

**ELECTRONIC WASTE: AN EXAMINATION OF CURRENT ACTIVITY, IMPLICATIONS FOR ENVIRONMENTAL STEWARDSHIP, AND THE PROPER FEDERAL ROLE**

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**HEARINGS**

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND  
HAZARDOUS MATERIALS

OF THE

COMMITTEE ON ENERGY AND  
COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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**WEDNESDAY, JULY 20, 2005**

HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ENERGY AND COMMERCE,  
SUBCOMMITTEE ON ENVIRONMENT  
AND HAZARDOUS MATERIALS,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 2 p.m., in room 2123 of the Rayburn House Office Building, Hon. Paul E. Gillmor (chairman) presiding.

Members present: Representatives Gillmor, Bass, Bono, Otter, Solis, Allen, and Schakowsky.

Staff present: Mark Menezes, chief counsel for energy and the environment; Tom Hassenboehler, majority counsel; Jerry Couri, policy coordinator; Peter Kielty, legislative clerk; and Dick Frandsen, minority senior counsel.

Mr. GILLMOR. The subcommittee will come to order.

We have a somewhat unusual situation. The full Energy and Commerce Committee is meeting at the same time on a markup session that was expected to conclude this morning, but is probably going to go all day. Consultations with the full committee Chairman Barton felt it was important that we go ahead with this hearing. And it is possible, however, because they have a number of contentious votes expected down there, that we will get a call and we will have to recess this briefly so that we go down and vote and then we will come down and reconvene.

We did have a couple of members who have been active in the e-waste issue who expressed an interest in making a 2-minute opening statement.

Mrs. Slaughter of New York, if you care to, you can either do that up here or at the witness table or however you wish.

Ms. SLAUGHTER. Thank you very much, Chairman Gillmor and Ranking Member Solis, for holding this important hearing and allowing members of the E-Waste Working Group to make the opening statements.

Electronic waste, or e-waste, comes as a broad range of discarded electronic products, including computers, televisions, cell phones, and PDAs. In today's high-tech era, e-waste has become one of the fastest growing sectors of the countries solid waste stream, with

Americans disposing of at least 2 million tons of electronic products a year.

Management of e-waste products is of concern in part because of their volume, but more importantly because they contain large amounts of heavy metals and other toxic substances, such as mercury and cadmium. As we will hear from the EPA, these metals can be released into the environment, causing irreparable harm to the air and waterways.

The bipartisan E-Waste Working Group was recently formed to raise awareness in Congress on the issue of e-waste and to jump-start talks on the need for a national approach to this problem. This hearing is a good first step in these efforts.

California, Maine, and Maryland, and a growing number of cities have passed legislation to mitigate the impacts of e-waste. At least 20 additional State legislatures have followed suit and begun debate on how best to approach e-waste disposal. And the European Union is set to begin implementation of their e-waste regulations in August. The United States, to date, has done little to address the problem of e-waste on the national scale. While retailers and manufacturers have created voluntary recycling programs, they are too small in scope to make much of a dent in the e-waste stream. No one wants a patchwork of different State and local regulations that make it impossible to deal effectively with e-waste and which can place our manufacturers and retailers at a competitive disadvantage.

As the saying goes, an ounce of prevention is worth a pound of cure, and a national policy will create a comprehensive infrastructure for recycling e-waste and protect Americans from the potential dangers that it poses. Additionally, a uniform plan will help, not hinder, manufacturers' and retailers' competitive edge in the marketplace.

As a member of the E-Waste Working Group, I look forward to learning more about the EPA's efforts to craft an e-waste strategy and hearing the different approaches we can take at the national level. Thank you very much, Mr. Chairman, Ms. Solis, for holding this important hearing. I appreciate how busy you are, and we are very grateful to you for the time.

Thank you.

[The prepared statement of Hon. Louise McIntosh Slaughter follows:]

PREPARED STATEMENT OF HON. LOUISE SLAUGHTER, A REPRESENTATIVE IN  
CONGRESS FROM THE STATE OF NEW YORK

Thank you, Chairman Gillmor and Ranking Member Solis, for holding this important hearing, and for allowing members of the E-Waste Working Group to make an opening statement.

Electronic waste, or e-waste, encompasses a broad range of discarded electronic products, including computers, televisions, cell phones, and PDAs. In today's high-tech era, e-waste has become one of the fastest-growing sectors of the country's solid waste stream, with Americans disposing of at least 2 million tons of electronic products a year.

Management of e-waste products is of concern, in part, because of their volume, but more importantly because they contain large amounts of heavy metals and other toxic substances such as mercury and cadmium. As we will hear from the EPA, these metals can be released into the environment causing irreparable harm to the air and waterways.

The bipartisan E-Waste Working Group was recently formed to raise awareness in Congress on the issue of e-waste, and to jump-start talks on the need for a national approach to the problem. This hearing is a good first step in these efforts.

California, Maine, and Maryland—and a growing number of cities—have passed legislation to mitigate the impacts of e-waste. At least 20 additional state legislatures have followed-suit and begun debate on how best to approach e-waste disposal. And the European Union is set to begin implementation of their e-waste regulations in August.

Yet the U.S. has done little to address the problem of e-waste on a national scale. While retailers and manufacturers have created voluntary recycling programs, they are too small in scope to make much of a dent in the e-waste stream.

No one wants a patchwork of different state and local regulations that make it impossible to deal effectively with e-waste, and which can place our manufacturers and retailers in a competitive disadvantage.

As the saying goes, an ounce of prevention is worth a pound of cure. A national policy will create a comprehensive infrastructure for recycling e-waste and protect Americans from the potential dangers it poses. Additionally, a uniform plan will help—not hinder—manufacturers and retailer's competitive edge in the marketplace.

As a member of the E-Waste Working Group, I look forward to learning more about the EPA's efforts to craft an e-waste strategy, and hearing the different e-waste approaches we can take at the national level.

Thank you again, Mr. Chairman, for holding this important hearing.

Mr. GILLMOR. Thank you very much. It is good to have you here.

And also, Congressman Thompson is here, so we would be pleased to recognize you for an opening statement.

Mr. THOMPSON. Mr. Chairman, thank you very much. Ranking Member Solis, thank you.

I have a statement that I will just submit for the record, if it is all right, Mr. Chairman. I will just make—

Mr. GILLMOR. No, without objection. Certainly.

Mr. THOMPSON. [continuing] a couple remarks, if I could.

First, I want to thank all of the members of the E-Waste Working Group, and one is your very able committee member, Ms. Bono, from California.

And I think we all come to this issue with the same thought in mind. Myself, I have a bill that deals with this, but I want to be really up-front with you and let you know I am not married to that solution, that bill. I just want to be able to work collectively to figure out how we are going to deal with this very, very serious problem. Today, the life span of a computer is about 2 years. You already heard Americans are disposing of about 3,000 tons of computers each day. It is a growing problem, and we need to figure out what we are going to do to address it in a comprehensive manner.

As was mentioned in the earlier testimony, three States have already passed State laws dealing with this. Twenty-six other States are in the process of looking at State legislation. And all this is going to do is create a patchwork of solutions across the country. It is going to make it tough on manufacturers. It is going to make it tough on retailers and make it tough on consumers. So I think we have an opportunity from the Federal level to step in and help put together that comprehensive plan so we can turn e-waste into e-scrap and solve this problem, or at least take appreciable steps in solving this problem once and for all.

So I commend you, Mr. Chairman, for holding this hearing and appreciate the fact that you are looking at the problem, and I look forward to working with you as our working group continues to do its work.

Thank you.

[The prepared statement of Hon. Mike Thompson follows:]

PREPARED STATEMENT OF HON. MIKE THOMPSON, A REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF CALIFORNIA

Good afternoon and thank you for inviting me here today to comment briefly on electronic waste—or “e-waste”. I appreciate Chairman Gillmor and Ranking Member Solis allowing me to be a part of the first congressional hearing on the subject of e-waste, a subject I’ve been involved with since I was first elected to Congress.

Electronic products are becoming smaller and lighter, but they also are creating an ever-growing environmental and waste disposal problem. That’s because it’s often cheaper and more convenient to buy a new PC or cell phone than to upgrade an old one.

Today, the average lifespan of a computer is only two years and Americans are disposing of 3,000 tons of computers each day. Consumers Union, publisher of Consumer Reports, recently estimated that the typical household could expect to discard approximately 68 electronic items over the next 20 years including: 20 cell phones, 10 computers, 7 TVs, 7 VCRs or DVD players and several answering machines, printers and CD players.

While e-waste contains a number of valuable materials that are recoverable—including aluminum, gold, silver and other metals, it also contains a witches’ brew of toxic material—such as lead, mercury and cadmium. If not properly disposed of these toxic materials can cause health and environmental problems. For example, the glass of a typical computer monitor contains six pounds of lead. When this glass is crushed in a landfill, the lead escapes into the environment. According to the Environmental Protection Agency (EPA), lead becomes hazardous to human health when one is exposed to only 1.5 ounces of its dust.

There’s a Native American proverb about stewardship, which says: “We don’t inherit the earth from our ancestors, we borrow it from our children.” To give you an idea of the potential legacy we are leaving future generations, the National Safety Council has projected that approximately 300 million computers are obsolete. If all 300 million units were discarded, this would involve nearly one billion pounds of lead, two million pounds of cadmium and 400,000 pounds of mercury.

We’ve done little to address the problem of e-waste on a national scale. Although some retailers and manufacturers have created voluntary recycling programs, they are too small in scope to make much of a dent in the e-waste stream. Without a national recycling infrastructure—collection programs, disassembly facilities and re-processing plants—consumers and businesses today are left with few choices for getting rid of their old computers, cell phones and other electronic devices. Most people shove them in a spare closet or corner and wait. When people do try to dispose of their e-waste responsibly, all too often it is shipped overseas. There, it and its toxins can land in riverbeds or in the hands of unprotected workers.

The buildup of e-waste on the local and state level has led California, Maine and Maryland to implement their own e-waste laws—each very different from one another. Twenty-six additional states are also considering e-waste legislation. As states continue to develop their own approaches the need for a federal solution only grows. Without federal action both consumers and businesses will have to contend with an unmanageable patchwork of state laws. This might also put many U.S. manufacturers at a competitive disadvantage if they have to juggle multiple state regulations.

My colleagues and I formed the Congressional E-Waste Working Group with the objective of investigating possible federal e-waste solutions and educating Members of Congress about the issue. At our first event, a forum entitled, “E-Waste: Is a National Approach Necessary?” we invited all stakeholders, including consumers, manufacturers, retailers, recyclers, environmentalists and nonprofits. All agreed to the value of a national approach to e-waste.

I thank the subcommittee for bringing much needed attention to this issue and to allow us to gather expert testimony on the problem of e-waste. I—and other members of the E-Waste Working Group—look forward to working with you to find a comprehensive way to reduce e-waste in a way that considers the interests of all stakeholders.

Mr. GILLMOR. Thank you very much.

And we will go a little bit out of order. A member of the E-Waste Working Group and also a member of this subcommittee is Ms. Bono of California, so we will move you up to the top of the order



as being part of the working group, and I recognize you for any statement you may wish to make.

Ms. BONO. Thank you, Mr. Chairman.

I would like to thank you very much for calling this hearing today. I appreciate your willingness to explore all aspects of this issue. And unfortunately, as you all know, we have a big markup going on downstairs, so we will be popping up and down, and that is not an indication of our not caring about the issue. But unfortunately, some demands that didn't meet with our time. So I would really like to thank my colleagues for testifying.

Recently, we have come across a wide array of proposed solutions to the e-waste dilemma, from doing nothing, to enabling the Federal Government to bear the burden, to everything in between. Because this is our first official Federal look at the issue, I believe that everything should remain on the table. I am also interested in examining what the actual amount of e-waste is and its implications on the environment. There are varying opinions on its impacts. In order to have a better understanding of what it is we are dealing with, we need to address these basic questions. Because many States have either mandated or considering a mandate to recycle, I understand why both manufacturers and retailers are looking for some kind of continuity. It puts our companies at a disadvantage and raises the cost of this equipment on the consumer if we had a number of different policies nationwide.

Finally, Congress needs to look abroad to see what kinds of policies are employed by other nations that have moved ahead with reducing e-waste. While the United States is not under any obligation to mirror these exact policies, it is in our interest to keep our high-tech companies remaining competitive in these markets. If by doing so we also help our environment here at home, all the better.

Mr. Chairman, yesterday, on the floor, I spoke briefly to my colleagues about a recent Washington Times article, which I think was entirely misleading. And one of my colleagues suggested that the best way to handle the e-waste problem was to suggest to all of those trying to dispose of computers and televisions and printers and stuff to just simply take their e-waste over to the Washington Times office and leave it there on their doorstep. So it is obvious that that is not a real option for us, but I look forward to our witnessses to hear what you have to say.

And thank you for being here.

Thank you, Mr. Chairman.

Mr. GILLMOR. Thank you very much.

As we have only two things going on at the same time for all of us, I am going to request unanimous consent that all members may have 5 days to enter opening statements into the record. Some can not be here.

And the chair will recognize himself for the purpose of an opening statement.

Our subcommittee today is making history by holding the first-ever Congressional hearing on the subject of what our Nation should do with the growing amount of electronic devices that will need to be disposed of or recycled. It is not an issue that is going to go away any time soon, particularly when you consider that we are about to make the transition to completely digital television. I

believe members need to understand the many facets of this issue in case there should come a time when our committee may need to act.

In the past, our subcommittee has spent time looking at waste disposal issues that have directly called into question the amount of waste capacity we have in this Nation and whether communities are able to develop comprehensive waste management plans.

The decision we, as a government and a society, make about the end-of-use activities of these products is no different. Three States have acted, because they believe something needs to be done about e-waste, and 23 other States have this on their radar screens in some fashion.

If you look at the model of the Solid Waste Disposal Act, which establishes a national structure and minimum guidelines for the handling of waste streams, clearly one can see the implications for electronic waste, from both the solid or hazardous waste perspectives, not to mention Federal laws dealing with recycling and recycled materials. In addition, the Low-Level Radioactive Waste Policy Act gives Congress the role of approving multi-State compacts that address this type of waste, an interesting thought considering the actions of some State coalitions.

Any way you look at this issue, though, the time is right for us to examine the state of electronic recycling in this country and whether a Federal solution should be considered for electronic waste.

I am very pleased that the subcommittee has received an overwhelming and a positive response from many quarters about our desire to have this hearing. And in order to accommodate the greatest diversity of witnesses as well as use the time we have in the most efficient way, considering both of the activities on the House floor and House-Senate conferences on the energy and the highway bills, we are going to bifurcate this hearing. Today will be the first part where we will hear from the Federal Government and the three State governments that have passed e-waste recycling laws.

Those are important perspectives, because we need to know if voluntary initiatives or differing State standards are preferable public policy outcomes, or whether they are economic and environmental disasters waiting to occur.

Our second part of the hearing will be scheduled for when the House returns in September, and at that time, we will hear from electronics manufacturers, retailers, associations, recyclers, charitable organizations, and environmental groups who each have important, informed perspectives and many experiences to share from both the domestic and international activities.

I believe that this hearing should attempt to answer a few simple questions. They include: How do various parties define electronic waste? What are these parties doing to address the concerns they have? What responsibilities do they believe the public and private sectors share in addressing the e-waste? And what responsibilities do all the stakeholders, including private citizens have? Is the status quo of voluntary programs or individual State laws adequate or appropriate? And what role, if any, should the Federal Government play?

I look forward to the testimony of our witnesses and the answers that they will give us on those questions.

And before I yield to Ranking Member Solis, so she can make an opening statement, I would like to welcome a few people and thank others. First, let me thank our distinguished panelists who will testify for the committee today, including Mr. Breen of the EPA and Mr. Wu from the Department of Commerce, the environmental heads of Maine and Maryland, as well as a representative from the California Waste Management Board.

And second, I want to thank the leadership of the Congressional E-Waste Caucus for their presence today, Mr. Thompson, Mrs. Slaughter. And I also want to congratulate Mary Bono, a member of our subcommittee, who has worked very hard on e-waste issues as a co-chair of the Congressional E-Waste Caucus and has been very helpful and encouraging to me in putting together this hearing.

I also want to alert the members that we have witnesses who have made sacrifices to be with us today and are on tight lines due to travel concerns, and we should try to keep that in mind as we proceed.

And I am now very pleased to yield 5 minutes to the ranking member of the committee, Ms. Solis of California.

[The prepared statement of Hon. Paul E. Gillmor follows:]

PREPARED STATEMENT OF HON. PAUL GILLMOR, CHAIRMAN, SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS WASTE

The Subcommittee will now come to order and the Chair will recognize himself for five minutes for the purposes of making an opening statement.

Today, our Subcommittee makes history by holding the first-ever congressional hearing on the subject of what our nation should do with the growing amount of electronic devices that will need to be disposed or recycled. This is not an issue that is going away any time soon—particularly when you consider that we are about to make the transition to completely digital television—and I believe Members need to understand the many facets of this issue in case the time should come where our Committee may need to act.

In the past, our Subcommittee has spent time looking at waste disposal issues that have directly called into question the amount of waste capacity we have in this nation, and whether communities are able to develop comprehensive waste management plans.

The decisions we as government and society make about the end-of-use activities of these products is no different. Three states have acted because they believe something needs to be done about e-waste and 23 other states also have this issue on their “radar screens” in some fashion. If you look at the model of the Solid Waste Disposal Act, which establishes a national structure and minimum guidelines for the handling of waste streams, clearly one can see implications for electronic waste—from solid or hazardous waste perspectives—not to mention Federal laws dealing with recycling and recycled materials. In addition, the Low-Level Radioactive Waste Policy Act gives Congress the role of approving multi-state compacts that address this type of waste—an interesting thought considering the actions of some state coalitions. Any way you look at this issue, though, the time ripe for us to examine the state of electronic recycling in our country, and whether a Federal solution should be considered for electronic waste.

I am pleased to announce that the Subcommittee has received an overwhelming and positive response from many quarters about its desire to have this hearing. In order to accommodate the greatest diversity of witnesses as well as use the time we have in the most efficient way considering the activities on the House floor and House-Senate conferences on the energy and highway bills, the Subcommittee will bifurcate this hearing. Today will be the first part where we will hear from the Federal government and the three state governments that have passed e-waste recycling laws. These are important perspectives because we need to know if voluntary initiatives or differing state standards are preferable public policy outcomes, or are

economic and environmental disasters waiting to occur. Our second part of this hearing will be scheduled for when the House returns in September. At that time, we will hear from electronics manufacturers, retailers, associations, recyclers, charitable organizations, and environmental groups who each have important, informed perspectives and many experiences to share from both domestic and international activities.

Again, I believe this hearing should attempt to find answers to a few simple questions. These include: How do various parties define electronic waste? What are these parties doing to address the concerns they see? What responsibilities do they believe the private and public sector share in addressing e-waste? What responsibilities do all the stakeholders, including private citizens? Is the status quo of voluntary programs or individual state laws adequate or appropriate? What role, if any should the Federal government play? I look forward to the testimony of our witnesses and the answers they will give us on these matters.

Before I yield to the Ranking Member of the Subcommittee, Mrs. Solis, so she can make her opening statement; I want to welcome a few people and thank others. First, let me thank our distinguished panelists who will testify for our committee today, including Mr. Breen from EPA and Mr. Wu from the Department of Commerce, the environmental heads of states of Maine and Maryland, as well as a representative from the California Waste management board. Second, I want to welcome as well as thank the leadership of the Congressional E-Waste Caucus for their presence today, Mr. Thompson, Mrs. Slaughter, and Mr. Cunningham. Finally, I want to congratulate Mary Bono, a member of our subcommittee, who has worked very hard on e-waste issues as a co-chair of the Congressional E-Waste Caucus and who has been very helpful and encouraging to me in putting together this hearing.

With that, I yield five minutes to Mrs. Solis.

Ms. SOLIS. Good afternoon, and thank you, Chairman Gillmor, and thank you very much for having this first hearing on electronic waste.

I also want to thank the previous speakers that came before us to speak, Representative Slaughter, Representative Thompson, and Congresswoman Bono.

I would like to also take this opportunity to recognize Rosalie Mule, who is here from California, who has joined us to serve on the second panel and also represents the California Integrated Waste Management Board, and recognize also Carol Mortenson, I believe, who is also here with her.

I want to thank the chairman for cooperating his staff and ours in bifurcating this hearing so that we can consider information from the large number of stakeholders that are involved. And I hope we can continue to work in this manner. I think it is very uplifting to know that at least on an issue like this we can come together.

These issues include a number of which are discussed in the conference meeting for the energy bill.

Mr. GILLMOR. Excuse me. Excuse me.

We have got a vote on, and if it is all right with you, we will recess very briefly, go vote, come back, and you can finish your statement.

Ms. SOLIS. That is fine.

Mr. GILLMOR. Okay. You don't get penalized time-wise.

[Brief recess.]

Mr. GILLMOR. The committee will come back to order.

And we will continue with the statement of Ranking Member Solis.

Ms. SOLIS. Thank you, Mr. Chairman.

And I do want to submit my statement for the record in its full length, and I realize that we have some witnesses here that may have to leave a lot sooner, but I do want to state my opinion.

And that is that e-waste is the fastest growing portion of our waste stream, growing almost three times faster than our overall municipal waste stream. Six million desktop and laptop computers in the United States will be obsolete. A pile of these obsolete computers would reach a mile high, cover six acres. That is the same as a 22-story pile of e-waste covering the entire 472 square miles of the city of Los Angeles. E-waste has become the new hazardous waste crisis. E-waste contains toxic substances, such as lead, cadmium in circuit boards, lead oxide, cadmium in monitor cathode ray tubes, and mercury in switches.

So given these facts, we know that there is an urgency for us to do something, and I am very proud that California has been one of those leading States on this issue for many, many years, and I was very pleased to see Congressman Mike Thompson here, who I served with in the California legislature when we were dealing with these issues some 7 and 8 years ago.

And I am delighted to have our witnesses here.

I will, with that, just relinquish my time and submit my statement for the record. I request unanimous consent to do that.

Mr. GILLMOR. Without objection.

[The prepared statement of Hon. Hilda L. Solis follows:]

PREPARED STATEMENT OF HON. HILDA L. SOLIS, A REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF CALIFORNIA

Good afternoon. I would like to thank Chairman Gillmor for holding this important hearing on electronic waste. I also want to thank our witnesses for coming. I would like to recognize Rosalie Mule who will join us on the second panel today from California's Integrated Waste Management Board and recognize Carol Mortensen who has joined her.

I want to thank the Chairman for the cooperation of his staff in bifurcating this hearing so we can consider information from the large number of stakeholders involved. I hope we can continue to work in this manner to take up the number of issues important to this Subcommittee, and fall within its jurisdiction.

These issues include a number of which are being discussed in the Conference meeting for the Energy Bill. The Energy Bill includes provisions on refinery revitalization, LUST, and hydraulic fracturing involving the Safe Drinking Water Act, the Solid Waste Disposal Act and Superfund. All of these statutes fall within the Subcommittee jurisdiction yet we have not had any hearings or legislative markup. I think that all members need to have the opportunity to address these issues.

I also understand from my staff that you, Chairman Gillmor, will personally be speaking to Chairman Barton about scheduling a perchlorate hearing, per previous commitments. I appreciate that and I look forward to that hearing.

I believe the need for the safe disposal of e-waste is evident. E-waste is the fastest growing portion of our waste stream—growing almost 3 times faster than our overall municipal waste stream. 600 million desktop and laptop computers in the U.S. will soon be obsolete. A pile of these obsolete computers would reach a mile high and cover six acres. That's the same as a 22-story pile of e-waste covering the entire 472 square miles of the City of Los Angeles.

E-waste has become the new hazardous waste crisis. E-waste contains toxic substances such as lead and cadmium in circuit boards; lead oxide and cadmium in monitor cathode ray tubes; and mercury in switches and flat screen monitors. Due to the hazards involved, disposing and recycling of E-waste have serious environmental implications.

When computer waste is sent to the landfill or incinerator, it poses significant contamination problems. Landfills leach toxins into groundwater and incinerators emit toxic air pollutants. E-Waste also has occupational implications for workers who are exposed to the toxic chemical compounds.

The result is a growing challenge for businesses, local governments, and residents, as they search for ways to reuse, recycle, or properly dispose of E-waste. It is or should be a challenge to manufacturers to find ways to produce these products without using these dangerous materials. One thing is certain: E-waste is with us to stay.

We need to keep these harmful materials from ending up in landfills and ultimately in our water supplies.

I am happy to see that California is setting an example with one of the nation's first electronics recycling law. California enacted the Electronic Waste Recycling Act in September 2003. Supporters of the California law included environmental groups, local governments, municipalities, and recyclers.

California's law requires consumers to pay an advance recycling fee to retailers on the sale of computer monitors, televisions, and other video devices containing toxic materials, after January 1, 2005. The fees are to be used to reimburse recyclers for the cost of collecting and recycling the covered video devices. I hope that Rosalie Mule can provide us information on the implementation of the California law. I understand that 20 other states are thinking of adopting E-waste legislation. California's law could be looked at by these other states as a model.

Unfortunately, E-Waste is also exported overseas to countries that are least able to deal with them appropriately. Exporting E-Waste pollutes the air, water and soil in countries that have minimum environmental standards. I believe that it is unjust and inappropriate to export pollution and contrary to the principles of environmental justice. I am happy to see that the California law restricts the export of covered e-waste to foreign destinations.

I am glad that we are having the first half of this hearing today and look forward to both this and the second day of this hearing to learn about the role of the federal government, state governments and regional opportunities for handling E-waste. I also hope that we can begin hearings on the other issues within this Subcommittee's jurisdiction.

Thank you.

**Mr. GILLMOR.** And thank you.

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. CHARLES F. BASS, A REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF NEW HAMPSHIRE

Thank you Mr. Chairman. I appreciate you scheduling this important hearing that affects a wide range of issues—including the environment, waste management, commerce, and the technology industry. I think it would be hard press for us to find one individual in this room that does not have some piece of out-dated electronic equipment sitting in a drawer, closet, attic, or basement in their home or office. Eventually, this equipment will need to be disposed of and the question is whether it will end up in our landfills or to be recycled or reused. Even though there are currently alternatives to landfills, such as donations to charities and recycling locations, most Americans do not have the information or ability to access these other options for "end-of-life" electronic products. Additionally, there is a lack of infrastructure on the national level to handle the overall demand for these alternatives. It is critical for our Committee to keep in mind as we move forward in considering any federal action: how do we encourage households to recycle; how do we create a market for recycling e-waste, and how do we develop incentives to design more environmentally friendly products.

This hearing comes at an opportune time since many local communities and states are currently addressing how to handle their growing e-waste stream. For example, the Northeast Recycling Council and the Council of State Governments-East Region Conference have been working on a collaborative effort in addressing how to regionally handle e-waste. Last week, the group released draft legislation from this effort and will be meeting again on July 25th with stakeholders from all sectors impacted by e-waste to further discuss the draft. I hope this Committee will make sure that groups like the Northeast Recycling Council will be consider in future discussions on e-waste.

Additionally, the issue of e-waste is particularly relevant to our Committee as we move forward to transferring over to digital television and what the possible impacts that this transition may have on our landfills. Even in absence of a transition, the continual advances in technology that makes our electronic products out-dated is also placing pressure on our landfills. There is a growing need for municipalities to handle increasing amounts of electronic waste at the same time that their landfills are becoming more and more constraint. Many of our electronic products are bulky, not biodegradable, and contains hazardous material that if released can be detrimental to the environment. For these reasons, it is imperative that we address this problem now.

I look forward to hearing from the second panel that represents a wide range of approaches in handling e-waste. Additionally, each state is implementing very dif-

ferent programs ranging from placing the responsibility on producers to shifting the cost on to consumers at the point-of sale. Each strategy has their own merits and drawbacks and hopefully our witnesses will discuss these differences.

Talking to various stakeholders from my state of New Hampshire, there is a consensus that this problem can not be tackled by individual state legislation, but that for any program to succeed that there needs to be either regional efforts or introduction of a federal program. Currently, in New Hampshire, each municipality handles their e-waste items individually. Some communities accept e-waste in their municipal landfill, while others set-up periodic donation/recycle collection drives, and even other communities have set-up e-waste recycling programs that either accepts the item with or without a fee. For example, in my small town of Peterborough, television sets under 19 inches are accepted without a fee, while the owner is charged \$5.00 for recycling a larger televisions. However, the municipality has no programs for computers, microwaves, stereos, fax machines, scanners, and other telecommunication equipment.

It is important for this Committee to explore ways to encourage environmentally conscious behavior throughout the life of the product. There is a critical need to stimulate the industry to produce more energy, environmentally-friendly products that can in turn be recycled. But just as important is the need to produce incentives for consumers to dispose of their products in s environmentally conscious manner, rather than simply dropping it at their dump. Finally, no effort will be truly successful if we do not consider incentives for the waste management industry by reducing any existing barriers or burdensome cost related to the reduction of e-waste with recycling and reusing programs.

I like to thank our witnesses for joining us today and I look forward to hearing their testimony on this important issue to all of us.

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PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, COMMITTEE ON ENERGY  
AND COMMERCE

Thank you, Chairman Gillmor for holding today's hearing on what I understand is the first congressional survey regarding electronic waste and the proper federal role on this important environmental issue. I hope this hearing will not only help us figure out what to do with all of those old computers, printers, and televisions that end up getting stored in the basement or closet somewhere, but will also provide valuable insight to what the states and agencies are currently doing to address this problem.

The Commerce Department states that given the growth and obsolescence rates of the various categories of consumer electronics, somewhere in the neighborhood of 3 billion units will be scrapped during the rest of the decade—or an average of about 400 million units a year, including 200 million televisions and 1 billion units of computer equipment. And with the rise of increased dependency on computers and other electronic equipment, this problem is only expected to escalate. I look forward to hearing what EPA and the Department of Commerce have been doing on this matter and I also understand that a few states have already undertaken action, with many proposals floating in other state legislatures. This creates an interesting dynamic, and while I don't feel the time is right for a comprehensive federal solution, I look forward to hearing the current state of things and what types of infrastructure and industry cooperation currently exist among state, local, and federal waste enforcement officials.

Once again, I thank the Chairman for holding this hearing and I yield back the balance of my time.

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PREPARED STATEMENT OF HON. LOIS CAPPS, A REPRESENTATIVE IN CONGRESS FROM  
THE STATE OF CALIFORNIA

Mr. Chairman, thank you for holding this hearing.

The technological revolution brought with it a consumer demand for constant upgrades to newer, faster and more advanced models of older products.

Think about how quickly our technology has changed? Can any of us remember using an eight-track stereo, a rotary phone, black-and-white television set, or even a Commodore 64?

The pace of technological innovation continues to offer the American public more and more choices. But for every I-pod, cell phone, HDTV or laptop computer that goes home from the store, its outdated predecessor gets moved to the garage or thrown out with the trash.

The lifespan of a computer used to be about five years, it's now about two. Cell phones have an average lifespan of less than a year, and in most cases stereo and television equipment is not even worth repairing anymore.

According to the EPA, U.S. households have an average of two to three unused computers and televisions in storage. Businesses are estimated to have even more. The reason is most people simply do not know how to go about disposing or recycling them.

A recent report conducted by the Silicon Valley Toxics Coalition predicted that 500 million computers will become obsolete between 1997 and 2007. These obsolete computers alone will result in over 6.3 billion pounds of plastic and 1.6 billion pounds of lead in our landfills and incinerators.

Cell phones can also add up to big problems. According to another recent study, Americans discard about 130 million cell phones per year. This figure adds up to be approximately 65,000 tons of trash.

Mr. Chairman, the U.S. led the technological revolution and I think we ought to lead the way to safely manage computers and other electronic devices at the end of their life. As we continue to dispose of more and more e-waste each year, finding a national recycling approach becomes more and more critical.

While some states, including my own state of California, have laws to get recycling programs going, others are just beginning to talk about how to deal with the accumulation of e-waste.

Without a national program, states will continue to create a patchwork of different programs making it difficult for manufacturers, retailers and consumers to adhere to.

As a public health nurse, I also believe we have a duty to assure that e-waste is handled responsibly. Electronics contain toxic metals such as lead, mercury and other dangerous compounds.

If not handled properly, e-waste can harm people and lead to contamination of the land, air and water. The health effects of these hazardous toxins are also well known. They include an increased risk of cancer, as well as harm to the brain, nervous system and kidneys.

E-waste is a growing problem that is not going away. It is my hope that with today's hearing we will begin to set the groundwork for a useful and intelligent conversation on how best to tackle this rising problem.

Again, I would like to thank the Chairman for holding this hearing and I look forward to the testimony of the witnesses.

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PREPARED STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Good afternoon. I would like to thank Chairman Gillmor and Ranking Member Solis for holding this hearing on electronic waste.

There is no doubt consumer electronic products have changed our way of life over the last 15 years.

Computers, cell phones, and other electronic products are a rapidly growing part of our society and are crucial to our economy.

As technology advances, making new products obsolete within a few short years, these products have also become a rapidly growing part of our waste, causing concern among states and posing a potential environmental problem.

Electronic equipment is the fastest-growing portion of the municipal solid waste stream.

Estimates show that nearly 500 million computers will become obsolete between 1997 and 2007.

The environmental liabilities of landfilling computers and electronic equipment include the potential for the release of a variety of toxic substances including mercury, cadmium, chromium, flame-retardant plastics, and lead.

Each monitor, or cathode-ray tube contains from four to six pounds of lead.

Because of these components, electronic waste has the potential to pollute the air or groundwater if disposed of in an incinerator or landfill.

Consumer electronic products already account for approximately 40 percent of lead found in landfills.

In my home state of Texas, an estimated 1.5 million computers are discarded annually, with roughly 162,000 recycled, leaving more than 1.3 million units assumed to be stored or disposed of in landfills.

A major factor leading to low recycling rates of electronic waste is a lack of education provided to consumers about recycling options available to them.



To help address this, the Texas Natural Resources Conservation Commission has started a campaign to make consumers aware of recycling and donation options available to them so that electronic waste does not end up in landfills or stored and unused where it loses its value and its potential to be sold or reused.

Additionally, the Texas Department of Information Resources has developed a guidance document for evaluating lease and purchase options to reduce electronic waste in the workplace, and provides consumer with information on where to donate or recycle used equipment.

While this is a good start to raise awareness, it is clear electronic waste is a growing concern across the nation and needs to be addressed.

I look forward to hearing from Secretary Wu and Secretary Breen for their observations and recommendations on this issue, and I look forward to hearing from the representatives from California, Maine and Maryland to hear how their respective states have approached the potential problems posed by electronic waste.

With that, Mr. Chairman, I yield back the balance of my time.

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PREPARED STATEMENT OF HON. TAMMY BALDWIN, A REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF WISCONSIN

Thank you Mr. Chairman,

I am very pleased this subcommittee has decided to examine the growing problem of electronic waste.

From CPUs and keyboards to copier machines and cell phones, Americans are discarding huge amounts of waste in the form of obsolete electronic products every year—the vast majority of which are not being recycled or disposed of properly.

This is a problem because this is not ordinary waste. These are products that contain highly dangerous materials such as mercury, lead, barium, chromium and a host of other toxic substances that can pose serious threats to the public's health and our environment.

Between 2.2 and 3 million tons of e-waste are tossed into landfills every year. Less than 10 percent of this waste is being reused or recycled. More than 50 million computers alone make their way to the trash every year.

As consumers demand more advanced electronic devices, like fancier cell phones and faster computers, the amount of e-waste seeping into the environment will continue to rise.

Mercury contamination is a particular concern of mine because pregnant mothers and young infants are highly susceptible to exposure to this toxic element, which can cause chronic damage to the brain, nervous system, spinal cord, kidneys, and liver.

Mercury is found in numerous components in electronic devices such as switches, CPU monitors, and printed wiring boards.

I'm glad states like Maine, California, and Maryland are taking the initiative to pass legislation that confronts the growing public health threat of e-waste. However, I do believe it is time for the federal government to adopt some national guidelines.

The lack of national standards has led to a patchwork of state laws that have created confusion for retailers and consumers. Meanwhile, there are few—if any—incentives for manufacturers to help remedy the problem or invest in safer alternatives. Nor are there any repercussions for their failure to act.

I hope today's hearing will prompt further Congressional action on this important health and environmental issue.

Thank you Mr. Chairman for holding this hearing today.

Mr. GILLMOR. We will begin with Benjamin Wu, who is the Deputy Undersecretary of the Office of Technology, U.S. Department of Commerce.

Mr. Wu.

**STATEMENTS OF BENJAMIN H. WU, DEPUTY UNDERSECRETARY, OFFICE OF TECHNOLOGY, DEPARTMENT OF COMMERCE; AND BARRY BREEN, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY**

Mr. WU. Thank you, Mr. Chairman.

Chairman Gillmor, Ranking Member Solis, and Congressman Bono, I appreciate the opportunity to appear before you this afternoon. The growth of the American high technology sector has been one of the greatest stories of the past 20 years. In part due to the legislative leadership of this committee, the U.S. technology industry continues to be a driver of economic growth and quality of life by providing electronics products that can educate us, entertain us, enthrall us, connect us, and also make us more productive.

These electronic products are now ubiquitous in our society. All one needs to do is attend this year's consumer electronics show to understand that the rapid growth of electronics products is the wave of our future, and sustaining that innovative growth may very well determine our Nation's ability to compete in the global marketplace.

So the preparation of consumer electronics products is a modern day reality. And as Americans begin to replace early generation electronics products that have reached the end of their life cycle or choose to upgrade to newer models, the issue of electronic waste disposal, or e-waste, is an issue that lawmakers and policymakers must confront, especially since it is believed that certain electronics products, especially in the early generation products, contains toxins that make their disposal potentially hazardous.

I commend you, Mr. Chairman, and your staff for holding the very first Congressional hearing on electronic waste. The fact that the Senate is holding a similar hearing next week, coupled with the establishment of the House E-Waste Working Group this past May, underscores its importance and the Congressional desire to address this complex issue.

The Department of Commerce looks forward to working with you and being of assistance to your subcommittee as you proceed with future consideration of e-waste policies and legislation. How and who decides e-waste solutions can dramatically affect the U.S. technology industry's manufacturing and marketing business models as well as their competitiveness.

As a portal for the U.S. technology industry, our Technology Administration has heard the concerns from the industry regarding the need for an industry-led consensus that will give certainty to the U.S. high-technology sector. Toward that goal, over the past year, we have worked to complement EPA's already existing and outstanding activities to drive and advance a consensus. We met with effective stakeholders, convened a roundtable, put out a Federal Register notice for comment, and will be issuing an overview of e-waste policy issues to the subcommittee in order to educate and inform Congress of relevant issues to be considered.

This overview, which is gleaned from lessons learned from our Technology Administration activities, is expected to be released by the time this subcommittee their second part of this hearing in September. They include which products should be considered for a—excuse me. The overview will provide a background on the issue of electronics recycling, including an explanation of the different components of recycling systems.

Mr. Chairman, electronic waste disposal and recycling is indeed a multifaceted and an intricate issue, one which has not easily been drawn into a consensus. While still ongoing, despite several

attempts encompassing several years, unanimity and comfortable consensus have been limited. This is because the issue involves many stakeholders, and the impacts of the decision any government makes concerning electronics recycling hold implications that are far-ranging, including environmental impacts, but also extending to the impact upon the health of U.S. businesses and their ability to compete internationally.

It is important that we involve all of the stakeholders who may be affected by electronics recycling legislation so that we will be able to fully understand the implications of actions undertaken and provide the opportunity for all affected parties to provide their input into shaping the most effective solution.

In the United States, as has been mentioned, several States have already begun considering a variety of legislative proposals, with the three States appearing in today's second panel having passed distinctively different approaches to manage electronic waste. Accordingly, it is conceivable, at this rate, that within the United States, there could be as many as 50 different sets of regulations that could have a significant impact on an important sector of the U.S. economy. And that is why industry welcomes Congressional review.

In doing so, Congress will need to examine a range of issues, including but not limited to, establishing financing mechanisms that have been used for electronics and other product recycling systems in the United States and other countries around the world, such as a government-sponsored recycling program, an advanced recovery fee, a fee paid by the consumer at the time of the purchase that would offset the cost of eventual recycling of the product, which is the basis of the 2003 law in California, a producer responsibility model where each manufacturer will be responsible for its own products and a certain percentage of orphaned products, a consumer mail-in program, a deposit refund system, and/or several combinations of the above possibilities.

Congress must also ensure that all stakeholders must be considered in any national plan. And these stakeholders include, but are not limited to, electronics manufacturers, retailers, recyclers, environmental interests, and consumers. Initially, in the early stages of trying to find a consensus, the retailers were not included and were overlooked in this process yet play a very important role, because of the impact that they could have.

Additionally, Congress must weigh several other issues that must be taken into consideration when devising a strategy for electronics recycling. They include which products should be considered for a program and how they should be gradually phased in, how discarded products should be collected and transported and by whom, how new products should be classified and sold on the Internet without leaving brick and mortar retailers at a competitive disadvantage due to mandated fees, and how the problem of orphaned products should be addressed, and how consumers can be encouraged to actively participate in any established recycling program.

In the United States, 408 related to waste management, recycling, and product stewardship that were introduced at the State level in 2003, 50 more than in 2002. And so we can expect more legislation to be introduced as other States gain interest in this

issue. Twenty-six States introduced 52 bills related to electronics disposal. And we have heard industry's deep concerns that leaving this issue to the State level becomes problematic because of the cost of compliance with the patchwork of international and State laws can be daunting.

E-waste is certainly an issue worthy of Congressional review, and we applaud this committee for undertaking this important issue. We are available to help educate and inform the Congress on this complex debate and ensure that all stakeholders' interests are taken into account in crafting a solution.

Thank you, Mr. Chairman, and I would be happy to respond to any questions you or members of the subcommittee may have.

[The prepared statement of Benjamin H. Wu follows:]

PREPARED STATEMENT OF BENJAMIN H. WU, ASSISTANT SECRETARY FOR  
TECHNOLOGY POLICY, U.S. DEPARTMENT OF COMMERCE

Chairman Gillmor, Ranking Member Solis, and members of the subcommittee, I appreciate the opportunity to testify before your subcommittee in the first Congressional hearing on electronics recycling. I commend you on your leadership to address this important issue—an issue that can dramatically affect the U.S. technology industry's manufacturing and marketing business models, as well as their competitiveness.

Mr. Chairman, the growth of the American high-technology sector has been one of the great stories of the past 20 years because of its contribution to our economic growth, our standard of living, and the rise of ubiquitous consumer electronics improving the quality of our lives. However, many consumer electronic products contain toxins that make their disposal potentially hazardous. As the early generations of these technology products have reached or are reaching the end of their life cycle, it has become increasingly clear that lawmakers and policymakers must deal with the issue of their disposal.

A recent report from the International Association of Electronics Recyclers projects that given growth and obsolescence rates of the various categories of consumer electronics, somewhere in the neighborhood of 3 billion units will be scrapped during the rest of this decade—or an average of about 400 million units a year, including 200 million televisions and 1 billion units of computer equipment.<sup>1</sup> E-waste comprises 1.5 percent of municipal waste across the United States. It is a small but fast-growing portion. Some researchers estimate that nearly 75 percent of old electronics are in storage as consumers hoard them, feeling they have some value and uncertain how to dispose of them.

Electronics waste and recycling is an important and complex issue. This issue involves many stakeholders, and efforts to comfortably resolve the issue by consensus with all stakeholders, while on-going, have had limited success. The impacts of the decisions the government makes concerning electronics recycling holds implications that are far-ranging, including environmental impacts, but also extending to the impact upon the health of U.S. businesses and their ability to compete in the global marketplace. It is important that we involve all of the stakeholders who may be affected by electronics recycling legislation so that we will be able to fully understand the implications of actions undertaken, and provide the opportunity for all affected parties to provide their input into shaping the most effective solution.

Several characteristics of e-waste—their bulky nature, possibly toxic constituents, the high cost of properly managing them—combine to warrant special consideration of its removal. Many of these products, especially televisions and personal computers, are not easily handled with regular trash. Moreover, they take up space that is already at a premium in landfills. Recycling is generally more expensive than disposal, however, and recycling does not pay for itself. The costs of collecting and dismantling these products may exceed the material value of the recycled equipment because there is no efficient infrastructure for collecting discarded electronics, nor were these products originally designed with recycling in mind. About two million tons per year of electronic waste, 20 to 50 million personal computers a year for example, require disposal management. Internationally, a number of countries have enacted legislation to manage electronic waste.

<sup>1</sup> Product Stewardship Institute, [http://www.productstewardship.us/prod\\_electronics.html](http://www.productstewardship.us/prod_electronics.html)

In the United States, several states are considering a variety of legislative proposals, with three states having passed distinctly different approaches to manage electronic waste. Accordingly, it is conceivable that, within the United States, there could be as many as 50 different sets of regulations that could have a significant impact on an important sector of the U.S. economy.

Various stakeholders have been participating voluntarily in multi-stakeholder dialogues for several years, such as the National Electronics Product Stewardship Initiative (NEPSI), trying to find a national solution. The technology industry has been an active participant in these discussions and has been working with the Environmental Protection Agency (EPA) on a number of pilot programs.

As the portal for the U.S. high-technology industry, the Department of Commerce's Technology Administration has worked with industry to complement EPA's efforts to drive towards an industry-led consensus that will give certainty to the U.S. high-technology sector. Towards that goal, over the past year, the Technology Administration has met with affected stakeholders, convened a roundtable, put out a Federal Register notice for comment, and will be issuing an overview of e-waste policy issues to provide Congress with information as you move forward in considering this issue. This overview is expected to be released by the time this subcommittee completes the second part of this hearing in September, and provides background on the issue of electronics recycling, including an explanation of the different components of a recycling system and commonly used concepts and terminology.

Mr. Chairman, let me discuss with you the components of our overview to help lay out the policy foundations for possible Congressional consideration. It should be noted that Technology Administration's overview does not make any recommendations as to whether the United States should have a national system or whether one system is better than another. Instead, it is designed to simply report the various options under discussion and the reported advantages and disadvantages of each.

The overview focuses on the range of financing mechanisms that have been used for electronics and other product recycling systems in the United States and in other countries. The financing models considered include: a government sponsored recycling program; an Advance Recovery Fee (ARF), a fee paid by the consumer at the time of purchase that would offset the cost of the eventual recycling of the product, which is the basis for the 2003 law passed in California; a producer responsibility model, where each manufacturer would be responsible for its own products and a certain percentage of orphaned products (electronic waste produced by a company that is no longer in business or cannot be identified); a consumer mail-in program; a deposit refund system; and several combinations of the above possibilities.

The overview also presents stakeholders' views regarding these various financing options and the role of government in enabling a national electronics recycling system. The stakeholders that should be considered in any national plan include, but are not limited to: electronics manufacturers; producers; retailers; recyclers; environmental interests; and consumers. The overview also lists some steps being taken by some of these interests voluntarily to help promote electronics recycling.

The overview notes several other issues that must be taken into consideration when devising a strategy for electronics recycling. They include: which products should be considered for a program, and how they should be gradually phased in; how discarded products should be collected and transported and by whom; how new products should be classified and sold on the Internet without leaving brick-and-mortar retailers at a competitive disadvantage due to mandated fees; how the problem of orphaned products should be addressed; how worker safety in the recycling process can be ensured; and how consumers can be encouraged to actively participate in any established recycling program.

The overview examines current and potential future Federal regulations in the United States that govern the disposal of electronics, and legislation that has been passed or proposed by the States regarding electronics recycling. In the United States, 408 bills related to waste management, recycling, and product stewardship were introduced in state legislatures in 2003, 50 more than in 2002. Twenty-six states introduced 52 bills related to electronics disposal.

Three states, California, Maine, and Maryland, have passed laws requiring electronics recycling, yet with very different requirements for manufacturers and retailers. California's legislation is based on an advance recovery fee; Maine has implemented producer-financed collection, recovery, and recycling of electronic waste; and Maryland is mandating that manufacturers offer a take back program and pay a fee. Other states have already banned disposal of CRT (Cathode Ray Tube) Monitors in their landfills, or have commissioned study committees to draft legislation and are expected to introduce electronics recycling legislation shortly.

We have heard deep concerns from industry that solving this issue at the State level may become problematic because the cost of compliance with a patchwork of international and state laws can dramatically affect the manufacturing, marketing, and business models of the U.S. electronics sector and the transaction costs and business models of our retail sector. Industry believes a national solution is required to avoid forcing companies to comply with a potentially wide variety of regulations that will drive up their costs and impede their ability to compete internationally. Industry is focusing on efforts to create a national system that will achieve the goal of increasing recycling while not impeding interstate commerce.

The overview also analyzes how other countries have financed national electronics recycling systems. At least 10 countries have legislation on discarded electronics and more are developing legislation. The Waste of Electrical and Electronic Equipment (WEEE) Directive in the European Union (EU) covers the collection and treatment of electronics, as well as large household appliances and medical devices. The Restriction on Hazardous Substances (RoHS) Directive in the EU bans the use of certain hazardous substances in electronic equipment and was also incorporated into the California State law. The EU Directives are having a significant effect on U.S. industry. U.S. businesses selling into the EU market must comply with the WEEE and RoHS Directives and most are changing their product line worldwide to meet the new requirements of RoHS. Other countries, including Japan and China, have taken steps to echo some of these types of requirements within their borders. At the Sea Island, Georgia Summit of G8 countries<sup>2</sup> in June 2004, Japan proposed the "3R's Initiative" to reduce waste, reuse, and recycle resources and products to the extent economically feasible. A 3R's Ministerial Conference was held in Tokyo in April 2005, and follow-up work is expected to continue.

Additionally, the overview investigates parallels in other recycling programs, analyzing recycling models from eight different industries within and outside of the United States with items ranging from batteries to carpets, and seeks to highlight successes and failures to inform the policy debate surrounding electronics recycling.

The final chapter examines the financing models considered by NEPSI, a group convened to find a single national solution to electronics recycling in 2001 by the EPA, which included industry, state and local governments, recyclers, environmental organizations, and others. NEPSI dealt only with residential electronics recycling for which the management costs fall largely on taxpayers and local government.<sup>3</sup> Over time, the NEPSI stakeholders realized that a national law might be necessary to force otherwise reluctant players to do their parts to make a national system work.

#### Conclusion

We applaud the committee for undertaking this important issue. We are available to help educate and inform the Congress on this complex debate and ensure that all stakeholder's interests are taken into account in crafting a solution.

Thank you Mr. Chairman. I would be happy to address any questions you or the members of the committee may have.

Mr. GILLMOR. Thank you very much, Mr. Wu.

And Mr. Breen, who is the Deputy Assistant Administrator, the Office of Solid Waste and Emergency Response of the U.S. EPA.

#### STATEMENT OF BARRY BREEN

Mr. BREEN. Thank you, Mr. Chairman and members of the subcommittee.

EPA is pleased to be here today to address electronics issues, including management, reuse, and recycling. I will summarize my testimony, however I ask that my entire written statement be submitted for the record.

EPA has been involved with the improvement of electronics design and recovery for more than 8 years now. This involvement was

<sup>2</sup>Group of the eight major industrial nations consisting of Japan, Russia, UK, France, Italy, Germany, USA, and Canada.

<sup>3</sup>The cost of recycling unwanted electronics from commercial and institutional sources is a cost borne directly by those organizations which, generally, are required to meet Federal hazardous waste management requirements if they dispose of large quantities of electronics that meet the test for hazardous waste. Electronics from household and small quantity generators, by contrast, are exempt from hazardous waste management requirements.

prompted by several EPA concerns, including the increased growth of electronics waste, the potential for exposure to contaminants contained in that waste if it is not properly managed, and the lack of a convenient, affordable electronics reuse or recycling infrastructure.

Electronics waste is an increasing portion of the municipal solid waste stream, although it contributes less than 2 percent of municipal solid waste. EPA estimates that in 2003 approximately 10 percent of consumer electronics was recycled domestically. The remaining 90 percent of used consumer electronics were stored, disposed of in landfills or incinerators, or exported. Discarded electronic products contain a number of substances that can cause concern if improperly managed, including, for example, lead from cathode ray tubes, and mercury in flat panel displays.

To address a number of these issues, EPA has engaged in a series of partnerships with manufacturers, retailers, recyclers, State and local governments, non-profits and other organizations, and other Federal agencies to encourage the improved design of electronic products, develop an infrastructure for the collection and reuse or recycling of discarded electronics, and encourage the environmentally safe recycling of used electronics. For example, EPA funded and participated in a process with electronics manufacturers, government technology purchasers, and other organizations to develop EPEAT, the Electronic Product Environmental Assessment Tool. EPEAT will help large technology purchasers identify electronic products that are designed in a more environmentally friendly manner.

We are expecting that EPEAT will be operating by late 2005 or early 2006 when manufacturers that meet EPEAT criteria will be able to certify their products. The initial products eligible for EPEAT certification will be desktop computers, laptops, and monitors.

In addition, EPA has entered into a voluntary partnership with manufacturers, retailers, and State and local governments to develop Plug-In To eCycling to raise public awareness on electronics recycling and to increase recycling opportunities. In the first 2 years of this initiative, more than 45 million pounds of unwanted electronics were recycled by Plug-In partners.

Further, EPA launched several pilot programs last year with manufacturers, retailers, and local governments. The pilots resulted in more than 11 million pounds of used electronics being collected in retail stores. For example, New England area Staples, Seattle area Good Guys, and all Office Depot locations.

EPA has also partnered with the Federal Environmental Executive to launch the Federal Electronics Challenge, the FEC. The Federal Government is such a large purchaser of information technology products, it is a voluntary partnership of Federal agencies committed to develop a more sustainable environmental stewardship of electronic products. Twelve agencies have signed a Memorandum of Understanding on electronics management, and together, we represent 83 percent of the government's information technology purchasing power.

Finally, EPA continues to work with a wide variety of stakeholders to further the reuse and recycling of electronics products.

We hosted a National Electronics Meeting attended by representatives from industry, governments, and non-profits to discuss electronics management issues. As a result of the meeting, collaborative strategies are being developed that include the development of standards for electronics recyclers, a nationwide electronics recycling data repository, and a multi-State pilot program to support electronics recycling in the Pacific Northwest.

Mr. Chairman, that concludes my summary of some of the efforts that we are taking to encourage electronics management, reuse, and recycling.

I will be happy to answer any questions that you or the other members may have.

[The prepared statement of Barry Breen follows:]

PREPARED STATEMENT OF BARRY BREEN, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the Subcommittee, I am Barry Breen, Deputy Assistant Administrator for the Office of Solid Waste and Emergency Response at EPA. Thank you for inviting me to appear today to discuss electronics waste and EPA's interest in electronics product design and recycling. Last year, we appeared before this Subcommittee to tell you about the Resource Conservation Challenge (RCC). In 2002, we set in motion a plan of action to renew the emphasis on resource conservation in the Resource Conservation and Recovery Act (RCRA). At least since 1976, RCRA has included among its purposes a goal to reverse the trend of "millions of tons of recoverable material which could be used [being] needlessly buried each year."

Today, the RCC has become a national program, challenging all of us to promote recycling and reuse of materials and to conserve resources and energy. One key area of focus is electronics.

The use of electronic equipment has grown substantially in recent years. According to the Consumer Electronics Association (CEA), Americans own some 2 billion electronic products—about 25 products per household. Electronics sales grew by 11% in 2004, and the same growth is expected again this year.

#### **Why We Care About Electronics at EPA:**

EPA has been actively involved in helping to improve the design and recovery of electronics for more than eight years now. Our interest in electronics stems from three primary concerns:

1) the rapid growth and change in this product sector, leading to a constant stream of changing offerings and wide array of obsolete and discarded products needing an appropriate response;

2) substances of concern present in many products which can cause problematic exposures during manufacturing, recycling or disposal if not properly managed—the presence of these constituents has sparked the search for workable substitutes and development of better management practices; and

3) the desire to help encourage development of a convenient and affordable reuse/recycling infrastructure for electronics, with an initial emphasis on TVs and PCs.

#### **Here I would like to provide some illustrative facts:**

**1. Increasing volume of electronic waste:** Consumer Electronics—including TVs and other video equipment, audio equipment and personal computers, printers and assorted peripherals—make up about 1.5% of the municipal solid waste stream (2003 Figures). This is a small, but growing percent of the waste stream. Consumer electronics have increased as a percent of municipal solid waste in each of the last few years that EPA has compiled data.

**2. Recycling is limited:** EPA's latest estimates are that in 2003 approximately 10% of consumer electronics were recycled domestically, up slightly over previous years. The remaining 90% of used consumer electronics are in storage, disposed of in landfills or incinerators, or exported for reuse or recycling. EPA is now taking a closer look at the fate of all electronics waste such that the Agency can better account for the amount of electronic waste stored, disposed, or exported. But anecdotal information suggests that nontrivial amounts of consumer electronics are in storage or exported, rather than going to disposal in landfills.



**3. Substances of concern in electronics:** While industry is making progress in making its products with less toxic materials, many products may contain substances of concern such as lead, mercury and/or cadmium. For example, older cathode ray tubes (monitors) in TVs and PCs contain on average 4lbs of lead, although there are lower amounts of lead in newer CRTs. These constituents do not present risks to users while the product is in use; indeed, they are there for a good reason. Lead shields users from electromagnetic fields generated while the monitor is operating. Mercury is used in backlights in flat panel displays to conserve energy. But the presence of these materials means that some electronic equipment may present a risk if not properly managed.

**What We Are Doing About Electronics:**

We are engaged in several broad scale partnerships with manufacturers, retailers, other Federal agencies, state and local governments, recyclers, non-government organizations (NGOs) and others to encourage and reward greener design of electronic products, to help develop the infrastructure for collection and reuse/recycling of discarded electronics, and to promote environmentally safe recycling of used electronics. I'd like to give you a little more detail about each of these efforts.

**1) Greening Design of Electronics**

**EPEAT:** EPA funded and participated in a multistakeholder and consensus-based process, involving electronics manufacturers, large government IT purchasers, NGOs and others, to develop the Electronics Product Environmental Assessment Tool (EPEAT). It was created to meet growing demand by large institutional purchasers for a means to readily distinguish greener electronic products in the marketplace. EPEAT is modeled on other environmental rating tools like the LEED's Green Building Rating system. It is expected to gain wide acceptance in purchases of information technology equipment by federal and state government—and eventually by other large institutional purchasers of IT equipment.

The EPEAT rating system establishes performance criteria in eight categories of product performance, including reduction or elimination of environmentally sensitive materials; design for end of life; life cycle extension; energy conservation; and end of life management.

The multistakeholder team that developed EPEAT has reached agreement on the main criteria that will be recognized for environmental performance. Now, the tool is being readied for use; as part of this effort, a third party organization will be selected to host and manage the tool. The aim is to have the EPEAT system up and running by December 2005 or January 2006—at which time manufacturers will be able to certify their products to the EPEAT requirements and purchasers will be able to find EPEAT certified products in the marketplace. The first EPEAT certified products will be desktop computers, laptops and monitors.

**ENERGY STAR:** EPA recently made its best known brand, the ENERGY STAR label, available for external power adapters that meet EPA's newly established energy efficiency guidelines. Power adapters, also known as external power supplies, recharge or power many electronic products—cell phones, digital cameras, answering machines, camcorders, personal digital assistants (PDA's), MP3 players, and a host of other electronics and appliances. As many as 1.5 billion power adapters are currently used in the United States—about five for every American.

Total electricity flowing through external and internal power supplies in the US is about 207 billion kWh/year. This equals about \$17 billion a year, or six percent of the national electric bill. More efficient adapters have the potential to save more than 5 billion kilowatt hours (kWh) of energy per year in this country and prevent the release of more than 4 million tons of greenhouse gas emissions. This is the equivalent of taking 800,000 cars off the road.

On average, ENERGY STARqualified power adapters will be 35 percent more efficient. EPA is promoting the most efficient adapters since they are commonly bundled with so many of today's most popular consumer electronic and information technology products.

**DESIGN FOR THE ENVIRONMENT (DfE):** Over the years, EPA's DfE program has worked numerous times with the electronics industry to help green the manufacturing of electronics as well as electronics products themselves. DfE has worked with the industry on ways to green the manufacture of printed wiring boards, assessed the life cycle impacts of CRTs and flat panel displays and has also recently assessed the life cycle impacts of tin-lead and lead-free solders used in electronics.

One important ongoing project in this DfE realm is the joint government industry search for substitutes for tin-lead solder that have acceptable engineering performance and environmental attributes.

The DfE LeadFree Solder Partnership is providing the opportunity to mitigate current and future risks by assisting the electronics industry to identify alternative leadfree solders that are less toxic, and that pose the fewest risks over their life cycle.

The draft final lifecycle assessment report for the tinlead and alternative solders is available now for public review.

**2) Encouraging reuse and recycling, rather than disposal, at product end of life Plug-In To eCycling:** PlugIn To eCycling is a voluntary partnership to increase awareness of the importance of recycling electronics and to increase opportunities to do so in the United States. Through PlugIn, EPA has partnered with 21 manufacturers and retailers of consumer electronics as well as 26 governments to provide greater access to electronics recycling for Americans. In the first two years, the Plug In program has seen the recycling of 45.5 million pounds of unwanted electronics by program partners—all of whom have agreed to rely on recyclers who meet or exceed EPA's "Guidelines for Materials Management," EPA's voluntary guidelines for safe electronics recycling.

Last year, we launched a number of pilot programs with manufacturers, retailers and local governments to create more compelling opportunities for consumers to drop off our old electronics. These pilots succeeded in collecting over 11 million pounds of used electronics and demonstrating that, when the circumstances are right, retail collection can be a successful model:

- The Staples pilot in New England collected over 115,000 pounds in testing in-store collection and "reverse distribution" making use of Staples existing distribution network. In this pilot, trucks dropping off new equipment at Staples stores removed electronics that had been dropped off and took them to Staples distribution centers rather than leaving the stores with the trucks empty.

- The Good Guys pilot in the Seattle area collected over 4,000 TVs—double the quantity expected—by offering in-store take back and a low fee for drop-off countered by a purchase rebate.

- Office Depot and Hewlett-Packard worked together to offer free instore takeback of consumer electronics in all 850 Office Depot stores for a limited time period. It resulted in 10.5 million pounds collected, more than 441 tractor trailer loads.

We believe these and other pilots sponsored by industry, states, and recyclers are generating critical data which will inform policymaking on electronics recycling. These pilots have proved crucial to testing out what works, what doesn't, where collaboration is possible and where it is not, what kinds of opportunities really get the attention of the consumer and what kind of material the consumer wants to recycle. And very importantly, what it costs to get electronics from the consumer into responsible recycling.

**Federal Electronics Challenge:** The Federal Government is a large purchaser of IT products. To help the Federal government lead by example the Federal Environmental Executive and the EPA launched the Federal Electronics Challenge (FEC). The FEC is a voluntary partnership program designed to help federal agencies become leaders in promoting sustainable environmental stewardship of their electronic assets. As FEC Partners, federal agencies agree to set and work toward goals in one or more of the three electronics lifecycle phases—acquisition & procurement; operations & maintenance; and endoflife management. As of this month, the FEC has 54 partners representing facilities from 12 Federal agencies. All 12 Federal agencies are signatories to a national Memorandum of Understanding on Electronics Management and, in total, represent about 83% of the Federal government's IT purchasing power.

**Recent National Electronics Meeting:** Last spring, EPA hosted a National Electronics Meeting to take stock of where we are with our electronics programs and talk with stakeholders about what else is needed. The goal of the meeting was to identify collaborative strategies that will contribute to effective management of used electronics across the country. Nearly 200 representatives from industry, government, and the nonprofit community participated in this meeting.

A few of the collaborative strategies being developed include the following:

- Developing standards for environmentally safe electronics recyclers and a process for certifying these recyclers. EPA plans to take a leadership role in convening stakeholders to develop such standards.

- Further development of a centralized data repository for electronics recycling to collect nationwide market data/share by manufacturers and provide information and status on national, state and local ewaste initiatives (provides data on waste, geographic summaries and process/implementation data). This effort is being chaired by the National Center for Electronics Recycling (NCER) in partnership with EPA and other interested parties.

- Piloting a private multistate ThirdParty Organization (TPO) to support electronics recycling efforts in the Pacific Northwest. This project will explore how a multistate TPO could assume responsibilities on behalf of manufacturers, like contracting for recycling services across state lines. This effort is being chaired by the NCER and the WA Department of Ecology with eight electronics manufacturers.

Even if the key collaborations noted above are implemented, there will remain some gaps in needed infrastructure. In the course of developing, implementing, and sharing information related to key infrastructure-related collaborations, EPA looks forward to working with stakeholders to identify and plan to address other infrastructure-related efforts.

**How EPA will Work with Other Organizations Moving Forward:**

EPA has been working with a wide range of stakeholders in a variety of fora, both domestically and, as appropriate, internationally. This approach has worked well, and we expect to continue to follow it in partnership with other federal agencies such as the Commerce Department and with the Federal Environmental Executive.

CONCLUSION

I hope that I have given you a sense of EPA's electronics goals and how we work with partners throughout the product chain to achieve shared responsibility for a greener, recovery-oriented product cycle. I look forward to answering any questions you may have.

Mr. GILLMOR. Thank you very much, Mr. Breen.

Let me begin with a question for you, Mr. Breen.

The predominant Federal law that governs the disposal of solid and hazardous waste, the Resource Conservation Recovery Act, sets minimum Federal standards for the States to follow. In your opinion, should the States be allowed to act on their own with some sort of Federal guidance? Is that advisable? Or would you rather see the Federal Government give a national structure to electronic waste recycling?

Mr. BREEN. We know certain things about the fate of electronics in landfills. The typical landfill Ph is between 6.8 and 7.0, which is essentially about neutral. And we know that that consequently does not lead to large leaching from the metals in the electronics. We are thankful for that. However, leaching could occur even at those fairly neutral Ph levels. Of the, approximately, 2,000 landfills in the United States that take municipal solid waste, most are now in compliance with the 1991 standards that call for a leachate collection system, so even if there were leachate, that it would typically be collected by the leachate collection system. If the leachate collection system still missed it, what we find is that the leachate that would reach ground water would typically be about twice the drinking water standards, about two times drinking water standards. But since we think the dilution factor would be 10 to 1,000 times, States are in a fairly good situation to make their own decisions on this in terms of what additional standards are needed for landfills. We understand four States have banned cathode ray tubes from municipal solid waste in their State landfills. And that is a decision we respect, but we also respect the decision of other States that, given those facts that we and they see, that other means are necessary or adequate to deal with this issue.

Mr. GILLMOR. So basically, the evidence is there that is necessary at this point.

Mr. BREEN. Well, what I have laid out for you is certainly evidence about landfills. There are concerns about incinerators and other waste to energy streams, and if certain materials were put into high temperatures and then incinerated, you could have con-

cerns that we would have to deal with, not only from an environmental point of view, but just from an operational point of view in terms of gumming up the operations of the system.

And then there are actually concerns about resource stewardship, just taking a good common sense approach to take care of valuable things. And in fact, Congress seems to have called on that as a national policy when it wrote the Resource Conservation and Recovery Act.

So the environmental issues are just one piece of a far larger and, as Mr. Wu said, more complex issue than just the environmental piece.

Mr. GILLMOR. Let me ask Mr. Wu, and you can, if you wish, jump in with an answer to this, also, Mr. Breen, but I expect there will be some discussions about who should bear the greatest responsibilities in an electronic waste and recycling regime. Do you have an opinion as to where you think the most sense for this to be placed is? Since individuals have to make the choice to give up their unused electronic equipment, what responsibility do they bear? What responsibility should the manufacturer or retailer bear in this effort? And what role does public education play in the process?

Mr. WU. Well, I think that, obviously, as Congress moves forward, there should be a balanced approach taken. I think that all of the stakeholders want to see an equitable, a fair and balanced process, one in which one party is not held harmless over another. We see this issue being complicated by business models for certain industries. You know, we have an industry, for example, who are computer producers in which they are facing global competition. In order to be as strong as possible economically, they need to have huge economies of scale and the razor-thin margins that they have to protect may not be enough to sustain an advanced recovery fee that would be imposed upon the consumer, especially if the international competitors and manufacturers may not be held to such a same standard.

The same with the retailers. The retailers, especially smaller stores, such as RadioShack, don't have the ability to inventory and warehouse a number of the disposable equipment that may have been purchased there, and so that places an inordinate burden on the brick and mortar stores. And then there is the issue about the purchase and collection of the fee, should there be one imposed, and Internet-based systems sellers, such as Dell, Gateway, they may have an advantage over the Best Buys and others that do sell. So because of the business models, because of the parochial concerns each of the manufacturers, the retailers, the recyclers, the consumers may have, the search for a balanced approach is paramount, but also, quite frankly, has been a little elusive.

Mr. GILLMOR. Thank you very much.

Ms. Schakowsky from Illinois.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman.

I apologize to our witnesses. As you probably heard, we have a full markup going on in committee, and Ms. Solis, the ranking member, is, I believe, speaking on the floor. So I appreciate, though, being able to ask a couple of questions. If they are redundant, again, I apologize for that.

I guess this is for you, Mr. Breen. The EPA, does it have current authority to regulate e-waste?

Mr. BREEN. It is actually a more complex question than it might at first appear. We have authority over hazardous waste, and we have not listed any of the typical items that you would think of. We haven't listed cathode ray tubes. We haven't listed cell phones. We haven't listed anything like that as listed hazardous waste. There are some tests that would suggest that some components would fail the toxicity tests, one of four characteristics of hazardous waste: toxicity, corrosivity, ignitability, and reactivity. In some cases, there is some evidence that some components would fail the toxicity test. But I think a harder question is whether it makes sense to approach it in that way or to approach it in a far more collaborative and flexible way, given what that means. And—

Ms. SCHAKOWSKY. Well, let me follow that up. It kind of led into what I wanted to get at.

In a report by EPA regions four and five, the researchers did find sufficient evidence that discarded electronic devices with lead has a potential to be a hazardous waste. And every device, lead concentrations exceeded the concentrations above the threshold in at least one test, and most devices leached above the threshold in a majority of cases. So if they are not considered hazardous waste and you don't regulate e-waste, then what is the consequence of having that stuff leaching into our—I mean, don't we have to do something?

Mr. BREEN. Okay. Thank you.

It turns out that in the amounts that would typically be produced by households and small businesses, for example, that sort of volume of electronic waste, so far, we are not finding that if they went to municipal solid waste landfills that the municipal solid waste landfills are incapable of taking them. There may be other reasons to deal with them, but we are not finding that MSW landfills are a problem if the waste goes there, and it has to do with the Ph of the landfill. It tends to be a Ph that doesn't trigger leaching in worrisome amounts. It has to do with the leachate collection systems that are in place, and then with the typical dilution that would happen at the levels at which the waste would reach groundwater, if it ever did.

Ms. SCHAKOWSKY. Now but we are expecting that there is probably going to be increased quantities of these things, do we not, as we go forward. So I understand we are at the beginning of a process now to consider what to do, but looking ahead, do you see that we are going to, fairly quickly, reach beyond that point? I am looking at some of the questions that Hilda had. Her District has three super fund sites and several operating landfills. How do you anticipate the growing amount of e-waste will impact these sites and their cleanup?

Mr. BREEN. In fact, it does feel, on this one, like a little bit of a shooting at a moving target. We are trying to find out more about a problem, as the problem is evolving.

Ms. SCHAKOWSKY. Sure.

Mr. BREEN. For example, a cathode ray tube several years ago probably included 4 pounds of lead as shielding. The lead is put in for very good reasons. It is shielding the cathode rays so that the

user isn't exposed to all of those cathode rays coming at the user, and the lead is put in for very good reason. Today, cathode ray tubes probably have about 2 pounds of lead, but what we are seeing is that more and more computers are moving from cathode ray tubes to LCD displays, liquid crystal displays, in which lead is virtually non-existent except in the solder and similar connections. But then the issue becomes Mercury.

Ms. SCHAKOWSKY. Right.

Mr. BREEN. A typical LCD display has, say, for example, 8 Mercury-containing devices in it, with each one having about 3.5 to 12 milligrams of Mercury. And to give you a sense, a typical fluorescent light bulb, like the ones in the ceiling of this room, would typically have about 3.5 to 4 milligrams of Mercury in each one. So the problem is evolving, even as we are trying to research what it is.

Ms. SCHAKOWSKY. Sure.

Mr. BREEN. It makes it really hard to predict.

Ms. SCHAKOWSKY. So you are saying the technology is changing, so we don't even know what the component—

Mr. BREEN. The technology is changing, and the consumer demand is changing. So, for example, what we are seeing is convergence where, instead of having three devices, like I walked in today with a Blackberry in one pocket and a cell phone in another—

Ms. SCHAKOWSKY. Right. Right.

Mr. BREEN. [continuing] what we are seeing is—by the way, I should turn all of them off, Mr. Chairman, but what we are seeing is them merging and so that you have one device, and that has issues.

Finally, the international market seems to be driving some of this, and people are coming into compliance with requirements that other governments have already put into place. So it is a little hard to make predictions.

Ms. SCHAKOWSKY. Thank you.

Mr. WU. Ms. Schakowsky, if I could also add to Mr. Breen's statement.

One of the points of consensus in all of our Technology Administration activities in contacting the affected stakeholders was that product stewardship should be a priority, and product stewardship in terms of design in trying to have industry voluntarily move toward less toxic materials to reduce the impact to our environment, our industry is already doing that, and we are seeing great strides in what they are doing in terms of design and trying to reconfigure for environmentally friendly materials. EPA has a terrific program to help incentivize that kind of design function with the E-Star energy efficient coding to make sure the consumers know. So it becomes, really, almost a Federal seal of Good Housekeeping Seal of Approval that this product is energy efficient, and therefore it becomes more marketable. And so industry is moving forward in trying to do that voluntarily but also with the incentives that EPA is putting forward, we expect, and hope, and the industry predicts, that there will be less, even though we see a proliferation of electronics products, we will see less of an impact on the environment.

Ms. SCHAKOWSKY. Thank you.

Mr. GILLMOR. Thank you.

The gentlelady from California.

Ms. BONO. Thank you, Mr. Chairman.

Mr. Breen, I understand that counsel of State governments has been working with 10 eastern States and the Northeast Recycling Council to come up with a regional electronic waste effort.

I was interested in EPA's efforts to pilot a private, multi-State, third party organization to support electronics recycling efforts in the Pacific Northwest. Has EPA worked with the States in the northeast? And why does EPA consider regional approaches rather than a national one to be meaningful ways to approach these issues recognizing the interstate nature of electronic sales and product take-back and refurbishment programs?

Mr. BREEN. The northeastern project that you are describing is one that we are interested in finding out more about. I think even this month there are new reports and new announcements about that work. I am not entirely sure we know whether regional or national or both.

Mr. GILLMOR. I apologize. We are going to have to recess briefly. And—

Ms. BONO. Mr. Chairman, if I might, they have been answering so many of my questions as a member of the working group, and understanding we are running up and down, I can submit my questions in writing to the witnesses so they don't have to stick around, if I am the last questioner.

Mr. GILLMOR. Well, I think we have two more. We have Ms. Solis and Mr. Otter.

Ms. BONO. Okay. I am sorry for trying to chair the committee.

Mr. GILLMOR. But however you want to do it, but I appreciate that. But we better go vote.

[Brief recess.]

Mr. GILLMOR. The committee will again come to order, and we will resume the questioning by the gentlelady from California.

Ms. BONO. Thank you, Mr. Chairman.

I believe Mr. Breen was in the middle of a brilliant answer at the time we broke.

Mr. BREEN. Thank you.

I understood your question to ask whether regional versus national solutions were preferable.

Ms. BONO. It seemed that the EPA had sort of endorsed regional ideas before, and I was wondering why that would be different than a national solution.

Mr. BREEN. Thank you.

I don't think we intended to endorse one to the exclusion of the other. We certainly worked with some regional possibilities in some of our pilots. And there are good reasons to think that regional might be better, because rural areas might have different ways to collect than dense urban areas. But I don't think we are in a position to say the jury is in, that one is necessarily better than the other.

Ms. BONO. Well, thank you.

Can you comment a little bit on California's program so far, then?

Mr. BREEN. Thank you.

I don't think the jury is in on that one, either. I think we are thankful that States, including California and Maryland and

Maine, have stepped forward to try some actual processes, and we can all benefit from it. And there were good reasons for adopting each one in each case, even though they are different among them. But I don't think we know enough to say that there are enough results that you could make comparisons yet.

Ms. BONO. Okay. Also, I know that some of the data that we are operating off of is old. It is based on 1999 figures. Is that true? And if so, what do we need to do to update our information?

Mr. BREEN. I am not sure which 1999 figures I can help you with.

Ms. BONO. 1999 National Safety Council report, which differs from the EPA's 2001 and 2003 Municipal Solid Waste Facts and Figures report.

Mr. BREEN. We do try to do Municipal Solid Waste reports every 2 years, and the 2003 is actually our newest, because it takes us that amount of time to assemble. I would be happy to get back to you on the 1999 National Safety Council report, if there is anything we can offer on that.

Ms. BONO. Thank you.

Mr. Wu, you mentioned that you are involved in the design and development of new technologies, specifically, say, cathode ray versus the LCDs and all. Are there regulations, is there something here, that Congress ought to be doing to help with that? Or right now, do you believe we are set with all that you are doing in advising in that role?

Mr. WU. Well, I think that developing incentives in the private sector through programs that reward environmentally friendly designs, such as EnergyStar, the EPEAT, the Green Suppliers Network, all of those incentive programs at EPA and overseas are very helpful in pushing industry to develop standards. Mandating design standards generally tend to be difficult, although some States have done so. The standards development process within the United States is generally one that is voluntary and market-driven. And so I think that design mandates by Congress could be problematic and may inhibit innovation in the long term.

Ms. BONO. Thank you.

Thank you, Mr. Chairman. I yield back.

Mr. GILLMOR. And the chair recognizes the other gentlelady from California.

Ms. SOLIS. Thank you. Thank you, Mr. Chairman.

I would like to request unanimous consent to submit two statements by members of our committee, Congresswoman Lois Capps and Congresswoman Tammy Baldwin.

Mr. GILLMOR. Without objection, so ordered.

Ms. SOLIS. Thank you.

And I would like to ask Mr. Breen a question. This is somewhat unrelated to this topic, but nevertheless, you might be aware of it.

On June 16, Mr. Bishop and I sent Administrator Johnson a letter requesting communications regarding the CHEERS, a human exposure study. We did receive a videotape presentation that the Administration made, but we are still awaiting other communications, written statements that were made. And I wanted to ask you, we made a formal request for that on June 27 of this year and



was wondering if you could tell me if we would be able to expect a full response.

Mr. BREEN. I will have to ask our folks to get back to you on that. I don't have that myself.

Ms. SOLIS. Okay. Thank you.

Then I would like to go back to our subject matter here and ask you, in May 2004, EPA, through the Resource Conservation Challenge, noted that they were failing in their own national recycling effort. They had set a goal for 35 percent. Where are you at this stage?

Mr. BREEN. The national recycling goal is 35 percent for municipal solid waste, and we hope to reach that in the next several years. At the moment, we are in the low 30's, and actually, there is a fairly wide variation, as you can imagine. Some communities are getting much higher than some others. Some communities, for example, are hitting recycling rates in between 55 and 60 percent, which is really amazing. But nationally, we are still in the low 30's.

I honestly don't know if we are going to be able to hit 35 percent as a Nation. It turns out that that number is very sensitive to things that nobody in government has much control over. If the economy goes down, people tend to hold on to more things and throw out less, and so the recycling rate actually goes up in bad times and down in good times. And it is really hard to find yourself wishing that the economy will go bad in order for my particular program to hit a higher recycling rate. So it is affected by a lot of things that we don't have that much control over.

Ms. SOLIS. And what type of monitoring are you doing to at least report back to us? I mean, if we are not going to achieve that goal, then what kinds of measures are you undertaking to do that?

Mr. BREEN. Thank you.

We actually put that measure in our annual report, so we report to you once a year on what the annual recycling rate is, the most recent data we have. And we are doing as much as we can think of, public service announcements. We are trying to make it easier. We are offering technical assistance. We have wonderful partners in the States on this. It is often to their advantage, not just good public policy, but financial advantage to State and local governments. And we try to help them in any way we can.

Ms. SOLIS. In talking about recycling value and, you know, depending on how the economy is, just to get a sense from you, what would the value be for products like a cell phone when we know, for example, aluminum cans are 10 cents.

Mr. BREEN. Right.

Ms. SOLIS. A cell phone, a full size computer, a laptop computer, an average sized telephone?

Mr. BREEN. The numbers I have most confidence in are in the recycling costs and value of desktop computers. And naturally, there is a fair amount of regional variation, and it depends on various things. But a good rule of thumb is that to recycle a desktop computer costs about \$15 and that the value of the materials recovered from it are anywhere between \$1 and \$2.50. And obviously commodity prices change from time to time on their own, but \$1 to \$2.50 seems like where they typically stand. So there is that delta.

Ms. SOLIS. And does that vary? Given that there are some States that are already moving in this direction, is there a sense of how that looks? Can we get information on that?

Mr. BREEN. I will get you whatever we have. I don't know how refined the data is to give it to you State by State, but if we have got something, we will get it to you.

Ms. SOLIS. Okay. Very good.

One of the other questions I had was regarding what EPA is doing to educate under-served communities about these kinds of programs that are necessary. Language communities oftentimes are not fully aware of these programs, and perhaps both of you could address that, whatever efforts that are being undertaken by Commerce as well as EPA to reach out to these communities.

Mr. BREEN. We would like to reach them, just like everybody else, and we often—

Ms. SOLIS. Is there any effort, in particular?

Mr. BREEN. We often work directly with local governments and State governments, rather than ourselves trying to do anything directly. This is really 53 governments plus us.

Ms. SOLIS. And is there any kind of information, though, that you could get from them? I mean, that would be a specific question that you may be able to ask or at least provide us with the information, because I know some States or locales put information out in different languages.

Mr. BREEN. I will try to follow-up on that.

Mr. WU. The EPA oversees the programs, and so we would be happy to assist EPA through either a minority business development administration or any other ways to make sure that the word gets out.

Ms. SOLIS. And I raise that, because in my own District, we have a very high percentage of Asian pacific islanders who are heavy users of computer equipment, and I have heard from our constituents that this is a concern and something that they definitely would like to see addressed.

Mr. GILLMOR. We need to recess once more.

[Brief recess.]

Mr. GILLMOR. The subcommittee will reconvene, and we will resume the questioning by the gentlelady from California.

Ms. SOLIS. Thank you, Mr. Chairman.

Very briefly, I wanted to get a better understanding of the European Union and what they are currently doing in terms of eliminating lead in cell phones by 2006. That is a position that they are taking. Is EPA looking at any similar type of procedures or rules?

Mr. BREEN. We are definitely watching with great interest, as everyone is, what the European Union is doing. We don't have any rulemaking development effort underway on that issue ourselves, but on its own, that can drive a global market to do things that it wouldn't otherwise do, just by having the European Union take on that work.

Ms. SOLIS. Is that something of serious concern, though, to possibly look at that more closely and—

Mr. BREEN. Well, we are certainly studying it, but in terms of developing a rulemaking on it, I think it would be premature to take that up.

Ms. SOLIS. Thank you.

Mr. WU. Congressman, if I could add, related to the EU regulations and rules, the industry has voiced a concern about what California did in adopting wholesale the Ross directive, and the concern rests in adopting the EU standard, a standard in which American industry didn't have an opportunity to have notice, comment, or go through the process, which our standards development process does, which is based on a transparency, due process, and openness, and an interaction in order to draw to a consensus for a standard. Not to debate the merits of the Ross directive, but the fact that California adopted wholesale a foreign standard, international standard has raised concerns within industry.

Ms. SOLIS. So has Congress taken a position on whether or not to look at these issues regionally, or—

Mr. WU. For a State to adopt a foreign international standard without an opportunity for American businesses to make comment, it would be part of the process.

Ms. SOLIS. Well, it is part of the, you know, legislative process in the State, and I know that. We can hear later from our witness from California to talk more about that.

Thank you.

Mr. GILLMOR. Very good. Thank you.

And we will now go to the gentleman from Idaho, Mr. Otter, and then to our second panel.

Mr. Otter.

Mr. OTTER. Thank you very much, Mr. Chairman.

Mr. Breen, under the project Plug-In To eCycling initiative involved several programs that seem to be somewhat successful. I think you mentioned them in your opening statement, Staples in New England, and Good Guys in the Pacific Northwest, in a nationwide program that was initiated by Hewlett Packard and Office Depot. And at least the data that I have seen or has been made available to me is that these voluntary programs were not only consumer-friendly, but they were fairly successful. Would the Environmental Protection Agency envision a program that had flexibility for the States or flexibility for the regions? Probably a follow-up question to the gentlelady from California's question relative to a nationwide standard.

Mr. BREEN. It seems as though there is a natural balance that will need to be struck between flexibility on the one level and at the same time predictability and some sense of not having 50-some different regimes at 50-some different places. But how that balance is struck and where is a hard one to know right now. We are getting success in collaborative efforts, and those collaborative efforts have had a wide variety of stakeholders joining in on them, and that seems to have made an important difference.

Mr. OTTER. Hasn't the EPA been successful? Maybe it is the Department of Commerce. Some Federal Government agency has been successful in recycling other products that were injurious to the solid waste disposal facilities? Batteries? Tires? Freon in refrigerators?

Mr. BREEN. Surely, yes. And in fact, one thing that you may be thinking of is we now have a government contract, a Federal Government contract where various Federal agencies can buy into one

particular contract to make sure that when they dispose of their computers, they are doing it safely and properly and so that not every agency has to replicate that. And we have standards for safe recycling that we would share with anyone.

Mr. OTTER. But that is a private sector operation.

Mr. BREEN. Actually, the one that we have would be—it is the private sector who is doing it, but it is a government contract that would make it available.

Mr. OTTER. Right.

Mr. WU, are we running toward a conflict of national policy? Lord knows, we have spent a lot of money trying to get the United States wired, higher in technology and broadband use than anybody else. We spent a lot of money doing that and a lot of U.S. dollars. And plus, at the same time, we have tried to lessen the tax burden on the private sector and on the individual user of this high tech. Do we have national government policies here in conflict if we are now looking at taxing a new tax in order to diminish whatever impact the use products may have?

Mr. WU. Well, Congressman Otter, I don't think anyone is necessarily advocating for a tax, but I understand your point about the conflict within the policies as we move forward to have an interconnected and a wired Nation. I think that, you know, the President has clearly stated his goal for having the Nation broadband accessible by 2007, and we are moving forward with those efforts. We are making great advances in making sure that under-served populations are part of the 21st century economy and have the tools in order to provide that.

Mr. OTTER. I think I understand where you are going, and I appreciate that, but I am running out of time here, and I have one other question that I wanted to ask. And that is, those who benefit should do the paying, and I am kind of a user pay kind of person. I think if I pay gasoline tax, it ought to be used to lay asphalt on the highway. If I use my computer, and I am the person that benefited or if I sold the computer and I am the person that benefited profit-wise from it, then I ought to have a responsibility for that. And I am aware now that, for instance, we have got high-definition television coming at us, and so there is probably going to be an onslaught here in a few years of a lot of old television sets looking for a place to go to surrender for the rest of eternity. But we also know that not very many of those, if any of them, are being made in the United States anymore. In fact, we have got international commerce initiatives, like the Caribbean Basin Initiative, that says if you build it down here, you can ship it into the United States for free. Whenever the cost of this program finally hits the marketplace for disposal, do you envision that having to change our trade policies or importation policies?

Mr. WU. If the policies are done fairly and everyone is held harmless—

Mr. OTTER. Well, we are going to argue all day long about fairness. I don't think there is any fairness in CAFTA at all, or NAFTA anymore. But what I am saying is many of the trade policies that we have already established are going to prohibit any kind of change in the trade that we had established prior to establishing

a new national policy on disposal of high-tech equipment, wouldn't you agree?

Mr. WU. Well, I think that the industry stakeholders and others would be willing to have a cost share that is equal. But there is a concern about the competitiveness. If international companies and manufacturers are able to bring in their product without an ARF or some sort of fee to help finance, you know, the recycling, then it becomes difficult, and then it becomes a competitiveness issue.

Mr. OTTER. Maybe, if I could just get a yes or a no on this, would you be more in favor of a private sector program to solve this problem or a government program to solve this problem?

Mr. WU. I think that it would be optimal to have a market-driven industry-related process.

Mr. OTTER. Thank you. Thank you. I appreciate that.

Thank you, Mr. Chairman.

Mr. GILLMOR. Thank you.

And that will conclude our first panel. Mr. Breen, Mr. Wu, thank you very much for that very helpful testimony.

And we will invite our second panel to come to the witness table.

And we would request, Mr. Wu and Mr. Breen, if members of the committee could submit questions to you in writing and you could respond, thank you very much.

We have representatives on this panel from the Maryland Department of the Environment and the Maine Department of Environmental Protection as well as the California Integrated Waste Management Board. And I will start with Kendl, did I pronounce that right?

Mr. PHILBRICK. Yes, sir.

Mr. GILLMOR. Good, I usually don't. Kendl Philbrick, who is the Secretary of the Maryland Department of Environment.

**STATEMENTS OF HON. KENDL P. PHILBRICK, SECRETARY, MARYLAND DEPARTMENT OF THE ENVIRONMENT; HON. DAWN R. GALLAGHER, COMMISSIONER, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION; AND HON. ROSALIE MULE, MEMBER, CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD**

Mr. PHILBRICK. Thank you, Chairman Gillmor and Ranking Member Solis for this great opportunity to testify before you and the rest of the committee about Maryland's approach to dealing with e-waste.

I would also like to commend you for conducting these hearings. As Ranking Member Solis had mentioned, this is a rapidly growing problem in all of the States within the United States.

I am going to be brief in my remarks, but I would like my whole testimony, if you don't mind, to be submitted for the record.

Mr. GILLMOR. Without objection, it will all be entered in the record.

Mr. PHILBRICK. Thank you.

A little background on the status of eCycling in Maryland. Electronics recycling, or eCycling, began in Maryland in October of 2001 with the EPA Region 3 eCycling Pilot Project, which gave Maryland and the other Region 3 States the funding and other

share ideas to begin collection and recycling of these valuable materials.

Since the end of the EPA Region 3 project, MDE, the Maryland Department of the Environment, has continued to provide modest State cost share support to local governments. In summary, over 3,900 tons of electronics, including televisions, computers, and other electronics have been collected through a total of 63 one and 2-day events, three curbside events, and seven permanent or ongoing programs.

The legislative history here in Maryland goes as follows. House Bill 375 entitled "Environment Statewide Computer Recycling Pilot Program", signed into law by Governor Ehrlich in April of 2005, defines certain terms and requires a manufacturer to register with MDE and pay a registration fee.

The initial registration fee is \$5,000, and a manufacturer's renewal registration fee will be reduced to \$500 in subsequent years if the manufacturer has implemented a computer take-back program that is acceptable to MDE. These fees will be used to provide grants to counties and municipalities for implementing computer-recycling programs.

The law requires MDE to study and compare the environmental and public health impacts of disposing and recycling cathode ray tubes and review the effectiveness of the pilot program in diverting computers and computer monitors from disposal in landfills in the State through a report of its findings to the Maryland General Assembly by December 1, 2008. The law itself is scheduled to sunset December 31, 2010.

MDE is currently identifying computer manufacturers and drafting regulations to clarify certain language in the new Statewide Computer Recycling Pilot Program law. Challenges with the implementation of this law include: one, uncertainty regarding the number of computer manufacturers; two, inability to determine if the registration fees will be sufficient to even fund the pilot program; three, acceptability of regulations for bill implementation; four, whether the registration fee will encourage more computer manufacturers to implement computer take-back programs; and five, impacts of other States and Federal legislation initiatives on Maryland's law; and last, the influence that the focus on computers may have on collection of other electronics.

The Federal role, as we see it.

MDE sees the need for Federal assistance in the following areas: a uniform national definition for electronics waste; evaluation of the economics and the environmental impacts of electronics recycling versus disposal to waive the true costs of electronics waste recycling; useful data on the number and types of stored electronics to identify the costs of recycling these historic materials and estimating future costs; national outreach and education programs to increase awareness of the benefits of eCycling; standards for electronics recyclers to protect workers and public from physical and chemical hazards associated with eCycling; and last, Federal funding for solid waste and recycling programs, which are not currently supported.

Although the efforts of the National Electronics Product Stewardship Initiative, NEPSI, have been deemed noble, that collaboration

did not result in a consistent and effective national solution to the problem of electronics waste management and recycling. The passage of significant electronics waste legislation in California, Maine, and now Maryland shows that there is a current demand for government action. Waiting for a national one-size-fits-all approach is inadequate.

As more citizens demand electronics recycling, additional States will be forced to pass legislation, continuing the hodgepodge, perhaps, of State laws. Electronic industry representatives are partnering more and more with State governments to find individually legislative solutions suitable to the demands and the challenges of the electronic waste.

Most of us are watching the progression of the European Union's requirements related to electronic waste, and some manufacturers are already responding with new, less hazardous processes and materials.

In conclusion, Maryland's law is new, and it will take several years for the State to determine its impact. It is important for States to stay involved on the national level and share amongst each other the successes and its challenges. As Governor Ehrlich is a very strong proponent of recycling, Maryland offers support to Congress in its efforts to sort out electronics waste and recycling issues.

Thank you again for the opportunity to address you.

[The prepared statement of Hon. Kendl P. Philbrick follows.]

**MARYLAND DEPARTMENT OF THE ENVIRONMENT  
HEARING TESTIMONY OF SECRETARY KENDL P. PHILBRICK**

**SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS MATERIALS  
HOUSE OF REPRESENTATIVES ENERGY AND COMMERCE COMMITTEE**

**JULY 20, 2005 2:00 P.M.**

**RAYBURN HOUSE OFFICE BUILDING, WASHINGTON D.C.**

**“Electronic Waste: An Examination of Current Activity, Implications for Environmental  
Stewardship, and the Proper Federal Role.”**

On behalf of Governor Robert L. Ehrlich, Jr. and the Maryland Department of the Environment (MDE), I would like to thank you for the invitation to testify before your Subcommittee today on electronic waste. It is an honor for me to provide you with the status of electronic waste management in Maryland, a summary of our new Statewide Computer Recycling Pilot Program, our views on the federal role in electronics recycling, and answers to any questions you may have.

Background and Current Status of eCycling in Maryland

Electronics recycling or “eCycling” began in Maryland in October 2001 with the EPA Region 3 eCycling Pilot Project. The goal of the project was to develop an economically and



environmentally sustainable collection, reuse, and recycling system for electronics based on the principle of shared responsibility among business (electronics manufacturers and retailers), government, and consumers. The kick-off for the EPA Region 3 pilot was held at Scarborough Landfill in Harford County, Maryland and generated 150 participants and 7.99 tons of electronics, including televisions, computers, printers, fax machines, and other electronics for recycling. During the pilot project, there were a total of 5,722 participants in 21 one-day collection events and two (2) two-day collection events throughout all regions of Maryland. One permanent electronics collection facility (Wicomico County) was also established with project funding. Over 250 tons of electronics were collected through these activities until the end of the project on December 31, 2002.

The EPA Region 3 project gave Maryland and the other Region 3 states the shot in the arm needed to begin collection and recycling of these valuable materials. Without funding and other shared resources from this important partnership, such as idea brainstorming, advertising, and lessons learned, Maryland would not have gotten the start needed to become a leader in eCycling. EPA Region 3 is no longer providing funding for these activities but periodically holds conference calls with Region 3 states to information on electronics recycling activities.

Since the end of the EPA Region 3 project, MDE has continued to provide funding support to local governments through cost sharing for 31 additional one-day, two (2) additional two-day, and one (1) curbside electronics recycling events with approximately \$79,000 in unspent capital projects monies from the Solid Waste Facilities Loan Fund. MDE has managed these events through the Maryland Environmental Service, another State agency, and its

contractor. There is enough money left from this funding to support perhaps one additional electronics collection event in a small population county. After that event, the Department will have no other source of funding to continue assisting local jurisdictions with electronics collection and recycling until the registration fees from new legislation are received by January 1, 2006.

In spite of the limited State funding and lack of private and federal funding support that has been available to local governments for electronics collection and recycling, many local governments have been able to establish their own systems for addressing the increase in citizen demand for these activities. Maryland electronics recyclers have often responded to demand for electronics waste reuse, refurbishment, and recycling by negotiating mutually beneficial contracts with local governments for collection and recycling activities. At this time, six (6) jurisdictions (Harford, Howard, Montgomery, Prince George's, Wicomico, and Worcester Counties) have established permanent electronics collection facilities and several other jurisdictions (MidShore Region, Anne Arundel, and Baltimore Counties and the City of Greenbelt) hold regular collection events. At least two (2) additional jurisdictions have committed to establishing permanent collection facilities in the near future. In addition, the City of Salisbury has been collecting electronics curbside on several weekends in January for the past three (3) years.

As a result of State and local government efforts and participation by all Maryland counties and the City of Baltimore, over 3,900 tons of electronics, including televisions, computers, and other electronics, have been collected through a total of 63 one and two-day

events, three (3) curbside events, and 7 permanent or on-going programs in Maryland since eCycling began in October 2001. The largest electronics collection event in Maryland was held during a four (4)-hour period in Baltimore County on April 30, 2005 in which 1,600 participants brought over 89.5 tons of electronics for recycling.

#### Legislative History

Legislation regarding electronics waste and recycling was proposed during several General Assembly sessions, beginning in 2001, before the first electronics waste legislation was passed in Maryland during the 2004 Legislative Session. House Bill 109 “Environment – Cathode Ray Tubes and Computer Products – Collection Systems” was carefully negotiated with the bill sponsors and interested parties to include elements from two other bills also proposed that session. The bill required MDE to study, in collaboration with stakeholders, including elected officials, local governments, environmental groups, and electronics manufacturers, recyclers, and retailers, the funding, collection, and implementation of an electronic waste system in Maryland by January 2006.

The Electronics Recycling Workgroup established by House Bill 109 met over several months in Fall 2004 to study issues related to electronic waste management, and found that there were diverse views, particularly amongst electronic industry representatives on mechanisms for handling electronic wastes. The two primary means for addressing this problem surfaced during the discussions: 1) the application of an advanced recycling fee to fund the collection and recycling of electronics, similar to that legislated in California; and 2) a system of shared

responsibility with all stakeholders, including manufacturers, retailers, local governments, and citizens, having a role in eCycling, similar to the system legislated in Maine.

Because many Workgroup members voiced differing opinions on key components of an eCycling system (a definition for electronic waste, a funding mechanism, or whether to ban disposal of electronic waste in landfills and incinerators), they felt that decisions regarding funding and a system for electronics collection and recycling in Maryland should be delayed to allow for the development of a national electronics waste management system. Although wide consensus was not reached during these Workgroup meetings, valuable information and views were shared and relationships developed with stakeholders, including manufacturers and recyclers, which continued communications and partnering throughout the 2005 Legislative Session and to date.

Several of the elected officials that participated in the Electronics Recycling Workgroup in Fall 2004 proposed legislation during the 2005 General Assembly Session. House Bill 575 "Environment – Statewide Computer Recycling Pilot Program," as originally proposed, would have imposed a State Computer Recycling fee, to be collected by retailers, on computers sold by a computer manufacturer which did not have a certified environmental compliance plan. Through a series of drafting sessions, stakeholders, including several national electronics manufacturers, local and State government representatives, retailers, and elected officials, negotiated the provisions of the bill which was passed by the legislature and signed into law by Governor Ehrlich in April 2005.

House Bill 575 defines “computer,” “manufacturer,” and “computer takeback program” and requires a manufacturer of an average of more than 1,000 computers over the previous three years to register with MDE and pay a registration fee, if it intends to sell its computers in Maryland on or after January 1, 2006. The initial registration fee is \$5,000 and a manufacturer’s renewal registration fee will be reduced to \$500 in subsequent years if the manufacturer has implemented a computer takeback program acceptable to MDE. These fees will be used primarily to provide grants to counties and municipalities for implementing computer recycling programs and to carry out the purposes of the State’s Recycling Program. The bill requires MDE to study and compare the environmental and public health impacts of disposing and recycling cathode ray tubes and review the effectiveness of the pilot program in diverting computers and computer monitors from disposal in landfills in the State through a report of its findings to the Maryland General Assembly by December 1, 2008. The law is scheduled to sunset on December 31, 2010.

In collaboration with electronics manufacturers, retailers, and recyclers, local governments, and State representatives, MDE is currently identifying computer manufacturers affected by the bill and drafting regulations to clarify certain language in the new Statewide Computer Recycling Pilot Program law. Regulations should be finalized by December 2005. In addition, MDE is conducting outreach and education activities and developing criteria for awarding grants to counties and municipalities for computer recycling programs. Challenges with implementation of this bill include: 1) uncertainty regarding the actual number of computer manufacturers worldwide affected by the bill; 2) inability to determine if the registration fees available initially and in subsequent years will be sufficient to fund the pilot program; 3)

acceptability of regulations for implementing the bill; 4) whether the level of the registration fee will encourage more computer manufacturers to implement computer takeback programs; 5) impacts of other states' and federal legislative initiatives on the implementation of Maryland's law; and 6) the influence that the bill's narrow focus on computers may have on collection of other electronics historically acceptable through local government recycling programs.

#### Federal Role

The establishment of electronics recycling in Maryland in 2001 could not have taken place without the financial support and collaborative efforts of EPA Region 3, the Region 3 states, electronics manufacturers and retailers, and local governments through the eCycling Pilot Project. Through the project, the definition of electronics waste was determined to be broad, encompassing those items frequently defined as consumer electronics, such as unwanted computers, monitors, keyboards, televisions, audio equipment, printers, cellular phones, and other home electronic devices. Although this is the definition used by MDE, in 2005 House Bill 575 the legislature only defined computer recycling. The original, broader definition continues to be narrowed by various state legislatures that are struggling with which electronics are most hazardous and/or most valuable to recycle.

It is well known that electronic equipment contains metals, including cadmium, lead, and mercury, and other materials that can become hazardous to human health and the environment if they are not properly managed. It is reported that the largest source of lead in municipal solid waste (MSW) is computer monitors and televisions that contain cathode ray tubes made with

leaded glass. In addition, the largest source of cadmium in MSW is rechargeable nickel-cadmium batteries, commonly found in laptop computers, and a leading source of mercury in MSW comes from batteries, switches, and printed wiring boards in electronic wastes. In addition to these hazardous components, however, electronic equipment also contains valuable resources, such as precious metals, engineered plastics, glass, and other materials.

The presence of hazardous components in electronic equipment is frequently cited by environmentalists, elected officials, and some scientists, as the reason for restricting disposal of these materials and collecting them for recycling. However, there is no conclusive evidence that modern, highly engineered solid waste acceptance facilities are insufficient to protect the public and the environment from these hazards. Clearly any materials that can be eliminated from the solid waste stream through recycling will increase landfill life and solid waste capacity, but the economics of electronics recycling vs. disposal has not been completely evaluated. Useful data on the number and types of stored electronics would help to establish the true extent of this waste stream and assist the states in identifying the costs of recycling these historic materials and estimating future costs. Outreach and education programs established on a national level would continue to increase awareness of the need to recycle electronics. In addition, electronics recyclers throughout Maryland are concerned that they are not all on a level playing field, as there are no standards (state or federal) to ensure that collection and recycling of electronics are conducted in an environmentally safe manner so as to protect workers and the public from physical and chemical hazards. Guidance from EPA and other science based federal agencies on these subjects would be welcome. Although the states do not historically receive federal funding

for solid waste and recycling programs, support in these areas could certainly enhance state programs, even on a limited term basis.

Although the efforts of the National Electronics Product Stewardship Initiative (NEPSI) to develop a national financing system to help maximize the reuse and recycling of old computers and televisions have been deemed noble, that collaboration did not result in a consistent and effective national solution to the problem of electronics waste management and recycling. The passage of significant electronics waste legislation in California, Maine, and now Maryland shows that states are prepared to design and implement their own systems to address electronic waste. Many states do not require recycling of certain materials. In Maryland, counties are required to recycle a certain percentage of their wastes, based on their population, but they are free to determine the most efficient way to reach their required rate and the materials that they choose to collect for recycling. Maryland does not currently mandate electronics recycling.

With no national solution, the challenge for manufacturers and retailers is how to comply with a patchwork of differing state programs. As more citizens demand electronics recycling, and in some areas assume some financial responsibility for this activity, additional states will be forced to pass legislation, continuing the hodgepodge of state laws. As evidenced by the level of involvement and influence by the larger electronics industry representatives in the development of state legislation, industry is partnering more and more with state governments to find individual legislative solutions to the demands and challenges of electronic wastes. Industry is



also evaluating and responding to the European Union's requirements related to electronic wastes, with less hazardous processes and materials.

Maryland's law is new and it will take the State several years to develop enough information to determine its impact. It is important for states to stay involved on the national level and share successes and challenges. As Governor Ehrlich is a strong proponent of recycling, Maryland offers support to Congress in its efforts to sort out electronics waste and recycling issues.

References

For additional information regarding Maryland's eCycling activities, including the Electronics Recycling Workgroup Report and the text of House Bill 575, please visit MDE's website at <http://www.mde.state.md.us/ecycling> or contact either Mr. Horacio Tablada, Director, Waste Management Administration at (410) 537-3304 or Ms. Hilary Miller, Administrator, Recycling and Operations Program at (410) 537-3314 or at 1-800-633-6101 extension 3314.

Thank you again for the opportunity to address you today.

Mr. GILLMOR. Thank you, Mr. Philbrick.  
And we will go to Dawn Gallagher, who is the Commissioner of the Maine Department of Environmental Protection.

**STATEMENT OF HON. DAWN R. GALLAGHER**

Ms. GALLAGHER. Good afternoon, and thank you for having us today.

I would like to briefly talk about the recycling program Maine is using. It is based on a market approach without creating a new bureaucracy.

Maine's approach is as follows. An individual has a TV or they have a CRT that they want to get rid of. They take it to their town. The town can either have a once-a-year, once-a-month, or once-a-week pick up. The town then sends the disposal of these items to a consolidator. The consolidator keeps track of the manufacturers, and the manufacturers are then billed either for the charge of transporting the items to the consolidator or for the actual recycling. The manufacturer has an opportunity to either take back the CRTs or televisions or to have the consolidator have them recycled. So there is a lot of flexibility that is being done.

We believe that this is kind of a paradigm shift that the government is responsible for all end-of-life management of solid waste generated by households. It takes on a new approach. Our stakeholder group, over the last year and a half, looked at three different methods and came up with the shared responsibility.

In this shared responsibility, manufacturers are responsible for either taking back the items or having them recycled through the consolidator. The individual is responsible for getting the computer or having the computer picked up as waste at their own residence, and then the municipality is responsible for getting it to the consolidator itself.

The advantages are this. From a manufacturer's standpoint, there is flexibility. They can either recover their own waste, or they can consolidate and have the invoice being sent to them. They can also change their method. Maine's rules allow for manufacturers to get credit for recycling programs, such as those that are done at Staples and other retailers.

If there is a consolidator involved, there is economies of scale, of shipping, and other issues so that we are minimizing the price to the manufacturers as well as to individuals. We have a fair distribution of orphan costs. The manufacturers pay orphan costs based upon the amount of market share that they have in Maine. And they pay only their fair share. The State limits the costs and we pick the low bidders for consolidations. And as a matter of fact, we have consolidators that are waiting in the wings to help us out with this endeavor.

Municipalities have a flexibility, which is in the collection and the transportation system. They can either pick up things at roadside, or they can have them done at their landfills or transfer stations, and there are limited costs involved. If municipalities want, they can have an end-of-life fee.

For the consolidators, there is a limited risk. The State reimburses them for abandoned wastes and also provides new business

opportunities. And for the State, there is no new bureaucracy, and we have the safe handling of consumer goods.

So what we have is something that provides an incentive for the business to embark on a smart production or a cradle-to-cradle philosophy. And it follows the hierarchy that we like to use in Maine for our waste, which is reduce, reuse, and recycle. It reduces the landfills and also increases its capacity, and it reduces toxicity.

We believe that there should be Federal standards, as were mentioned. We also believe that Maine's model may provide the most optimal method of combining a market-based approach with product stewardship.

Thank you very much.

[The prepared statement of Hon. Dawn R. Gallagher follows:]

D. Gallagher  
July 20, 2005

STATEMENT OF DAWN R.GALLAGHER, COMMISSIONER  
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
To the  
SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS MATERIALS  
JULY 20, 2005

The State of Maine is currently implementing the nation's first law requiring that computer and television manufacturers pay part of the costs of collecting and recycling their products. It is a law grounded in the notion that product stewardship is good for the environment and good for business. It promotes a "cradle-to-cradle" model for production that conserves natural resources, reduces waste and toxic environmental impacts, *and* benefits the corporate bottom line.

It does all of this without creating a new, cumbersome bureaucracy.

Understandably, I am proud of Maine's leadership in this matter. The program was developed with significant input from a variety of interested parties. I believe that Maine's effort could serve as a national model.

This statement is divided into 5 sections. Section 1 summarizes the history and the intent of Maine's program. Section 2 describes the law. Section 3 summarizes the implementation process. Section 4 provides the advantages of Maine's program. Finally, section 5 comments on a national program.

D. Gallagher  
July 20, 2005

### Section 1. History and Intent of Maine's E-Waste Recycling Program

Maine's first initiative regarding electronic waste was to require businesses to recycle their cathode ray tubes (CRTs). The next step was to address the homeowner waste stream. The need for a recycling program for e-waste generated by households was essentially driven by two disposal ban laws. One prohibited the disposal of *all* (regardless of ownership) CRTs in landfills and incinerators; the other banned mercury-added products, including flat panel computer monitors and laptop displays. Maine citizens therefore needed a convenient and affordable system for collecting and recycling the affected products.

The Maine Legislature established "a comprehensive electronics recycling system that ensures the safe and environmentally sound handling, recycling and disposal of electronic products and components and encourages the design of electronic products and components that are less toxic and more recyclable."<sup>1</sup>

The Maine Legislature was very clear that the intent of the law was to recognize product stewardship as part of a "shared responsibility" for e-waste. The law requires manufacturers recognize the environmental impacts of their products. Not only should manufacturers be responsible for ensuring the "proper handling, recycling and disposal of discarded products", but they should also "reduce, and to the extent feasible, ultimately phase out the use of hazardous materials in these products."<sup>2</sup>

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<sup>1</sup> PL 2004, Chapter 661, "An Act to Protect the Public Health and the Environment by Providing for a System of Shared Responsibility for the Safe Collection and Recycling of Electronic Waste"

<sup>2</sup> PL 2004, Chapter 661, Section 2

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Section 2. Maine's Television and Computer Recycling Law (See Appendix A):

*Shared Responsibility for Recycling*

In broad terms, Maine's vision of "shared responsibility" may be summed up as follows: the State holds manufacturers responsible for ensuring the recycling of their products; local government is responsible for collection of the waste equipment; and retailers are responsible for not selling products of manufacturers that fail to comply with program.

(See Appendix B)

- \* Each manufacturer<sup>3</sup> is responsible for paying consolidators<sup>4</sup> to handle, transport and recycle its own television and computer monitor products. Each manufacturer must also pay a pro rata share of the costs incurred to recycle televisions and computer monitors produced by entities no longer in business (so-called "orphan" products).
- \* Municipalities must have a system for delivering residential waste televisions and computer monitors to a consolidation facility in Maine. Each municipality may decide whether it wants to operate an on-going collection center<sup>5</sup>, do regular one-day collections, or have residents deliver the equipment directly to a near-by consolidator.
- \* Consolidation facilities are responsible for an accurate count, by manufacturer, of the waste household televisions and computer monitors handled, for providing this accounting to the State and for billing the manufacturers. Consolidation facilities are

<sup>3</sup> "Manufacturer" is defined as "a person who manufactures and sells, or has sold, by any means, including, but not limited to, transactions conducted through sales outlets, catalogs or the Internet, a covered electronic device under its own brand or sells, or has sold, a covered electronic device produced by other suppliers under its own brand and label".

<sup>4</sup> "Consolidators" operate facilities where electronic wastes are consolidated and temporarily stored while awaiting shipment of at least a 40-foot trailer full of covered electronic devices to a recycling, treatment or disposal facility.

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also responsible for shipping the e-waste *solely* to recyclers certified as meeting State guidelines.

- \* Recyclers are responsible for providing consolidators with a sworn statement that their handling, processing, refurbishment and recycling of computer monitors and televisions meet environmentally sound management guidelines published by the State. (See Attachment C)
- \* The State is responsible for publishing those guidelines, for calculating manufacturer pro rata share of "orphan waste", for adopting rules defining the "allowable costs" to be billed to manufacturers, for providing grants to help fund collection infrastructure, and for enforcement.
- \* Retailers are responsible for implementing sales ban on products from non-compliant manufacturers after being notified by the State.

### Section 3. Implementation of Maine's Program:

Implementation involves the following: manufacturers submit compliance plans for State review; State completes rulemaking on key elements of program; and municipalities select collection systems. Significant progress has been made on all of these fronts.

- Manufacturer compliance plans
  - ❖ As of July 2005, plans have been received from manufacturers responsible for almost 82% of televisions and computer monitors in residential waste stream<sup>6</sup>.
  - ❖ The State is currently seeking plan submittals from manufacturers that are responsible for an additional 7.3% of televisions and computer monitors.

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<sup>5</sup> State grants are available to help with the construction of municipal collection.

<sup>6</sup> The waste stream characterization is based on collections in Florida and Minnesota.

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- ❖ Existing manufacturers have not yet been identified for approximately 11% of televisions and computer monitors.
- ❖ Manufacturers are responsible for implementing their compliance plans 90 days after the State adopts rules for the program. Anticipated date for implementation is early 2006.
- State rule-making
  - ❖ The rule defines the "allowable costs" to be collected by the consolidators.
  - ❖ The rule proposes a formula for calculating a manufacturer's pro rata share of the costs to recycle "orphan" equipment. It includes a credit calculation for manufacturers that have "takeback" programs.
  - ❖ The rule establishes a process by which to qualify a limited number of consolidators to manage wastes and interact with manufacturers.
  - ❖ Draft rule language (see Appendix D) has been posted for public hearing on August 18, 2005.
  - ❖ The final rule is scheduled to be in place by end of November 2005.
- Local collection systems
  - ❖ Municipalities must ensure collection capability for recycling no later than nine months after rule adoption.
  - ❖ Municipalities are currently identifying preferred system for collection and delivery to consolidation; some are already collecting and sending e-waste for recycling.
  - ❖ Many municipalities and regional recycling centers have received grants to construct collection sheds from the State.



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Implementation has also involved addressing issues covered by 2005 legislation. (see Appendix E). One issue was how to equitably deal with “abandoned waste”—those products processed for recycling for which the manufacturer refuses to pay the bill. In these instances, the consolidators would have incurred costs, but there was no clear mechanism through which to make them whole.

Under the 2005 law, DEP may now reimburse consolidators for the cost of managing and recycling abandoned computer monitors and televisions and may pursue treble cost recovery against the non-compliant manufacturers.<sup>7</sup>

Section 4. Advantages of the Maine Approach:

The stakeholder process that led up to the selection of a preferred option for an e-waste recycling program in Maine closely examined three models: advance recovery fees, manufacturer responsibility and shared responsibility. While the Legislature explicitly noted that manufacturers should be held accountable for product stewardship, “shared responsibility” was ultimately selected to guide program development.

The significance of this is important. In the first place, it represents a paradigm shift from the premise that government is the entity responsible for end-of-life management of solid waste generated by households. Secondly, while it defines roles and requires action on the part of a number of different entities, it also offers certain advantages to those involved. Specifically, these include:

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<sup>7</sup> PL 2005, Chapter 330, section 40

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- √ For the manufacturers, flexibility regarding compliance. Manufacturers may elect to recover their own products from consolidation facilities and they may have the consolidator simply invoice them for their share of consolidation and recycling costs.
  
- √ For the manufacturers, flexibility to change compliance plans. Manufacturers may change their approved compliance plans to reflect "changing circumstances", provided the changes meet program requirements.
  
- √ For the manufacturers who choose to pay consolidators to recycle their products, economies of scale for shipping, counting and recycling. A minimum quantity of televisions and/or computer monitors must be consolidated before payment is required.
  
- √ For the manufacturers, fair distribution of "orphan" costs. The cost of recycling orphan products is shared by current manufacturers proportional to their share of the waste stream.
  
- √ For the manufacturers, assurances that they will only pay their "fair share." Program rules set standards for consolidation operations, tracking and billing.
  
- √ For municipalities, flexibility. Each municipality may decide which collection and transportation scenario is best suited to local needs.

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- √ For municipalities, limited cost. Municipalities may impose minimal end-of life fees to cover their costs.
  
- √ For the State, no added bureaucracy. This system does not increase the demands on government resources to manage or enforce an advance recovery fee (ARF) system, nor does it create a bureaucratic solution.
  
- √ For the State, assurances of safe handling. Collected products are directed to recyclers that meet State environmental and public health guidelines.
  
- √ For the consolidators, safeguards for cost recovery. The State may reimburse costs for handling "abandoned waste" and seek costs from non-complying manufacturers.

Evaluating the approach from a more global perspective, the environmental and public health advantages are also considerable.

Essentially, this program encourages "design for the environment". It provides incentives for manufacturers to "take back" their unwanted products and reclaim/re-use materials instead of further depleting natural resources used in manufacturing of covered electronic devices. In the near term, this reduces the volume of waste having to be handled by landfills and incinerators. Ultimately, it encourages manufacturers to implement a "Smart Production" approach (see Appendix F) and is a key component in assuring long-term business and natural resource sustainability.

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The Maine approach also encourages innovations that reduce the costs of recycling by reducing the use of hazardous materials in consumer products. While this clearly has health benefits in terms of worker exposure, it also has a broader public benefit as the toxicity of the waste stream is reduced over time.

Section 5. Comments on a National Program and the "Federal Role"

A national program may be desirable, in part, because manufacturers are divided in how they want to approach e-waste, and because it makes some sense to have consistency throughout the nation.

Maine believes that our "shared responsibility" e-waste model could be the most optimal program for the nation. It should be given a chance to prove itself. If a federal program is adopted, it *should not* be more costly for the consumer. It *should not* create a need for a cumbersome and costly new bureaucracy. But most importantly, it *should* include incentives for manufacturers to design products to maximize the recapture of materials from their products. Those manufacturers who choose to "design for the environment" and support product stewardship should be rewarded for their efforts. Maine's model does that.

# Maine's Shared Responsibility Model for E-Waste Recycling

Waste Flow

**Town "collects"** and transports to consolidator. Town decides how to collect and transport; can continue with existing systems.

**Consumer and/or local government**

**Manufacturers** responsible for costs from this point on.

**Consolidation facility:**

- count by manufacturer and report annually to DEP (no sort required);
- ship to recycler that meets environmental standards; and
- bill the manufacturers

Alternatively, manufacturer can take responsibility for their units and/or share from consolidators.

Dismantler/Recycler

**Retailers:**  
Must implement sales ban on products of non-compliant manufacturers

Who pays?

**Maine's Electronic Waste Law****38 MRSA §1306, sub-§4.**

**4. Cathode ray tube disposal.** Beginning 9 months after the department adopts rules pursuant to section 1610, subsection 5, paragraph D, subparagraph (1), a person may not dispose of a cathode ray tube in a solid waste disposal facility. This subsection may not be construed to affect existing laws, rules or regulations governing disposal of cathode ray tubes in effect prior to the adoption of rules pursuant to section 1610, subsection 5, paragraph D, subparagraph (1).

**38 MRSA §1610. Electronic waste**

**1. Findings; purpose.** The Legislature finds that the establishment of a system to provide for the collection and recycling of electronic devices in this State is consistent with its duty to protect the health, safety and welfare of its citizens, enhance and maintain the quality of the environment, conserve natural resources and prevent air, water and land pollution. The Legislature further finds that such a system is consistent with the overall state solid waste management policy including its intent to pursue and implement an integrated approach to solid waste management and to aggressively promote waste reduction, reuse and recycling as the preferred methods of waste management.

The Legislature finds that the purpose of this section is to establish a comprehensive electronics recycling system that ensures the safe and environmentally sound handling, recycling and disposal of electronic products and components and encourages the design of electronic products and components that are less toxic and more recyclable.

The Legislature further finds that it is the purpose of this section to establish an electronics recycling system that is convenient and minimizes cost to the consumer of electronic products and components. It is the intent of the Legislature that manufacturers of electronic products and components will be responsible for ensuring proper handling, recycling and disposal of discarded products and that costs associated with consolidation, handling and recycling be internalized by the manufacturers of electronic products and components before the point of purchase.

The Legislature further finds that the manufacturers of electronic products and components should reduce and, to the extent feasible, ultimately phase out the use of hazardous materials in these products.

The Legislature further finds that a system of shared responsibility for the collection and recycling of covered electronic devices among manufacturers, consolidation facilities, municipalities and other parties is the most effective and equitable means of achieving the purposes of this section. Manufacturers of electronic devices and components, in working to achieve the goals and objectives of this section, should have the flexibility to act in partnership with each other, with state, municipal and regional governments and with businesses that provide collection and handling services to develop, implement and promote a safe and effective electronics recycling system for the State.

**2. Definitions.** As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Computer monitor" means a covered electronic device that is a cathode ray tube or flat panel display primarily intended to display information from a central processing unit or the

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Internet.

B. "Consolidation facility" means a facility where electronic wastes are consolidated and temporarily stored while awaiting shipment of at least a 40-foot trailer full of covered electronic devices to a recycling, treatment or disposal facility. "Consolidation facility" includes a transport vehicle owned or leased by a recycling and dismantling facility with a minimum 40-foot trailer used to collect covered electronic devices at municipal collection sites in this State.

C. "Covered electronic device" means a computer central processing unit, a cathode ray tube, a cathode ray tube device, a flat panel display or similar video display device with a screen that is greater than 4 inches measured diagonally and that contains one or more circuit boards. "Covered electronic device" does not include an automobile, a household appliance, a large piece of commercial or industrial equipment, such as commercial medical equipment, that contains a cathode ray tube, a cathode ray tube device, a flat panel display or similar video display device that is contained within, and is not separate from, the larger piece of equipment, or other medical devices as that term is defined under the Federal Food, Drug, and Cosmetic Act.

D. "Manufacturer" means a person who manufactures and sells, or has sold, by any means, including, but not limited to, transactions conducted through sales outlets, catalogs or the Internet, a covered electronic device under its own brand or sells, or has sold, a covered electronic device produced by other suppliers under its own brand and label.

E. "Municipal collection site" means a municipally owned solid waste transfer station or recycling center, including a facility owned by a consortium of municipalities or a facility that is under contract with a municipality or consortium of municipalities to provide solid waste management services.

F. "Office" means the Executive Department, State Planning Office.

G. "Orphan waste" means a covered electronic device, the manufacturer of which can not be identified or is no longer in business and has no successor in interest.

H. "Recycling" means the use of materials contained in previously manufactured goods as feedstock for new products, but not for energy recovery or energy generation by means of combustion.

I. "Recycling and dismantling facility" means a business that processes covered electronic devices for reuse and recycling.

J. "Retailer" means a person who sells a covered electronic device in the State to a consumer. "Retailer" includes, but is not limited to, a manufacturer of a covered electronic device who sells directly to a consumer through any means, including, but not limited to, transactions conducted through sales outlets, catalogs or the Internet, or any similar electronic means, but not including wholesale transactions with a distributor or other retailer.

K. "Television" means a covered electronic device that is a cathode ray tube or flat panel display primarily intended to receive video programming via broadcast, cable or satellite transmission or video from surveillance or other similar cameras.

**3. Sales prohibition.** Beginning January 1, 2006 the following sales prohibitions apply to

**Maine's Electronic Waste Law**

manufacturers and retailers.

A. A manufacturer not in compliance with this section is prohibited from offering a covered electronic device for sale in this State. A manufacturer not in compliance with this section shall provide the necessary support to retailers to ensure the manufacturer's covered electronic devices are not offered for sale in this State.

B. A retailer may not offer for sale in this State a covered electronic device of a manufacturer that is not in compliance with this section.

**4. Manufacturer label required.** Beginning January 1, 2005, a manufacturer may not offer for sale in this State a covered electronic device unless a visible, permanent label clearly identifying the manufacturer of that device is affixed to it.

**5. Responsibility for recycling.** Municipalities, consolidation facilities, manufacturers and the State share responsibility for the disposal of covered electronic devices as provided in this subsection.

A. Each municipality that chooses to participate in the state collection and recycling system shall ensure that computer monitors and televisions generated as waste from households within that municipality's jurisdiction are delivered to a consolidation facility in this State. A municipality may meet this requirement through collection at and transportation from a local or regional solid waste transfer station or recycling facility, by contracting with a disposal facility to accept waste directly from the municipality's residents or through curbside pickup or other convenient collection and transportation system.

B. A consolidation facility is subject to the requirements of this paragraph.

(1) Beginning January 1, 2006, a consolidation facility shall identify the manufacturer of each waste computer monitor and waste television delivered to the facility and identified as generated by a household in this State and shall maintain an accounting of the number of waste household computer monitors and waste household televisions by manufacturer. By March 1st each year beginning in 2007, a consolidation facility shall provide this accounting by manufacturer to the department.

(2) A consolidation facility may perform the manufacturer identification required by subparagraph (1) at the consolidation facility or may contract for this identification and accounting service with the recycling and dismantling facility to which the waste is shipped.

(3) A consolidation facility shall work cooperatively with manufacturers to ensure implementation of a practical and feasible financing system. At a minimum, a consolidation facility shall invoice the manufacturers for the handling, transportation and recycling costs for which they are responsible under the provisions of this subsection.

(4) A consolidation facility shall transport waste computer monitors and waste televisions to a recycling and dismantling facility that provides a sworn certification pursuant to paragraph C. A consolidation facility shall maintain for a minimum of 3 years a copy of the sworn certification from each recycling and dismantling facility that receives covered



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electronic devices from the consolidation facility and shall provide the department with a copy of these records within 24 hours of request by the department.

C. A recycling and dismantling facility shall provide to a consolidation facility a sworn certification that its handling, processing, refurbishment and recycling of covered electronic devices meet guidelines for environmentally sound management published by the department.

D. Computer monitor manufacturers and television manufacturers are subject to the requirements of this paragraph.

(1) Ninety days after the department adopts rules as provided for in this subparagraph, each computer monitor manufacturer and each television manufacturer is individually responsible for handling and recycling all computer monitors and televisions that are produced by that manufacturer or by any business for which the manufacturer has assumed legal responsibility, that are generated as waste by households in this State and that are received at consolidation facilities in this State. In addition, each computer manufacturer is responsible for a pro rata share of orphan waste computer monitors and each television manufacturer is responsible for a pro rata share of orphan waste televisions generated as waste by households in this State and received at consolidation facilities in this State. The manufacturers shall pay the reasonable operational costs of the consolidation facility attributable to the handling of all computer monitors and televisions generated as waste by households in this State, the transportation costs from the consolidation facility to a licensed recycling and dismantling facility and the costs of recycling. The manufacturers shall ensure that consolidation facilities are geographically located to conveniently serve all areas of the State as determined by the department. By November 1, 2005, the department shall adopt routine technical rules as defined in Title 5, chapter 375, subchapter 2-A that identify the criteria that consolidation facilities must use to determine reasonable operational costs attributable to the handling of computer monitors and televisions.

(2) Each computer monitor manufacturer and television manufacturer shall work cooperatively with consolidation facilities to ensure implementation of a practical and feasible financing system. Within 90 days of receipt of an invoice, a manufacturer shall reimburse a consolidation facility for allowable costs incurred by that consolidation facility.

E. Annually, beginning January 1, 2006, the department shall provide manufacturers and consolidation facilities with a listing of each manufacturer's pro rata share of orphan waste computer monitors and televisions. The department shall determine each manufacturer's pro rata share based on the best available information, including but not limited to data provided by manufacturers and consolidators and data from electronic waste collection programs in other jurisdictions within the United States.

**6. Manufacturer plan and reporting requirements.** A manufacturer shall develop a plan and submit a report as required in this subsection.

A. A manufacturer shall develop a plan for the collection and recycling or reuse of computer monitors and televisions as follows.

(1) By March 1, 2005, a manufacturer of computer monitors and a manufacturer of televisions shall develop and submit to the department a plan for the collection and

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recycling or reuse of computer monitors and televisions produced by the manufacturer and generated as waste by households in this State. This plan must be based on the manufacturer's taking responsibility for its products upon receipt at consolidation facilities in the State. Following submission of the original plan, manufacturers may revise their plans at any time as they may consider appropriate in response to changing circumstances or needs provided that these revisions conform to the provisions of this section and rules adopted pursuant to this section, and are submitted to the department in a timely fashion.

(2) By January 1, 2006, a manufacturer of computer monitors and a manufacturer of televisions shall implement and finance the implementation of this plan for the collection and recycling or reuse of computer monitors and televisions produced by the manufacturer and generated as waste by households in this State.

(3) Notwithstanding subparagraphs (1) and (2), a manufacturer may satisfy the plan requirements of this paragraph by agreeing to participate in a collective recovery plan with other manufacturers. The collective recovery plan must meet the same standards and requirements of the plans submitted by individual manufacturers.

(4) The plan developed by the manufacturer must include, at a minimum:

(a) A description of the collection system, including the methods of convenient collection;

(b) A public education element to inform the public about the collection system, including details about meeting all consumer notification and labeling requirements;

(c) Details for implementing and financing the handling of computer monitors and televisions produced by the manufacturer and orphan waste computer monitors and televisions that are generated as waste by households in this State and received by consolidation facilities in this State;

(d) Details for the method of reimbursing consolidation facilities for the costs of handling and recycling the household computer monitors and televisions;

(e) Documentation of the willingness of all necessary parties to implement the plan, including the parties that will participate in the consolidation, treatment, recovery, reuse and recycling of the computer monitors and televisions;

(f) Assurances that the plan and all necessary parties will operate in compliance with local, state and federal waste management laws, rules and regulations;

(g) Descriptions of the performance measures that will be used and reported by the manufacturer to report recovery and recycling rates for computer monitors and televisions at the end of life of those computer monitors and televisions;

(h) Descriptions of additional or alternative actions that will be taken to improve recovery and recycling rates, if needed; and

(i) Annual sales data on the number and type of computer monitors and televisions sold by the manufacturer in this State over the 5 years preceding the filing of the plan.

(5) A manufacturer is responsible for all costs associated with the development and implementation of the plan. If the costs are passed on to consumers, the costs must be imposed at the time of purchase and not with a fee imposed at the end of life of the

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computer monitor or television.

B. Beginning July 1, 2007, and annually thereafter, a manufacturer that offers a computer monitor or television for sale in this State shall submit a report to the department that includes the following: a description of the collection, consolidation and recycling services utilized to recover the manufacturer's products; substantiated estimates, on an annual basis for the preceding calendar year, of the quantities of covered electronic devices marketed in this State and collected for recovery in this State; the capture rate for electronics based on sales in this State; substantiated estimates of the percentage of collected materials that are reused and recycled from its products; the identification of end markets for the collected waste; and any systems implemented by the manufacturer to ensure environmentally sound management of its products. The department may keep information submitted pursuant to this paragraph confidential as provided under section 1310-B.

**7. Enforcement.** The department must enforce this section in accordance with the provisions of sections 347-A and 349. If a manufacturer fails to pay for the costs allocated to it pursuant to section 1610, subsection 5, paragraph D, subparagraph (1), including its prorated share of costs attributable to orphan waste, the department may pay a consolidator its legitimate costs from the Maine Solid Waste Management Fund established in section 2201 and seek cost recovery from the nonpaying manufacturer. Any nonpaying manufacturer is liable to the State for costs incurred by the State in an amount up to 3 times the amount incurred as a result of such failure to comply.

The Attorney General is authorized to commence a civil action against any manufacturer to recover the costs described in this subsection, which are in addition to any fines and penalties established pursuant to section 349. Any money received by the State pursuant to this subsection must be deposited in the Maine Solid Waste Management Fund established in section 2201.

**8. Reports to Legislature.** The department shall submit a report on the recycling of electronic waste in the State to the joint standing committee of the Legislature having jurisdiction over natural resources matters by January 15, 2008 and every 2 years thereafter until January 15, 2014. The report must include an evaluation of the recycling rates in the State for covered electronic devices, a discussion of compliance and enforcement related to the requirements of this section and recommendations for any changes to the system of collection and recycling of electronic devices in the State.

**9. State procurement.** All vendors of electronic devices to the State shall provide take-back and management services for their products at the end of life of those products and must be in compliance with all the requirements of this section. Vendors shall provide assurances that all take-back and management services will operate in compliance with all applicable environmental laws. Purchasing preference must be given to electronic devices that incorporate design for the preservation of the environment.

**Maine Department of Environmental Protection**  
**Guidelines for the Environmentally Sound Management**  
**of Televisions and Computer Monitors**

Pursuant to 38 MRSA §1610.5(C), the Maine Department of Environmental Protection has developed the following guidelines for recycling and dismantling facilities engaged in the handling, processing, refurbishment and recycling of televisions and computer monitors generated as waste by Maine households. These guidelines provide a framework for environmentally sound management of these wastes. Consolidators operating in Maine may not transport these electronic wastes to a recycling or dismantling facility unless the facility has provided a sworn certification to the consolidator that the facility substantially meets these guidelines.

MEDEP reserves the right to revise these guidelines in response to developments within the electronics manufacturing and recycling industries and federal and state programs that impact these industries, and will provide notice to recyclers and dismantlers with adequate time to allow for implementation of any changes necessary to meet the revised guidelines.

1. The facility must comply with federal, state and local laws and regulations, including federal and state minimum wage laws, specifically relevant to handling, processing, refurbishment and recycling of televisions and computer monitors, and proper authorization by all appropriate governing authorities to perform such handling, processing, refurbishment and recycling.
2. The facility must implement appropriate measures to safeguard occupational and environmental health and safety, through the following:
  - a. Environmental health & safety (EH&S) training of personnel, including training with regard to material and equipment handling, worker exposure, controlling releases and safety and emergency procedures.
  - b. An up-to-date, written hazardous materials identification and management plan.
  - c. An up-to-date, written plan for reporting and responding to exceptional pollutant releases, including emergencies such as accidents, spills, fires, and explosions.
  - d. Maintenance of Commercial General Liability Insurance or equivalent corporate guarantee for accidents and other emergencies with limits of not less than \$1,000,000 per occurrence and \$1,000,000 aggregate. Additionally, maintenance of Pollution Legal Liability Insurance with a limit of not less than \$1,000,000 per occurrence for companies engaged solely in dismantling activities and \$5,000,000 per occurrence for companies engaged in processing of recyclable materials.
  - e. Documentation that completion of an EH&S audit is completed and certified by a competent internal or external auditor on a periodic basis (generally annually). A competent auditor is an individual who through professional training and/or work experience is appropriately qualified to evaluate the environmental health and safety conditions, practices, and procedures of the facility. Documentation of the auditor's qualifications must be available for inspection by government officials and third party auditors.

- f. The facility must maintain on file proof of procurement of workers compensation/employers' liability insurance.
3. The facility must provide adequate assurance (e.g. bonds, corporate guarantee) to cover environmental and other costs of the closure of our facility, including the cleanup of stockpiled equipment and materials.
4. The facility must apply due diligence principles to selection of facilities to which components and materials (e.g., plastics, metals, circuit boards, CRTs) from televisions and computer monitors are sent for reuse and recycling.
5. The facility must establish a documented environmental management system (EMS), appropriate in level of detail and documentation to the scale and function of the facility, including documented regular self-audits and/or inspections of its environmental compliance.
6. The facility must use appropriate equipment for proper processing of incoming materials as well as controlling environmental releases. The facility must manage all materials to minimize adverse exposures to workers and releases to the environment. Dismantling operations and storage of television and computer monitor components that contain hazardous substances must be conducted indoors and over impervious floors. Storage areas must be adequate to hold all processed and unprocessed inventory. When heat is used to soften solder and when televisions and computer monitors, or components thereof, are shred, operations must be designed to control indoor and outdoor hazardous air emissions.
7. The facility must establish a system for identifying and properly managing components that if waste may be hazardous (e.g., circuit boards, batteries, CRTs, mercury phosphor lamps, etc.) that are removed from televisions and computer monitors during disassembly. The facility must properly manage all hazardous and other components requiring special handling from televisions and computer monitors consistent with relevant federal, state, and local regulations. The facility agrees to provide visible tracking (such as hazardous waste manifests or Bills of Lading) of hazardous components and materials from the facility to the destination facilities and documentation (such as contracts) stating how the destination facility processes materials received. The facility must not send, either directly or through intermediaries, hazardous wastes to solid waste (non-hazardous waste) landfills or to non-hazardous waste incinerators for disposal or energy recovery. For the purposes of these guidelines, smelting of hazardous wastes to recover metals for reuse in conformance with all applicable laws and regulations is not considered disposal or energy recovery.
8. The facility must use a regularly implemented and documented monitoring and record keeping program that tracks inbound material weights (total) and outbound material weights (total to each destination), injury and illness rates, and compliance with applicable permit parameters including monitoring of effluents and emissions. The facility must maintain contracts or other documents, such as sales receipts, suitable to demonstrate: (a) a reasonable expectation that there is a downstream market or uses for designated electronics (such uses may include recycling and/or reclamation processes such as smelting to recover metals for

reuse); and (b) that any residual from recycling and/or reclamation processes are properly handled and managed to maximize reuse and recycling of materials to the extent practicable.

On an annual basis, the facility must provide a statement to consolidators operating in Maine that ship televisions and computer monitors from Maine households to the facility with a description of how televisions and computer monitors are recycled, including the following data as a percent of the total number or weight of units received by the facility:

- Percent each of televisions and computer monitors that are sent for reuse;
- Percent of components recovered for reuse;
- Percent of materials recycled;
- Residual rates by material; and
- Fate of materials not recycled

The facility may calculate these numbers based on the proportion of these waste categories received from Maine and the total electronic waste stream handled by the facility. The facility must maintain on file these statements to consolidators for a minimum of 3 years for inspection by government officials and relevant auditors.

9. The facility must comply with federal and international law and agreements regarding the export of used products or materials. In the case of export of televisions and computer monitors, compliance with applicable requirements of the U.S. and of the import and transit countries, and maintenance of proper business records documenting such compliance. The facility agrees not to establish or utilize intermediaries for the purpose of circumventing these U.S., import, and transit country requirements.

The facility must conduct transactions that involve the transboundary shipment of used televisions and computer monitors based on contracts (or equivalent commercial arrangements) made in advance that detail the quantity and nature of the materials to be shipped. For the export of materials to a foreign country (directly or indirectly through downstream market contractors):

- Shipment of intact televisions and computer monitors destined for reuse include only whole products, tested and certified as being in working order or requiring only minor repair (e.g., not requiring replacement of circuit boards or CRTs), that are destined for reuse with respect to their original purpose, where the recipient has verified a market for the sale or donation of such products for reuse;
- Shipments of televisions and computer monitors for materials recovery are prepared in a manner appropriate for processing, including smelting where metals will be recovered, plastics recovery, and glass-to-glass recycling; and/or
- Export to companies or facilities owned or controlled by the original equipment manufacturer (OEM).

Also, the facility must maintain the following export records on file for a minimum of three years:

- a. Destination (including facility name and address) to which shipment is exported.
- b. Shipment contents and volumes.
- c. Intended use of contents by the destination facility.

- d. Specifications required by the destination facility in relation to shipment contents.
- e. Assurance that all shipments for export, as applicable to the \_\_\_\_\_ (name of company) \_\_\_\_\_, are legal and satisfy all applicable laws in the destination country.

**Chapter 415: REASONABLE COSTS FOR HANDLING AND RECYCLING OF ELECTRONIC WASTES**

**SUMMARY:** This rule establishes the requirements and procedures for determining reasonable costs for the consolidation and recycling of electronic waste generated by households in Maine pursuant to 38 M.R.S.A. section 1610.

- 1. Definitions.** The following terms, as used in these rules, have the following meanings unless the context indicates otherwise.
- A. Computer monitor.** "Computer monitor" means a covered electronic device that is a cathode ray tube or flat panel display, including a laptop, primarily intended to display information from a central processing unit or the Internet.
  - B. Consolidation facility.** "Consolidation facility" means a facility where electronic wastes are consolidated and temporarily stored while awaiting shipment of at least a 40-foot trailer full of covered electronic devices to a recycling, treatment or disposal facility. "Consolidation facility" includes a transport vehicle owned or leased by a consolidator or recycling and dismantling facility with a minimum 40-foot trailer used to collect covered electronic devices at municipal collection sites in this State.
  - C. Consolidator.** "Consolidator" means a person that operates at least one consolidation facility.
  - D. Covered electronic device.** "Covered electronic device" means a computer central processing unit, a cathode ray tube, a cathode ray tube device, a flat panel display or similar video display device with a screen that is greater than 4 inches measured diagonally and that contains one or more circuit boards. "Covered electronic device" does not include an automobile, a household appliance, a large piece of commercial or industrial equipment, such as commercial medical equipment, that contains a cathode ray tube, a cathode ray tube device, a flat panel display or similar video display device that is contained within, and is not separate from, the larger piece of equipment, or other medical devices as that term is defined under the Federal Food, Drug, and Cosmetic Act.
  - E. Department.** "Department" means the Maine Department of Environmental Protection.
  - F. Geographic service area.** "Geographic service area" means four geographic areas of Maine delineated as: Region 1 - Aroostook, Washington, and Hancock Counties; Region 2 - Piscataquis and Penobscot Counties; Region 3 - Sagadahoc, Kennebec, Somerset, Waldo, Knox and Lincoln Counties; and Region 4 - Franklin, Oxford, Cumberland, Androscoggin and York Counties.
  - G. Handle.** "Handle" means to store, transfer, collect, separate, salvage, process, reduce, recover, dismantle, demanufacture, or recycle.
  - H. Maine's E-waste Law.** "Maine's E-waste Law" means the provisions in 38 M.R.S.A. section 1610.
  - I. Manufacturer.** "Manufacturer" means a person who manufactures and sells, or has manufactured and sold, by any means, including, but not limited to, transactions



conducted through sales outlets, catalogs or the Internet, a covered electronic device under its own brand or sells, or has sold, a covered electronic device produced by other suppliers under its own brand and label.

- J. M.R.S.A.** "M.R.S.A." means the Maine Revised Statutes Annotated.
- K. Municipal collection site.** "Municipal collection site" means a municipally owned solid waste facility or recycling center, including a facility owned by a consortium of municipalities or a facility that is under contract with a municipality or consortium of municipalities to provide solid waste management services.
- L. Orphan waste.** "Orphan waste" means a covered electronic device, the manufacturer of which cannot be identified or is no longer in business and has no successor in interest.
- M. Person.** "Person" means any individual; partnership; corporation; firm; federal, state or local government entity; or public or private organization of any character.
- N. Qualified recycling and dismantling facility.** "Qualified recycling and dismantling facility" means a business that processes covered electronic devices for reuse or recycling and that provides the consolidator with a sworn certification that its handling, processing, refurbishment for reuse and recycling of covered electronic devices meet the guidelines for environmentally sound management as published by the Department.
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- NOTE: The Department publication "Guidelines for Environmentally Sound Management of Televisions and Computer Monitors" (ESM Guidelines) is available at [www.maine.gov/dep/rwm/ewaste](http://www.maine.gov/dep/rwm/ewaste).
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- O. Recycling.** "Recycling" means processing of covered electronic devices or their component materials for recovery of useable products. Energy recovery or energy generation by means of combustion is not recycling.
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- NOTE: Smelting of hazardous wastes to recover metals for reuse in conformance with all applicable laws and regulations is not considered disposal or energy recovery.
- 
- P. Storage.** "Storage" means the containment of hazardous wastes, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of the hazardous wastes.
- Q. Television.** "Television" means a covered electronic device that is a cathode ray tube or flat panel display primarily intended to receive video programming via broadcast, cable or satellite transmission, recorded transmissions from VHS, DVD and similar video players, or video from surveillance or other similar cameras.
- R. Universal waste.** "Universal waste" means cathode ray tubes, lamps, mercury-containing devices, non-leaking polychlorinated biphenyl ballasts, and certain batteries as further defined in Maine's *Identification of Hazardous Wastes* rule, 06-096 CMR 850.13&14.

## 2. Criteria for determining reasonable costs of consolidation operations.

- A. Consolidator approval process.** To be eligible to receive reimbursement from manufacturers for the consolidation of covered electronic devices generated as waste by households in Maine, a consolidator must be approved by the Department. The Department shall approve a group of 5 to 10 consolidators to provide consolidation

facility services to municipalities. The Department will include in the approved group consolidators that:

- (1) provide adequate demonstration that they have the ability to operate in conformance with this rule and Maine's E-waste Law;
- (2) submit the lowest cost schedules, including anticipated annual cost adjustments for a two to three year approval period (if sought), with overall consolidator costs not to exceed \$0.48 per pound for the weight of televisions and computer monitors; and
- (3) when considered in aggregate, ensure that geographically-convenient consolidation services are provided throughout the state.

The Department may approve consolidators for a period not to exceed three years, subject to the Department's annual evaluation of new submittals from consolidators. The Department may request updated information from any consolidator whenever it receives what it determines to be credible information of a significant change in any of the information provided in the consolidator's submittals to the Department. The Department may remove a consolidator from the approved list when violations of Maine's environmental laws are adjudicated or otherwise resolved, or when the Department determines that inaccurate information has been provided by a consolidator to the Department and the consolidator cannot cure the inaccuracy.

At least 90 days prior to expiration of its approval, a consolidator may submit information to the Department, including annual cost adjustments, to demonstrate it continues to meet the criteria for inclusion in the group of 5-10 consolidators approved to offer consolidation facility services to municipalities and to receive reimbursement from manufacturers.

The Department shall annually evaluate all new submittals and adjust the published approval list to include no more than the 10 consolidators with the lowest submitted costs, while also ensuring that geographically-convenient consolidation services are provided throughout the state.

**B. Consolidator demonstration of technical ability and financial capacity.** To be approved to receive reimbursement from manufacturers for the handling and recycling of waste televisions and computer monitors from Maine households, the consolidator shall submit to the Department a completed application, on forms developed by the Department, that includes, at a minimum, the following information:

- (1) A description of the company's qualifications and experience in managing electronic waste, universal waste, specifically including cathode ray tubes;
- (2) Evidence of the technical ability to comply with the consolidator responsibilities in Maine's E-waste Law, 38 M.R.S.A. §1610.5(B);

- (3) A listing and explanation of any civil and criminal violations of, and administrative agreements or consent decrees entered into for, any environmental laws in any state or under the jurisdiction of the U.S. Environmental Protection Agency;
- (4) A copy of the standard operating procedures for receipt and handling of televisions and computer monitors, including procedures to track units that are identified at receipt as generated from a household in Maine, and for data collection and management, including tracking of brands and other information specified in sections 3(C)(1) and 3(C)(2) of this rule from televisions and computer monitors;
- (5) A description of consolidation capacity, including the location and description of consolidation facilities and geographic service area(s);
- (6) A description and disclosure of all business relationships with electronic waste recycling and dismantling facilities, including ownership of any electronic waste recycling and dismantling facilities or related companies;
- (7) Evidence of financial capacity;
- (8) A current annual fee schedule, including an annual inflation factor, of total costs related to the handling and recycling of televisions and computer monitors for each geographic service area, expressed as the price per pound for: receipt, handling and packaging for shipment; for mobilization and transportation of a full 40-foot trailer; and for recycling; and
- (9) Evidence of commercial general liability insurance or equivalent corporate guarantee for accidents and other emergencies with limits of not less than \$1,000,000 per occurrence and \$1,000,000 aggregate.

The Department shall make the current list of approved consolidators available through its website, and, upon request, in writing.

**C. Allowable costs.** Each consolidator shall bill a manufacturer in accordance with their most recent fee schedule submitted to the Department for allowable costs associated with the handling and recycling of household-generated waste computer monitors and televisions that are or were produced by that manufacturer or any business for which the manufacturer is legally responsible, and a pro rata share of orphan waste computer monitors and orphan waste televisions.

Allowable handling and recycling costs are those directly associated with meeting the requirements of this rule for covered electronic devices, including but not limited to:

- (1) Providing geographically convenient consolidation facility services, including the cost of transporting household waste computer monitors and televisions from

municipal collection sites calculated on the basis of the price per pound for transportation of a full 40-foot trailer, by geographic service area;

- (2) Accounting, by brand and manufacturer, of televisions and of computer monitors and the collection of other information as required in sections 3(B)(1) and 3(B)(2) of this rule;
- (3) Storing, loading and unloading;
- (4) Packaging for transport;
- (5) Transportation and tracking of covered electronic devices to a qualified recycling and dismantling facility;
- (6) Billing, record-keeping and reporting as required by section 3;
- (7) A reasonable rate of profit or return on investment; and
- (8) Costs billed to the consolidator by a qualified recycling and dismantling facilities for recycling.

The cost of physically separating brands for a specific manufacturer, and the cost of gathering and providing additional information from each unit (e.g., serial number, model number) not required by this rule are not allowable costs and must be borne by each manufacturer that requests these services by arrangement between the manufacturer and consolidator.

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NOTE: A manufacturer may be responsible for the costs of handling and recycling multiple brands.

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**D. Manufacturer Brand Determination and Orphan Waste.** The Department shall provide manufacturers and approved consolidators with a listing of manufacturers and the brand(s) known to the Department for which each manufacturer is responsible. The Department will determine the brands for which each manufacturer is responsible based on data provided by manufacturers, consolidators and electronic waste collection programs in other jurisdictions within the United States, and information from reputable reference sources such as the “The Thomas Register”, “Gale Trade Name Directory”, “Headquarters USA”, “Dun and Bradstreet Industry Handbook”, trade association directories, and similar resources. It is the responsibility of the manufacturer to provide the Department with documentation establishing or refuting a manufacturer’s responsibility for a specific brand when such information is requested by the Department.

- (1) The Department shall annually determine each manufacturer’s pro rata share of the orphan waste portion of the television waste stream and the computer monitor waste stream based on the best available information, including but not limited to, data provided by manufacturers and consolidators and data from electronic waste

collection programs in other jurisdictions within the United States. The Department will incorporate into the orphan share determination, and thus into the manufacturer pro rata share of the orphan waste stream, Maine-specific data after analysis is completed of at least one year of data submitted to the Department in reports by consolidators.

In calculating manufacturers' pro rata shares of the orphan waste stream, the Department may credit manufacturers for waste televisions and computer monitors collected through no-cost manufacturer take back programs, provided the manufacturer provides documentation to the Department that the units were generated as waste by Maine households, of the number of units and total weight by brand and the timeframe in which the units were received, and that the units were handled by a qualified recycling and dismantling facility. The Department may request additional documentation from manufacturers if needed to justify providing an orphan share credit. Manufacturers determined by the Department to be responsible for a de minimus share of the television or computer monitor waste stream may not be assessed a pro rata share for that waste stream if the Department determines the costs of assessment and billing are likely to exceed the billable amount.

The Department will issue the first pro rata share determination no later than January 1, 2006, and shall subsequently provide an annual updated schedule of pro rata shares by November 1<sup>st</sup>, effective for the following calendar year. The Department shall use the following formula for calculating the pro rata share of the orphan waste for each manufacturer:

$$S = (B + T)[(100 + W) \div 100]$$

When:

S = pro rata share (expressed as a decimal fraction),

B = number of manufacturer brand units,

T = total number of units, and

W = the percentage of orphan waste expressed as a whole number

**E. Consolidator and Manufacturer Arrangements.** Manufacturers may establish arrangements with approved consolidators to facilitate implementation of this rule. Those arrangements may include any limitation on services to be provided by the consolidator that are otherwise eligible as allowable costs, and billing arrangements that are consistent with this rule. In the absence of an arrangement, the presumption established in this rule is that a manufacturer desires compliance with the requirements of this rule, other than requirements specifically assigned to manufacturers, to be handled by the consolidator.

### 3. Operational standards.

**A. Required consolidation and billing options.** Each consolidator shall offer a manufacturer the following handling and billing options:

- (1) The consolidator separates manufacturer's product and informs the manufacturer annually or when a 40-foot truckload of the manufacturer's product is available,

whichever occurs first, for shipment to a qualified recycling and dismantling facility as contracted by the manufacturer, plus the consolidator bills the manufacturer for the management of its share of orphan products and receipt, handling, and packaging costs associated with the manufacturer's product.;

- (2) The consolidator performs brand count to determine manufacturer share, and the manufacturer contracts for transportation to and recycling at a qualified recycling and dismantling facility of its share of mixed brand products, including its share of orphan products, by 40-foot truckload, plus the consolidator bills the manufacturer for receipt, handling, and packaging of the manufacturers share, including its orphan share;
- (3) The consolidator performs a brand count and contracts with a qualified recycling and dismantling facility, and bills the manufacturer for the costs associated with receipt, handling, packaging, transportation and recycling based on weight of the products received for which that manufacturer is responsible plus its share of orphan products.

The consolidator shall manage the handling and billing in accordance with each manufacturer's selected annual preference for one of these options (or such other contracted arrangements negotiated that are consistent with these rules but vary from the alternatives outlined in this section). For each manufacturer that does not notify the consolidator of a preference by January 1 of each year, the consolidator shall use option (3) for the handling and billing of the brands and orphan share for which that manufacturer is responsible. When given annual notice of a change in manufacturer preference, a consolidator shall implement the change in the handling and billing option selected by that manufacturer within 90 days.

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NOTE: For e-waste that Maine municipalities elect to manage under this system, the E-Waste Law, 38 MRSA 1610(5)(B)(4), requires consolidators to transport waste computer monitors and waste televisions to facilities that provide a sworn certification that its handling, processing, refurbishment and recycling of this e-waste meets the guidelines for environmentally sound management as provided by the Department. A manufacturer that contracts for pick up and transportation from a consolidation facility may provide the consolidation facility with documentation that the wastes are shipped to such qualified recycling and dismantling facilities.

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**B. Handling, storage, transport and recordkeeping requirements.**

- (1) All handling, storage, transport and recordkeeping shall be performed in accordance with 06-096 CMR 850.3(A)(13) the universal waste provisions of Maine's *Hazardous Waste Management Rules*.
- (2) Beginning January 1, 2006, a consolidator shall maintain a written log that identifies responsible manufacturers by recording the brand of each waste computer monitor and waste television delivered to the consolidation facility and identified at receipt as generated by a household in Maine. The consolidator may perform the brand

identification at the consolidation facility or may contract for this identification and accounting services with the qualified recycling and dismantling facility to which the waste is shipped.

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NOTE: Municipalities are responsible for clearly identifying to the consolidators units that are generated as waste by their residents. One way to do this is to clearly mark, with an indelible marker or grease pencil, each unit generated by a Maine household with a large mark such as "MH" (for Maine Household). Any units not clearly identified will be assumed to be generated by businesses and the costs of recycling borne by the entity that delivers, or causes to be delivered, the units to the consolidator.

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- (3) The consolidator shall establish and implement procedures for clearly distinguishing and tracking household waste units separately from business waste units.
- (4) For all units for which a manufacturer has not contracted for pick up at the consolidation facility, the consolidator shall transport waste computer monitors and waste televisions only to qualified recycling and dismantling facilities.
- (5) When provided with at least 24-hours notice, the consolidator must allow on-site audit reviews by manufacturers during normal business hours of Monday – Friday from 9:00 a.m. to 4:00 p.m. to ensure compliance with Maine's E-waste law and these rules and validity of data provided to the manufacturer and the Department.

**C. Billing.** Consolidators and manufacturers shall work cooperatively to ensure implementation of a practical and feasible billing system. At a minimum, a consolidator shall invoice a manufacturer for the allowable costs incurred by the consolidator and associated with the handling, transportation and recycling for which each manufacturer is responsible under the provisions of this rule in conformance with its most recent fee schedule submitted to the Department. A consolidator shall bill each manufacturer monthly for the services provided related to the manufacturer's products and its pro rata share of the orphan waste.

- (1) At a minimum, each bill to a manufacturer must include the following information:
  - (a) Unit count and total weight by brand for each brand for which the manufacturer is responsible, with the television and computer monitor waste streams clearly distinguished;
  - (b) unit count and total weight by brand of orphan waste;
  - (c) total product weight for all televisions and computer monitors generated by Maine households and managed by the consolidator during the billing term;
  - (d) total cost per pound billed; and
  - (e) total amount due from the manufacturer.

The total amount due from the manufacturer will equal  $[M + (x)(o)][C]$  where:  
 M = the total weight of the brands for which the manufacturer is responsible,  
 x = the manufacturer's pro rata share of the orphan waste stream,

o = the total weight of the orphan waste stream managed by the consolidator for the billing term, and  
 C = cost per pound for management services provided.

- (2) Manufacturers may request additional information from consolidators at their discretion provided the requested information does not pose an unreasonable operating burden on the consolidator. The manufacturer shall pay the cost of obtaining and transmitting additional information to that manufacturer, including any costs incurred in meeting manufacturer audit requirements. The consolidator must provide the manufacturer with documentation of the cost of fulfilling the additional information request by the manufacturer.
- (3) A consolidator must maintain for a minimum of three (3) years a copy of the sworn certifications of compliance with ESM Guidelines from each recycling and dismantling facility that receives waste computer monitors and televisions from the consolidator and must provide the Department with a copy of these records within 24 hours of its request.
- (4) Manufacturers shall pay all bills received from approved consolidators and generated in conformance with this rule.

**D. Insurance requirement.** A consolidator shall maintain commercial general liability insurance or equivalent corporate guarantee for accidents and other emergencies with limits of not less than \$1,000,000 per occurrence and \$1,000,000 aggregate.

**E. Reporting requirements.** By March 1st each year beginning in 2007, a consolidator shall submit an annual report to the Department. This report shall include, but is not limited to:

- (1) updates to any information submitted under the provisions of in sections 2(A) and 2(B) of this rule;
- (2) a narrative summary of the facility's activities related to consolidation of household televisions and computer monitors;
- (3) an accounting consistent with section 3(B) of this rule, by brand and responsible manufacturer (if applicable), of numbers and volume by weight for the units handled in the preceding calendar year; and
- (4) rates of reuse and recycling for covered electronic devices as reported to the consolidator from all qualified dismantling and recycling facilities to which the consolidator ships from Maine .

**F. Notification of cessation of services.** At least 30 days prior to ceasing operations as a consolidation facility in any of the geographic service areas indicated as served in the consolidator's documents submitted under the provisions of section 2(B) of this rule, an



approved consolidator must provide the Department notice of intent to cease operations for purposes of managing household waste televisions and computer monitors.

AUTHORITY: 38 M.R.S.A. Sections 341-D(1-B) and 1610(5)(D)(1)

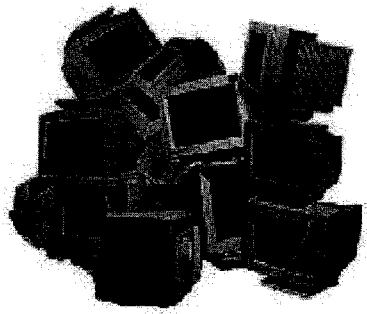
EFFECTIVE DATE:

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BASIS STATEMENT

Report to the Joint Standing Committee on  
Natural Resources  
First Session of the 122<sup>nd</sup> Maine Legislature

**Managing the Cost of Abandoned Waste  
in Maine's Residential E-Waste  
Collection and Recycling System**



Submitted by the  
Maine Department of Environmental Protection  
in accordance with P.L. 661, Second Special Session of the 121st

March 2005

### **Background**

In 2004, the Second Special Session of the 121<sup>st</sup> Maine Legislature passed Public Law Chapter 661, "An Act to Protect the Public Health and the Environment by Providing for a System of Shared Responsibility for the Safe Collection and Recycling of Electronic Waste". This is the first law adopted by a state in the U.S. that requires manufacturers to pay part of the cost of collection and recycling of their television and computer monitor products generated as waste by households.

The shared responsibility system established by this law requires municipalities to ensure that waste televisions and computer monitors are delivered to an in-state consolidation center. From this point forward, the consolidation centers are responsible for billing each manufacturer for the cost of handling, transportation and recycling of that manufacturer's products. (Alternatively, manufacturers may opt to assume responsibility for ensuring the recycling of their products from the consolidation centers.) During the legislative session, some who testified raised the concern that there could be manufacturers that would not pay the bills sent by consolidators. They would in effect "abandon" the cost of managing their waste in the system, with no clear mechanism for assigning these costs elsewhere in the shared responsibility system. Because Maine was the first state to adopt a law like this, it was not possible for the Legislature to determine the likelihood that abandoned waste would be a significant problem, and therefore no basis to decide whether a law, rule or policy was needed to address it.

P.L. 661 includes a provision that requires the Department of Environmental Protection to adopt rules that identify the criteria that consolidation facilities must use to determine reasonable operational costs attributable to the handling of computer monitors and televisions that they can bill to the manufacturers. The Legislature recognized that one option for allocating the cost of managing abandoned waste is to include those costs as part of the reasonable operational costs for which consolidators can bill manufacturers that are participating in the shared responsibility system. To determine whether the cost of managing abandoned waste may become a significant problem and if so, whether that cost may be included as part of the reasonable operational cost of a consolidation facility, the following provision was added to and adopted as part of P.L. 661:

**Sec. 4. Report on abandoned waste.** By March 30, 2005, the Department of Environmental Protection shall report to the joint standing committee of the Legislature having jurisdiction over natural resource matters on whether the handling and recycling costs attributable to abandoned waste should be included in the reasonable operational costs of consolidation facilities. For purposes of this section, "abandoned waste" means a covered electronic device that is not an orphan waste and for which a manufacturer does not pay the consolidation facilities' handling and recycling costs within 90 days of the 3<sup>rd</sup> monthly billing.

Approximately 525 additional possible brands were recorded by the collection events in Florida and Minnesota. These brands were identified by the people receiving the units at the collection events based on readily visible labels, so at least some of the names of these brands appear to be product descriptors rather than actual brands. Of these, 519 brands each accounted for 20 units or less. The remaining brands account for less than 100 units each (100 units represents 0.28% of the waste stream studied) except for one brand which we've determined is orphaned and accounts for 0.677% of the TV waste stream. At the time this report was written, Department staff had identified almost 3% of the TV waste stream as likely orphans, and continues working to identify whether each of the remaining brands is a likely orphan or the responsibility of existing manufacturers.

**Summary of MANUFACTURER Information  
as of 3/24/05**

<b>Status</b>	<b>Number of Manufacturers</b>	<b>% waste TVs</b>	<b>% waste computer monitors</b>
Contacted prior to 3/1 and submitted plans	29	78%	71%
Contacted prior to 3/1, but did not submit plans	39	5%	18%
Contacted since 3/1	7	9%	<1%
No contact identified	525	8%	11%

On March 24, 2005 the Department initiated enforcement action against the manufacturers that had been provided with sufficient notification of their responsibility to submit a plan for compliance by March 1, 2005. We mailed a Notice of Violation (NOV) to each of these manufacturers, informing them that they are in violation of Maine law and requesting submittal of their plan ASAP but no later than April 8, 2005 (Appendix B is a generic version of this NOV). The names of all manufacturers that do not respond adequately to the NOV will be referred to the Attorney General for further enforcement action. The DEP also will work with the AG to determine when to notify retailers that beginning January 1, 2006, televisions, computer monitors, and CPUs produced by manufacturers that are not in compliance with the law may no longer be sold in Maine.

Based on the data and plans received to date by the Department and assuming that no additional manufacturers submit plans for compliance, no more than 22% of the television waste stream and no more than 29% of the computer monitor waste stream can potentially be abandoned waste in the Maine e-waste collection and recycling system, and much of this will be likely identified as orphan waste.

**Mechanisms to minimize the abandoned waste problem**

Under existing law, there are two enforcement mechanisms that can be used to address the problem of abandoned waste. The first is the use of the Department's enforcement

authority under 38 MRSA section 347-A and 349 to gain compliance with the provisions of 38 MRSA §1610. The second is the use of collection agencies and/or legal action by consolidators to force the payment of bills by manufacturers.

As noted above, the Department has already begun pursuing enforcement against the manufacturers that have not submitted plans as required by 38 MRSA §1610.6.A(1). Each manufacturer has received at least three mailings from the Department that explained the manufacturer's legal responsibilities under Maine's e-waste law. On March 24th, each manufacturer that did not submit a plan was mailed a Notice of Violation (NOV) by the Department (a sample is included as Appendix B). Each NOV requires that the manufacturer contact the Department within 5 working days of receipt of the NOV to discuss its violation and determine the corrective action it will take to come into compliance with the law. The Department will then refer the case to the Maine Attorney General's Office for prosecution in Superior Court. The purpose of pursuing enforcement is to gain compliance, with the result that all existing manufacturers participate in Maine's shared responsibility system for the recycling of computer monitors and televisions.

Once the law goes into effect, there is additional legal recourse beyond enforcement action by the State to ensure that manufacturers pay the costs of consolidation and recycling of their products and a pro rata share of the orphans. Under the law, consolidators bill manufacturers for their share. If a manufacturer does not pay its bill within 90 days, consolidators can utilize a collection agency to recoup these unpaid bills. The cost of this collection service would be borne by the consolidators.

#### **Options to reimburse consolidators for the costs of managing and recycling abandoned waste**

Within Maine's e-waste system, there are three parties that could potentially be called upon to reimburse consolidators for the costs of managing and recycling abandoned waste. These include municipalities, manufacturers, and the State. Consolidators could bill the municipality from which the waste was generated. Alternatively, the cost of managing abandoned wastes could be considered a reasonable operational cost of consolidators to be paid by the participating manufacturers. A third option is for the State to pay the consolidators' costs of recycling abandoned waste.

None of these options is ideal, as they each require a non-responsible party to meet financial obligations already assigned to someone else under Maine law. To evaluate each option, it may be helpful to consider the objectives established for designing Maine's e-waste system (see the Maine DEP January 2004 "Report to the Joint Standing Committee on Natural Resources - A Plan for the Collection and Recycling of Cathode Ray Tubes in Maine, referred to subsequently as the "Maine DEP 2004 e-waste report"). These include, in part, for the system to minimize additional costs to municipalities, and to be relatively simple, clear, and consistent so that all players understand their role in implementation.

Assigning responsibility for the entire cost of collection, consolidation, and recycling of abandoned waste to municipalities would be counter to the objective of minimizing additional costs to municipalities, and could be challenged as an unfunded mandate.

To evaluate the options of the manufacturers or the State paying the costs of recycling abandoned waste in relation to the objective of keeping the e-waste collection and recycling system relatively simple, clear and consistent, we need to review the respective roles assigned to manufacturers and the State by the law. As the system is designed, manufacturers have the responsibility of paying the cost of managing their products plus a portion of the orphan share of the waste stream. The State has funded the development of some of the local collection infrastructure, and has the responsibility of enforcing the e-waste law. Given these respective responsibilities, it is possible to consider managing abandoned waste similarly to orphan waste, i.e., assign the manufacturers a pro rata share of the costs, or as strictly an enforcement problem to be handled by the Department.

One clear drawback to assigning responsibility for financing the recycling of abandoned waste to the manufacturers that are participating in the system is that this can be viewed as punishing those that are in compliance with the law. Some manufacturers may perceive this arrangement as an incentive to abandon their waste into the system. As additional manufacturers choose not to pay their bills from the consolidators, the cost of abandoned waste would increase, thus increasing the costs to the manufacturers that are in compliance and eliminating the costs to the manufacturers that are not in compliance.

The issue of abandoned waste is, at its heart, an issue of enforcement. When viewed from this perspective, it makes sense to integrate the costs of managing abandoned waste within the enforcement powers of the Department. One way to do this is for the Department to pay consolidators for the costs associated with managing abandoned waste and then seek cost recovery. A law that allows for recovering costs plus punitive damages, similar to the provisions of the Uncontrolled Sites Law, would provide added incentive to manufacturers to comply with their e-waste responsibilities.

#### **Potential cost of managing abandoned waste**

Given that the Department has just begun enforcement action to gain additional manufacturer compliance with the requirement to submit a compliance plan, at this point in time it is not possible to definitively determine the cost of managing abandoned waste in Maine's e-waste recycling system, or even whether there will be any. If all identified manufacturers come into compliance in response to DEP enforcement actions and the remaining unclaimed brands are identified as orphans, then there will be no abandoned waste in the system, and the cost will be \$0. The other extreme is to assume that no additional manufacturers will comply with the law and instead will choose to abandon their waste, and that all currently unclaimed brands are abandoned rather than orphans, the cost of recycling the abandoned electronic waste could range between \$130,000 and \$200,000.

If all brands that have not yet been identified as the responsibility of a current manufacturer are assumed to be orphans, and no additional manufacturers come into compliance, the cost of managing abandoned waste is estimated to be between \$41,000 and \$66,000 (depending on cost assumptions). (See Appendix C for calculations of cost estimates.)

### **Summary**

One question that remained unanswered when Maine's e-waste law was adopted last year was who should bear the costs of consolidation and recycling of televisions and computer monitors produced by manufacturers that refuse to fulfill their financial responsibilities under the law, i.e., who should bear the costs of "abandoned waste" attributable to viable yet uncooperative manufacturers. The Legislature requested that the Department examine the possibility of including this cost within the reasonable operating costs of consolidation. At this time, the cost of managing abandoned waste can only be roughly estimated to fall between no cost and approximately \$200,000.

Since the law directs consolidators to bill manufacturers for reasonable operational costs of handling their products, the effect of including the recycling of abandoned waste in consolidators' operational costs would be to pass these costs on to participating manufacturers. This means that the manufacturers in compliance with the law would be required to pay the costs for non-compliant manufacturers. Such an arrangement would indirectly provide manufacturers with a significant disincentive to comply with the law.

Alternatively, the cost of abandoned waste could be borne by the municipalities that generate the waste. Arguably, one of the underlying objectives of Maine's e-waste law is to minimize any cost increases to municipalities when they change from disposal to recycling of TVs and computer monitors. Requiring municipalities to bear the costs of abandoned waste could significantly increase their costs and therefore is counter to the objective of minimizing municipal costs.

Maine's e-waste law clearly assigns enforcement responsibilities to the Maine DEP. The issue of abandoned waste could be viewed solely as an enforcement issue. It is simple and consistent to maintain the issue of managing the costs of abandoned waste within Maine DEP's authority. This can be achieved by authorizing the Maine DEP to reimburse consolidators for the cost of managing and recycling abandoned computer monitors and televisions, and providing the Department strengthened enforcement power by adding a treble cost recovery provision to the e-waste law.

**Next Steps**

Based on this analysis of the potential abandoned waste issue, the Department recommends the following next steps:

- ❖ The Department and Attorney General's Office will continue working to minimize the amount of abandoned waste in Maine's e-waste collection and recycling system by vigorously pursuing enforcement actions against manufacturers that have not submitted a Plan of Compliance indicating their intent to meet their obligation under the law.
- ❖ The Legislature should direct the Department to implement one or more of the following options for managing the cost of handling and recycling of abandoned waste televisions & computer monitors:
  1. Treat abandoned wastes as orphans within the Maine e-waste system, with the cost of management charged through pro rata share to the compliant manufacturers;
  2. Require municipalities to pay consolidators for the cost of managing and recycling abandoned waste televisions and computer monitors from their residents; or
  3. Reimburse consolidators for the cost of managing abandoned waste and add a cost recovery provision to the e-waste law that allows the Department to recoup treble costs and enforcement costs from non-compliant manufacturers.



## **Appendices**

Appendix A - List of contacted manufacturers of televisions & computer monitors, with date plan submitted (if applicable), and estimated percent of waste stream.

Appendix B – Sample Notice of Violation to manufacturers that have not submitted compliance plans

Appendix C – Cost calculations for possible abandoned wastes

## Appendix A

**Contacted Manufacturers and Estimated Share of Waste Stream**

This summary is based on manufacturer plans received (or promised shortly\*) and the most recent waste stream data from FL & MN. MEDEP is continuing to communicate with manufacturers and to analyze the data received, and expects to update this information frequently.

<b>Manufacturers contacted, plan filed or filing scheduled*</b>	<b>Date plan filed</b>	<b>Estimated % of Waste TVs</b>	<b>Estimated % of Waste Computer Monitors</b>
Apple	2/25	0.156	11.253
Best Buy	3/1		
Daewoo	2/28	1.515	0.302
Dell	2/28		5.276
Envision*	3/2	0.542	0.618
Fujitsu	3/1	0.035	
Funai	3/16	5.660	0.130
Gateway	2/23		6.445
HP	3/1		11.762
Hitachi	3/1	1.621	1.031
Hyundai	3/18	0.020	0.096
IBM	2/28		6.651
JVC	3/1	2.559	
LG Electronics	3/1	12.765	1.450
MPC	2/11		1.264
Mitsubishi Electric and NEC/Mitsubishi	3/1	3.738	0.508
NEC Solutions (America)	3/1	0.758	13.267
Panasonic	3/1	7.261	0.426
Philips	3/1	8.385	
Planar	3/17	0.015	
Radio Shack	3/1	0.728	0.385
Samsung	2/24	4.857	3.971
Sharp	3/1	4.100	
Sony	2/28	4.566	2.336
Sun Microsystems	3/1		0.330
TTE	3/11	16.177	0.041
Toshiba	3/1	2.494	0.392
ViewSonic	1/19		3.023
<b>Subtotals</b>		<b>77.952</b>	<b>70.957</b>
<b>Manufacturer contacted, no plan filed</b>			
Acer			3.050
AKAI		0.005	
Amtron			0.021
Apex		0.181	
ATARI			0.014
Aydin			0.007
BenQ			0.007
Brother			0.268

Manufacturer plan status &amp; waste stream share

Appendix A

COMPAL		0.007
COMPU DYNE		0.227
CTX		5.196
Daytek		0.048
Eizo-Nanao		0.082
Epson		0.502
Honeywell		0.048
Iiyama		0.247
Impression		0.062
KDS		1.896
Microtek		0.007
Miracle		0.014
Mitac		0.041
Motorola	0.171	
Nakamichi		0.481
Pioneer	0.005	
Pixie		0.165
Princeton		0.316
PROVIEW	0.753	2.954
Relisys		0.632
Sampo	0.492	0.206
Sanyo	3.342	0.076
Sceptre		0.055
Silicon Graphics		0.027
Tatung	0.015	0.144
TTX		0.110
Unisys		0.103
Vistamax	0.095	
WEN TECHNOLOGY		0.021
Wyse	0.020	0.646
Yamaha	0.020	
<b>Subtotals</b>	<b>5.099</b>	<b>17.680</b>
<b>Manufacturers contacted after 3/1/05</b>		
JC Penney	1.796	
Kmart	0.020	
KTV	0.557	
Memorex	0.853	0.062
Montgomery Ward	2.353	
Sansui	0.763	
Sears	2.318	
<b>Subtotals</b>	<b>8.660</b>	<b>0.062</b>
<b>Total estimated share all contacted manufacturers</b>	<b>91.711</b>	<b>88.699</b>

If you have additional data that may be relevant, please send that information by e-mail to [carole.a.cifrino@maine.gov](mailto:carole.a.cifrino@maine.gov) and to [susan.a.alderon@maine.gov](mailto:susan.a.alderon@maine.gov).

**Appendix B**  
**Sample Notice of Violation**

Sent Certified Mail No.: \_\_\_\_\_

NOV Number: 2005-EW\_\_

Date of Issue: March 24, 2005

{Name}  
{Address line 1}  
{Address line 2}  
{Address line 3}

DEP understands that COMPANY NAME is a manufacturer of televisions and computer monitors. Some or all of that equipment is believed to be subject to Maine's Electronic Waste Law, 38 M.R.S.A. § 1610. The E-waste Law was put in place by Maine's Legislature to minimize risks to human health and the environment as a result of improper disposal of these items.

DEP believes COMPANY NAME is subject to the requirement that a plan be developed for collection, recycling and reuse of those computer monitors and televisions. That plan was due for submission by March 1, 2005. DEP notified COMPANY NAME of the requirement on {Date of notification}. A review of our records shows that COMPANY NAME has thus far failed to submit the required plan. As such, enclosed is a Notice of Violation (NOV) that includes a compliance schedule.

A failure by COMPANY NAME to meet the compliance conditions in the NOV, including contact with Carole Cifrino within five days of receipt, will result in DEP pursuing an additional enforcement action that will include monetary penalties. Violation of a law administered by the department is subject to a civil penalty of not less than \$100 and not more than \$10,000 for each day of that violation.

Failure by COMPANY NAME to comply with Maine's E-waste Law, including the requirement to submit a plan, will also result in the prohibition of the sale in Maine of televisions, computer monitors and central processing units manufactured by COMPANY NAME beginning January 1, 2006 in accordance with 38 M.R.S.A. §1610.3.

You can contact Carole Cifrino by calling (207)287-7720 or by e-mail at [carole.a.cifrino@maine.gov](mailto:carole.a.cifrino@maine.gov).

Sincerely,

Stephen K. Davis, Director  
Bureau of Remediation & Waste Management

STATE OF MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 Bureau of Remediation & Waste Management  
 17 State House Station  
 Augusta, Maine 04333  
 Telephone: (207) 287-2651

◆◆ NOTICE OF VIOLATION ◆◆

ALLEGED VIOLATOR'S NAME: <i>[Click here to type the name]</i>	NOV NUMBER: <i>[Click here to type the number]</i>
ADDRESS: <i>[Click here to type the mailing address]</i>	DATE ISSUED: March 24, 2005
MUNICIPALITY, STATE AND ZIP CODE: <i>[Click here to type municipality, State and zip code]</i>	CERTIFIED MAIL NUMBER: <i>[Click here to type the number]</i>
POINT OF CONTACT (IF DIFFERENT FROM ALLEGED VIOLATOR): <i>[Click here and type the name]</i>	TELEPHONE NUMBER: <i>[Click here to type the alleged violator's number]</i>

YOU ARE HEREBY NOTIFIED THAT YOU OR YOUR COMPANY IS ALLEGED TO BE RESPONSIBLE FOR THE VIOLATION(S) OF MAINE'S ENVIRONMENTAL LAWS, REGULATIONS OR DEP ORDERS DESCRIBED IN THE NEXT PARAGRAPH OF THIS NOTICE. RESOLUTION OF THIS MATTER MAY BE SUBJECT TO ADDITIONAL ENFORCEMENT, INCLUDING MONETARY PENALTIES, AS PROVIDED FOR UNDER MAINE LAW, 38 M.R.S.A. §§ 347-A, 348 AND 349 (see attached), AND/OR OTHER APPLICABLE REGULATIONS AND STATUTES.

**SUMMARY OF VIOLATIONS:**  
 Failure to file a plan with the Maine Department of Environmental Protection by March 1, 2005 for the collection and recycling or reuse of computer monitors and televisions as required by 38 M.R.S.A. §1310.6.A

**REQUIRED CORRECTIVE ACTIONS:**  
 Within five (5) days of receiving this NOV, contact the case manager listed below, and file a plan for the collection and recycling or reuse of computer monitors and televisions in conformance with the requirements of 38 M.R.S.A. §1610.6.A(4) no later than April 8, 2005.

A FAILURE TO CONTACT THE CASE MANAGER WITHIN FIVE (5) DAYS OF RECEIVING THIS NOV IS CONSIDERED AN AGGRAVATING FACTOR IN SETTING ANY MONETARY PENALTY NECESSARY TO RESOLVE THIS MATTER.

ENFORCEMENT CASE MANAGER:  
 Carole Cifrino  
 Direct-line: (207) 287-7720

<b>DISTRIBUTION:</b>	Case File	Enforcement File	X	AG's Office	EPA	Other: _____
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§ 342. **Commissioner, duties.** The Commissioner of Environmental Protection shall have the following duties:

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7. **Representation in court.** The commissioner may authorize licensed Maine attorneys with active bar status who are employees of the department and certified employees of the department to serve civil process and represent the department in District Court in the prosecution of violations of those laws enforced by the department and set forth in Title 4, section 152, subsection 6-A. Licensed Maine attorneys do not need to file the certification referred to in the Maine Rules of Civil Procedure, Rule 80K(h). Certification of nonattorney employees must be provided as under Title 30-A, section 4453.

§ 347-A. **Violations**

1. **General procedures.** This subsection sets forth procedures for enforcement actions.

A. Whenever it appears to the commissioner, after investigation, that there is or has been a violation of this Title, of rules adopted under this Title or of the terms or conditions of a license, permit or order issued by the board or the commissioner, the commissioner may initiate an enforcement action by taking one or more of the following steps:

- (1) Resolving the violation through an administrative consent agreement pursuant to subsection 4, signed by the violator and approved by the board and the Attorney General;
- (2) Referring the violation to the Attorney General for civil or criminal prosecution;
- (3) Scheduling and holding an enforcement hearing on the alleged violation pursuant to subsection 2; or
- (4) With the prior approval of the Attorney General, initiating a civil action pursuant to section 342, subsection 7 and the Maine Rules of Civil Procedure, Rule 3.

B. Before initiating a civil enforcement action pursuant to paragraph A, the commissioner shall issue a notice of violation to the person or persons the commissioner considers likely to be responsible for the alleged violation or violations. The notice of violation must describe the alleged violation or violations, to the extent then known by the commissioner; cite the applicable law, rule and term or condition of the license, permit or order alleged to have been violated; and provide time periods for the alleged violator to take necessary corrective action and to respond to the notice. For violations the commissioner finds to be minor, the notice may state that further enforcement action will not be pursued if compliance is achieved within the time period specified in the notice or under other appropriate circumstances. The commissioner is not required to issue a notice of violation before issuing an emergency order pursuant to subsection 3 or other applicable provision of this Title; nor is the commissioner required to issue a notice of violation before referring an alleged violation to the Attorney General for criminal prosecution or in a matter requiring immediate enforcement action.

2. **Hearings.** The commissioner shall give at least 30 days' written notice to the alleged violator of the date, time and place of any hearing held pursuant to subsection 1, paragraph C. The notice shall specify the act or omission which is claimed to be in violation of law or regulation.

Any hearing conducted under the authority of this subsection shall be in accordance with the provisions of the Maine Administrative Procedure Act, Title 5, chapter 375, subchapter IV. At the hearing, the alleged violator may appear in person or by attorney and answer the allegations of violation and file a statement of the facts, including the methods, practices and procedures, if any, adopted or used by that person to comply with this chapter and present such evidence as may be pertinent and relevant to the alleged violation.

After hearing, or in the event of a failure of the alleged violator to appear on the date set for a hearing, the commissioner shall, as soon as practicable, make findings of fact based on the record and, if the commissioner finds that a violation exists, shall issue an order aimed at ending the violation. The person to whom an order is directed shall immediately comply with the terms of that order.

3. **Emergency orders.** Whenever it appears to the commissioner, after investigation, that there is a violation of the laws or regulations which the department administers or of the terms or conditions of any of the department's orders, which is creating or is likely to create a substantial and immediate danger to public health or safety or to the environment, the commissioner may order the person or persons causing or contributing to the hazard to immediately take such actions as are necessary to reduce or alleviate the danger. Service of a copy of the commissioner's findings and order issued under this emergency procedure shall be made by the sheriff or deputy sheriff within the county where the person to whom the order is directed operates or resides. In the event that the persons are so numerous that the specified method of service is a practical impossibility or the commissioner is unable to identify the person or persons causing or contributing to the hazard, the commissioner shall make the order known through prominent publication or announcement in news media serving the affected area.

The person to whom the order is directed shall comply with the order immediately. The order may not be appealed to the Superior Court in the manner provided in section 346, but the person may apply to the board for a hearing on the order which shall be held by the board within 48 hours after receipt of application. Within 7 days after the hearing, the board shall make findings of fact and continue, revoke or modify the order. The decision of the board may be appealed to the Superior Court in the manner provided by section 346.

4. **Administrative consent agreements.** Following issuance of a notice of violation pursuant to subsection 1 and after receipt of the alleged violator's response to that notice or expiration of the time period specified in the notice for a response, in situations

determined by the commissioner appropriate for further enforcement action, the commissioner may send a proposed administrative consent agreement to the alleged violator or violators.

- A. Except as otherwise expressly agreed to by the Attorney General, all proposed administrative consent agreements must be reviewed and approved by the Department of the Attorney General before being sent to the alleged violator.
  - B. All proposed administrative consent agreements sent to the alleged violator must be accompanied by written correspondence from the department, in language reasonably understandable to a citizen, explaining the alleged violator's rights and responsibilities with respect to the proposed administrative consent agreement. The correspondence must include an explanation of the factors considered by the commissioner in determining the proposed civil penalty, a statement indicating that the administrative consent agreement process is a voluntary mechanism for resolving enforcement matters without the need for litigation and an explanation of the department's procedures for handling administrative consent agreements. The correspondence must also specify a reasonable time period for the alleged violator to respond to the proposed administrative consent agreement and offer the opportunity for a meeting with department staff to discuss the proposed agreement. Consent agreements shall, to the greatest extent possible, clearly set forth all the specific requirements or conditions with which the alleged violator must comply.
  - C. After a proposed administrative consent agreement has been sent to the alleged violator, the commissioner may revise and resubmit the agreement if further circumstances become known to the commissioner, including information provided by the alleged violator, that justify a revision.
  - D. The public may make written comments to the board at the board's discretion on an administrative consent agreement entered into by the commissioner and approved by the board.
  - E. When the department and the alleged violator can not agree to the terms of a consent agreement and the department elects to bring an enforcement action in District Court pursuant to section 342, subsection 7, the District Court shall refer the parties to mediation if either party requests mediation at or before the time the alleged violator appears to answer the department's complaint. The parties must meet with a mediator appointed by the Court Alternative Dispute Resolution Service created in Title 4, section 18-B at least once and try in good faith to reach an agreement. After the first meeting, mediation must end at the request of either party. If the parties have been referred to mediation, the action may not be removed to Superior Court until after mediation has occurred.
5. **Enforcement.** All orders of the department may be enforced by the Attorney General. If any order of the department is not complied with, the commissioner shall immediately notify the Attorney General.
6. **Public participation in enforcement settlements.** After the State receives authority to grant permits under the Federal Water Pollution Control Act, 33 United States Code, 1982, Section 1251 et seq., as amended, in any civil enforcement action brought under this section, section 348 or 349 involving discharges regulated by the Federal Water Pollution Control Act, the department shall publish notice of and provide at least 30 days for public comment on any proposed settlement as follows.
- A. In the case of administrative consent agreements, the proposed agreement must be filed with the board and notice of the filing must be placed on the board's agenda at least 30 days before the board takes any action on the agreement. The Attorney General and the department shall receive and consider, and the department shall provide the board with summaries of, any written comments relating to the proposed agreement.
  - B. In the case of judicial enforcement, each proposed judgment by consent must be filed with the court at least 30 days before the judgment is entered by the court. Prior to the entry of judgment, notices of the proposed judgment must be published in a newspaper having general circulation in the area in which the alleged violation occurred, and the Attorney General and the department shall receive and consider, and file with the court, any written comments relating to the proposed judgment.
  - C. The Attorney General shall reserve the right to withdraw or withhold its consent to the proposed judgment if the comments, views or allegations concerning the judgment disclose facts or considerations that indicate that the proposed judgment is inappropriate, improper or inadequate and oppose an attempt by any person to intervene in the action. When the public interest in this notification process is not compromised, the Attorney General may permit an exception to publication as set forth in this section in a specific case where extraordinary circumstances require a period shorter than 30 days or a notification procedure other than that set forth in this section.
7. **Landowner liability for actions of others.** An owner, lessee, manager, easement holder or occupant of premises is not subject to criminal sanctions or civil penalties or forfeitures for a violation of laws or rules enforced by the department or the board if that person provides substantial credible evidence that the violation was committed by another person other than a contractor, employee or agent of the owner, lessee, manager, easement holder or occupant. This subsection does not prevent the department, the board or a court from requiring an owner, lessee, manager, easement holder or occupant of premises to remediate or abate environmental hazards or damage or to reimburse the department for the cost of such remediation or abatement. An owner, lessee, manager, easement holder or occupant of premises is subject to criminal sanctions or civil penalties or forfeitures for failure to comply with a lawful administrative order or court order to remediate or abate environmental hazards or damage.
- A. The department shall investigate substantiated allegations by an owner, lessee, manager, easement holder or occupant that the violation was caused by another person.

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**B.** If an owner, lessee, manager, easement holder or occupant is subjected to criminal sanctions or civil penalties or forfeitures, or if such a person is required to remediate or abate environmental hazards or damage as a result of violations by another person, the owner, lessee, manager, easement holder or occupant has a cause of action against the actual violator to recover all damages and costs, including attorney's fees, incurred in connection with the environmental damage, and all costs, including attorney's fees, incurred in bringing the action to recover.

**C.** This subsection does not apply to persons who are defined as "responsible parties" under chapter 3, subchapters II-A and II-B; chapter 13, subchapter II-A; or chapter 13-B.

**§ 347-C. Right of inspection and entry.** Employees and agents of the Department of Environmental Protection may enter any property at reasonable hours and enter any building with the consent of the property owner, occupant or agent, or pursuant to an administrative search warrant, in order to inspect the property or structure, take samples and conduct tests as appropriate to determine compliance with any laws administered by the department or the terms and conditions of any order, regulation, license, permit, approval or decision of the commissioner or of the board.

**§ 348. Judicial enforcement**

**1. General.** In the event of a violation of any provision of the laws administered by the department or of any order, regulation, license, permit, approval or decision of the board or commissioner or decree of the court, as the case may be, the Attorney General may institute injunction proceedings to enjoin any further violation thereof, a civil or criminal action or any appropriate combination thereof without recourse to any other provision of law administered by the department.

**2. Restoration.** The court may order restoration of any area affected by any action or inaction found to be in violation of any provision of law administered by the department or of any order, rule, regulation, license, permit, approval or decision of the board or commissioner or decree of the court, as the case may be, to its condition prior to the violation or as near thereto as may be possible. Where the court finds that the violation was willful, the court shall order restoration under this subsection unless the restoration will:

- A. Result in a threat or hazard to public health or safety;
- B. Result in substantial environmental damage; or
- C. Result in a substantial injustice.

**3. Injunction proceedings.** If the department finds that the discharge, emission or deposit of any materials into any waters, air or land of this State constitutes a substantial and immediate danger to the health, safety or general welfare of any person, persons or property the department shall forthwith request the Attorney General to initiate immediate injunction proceedings to prevent such discharge. The injunction proceedings may be instituted without recourse to the issuance of an order, as provided for in section 347-B.

**4. Settlement.** A person who has resolved that person's liability to the State in an administrative or judicially approved settlement and is implementing or has fully implemented that settlement pursuant to its terms is not liable for claims by other potentially liable persons regarding response actions, response costs or damages, including without limitation natural resource damages, addressed in the settlement. The settlement does not discharge any other potentially liable persons unless its terms so provide. The protection afforded by this subsection includes protection against contribution claims and all other types of claims under state law that may be asserted against the settling party for recovery of response costs or damages incurred or paid by another potentially liable person, if those actions, costs or damages are addressed in the settlement, but does not include protection against claims based on contractual indemnification or other express contractual agreements to pay the costs or damages. A potentially liable person who commences an action against a person who is protected from suits under this subsection is liable to the person against whom the claim is brought for all reasonable costs of defending against the claim, including all reasonable attorney's and expert witness fees. This section is not intended to create a right to contribution or other cause of action or to make a person liable to pay a portion of another person's response costs, damages or civil penalties.

**§ 349. Penalties**

**1. Criminal penalties.** Except as otherwise specifically provided, a person who intentionally, knowingly, recklessly or with criminal negligence violates a law administered by the department, including, without limitation, a violation of the terms or conditions of an order, rule, license, permit, approval or decision of the board or commissioner, or who disposes of more than 500 pounds or more than 100 cubic feet of litter for a commercial purpose, in violation of Title 17, section 2264-A, commits a Class E crime. Notwithstanding Title 17-A, section 1301, the fine for a violation of this subsection may not be less than \$2,500 and not more than \$25,000 for each day of the violation, except that the minimum amount for knowing violations is \$5,000 for each day of violation.

This subsection does not apply to actions subject to the criminal penalties set forth in section 1319-T.

**2. Civil penalties.** Except as otherwise specifically provided, a person who violates a law administered by the department, including, without limitation, a violation of the terms or conditions of an order, rule, license, permit, approval or decision of the board or commissioner, or who disposes of more than 500 pounds or more than 100 cubic feet of litter for a commercial purpose, in

<b>DISTRIBUTION:</b>	Case File	Enforcement File	X	AG's Office	EPA	Other: _____
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violation of Title 17, section 2265-A, is subject to a civil penalty, payable to the State, of not less than \$100 and not more than \$10,000 for each day of that violation or, if the violation relates to hazardous waste, of not more than \$25,000 for each day of the violation. This penalty is recoverable in a civil action.

**2-A. Supplemental environmental projects.** In settling a civil enforcement action for any violation of any of the provision of the laws administered by the department, including, without limitation, a violation of the terms or conditions of any order, rule, license, permit, approval or decision of the board or commissioner, the parties may agree to a supplemental environmental project that mitigates not more than 80% of the assessed penalty. "Supplemental environmental project" means an environmentally beneficial project primarily benefiting public health or the environment that a violator is not otherwise required or likely to perform.

A. An eligible supplemental environmental project is limited to the following categories:

- (1) Pollution prevention projects that eliminate all or a significant portion of pollutants at the point of generation;
- (2) Pollution reduction projects that significantly decrease the release of pollutants into a waste stream at the point of discharge to a point significantly beyond levels required for compliance;
- (3) Environmental enhancement projects in the same ecosystem or geographic area of the violation that significantly improve an area beyond what is required to remediate any damage caused by the violation that is the subject of the enforcement action;
- (4) Environmental awareness projects substantially related to the violation that provides training, publications or technical support to members of the public regulated by the department;
- (5) Scientific research and data collection projects that advance the scientific basis on which regulatory decisions are made;
- (6) Emergency planning and preparedness projects that assist state and local emergency response and planning entities in preparing or responding to emergencies;
- (7) Public health projects that provide a direct and measurable benefit to public health.

B. Supplemental environmental projects may not be used for the following situations:

- (1) Repeat violations of the same or substantially similar law administered by the department by the same person;
- (2) When a project is required by law;
- (3) If the violator had previously planned and budgeted for the project;
- (4) To offset any calculable economic benefit of noncompliance;
- (5) If the violation is the result of reckless or intentional conduct; or
- (6) If the project primarily benefits the violator.

Any settlement that includes a supplemental environmental project must provide that expenditures are not tax deductible and are ineligible for certification as tax exempt pollution control facilities pursuant to Title 36, chapters 105 and 211.

**3. Falsification and tampering.** A person may not knowingly:

- A. Make a false statement, representation or certification in an application, record, report, plan or other document filed or required to be maintained by any law administered by the department or by any order, rule, license, permit, approval or decision of the board or commissioner;
- B. Tamper with or render inaccurate a monitoring device or method required by any law or by any order, rule, license, permit, approval or decision of the board or commissioner; or
- C. Fail to comply with an information submittal required by the commissioner pursuant to section 568, subsection 3 or section 1364, subsection 3.

**4. Violations. (repealed)**

**5. Considerations.** In setting a penalty, the court shall consider, but shall not be limited to, the following:

- A. Prior violations by the same party;
- B. The degree of environmental damage that cannot be abated or corrected;
- C. The extent to which the violation continued following an order of the commissioner or board to correct it; and
- D. The importance of setting a civil penalty substantial enough to deter others from similar violations.

**6. Maximum civil penalty.** The maximum civil penalty may exceed \$10,000 for each day of that violation, but shall not exceed \$25,000 for each day of the violation, when it can be shown that there has been a previous violation of the same law by the same party within the 5 preceding years.

<b>DISTRIBUTION:</b>	Case File	Enforcement File	X	AG's Office	EPA	Other: _____
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7. **Notification.** The commissioner shall notify all newspapers of general circulation in the State of all administrative consent agreements, court-ordered consent decrees and adjudicated violations involving laws administered by the department.
8. **Economic benefit.** If the economic benefit resulting from the violation exceeds the applicable penalties under subsection 2, the maximum civil penalties may be increased for each day of the violation. The maximum civil penalty may not exceed an amount equal to twice the economic benefit resulting from the violation. The court shall consider as economic benefit, without limitation, the costs avoided or enhanced value accrued at the time of the violation by the violator not complying with the applicable legal requirements.
9. **Unavoidable malfunctions.** The following considerations apply to violations resulting from unavoidable malfunctions.
- A. The commissioner may exempt from civil penalty an air emission in excess of license limitations if the emission occurs during start-up or shutdown or results exclusively from an unavoidable malfunction entirely beyond the control of the licensee and the licensee has taken all reasonable steps to minimize or prevent any emission and takes corrective action as soon as possible. There may be no exemption if the malfunction is caused, entirely or in part, by poor maintenance, careless operation, poor design or any other reasonably preventable condition or preventable equipment breakdown. The burden of proof is on the licensee seeking the exemption under this subsection. In the event of an unavoidable malfunction, the licensee must notify the commissioner in writing within 48 hours and submit a written report, together with any exemption requests, to the department on a quarterly basis.
- B. An affirmative defense is established for a wastewater discharge in excess of license limitations if the discharge results exclusively from unintentional and temporary noncompliance with technology-based limitations because of factors entirely beyond the reasonable control of the licensee and the licensee has taken all reasonable steps to minimize or prevent any discharge and takes corrective action as soon as possible. There is not an affirmative defense if the malfunction is caused, entirely or in part, by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance or careless or improper operation. The burden of proof is on the licensee seeking the affirmative defense under this subsection. In the event of an unavoidable malfunction, the licensee must notify the commissioner orally within 24 hours, and in writing within 5 days.

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<b>DISTRIBUTION:</b>	Case File	Enforcement File	X	AG's Office	EPA	Other: _____
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**Appendix C**  
**Cost calculations for possible abandoned wastes**

The following calculations are based on the information that the Department has to date on brands identified in e-waste collection event is Florida and Minnesota, the estimated number of units expected in the Maine residential waste stream and the cost per unit based on data generated during 2002 by EPA and 2003 in Florida (see Appendix L of the Maine DEP 2004 e-waste report) or the cost per unit currently offered by a sample consolidator to Maine municipalities (\$0.18 per pound for mixed e-waste, equivalent to \$9.00 per unit for televisions and \$5.40 per unit for computer monitors).

Assume no additional manufacturers come into compliance and no additional brands are identified as orphans (assuming 3% televisions orphaned):

Estimated # waste televisions = 40,000 units  
 Estimated % TVs abandoned = 19%  
 Recycling cost per unit from receipt at consolidation = \$13.75/unit (2003 cost)  
 $40,000 \text{ units} \times 0.19 \times \$13.75/\text{unit} = \$104,500 \text{ for TVs}$   
 Recycling cost per unit from receipt at consolidation = \$9.00/unit (current sample cost)  
 $40,000 \text{ units} \times 0.19 \times \$9.00/\text{unit} = \$68,400 \text{ for TVs}$   
 Estimated # waste computer monitors = 40,000  
 Estimated % computer monitors abandoned = 29%  
 Recycling cost per monitor from receipt at consolidation = \$8.65/unit  
 $40,000 \times 0.29 \times \$8.65/\text{unit} = \$100,340 \text{ for computer monitors}$   
 Recycling cost per monitor from receipt at consolidation = \$5.40/unit (current sample cost)  
 $40,000 \times 0.29 \times \$5.40/\text{unit} = \$62,640 \text{ for computer monitors}$

Total maximum annual cost of managing abandoned waste =  
 \$204,840 (2003 costs) or \$131,040 (current sample cost)

Assume that all contacted manufacturers come into compliance and all the remaining brands that have not yet been identified as orphans are actually abandoned waste:

Estimated # waste televisions = 40,000 units  
 Estimated % TVs abandoned = 5%  
 Recycling cost per unit from receipt at consolidation = \$13.75/unit  
 $40,000 \text{ units} \times 0.05 \times \$13.75/\text{unit} = \$27,500 \text{ for TVs}$   
 Recycling cost per unit from receipt at consolidation = \$9.00/unit (current sample cost)  
 $40,000 \text{ units} \times 0.05 \times \$9.00/\text{unit} = \$18,000 \text{ for TVs}$   
 Estimated # waste computer monitors = 40,000  
 Estimated % computer monitors abandoned = 11%  
 Recycling cost per monitor from receipt at consolidation = \$8.65/unit  
 $40,000 \times 0.11 \times \$8.65/\text{unit} = \$38,060 \text{ for computer monitors}$   
 Recycling cost per monitor from receipt at consolidation = \$5.40/unit (current sample cost)  
 $40,000 \times 0.11 \times \$5.40/\text{unit} = \$23,760 \text{ for computer monitors}$

Total estimated cost of managing abandoned waste =  
 \$65,560. (2003 costs) or \$41,760 (current sample cost)

## **Smart Production**

**Smart Production is the leadership-driven integration of business objectives and environmental objectives into an operation's essential purpose.** It looks at the production process as an **integrated system**: seeking, at the same time, both business and environmental innovations to gain competitive advantage. Environmental objectives are not an "add on" to the business purpose, but rather an essential part of it.

**S**mart Production looks to natural processes as a model for this integration, for natural processes are effective, self-renewing, and produce no waste that cannot be readily assimilated. It requires a long-term view. It is driven at the front end by business innovation, which may be supported and enabled by government incentives. It also needs to be supported by just, consistent and timely enforcement against those that do not follow the rules. In this way, the competitive advantage accrues to those out in front, rather than those who are lagging behind, and environmental goals and forces of the market place can achieve some synergies. Smart Production recognizes that on a global scale, systems have to work both ecologically and economically.

**F**rom a systems standpoint there are three components: inputs, products, and byproducts. It seeks to use inputs that are renewable, recycled, non-toxic. (Some companies have taken the approach of running their inputs through an "intellectual filter," identifying which substances are toxic, hazardous, carcinogenic, mutagenic, etc., and seeking to eliminate as many of these inputs as possible.) In terms of products, Smart Production looks at the entire life cycle of a product to optimize its life, utility, and/or value, with a high degree of reuse capability. And finally, it seeks ultimately to eliminate discharges of pollutants to air, land and water.

**I**n many respects, Smart Production is a natural outgrowth of the evolution of environmental policy and programs – of regulatory processes, pollution prevention, and education and outreach. These approaches have accomplished a lot over the past three decades. But we know this is not enough. We continue to consume natural resources introduce dangerous toxins into our air, water, and soil that the planet cannot sustain. We now know that even tiny amounts of some substances can have disastrous effects on biological systems, and the effects of many other substances have been inadequately defined, if at all.

**W**e need to figure out how to *redesign* our production processes, to eliminate waste and restore the environment, while simultaneously increasing the wealth necessary to support human systems. Some companies have begun to figure out how to do this. Globalization of the economy and the explosion of information technology present opportunities to make quantum leaps in our efforts to renew and sustain the planet. We need to give a lot of thought to what the role of government should be to support and enable this process.

**T**o make the adoption of these principles universal will take innovation, driven and supported by the combined pressures of market demand and well-designed governmental standards. These in turn must be fueled by the expression of strong societal values. This puts a responsibility back on each one of us as citizens: our purchasing and lifestyle choices, our participation in the democratic process, and our self-education.

Mr. GILLMOR. Thank you very much.  
And we will go to Rosalie Mule of the California Integrated Waste Management Board.

**STATEMENT OF HON. ROSALIE MULE**

Ms. MULE. Thank you, Mr. Chairman and Ranking Member Solis, for inviting me here today to testify on this important issue of e-recycling. And I do appreciate the opportunity to be here before this subcommittee.

I am a member of the Integrated Waste Management Board, and I am here today to discuss California's e-recycling program. I will try to be as brief as I can in my remarks, and answer—

Mr. GILLMOR. Before you get started, so that I don't have to interrupt you in the middle, it appears we are going to have to go vote, and then we will come right back.

Ms. MULE. Vote? Okay. Thank you.

Mr. GILLMOR. Well, I was looking at the Clerk down at the desk. He was making motions like we are going to vote. Oh, they passed another amendment. Nevermind.

Ms. MULE. Okay.

Mr. GILLMOR. Go ahead.

Ms. MULE. In 2001, California clarified that cathode ray tubes are presumed to be hazardous waste and could not be disposed of in landfills. In a survey commissioned by the Integrated Waste Management Board, it was estimated that more than 6 million old TVs, computer monitors, and other electronic devices were being stockpiled in California homes alone. This created a management and disposal issue that had to be addressed.

In response to this dilemma, the Integrated Waste Board, as well as other State agencies, local jurisdictions, industry representatives, environmental groups, and other stakeholders worked at various levels to seek a solution. Many options and scenarios were explored, including those discussed at the national level. In 2003, the California State legislature passed Senate Bill 20, the Electronic Waste Recycling Act. The first of its kind in the Nation, this law established a funding mechanism to provide proper end-of-life management for certain electronic products from all consumers, including households, businesses, and schools.

The goal was to involve all stakeholders, including industry, State and local government, and recyclers in the system to remove the stockpiles and establish an infrastructure, which would provide a sustainable, convenient management option for these items. The program has flexibility to add and remove electronic products to keep up with the rapid growth and change inherent in this industry. It also has provisions to address both the fee paid by consumers as well as the payments made to collectors and recyclers to account for fund condition and recycling markets.

At the State level, the program is a cooperative effort between the Waste Board, the California Department of Toxic Substances Control, and the State Board of Equalization. In short, the Act calls for a \$6, \$8, or \$10 fee paid by consumers of certain covered electronic devices at the time of purchase. These funds are used to make payments to authorized collectors and recyclers of covered

electronic devices and reimburse the net cost of proper material management.

In the field, the system, which is truly a partnership of stakeholders, provides for financial relief to local jurisdictions who have borne the burden of management before the passage of the Act, cost-free recycling opportunities for consumers throughout the State, reduction and prevention of illegal dumping, and elimination of the stockpile of waste monitors and TVs.

Our program began on January 1 of this year, and the implementation is proceeding as planned. Our projected revenue for the first year is \$60 million, and our first quarter revenues, which was through March 31, we collected \$15 million, which places us in line with our projections. We have received over \$5 million in recycling payment claims, and we have paid out over \$2.6 million to recyclers.

The first quarter saw more than 13 million pounds of materials recovered for recycling. These materials are being handled by 260 authorized collectors and 38 authorized recyclers. And they are authorized to ensure that they are handling these materials in the manner that is protective of public health and safety and the environment. The number of collectors and recyclers will be expected to grow as the program does increase.

California consumers are the other key component to our program. Thus, the Integrated Waste Board is tasked with providing outreach and education to California consumers to explain the need for the Act and the resulting fees that they are paying. To accomplish this, we established an e-recycle.org website. It provides a one-stop information portal on e-waste in general as well as specific provisions of the Act. And I believe that we will be sending you, if we haven't already, some information on our website.

Many different types of public education materials, including downloadable point-of-purchase ads and banners have been developed and are available for use by retailers as well as others to promote our program.

Governor Schwarzenegger is supportive of the full implementation of this groundbreaking legislation. He has reaffirmed this commitment in the State of the State Address as well as his continued support through the budget process. He has tasked us to build a program that is sustainable and workable for all involved and consistent with his charge to protect the public health and the environment while strengthening California's business economy.

With this support and the support of the stakeholders, we are confident that this program will achieve its goals.

With that, I would be happy to answer any questions.

Thank you.

[The prepared statement of Hon. Rosalie Mule follows:]

PREPARED STATEMENT OF ROSALIE MULE, BOARDMEMBER, CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

In 2002 it was determined that more than 6 million old TVs and computer monitors and other electronic devices were being stockpiled in California, in garages, storage and attics among some of the places. As with many other states, California prohibits the disposal of these items in landfills.

California, in response to the dilemma at hand, began working with the National Electronic Product Stewardship Initiative to help find solutions but was unfortunately, unable to reach agreement. Therefore, the California State Legislature

passed Senate Bill 20 which enacted The Electronic Waste Recycling Act of 2003 which established a funding mechanism to improve the proper end-of-life management of certain electronic products. The goal, to eliminate these items, determined to be hazardous to public health, from California's landfills and to provide a easy and convenient method of proper disposition.

The subsequent program is a cooperative effort between California Integrated Waste Management Board, the California Department of Toxic Substance Control and the Board of Equalization. SB 20 calls for a 6 dollar, 8 dollar, or 10 dollar fee, paid by consumers of covered electronic devices at the time of purchase. Payments are made to authorized handler/processors of covered electronic waste to reimburse the net cost of proper material management.

Combined, the collected revenue and the payment system are intended to:

- Provide financial relief to local jurisdictions
- Provide cost-free recycling opportunities for consumers throughout the state
- Reduce/prevent illegal dumping
- Reduce/eliminate the stockpile of waste monitors/TVs

The program began on January 1 of 2005, and we are now into our seventh month. By the end of the first quarter, California has approved over 260 collectors and more than 38 approved recyclers.

Our projected revenue for the first year was 60 million dollars. Our first quarter revenues, January to March, collected 15 million dollars which places us inline with our annual projections. Over 5 million dollars in recycling payments claims have been submitted to the State. We are awaiting second quarter revenues that are due from recyclers by July 31st and expect to be ahead of projected revenues as more collectors and recyclers are approved and retail sales increase.

The first quarter also saw more than 13 million pounds of materials have been recovered for recycling. Revenues generated are returned back to recyclers at 48 cents per pound collected in which recyclers payout collectors up to 20 cents per pound.

The CIWMB was tasked with providing outreach and education to California consumers and in doing so established, in partnership with DTSC and program stakeholders, eRecycle.org to provide a one-stop information portal on e-waste in general and provisions of the Act in particular. Public education materials including downloadable point of purchase ads and banners have been developed and are available too.

Governor Schwarzenegger and the State of California have taken a strong stand to eliminate these hazardous materials from our landfills to protect the health and safety of our residents and visitors. We have worked with manufactures and retailers to find a system that would best address the issue and find a solution.

We believe the program is successful in that we are accomplishing our goals of ridding landfills of hazardous materials and illegal dumping of electronic waste. Considering we have built a 60 million dollar enterprise from the ground up. Californians are accepting and adopting the new fee's as we have experience with programs such as fees on new tires and oil. While differences exist between that program and our e-waste program, the need for a clean and healthy environment continues to be a top priority for the people of California.

Mr. GILLMOR. Thank you very much.

Let me ask you, Commissioner Gallagher, you mentioned, as I understand that there is a fee on the manufacturers, and the people who collect the electronics and keep track of it by manufacturer, considering that manufacturers are outside of Maine or outside of the country, I mean, how has that worked in terms of a collection process? Is there a problem?

Ms. GALLAGHER. We actually have not had a problem with that. We have actually identified about 87 percent of the total manufacturers. And we also have what we would call abandoned waste, and under the abandoned waste proposal, the State of Maine would be authorized to go through our Attorney General's office after the individuals and the companies and propose at least treble damages.

Mr. GILLMOR. You know, if you are buying something that was made in Taiwan or China, I think it would be pretty hard to. Actually, if you figure out a way to deal with that, maybe you better

tell us, because some of the trade laws that Mr. Otter talked about earlier.

Let me ask the three of you if you are comfortable with the present involvement by the Federal Government either through voluntary programs or do you think that we at the Congressional level ought to be looking at doing something on a national basis that might help you?

Ms. MULE. I think I will go first.

Actually, in our law, it does provide provisions if, in fact, the national law does come into play, that we would join up with that law, under certain conditions. So we do have that option to work with you. There are definitely advantages, at least in my opinion, to having some type of a national law.

Ms. GALLAGHER. I would echo that. I do think that the Federal Government needs to provide standards for us and standards for the manufacturers. I think there has to be some criteria. What we are lacking, and what you have seen today, is a lack of consistency among the States on how to deal with these issues. And while Maine believes that our model is the best, we all do, it still would be beneficial to have some consistency among the States.

Mr. PHILBRICK. I agree.

Mr. GILLMOR. You know, the Council of State Governments has released draft legislation that would propose a regional electronic waste plan for several northeastern States, and I understand that there are legislators from Maine that are participating in those discussions. I guess how do you view that draft legislation? And can your State law and that coexist peacefully, I guess would be the question?

Ms. GALLAGHER. Well, certainly when Maine went about doing its e-waste law, based on what the stakeholders said and what some of the very progressive companies said, we elected not to use an advanced recovery fee, which is what the draft legislation uses. And we believe that we also needed to have some shared responsibility. In fact, our legislation stated that we had to have a shared responsibility. I guess that is a question that we will have to take a look at, given that we have gone through the process and what our State believes it should be doing.

Mr. GILLMOR. Well, yes, sir, Mr. Philbrick.

Mr. PHILBRICK. Although we are not participating in the State program that you have mentioned, my feeling about the regional approach is that it should be taken a look at. I think the key to all of this is that we should make it as convenient as possible to the consumer, a walk in the park, if you will, for them to be able to return these kinds of materials to the proper place where they can be disposed of and recovered properly. And anything that would, in any way, frustrate the consumer in terms of their ability to return these things to recycling is going to end up with these things over along the side of the road, in landfills where we would not want them, or otherwise they would just continue to buildup in their basements someplace. I think a regional approach might be effective economically. I think, as Ms. Gallagher has indicated, I think we need to take a look at that. There may be some cost benefit in doing that. I think the devil would be in the details, certainly.



Mr. GILLMOR. Let me follow-up here. I am running out of time, Mr. Philbrick, but you gave credit in your testimony to the EPA for giving Maryland a “shot in the arm” to begin the successful journey to the electronic waste law. And you singled out their eCycling Pilot Project. Could you explain what EPA did and why it was important?

Mr. PHILBRICK. I would love to, Mr. Chairman, but in 2001, I was not the Secretary of the Department of the Environment. But I will get back to you with an answer to that.

Mr. GILLMOR. Okay. Well, I would appreciate that.

Mr. PHILBRICK. Yes, sir. I will give you that.

Mr. GILLMOR. And my time has expired.

Let me go to the gentlelady from California.

Ms. SOLIS. Okay. Thank you, Mr. Chairman.

And I really am pleased to hear the testimony from our witnesses, and I wanted to go back to California. We heard earlier from the first panel from the Commerce representative that California somehow created legislation without really thoroughly speaking to all of the stakeholders regarding how fees were set. Could you address that and give us a little indication of how that all happened?

Ms. MULE. I think if you were to talk to the folks in California, they would beg to differ. I think there was an extensive stakeholder process throughout the development of this legislation. There was some legislation that was passed a year or 2 before, but it was vetoed by then-Governor Davis. So again, the stakeholders did work together to come up with what we now know as SB-20. So there was extensive stakeholder input into the development of the program that we now have in California.

Ms. SOLIS. How would California feel if, for example, the Federal Government EPA did set a standard and their standard was a lot less restrictive? What would California want?

Ms. MULE. Well, California, as you know, Congresswoman, sets their own standards. And there are a number of instances where, particularly in the solid waste field, where California’s standards are higher than that of Federal standards. And so I believe that the States would have the option to set higher standards and—

Ms. SOLIS. May not be penalized then, perhaps, or, you know, have that ability in terms of States’ rights to—

Ms. MULE. Right.

Ms. SOLIS. [continuing] be able to kind of direct what fits them best—

Ms. MULE. Right.

Ms. SOLIS. [continuing] because California, obviously, is very different from Maine—

Ms. MULE. Right.

Ms. SOLIS. [continuing] which is my next question.

Maine, how do you deal with imported products that come from, say, countries that don’t meet our current, say, standards that would be acceptable that would have lower levels of contaminants? How do you address that without getting caught up in trade agreements here that might cite some red flags or create some red flags?

Ms. GALLAGHER. Well, our law does not actually look at what is in the computer. It just requires recycling of any computer that we

have. And we have to have certification from the recyclers that, in fact, they are using strict environmental State and Federal regulations in the recycling of the matters.

Ms. SOLIS. So I am still not quite understanding. Is there, for example, few larger manufacturers that are out of, I guess, the United States that kind of meet the standards? And what happens if there is, say, Korean, just to throw that out, products that are brought in? I mean, how are you actually really able to get information that the equipment is not—

Ms. GALLAGHER. The manufacturer files a report with us. As a matter of fact, that is what we are doing right now is compiling all of the reports that have come into manufacturers. We took a look at several other States, Florida and Minnesota, that had done extensive work on finding manufacturers. And we used that basic list as a premise for ours and a baseline for ours. And so what we have done is identified the manufacturers and have written them and have gotten back their plan for what they plan to do with the e-waste.

Ms. SOLIS. And that is with manufacturers that are representatives of outside the United States?

Ms. GALLAGHER. That is correct.

Ms. SOLIS. Really? Wow. That is interesting.

My question next is for Mr. Philbrick. Thank you for coming and sharing what Maryland is doing.

How do you see our role in terms of what EPA can offer? You did make some mention earlier in your testimony regarding EPA's involvement, or somewhat involvement. Can you elaborate a little bit more on that? What would be ideal?

Mr. PHILBRICK. Thank you.

I think some consistency in defining exactly what is e-waste. What are we going to be tackling? Is it just televisions and radios? Or are we going to start talking about PDAs? Are we going to be talking about video cameras? What are we going to be dealing with here?

I think in order to be sure that waste is removed from the waste stream, I think we need to be talking about recycling and not just what do we do with waste. I think we need to get this stuff. There is value to be mined in this. I heard some testimony from, I guess, EPA that said it would cost \$15 per laptop with only \$2 worth of value. I asked my staff about that, and we are looking at somewhere between 10 to 23 cents a pound in cost, and we don't know, right now, what the value is to be mined from that. So I think those kinds of studies would be helpful on a national level so that we get a broad spectrum of what is going on here. Otherwise, I think we are going to end up with potentially 50 disparate things going on here, and that may be great for that State, but that may not be good for a region, or it may not be good for the whole country.

Ms. SOLIS. Thank you.

One last question just for all of you. You can think about this.

I am very concerned about recycled cell phones or software, whatever, not software in particular, but computers that are then resold to other countries where they still may have a high level of contaminants there and people who handle that as well as those

individuals that are on the receiving end in terms of recycling to being exposed to that material and how well we are actually providing assistance so that employees are aware and safety measures are put into place. And maybe that is something that you can respond to.

Mr. PHILBRICK. I have toured several what I will call recyclers within the State of Maryland and looked at how they handle this. On the one hand, it is great, because the people that they are using to do this, the people who aren't necessarily highly educated or whatever, you know, it is a very labor-intensive effort. But I wondered the same thing that you just asked. And that is I didn't see a whole lot of protection going on for these folks who were pulling these things apart, and I wondered if there is an accident, like if they break in two or they open something and we have got mercury running along the top, you know, so I think that that is something else that needs to be carefully evaluated. I don't know if that is EPA's responsibility or not, but it is something I think that we have to look at.

These operators are operating very cautiously. They are professional. They are doing the right thing, but I think there are a lack of standards, if you will, or a lack of process in how this stuff is supposed to be handled. And then where does it go? What are we doing with the things that they are collecting? My staff may know the answer to that. I don't personally know, but I could get something back to you on that as well.

Ms. SOLIS. If you could give us that information, I would greatly appreciate it.

Ms. MULE. I can forward that to you. The Department of Toxic Substance Control in California does have authorization. They do authorize the collectors and recyclers to ensure the very environmental protections that you are speaking of, and they do go out and conduct inspections and ensure that the workers are operating in a safe manner. So I will be happy to share all of that information with you and the committee.

Ms. GALLAGHER. Maine's recycling group and the consolidators receive a bid from the State, and so therefore, we have between five and ten consolidators. And those companies have to self-certify, plus they are inspected. And we can take enforcement against them.

Ms. SOLIS. Okay. Thank you.

Mr. GILLMOR. Thank you.

The gentlelady from California.

Ms. BONO. Thank you, Mr. Chairman.

And thank you all, again, so much for being here today.

Ms. Mule, one of the bigger challenges facing meaningful environment protection is that government set up taxes or other fees to generate revenue for a specific pollution problem, but then only spend a fraction of the raised revenue to address the problem. In your testimony, you say that we in California, our first quarter revenues were \$15 million, but our State only received \$5 million in recycling payment claims, roughly 33 percent payout of revenues. What is happening with that additional \$10 million for the first quarter? Where is that extra \$10 million? And this is going to be a problem in the future where in California we are so cash

strapped. Is this going to be a fund that is dipped into for other purposes?

Ms. MULE. That is an excellent question.

And as I mentioned, the program started January 1 of this year, so really we have completed just the first payment cycle of this program. And we were all wondering the same thing. You know, we had estimates of what we thought we would collect in terms of the fees, and we just weren't sure what the payment request would be. And what we are seeing, the trend in California, at least, is that when someone buys a new television, they don't necessarily get rid of their old one. They hold on to it. So it is not a one for one exchange there. And our law does have provisions where the Waste Board does review those fees on an annual basis, and we can adjust them accordingly, because if we are taking in more money than we need, you know, we don't want to do that, but we don't want to take in too little money at the same time. So the fees can and will be adjusted accordingly.

Ms. BONO. Thank you.

Ms. MULE. Thank you.

Ms. BONO. Also, I, like most Americans, have got an extra piece of electronics. The first place I go is to my local charity. And I understand they are, once again, getting back into the business of collecting and dealing with this. And I think that goes back to Mr. Philbrick's comment. Instead of calling this e-waste, if you call it e-scrap, I think there would be, perhaps, a different understanding of the problem. But are not-profits benefiting under the California law?

Ms. MULE. Yes, they are. Just to mention one off the top of my head, Goodwill is an authorized recycler and collector in certain areas of California, so yes. They are very actively involved in this program.

Ms. BONO. Thank you.

And then last, in the Washington Times article, I don't know how many of you have seen it, but I think maybe, perhaps, Mr. Philbrick might have seen it close by, but the writer closes with a comment about Congress has a responsibility to uncover the facts and not to look for baseless assumptions and misinformations spread by agenda-driven pressure groups, which of course it goes through everything we do in Congress. But do you believe the policies that each of your States have adopted have been driven by baseless assumptions or misinformation spread by agenda-driven pressure groups?

Mr. PHILBRICK. Thank you.

Not at all. As I had indicated in my testimony, last fall, based on an earlier piece of legislation, the Governor populated a work group study with industry, with consumers, with local government, and a whole host of stakeholders to study the problem. And in fact, at the end of the day, when that committee got done, there was not consensus. And so we advised that we should not have legislation. But some of the legislators who served on that work group thought otherwise and put legislation in. And all of those stakeholders worked very closely together in this to craft the legislation, the pilot program that Maryland has right now.

So I would like to say that it has broad input and representation. But again, the proof is in the pudding, and we are just now beginning. We are beginning to draft regulations which we hope will be in place by October the 1st, and we are going to have to see how it goes. That is why the report is due in 2008.

Ms. BONO. Thank you.

Do the other two care to—you both shook your head no, but I know the stenographer is probably looking for an audible answer, if you could.

Ms. GALLAGHER. No.

Ms. BONO. Thank you.

Ms. MULE. No, not at all. As a matter of fact, the Waste Board did commission a survey where that is how we found out that there were 6 million electronic devices in people's homes, just in people's homes alone.

Ms. BONO. Well, thank you.

And Mr. Chairman, I also just want to close and qualify the Working Group's intentions are we are not behind any one bill. We just really wanted to bring the problem to Congress and raise the awareness and certainly think about all of these answers that everybody has talked about and move forward.

So I think we have heard a lot of great ideas and I look forward to working with all of you moving forward.

And certainly your leadership, Mr. Chairman, is greatly appreciated.

And I yield back.

Mr. GILLMOR. Thank you very much.

And the chair recognizes the gentleman from Maine.

Mr. ALLEN. Thank you, Mr. Chairman.

Welcome to all of you. Thank you, particularly, Commissioner Gallagher, for being here.

Mr. Chairman, Maine is a small State, but we are very proud that in a series of areas, whether it is education, healthcare, or environmental protection, we feel like we are on the cutting edge, and your presence here is affirmation of what you have been able to achieve in your position and what Maine has done in the past.

Some of the prior questions have a lot to do with it, and how can this possibly work. And I wanted to give you an example, on a larger scale, but not a large scale, from Europe. And the size of the European market is really pretty interesting. They have been able to dictate the components of products made around the world, because they have a unified market. But back in 2001, the Dutch by themselves decided that they simply weren't going to have cadmium in higher levels than those permitted by local law. And they turned away a whole shipment of Sony Playstations because the video game's cadmium was too high under their law. Sony lost about \$100 million worth of sales, but today, all of its Playstations have a lot less cadmium, and they are back in the Dutch market.

I think I heard you, Commissioner Gallagher, this is really a question, it seems to me that the Maine system is working because it turns out that manufacturers who want to do business in Maine or continuing to do business in Maine are readily identifiable and can be located and that the program, as a whole, is not so burdensome to them that they won't cooperate with the State government

and with municipal governments or with consolidators when that is appropriate. Is that a fair statement?

Ms. GALLAGHER. That is a fair statement.

We had initial legislation in 2004. We had to get some clarifying legislation this past year, and all of the major manufacturers came and supported the bill.

Mr. ALLEN. Maine is still a very small State.

Ms. GALLAGHER. We think big, though.

Mr. ALLEN. We do think big. But are there particular challenges, any particular challenges in trying to enforce this law, because we are only 1.3 million people?

Ms. GALLAGHER. I think the challenge comes from companies wanting to have some consistency and perhaps wanting to not take part. And so they look at Maine and say, "You are not a very big market, so we are not sure we have to play." But I think once we get into regional organizations and also if we are the first to jump off the cliff, then I think there is kind of a notice to them. I believe that probably the biggest problem that we will have will be on establishing, kind of, orphaned and abandoned waste.

Mr. ALLEN. Yes. In your testimony, you say that a program should not be more costly for the consumer. And do you think Maine's approach, which holds manufacturers responsible for their products from, as you said, cradle to cradle, will cost less for consumers than an up-front fee, and if so, why?

Ms. GALLAGHER. I believe that it is much less than an advanced recovery fee, and one of the reasons is that several progressive companies, like HP, are already taking back a lot of the computers and CRTs. And so for them, they have found that they wouldn't be doing it if it weren't economically viable. And so therefore, we have got a program in place and will shortly begin that program, which will have the consolidators getting a price per ton. But because we are collecting them not individually and it is not an individual consumer, there are economies of scale with that.

Mr. ALLEN. I see. When the bill was passed in the Maine legislature, some members of the legislature felt that this would actually create jobs in Maine, in addition to sort of diminishing the waste stream, but it would create jobs. Can you speak to that issue and how that has worked out?

Ms. GALLAGHER. With the consolidators coming on, it is several small businesses, and as you know, Congressman, Maine depends a lot on small businesses. And this will allow individuals and smaller companies to put in a bid and to compete for the five to ten different consolidators for the various e-waste coming in.

Mr. ALLEN. Okay. Good.

Thank you.

Mr. GILLMOR. I want to thank our panel for testifying. It was very helpful. And as we work through this process, we appreciate your contribution. I might ask if you would be willing to respond to written questions from members of the committee.

Ms. GALLAGHER. Yes.

Mr. GILLMOR. Thank you very much.

Ms. MULE. Thank you.

Mr. GILLMOR. And we stand adjourned.

[Whereupon, at 4:15 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

RESPONSE FOR THE RECORD BY BARRY BREEN, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY, TO QUESTIONS OF HON. HILDA SOLIS

*Question 1.* How do the 1999 National Safety Council Report facts and figures differ from EPA's 2001 and 2003 Municipal Solid Waste Report's facts and figures?

Answer: There are some important differences in the way that the electronics waste calculations were made in the National Safety Council (NSC) report, *Electronic Product Recovery and Recycling Baseline Report* (1999) and EPA's periodic reports entitled *Municipal Solid Waste In the United States* (hereafter referred to as the MSW Characterization Report).

The NSC report focused exclusively on discarded electronics. It used sales data from 1992 through 1998 and projected sales for 1999 through 2003 to predict the number of units that would become obsolete after their first use. At the time the NSC made their projections, computer sales were very high and therefore the sales projections in their analysis were much larger than the actual sales that took place in subsequent years.

The MSW Characterization Report is a report periodically issued by EPA that looks at the entire municipal solid waste stream. In 2001, EPA added a specific new category of consumer electronics to its usual methodology. In doing so, it examined actual sales data through 2001 and did not project sales. Another difference is that the NSC report reported information in terms of units, as was its normal approach with other wastes, while the MSW Characterization report reported consumer electronics in terms of tons of material.

Furthermore, the MSW Characterization Report developed estimates for several categories of consumer electronic products, including the information product category comprised of computers, printers, modems, word processors, fax machines, answering machines, telephones, and cell phones. The NSC report examined only personal computers (laptops, CPUs, and monitors).

Therefore the numbers from these two sources differ because: (1) the two studies are working with different timeframes, and the NSC sales projections were overestimates for the years in which data may overlap; (2) the NSC report reported information in terms of units and the MSW Characterization report reported numbers in terms of tons; and (3) the Characterization Report estimated figures for a broader range of products.

*Question 2:* Please provide information on the value of materials recovered from recycled electronics products.

Answer: According to the 2003 IAER Electronics Recycling Industry Report:

- Commodity (e.g., copper, aluminum, steel) recovery values range from \$1.50 to \$2.00
- Parts (e.g., printed circuit boards, connectors) recovery can be as high as \$100 for a relatively new machine to nearly \$0 for a machine more than 10 years old.
- Machine resale value varies greatly depending on the age and type of machine (laptops can have double the value of a desktop).

*Question 3:* What is EPA doing to get the recycling message out to minority and under-served communities?

Answer: On the subject of recycling in general, EPA is very active in working with minority and under-served communities to get the word out on recycling. Some examples include:

EPA has an active Hispanic program in the Office of Solid Waste (OSW). Nearly everything published by OSW is published in Spanish and English. (We are also beginning to publish selected documents in Chinese and Korean as well). EPA also supports and attends a number of Hispanic-oriented conferences throughout the year, namely LULAC and NABE and has assisted in the development of the Agency's Hispanic Portal. EPA is working with two Hispanic, woman-owned contractors to ensure that our outreach materials and efforts are appropriate and targeted for the Hispanic community. EPA's used oil campaign materials were the first of their kind; i.e., specifically designed for Hispanic owners and operators and employees of the automotive industry and the Hispanic general population. EPA aired a recycling PSA on Hispanic radio stations across the country that was narrated by the actor Erik Estrada.

EPA is in the planning stages of a major outreach event at Miami Dade College (Kendall Campus). Scheduled for November 2005, it will include a number of training workshops and interactive activities for all ages, focusing on solid waste management (reduce, reuse and recycle). EPA is also in the beginning stages of developing a household hazardous waste (HHW) campaign for the Hispanic community;

it will be field tested at a national conference in Tacoma, Washington in September 2005 and the final stages of developing an “English as a Second Language” curriculum based on the environment. This product will be launched at the international TSOL conference in March 2006. The Immigration and Naturalization Service (INS) has expressed an interest in supporting this effort.

EPA has also developed targeted recycling outreach materials for the African-American community, including radio PSA’s with Usher and other recording artists. We also have targeted outreach efforts for the “aging” population and have designed a number of outreach materials that focus on this population’s changing life styles and habits and their potential effects on the environment. We work with the Agency’s aging program on this initiative and also support and attend conferences specific to this audience (e.g., AARP and NCOA). Our EPA regional offices in California are also focusing on getting the recycling message out to Tribal governments and to the outer Pacific Islands, two underserved groups in EPA Region 9. EPA Region 9 has funded household hazardous waste collection programs on Tribal lands and a Regional Recycling Initiative for two outer Pacific Islands focused on scrap metals and plastic.

With respect to electronics, EPA is just starting a group to focus on increasing opportunities to reuse working electronics. This group will be partnering with non-profits such as the National Cristina Foundation and Compumentor who specialize in job training in underserved communities and in making available affordable used information technology equipment to help bridge the “digital divide”. The Federal Electronics Challenge is also encouraging federal facilities to use GSA’s “Computers for the Learning” program as a way to donate excess computers. This program makes an effort to provide computers for empowerment zones and enterprise communities.

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RESPONSE FOR THE RECORD BY BENJAMIN H. WU, DEPUTY UNDERSECRETARY, OFFICE OF TECHNOLOGY, DEPARTMENT OF COMMERCE

*The Honorable Paul E. Gillmor*

*Question 1.* Are you comfortable with the present involvement by the Federal government—either through voluntary programs or existing regulations—or do you think that Congress needs to rethink the role of the Federal government in this area?

Response. Congress has an opportunity to take on a leadership role that will benefit our nation’s technology competitiveness and benefit our environment. I believe that a national solution will require statutory and legislative initiatives; therefore, Congress must play a significant role in the e-waste debate and any actions taken. We stand ready to work with Congress to inform and help shape the debate towards a constructive resolution. If each state continues to develop a patchwork of legislation, industry will be overburdened. It is imperative that the federal government mobilize to fully consider options for the crafting of a national solution.

*Question 2.* Where do you think it makes the most sense to place the greater responsibilities in any electronic waste and recycling regime? Since individual persons have to make the choice to give up their unused electronic equipment, what responsibilities do you think they should bear? What role does public education have in this effort and have you seen any successes with public education efforts in these or other recycling programs?

Response. A consensus-based, equitable, fair, and balanced approach that is not overly burdensome is the ideal. Consumer awareness is certainly a key component. Without the consumer properly handling and disposing of e-waste, a national system will not flourish. There has been success in some voluntary programs. For example, HP and Office Depot ran a nationwide program in the summer of 2004 for seven weeks and consumer awareness was certainly a key to the success of this program. Consumers could drop off one piece of electronic equipment a day for free at an Office Depot for recycling by HP. Through this program HP received 10.2 million pounds or 425,000 items. However, other programs that placed a significant burden on consumers have not fared as well. For instance, HP and Dell customers may fill out a form online describing the product they wish to mail back and agree to pay a fee. The company sends packing materials and a label to the consumer and arranges for pick up from the residence. The volume of product collected in this program was dwarfed by the success of the HP and Office Depot program where consumers simply had to drop off e-waste for free.

*Question 3.* Some have argued that making products easier to recycle reduces the costs of recycling and ultimately makes these commodity products more affordable for using in future products. Manufacturers argue that cost internalization is the



only true incentive that effectively encourages design changes. If you believe this to be the case, how does an Advanced Recycling Fee (or ARF) or the registration fee, like in Maryland, encourage or promote manufacturers to design their products for recycling?

Response. A national plan should incentivize technology manufacturers to design products for ease of recycling and thereby reduce their costs. A system of shared responsibility is best to make sure each party has an incentive to properly dispose of the e-waste.

*Question 4.* As you know, our world is becoming a more global marketplace with goods and services easily moved among countries. In addition, many countries have varying standards concerning how these materials should be handled or disposed. What lessons have you learned from activities either in other states or countries about how our country can deal with this issue? What do we know about how these activities are affecting our own domestic manufacturing, retailing, and recycled products industry?

Response. Working collaboratively with and learning from foreign partners will be key in a successful e-waste policy. Similar and related efforts, such as the 3R's initiative (Reduce, Reuse, and Recycle) have proven that international collaboration is central, beneficial, and necessary. It is certainly true that materials can easily move across state and international borders, and therefore a policy one state or country makes will have effects on the surrounding area. Decisions such as classification of materials will also be important in determining how materials are treated across borders. E-waste can fall in an ambiguous middle ground. Some groups may reuse and remanufacture the e-waste, some may consider it normal waste, while others may consider it hazardous waste, with each group having disparate transportation regulations which could hamper a wide spread solution and disadvantage certain groups or areas. In addition, the regulations in one area can affect the competitiveness of companies forced to comply with regional rules as well as affect widespread manufacturing processes and therefore the types of products all markets receive.

What is important to remember is that we need to involve all groups in the decision making process. While Europe has acted on legislation and has a national e-waste policy in place we must be careful when adapting lessons learned in Europe to the American market, especially if we are adopting wholesale EU standards which did not have the benefit of U.S. input, notice, comment, and consideration.

*Question 5.* What work have you done with other international countries and stakeholders regarding electronic waste and recycling?

Response. We have touched upon the e-waste issue at the Tokyo April 2005 G8 Ministerial Conference on the 3R's initiative (Reduce, Reuse, and Recycle).

*Question 6.* Some of the State laws or bills put forward suggest the need for collectors and recyclers to be "certified" by a set of regulatory guidelines. Do you believe these regulations undermine the contracts that businesses currently enjoy? Do you believe these regulations unnecessarily burden the current commercial-to-commercial relationships that are governed by company due diligence and contractual obligations? Do you believe that this presents Commerce Clause issues about a restriction on the free and fair trade of these commodities?

Response. In establishing an e-waste policy, certain criteria must be met to ensure that companies are complying with required practices and operating on a level playing field. While ideally the private sector would be self-regulating, it may become necessary to have oversight into the recycling process to ensure certain standards are kept. The government should work with the industry to find a solution that ensures e-waste is handled properly without unnecessary burdens while allowing them to remain competitive in the global marketplace.

*Question 7.* I think you were quite kind in your assessment that "efforts to comfortably resolve the issue [electronic waste] by consensus with all stakeholders, while on-going, have had limited success. Could you please provide the Subcommittee with your own experiences about how difficult bridging the gap of agreement can be?

Response. I have had the opportunity to engage affected e-waste stakeholders on this issue over the past several years, coupled with the industry-led efforts and EPA's leadership; I recognize that consensus is being held up by each stakeholder's insistence on their parochial and preferred business model. The ability to craft a national solution lies in the leadership necessary to force a consensus among the stakeholders. Having Congress play a significant role in that regard is key.

*Question 8.* Obviously, you think there is an environmental issue here because you claimed: "Recycling is generally more expensive than disposal and recycling does not pay for itself. The costs of collecting and dismantling these products may exceed the material value of the recycled equipment because there is no efficient infrastructure for collecting discarded electronics, nor were these products originally

designed with recycling in mind.” Since this is the case, why is the Commerce Department trying to push a consensus plan on recycling of these materials?

Response. Electronics recycling is an issue that is only going to increase in significance in the coming years. A recent report from the International Association of Electronics Recyclers projects that given growth and obsolescence rates of the various categories of consumer electronics, approximately 3 billion units will be scrapped during the remainder of this decade. We are currently seeing the states take up this issue, and several have passed legislation or are on the cusp of doing so, thus it appears that without federal government action, it is inevitable that the states will legislate heavily in this area. A national solution is preferable for several reasons, including: the economies of scale and cost savings of having a larger national infrastructure; the benefit to companies to not be forced to comply with a patchwork of legislation; the inefficiency and waste of tax dollars in having this debate conducted hundreds of times at the state and local level; and the inability of all affected parties to have their interests represented if this debate is conducted hundreds of times at the state and local level. Therefore, the e-waste issue is important for the Department of Commerce not only because of the merits of the issue and the environmental impact of the growing volumes of electronic waste, but because state legislation is developing significant concerns affecting U.S. industry and competitiveness.

*Question 9.* I was wondering if I could get you to be a bit more specific about a few areas of the report that you mentioned in your testimony? Specifically, which products should be considered for a program, how should discarded products be collected and transported and by whom; how should new products should be classified and sold on the Internet without leaving brick-and-mortar retailers at a competitive disadvantage due to mandated fees; how should the problem of orphaned products be addressed; how can worker safety in the recycling process can be ensured; and how should consumers can be encouraged to actively participate in any established recycling program? Does the report specify potential, future Federal regulation of electronic waste?

Response. These are all the central questions that must be answered in establishing an electronics recycling program. Our soon-to-be-released report does outline the interest of the various parties in relation to all of these questions, and it provides the pros and cons of each solution that has been proposed by the major groups looking into this issue. The report does not specify potential future regulations, but seeks to educate lawmakers concerning the complexities of this issue and the interests of the stakeholders.

*Question 10* Your testimony notes that you have “have heard deep concerns from industry that solving this issue at the State level may become problematic because the cost of compliance with a patchwork of international and state laws can dramatically affect the manufacturing, marketing, and business models of the U.S. electronics sector and the transaction costs and business models of our retail sector.” This would lead to a national solution. Do industries arguments have merit, especially if you layer on any international obligations? Why?

Response. While international obligations remain an important factor in U.S. business models, the U.S. market remains the strongest in the world and having a single set of regulations to comply with will greatly ease the burden that electronics recycling legislation will put on industry. While the extent of the burden of a patchwork of legislation would have on industry is still unknown, reviewing the differences between the current laws and the diversity of proposed solutions elsewhere, it appears that the state solutions are divergent enough to create a major hindrance to U.S. competitiveness, and would hinder the sale of electronics in the United States. Compounding the difficulties facing companies are the layers of any international obligations, especially if their business models rely on international exports. Industry would then be faced with disparate domestic requirements coupled with even more disparate international requirements.

*Question 11.* Your testimony states that: “Over time, the NEPSI stakeholders realized that a national law might be necessary to force otherwise reluctant players to do their parts to make a national system work.” Do you agree with this assessment?

Response. Ideally, voluntary participation by all the stakeholders would be sufficient to solve the electronics waste issue. The incentives may not be in place, however, to make sure all responsible parties are willing to voluntarily participate in a solution. A national solution may be necessary to ensure that all key participants in the life of an electronic product, from the manufacturers to the retailers to the consumers to the recyclers, play an appropriate role in its proper disposal.

*Question 12.* You mentioned that the impact of governmental decisions on electronics recycling can have far-ranging implications, both environmental and on the

health of U.S. businesses and their ability to compete in the global marketplace. Could you please discuss the importance the European Union's directives on electronic waste and how they operate? In your opinion, what does WEEE and RoHS mean for the U.S. electronics manufacturers and consumers and what impact they will have on our country and its trade balance? I am especially interested in your perspective about certain states adopting parts of these other country's regulatory regimes while some states do not.

Response. While the U.S. can benefit from the work done with WEEE and RoHS in Europe, it is important that we create our own standards in the U.S. and involve the U.S. stakeholders in the process of creating these regulations. It is troubling that states would wholesale adopt European standards, which U.S. industry have not had a chance to be an active member of its consideration and adoption. When states endorse adopt international standards which are adopted without active U.S. participation, it becomes very problematic.

*Question 13.* Subtitle E of the Solid Waste Disposal Act (42 U.S.C. 6951 et. seq.) specifies the "Duties of the Secretary of Commerce in Resource and Recovery". Is the Commerce Department using these authorities to compile its data on electronic waste? If not, which statute is the Department using to obtain this data?

Response. EPA is the agency which collects information and data on electronic waste.

*Question 14.* Is the Commerce Department tracking other recycling data, not related specifically to electronic waste, under Subtitle E of the Solid Waste Disposal Act or another Federal statute? If so, what?

Response. No, not to my understanding.

*The Honorable Charles F. Bass*

*Question 1.* In talking with stakeholders in my state of New Hampshire, one concern is in regards to importers and their obligation to our e-waste. Some have suggested a possible "dock tax" collected by the federal government on units entering the US for recycle programs. Could you talk about the feasibility of such a program and any problems with such a program under any of our existing trade agreements?

Response. The question of a balance of equities, especially those international companies which export to the U.S. may not be held to the same requirements as U.S.-based companies is a valid issue. A so-called "dock tax" could have repercussions for trade and may be problematic if it is considered a barrier to trade. Additionally, there would be a logistics question regarding the tax requirements and who would be subject to its implementation.

*Question 2.* Could you expand on the obstacles to interstate commerce that could possibly arise if the federal government does not implement a national program and allows each state to create their own standards? What affect would this have on the industry and the ability for consumers to have access to products?

Response. Companies that have to conform to a number of disparate state regulations would unduly burden the ability of that company to effectively engage in interstate commerce. The currently established business models for manufacturing, distribution, and marketing would have to be entirely revisited. These disruptions would have great adverse impacts on a U.S. technology company's ability to conduct interstate commerce.

*Question 3.* What barriers to interstate commerce do you see if individual states are allowed to implement their own programs of charging a fee at the point of sale? Do you see any barriers with sales over the Internet? Additionally, could you discuss the feasibility with such a program due to the fact that many electronic products are bought in one state and disposed of in another locality?

Response. The effects of a patchwork of legislation could have a significant effect on interstate commerce, especially near the state borders. For instance, in the DC metro area, if Maryland passed a state law that included an ARF similar to California's state law, consumers could easily go to the District or Virginia to purchase electronic goods and avoid the ARF, which could have had an immediate and significant effect on retailers in Southern Maryland. Additionally, if disposal requirements are eased in one state, they will likely become flooded with electronic waste from neighboring states with stricter legislation.

If each state decides to come up with their own solution, the state will have an incentive to legislate not only towards the best solution for all affected parties, but also may consider the affects on interstate commerce which could skew the decision making process. Thus the affect that interstate commerce could have on an individual state's legislative considerations speaks towards the need for a national solution. Internet sales will also need to be addressed and ensure that these retailers operate on a level playing field.

*Question 4.* From the Department of Commerce's standpoint, do you see any problems with implementing a national program in relation to any of our existing international agreements or treaties concerning trade or foreign waste?

Response. We need to be mindful of our international agreements and treaties but I do not believe there are any current impediments towards the development of a national solution.

*Question 5.* What difficulties would arise by implementing a program that focuses on manufacturers' responsibility with foreign companies that are not located in the United States? How would we ensure these companies accept their responsibility and that they are properly handling their electronic waste? For example, I would especially like you to address a case in which a company accepts their end-of-life product and exports it to another country where there are no safeguards to ensure that the hazardous materials are being handled properly.

Response. Any electronics waste policy will have to be coupled with agreements with any foreign entity that may be involved in disposing of electronic waste. We will have to establish a mechanism to ensure that all parties are complying with our regulations. We should work with the recycling industry to develop the best means to accomplish this oversight and regulation that will ensure all recyclers are operating on a level playing field in competing for the business that will be generated by national electronics recycling legislation.

*The Honorable Hilda L. Solis*

*Question 1.* I understand that the Department of Commerce will be submitting to Congress an electronics recycling report that is based on meetings with a group of stakeholders. There is a diverse group of stakeholders interested in this issue—from state and local government agencies, manufacturers, retailers, recyclers, environmental organizations to name a few. Please provide detailed information on which stakeholders were involved with the Department of Commerce and how they were chosen? Did all stakeholders participate? What was the process for the stakeholder involvement? Was this process open to the public?

*Question 2.* Can you also provide more information about the Roundtable meeting that Department of Commerce held September 21, 2004 on E-waste?

Response. On September 21, 2004, the Department of Commerce's Technology Administration held a roundtable to examine some of the major issues still outstanding between stakeholders. There were representatives from affected stakeholders, including retailers who had not been heard from before. Panelists included representatives of electronics manufacturers, retailers, recyclers, and environmental groups. The discussion focused on what products should be included in electronics recycling, collection and funding mechanisms, and the role of government in electronics recycling. The Technology Administration then solicited comments from the public in the Federal Register on October 20, 2004, on the same four areas which the Roundtable focused: which products should be included in an electronics recycling program; methods for collection, transportation and recycling; financing a recycling program; and the role of the government in a recycling program. The soon-to-be-released Technology Administration report is an outgrowth of the Roundtable and response to the Federal Register notice. It includes views expressed by the panelists from the Roundtable, comments submitted by organizations in response to the Federal Register notice, and information gathered especially for this report. The purpose of the report is to provide policymakers with background on the issue of electronics recycling; including state, Federal, and international regulations and activities, models of recycling efforts in other industries, and an analysis of some of the most commonly discussed financing models.

*Question 3.* What type of process do you think would best enable stakeholders to reach a national consensus on electronics legislation?

Response. A national solution that is equitable, balanced, and takes into account all stakeholder responsibilities is the ideal. Therefore, to achieve that goal, a participatory process that allows for all stakeholders to voice their concerns and its impact would be the best process.

*Question 4.* What roles can EPA and Commerce play that will encourage agreement on national legislation?

Response. With the potential of its impact on our nation's competitiveness, Commerce has the unique role of representing the interests of industry within the federal government. The Commerce Department, as well as the EPA, has already helped convene affected parties to understand their various interests to help drive a consensus towards a national solution. The report the DOC will soon release will outline the interests of several of the stakeholders and articulate their concerns. By facilitating a dialogue between affected stakeholders the DOC can help EPA foster

an agreement on national legislation. EPA has the regulatory and program jurisdiction to be the lead federal agency in any national e-waste solution.

*Question 5.* Which electronics financing model do you think might work best in the United States, and why?

Response. Should Congress determine that a financing model is necessary; a model that ensures all stakeholders bear a responsibility in the proper disposal of e-waste and that all is done throughout the lifespan of electronics products to ensure that the process is an efficient one would be preferred.

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RESPONSE FOR THE RECORD BY HON. ROSALIE MULE, MEMBER, CALIFORNIA  
INTEGRATED WASTE MANAGEMENT BOARD

*The Honorable Hilda L. Solis*

*Question 1.* Under the California law, consumers pay a \$6-10 advanced recycling fee at the time of the sale for a covered electronic product. The fees are collected by the state and deposited into an E-Waste account. The state then pays the collectors and recyclers out this fund. Can you tell me what would California do if the demand for recycling funds from collectors and recyclers exceeds what you have collected? What happens if you have not collected enough money in fees to pay the collectors and recyclers?

Response: California's Electronic Waste Recycling Act of 2003 (Act) requires the State to occasionally review the fee level to ensure that there are sufficient funds in the account to operate the program.

California Public Resources Code Section 42464(f) states, in part, "On or before August 1, 2005, and, thereafter, no more frequently than annually, and no less frequently than biennially, the board, in collaboration with the department, shall review, at a public hearing, the covered electronic waste recycling fee and shall make any adjustments to the fee to ensure that there are sufficient revenues in the account to fund the covered electronic waste recycling program established pursuant to this chapter. . . ."

The program has operated for less than one year. The State has not adjusted the fee from the original \$6, \$8, and \$10 level because there is not yet sufficient data to demonstrate trends in revenue or costs, though presently revenue is outpacing costs while the recycling infrastructure is still developing.

*Question 2.* Has your program set accountable goals for how many products should be collected? If there are no goals, how does your program encourage more electronics to be recycled?

Response: California's Electronic Waste Recycling Act of 2003 (Act) requires the State to establish recycling goals. Specifically, the California Public Resources Code Section 42475.4 (a) states, in part, "The board shall annually establish, and update as necessary, statewide recycling goals for covered electronic waste. In implementing this section, the board shall do all of the following:

- (1) Post on its Web site information on the amount of covered electronic devices sold in the state in the previous year as reported to the board.
- (2) Post on its Web site information on the amount of covered electronic waste recycled in the state in the previous year as reported to the board.
- (3) Develop and adopt recycling goals, with input from manufacturers, retailers, covered electronic waste recyclers, and collectors, that reflect projections of covered electronic device sales, rates of obsolescence, and stockpiles."

At this time, as the recycling infrastructure is still being developed, the State has not set specific goals and has focused on expanding access to recycling opportunities and increasing public awareness. The overarching goal, established by the Act is to eliminate current stockpiles of unwanted and obsolete covered electronic waste, estimated at approximately six million units in residences alone, by the end of 2007.

*Question 3.* Does your program have a system to track the amount of E-waste that will be collected and recycled? Do you have any statistics that show that more products are being recycled as a result of your program?

Response: California has established a data system to track the amount of covered electronic waste (CEW) processed and claimed for payment. As of September 1, 2005, after eight months of operation, the program has received claims for over 20 million pounds of CEWs processed, representing activities by program participants conducted through June.

While this represents a significant amount of material, there is currently no way to compare or contrast this volume with what was processed before tracking began, or to evaluate the amount of material diverted through means outside of the system, such as asset recovery for continued use or wholesale export. However, it is firmly

believed that more CEW is being recovered for processing in California now that the program exists.

In addition to the data which the State collects as part of the documentation submitted for recycling payments and manufacturer annual reports, handlers of hazardous electronic waste in California are required to submit an annual report identifying the amount of waste handled and its disposition. A database is being developed to house annual report data and facilitate analyzing it (including year-to-year comparisons of recycling volumes). The Electronic Waste Recycling Act has only been in effect since January 1, 2005 and annual reports for calendar year 2005 are not due until February of 2006. While data on the affect of the new law on recycling rates is not yet available, the State is putting the tools in place to evaluate the effectiveness of the law once the annual reports are submitted.

*Question 4.* What has been your experience to date of the electronics law operating in your state? Does your state have enough experience in implementing this law to suggest what you might change about it?

Response: As noted above, the program has received claims for over 20 million pounds of CEWs processed, representing activities by program participants conducted through June. All indications are that the system is fostering the recovery and recycling of CEW, however it is too early to tell what specific changes should be made to improve the system. The State will be engaged in final rulemaking over the coming year to evaluate existing emergency regulations and to adopt permanent regulations.

*Question 5.* What is your advice for how to craft national legislation that would take into consideration the different state legislation already enacted? What aspects of your state legislation would make it most difficult to incorporate into national legislation?

Response: The goal of a federal bill should be a national program that includes all states in order to prevent a patchwork of programs across the country and is mindful of states' ability to establish management criteria. Such legislation should make clear what types of electronic waste are and are not covered. (The basis for making this determination could be something other than whether the waste meets the criteria for classification as hazardous waste.) It is also important that any national legislation to promote recycling of electronic waste does not impair states' ability to establish their own criteria for hazardous waste classification and management that are more stringent than those of RCRA. National electronic waste legislation should also address the exportation of discarded electronic equipment and residual materials generated from the treatment of such equipment. The establishment of export requirements and their implementation, tracking, and enforcement would be most efficiently accomplished on a national scale, rather than a state-by-state basis.

Inclusion of the following aspects in federal legislation would satisfy the current requirements in statute necessary to supersede California law; PRC 42485 (a)):

- The establishment of a program for the collection, recycling, and proper disposal of covered electronic waste necessary for the effective administration of a national Advanced Recycling Fee that is applicable to all cathode ray tubes devices sold in the United States.
- Is capable of providing adequate revenue to the state to support the collection, recycling, and proper disposal of covered electronic waste, in an amount that is equal to, or greater than, the revenues that would be generated by the fee currently imposed under California law (PRC 42464).
- Require covered electronic device manufacturers, retailers, handlers, processors, and recyclers to dispose of such devices in a manner that is in compliance with all applicable federal, state, and local laws, regulations, and ordinances, and prohibits the devices from being exported for disposal in a manner that poses a significant risk to the public health or the environment.

The following are additional aspects that could be considered in the course of national program development:

- A product stewardship element that would require the entities that design, make, sell, or use a product takes responsibility for minimizing its environmental impact. This responsibility would span the product's life cycle—from selection of raw materials, to design and production processes, to its use and disposal.
- Encourage manufacturers to create products with recycling in mind. This would include reducing the amount of hazardous chemicals currently used in the production process of electronic devices. In addition, since all manufacturers will need to comply with the EU's RoHS Directive by July 2006 (banning the use of some hazardous substances) a component requiring manufacturers to sell RoHS compliant products in the U.S. market should also be considered.

*The Honorable Charles F. Bass*

*Question 1.* This Committee in the past has often discussed interstate solid municipal waste. I would like to hear each of your thoughts on what implications would result if all fifty states created their own programs and standards in how to handle e-waste? What complications would you see as a result of this on the flow of interstate waste?

Response: The concept of all fifty states choosing to address the electronic waste issue in their own separate way is actually the reality of the situation even today. For instance, while some states such as California, Maryland, and Maine have implemented state-wide programs, others have decided to address the problem at the local level or not at all.

Impacts of these programs on waste flow are dependent on the program structure. California requires documentation to ensure that the materials originated in California, in order to provide payments. This type of system effects waste flow differently than a system that accepts interstate waste.

In the absence of a national framework for dealing with the problem, a patchwork of potentially conflicting solutions will continue to emerge. For instance, manufacturers in one state may have an advance recovery fee placed on their products, while the same manufacturers may have to take back their products and pay for recycling in another. Not only could this patchwork create interstate commerce problems, but it also has the potential to place a substantial burden on recyclers, refurbishers, and other stakeholders.

*Question 2a.* In talking with the New Hampshire Department of Environmental Services, one of their concerns has been with the mobility of items: where an item is sold is not necessarily the place where it is disposed. Could you address the problems with charging a fee at the point of sale for products bought over the Internet if a national program is not implemented?

Response: While the concern is not without merit, this issue can be addressed during the development stage of a state's program. For instance, due to the resilient design of the California program, we have the ability to accommodate e-waste products that were not originally assessed a fee, such as "legacy" waste and products that may have been bought over the Internet. The State believes that the vast majority of Internet and catalogue retailers are participating in the California Electronic Waste Recycling Program.

*Question 2b.* Additionally, could you discuss the problem with individuals buying an electronic product from one state and disposing of it in another? How would that affect the success of your program and how have you addressed this problem in your own strategies?

Response: California's legislation, in establishing the fee, contemplated that some devices, for which a fee was not charged would enter California by being used by a consumer then discarded in this state. It was further contemplated that "legacy" waste, which met its end of useful life before the fee program was enacted, would also enter the funded recycling system. The program is intended to be designed to be strong enough to accommodate these types of e-waste for which fees were not collected. California, however, has established rules which allow only e-waste generated by California consumers to enter the funded recycling system, by requiring documentation of the source of all e-waste for which funding is claimed.

*Question 3.* Would you agree that if a national fee was imposed with pro rata payments made to the states that this would be the most efficient way to pay for such electronic waste programs?

Response: California believes that a national fee system with pro rata payments made to the states would be effective. Nonetheless, how a "pro-rata" disbursement would be designed raises critical questions. One concern, specifically for larger states, would be the ability of such a payment system to ensure that the state's costs would be covered, given the size and volume of devices disposed of in some states compared to others. An initial pro-rata design based on population could require a financial analysis after a period of time to determine costs, usage, recycling frequency and rates, etc.

*The Honorable Paul E. Gillmor*

*Question 1.* Could you please tell me how you define "electronic waste" and do you consider recycling these products more important in order to avoid an environmental hazard or because you are worried about preserving landfill capacity?

Response: Many types of electronic products that are widely used in workplaces and homes contain hazardous substances like lead and mercury. Products that reach the end of their useful lives or become obsolete and contain enough hazardous substances are considered hazardous waste.

Any electronic device that becomes a waste and fails California's hazardous waste toxicity criteria is a hazardous waste which may be managed as a "universal waste". California's universal waste management requirements are consistent with the Federal Universal Waste Rule requirements.

California's Electronic Waste Recycling Act of 2003 (Act) addresses a specific portion of the electronic waste universe: video display devices. The definition of "electronic waste" for purposes of the system established by the Act only applies to video display devices which California determines are hazardous waste when discarded. Specifically, these are currently:

- a. Cathode ray tube (CRT) devices (including televisions and computer monitors);
- b. LCD desktop monitors;
- c. Laptop computers with LCD displays;
- d. LCD televisions; and
- e. Plasma televisions

California plans to test additional video display devices in the future to determine which additional items, if any, should be covered by the EWRA.

Preventing threats to human health and the environment, preserving landfill capacity, and conserving valuable natural resources are all important factors in why recycling of hazardous, electronic wastes should be promoted.

*Question 2.* Since individual persons have to make the choice to give up their unused electronic equipment, what responsibilities do you think they should bear? What role does public education have in this effort and have you seen any successes with public education efforts in your states on these or other recycling programs?

Response: Since California has established a system that requires convenient and cost free recycling opportunities and that these types of waste can no longer go in to the landfill, the State has identified that it is the individual's responsibility to avail themselves of these recycling opportunities.

Public education about the proper handling of obsolete electronics is key to the success of state e-waste recycling efforts. California's primary consumer awareness effort is through [www.eRecycle.org](http://www.eRecycle.org) ([www.eRecycle.org](http://www.eRecycle.org) in Spanish), and the State has promoted this website through point-of-purchase information at electronic retail outlets as well as radio and television public service announcements. Although it is premature to gauge the success of this effort—it was initiated prior to the collection of revenues from the retail fee on covered electronic products—public response has been very positive. For the most part, public concern seems to be focused on available recycling opportunities rather than on costs (e.g., "Yes, I know about the fee. What I need to know is where to take my old stuff.")

*Question 3.* In 1980, Congress enacted the Low-level Radioactive Waste Policy Act. Under this law, a state is given the responsibility to select disposal sites for low-level radioactive waste—a type of waste that generally consists of low concentrations of relatively short-lived hazardous waste. What intrigues me most though is that several states have banded together to address this serious waste concern. In fact, most states have set up and joined congressionally approved interstate compacts to handle low-level waste disposal, while others are developing single-state disposal sites. Recognizing the interstate nature of electronics sales and product take-back and refurbishment programs, is this model something that makes sense to you or your state?

Response: A national system establishing a funding and/or take-back program has merit, to avoid the impact of potentially disparate state requirements on the manufacture and sales of electronic devices. Different state requirements impact interstate commerce. While this impact may be lawful, the market for electronic devices is not only national, but global. Uniformity of requirements affecting this market is desirable. Commercial, manufacturing, and funding concerns are and would not be addressed by a regional approach. Only a national approach would cure the impact caused by the diversity of state-by-state or region-by-region programs.

Moreover, an additional concern emerges when regional or national solutions are considered. The importance of maintaining hazardous waste management standards is of distinct interest to California, due to the fact that the state has more stringent hazardous waste management standards than federal standards and those of many other states. California feels strongly that its hazardous waste management standards, and ability to enforce those standards, should not be affected or lessened in the course of multi-state or national recycling program development.

*Question 4.* California has been the first state in our country to step forward with its own law on electronic waste. Being the first one to act, especially because of the size of your state and the amount of goods sold and the potential opportunities for recycling, means that you have gleaned some important lessons. What do you think it is important for us to know about electronic waste and recycling programs that either is not reflected in your testimony or is not easily apparent? What kind of in-



vestment, financial or otherwise, do governments need to make in order to get viable programs operating?

Response: It is critical that any program establish clear objectives from the start and specifically identify who is the intended beneficiary. The Act assesses an advanced recycling fee on the sale of all covered electronic devices (CEDs) regardless of consumer type (residents, businesses, institutions, government, etc) and currently does not delineate the generator sectors from which discarded material is eligible. The net effect is that all covered electronic waste (CEW) generated in the state is eligible to be part of the program, whether or not the CEW from certain generator sectors historically required financial support to be effectively recovered and recycled.

The Act actually covers only a limited segment of a far larger electronic waste stream. At this time, CEDs are limited to video displays greater than four inches, such as televisions and computer monitors. The primary reasoning behind this is that cathode ray tubes (CRTs) are considered a hazardous waste when disposed in California. CRTs may be managed as a universal waste if recycled, but may not be disposed in municipal landfills. This “ban” on disposal created a significant cost burden on local governments to divert residentially generated CRT devices. The Act was intended to relieve this burden.

Other consumer electronic products, such as computer CPUs, printers, phones and fax machines, also likely exhibit the characteristics of a hazardous waste when disposed, and can be managed as a universal waste if diverted for recycling. These items currently are allowed a household generator exemption with regards to disposal. While this may present some confusion in the minds of consumers regarding what the Act covers, the funding available for what is covered provides for the later expansion of a collection infrastructure for other electronic wastes that are not currently part of the program.

California has attempted to tap market forces to develop the network of collection opportunities intended by the Act. Instead of requiring local government to provide services, the Act allows for, even encourages, private investment, innovation and initiative to grow the system, along with services that can and may be provided by local government. Often these services are provided in concert between private enterprise and local government.

In addition to administering the funding to develop the recycling system, one of the most important investments government can make is in information and public education; specifically making sure that the community knows what opportunities and services are available and what is expected of the public in return.

*Question 5.* There appears to be widespread cooperation by Internet sellers to comply with the California law by collecting the fee on covered products. Is your Board satisfied that it is capturing the fee on a majority of sales via the Internet? If not, can you recommend how Federal legislation should address this issue?

Response: To date, we are satisfied with the revenues we are receiving from a majority of sales via the Internet and have received no complaints from in-state retailers. The healthy revenue is largely attributable to fact that all of the major retailers in the State are participating in the program. Although we do not know its extent, there is some traffic in unbranded electronics sold by businesses located out of State or out of the country.

National legislation could impose a national advanced recycling fee. This would eliminate the problem of a state’s authority to impose its fee on out-of-state retailers. If national legislation enacted a requirement that producers take back discarded electronics, then fee collection would not be an issue. If national legislation authorized separate state programs, then specific provisions requiring compliance with state fee requirements and allowing the “burden” on interstate commerce should be included.

*Question 6.* Your state’s recycling law requires manufacturers to notify retailers of covered products—for which manufacturers have complained that the internal costs of complying with these administrative and other paperwork requirements can be quite high—in order to receive reimbursement. Has California calculated the costs of these requirements on companies? If so, does the disincentive of paperwork costs negate the fee the state reimburses?

Response: This question appears to conflate two or more aspects of California’s Electronic Waste Recycling Act of 2003 (Act). Under the Act, manufacturers do have an obligation to notify retailers of what products are covered by the law and to update this notification annually as new devices are brought into the system. Manufacturers are also required to report to the State annually regarding covered electronic device (CED) sales data, retailer notification efforts, CED hazardous material content, CED recyclability, design for recycling efforts, and consumer information ac-

tivities. However, there are no reimbursements available for fulfilling these basic obligations.

The Act does contain a provision for CED manufacturers to receive payments if they engage in recycling activities that remove devices from the state. The amount of payment currently available is equal to the advanced recycling fee that would be paid by a consumer for that type of device. Generally this manufacturer payment is much less than the recovery and recycling payments available through the covered electronic waste (CEW) payment system and no manufacturers are currently registered to participate in the manufacturer payment system. Some manufacturers have partnered with recycling enterprises in California to offer services through the CEW payment system.

The CEW payment system does require a certain level of documentation to ensure that only California sourced CEWs are processed and claimed for payment. Since the program is less than a year old, the cost of complying with this "paperwork" is presently an unknown component of the overall cost of participating in the program. Participants are required to file "net cost reports" with the state annually, and from those it is expected that more can be learned of the administrative burden. However, in response to some initial concerns by a major retailer that the notification requirements were too complex and expensive, California adopted regulations which clarified and streamlined some of the requirements on manufacturers pertaining notification to retailers.

*Question 7.* Your state's law imposes a uniform tax on each category of covered display sold in the state, and the state has established a payment schedule of \$0.48 (48 cents) per pound that the state presumably pays to recyclers. The law, understandably, allows the fee to be increased if there are insufficient funds to pay recyclers. Since the law does not speak to the lowering of the tax, and a steady rate of return is guaranteed, what incentives do you see to improve the system over time?

Response: To clarify, the state imposes a fee, not a tax, on the sale of a covered electronic device sold in California. Unlike a tax that is deposited into the General Fund, the main purpose of this specific fee is to mitigate the cost of handling California-generated electronic waste.

According to PRC 42464 (e), at least every two years, the State must review the covered electronic waste recycling fee and make any adjustments to the fee necessary to ensure that there is sufficient revenue in the fund to support Electronic Waste Recycling Program. Based on our interpretation of the statute, the State not only has the authority to increase the fee should the need arise, but can also decrease fee if need be.

The IWMB shall base the adjustment of the fee on both of the following factors:

1. The sufficiency, and any surplus, of revenues in the account to fund the collection, consolidation, and recycling of covered electronic waste that is projected to be recycled in the State.
2. The sufficiency of revenues in the account for the State to administer, enforce, and promote the Electronic Waste Recycling Program, plus a prudent reserve not to exceed 5 percent of the amount in the account.

*Question 8.* Since the California law took effect this past January, I understand that some local retailers have been acting as collectors for end-of-life electronics products. Some argue that this provides the retailers an apparent benefit from the program because it brings potential customers back into their stores to turn in older, obsolete products. Can you speak to any evidence that your Board has that retailers in California, under the new law, can both divert products from the electronics from the waste stream and also promote sales of new products?

Response: Based on the information that we have received from a variety of stakeholders, a majority of retailers in California have not been acting as handlers of electronic waste. However, it may be possible that some retailers have either partnered with approved collectors or have collected the devices themselves for the purpose of monetary gain. Many retailers' businesses cannot physically accommodate the collection and storage of electronic wastes. Although, once retailers evaluate the potential economic benefit of acting as an e-waste collector, they may design new stores for this function.

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RESPONSE FOR THE RECORD BY HON. DAWN R. GALLAGHER, COMMISSIONER, MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

*The Honorable Paul E. Gillmor*

*Question 1.* The issue of electronic waste and recycling can be looked at from several different perspectives. Could you please tell me how you define "electronic

waste” and do you consider recycling these products more important in order to avoid an environmental hazard or because you are worried about preserving landfill capacity?

A. Maine law does not contain a definition for electronic waste. It does, however, define “covered electronic device” and specifies that those devices are subject to the provisions of the law. Recycling electronic products is critical to avoid emissions of toxics from incineration, to preserve landfill capacity, and most importantly to recoup the commodity resources contained in the products and avoid the environmental costs associated with mining and production of virgin commodities.

*Question 2.* Since individual persons have to make the choice to give up their unused electronic equipment, what responsibilities do you think they should bear? What role does public education have in this effort and have you seen any successes with public education efforts in your states on these or other recycling programs?

A. All electronics function for a finite time. Consumers may be encouraged to give up electronic devices prior to the end of useful life by new developments in technology, or by planned obsolescence or marketing by manufacturers. From a public policy perspective, consumers historically have borne some responsibility for ensuring that the waste they generate appropriately enters the waste management system, either through personal delivery to a drop off point or through collections funded by taxes. Public education is critical for informing consumers how to get their electronic wastes into the recycling system. In Maine, we have had great success educating the public in where to deliver their mercury-added products for recycling by providing workshops and educational materials to local jurisdictions.

*Question 1.* In 1980, Congress enacted the Low-level Radioactive Waste Policy Act. Under this law, a state is given the responsibility to select disposal sites for low-level radioactive waste—a type of waste that generally consists of low concentrations of relatively short-lived hazardous waste. What intrigues me most though is that several states have banded together to address this serious waste concern. In fact, most states have set up and joined congressionally approved interstate compacts to handle low-level waste disposal, while others are developing single-state disposal sites. Recognizing the interstate nature of electronics sales and product take-back and refurbishment programs, is this model something that makes sense to you or your state?

A. There are a number of examples of waste management situations in which potentially significant advantages in pursuing regional solutions, and important disincentives to implementing single state approaches, exist. The siting of a low-level radioactive waste disposal facility is such an example. Sharing the cost and regulatory burden of a disposal site makes sense when each state does not necessarily require its own facility and a single site can be shared. The situation with electronic waste management is somewhat different and, we believe, can be effectively addressed by a single state to meet that state’s needs. Maine chose to move ahead with comprehensive e-waste management legislation when it did because it was an element critical to achievement of the state’s broader toxics reduction and waste management goals. That is not to say, of course, that implementation of a consistent e-waste management program by multiple states (or all states) might not be desirable. From Maine’s perspective it would, however, be important that such a program be cost effective for states, be efficient, and employ the principles of product stewardship.

States have taken a variety of different positions with respect to e-waste management programs and, to date, there has not been broad agreement concerning a uniform management model that might best serve the national interest. The majority of states have not yet made legislative proposals concerning e-waste management systems. Although Maine has been a participant in national and regional discussions concerning e-waste management, it chose to implement a single state program at this time because it believes the program can be efficient and effective, and will contribute toward the achievement of the state’s environmental goals.

*Question 2.* The system that you described in your testimony provides that local governments have responsibility to collect products from households in Maine. It is also my understanding that the law allows for manufacturers to get a credit toward their obligation for setting up their own recycling programs. Is this correct and can you explain the benefit that the state sees in allowing this opportunity?

A. Maine’s e-waste law does not preclude manufacturers from setting up their own recycling program, and it gives the Department responsibility to determine each manufacturer’s pro rata share of the orphan waste stream. The Department is currently engaged in rule-making to implement the law, and as part of that rule we have proposed to credit manufacturers for units they collect from Maine households as part of a manufacturer take-back program. This eliminates any disincentive manufacturers may perceive for conducting manufacturer take-back programs,

and provides an incentive for manufacturers to engage directly the consumers directly in take back. Manufacturers that do this have direct control on the costs of recycling those units they take back, thus providing a mechanism through which manufacturers can minimize their financial obligations in the Maine collection and recycling system. The more directly involved manufacturers are in end-of-life management of their products, the more incentive exists to apply private sector innovation to develop a product that has maximum commodity value at the end of life.

*Question 3.* Under the framework of your state law, collected products will need to be sorted out by brand names in order for individual manufacturing to be billed. Could you please help our subcommittee understand the expenses that are involved in the sorting of these products. What do you recommend be done to keep costs such as these under control?

A. Under Maine's law, consolidators must create an accounting by manufacturer of collected products; *a physical sort by manufacturer is not required.* We do not yet have cost estimates from consolidators on the expected costs of performing this accounting as units are received, although some have indicated to DEP staff in anecdotal conversations that they expect a minor increase in record-keeping and billing costs. To keep costs under control, in the draft rule the Department is proposing to approve consolidators to participate in the collection and recycling system in part based upon their costs; consolidators will need to control costs to receive Department approval.

*Question 4.* On the issue of "orphan" waste—or waste which a company that is no longer in business made. Please explain the reasons for the choices made by Maine to handle the recycling of older products whose manufacturer is now defunct. What would you recommend be done at the Federal level, if anything, to ensure that such issues do not create problems for long-time electronics manufacturers?

A. Under Maine's law, the costs for consolidation and recycling of orphan wastes is shared by existing manufacturers proportional to the percentage of their products in the waste stream. After much discussion with a variety of stakeholders, this was perceived to be the fairest way to distribute costs due to the unavailability of state-specific sales figures. Allocation of orphan waste costs proportional to sales may be possible in a national system, and would avoid the problem of creating financial impacts disproportional to current revenues on existing manufacturers.

*Question 5.* Your testimony states: "Maine's 'shared responsibility' electronic waste program should be allowed to prove itself during several years of implementation. If a national program were established, it should *not* be more costly to the consumer. Such a program should correctly assign end-of life product responsibility to the manufacturers and should reward 'green design' and environmentally sustainable production processes. It should not create a new layer of bureaucracy in the name of gaining environmental and public health benefits." Does this mean that you would oppose any national solution unless it exempted your State?

A. We may oppose a national solution if it is more costly to Maine consumers and taxpayers and does not provide manufacturers with incentives to maximize the commodity value of electronics at the end-of-life, thus minimizing environmental degradation caused by the mining of virgin materials.

*Question 6.* Your testimony states that your state "law requires manufacturers recognize the environmental impacts of their products. Not only should manufacturers be responsible for ensuring the "proper handling, recycling and disposal of discarded products", but they should also "reduce, and to the extent feasible, ultimately phase out the use of hazardous materials in these products." Most Federal environmental law does not get into the details of regulating manufacturing, but rather deals with the outputs. Your statement seems to suggest that environmental law should govern manufacturing processes. Is this correct? In addition, this statement suggests that the manufacturer should be liable for every action by the retailer and consumer as long as they are in possession of the electronics item. Is this reasonable? Why?

Good environmental law sets standards that are protective of public health and the environment and that promote environmental stewardship while leaving it up to the private sector how best to achieve these standards. In order to achieve protection of public health and the environment, it can be appropriate to pass laws that restrict the use of hazardous materials. These laws only preclude manufacturing processes that utilize materials that pose an unacceptable risk to public health and the environment. They also serve a public policy goal of encouraging private sector entities to adopt a sustainable business model that considers cradle-to-cradle product lifecycle minimizing long-term liability for the manufacturer.

My statement as quoted above was not meant to imply that the manufacturer should be liable for every action by the retailer and consumer as long as they are in possession of the electronics item. However, through green design manufacturers

have the ability to minimize any potential harm from their products no matter who is in possession of them.

*Question 7.* Your testimony claims that Maine's e-waste law is not an expansion of bureaucracy. I would agree with you that there are few requirements placed on the state or its municipalities. How do you respond, though, to arguments that the Maine law co-opts the private sector and its infrastructure? Do electronics manufacturers and retailers who operate in Maine consider the Maine law to be "business friendly"?

A. We are not aware of any claims that the Maine law co-opts the private sector and its infrastructure. On the contrary, we expect that implementation of the law will likely provide opportunity for private sector expansion, since the demand for household generated e-waste handling services is expected to increase. There are no electronics manufacturers operating in Maine. Retailers, however, through the Consumer Electronics Retailers Coalition (representing retail businesses in all 50 states and including businesses such as Best Buy, Target, Circuit City, Radio Shack and Walmart) have expressed strong support for Maine's program, in part because the program does not rely on a point-of-sale advance recycling fee.

*The Honorable Charles F. Bass*

*Question 1.* This Committee in the past has often discussed interstate solid municipal waste. I would like to hear each of your thoughts on what implications would result if all fifty states created their own programs and standards in how to handle e-waste? What complications would you see as a result of this on the flow of interstate waste?

A. From a state perspective, there are two major complications that would result from fifty different state systems. The first is confusion on the part of the regulated community as to which requirements apply in which states, increasing the amount of state resources that may be needed for compliance assistance and enforcement. The second potential unintended consequence is that different state systems could encourage the cross-border shipment and misidentification of the state of generation of specific e-waste units by persons looking to scam states that may provide greater payment for recycling.

*Question 2a.* In talking with the New Hampshire Department of Environmental Services, one of their concerns has been with the mobility of items: where an item is sold is not necessarily the place where it is disposed. Could you address the problems with charging a fee at the point of sale for products bought over the Internet if a national program is not implemented?

A. This is not an issue for Maine as we do not charge a fee at the point of sale.

*Question 2b.* Additionally, could you discuss the problem with individuals buying an electronic product from one state and disposing of it in another? How would that affect the success of your program and how have you addressed this problem in your own strategies?

A. The purchase of an electronic product in another state does not affect the viability of Maine's program. Maine's law requires manufacturers to share responsibility for ensuring recycling of their products when generated as waste by Maine households. Manufacturers pay directly for their share of the costs; Maine's system does not impose and collect a fee from any party to finance the system.

*Question 3.* Would you agree that if a national fee was imposed with pro rata payments made to the states that this would be the most efficient way to pay for such electronic waste programs?

A. The imposition of a national fee may create some efficiency by standardizing the source of funding. However, providing pro rata payments to the states will require all states to establish systems for managing the funds, maintaining the status quo of divergent management systems with the potential to create inefficiencies and increase costs. The greatest efficiency can be gained through the creation of a national system managed by a third party organization and that does not impose management requirements on individual states.

*Question 4.* Do you see any significant differences in your state's strategy with the other states represented on the panel that better encourages and builds incentives for both the consumer and the industry toward a recycling approach to their e-waste?

A. Yes. Maine's system requires manufacturers to be responsible for ensuring the recycling of their products once collected and consolidated by consumers and local governments. This builds incentives for manufacturers to design their products to recapture the most value at the end of life, and for recyclers to develop efficiencies in recycling systems to maximize net revenues.

Maine law also prohibits the disposal of cathode ray tubes beginning in July 2006, and of mercury-added products (including flat panel displays) as of January 2005.

Along with no or minimal end-of-life fees, these disposal bans encourage consumers to ensure their electronics are delivered in to the recycling system.

*Question 5.* Could you talk about any specific problems that Maine, as a state with more rural municipalities, faces in implementing an e-waste program that might be different than larger and more populated states like California? How did you approach those problems with your legislation?

A. As a shared responsibility system, the most perplexing problem in implementing Maine's law is how to fairly apportion costs of transportation from rural collection points to centralized consolidation points between manufacturers and rural municipalities. The Maine law holds manufacturers responsible for transportation costs commensurate with a minimum amount of waste materials consolidated, yet it also requires manufacturers to provide geographically convenient consolidation in all areas of the state. Maine law holds municipalities responsible for ensuring that their residents' waste televisions and computer monitors are delivered to consolidation points based on the understanding that the costs of collection and transportation to consolidation would be very limited. We are currently in process of making a final determination on this issue through our rule-making process.

*The Honorable Hilda L. Solis*

*Question 1.* Has your program set accountable goals for how many products should be collected? If there are no goals, how does your program encourage more electronics to be recycled?

A. Maine law prohibits the disposal of mercury-added products (including flat panel displays) as of January 2005 and of cathode ray tubes as of July 2006, effectively banning the disposal of all televisions and computer monitors. In effect, this disposal ban sets a goal of recycling 100% of televisions and computer monitors at the end of life. The state encourages recycling of electronics by making grants available to local communities to develop collection infrastructure and through targeted educational efforts to consumers through their municipal recycling and solid waste facilities.

*Question 2.* Does your program have a system to track the amount of E-waste that will be collected and recycled? Do you have any statistics that show that more products are being recycled as a result of your program?

A. Maine's e-waste law requires annual reporting of actual units recycled. We will perform our first evaluation of how well the system is working once Maine's e-waste law and disposal bans come into full effect and the first round of annual reports is received early in 2007. We have current data from municipalities that have already done some voluntary collection and recycling of televisions and computer monitors that will be used as a baseline for evaluating any increases in recycling that can be attributed to full implementation of Maine's e-waste law in 2006.

*Question 3.* What has been your experience to date of the electronics law operating in your state? Does your state have enough experience in implementing this law to suggest what you might change about it?

A. To date, the law has required manufacturers of televisions and computer monitors to submit plans for compliance with the manufacturer responsibility provisions of the law. The vast majority of manufacturers are in compliance with the requirement to submit a plan, and the Department is working with manufacturers to have them address any provisions of their plans that are not in conformance with Maine's requirements. The manufacturer responsibility for recycling provisions do not come into effect until January 2006, so we do not yet have experience from a fully operational system. There is some minor streamlining of manufacturer plan and reporting requirements that we would suggest to anyone interested in using Maine's law as a model.

*Question 4.* What is your advice for how to craft national legislation that would take into consideration the different state legislation already enacted? What aspects of your state legislation would make it most difficult to incorporate into national legislation?

A. National legislation should allow for state electronics waste legislation that is at least as effective and less costly to consumers and taxpayers. That said, if an effective national system is instituted that implements the principles of product stewardship (see attached ECOS resolution), there will be great incentive for states to sunset their programs in favor of a uniform national system.

We recommend that a federal law impose a disposal ban uniformly across the country to prevent states without disposal bans from becoming dumping grounds for e-waste and to maximize the recapturing of the commodity resources in e-waste. Like the Maine law, any national legislation should include provisions that clearly assign some direct responsibility to manufacturers for their products at the end of life.

There are fewer barriers to creating an efficient national system that is truly protective of public health and the environment than there are to creating a state system that accomplishes the same levels of protection. A federal system can include a uniform set of environmentally sound management standards and a single auditing system to which all recyclers would be subject equally; a federal system will not create inequities in manufacturer and/or consumer costs across state borders; and the federal government has authority to control the flow of goods into the country from foreign manufacturers that do not comply with a federal e-waste law.

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MARYLAND DEPARTMENT OF THE ENVIRONMENT  
BALTIMORE MD 21230  
*September 7, 2005*

The Honorable PAUL E. GILLMOR  
*U.S. House of Representatives  
Committee on Energy and Commerce  
Environment and Hazardous Materials Subcommittee  
2323 Rayburn House Office Building  
Washington, DC 20515*

DEAR CONGRESSMAN GILLMOR: Thank you for the opportunity to address the Environment and Hazardous Materials Subcommittee on July 20, 2005 regarding current activities, environmental stewardship, and the proper federal role related to electronics waste. The Maryland Department of the Environment (MDE) appreciates your interest in the views of the states that are currently implementing legislation on electronics recycling systems and federal agencies that are assisting with determining a solution to the issues of electronics waste and recycling. Our responses to additional questions by Subcommittee members in your letter of August 23, 2005 are enclosed.

I mentioned during my testimony that the US Environmental Protection Agency (EPA) Region 3 eCycling Pilot Project (Project) gave Maryland the shared resources needed to begin electronics recycling in the State and I would like to share additional details regarding the Project and how it has influenced our current eCycling efforts. The Project kickoff was held in Harford County, Maryland in October 2001. The Project's goal was to develop an economically and environmentally sustainable collection, reuse, and recycling system for electronics based on the principle of shared responsibility among business (electronics manufacturers and retailers), government, and consumers. Project partners included:

- EPA Region 3;
- EPA Region 3 state (Delaware, Virginia, West Virginia, District of Columbia, and Maryland) environmental protection agencies; and
- Sony, Panasonic, Sharp, Envirocycle, Inc., Waste Management Asset Recovery Group, Elemental, Inc., Electronic Industries Alliance (EIA), and Polymer Alliance Zone of West Virginia.

EIA, a national trade organization and one of the partners, contributed \$50,000 to the Project to help fund transportation and recycling of electronic wastes. Contributing members of EIA included Canon, Hewlett-Packard, JVC, Kodak, Nokia, Panasonic, Philips Consumer Electronics North America, Sharp, Sony, and Thomson Multimedia.

In response to concerns raised by participating electronics manufacturers and recyclers regarding consistent enforcement of hazardous waste regulations in the Region during the life of the Project, EPA and the Region 3 states determined that a new regional regulation should be developed to exclude from hazardous waste requirements those electronics from the Project that were destined for recycling and reuse. A Memorandum Of Understanding between EPA Region 3 and Region 3 environmental protection agencies was signed in 2001 to manage end-of-life electronics as a solid waste through the Mid-Atlantic States. On December 26, 2002, EPA issued a final rule exempting CRT's and CRT glass destined for recycling and reuse from regulation as a hazardous waste. This enabled those involved in the generation, transportation, collection, accumulation, storage, and dismantling of end-of-life electronics to feel more secure in participating in the Project.

During the Project, over 2,700 tons of electronics were diverted from the waste stream through a total of 58 collection events and nine (9) permanent collection programs in the Region 3 states. Maryland held 21 one-day and two (2) two-day collection events and established one permanent collection facility (Wicomico County) as part of the project, collecting over 250 tons of electronics. This was a remarkable response for a small state and resulted in a significant increase in public awareness

of electronics recycling and demand for these activities. Overall Project costs were approximately \$1.1 million or an average of 20 cents per pound.

The Project was successful because it created a partnering environment and a common vision amongst government and industry. The idea brainstorming, combined funding, consistent advertising message, and shared lessons learned were invaluable to the Region 3 states as they struggled to move toward developing long-term electronics waste recycling systems. Although EPA Region 3 continues to support its states through monthly conference calls, there is no longer the coordinated effort regionally to manage electronics wastes. However, Maryland has continued to establish electronics recycling mechanisms and has collected over 3,905 tons of electronics since eCycling began in 2001.

I hope this additional information has been helpful to you. We will continue to monitor your Subcommittee's activities and national activities related to electronic wastes and remain ready to assist you as necessary. If you have additional questions, please feel free to contact me or Mr. Horacio Tablada, Director, Waste Management Administration, at 410-537-3304, toll-free at 800-633-6101 or via email at htablada@mde.state.md.us if we may be of additional assistance.

Very truly yours,

KENDL P. PHILBRICK  
*Secretary*

Enclosures

cc: The Honorable Hilda L. Solis, Ranking Member  
Subcommittee on Environment and Hazardous Materials  
Mr. Donald Welsh, Region 3 Administrator, U.S. Environmental Protection Agency

*The Honorable Paul E. Gillmor*

*Question 1.* The issue of electronic waste and recycling can be looked at from several different perspectives. Could you please tell me how you define "electronic waste" and do you consider recycling these products more important in order to avoid an environmental hazard or because you are worried about preserving landfill capacity?

*Response.* The Maryland Department of the Environment's working definition of "electronic waste" is "unwanted consumer electronics, such as computers, monitors, keyboards, televisions, audio equipment, printers, cellular phones, and other home electronic devices." Although electronic waste contains toxic materials, such as lead, mercury, and cadmium that can be hazardous to public health and the environment if not properly managed, electronic equipment also contains valuable resources, such as precious metals, engineered plastics, glass and other materials, all of which require energy to extract, refine, manufacture, and transport. Therefore, it is important not only to protect the environment and preserve landfill capacity, but also to encourage energy efficiency through the recovery of valuable materials.

*Question 2.* Since individual persons have to make the choice to give up their unused electronic equipment, what responsibilities do you think they should bear? What role does public education have in this effort and have you seen any successes with public education efforts in your states on these or other recycling programs?

*Response.* Many consumers are aware of both the hazards associated with the improper management of used electronics and the valuable resources contained in these products. However, we have seen that many consumers are not aware of the ways that used electronics can be refurbished, reused, and recycled. Through our efforts during the EPA Region 3 eCycling Pilot Project and our work with the counties in Maryland, we have seen that public education plays a crucial role in the success of our eCycling programs. Counties that invest time and money in advertising their events through flyers in schools, mailings, radio spots, posters, and other outlets, witness higher participation rates and volumes of material collected than counties that do not advertise their collection events and facilities well. Although we know that advertising is important, many Maryland counties simply cannot afford to spend a lot of money on advertising electronics collection activities. Maryland would welcome federal assistance in this area.

In Maryland, as is being witnessed around the country, recycling rates seem to have reached a plateau. Recycling is no longer a hot topic and has become routine for many of our citizens. EPA has recognized this problem and is working toward developing a plan for increasing the national recycling rate. Undoubtedly, public education regarding the benefits of recycling will play a significant role in these efforts. A national education and outreach campaign, with a consistent message, could be beneficial.

*Question 3.* In 1980, Congress enacted the Low-level Radioactive Waste Policy Act. Under this law, a state is given the responsibility to select disposal sites for low-



level radioactive waste—a type of waste that generally consists of low concentrations of relatively short-lived hazardous waste. What intrigues me most though is that several states have banded together to address this serious waste concern. In fact, most states have set up and joined congressionally approved interstate compacts to handle low-level waste disposal, while others are developing single-state disposal sites. Recognizing the interstate nature of electronics sales and product take-back and refurbishment programs, is this model something that makes sense to you or your state?

Response. Low-level radioactive waste is classified as a hazardous waste throughout the country, requiring careful monitoring, handling, tracking, transportation, and disposal. Many states, including Maryland, have chosen to join with other states to identify disposal sites for these hazardous wastes for economic reasons, as facilities to manage low-level radioactive waste are quite expensive. Although used electronics may contain some toxic materials such as lead, mercury and cadmium, they are not, in their whole state, classified as hazardous waste in all states. It may be useful to work with other states in the same geographic regions on projects involving electronics waste. However, there would be difficulties in managing these materials regionally as definitions of electronic waste differ and not all states regulate electronics waste the same way, if at all.

*Question 4.* The law that Maryland recently passed allows manufacturers a choice in how to meet the state requirements—either establishing a take back program or paying the state a fee. This seems like an interesting approach that may help to provide different options to residents in Maryland—Was that one of the goals of the legislation?

Response. Maryland's Statewide Computer Recycling Pilot Program law requires a manufacturer of an average of more than 1,000 computers over the preceding three-year period to pay an initial \$5,000 registration fee, regardless of whether the manufacturer has implemented a computer take-back program, if the manufacturer wishes to sell its computers in Maryland on or after January 1, 2006. In subsequent years, if a manufacturer has implemented a take back program acceptable to the Department, the registration fee will be reduced to \$500. Those manufacturers that have not implemented take back programs after 2006, are required to pay \$5,000 each year if they wish to continue to sell their computers in Maryland. We do not expect that the manufacturer's choice to establish a take back program or continue to pay Maryland the \$5,000 annual fee would have any significant impact on the consumer.

*Question 5.* Currently the Maryland law only focuses on computer products. This subcommittee has heard testimony that the U.S. EPA has concerns with all types of cathode ray tubes (CRTs), including computer monitors and televisions. Does your Department plan on expanding the scope of products to include televisions?

Response. The Maryland Department of the Environment has no plans at this time to propose legislation regarding electronics recycling during the 2006 legislative session that begins in January. Electronics recycling in Maryland currently includes many types of electronics, including computers, monitors, keyboards, mice, printers, televisions, cellular phones, etc.

*Question 6.* Of the three states that have enacted an electronic waste law, Maryland chose, arguably, the most minimal approach to address electronic waste streams and recycling. Was this decision made consciously because of concerns about regional or Federal actions or was it simply the political reality that all the State legislative branch could support was your five-year registration and take-back program?

Response. The Maryland Department of the Environment had input on fashioning some provisions of the Statewide Computer Recycling Pilot Program law that became effective July 1, 2005, but it was a bill that was introduced and sponsored by several delegates. As stated in the response to the previous question, the Department has no plans at this time to seek changes to the current law.

*Question 7.* Your testimony refers to the importance of the private recycling market. Could you please expound on your testimony's reference to Maryland electronics recyclers who "have often responded to demand for electronics waste reuse, refurbishment, and recycling by negotiating mutually beneficial contracts with local governments for collection and recycling activities," thus allowing many local governments to increase their electronic waste collection activities?

Response. Several major recyclers in Maryland have been very active in seeking contracts with local governments to manage electronics waste collected through permanent county facilities and one-day events. In an effort to make these collection activities economically feasible for both parties, these recyclers have kept the costs to the local governments low in order to receive a consistent quantity and quality of electronics to support their recycling business. For example, one recycler is cur-

rently charging a metropolitan county two cents per pound for electronics collected at the county's permanent collection facility. This relatively affluent county has been shown to collect rather high-end electronics products that have reuse and refurbishment potential and can be resold at a profit to the recycler. This not only benefits the recycler but benefits the county by managing its electronics waste and preventing disposal, which helps increase disposal capacity.

Materials generated through the recycling of electronics in Maryland have several destinations. Some electronics recyclers are very efficient at recycling nearly 100% of the materials they collect and dismantle. They have been able to find markets for all the materials generated from shredding or dismantling, including the plastics and varied ferrous and non-ferrous metals. Other electronics recyclers are more involved in refurbishing electronics for reuse and have found local and overseas markets for these items. As Maryland does not specifically regulate electronics recyclers nor require reporting on their activities, we rely on self-disclosure by these companies regarding their markets and the destinations for these materials.

*Question 8.* In the section of your testimony that talks to Maryland's decision about its financing mechanism, you mention that your state was uncomfortable pursuing plans that had been adopted in either California or Maine. In fact, you state: "Because many Workgroup members voiced differing opinions on key components of an eCycling system (a definition for electronic waste, a funding mechanism, or whether to ban disposal of electronic waste in landfills and incinerators), they felt that decisions regarding funding and a system for electronics collection and recycling in Maryland should be delayed to allow for the development of a national electronics waste management system." Does this mean you want a Federal electronic waste program to make this financing decision for you?

Response. During the Workgroup discussions, it was decided that it would be best for Maryland to take a "wait and see" approach, in part because there were efforts nationally to develop a system for managing electronic wastes. However, with the enactment of Maryland's legislation, we will now focus our efforts on implementing and evaluating the provisions of this new law without regard to potential federal action.

*Question 9.* You mention in your testimony that you are unsure how many companies your state law covers, which makes it impossible to know how much money your registration fee will raise. When do you expect to have a full understanding of how many companies are involved in your state and how much money you should generate? What will the State do if it does not generate enough money under the registration fees to pay the costs of its program?

Response. The Department has mailed approximately 250 letters to companies identified as potentially subject to the requirements of the new computer recycling law. The Department is also following up with companies that have questions about the law. It is expected that by early fall, there will be reliable information about the number of computer manufacturers that will be required to register with and pay the registration fee to the Department by January 1, 2006. By mid to late January, the Department should discern the amount of funding that will be available to support the Pilot Program the first year. Since the registration fee will be reduced in future years of the pilot if a manufacturer implements a take-back program, it will take at least until January 2007 to determine the amount of money that will be available to support the Program through 2010.

Since 1) electronics recycling is voluntary, 2) there are no accurate figures regarding how much electronic waste is being stored or generated, 3) the program will have only been in place for four years this fall, and 4) eCycling is still growing in Maryland, there is no reliable data at this time regarding the exact costs for providing recycling services for all computers in the state. In addition, the Program is a pilot that will expire December 31, 2010 if no further action is taken by the legislature on computer recycling.

*Question 10.* Your state law allows a reduced registration fee if a computer manufacturer has a "take-back" program. Since the registration fee drives the local recycling programs, what do you see as the trade off and what do you estimate to be the decrease in revenue? If a company has a "take-back" program, but it does not apply to other maker's products or there is a fee involved, how does your law handle this? Do you think this creates more or less of an incentive under your state law to adopt a state sanctioned "take-back" program?

Response. Several counties in Maryland are currently maintaining their own electronics recycling activities without State financial support. The registration fees that will be received from computer manufacturers are not expected to do any more than supplement or reimburse for some of these activities. More fees will obviously allow more activity, but if annual fee collection decreases, then assistance to local jurisdictions will correspondingly decrease. With no past data to guide our projec-

tions, we have no way to reliably estimate revenues for this program. If a company implements a take back program, it will continue to pay a \$500 annual fee to the State. Maryland's law already provides that a take back program must be "acceptable" to the Department, so we, in effect, "sanction" each program while allowing manufacturers the flexibility to design and implement whatever makes the best business sense for them. .

*The Honorable Charles F. Bass*

*Question 1.* This Committee in the past has often discussed interstate solid municipal waste. I would like to hear each of your thoughts on what implications would result if all fifty states created their own programs and standards in how to handle e-waste? What complications would you see as a result of this on the flow of interstate waste?

Response. Maryland addressed the issues of siting landfills and transporting solid waste between jurisdictions through the efforts of the Solid Waste Management Task Force in 1998. The recommendations of the Task Force included encouraging regionalization and public-private partnerships, increasing recycling, collecting better information about waste generation, transportation, and disposal within and outside the region, and increasing funding for recycling, source reduction, and education. The full text of the report can be found on the Department's website at: <http://www.mde.state.md.us/assets/document/waste/SW—TaskForce98.pdf>.

*Question 2a.* In talking with the New Hampshire Department of Environmental Services, one of their concerns has been with the mobility of items: where an item is sold is not necessarily the place where it is disposed. Could you address the problems with charging a fee at the point of sale for products bought over the internet if a national program is not implemented?

Response. The Electronics Recycling Workgroup studied the funding and implementation of a system for collection and recycling of waste electronics in the fall of 2004. The members of the Workgroup expressed concerns regarding the use of an advanced recovery fee for the reasons you mentioned. The recommendations of the Workgroup can be found on the Department's website at: <http://www.mde.state.md.us/assets/document/Electronics%20Workgroup%20Report.pdf>.

*Question 2b.* Additionally, could you discuss the problem with individuals buying an electronic product from one state and disposing of it in another? How would that affect the success of your program and how have you addressed this problem in your own strategies?

Response. At this time, it is not anticipated that the problem you mention will impact the success of the Statewide Computer Recycling Pilot Program in Maryland. The new law requires manufacturers of computers sold in Maryland to register and pay a fee to the Department. These registration fees will be used to provide grants to local governments and municipalities to support their computer recycling programs and for the Department's Office of Recycling. The law does not address disposal of computers in Maryland.

*Question 3.* Would you agree that if a national fee was imposed with pro rata payments made to the states that this would be the most efficient way to pay for such electronic waste programs?

Response. The Department has no data that attempt to rank the efficiency of different models of program design and/or funding.

*The Honorable Hilda L. Solis*

*Question 1.* Has your program set accountable goals for how many products should be collected? If there are no goals, how does your program encourage more electronics to be recycled?

Response. The Department has not set specific goals related to electronics recycling; however, the Department does have an objective related to increasing the Statewide recycling rate as part of Maryland's State agency Managing Maryland For Results tracking. The objective is to "Increase the statewide voluntary waste diversion rate to 40% by the end of calendar year 2005." Electronics are a recyclable material that counts toward each county's annual waste diversion rate (determined by adding the county's recycling rate and the county's source reduction credit, if applicable). Therefore, electronics recycling is a factor in the statewide waste diversion rate, even though it is not counted separately.

*Question 2.* Does your program have a system to track the amount of E-waste that will be collected and recycled? Do you have any statistics that show that more products are being recycled as a result of your program?

Response. Maryland's Statewide Computer Recycling Pilot Program just became effective July 1, 2005 and the Department is in the process of implementing the law. Although we do not have any statistics at this time regarding the program, we have

been tracking electronics collection activities since October 2001, when eCycling activities began in Maryland. Our most current collection data is enclosed for your information.

*Question 3.* What has been your experience to date of the electronics law operating in your state? Does your state have enough experience in implementing this law to suggest what you might change about it?

*Response.* The Statewide Computer Recycling Pilot Program law became effective July 1, 2005. Computer manufacturers are required to register and pay a registration fee to the Department by January 1, 2006 or they will no longer be able to sell their computers in Maryland. The Department does not have any experience to report at this time.

*Question 4.* What is your advice for how to craft national legislation that would take into consideration the different state legislation already enacted? What aspects of your state legislation would make it most difficult to incorporate into national legislation?

*Response.* Again, as we are just beginning the implementation of our new law, the Department does not have any advice at this time.

**ELECTRONIC WASTE: AN EXAMINATION OF  
CURRENT ACTIVITY, IMPLICATIONS FOR  
ENVIRONMENTAL STEWARDSHIP AND THE  
PROPER FEDERAL ROLE**

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**THURSDAY, SEPTEMBER 8, 2005**

HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ENERGY AND COMMERCE,  
SUBCOMMITTEE ON ENVIRONMENT AND  
HAZARDOUS MATERIALS,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 2 p.m., in room 2322, Rayburn House Office Building, Hon Paul E. Gillmor (chairman) presiding.

Members present: Representatives Gillmor, Bono, Otter, Solis, and Inslee.

Staff present: Mark Menezes, chief counsel for energy and environment; Jerry Couri, policy coordinator; Tom Hassenboehler, majority counsel; Peter Kielty, legislative clerk; and Dick Frandsen, minority senior counsel.

Mr. GILLMOR. We will call the subcommittee to order. And we did have two panels consisting of nine members, but we thought it might be a better idea if we consolidated those two panels into one panel of nine members. So we will ask all of the panelists, both on panel one and panel two, if they could come forward and take a seat at the witness table.

And we had name tags for everybody, Jerry. So we can get the name tags and get the seating?

We will start. Once again, I apologize to this panel. Two of the members of the panel are distinguished former colleagues of ours, so they are used to all of this confusion, Steve and Dave. But let us proceed, and we are waiving opening statements for this hearing so that we can facilitate the witnesses. And I would propose that we go in the order that our panelists were originally listed.

The first would be Joel Denbo of the Institute of Scrap Recycling Industries. We normally have 5 minutes, and we would ask if you would stay within that. And, of course, your complete statements will become part of the record.

**STATEMENTS OF JOEL DENBO, CHAIR, INSTITUTE OF SCRAP RECYCLING INDUSTRIES, INC.; MICHAEL VITELLI, SENIOR VICE PRESIDENT, BEST BUY, ON BEHALF OF CONSUMER ELECTRONIC RETAILERS COALITION; STEVE LARGENT, PRESIDENT AND CEO, CTIA-THE WIRELESS ASSOCIATION; DAVE MCCURDY, PRESIDENT AND CEO, ELECTRONIC INDUSTRIES ALLIANCE; PARKER E. BRUGGE, SENIOR DIRECTOR AND ENVIRONMENTAL COUNSEL, CONSUMER ELECTRONICS ASSOCIATION; DAVID A. THOMPSON, DIRECTOR, CORPORATE ENVIRONMENTAL DEPARTMENT, PANASONIC CORPORATION OF NORTH AMERICA; GERALD L. DAVIS, PRESIDENT & CEO, GOODWILL INDUSTRIES OF CENTRAL TEXAS, INC.; MARK MURRAY, EXECUTIVE DIRECTOR, CALIFORNIANS AGAINST WASTE; AND RENEE ST. DENIS, DIRECTOR, AMERICAS PRODUCT TAKE BACK, HEWLETT-PACKARD COMPANY**

Mr. DENBO. Mr. Chairman and members of the subcommittee I am Joel Denbo of the Institute of Scrap Recycling Industries. ISRI is the trade association that represents 1,260 private for-profit companies that process, broker and industrially consume scrap commodities including metals, paper, plastics, glass, textiles, rubber, and electronics at nearly 3,000 facilities worldwide. Electronics scrap is nothing more than a complex combination of these items.

I am also the third generation of my family to own and operate Tennessee Valley Recycling, a company that began small, struggled for years, and will celebrate a century of recycling in 2007, with plants in Alabama and Tennessee.

The recycling industry is made up of entrepreneurs whose businesses, large and small, collectively process over 130 million tons of recyclables each year, worth upwards of \$30 billion. ISRI member companies have been recycling electronics for decades. In 2002, recognizing the ever-growing number of obsolete personal computers and peripherals and other electronics materials entering into the recycling stream, ISRI formed an Electronics Council to address the issues unique to this segment of the scrap recycling industry's activities.

The recycling of electronics—as entrepreneurs, I can assure you that we would not be here today if we did not recognize the value of this market. The explosive growth of electronics has presented challenges that need to be addressed. Scrap is not waste. Recycling is not disposing. These are two simple concepts that are often misunderstood. Scrap is a valuable raw material used in manufacturing. In contrast, waste has no value and generally ends up in landfill.

Defining obsolete electronics as waste undermines and overlooks the value that these electronics retain if properly recycled. When properly handled, the recycling of electronics poses little to no environmental risk, though ISRI is implementing a comprehensive integrated quality environmental health and safety management system. We call this Recycling Industry Operating Standards, or RIOS. Few industries have attempted such a huge step, but we believe that it is valuable to promote worker safety and manufacture of high quality raw material feed stocks.

The third issue involves the scope of the challenge. In the short form, our country needs to deal with the amount of electronics that

are stored in closets, basements, and warehouses. Some of these materials may have a value once calculated, sorted, transported, and recycled. There seems to be general agreement that our country needs some sort of short term, and I reiterate short term, funding mechanism to cover these costs, but there is less agreement on how it should be funded.

ISRI's Electronics Council is taking a look at this issue and comparing the two propositions most often discussed: cost internalization by the responsible manufacturers, and an advanced recycling fee administered by the government. We believe if funding is needed, cost internalization is the better of these alternatives. It is cheaper for consumers and taxpayers and provides a strong incentive for manufacturers to design their products to make them easier to recycle. Design for Recycling is a concept that ISRI developed 20 years ago. It calls on manufacturers to design products that can be easily recycled, minimizing the risk. Unfortunately, few manufacturers have voluntarily adopted the Design For Recycling philosophy. Electronics manufacturers are better than most, and we appreciate that. But there is still a significant room for improvement.

There is one more challenge that we must undertake in the long-term market. We must work together to develop markets. As the market grows, demand grows, the value of the commodity grows, and the need to subsidize electronic recycling falls. Hence, we suggest including funding for research.

In the end, our country should be encouraged to recycle. We must ensure that scrap electronics that come out of the basements, closets, and warehouses are handled properly, recycled, and not disposed of in a landfill. We should address this issue in a way that is not overburdened with regulation, that encourages a marketplace economy, and protects America's environment.

Thank you, Mr. Chairman and members of the subcommittee, for addressing this timely issue. I welcome any questions you may have.

[The prepared statement of Joel Denbo follows:]

PREPARED STATEMENT OF JOEL DENBO, CHAIR, INSTITUTE OF SCRAP RECYCLING INDUSTRIES

Mr. Chairman and Members of the Sub-committee, my name is Joel Denbo. I am here as Chair of the Institute of Scrap Recycling Industries (ISRI). ISRI is the trade association that represents 1,260 private, for-profit companies that process, broker and industrially consume scrap commodities including metals, paper, plastics, glass, textiles, rubber and electronics at nearly 3,000 facilities worldwide—over 80% of those facilities are located in the United States. Approximately 300 of our 1,260 members handle electronics, either exclusively, or as an aspect of their other recycling activities. I am also the third generation leader of Tennessee Valley Recycling, a company my family began in 1907 that currently has plants located in Alabama and Tennessee.

In the minds of many, recycling in the United States is a phenomenon that began in the 1970's following the original Earth Day celebration. For others, awareness dates to the late 1980's following the infamous voyage of the "garbage barge" and the ensuing fears that landfill capacity had reached a crisis stage. It may interest the Committee to know that—the scrap recycling industry actually dates back to the beginnings of our nation, when a statue of King George III was toppled in NYC and its metal was used to make bullets for the Continental Army. Our members are in the business of recycling, and have formed the basis of the established recycling infrastructure that exists in this country today.

Today, the processing of scrap commodities is an integral part of the U.S. economy and its domestic manufacturing industries. Scrap commodities are collected for beneficial reuse, conserving impressive amounts of energy and natural resources in the

recycling process. For example, according to the Environmental Protection Agency recycled aluminum saves the nation 95 percent of the energy that would have been needed to make new aluminum from virgin ores. Recycled iron and steel result in energy savings of 74 percent; recycled copper, 85 percent; recycled paper, 64 percent; and recycled plastic, more than 80 percent. Collectively, ISRI members process over 130 million tons of recyclables each year, worth upwards of \$30 billion and contribute more than \$2 billion annually to the US balance of trade.

ISRI's member companies are family owned businesses that have stood by, and with, the same towns and cities throughout America for the past century, creating the backbone of the recycling infrastructure you see in this country today. In fact, in two years my company will celebrate the one hundredth anniversary of its founding by my immigrant grandfather and his brother. ISRI members have provided stable, good-paying jobs in this country during the boom years, the lean years, and in war time. Understandably, we are known as America's "Original Recyclers" and proudly wear the badge of the Voice of the Recycling Industry.

ISRI members have been recycling electronics for decades as an integral part of their recycling operations. Indeed, early computers—mainframes as they were known, were highly sought after commodities in our industry. In 2002, recognizing the ever-growing number of obsolete personal computers and peripherals, and other electronics materials entering the recycling stream, ISRI formed an Electronics Council to address the issues unique to this segment of the scrap recycling industry's activities. Sensing an opportunity, as good businessmen and entrepreneurs generally do, many of our member companies are investing significant capital to expand their businesses to recycle more electronics. Yet, while they have acted on their "recycling know-how" and sense of opportunity, they also know that before electronics recycling can stand on its own, a number of challenges familiar to the traditional scrap recycling industry need to be addressed.

The challenges include, among other things, the need: to distinguish between scrap and waste, to develop end-use markets for the materials recovered from scrap electronics, to promote manufacturer design improvements to make electronics easier to recycle and to avoid the use of hazardous materials in the manufacture of electronics products, and to promote the benefits of environmental management systems, such as ISRI's Recycling Industry Operating Standard (RIOS) as the proper means to address environmental concerns. Consequently, ISRI's Board of Directors last month adopted a policy resolution outlining how best to address these challenges.

As businessmen who know how to recycle, our views are derived from years of practical experience. In order to assist this Committee's efforts to understand how best to ensure that electronics are recycled properly, and not disposed of in landfills or elsewhere, I would like to highlight some of the key issues within our policy.

We need to avoid creating unnecessary impediments to recycling. Thus, it is very important to distinguish the difference between scrap and waste. Electronics scrap, like scrap paper, glass, plastic, metal, textiles, and rubber, is not waste. Scrap is the opposite of waste. Processed scrap materials are commodities that have a value on domestic and international markets, whereas waste materials have no value and are typically buried in a landfill. Electronics recyclers make their living by providing de-manufacturing services, such as scrubbing and reselling hard drives, by reselling cell phones, monitors and CPUs that are in good working order, and by using machinery and equipment to shred or otherwise process electronics to extract the various commodities that are in electronics like steel, aluminum, gold, silver, titanium, copper, nickel, plastic and glass.

Defining obsolete electronics as waste undermines and overlooks the value that these electronics retain if properly recycled. Saddling them with the moniker of waste imposes a whole host of unwarranted regulatory burdens that will undermine the ability to make the system work. For these reasons, it is eminently important that we avoid confusing these valuable commodities with wastes.

Another key aspect underlying our policy is the concept of free and fair trade. We have been in the recycling business a long time and understand that scrap commodities are some of the best examples of basic supply and demand economics. These materials are traded in the global marketplace, supplying America's basic manufacturing industries with valuable raw material feed stocks that are used in place of virgin materials, and contributing significantly to the United States' balance of trade with other nations. Hence, our industry has generally opposed efforts to interfere with commodity markets and create artificial distortions. However, being the pragmatic businessmen that we are, we recognized that the electronics market has grown explosively in such a short period of time that, for the short term, it might take some sort of financial mechanism to ensure that the costs of recycling elec-



tronics—which sometimes have a “negative intrinsic value”—do not deter recycling from taking place.

Allow me to explain. Right now, under current market conditions, if a citizen, a governmental entity, a commercial or retail establishment wants to do the right thing and recycle their electronics, recyclers must charge that citizen or other entity a fee in order to justify the costs of recycling certain obsolete electronics components, such as older computer monitors and TV’s with cathode ray tubes (CRTs). That’s because the costs of recycling these items are more than the value of the component materials that can be extracted from them. This is due in large part to the lack of markets for the recycled glass and plastics in these units. Creating a long term, sustainable recycling infrastructure for the recycling of electronics will require that the electronics are both economically and technologically feasible to recycle. As a result, ISRI decided to support a financial mechanism to cover the negative value of the material.

In looking at the issue, our Electronics Council determined that the best financial mechanism would be for manufacturer’s to take some responsibility for the cost of recycling their products, by internalizing the cost of collecting, sorting, transporting and recycling of a defined set of electronics for two primary reasons. First, we recognized that producer responsibility provides a greater incentive to encourage manufacturers to adopt Design For Recycling<sup>®</sup>, a concept that ISRI has been advocating since the early 1980s. Second, we believe that internalization will be cheaper for the consumer/taxpayer. We did not come to this conclusion lightly. In fact, it was a gut wrenching decision as our industry has long argued that the markets should be allowed to operate freely.

Essentially, Design for Recycling calls upon manufacturers to design their products to be easily recycled at the end of their useful lives, without using hazardous or toxic constituents that can hinder the recycling of those products, and to be manufactured using recycled materials. Design for Recycling contemplates cooperative efforts between manufacturers, recyclers and the government, in research and development efforts, in defining and understanding the challenges faced at every stage of a product’s life cycle, and in mutual efforts to develop better ideas. To date, voluntary calls by the recycling industry to motivate manufacturers to adopt a Design for Recycling philosophy have met with only a tepid response. We do recognize that electronics manufacturers have taken some steps towards designing for recycling; however, there is room for improvement. It is important to understand that greater Design for Recycling can increase recycling productivity that will only ensure a stronger more sustainable infrastructure.

We believe, as successful businessmen, that if given the flexibility and opportunity to internalize the costs, that manufactures can create a model that will be less bureaucratic and burdensome and cheaper for the tax payer. However, certain manufacturers insist that a consumer tax in the form of an Advance Recycling Fee (ARF), implemented, governed and administered by state governments, will be cheaper than manufacturers internalizing the costs. We disagree with this logic. We are aware that there is a fierce and sometimes spirited debate occurring among and between manufacturers and retailers about this issue. This is as it should be. Ultimately, being neither an electronics manufacturer nor a retailer, ISRI’s Electronics Council felt it necessary to take an objective look at this issue, as the outcome of the debate will ultimately affect the electronics recyclers.

We acknowledge that some manufacturers have had an unkind, if not visceral, reaction to our position on this issue. They have even questioned our right to have an opinion on the matter of cost internalization versus ARFs. However, while we would not fall on our sword whichever way the Congress or state legislatures decides the cost internalization versus ARF matter, we have specific reasons for holding our preference.

While ISRI will ultimately defer to the wisdom of the Congress or the states to decide which financial mechanism is most apt to spur electronic markets, we strongly encourage the Congress and the states to end any financial mechanism as soon as markets for recyclable electronics become economically viable. We are not an industry that looks lightly on government subsidy, and we believe markets must ultimately stand on their own based on solid business principles. That said, whatever financial mechanism the Congress and the states might decide to put forward in order to sustain this market, ISRI suggests that a portion should be applied to the research and development of end use markets for the materials recovered from electronics products.

Two of the greatest challenges of electronics recycling are the difficulties of sorting the different resins of plastic and recycling chemically coated glass. Targeting funds to further technology in these two fields would have a tremendous impact on making end-use consumer markets more economically viable, which would, over

time, ensure these markets could stand on their own without subsidy. In fact, we believe it would be wholly appropriate for the Congress to support research efforts aimed toward the development of technologies for utilizing these materials in the manufacturing process.

Mr. Chairman, I briefly alluded to RIOS early in my remarks. RIOS is an integrated environmental, health and safety, and quality management system standard that ISRI has developed over the past 18 months. Few industries worldwide have endeavored to undertake such a huge step, but the recycling industry in the United States has always been, and intends to remain, the global leader in recycling technology, environmental protection, worker safety and the production of high quality materials. RIOS is a tool for us to accomplish those goals and will help assure that ISRI members who recycle scrap electronics will do so in a manner that is best for our country, and the world in which we live.

In closing, I want to remind the Committee what this is all about, and that is recycling. At the end of the day when you have done your jobs and the money issue is sorted out, and folks start pulling electronics from closets and basements, it will be the electronics recyclers that end up with electronics on their doorsteps, and that is exactly what we want. What we do not want is an over-regulated system that makes it impossible to do our job. Our job is to make sure electronics are properly recycled in order to protect America's environment and support our global economy. I want to thank you Mr. Chairman and Members of the Committee for addressing this timely issue and welcome any questions you may have.

Mr. GILLMOR. Thank you very much, Mr. Denbo, and we will go to Michael Vitelli, Senior Vice President of BestBuy, who is testifying on behalf of the Consumer Electronic Retailers Coalition.

Mr. Vitelli.

#### **STATEMENT OF MICHAEL VITELLI**

Mr. VITELLI. Thank you Chairman Gillmor, Ranking Member Solis, and members of the subcommittee. I am Michael Vitelli, Senior Vice President of Consumer Electronics of BestBuy, and I am here today to testify on behalf of the consumer electronics retailers coalition, or CERC.

CERC is a national coalition representing consumer electronics retail businesses and associations that operate in all 50 States and worldwide. Joining BestBuy in CERC are Circuit City, Radio Shack, Wal-Mart, Target, North American Retail Dealers Association, and the Retail Industry Leaders Association.

BestBuy is the country's leading consumer electronics retailer with close to 700 stores in 49 of the 50 States and nearly 100,000 employees. The company started in 1966 with a single store in Saint Paul, Minnesota, and we continue to operate our headquarters in the Twin Cities.

BestBuy is actively concerned with the issue of electronic waste. In 2001, we launched a series of recycling events. Through these events, BestBuy has helped consumers nationwide recycle over 2.5 million pounds of electronics in an environmentally responsible way since the program began. We also offer the ability to recycle cell phones, ink cartridges and rechargeable batteries year round in all our U.S. stores.

CERC members and other consumer electronics retailers and manufacturers have participated in such EPA programs as the Plug-in to e-Cycling outreach campaign. Partners in this EPA program have included manufacturers like Panasonic, Sharp, Sony JVC, Lexmark, Dell, and Intel, retailers like BestBuy, Staples, and Office Depot, and approximately 2 dozen State and local governments. More than 26.4 million pounds of electronics were collected in the first 10 months of this national program alone.

Given our industry's history on recycling programs and events, CERC has some observations regarding public policy solution to this issue.

There are three central points I want to make regarding the electronics recycling:

One, a Federal solution is far preferable to 50 differing State solutions. This issue needs Federal leadership. Of course, I believe this because it simplifies our participation. I also think a Federal solution is required because it will simplify the process for consumers and will ensure that no State is either disadvantaged by a system, or left with a large amount of the waste. The Federal Government needs to actively study this issue, thereby providing assurance to States that a Federal solution may be found and potentially reducing the number of individual State actions. Many States are acting only because they do not see a Federal action.

Two, this issue is complicated. There is the waste that is currently waiting to be recycled. There are the products that are still in use, but will need recycling in the near future. Neither of these two categories of products—historic waste—were produced with the understanding that they would have to be recycled. And then there are the products that will be produced in the future—future waste. It may be helpful in finding a solution to think about these two categories of waste separately.

Three, in any scenario, the public will pay for the recycling of electronic waste. If the government provides the solution, consumers pay in the form of additional taxes. If the government mandates a fee, the consumer pays. If the manufacturer must include recycling in their product costs, the consumer pays. But it is only in this last solution, where the costs of recycling are part of the cost of the products, that there is an inherent incentive to reduce both the need to recycle and the long-term costs of recycling. Given the reality that the consumer will pay under any scenario, it seems best to find the solution that will drive efficiencies and reduce costs over time.

It is the combination of point two, that there may need to be a couple of solutions, and point three, that the best solution in the future is one that drives to least cost and efficiency, that drives CERC to support the concepts of the Talent-Wyden approach. This tax incentive program could go a long way to provide an immediate incentive to deal with the historic waste over the next few years. If coupled with a program of manufacturers' responsibility for future products, the end result could be a total solution that drives to least cost and maximum efficiency over time and provides the right, limited incentive to jump start and capitalize recycling programs in the near term.

We very much appreciate the holding of this hearing and encourage Congress and the committee to continue to work toward a national solution to electronics waste management. We pledge to work with you in arriving at a fair, viable, and effective approach. Thank you.

[The prepared statement of Michael Vitelli follows:]

PREPARED STATEMENT OF MICHAEL VITELLI, SENIOR VICE PRESIDENT, BEST BUY ON  
BEHALF OF THE CONSUMER ELECTRONICS RETAILERS COALITION (CERC)

Chairman Gillmor, Ranking Member Solis and members of the Committee, I am Michael Vitelli, Senior Vice President of Consumer Electronics of Best Buy and am here today on behalf of the Consumer Electronics Retailers Coalition (CERC) to provide the views of CERC's membership on the need for a national electronics management system.

CERC very much appreciates the opportunity to provide the views of the consumer electronic and general retail industry concerning the need for a national approach to handling electronic devices at their end of life. We are also very appreciative, Mr. Chairman, of the leadership you have shown in holding this hearing today and providing a forum for interested stakeholders to express their views. We look forward to working with you and the members of this Committee to identify the best means of developing a national solution for electronic device recycling.

BACKGROUND ON BEST BUY

Let me begin by thanking the members of this Subcommittee as well as the full Committee for your leadership on energy issues related to the aftermath of Hurricane Katrina. Best Buy had 15 stores affected by the storm and 6 are still not functional. We have found all but 20 of our associates but are saddened to know that somewhere between 750 and 1000 are now homeless. We are working with those employees to secure needed support including temporary housing. As is our practice, employees affected by natural disasters remain on the payroll. We do our best to redeploy employees in other locations or provide them as local volunteers as needed. Our employees across the nation are active in their local communities, assisting where possible so trained disaster relief personnel can be deployed. The Company has donated \$1 Million in relief funds to the American Red Cross and we have opened our point of sale systems in our stores to collect contributions from customers and the general public for the American Red Cross.

As you may know, Best Buy is the country's leading consumer electronics retailer with close to 700 stores in 49 of the 50 states and nearly 100,000 employees. The company started in 1966 with a single store in St. Paul, Minnesota and we continue to operate our headquarters in the Twin Cities. In addition to our product and service offerings, Best Buy is also known for our ongoing commitment to our communities, providing volunteer support, financial resources and leadership on many issues, but especially on the use of innovative technology to improve the learning opportunities for kids. We provide over 1300 scholarships to students entering higher education—3 scholarships in every Congressional district in the country. Our new te@ch program rewards schools and educators who are using technology to energize their lesson plans and engage students. The National Parks Foundation's Junior Ranger program is available to kids across the country through the Web Ranger program sponsored by Best Buy. With Junior Achievement's "Titan" business simulation game, we've helped harness the excitement of a video game to stimulate real learning.

Best Buy has also been actively concerned with the issue of electronic waste. In 2001, we launched a series of recycling events to provide a simple, fun and convenient program for recycling electronics that protects the environment while raising awareness of recycling options. Best Buy has helped consumers nation-wide recycle over 2.6 million pounds of electronics in an environmentally responsible way since the program began. In addition to recycling events, we also offer the ability to recycle cell phones, ink cartridges, and rechargeable batteries year round in all our U.S. stores.

BACKGROUND ON CERC

CERC is a national coalition representing small, medium and large consumer electronics retail businesses and associations that operate in all 50 states and worldwide. Our members, in addition to Best Buy, include Circuit City, RadioShack, Wal-Mart, Target, the North American Retail Dealers Association and the Retail Industry Leaders Association. Our goal is to educate, advocate and instill continued consumer and market confidence in consumer electronics policy issues.

Following months of internal discussion, conducting an industry-wide survey, holding meetings with state legislative leaders and experiencing the impact and initial results of the California advance recycling fee law, CERC drafted a consensus legislative position paper on electronic waste management earlier this year, which is attached to my written statement.— While other stakeholders have yet to reach a broad consensus, consumer electronic and general retailers, including their na-

tional and state federations, have come together around a position that we believe lays out the issues, opportunities and obstacles—involved in setting up a nationwide eWaste model. Since issuing this Position Paper, CERC has been working with and recruiting broad cross-industry support among other interested stakeholders, including environmental groups, recyclers, state legislators and manufacturers.—

#### CURRENT PROGRAMS/ACTIVITIES

Even without state or federal laws governing management of electronic waste, the private sector—manufacturers and retailers working with qualified recyclers—has been fully supportive of the shared responsibility product stewardship approach through numerous voluntary initiatives that collect and recycle devices. These programs have included the development of a strong and meaningful educational campaign for consumers and policy makers. Best Buy and other members of CERC, as well as consumer electronic retailers that are not members of our organization, together with a number of manufacturers, have been actively involved in activities that highlight the need for conservation and how best to handle electronic devices at their end of life.

There are several initiatives in place today to reduce and manage electronic waste both at the federal and industry levels. CERC members and other consumer electronic retailers and manufacturers have participated in such EPA programs as the *Plug-In To eCycling* outreach campaign, which works to increase the number of electronic devices collected and safely recycled in the United States and has identified new and creative flexible, yet more protective ways to conserve our valuable resources.

*Plug-In To eCycling* focuses on:

- Providing the public with information about electronics recycling and increasing opportunities to safely recycle old electronics;
- Facilitating partnerships with communities, electronics retailers and manufacturers to promote shared responsibility for safe electronics recycling; and
- Establishing pilot projects to test innovative approaches to safe electronics recycling.

Program partners have included manufacturers like Panasonic, Sharp, Sony, JVC, Lexmark, Dell, Intel; retailers like our company, Best Buy, as well as Staples and Office Depot; and approximately two dozen state and local governments. More than 26.4 million pounds of electronics were collected in the first ten months of this national program alone.

In addition to the *Plug-In To eCycling* campaign a number of retailers and manufacturers have taken part in voluntary programs to encourage greater recycling. As noted in my introduction, Best Buy actively provides recycling options for our customers with our recycling events. We have had an overwhelming response to our events. In fact, the event we hosted a month ago at our corporate headquarters in Minnesota drew record crowds with over 2,900 cars and a collection of over 250,000 pounds (125 tons) in just two days. This is in a county that already has a program in place for the recycling of electronics.

In addition to Best Buy activities, a number of CE retailers and manufacturers have and are taking part in voluntary pilot projects. Staples, for example, sponsored a New England-based pilot program in cooperation with EPA's *Plug-In To eCycling* campaign and the Product Stewardship Institute (PSI) in the summer of 2004. Also last summer, Office Depot and HP sponsored a similar in-store electronics recycling pilot nationwide. Both programs accepted hardware from any manufacturer, including PCs, mice, keyboards, PDAs, monitors, flat-panel displays, laser and ink jet printers, scanners, all-in-one printers, digital cameras, fax machines, cell phones, TVs, and TV/VCR combos. This summer, Good Guys is partnering with the EPA and a number of electronics manufacturers to collect and recycle televisions.

#### THE NEED FOR A FEDERAL SOLUTION

But we all realize that voluntary programs cannot fully handle or solve the end of life issues surrounding electronics products. CERC strongly believes a comprehensive nationwide approach to the management of electronics is the ultimate solution and far more preferable, desirable and efficient than a patchwork of different eWaste laws instituted by individual states. In the first half of 2005 alone, 30 state and local legislatures saw more than 50 separate bills introduced on this issue including an eWaste measure introduced and still active in New York City. 50 different state approaches will be administratively unreasonable and infeasible for manufacturers and retailers alike and will not lead to a comprehensive and efficient electronics waste management system for our nation. Many states are acting because they do not see action from the Federal Government. Active consideration of

this issue by Congress, like that shown by this Committee, may help in providing a positive, national solution and in reducing the need for disjointed state and local action.

#### THE ISSUE IS COMPLICATED

Through all of the voluntary efforts outlined above, we have first-hand knowledge of the fact that this issue is complicated. It may be helpful to the Committee to highlight one significant complication. There is the waste that is currently waiting to be recycled. There are the products that are still in use but will need recycling in the near future. Neither of these two categories of products—historic waste—was produced with the understanding that they would have to be recycled. And then there are the products that will be produced the future—future waste. Finding a solution may require us to think about these two categories of waste separately.

#### EFFICIENCY AND A LEAST COST SOLUTION

Both CE and general retailers unanimously support a shared responsibility approach to the handling of electronic devices at the end of their life cycle. In any scenario, the public will pay for the recycling of electronic waste. If the government provides the solution, consumers pay in the form of additional taxes. If the government mandates a fee, the consumer pays. If the manufacturer must include recycling in their product costs, the consumer pays. But it is only in this last solution—where the costs of recycling are part of the cost of the products—that there is an inherent incentive to reduce both the need to recycle and the long term costs of recycling. Given the reality that the consumer will pay under any scenario, it seems best to find the solution that will drive efficiencies and reduce costs over time.

It is the combination of these last two points—that there may need to be a couple of solutions and that the best solution in the future is one that drives to least cost and efficiency—that drives CERC to support the concepts of the Talent Wyden approach. This tax incentive program could go a long way to provide an immediate incentive to deal with the historic waste over the next few years. If coupled with a program of manufacturers' responsibility for future products, the end result could be a total solution that drives to least cost and maximum efficiency over time and provides the right, limited incentives to jump start and capitalize recycling programs in the near term.

#### SPECIFIC SUGGESTIONS

Our Position Paper outlines the factors and components that a successful manufacturer responsibility program should include:

- Initially, any program should have a limited number of types included to insure an easy transition, and clear definitions of which devices are covered.
- Making sure that any “take-back” programs—if mentioned at all—remain voluntary.
- A “safe harbor” for a consumer electronics retailer that sells a product not covered under an approved management plan absent actual knowledge.
- Programs that help educate and are easily understood by consumers.
- A flexible system that allows manufacturers the ability to provide services to consumers and encourages the market to drive efficiencies and choices.
- Encouragement to voluntary collection initiatives by manufacturers to partner with retailers, charities and/or local government.
- Establishment of manufacturers' financial responsibility based on the products that consumers return to the system—not fees at the point of sale or other financial models that do not reflect the true costs and realities of the return system.
- The ability of manufacturers to work independently or collaborate with others to meet the established responsibility goals.

#### CERC EXPERIENCE WITH STATE-LEVEL ADVANCE RECOVERY FEES

Our members oppose a point of sale advance recovery fee (POSARF) system because we know from firsthand experience that such an ARF will not accomplish its goals, is administratively burdensome for all parties, and will only guarantee a new revenue source for government without guaranteeing that an effective recycling system will be put into place. In addition, such a program provides no incentive for the design of more environmentally-friendly products, and fails to take advantage of market forces to reduce the cost of recycling over time.

The recent institution of such a fee/tax program in California has already been shown to be:

- Too complicated for all parties—government, businesses and consumers—to understand and administer.
- Incredibly costly for both governmental agencies and retailers to implement.
- Impracticable to bring sufficient dollars down to the local level to implement enough local collection and disposal facilities.
- Impossible to impose on out-of-state online/mail order retailers.
- Impractical, by asking the government to set up a new administrative structure to collect the fees, to manage the program and disperse the revenue for effective recycling.
- Impossible to know how high the taxes/fees charged to consumers needs to be in order to adequately fund a successful electronics device recycling program.

In short, a POSARF—particularly given significant budget cutting at all levels of government—will not adequately fund an effective recycling program, and will only serve to confuse and burden the consumer with the imposition of new fees and perceived new taxes without any direct benefits.

#### CONCLUSION

The members of the Consumer Electronics Retailers Coalition, together with CE and general retailers and their trade associations throughout the United States, want to be constructive and contributing partners with law makers, manufacturers, public interest groups, recyclers and our customers in dealing with the end of life issues surrounding electronics products. We cannot, however, afford to let individual states and certainly individual cities and counties, establish their own programs that impose inconsistent mandates on retailers or manufacturers.

We very much appreciate the holding of this hearing and encourage Congress in general and this Senate Committee in particular to continue to work towards a national solution to electronics waste management. We pledge to work with you in arriving at a fair, viable and effective approach.

Thank you.

Mr. GILLMOR. Thank you very much, Mr. Vitelli. And I want to congratulate you. You almost hit the 5 minutes right on the button. Next, we will go to Steve Largent, who is the President of CTIA, the wireless association.

Steve.

Oh, Steve, could I ask you to suspend for a moment? We do have a court reporter here, and we will give him time to set up.

We are good to go.

Mr. Largent.

#### STATEMENT OF STEVE LARGENT

Mr. LARGENT. I would like to ask that my entire written testimony be made a part of the record.

Mr. GILLMOR. Without objection, it will be done.

Mr. LARGENT. As a Member of Congress, I had the privilege of serving on this subcommittee for 6 years. The experience and insight I gained formulating national environmental policy has proven invaluable as I work with CTIA's member companies to minimize the environmental impact of discarded mobile phones and related accessories.

CTIA members recognize that one of our responsibilities as good corporate citizens is a commitment to environmental stewardship. This commitment is reflected in the industry's voluntary disposal recycling program, "Wireless...the New Recyclable." This is a multifaceted program the wireless industry launched in 2003 to facilitate environmentally sensible management of wireless products at end of life. The program has been embraced by most CTIA members, including all national carriers and mobile phone manufacturers. The program guidelines incorporate all aspects of the recycling

process: collection, transportation, reuse, refurbishment, and materials reclamation.

The guidelines assist companies in ensuring that the wireless devices that are collected are managed, transported, recycled or refurbished in a responsible way, and in accordance with Federal and State environmental laws. The wireless industry has been able to establish effective voluntary collection programs because of the small size and portability of mobile phones and devices. Wireless handset manufacturers have responded to consumers' preference of the less is more approach. I have with me today an old mobile phone as well as a phone that is on the market today. This is our old mobile phone; some of you may remember using that. This is one of our newer phones here. It is a small, slim phone. That is the way of our world. Less is more.

The new generation of wireless devices weigh approximately 42 percent less than earlier models and are constructed in a more environmentally friendly way with a reduction of hazardous materials. Carriers, recyclers, and refurbishers are in the process of evaluating the best way to expand and assess their respective recycling and/or refurbishing programs. With that being said, I can share the following heartening statistics: ReCellular, a refurbisher, collected 4 million phones in 2004, up from 1.5 million in 2002. Sprint Nextel has collected 4.4 million phones since 2002. They also have refurbished 2.3 million phones since 2002. The Wireless Foundation's take-back programs have collected nearly 3 million phones since 1999. Verizon Wireless has collected approximately 2 million phones through their HopeLine charitable donation program. eBay reportedly sells 130,000 used phones a month on its Web site and approximately 4 million phones over the past 5 years.

Other examples are provided in my written testimony. CTIA and the member companies I represent believe that mobile phones and mobile devices are a consumer product in the national commerce and best addressed at the national level. We believe that State-by-State regulation is counterproductive. Rather, this challenge demands a comprehensive voluntary national solution tailored to address the issues raised by mobile phone and mobile device end of life. The wireless industry fears that a State-by-State system would lead to confusion, uncertainty, high compliance cost, and inefficient use of resources, all of which will lead to increased costs for consumers.

The EPA has established a record of comprehensive voluntary reuse and recycling programs. EPA's programs, such as Waste Wise and Resource Conservation Challenge are good examples of government-industry partnerships designed to produce environmental sound results without the need for new regulation.

The industry I represent believes that mobile phones and mobile devices demand a comprehensive voluntary national program for reuse and recycling that takes into account the unique characteristics of our devices. We are committed to working with EPA and the Department of Commerce to continue the industry's initiative, "Wireless... the New Recyclable," a program with a proven track record of success in protecting our Nation's environment.



I thank you, Mr. Chairman, for the opportunity to testify and for the opportunity to share the wireless industry's views. Thank you, Mr. Chairman.

[The prepared statement of Steve Largent follows:]

PREPARED STATEMENT OF STEVE LARGENT, PRESIDENT AND CEO, CTIA—THE WIRELESS ASSOCIATION™

Chairman Gillmor, Ranking Member Solis, and members of the Subcommittee, thank you for the opportunity to appear before you today to testify on the issue of electronic waste and the appropriate role of government, be it local, state, or Federal, to address this matter. As a Member of Congress, I had the privilege of serving on this Subcommittee for six years. The experience and insight I gained formulating national environmental policy has proven invaluable as I work with CTIA's member companies to minimize the environmental impact of discarded mobile phones and related accessories. CTIA—The Wireless Association™ and its members have been committed to the goal of sustainable development in the wireless industry and the environmentally sound management of discarded, recycled, or refurbished wireless mobile phone products.

CTIA'S COMPREHENSIVE, VOLUNTARY REUSE AND RECYCLING PROGRAM

CTIA members are at the forefront of providing consumers with wireless products and services that facilitate communications wherever and whenever. Concurrent with the industry's business goal of providing ubiquitous wireless coverage, CTIA members recognize that one of our responsibilities as good corporate citizens is a commitment to environmental stewardship. This commitment is reflected in the industry's voluntary disposal recycling program—Wireless... The New Recyclable.

WIRELESS... THE NEW RECYCLABLE

What is "Wireless... The New Recyclable?" It is a multi-faceted program the wireless industry launched in October of 2003 to facilitate environmentally sensible management of wireless products at end-of-life. The initiative provides a voluntary and uniform set of guidelines allowing manufacturers and carriers to upgrade the management of their environmental practices in the disposition of used wireless devices. It has been embraced and adopted by numerous CTIA members, including all of the national carriers and mobile phone manufacturers.

The program guidelines incorporate all aspects of the recycling process: collection, transportation, re-use, refurbishment and materials reclamation.

PUBLIC OUTREACH AND AWARENESS

"Wireless... The New Recyclable" is designed to inform, educate, and encourage consumers to recycle their "end-of-life" wireless products through a wide range of company initiatives and incentives. In particular, the program focuses the public's attention on the importance and ease of recycling wireless devices by 1) supplying the wireless industry with public awareness materials, such as posters and bill stuffers, to reinforce the message to recycle wireless devices and; 2) directing consumers to [www.recyclewirelessphones.com](http://www.recyclewirelessphones.com), a central website that provides consumers with important information on the recycling of wireless products and links to CTIA member company sites which provide information on where consumers can recycle phones.

CTIA ENVIRONMENTAL PRINCIPLES

"Wireless... The New Recyclable" incorporates CTIA's ten environmental principles that set forth the wireless industry's commitment to sustainable development and the proper management of wireless devices at their end-of-life. The principles are listed on the second page of a handout that I've included with my testimony.

VOLUNTARY GUIDELINES

The guidelines assist companies in ensuring that the wireless devices that are collected are managed, transported and reused, refurbished or recycled in a responsible way and in accordance with federal and state environmental laws. Promoting the re-use, refurbishment or recycling of wireless devices minimizes waste destined for landfills or incineration. Just as importantly, the recycling guidelines facilitate the recovery of raw materials that are then used in the manufacture of new products.

## CELL PHONES ARE DIFFERENT FROM OTHER ELECTRONICS

A key aspect of any re-use or recycling program is the collection of the product. The industry has been able to establish effective voluntary collection programs that are a function of the small size and portability of mobile phones and mobile devices. These voluntary programs include collection at municipal centers, return of products to service providers or other retailers, or mail-in returns to manufacturers. The size and relative lack of portability of most other electronics products, such as TVs and computers may not practically or economically allow for this range of collection options.

For example, Verizon Wireless has a program that collects cellular telephones in retail outlets and accepts the return of its products via mail through the charitable program, *HopeLine*<sup>SM</sup>; this program offers these collected products to help the victims of domestic violence. T-Mobile's *Give More, Get More* accepts used phones through the mail and donates 100% of the recycling proceeds to charitable organizations. Cingular, SprintNextel, and other companies also collect previously used wireless phones and donate either the refurbished phones or the proceeds from the programs to charitable organizations. Finally, The Wireless Foundation, a charitable organization created by CTIA, has sponsored collection events and charitable programs, such as Donate-a-Phone<sup>®</sup>.

## SIZE, PORTABILITY, AND REDUCED ENVIRONMENTAL IMPACTS

Wireless handset manufacturers have responded to consumers' preference of the "less is more" approach when it comes to the development of new mobile phones. One only has to look at the size of mobile phones ten years ago juxtaposed to the size of phones being manufactured today to see the tremendous strides the industry has made not only in technological capabilities, but also environmental compatibility. The new generation of wireless devices weigh approximately 42% less than earlier models and are being constructed in a more environmentally friendly manner. As mobile phone and device manufacturers comply with the European Union's Restriction of Hazardous Substance (RoHS) Directive, we also see the reduction of hazardous materials such as lead and cadmium in wireless phones marketed in the United States.

We anticipate that the design changes required for sale in, or import to, the European Union will also be applied to products marketed and sold in the United States. Such design changes will facilitate recycling and reuse and further reduce any potential environmental impacts from the recycling or disposal of mobile phones or mobile devices.

## MARKETS EXIST FOR USED MOBILE PHONES AND MOBILE DEVICES

The market for used mobile phones and mobile devices is different from most of the electronics industry. Mobile phones have a relatively high re-use value creating an ongoing market for these devices; therefore, the market forces providing incentives to collect and re-use these devices would be more efficient than for other electronics products. This is evidenced by the current efforts of ReCellular and HOBI International, Inc., two for-profit companies established to collect and refurbish used telephones for return to the market. The operation of for-profit companies is unusual in the electronics recycling and reuse market and is a clear indication of the strength of the market for wireless device reuse.

## CLOSE CONTACT BETWEEN CONSUMERS AND SERVICE PROVIDERS

Unlike most electronics manufacturers and retailers, wireless service providers and consumers are typically in close contact during mobile phone or mobile device replacement and billing. This contact presents the opportunity for efficient and cost-effective collection. Many wireless customers return to a service provider or independent agent to replace their devices. Moreover, through monthly billing, service providers are in communication with their customers on recycling and re-use options. This readily available occasion for re-use or recycling opportunities is not common to most other electronics industries.

SUCCESS OF "WIRELESS . . . THE NEW RECYCLABLE<sup>®</sup>"

Carriers, recyclers, and refurbishers are all in the process of evaluating the best way to expand and assess the success of their respective recycling and/or refurbishing programs. With that being said, I can share with the Subcommittee the following statistics:

- ReCellular, a refurbisher, has collected approximately four million phones in 2004, up from 1.5 million in 2002.
- Nextel has collected 4.4 million phones since 2002. Nextel also has refurbished 2.3 million phones since 2002.
- The Wireless Foundation's take-back programs have collected nearly three million phones since 1999.
- Verizon Wireless has collected approximately two million phones through their HopeLineSM charitable donation program.
- GRC Wireless Recycling has collected approximately one million phones since 2001.
- Old Cell Phone Co. reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.
- RMS Communications Group collected one million phones in 2004, and has been collecting phones for the past ten years.
- eBay reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

#### STATE-BY-STATE REGULATION IS UNWORKABLE

Mobile phones and mobile devices are a consumer product in national commerce best addressed at the national level. The re-use and recycling of these wireless devices present issues unlike those presented by traditional state solid waste management and disposal. The size, marketing and re-use and recycling options available for wireless devices are also distinct from other types of electronics. In our view, a voluntary, industry-supported national program will facilitate the re-use and responsible recycling of wireless devices regardless of where the devices are purchased or where the devices wind up.

The re-use and recycling of mobile phones and mobile devices is a national environmental challenge. We believe that state-by-state regulation is counter-productive and a one-size fits all national approach is not workable for the entire electronics industry. Rather, this challenge demands a comprehensive, voluntary national solution tailored to address the issues raised by mobile phone and mobile device end-of-life. Consumers and industry are already confronting inconsistent state requirements, as evidenced by the inconsistent take-back, financing and manufacturing requirements already enacted in California and pending in several other states. Absent a definitive federal endorsement of a voluntary national recycling program, it seems that a piecemeal and inconsistent network of state regulatory programs will be the default solution. The wireless industry fears that a state-by-state system would lead to regulatory uncertainty and confusion, high compliance costs, and the inefficient use of resources, all of which combined will lead to increased costs for consumers and a much less efficient and effective take-back program, particularly for wireless providers and manufacturers that serve multiple markets. The environmental benefits of such an approach are also questionable.

Wireless consumers will pay, either directly or indirectly, for inefficient and inconsistent state regulatory programs. Increased regulatory costs will invariably be passed through to the consumer as a result of an increase in product costs.

It's unfortunate, but true, that regulatory systems simply cost more and those states that choose to adopt such programs will incur potentially significant costs, at both the state and local level, to implement a mandatory regime, including costs of collection, administration, oversight and enforcement. Again, consumers will ultimately pay for these increased costs through local taxes.

Working with industry to promote product reuse and recycling on a national level will help the United States in its efforts to work with other nations in finding environmentally sound, effective, workable solutions to address the increasing volume of used wireless devices elsewhere. A piecemeal state-by-state approach will leave the United States without a strong basis for a leadership role in the international discussion on recycling issues.

#### EPA AND DEPARTMENT OF COMMERCE CAN PLAY AN IMPORTANT ROLE IN ASSISTING INDUSTRY TO TAKE THE LEAD ON PROMOTING PRODUCT STEWARDSHIP

The EPA has an established record of comprehensive, voluntary re-use and recycling programs. EPA's programs, such as "Waste Wise" and "Resource Conservation Challenge," are good examples of government/industry partnerships designed to produce environmental results without the need for new regulation. In May of 2004, EPA issued national guidelines for the management of "end-of-life" electronics.

Additionally, EPA has worked with states and industry for several decades in developing national markets for traditional recycled materials, such as aluminum, glass and paper. The Department of Commerce has expertise in technology and

markets. We believe mobile phones and mobile devices demand a comprehensive, voluntary national program for re-use and recycling that takes into account the unique characteristics of mobile phones and mobile devices and we are committed to working with the EPA and the Department of Commerce to continue to promote the industry's initiative, "Wireless... The New Recyclable"—a program with a proven track record of success in protecting our nation's environment.

Thank you for the opportunity to share the wireless industry's views on this important issue, I welcome any questions you may have.

Mr. GILLMOR. Thank you, Steve.

Ms. Solis

Ms. SOLIS. Thank you, Mr. Chairman. I would like to request unanimous consent to submit a letter by Representative Alan Mollohan to our subcommittee on this particular issue.

[The information referred to follows:]

PREPARED STATEMENT OF HON. ALAN B. MOLLOHAN, A REPRESENTATIVE IN  
CONGRESS FROM THE STATE OF WEST VIRGINIA

Thank you Chairman Gillmor and Ranking Member Solis for the opportunity to provide comments on the issue of electronic waste, or e-waste. I applaud the subcommittee on your efforts to advance the dialogue in Congress on this important issue, and to find both an environmentally sound and economically beneficial solution to the electronics recycling problem.

As a member of the Appropriations Committee, I have worked for the past several years to further develop regional and national solutions to e-waste technology and to its associated collection infrastructure. Specifically since 1998, I have supported grant funding for the Mid-Atlantic Recycling Center for End-of-Life Electronics (MARCEE) project, a public-private initiative designed to improve the economics of recycling used electronics.

Launching in 1999, the MARCEE project has provided grant funding to tackle some of the biggest challenges facing the electronics recycling industry. MARCEE has focused on developing new technologies to make plastics recycling economically feasible, supporting both laboratory research and a plastics recycling demonstration project. With support from MARCEE, West Virginia University recently created a Polymer Research Center as a public-private partnership to develop new recycling technologies and commercial applications in the plastic industry.

Through MARCEE's online platform, GreenOnline, MARCEE has also helped to pioneer the application of new information technologies to exchange electronics recycling data. The MARCEE project has also led to the development of a new cluster of electronics recycling activity and related services at the MARCEE-inspired Polymer Technology Park in Wood County, West Virginia, and continues to provide assistance in developing new electronics recycling infrastructure on behalf of West Virginia and around the nation. MARCEE has also provided the seed funding for the National Center for Electronics Recycling (NCER). The NCER is a new non-profit organization organized under the guidance of a 13 member Industry Advisory Committee of leading electronics manufacturers. Working closely with industry, U.S. EPA, state and local government officials, the NCER is a leading institution in the development of electronics recycling systems across state lines.

Through the NCER and other activities initiated with MARCEE's assistance, I have seen how Congress can make a difference by developing and improving systems to recover the valuable resources contained in used electronics that would otherwise go to non-recyclable waste. I look forward to working with this subcommittee on finding additional environmentally sound, economically beneficial solutions to the electronics recycling problem by optimizing the advances already put in place through the MARCEE initiative.

Mr. GILLMOR. Without objection, so ordered.

Before I go to the next witness, Steve, I used to have one of those big clunky things. I had one that was even clunkier. My 13-year-old, his mother got him a cell phone about 2 weeks ago. It is amazing, 13-year-olds are getting those now. He gives me the weather report. He tells me what Ohio State and Texas' standings are, because we have a big game this weekend. I do not even know what button to push. Amazing stuff.

Dave McCurdy, President and CEO of the Electronic Industries Alliance.

#### STATEMENT OF DAVE MCCURDY

Mr. MCCURDY. Thank you, Mr. Chairman and Ranking Member Solis. It is a pleasure to be here. I, like my colleague, Steve Largent, having been on that side of the dais, know the challenges of trying to put this hearing together, and we commend you and appreciate your flexibility.

I am here representing the Electronic Industries Alliance, which is one of the largest trade associations representing the full breadth and depth of the over \$400 billion U.S. high-tech and electronics industries. Our 1,300 member companies represent the entire range of products from electronic components to state-of-the-art defense and space industry high-tech systems, including the full range of telecommunications information-technology consumer electronics products.

Dozens of our major manufacturers actually participate in our Environmental Issues Council which has led industry involvement on environmental priorities for well over a decade. And again, we commend you for your interest in this hearing.

Basically, for the members, I am going to make five points, and then these are the ones that stand out. First of all, our industry is and has been committed to efficient environmentally sound management. I think the record will speak for that, and I will give you some examples.

Second, this is an important issue, and in order to discuss it, we need to put it in proper environmental context. I will give some rationale for that.

Third, our industry may be the most competitive in the world. And this particular issue may have an impact and effect the competitive balance so it is important to us.

Fourth, we strongly support the principle of shared responsibility.

And last, I and my colleagues believe there is a Federal role, and we have some suggestions that we would like to make.

So, first, our member companies have been at the vanguard in taking action to support the safe and appropriate recycling of used electronic products to help meet the important environmental goal of resource conservation and recovery. This ongoing commitment of our member companies to product stewardship, environmental design, and recycling can best be demonstrated by noting concrete examples.

Through a combination of direct corporate efforts and innovative partnerships including EPA's Plug-in to eCycling campaign, EIA member companies have been involved in the proper recovery and management of well over 2 billion pounds of used electronic products.

It is important to note that EIA member companies are on target to be in compliance with the European Union directive on the restriction of hazardous substances, the RoHS Directive when it takes effect next year.

More importantly many of our companies have long-standing design for environment or product stewardship programs that predate

the adoption of the RoHS Directive by years. Since our companies manufacture electronic products for global sale, production, and distribution, consumers in the United States and in overseas markets alike enjoy broad access to products with the latest environmental innovations.

And as a result of our members' long-standing dedication to product stewardship and technological innovation, our industry continues to achieve significant and sustained environmental progress throughout the entire product life cycle from design, through beneficial use, to end of life.

On the whole, every year, our products become more energy efficient, use fewer materials of potential environmental concern, and become easier to upgrade, disassemble, and recycle. And where Mr. Largent showed you the cell phone, we can demonstrate that in technology after technology and product. They get better, cheaper, and smaller every single year.

And on this last point, it is imperative to note that the competitive marketplace, not broad mandates or increased regulation, continues to be the primary driver behind these product innovations. This project of continuous evolution driven by market demand and competition leads to critical production efficiencies that directly translate into important benefits for reuse and recycling.

Moving to the environmental discussion, I think we have to get beyond the rhetoric and hyperbole that we often hear because we believe it is essential to consider the science related to electronic products as part of any public policy discussion regarding recycling. Compounds such as lead and mercury are present in some electronic products because they provide clear safety, performance and energy-efficiency benefits. As our industry and others have developed viable substitutes, manufacturers have successfully incorporated them into our products. You can go to conference after conference that we lead on lead-free products and lead-free development.

These compounds can and should be appropriately managed at the end of life. EPA shares this view and has consistently stated that the used electronics products when properly managed do not represent a human health or environmental concern. The agency considers electronics recycling as fundamentally a solid waste management and resource conservation issue.

The third point I was going to reiterate was market competition. Any discussion of recycling must recognize the intense competitive pressures within this industry and the potential impacts of any given recycling system could have on the competitive balance. As, again, the Department of Commerce witness noted in the first day of this hearing, government decisions on electronics recycling can impact the market competitiveness of the U.S. companies, and our organization strongly agrees with this assessment.

Consequently, any prospective recycling approach should strive to consider global competition and preserve market balance by applying equally to all producers while recognizing the important roles that many other stakeholders have in achieving this solution. And that comes to the principle of shared responsibility.

Given the complex nature of this challenge, EIA supports efforts to support a viable recycling infrastructure in which all major

stakeholders, manufacturers, retailers, government, nongovernment organizations, and recyclers, participate based on their unique expertise and capabilities. The combined goal of these institutional stakeholders should be to develop a recycling infrastructure that is convenient for the residential consumer.

Implementing a system based on principles of shared responsibility will increase the efficient collection of electronics and ensure economies of scale by taking advantage of existing infrastructure. This existing infrastructure includes municipal waste collection systems and reverse distribution systems that rely on established product distribution and retail channels.

Last, Mr. Chairman, what is the Federal role? We have had these discussions, and I think they are important to note.

There is clearly a role for the Federal Government in bringing national consistency to this emerging field. Federal action should strive to keep cost to consumers as low as possible, create a level playing field for market participants, and ensure that products are being recycled in an environmentally sound manner.

Federal action can promote safe and appropriate recycling by creating a streamlined uniform regulatory framework that removes artificial barriers and instead encourages the free flow of used products with proper management. Specific steps include: one, establishing consistent regulatory definitions key terms and strictly defining the scope of covered products through the application of fixed criteria. Two, consider the establishment of a flexible third party organization that can help with roles such as data reporting, compliance, and financing. Third, ensure broad consistency with labeling, product information, and regulatory reporting requirements. Last, assess whether additional recycling regulations or standards are necessary to ensure the environmentally sound management of used electronics.

EIA and our member companies stand ready to work with the subcommittee on these and other initiatives. Thank you again for bringing this important topic to the Congress and for taking appropriate action. We look forward to working with you and are prepared to answer any questions.

[The prepared statement of Dave McCurdy follows:]

PREPARED STATEMENT OF DAVE MCCURDY, PRESIDENT AND CEO, ELECTRONIC INDUSTRIES ALLIANCE

#### INTRODUCTION

Thank you Chairman Gillmor, Ranking member Solis and members of the Subcommittee. I am appearing today as the President and CEO of the Electronic Industries Alliance (EIA), an alliance of several major trade associations. EIA is the only organization that represents the full breadth and depth of the \$400 billion U.S. high-tech and electronics industries. Our 1,300 member companies provide products and services ranging from microscopic electronic components to state-of-the-art defense, space and industry high-tech systems, as well as the full range of telecommunications, information technology and consumer electronics products. Dozens of our major manufacturers actively participate in EIA's Environmental Issues Council, which has led industry involvement on environmental priorities for well over a decade.

As the leading advocate of the high-tech and electronics industries, EIA appreciates the opportunity to provide the views of our membership concerning the end-of-life management of our products. In February of this year, EIA hosted a meeting with Chairman Gillmor and representatives of several of our key manufacturers to discuss the challenges and opportunities surrounding electronics recycling. We are

pleased to see the active interest that the Chairman has taken in this matter, and we commend the Subcommittee for holding this hearing and advancing the dialogue on this important issue.

#### INDUSTRY COMMITMENT

EIA and our member companies have been at the vanguard in taking action to support the safe and appropriate recycling of used electronics products to help meet the important environmental goal of resource conservation and recovery. As manufacturers, we recognize our key role in the process, and we will continue to work with Congress, federal agencies, the states and involved stakeholders to address this challenge.

The ongoing commitment of our member companies to product stewardship, environmental design and recycling can best be demonstrated by noting some of our industry's concrete achievements:

- Through a combination of direct corporate efforts and innovative partnerships—including the U.S. Environmental Protection Agency's Plug-in to eCycling campaign—EIA member companies have been involved in the proper recovery and management of well over two *billion* pounds of used electronics products. In addition, EIA member companies use significant quantities of recycled materials, including glass, metals and plastics, in new generations of their products, thus creating demand that helps sustain markets for these materials.
- EIA member companies are on target to be in compliance with the European Union Directive on the Restriction of Hazardous Substances (the RoHS Directive) when it takes effect next year. In fact, many of our companies have long-standing design-for-environment or product stewardship programs that pre-date the adoption of the RoHS Directive by years. Since EIA companies manufacture electronics products for global sale and distribution, consumers in the U.S. and in overseas markets alike enjoy broad access to products with the latest environmental innovations.
- In conjunction with our members, EIA has developed a consumer outreach program, known as the Consumer Education Initiative, to inform the public of the options available for electronics recycling. A website ([www.eiae.org](http://www.eiae.org)) directs consumers to updated recycling and reuse options available in local communities throughout the United States. The Consumer Education Initiative website now contains information on over 2,000 recycling opportunities nationwide.

#### MARKET COMPETITION

Any discussion of electronics recycling must recognize the intense competitive pressures within our industry, and the potential impacts that any given recycling system could have on the competitive balance. As the U.S. Department of Commerce witness noted in the first part of this hearing, government decisions on electronics recycling can impact the market competitiveness of U.S. companies. EIA strongly agrees with this assessment. Our member companies are already facing unprecedented global competition, as the primary products contemplated under most electronics recycling approaches are increasingly treated by the market as commodities. Since margins are thin and producers depend on volume sales, any shift in the competitive playing field can have a direct and immediate impact on market share and the bottom line.

The EIA member companies, which include all the global brand-name manufacturers of these products, hold divergent views based in large part on their particular business models and corporate strategies. Specific factors include but are not limited to:

- Company size
- Number and types of product lines, and the comparative life-spans of their products
- Sales and distribution methods (i.e., traditional distribution and retail channels versus direct-to-consumer sales)
- Experiences and capabilities related to recycling
- Relative market share (i.e., current market share as compared to historical market share; business sales as compared to household sales)

Given this diversity of business models and capabilities, any particular funding approach may result in a competitive imbalance in this extremely competitive industry.

The competitive issues are intense enough between the EIA member companies. However, concerns over fair competition are significantly compounded due to the presence in the market of numerous small producers and generic-brand manufacturers that cannot necessarily be compelled to participate in a recycling program.



These manufacturers fall predominantly into one of two groups: (1) small foreign producers that sell mostly low-end units into U.S. markets; and (2) the so-called “white box” manufacturers that produce and sell generic computers at retail or remotely via catalogs or the internet. While individual manufacturers in these categories are usually small, they nonetheless collectively represent a noteworthy segment of the overall market.

EIA member companies comply with existing state requirements, and will certainly step up and participate in any broader national system. The same cannot necessarily be said of “fly-by-night” companies that often frequently change brand names or sell products remotely into regulated markets. EIA members have significant doubts over whether individual states can take effective enforcement actions against these manufacturers to ensure they pay their fair share of recycling costs. This threatens to result in a competitive imbalance that will disadvantage legitimate producers. Consequently, any prospective recycling approach should strive to consider global competition and preserve market balance by applying equally to all producers, while also recognizing the important roles that many other stakeholders have to play in achieving a solution.

#### SHARED RESPONSIBILITY

Given the complex nature of the challenge, EIA supports efforts to establish a viable recycling infrastructure in which all the major stakeholders—manufacturers, retailers, government, non-governmental organizations (NGOs) and recyclers—participate based on their unique expertise and capabilities. The combined goal of these institutional stakeholders should be to develop a recycling infrastructure that is convenient for the residential consumer. Implementing a system based on principles of shared responsibility will increase the efficient collection of electronics and ensure economies of scale by taking advantage of existing infrastructure. This existing infrastructure includes municipal waste collection systems and reverse distribution systems that rely on established product distribution and retail channels. Given that there is no true national or even regional collection and transportation infrastructure for electronics, making use of these systems is critical.

The vast majority of electronics products are sold through traditional distribution and retail channels. In general, manufacturers sell products in bulk to distributors, who sell them to retailers. Retailers in turn sell them to consumers through a network of thousands of retail locations. These products then have years of useful life, and are often re-sold, passed along to friends or family members, or donated to schools or charities. In most cases, manufacturers do not have a direct relationship with the end user at the time of initial sale, let alone years later when the product is ready to be placed into the recycling stream.

Given the way our products are manufactured, distributed and sold, it is clear that each stakeholder can and should bring its own strengths and capabilities to the table under a shared responsibility model. Manufacturers, for example, can best fulfill our role by continuing with our broad and successful efforts to design products that are lighter, more efficient, more environmentally-friendly, and easier to upgrade and recycle. We will also continue to participate as a key partner in efforts to develop a broader national approach to electronics recycling.

Retailers can likewise make unique contributions. Unlike any other stakeholder in the process, retailers have millions of face-to-face interactions with consumers every year. When consumers come into a retail store to purchase a new computer or television, it is often to replace an older unit that is ready to be collected and recycled. Many retailers have already participated in successful recycling events—often in partnership with manufacturers, NGOs and government—that include collecting used devices at retail locations. Because of their direct and special relationship with the public, their numerous stores and their existing transportation and distribution networks, retailers have a vital role to play.

For their part, recyclers need to provide their services in a safe, cost-effective and environmentally-sound manner. EIA is working with the U.S. EPA, recyclers and other stakeholders to help develop appropriate standards and a certification process for electronics recyclers.

#### ENVIRONMENTAL DISCUSSION

EIA believes it is essential to consider the science related to electronics products as part of any public policy discussion regarding recycling. Compounds such as lead and mercury are present in some electronics products because they provide clear safety, performance and energy efficiency benefits. As our industry and others have developed viable substitutes, manufacturers have successfully incorporated them into our products. However, these compounds cannot yet be replaced in all applica-

tions. For example, the RoHS Directive provides narrow exemptions for specified uses of these materials to provide for product safety or energy efficiency, or when no technically or environmentally suitable alternatives exist.

Nonetheless, these compounds can and should be appropriately managed at the end of life. U.S. EPA shares this view, and has consistently stated that used electronics products, when properly managed, do not represent a human health or environmental concern. The agency considers electronics recycling as fundamentally a solid waste management and resource conservation issue. Likewise, our member companies recognize that reusing and recycling electronics at the end of life is the most environmentally preferable option, and we support reasonable efforts to develop the recycling infrastructure.

#### MARKET-DRIVEN ACHIEVEMENTS

As part of our commitment, producers acknowledge that we have a critical role to play in the process by continuously improving product design for environment and recycling. Our companies have consistently risen to that challenge. As a result of our members' abiding dedication to product stewardship and technological innovation, the high-tech and electronics industries continue to achieve significant and sustained environmental progress throughout the entire product lifecycle: from design, through beneficial use, to end-of-life.

It is also critical to emphasize that the competitive marketplace—not broad mandates and increased regulation—continues to be the primary driver behind these improvements. On the whole, every year our products become more energy efficient, use fewer materials of potential environmental concern, and become easier to upgrade, disassemble and recycle. This process of continuous evolution, driven by market demand and competition, can be readily observed by comparing today's products to similar products that were manufactured just a few years ago. These market-driven innovations on the production side directly translate into benefits for reuse and recycling. Given the intense market competition, manufacturers have a clear incentive to streamline and simplify product assembly to improve production efficiency. Not only does this make products easier to service during their useful lives, it also makes products easier to upgrade, disassemble and recycle at the end of life. Market competition and consumer demand will continue to drive our companies to make important innovations in product design, efficiency, performance and recycling.

#### SUGGESTED FEDERAL ROLE

Absent a consistent national approach to electronics recycling, manufacturers, retailers and recyclers will be confronted by an expensive, inefficient and unworkable confusion of state laws and regulations. If this state-by-state pattern continues, it will impose an enormous administrative and logistical burden on the system that will ultimately result in increased prices to consumers for new products.

There is clearly a role for the federal government to play in bringing national consistency to this emerging field. Federal action should strive to keep costs to consumers as low as possible, create a level playing field for market participants, and ensure that products are being recycled in an environmentally sound manner. Federal action can also help promote safe and appropriate recycling by creating a streamlined and uniform regulatory framework that removes artificial barriers and instead encourages the free flow of used products for proper management. Specific steps include:

- Establishing consistent regulatory definitions of key terms, and strictly defining the scope of covered products through the application of fixed criteria;
- Considering the establishment of a flexible third party organization that can help with roles such as data reporting, compliance, and financing;
- Ensuring broad consistency in labeling, product information, and regulatory reporting requirements; and,
- Assessing whether additional recycling regulations or standards are necessary to ensure the safe and environmentally sound management of used electronics.

EIA and our member companies stand ready to work with the Subcommittee on these and other initiatives. Thank you again for the opportunity to share industry's position on this important issue. I would be pleased to respond to any questions.

Mr. GILLMOR. Thank you very much. Our next witness is Mr. Parker Brugge.

Did I pronounce that right.

Mr. BRUGGE. It is Mr. Brugge.

Mr. GILLMOR. Mr. Brugge, who is the Senior Director and Environmental Counsel of the Consumer Electronic Association.

**STATEMENT OF PARKER E. BRUGGE**

Mr. BRUGGE. Good afternoon, Chairman Gillmor, Ranking Member Solis, and members of the subcommittee. I am Parker Brugge, and I am senior director and environmental counsel for the Consumer Electronics Association and I would like to ask that my written statement be made a part of the record.

Mr. GILLMOR. Without objection. Actually, all statements submitted will become a part of the record.

Mr. BRUGGE. CEA is the trade association of the U.S. consumer electronics and information technology industries. Our 2,000 members are involved in all aspects of the consumer electronics industry and are responsible for over \$125 billion in annual sales. Their products include televisions, computers, audio and video equipment, and other consumer electronics. CEA also produces America's largest annual trade event, the international consumer electronics show.

Our member companies are fully supportive of the safe and appropriate recycling and reuse of consumer electronics products. Many of our companies, both manufacturers and retailers, have already established programs to collect and recycle computer monitors and other consumer electronics. In addition, our members have pioneered the concept of design for the environment as products are now engineered from the earliest design stages to ensure maximum recyclability and minimal use of potentially hazardous materials.

In the title of this hearing, you asked whether the Federal Government has a role to play in the management of electronic waste. Let me emphasize that the answer is yes. It is essential that Congress establish a national framework to address the management of electronics recycling. The current ad hoc approach of State-by-State programs is not a viable or successful system. Conflicting State programs impose unnecessary burdens on global technology companies and consumers alike.

Electronics recycling is a national issue that warrants a national solution. Moreover, with the upcoming transition to digital broadcasting and the inevitable enactment of a hard deadline on analog broadcasts, there has never been a more opportune time to address the issue with respect to television sets.

A national end-of-use framework must apportion responsibility among all the stakeholders and ensure a level playing field. Above all, we must develop a solution that convenient for the consumer and broadly consistent in product scope. The consumer electronics industry has reached consensus on many elements of an electronics recycling approach. First, there needs to be national consistency and uniform framework. Second, whatever approach that is put in place should begin with a limited and clearly defined scope of products. Third, all major stakeholders should bear some responsibility for the recycling of electronics product. And fourth, standards or best business practices should be established for recyclers to ensure the safe and appropriate recycling of electronics.

With respect to the financing system, a large majority of CEA's members favor a visible advanced recovery fee for a member of reasons. These companies believe that an advanced recovery fee is convenient and transparent for consumers and is the most effective way to handle the large volume of historic product in the market place. The consumer electronics sector is a dynamic sector with businesses and brands constantly entering and leaving the market-place. Supporters of a fee-based approach believe that producer responsibility, or take-back, approach can be abused by those companies that enter but do not stay in business for a significant length of time. Essentially, a take-back approach is a promise to pay or a promise to act at a later date when the product reaches its end of life. If those companies are no longer in business, the burden for recycling their products will fall on other companies and perhaps the government.

The best way for such a financing mechanism to be implemented is through a national framework that ensures harmonization. We believe that additional elements of the national approach should include the following: tax credits should be available to all stakeholders involved in the end-of-life infrastructure. CEA supports reasonable Federal procurement policies such as EPA's electronic product environmental assessment tool or EPEA. CEA is actively working with the national center for electronics recycling to create a third party organization that will provide a clearinghouse for product scope and ensure stable harmonization of State level systems. And finally, the role of the Federal Government we believe lies primarily in ensuring a level playing field nationally for recycling stakeholders complying with State level recycling systems.

Finding a solution to the electronics recycling challenge is a top priority for CEA. As we continue to make strides in eco-friendly design initiatives, lead the consumer electronics industry on environmental issues, and be a part of the effort to educate consumers, CEA stands ready to work with Congress and all interested parties to reach a common sense national solution that makes recycling as convenient as possible for all Americans.

I am grateful for the opportunity to share CEA's position on this important public policy issue, and I look forward to addressing any questions you may have.

[The prepared statement of Parker E. Brugge follows:]

PREPARED STATEMENT OF PARKER E. BRUGGE, SENIOR DIRECTOR AND ENVIRONMENTAL COUNSEL, THE CONSUMER ELECTRONICS ASSOCIATION

INTRODUCTION

Mr. Gillmor, Ms. Solis and Members of the Committee: My name is Parker Brugge and I am the Senior Director and Environmental Counsel for the Consumer Electronics Association (CEA). CEA is the principal U.S. trade association of the consumer electronics and information technology industries. CEA's 2,000 members are involved in the design, development, manufacturing, distribution and integration of audio, video, in-vehicle electronics, wireless and landline communication, information technology, home networking, multimedia and accessory products, as well as related services that are sold through consumer channels. Moreover, CEA's members include manufacturers of consumer electronics products, as well as many of the largest retailers. CEA also produces the nation's largest annual trade event, the International Consumer Electronics Show. CEA commends the Subcommittee for holding this hearing on the important issue of electronics recycling and we appreciate the opportunity to provide the views of our membership.

By extending information and entertainment to everyone—regardless of income or geographic location—our members' products have improved lives and changed the world. Meanwhile, America stands as the global leader in innovation, ingenuity and creativity. In addition, the competition and falling prices characteristic of our industry continue to confer benefits to consumers. As our products become increasingly affordable, it is often more economical for consumers to replace a product with a new one than to repair older equipment.

While these displaced products may have reached the end of their lives or be out-of-date, they certainly are too valuable to be completely discarded. Most consumer electronics products contain valuable materials, such as precious metals, plastics and other raw materials that can be resold in the commodities market by recyclers. Moreover, used, working computers can find use in thousands of schools, charities and public agencies committed to training people with disabilities, students at risk and economically disadvantaged Americans.

Although certain substances of concern, such as lead, mercury and cadmium, are present in these products, they are there for a good reason. For example, lead shields users of monitors from electromagnetic fields and mercury is used in backlights to conserve energy. According to U.S. EPA, these compounds, if properly managed and disposed of, present little or no risk to human health or the environment. The Agency views the issue of electronics recycling as one of resource conservation and solid waste management, and so do CEA and its members.

#### CEA'S MEMBERS ARE COMMITTED TO ELECTRONICS RECYCLING

CEA and its member companies have been and will continue to be fully supportive of the safe and appropriate recycling and reuse of consumer electronics products. A number of our member companies, both manufacturers and retailers, have partnered in voluntary pilot projects to collect and recycle computers, monitors and other consumer electronics. Many of our member companies have participated in EPA programs, such as Plug-In To eCycling, a consumer electronics campaign working to increase the number of electronic devices collected and safely recycled in the United States.

CEA recently joined eBay's Rethink initiative, which brings together leading technology companies, government agencies, environmental groups and millions of eBay users to confront the issue of electronic waste through consumer education via comprehensive information on options available to reuse or responsibly recycle, as well as disposition tools such as assisted selling, convenient local drop-off, trade-in programs and charity donations. We believe that the Rethink initiative can serve as a component of an important element in electronics recycling—consumer education.

A primary responsibility shared by manufacturers of consumer electronics lies in product design. Advances in technology have been accompanied by large reductions in the consumption of energy, fewer materials of potential concern, and other positive environmental attributes. Further, manufacturers use significant amounts of recycled content, such as glass, plastics and metals, in the production of new devices.

#### CEA SUPPORTS A NATIONAL APPROACH TO ELECTRONICS RECYCLING

CEA and its member companies all realize that voluntary programs alone cannot resolve the very important issue of electronics recycling. CEA strongly believes that a successful national framework should be established to address the management of electronics recycling. The current de-facto framework is an evolving patchwork of state-by-state approaches. As this Subcommittee is aware, three states, California, Maine and Maryland, have passed legislation to manage used electronics. These inconsistent state requirements likely will soon be joined by even more conflicting state requirements, as there were over twenty-five states that introduced legislation on the subject in 2005. This conflicting, ad-hoc approach imposes unnecessary burdens on global technology companies and consumers alike. Electronics recycling is a national issue that warrants a national solution.

A national end-of-use framework should apportion responsibility among all of the stakeholders and ensure a level playing field, while promoting a widespread and adequately financed electronics recycling solution. Above all, we must develop a solution that is convenient for the consumer and one that is broadly consistent in product scope.

CEA believes that a national framework should include the following elements:

##### **1. Tax Credits**

The federal government should support states choosing to rely on effective market-based solutions. Federal tax credits can enable manufacturers, recyclers, and re-

tailers to offer recycling services in those states. Tax credits also may enable stakeholders in other electronic sectors to offer recycling services or to develop markets for recycled products. Tax credits should be available to all stakeholders involved in the end-of-life infrastructure, including retailers, to help defray costs in those states adopting visible fee-based systems.

## **2. Fostering Design for Environment**

CEA supports the creation of reasonable federal procurement policies based on environmental criteria. The market power of the government can play a significant role in providing a direct sales-based incentive to manufacturers. States can augment this by adopting federal environmentally sensitive procurement guidelines, increasing the market and the incentive for manufacturers. In addition, federal and state governments will capture cost-savings through reduced energy usage and other advantages offered by these products.

## **3. A National Recycling Third-Party Organization**

States considering Advanced Recovery Fee or ARF-based systems, as well as producer responsibility or takeback approaches, may opt to select a third-party organization ("TPO") to collect and administer recycling funds. CEA is actively working with the National Center for Electronics Recycling to support the creation of a national third-party organization, to assist states considering a TPO system, to provide a national clearinghouse for product scope, and to ensure stable harmonization of state-level systems. A national TPO should include manufacturers, retailers, and recyclers in its governance structure. A national TPO that is available to states can serve as a further incentive to create state-level systems complementing a national solution. If additional federal authority to enable harmonization is required, CEA will work with Congress as appropriate to put that authority in place.

## **4. Ensuring a Level Playing Field through Federal Policy**

The role of the federal government lies primarily in ensuring a level playing field nationally for recycling stakeholders complying with state-level recycling systems. The federal government should put measures in place that enable states to ensure a level competitive playing field for in-state retailers with Internet and out-of-state retailers. CEA will advocate for any required additional federal authority to ensure interstate compliance with state-level market-based or visible fee-based systems, including seeking retailer stakeholder support.

### CONCLUSION

Finding a solution to this public policy challenge is a priority for CEA. As we continue to make strides in eco-friendly design initiatives, lead the consumer electronics industry on environmental issues and be a part of the effort to educate consumers about electronics recycling, CEA stands ready to work with Congress and all interested parties to reach a common-sense, national solution that makes recycling as convenient as possible for all Americans.

Thank you again for the opportunity to share CEA's position on this important public policy issue. I look forward to addressing any questions you may have.

Mr. GILLMOR. Thank you very much. And we will go to David Thompson of Panasonic Corporation of North America.

### STATEMENT OF DAVID A. THOMPSON

Mr. THOMPSON. Chairman Gillmor, Ranking Member Solis, I am David Thompson, Director of the Corporate Environmental Department of the Panasonic Corporation of North America. I am here today on behalf of the electronics manufacturers coalition for responsible recycling. We commend you on your leadership and are pleased to have the opportunity to present our views on an emerging issue of concern, the collection and recycling of electronic products.

Our coalition consists of 16 manufacturers which I have listed in my testimony. And I would like to emphasize five points, if I may: one is that our coalition and industry has been actively engaged in electronic product recycling and design for the environment; our support for an advanced recycling fee approach; our concerns with

the take-back system that is now being developed in Maine; our concern that take-back is not a strong design incentive, in fact we think it is a very weak design incentive; and last suggestions for going forward.

Our companies have come together to introduce recycling systems around the world, in the U.S., Japan and Europe. And collectively, we have recycled more than 1 million tons of electronic products to date. We are world leaders in the area of environmental design, including in the energy efficiency of products, in minimization or elimination of hazardous materials from our products and design for recycling.

My company alone spent almost \$125 million last year on environmental product design improvements. And from 1999 to 2003, we have spent approximately \$725 million changing the designs of our products to make them more environmentally conscious. Collectively, as a coalition, we have spent billions of dollars on environmental design. IBM is a member of our coalition. They are the world leader in computer product recycling. They have recycled over 1 billion pounds of computer products to date. Panasonic and Sanyo played a leading role in establishing the successful rechargeable battery recycling corporation. This is a program to recycle rechargeable batteries, and it was enabled, I believe, in 1996 by an act of Congress that enabled us to implement nationwide this cost internalization program. I took a leave of absence from my company to work for 1 year to startup this program, so I have some experience in this area with cost internalization programs.

JVC, Panasonic, Sharp, and Sony have developed a voluntary shared responsibility program under which we have sponsored 1,000 collection events over the past 5 years in the United States, many of them with BestBuy. And these events have collected over 10,000 tons of electronic products and recycled them.

And, finally, LG, Philips, Panasonic, RCA, Samsung, and Sony have taken the lead in the reuse of post-consumer CRT glass and now have in many of our picture tubes 20 to 50 percent post-consumer CRT glass recycled content. Based on our experience, we came together in 2003 to support the California electronic waste recycling act, which essentially established a statewide system in California based on an advanced recycling fee. We thought this approach had a number of advantages and supported it for that reason.

Our approach is that, one, we think first and foremost manufacturers should be responsible for the design of electronic products to make them more environmentally conscious. That is something that we can do based on our core expertise. We thought that consumers should pay an advance recycling fee to cover the cost of collection and recycling, that retailers should collect this fee, and manufacturers who sell products directly to consumers in California are also responsible for collecting the fee. The State government manages the financing of the system as well as ensuring a level playing field, and we also thought that a third party organization could be established that would manage the same process, the collection and recycling of electronic products. That seemed to be more realistic to solve this problem.

Local governments organize and provide collection services, and their costs are covered under this program. Manufacturers, retailers, and both State and local governments cooperate to provide education. And the manufacturers report on our design for recycling plans in progress, our chemical usage, and our consumption of recycled materials to the State on an annual basis. That is what was enacted, essentially, from our perspective as a manufacturer in California.

The advantages were numerous. We thought it was visible to the consumer and delivered a strong educational message to the consumer that they had a role to play and that systems are available. We also thought a visible fee would exert pressure on system operators to keep costs as low as possible.

We thought that the visible fee, an advanced fee was not subject to markup as the product moved through the chain of retail distribution. It would not be taxed thereby increasing the cost of recycling to the consumers. It eliminates the competitive disadvantage of associated systems based on waste stream share. It creates one unified system, as opposed to several competing manufacture based systems. It eliminates costly brand sorting. It eliminates the problem of orphaned products that are no longer associated with a manufacturer. And we thought it was easier to enforce than manufacturer take-back models, hence we came together to support this approach in California.

Since California, Maine has also enacted electronic product recycling legislation that essentially requires manufacturers to take back and recycle electronic products. One of our concerns with this particular approach is that electronic products are very long-lived. Televisions, based on our research, last about 17 years on average before people throw them away, and computer monitors approximately 10 to 11 years. So you have a situation where, since the Maine system is based on a manufacturer's waste stream share, a manufacturer is responsible for collecting products that are actually being thrown away today. You have a system where historical manufacturers who have a legacy waste stream share have an immediate financial burden whereas newcomers to the market have no burden to pay and help support a collection recycling system. And we felt that represented a competitive disadvantage to the historical manufacturers, many of whom are North American manufacturers.

According to an article in the May 2005 edition of Smart Money called "Behind the Glass, there has been a wave of new entrants into the television manufacturing business with 127 brands now available, 70 percent more than a decade ago. So I think you can get an idea of the potential competitive disadvantage this system would place on historical manufacturers.

The Maine approach requires that products be separated by brand in order to be managed. A recent study in Hennepin County, Minnesota, over the last 6 months of 2004, looked at 17,134 TV brands and 11,920 computer monitor brands.

Mr. GILLMOR. Could we ask you to wrap up here so we could keep on schedule? Thank you.



Mr. THOMPSON. So brand sorting is going to be a problem. We think multiple programs will be confusing. We think take-back does not present a strong design incentive.

And finally, we would like to recommend that, one, we do a study to get a sense of this problem. The last study was done in 1999. Many people have concerns about many different issues. That study could address those issues.

Finally, we look forward to working with this committee and our colleagues to develop an approach to electronic recycling that makes sense for all of us.

[The prepared statement of David Thompson follows:]

PREPARED STATEMENT OF DAVID A. THOMPSON, DIRECTOR, CORPORATE ENVIRONMENTAL DEPARTMENT, PANASONIC CORPORATION OF NORTH AMERICA ON BEHALF OF MANUFACTURERS COALITION FOR RESPONSIBLE RECYCLING

Electronics Manufacturers Coalition for Responsible Recycling consists of major manufacturers of televisions, computers, and laptops. Canon USA; LG Electronics; Sanyo Fisher; Epson; Mitsubishi Digital Electronics America; Sharp Electronics; Hitachi America; Panasonic Corporation of North America; Sony Electronics; IBM Corporation; Philips Consumer Electronics North America; Thomson Inc.; JVC America; Pioneer Electronics (USA) Inc.; Toshiba; and Samsung Electronics America.

Chairman Gillmor, Ranking Member Solis, and members of the subcommittee, my name is David Thompson, Director, Corporate Environmental Department, Panasonic Corporation of North America.

I am here today on behalf of the Electronic Manufacturer's Coalition for Responsible Recycling ("Coalition"). The Coalition commends you on your leadership and is pleased to have the opportunity to present our views on an emerging issue of concern—the collection and recycling of electronic products.

The Coalition consists of 16 major manufacturers and marketers of consumer, commercial and industrial electronic products.

Our Coalition members have actively supported the recycling of used electronic products and have been deeply involved in developing product recycling systems in the US, Japan, Europe, and other countries around the world. Collectively we have recycled more than 1 million tons of electronic products to date. Our Coalition members have also led the electronics world in eco-design, ranging from energy efficiency, hazardous material minimization, and design for recycling. My company alone spent almost \$125 million on environmental product design improvements just last year, and almost \$725 million from 1999-2003.

Here are a few of our members' noteworthy accomplishments:

- IBM is the world leader in computer equipment recycling, having recycled over 1 billion pounds to date.
- Panasonic and Sanyo played a leading role in establishing the successful Rechargeable Battery Recycling Corporation (RBRC) Program. Sony is also an RBRC member company and Board member.
- JVC, Panasonic, Sharp, and Sony have developed a voluntary Shared Responsibility Program, under which we have sponsored over 1,000 collection events over the past 5 years in the United States. These events have collected over 10,000 tons.
- LG, Philips, Panasonic, RCA, Samsung and Sony have lead the way in incorporating post-consumer recycled CRT glass into new picture tubes, in some cases achieving 20% post-consumer CRT glass recycled content.
- Canon operates a world-leading printer cartridge recycling program.
- Sharp is the world leader in the manufacturer of solar panel displays.
- Sony used 160,000 tons of recycled materials in 2004.
- Panasonic and Sanyo are the world leaders in manufacturing Ni-MH batteries used to power hybrid cars, trucks and buses. Look in the trunk of a Prius hybrid automobile and you will find a Panasonic battery.
- Mitsubishi Electric established the first home appliance recycling plant in 1988.

Based on our collective experience around the world in establishing recycling systems, our Coalition came together in California to support The Electronic Waste Recycling Act of 2003, a new law that established a state-wide recycling system financed by a point of sale advanced recycling fee.

The Coalition members have been for some time strongly committed to helping design and implement a national system for electronics recycling. Many of us were active participants in the three-year NEPSI process.<sup>1</sup> We believe that the NEPSI negotiations resulted in the detailed design of an excellent national system, one which was supported by the great majority of the NEPSI stakeholders. We understand that a small number of companies and stakeholders prefer a different approach, and we have worked hard with them to craft a compromise. Unfortunately these efforts have been unsuccessful to date and we are left with competing proposals. We believe that a compromise is within reach and we are still committed to achieving that compromise.

#### SUMMARY OF COMPETING APPROACHES

In this testimony, I will lay out the details of the two competing approaches and their pros and cons from the Coalition's perspective. We understand that it is time to make progress toward a compromise. I will therefore conclude our testimony with a set of principles that we believe are important to recognize in developing a compromise.

*The consumer fee approach:* In simple terms the NEPSI majority solution is based on a consumer fee that is paid on every covered product—an advanced recycling fee. The fee provides the money needed to finance the entire recycling system—collection through processing plus public education. A private third-party organization, consisting of manufacturers and other stakeholders, would contract for services, assure that environmental standards are followed, provide public education, and report on results.

*The manufacturers' responsibility or take-back approach:* In contrast the alternative approach assigns a responsibility to each manufacturer to recycle a share of products that are returned. Their share, in most cases, is determined by the portion of their brand that is returned, plus in some models, an allocation of old products for which the brand no longer exists, called orphan products. Manufacturers individually or collectively figure out how they will meet their responsibility and contract for services. Often local governments are asked to pay for collection from the public.

In both approaches the consumers pay for recycling services at the time of new product purchase. In the first the fee is visible, while in the second it is internalized in the product price and not visible.

#### COALITION APPROACH: SUPPORT ADVANCE RECYCLING FEE COLLECTED AT POINT OF SALE

The California legislation embodies our concept of a shared responsibility system based on a consumer fee, where all stakeholders have defined roles of responsibility.

- Manufacturers must design environmentally conscious products
- Consumers pay an advanced recycling fee to cover the costs of collection and recycling
- Retailers collect the required fee. Manufacturers who sell products at retail also collect the recycling fee.
- State government manages the financing of the collection and recycling system, as well as ensuring a level playing field.
- Local governments organize and provide collection services and their costs are paid out of the fee revenues. Retailers and manufacturers, to the extent that it makes business sense, may also provide collection services and receive compensation.
- Manufacturers, retailers, and both state and local government cooperate to provide education.
- Manufacturers report on design-for-recycling plans and progress, chemical usage, and consumption of recycled materials.

An advanced recycling fee has a number of advantages:

- Visible to the consumer, it delivers a strong educational message that the consumer has a role to play in recycling used products and that recycling programs are available. A visible fee will also direct consumer pressure toward keeping recycling costs as low as possible.
- In contrast to the internalized costs envisioned by take-back models, a retail fee will not be marked up as the product moves through the distribution chain

<sup>1</sup>A National Electronics Product Stewardship Initiative was convened by the U.S. EPA in order to provide all key stakeholders an opportunity to discuss and debate comprehensive responses to the electronic product recycling challenge, particularly the finance aspect associated with collection and recycling.

(typically 30% or more) and will not be taxed, thereby minimizing the cost of recycling to consumers.

- Eliminates the competitive disadvantages associated with systems based on waste stream share. (The European Union Waste Electrical and Electronic Equipment Directive (WEEE) established financial responsibility on current and future sales, and not retroactively.)
- Creates one unified system as opposed to several competing, confusing systems that may minimize potential economies of scale.
- Eliminates costly brand sorting
- Eliminates orphan problem
- Easier to enforce than take-back models

Our Coalition acknowledges that the California Advanced Recycling Fee system is not perfect. Particularly, no one likes to pay a fee, but we should also acknowledge that in some states consumers have become accustomed to paying a user fee to ensure the proper recycling or disposal of used motor oil, tires, and car batteries.

In addition we recognize that in California the State bears the burden of managing the infrastructure—the Waste Board audits and pays the companies that provide collection and processing. These functions could be better performed by a private entity. The Coalition is working with other stakeholders in a project sponsored by EPA in the Pacific Northwest to design a private third-party organization that would deliver these services more cheaply and efficiently than government can.

Of course there are some other issues that need to be addressed including:

- Legitimate enforcement issues against remote sales. Data collected to date, however, indicates that California is meeting its projected revenue targets, suggesting a high level of compliance.
- Retailer start-up and administration costs. (Retailers are allowed to keep 3% of the fees they collect to cover administration costs.)
- The fee was set too high. The California statute has an adjustment mechanism. We believe there is room for improvement, and have proposed a number of suggestions.

#### MAINE STATUTE DISADVANTAGES NORTH AMERICAN MANUFACTURERS

In contrast to the California Advanced Recycling Fee system, Maine has passed the first manufacturer take-back law in the United States.

Our principle concern centers on a fundamental inequity the Maine approach places on established manufacturers (and by extension on North American manufacturers) vis-à-vis newer market entrants. First, our research indicates that televisions are on average 17 years old when discarded and that computer monitors are about 11 years old. Second, we are experiencing a wave of new manufacturers, primarily from China, entering the North American market. According to an article in the May 2005 edition of *Smart Money*, “Behind the Glass,” there has been a wave of new entrants into the television manufacturing business with 127 brands now available, 70% more than a decade ago. Since the Maine law requires manufacturers to finance the management of their own products based on actual collection volumes, established manufacturers will have take-back costs while the 70% of the new market entrants will have no costs since their products are simply too new to be winding up in the recycling system. Only basing responsibility on current sales can eliminate this disadvantage to established manufacturers and their North American workers.<sup>2</sup>

Maine’s approach to orphan products could further exacerbate this competitive disadvantage. Maine, the only state that has passed take-back legislation, is attempting to allocate responsibility for orphan products based on a manufacturer’s waste stream share. Obviously, such an approach places the established, legacy manufacturers at a double competitive disadvantage to the newer market entrants, even though neither subset of the market (those with waste shares and those too new to the market place to have a waste stream share) is in any way responsible for the orphan problem. The only fair way to deal with orphan products is to base responsibility on current sales. Unfortunately this would result in a complex and burdensome dual financing system that would be difficult to administer and enforce.

<sup>2</sup>Additionally, new brand compliance in Maine appears to be less than 25%, based on the most recent information published by Maine Department of Environmental Protection (DEP). (Waste stream share compliance is much higher, approaching 80% based on April 21, 2005 summary prepared by Maine DEP.)

## REQUIRES TIME-CONSUMING AND EXPENSIVE SEPARATION BY BRAND

In order to allocate manufacturer responsibility under the Maine system, collectors and recyclers would have to sort products by brand, an extremely burdensome and costly endeavor. A recent brand sort completed by Hennepin County, Minnesota, during the last six months of 2004 looked at 17,134 TVs and 11,920 computer monitors by brand. Hennepin County reported 281 TV brands and 458 computer monitor brands respectively. While some brands have significant waste stream shares, the vast majority of the brands have waste stream shares that are below 1%: 258 TV brands and 438 computer monitor brands. It should be clear that attempting to manage collection by waste stream brand is going to be extremely burdensome and expensive.

It will be argued that brand sorting can be minimized through periodic sorting and reporting in order to establish manufacturer shares and proportionate responsibility. While possible in theory, sorting will still have to be done frequently in order to catch the brands of the new market entrants as soon as they begin entering the waste stream.

## MULTIPLE PROGRAMS WILL BE CONFUSING AND INEFFECTIVE

The disparity in waste stream shares described above will result in those companies with larger shares establishing their own programs and smaller companies attempting to band together. The result will likely be a mish-mash of competing programs that will be both extremely difficult for Maine to administer and confusing for consumers, local governments and retailers to utilize. These divergent programs will place enormous burdens on compliant companies to achieve the public awareness goals outlined in the bill.

## TAKE-BACK DOES NOT PROVIDE A MEANINGFUL DESIGN INCENTIVE

Let me refer to an example from my own company's activities, which I believe is indicative of what all leading electronic manufacturers are doing. Panasonic recently completed a redesign of our complete line of CRT-technology TVs in order to make them easier to recycle. Compared to a Panasonic TV manufactured in 1980, we have reduced the number of plastic resins we use from 13 to 2. We have reduced the number of plastic parts from 39 to 8, not only making the sets easier to disassemble, but improving the ability of the recyclers to sort and manage the plastic parts more effectively. In all, the disassembly time has dropped from approximately 140 seconds to 78 seconds. I am confident that other TV manufacturers are in the process of making similar design improvements.

While we, like all members in our Coalition, endeavor to design products where the value of the materials contained within will cover the cost of collection and recycling, these design changes will not benefit the recycling process until the newly improved sets have exhausted their useful life 15—17 years from now. This time lag calls into question the common supposition that mandated product take-back requirements will lead to design improvements. No chief financial officer would approve even an incremental investment in recycling design in the hope that the investment would be recouped or would advantage the company 15 years in the future. Companies that suggest otherwise are being disingenuous.

Under the type of take-back system mandated by the Maine legislation it should be clear that Panasonic would not receive any immediate financial benefit from the design improvements already made. It is quite possible that the added costs of complying with the Maine statute will actually reduce the amount of resources available to implement environmental design enhancements, given the ongoing competitive pressures now prevalent in the electronic marketplace. I therefore urge you to consider a system where market forces are harnessed to encourage and reward design innovations. The US Environmental Protection Agency's ENERGY STAR Program and newly launched Electronic Product Environmental Assessment Tool (EPEAT) represent excellent examples of a positive role the federal government can play in assuring product designers work diligently toward environmentally conscious designs.

In addition to the types of specific design for recycling efforts already discussed, it should be re-emphasized that all of our Coalition companies have accelerated plans to reduce or eliminate the use of potentially hazardous chemicals in the manufacture of and contained within our products.

## GOING FORWARD: THE FEDERAL GOVERNMENT

First, we need an accurate understanding of the problem and the challenge. The most recent governmental study was concluded by the National Safety Council back in May 1999. We need to better understand:

- How many products of concern are being generated
- The capability of the domestic recycling industry in terms of capacity and technology
- The adequacy and viability of secondary markets for materials contained in electronic products, both in the US and around the world
- The volumes of electronic products that are being exported, and the adequacy of overseas recyclers.
- The economic consequences of different financing mechanisms: An advanced fee versus cost internalization models versus pay-to-throw systems.
- The adequacy of modern landfills to handle the disposal of electronic products.

A national study conducted by US EPA would answer these questions. As recently written by the EPA-appointed NEPSI facilitator, "Prior to starting a full-fledged dialogue, an adequate level of base research must be in place...[In] the NEPSI dialogue, this baseline did not exist at the outset, which created recurring disagreements through the dialogue on basic facts."<sup>3</sup>

We need a system of consistent laws and regulations that do not burden commerce in new products and recyclable materials unnecessarily. The so-called CRT rule would help achieve this goal.

We need a system that actually rewards investments in environmental design. We have suggested some approaches that are preferable to mandating take-back in order to accomplish such a goal.

Again our Coalition companies are generally supportive of up-front, fee-based financing models, particularly fees assessed at the point of retail sale and run by independent 3rd party organizations.

Our Coalition has prepared a white paper on electronic product recycling that provides an in-depth discussion of the above issues and challenges, as well as model ARF legislation and a suggested design incentive system. Copies are submitted for your review.

## RECOMMENDED PRINCIPLES OF A NATIONAL SOLUTION

In closing, the Electronic Manufacturers Coalition for Responsible Recycling stands by to work with the Committee to address this emerging issue. It's time to find a solution—the public is rightly expecting a way to reasonably and responsibly recycle their old electronics which are accumulating every day.

We understand that compromises will need to be made in order to bridge the gaps that separate companies favored approach to this challenge. Above we offered you our preferred solution—the advanced recycling fee. Here we offer three simple principles that should guide a compromise solution.

- The solution should actively engage and involve all stakeholders, each in proportion to their ability to contribute. Each stakeholder group is best able to provide some elements of the needed system. By all sharing in the burden it will not fall too heavily on any one group.
- The solution should not disadvantage any manufacturer or retailer over others. In particular, an unfair burden should not be placed on small companies because they lack the resources of a nationwide presence, nor should unfair advantage be given to recent market entrants because their products will not enter the recycling stream for years. All companies should be treated equally.
- The national solution should be as straightforward and efficient to implement as possible. It should avoid complex or contentious regulations and enforcement.

Thank you again for the opportunity to present our views and ask for your leadership on this issue.

Mr. GILLMOR. Thank you very much, Mr. Thompson. And we will now go to Gerald Davis who is President and CEO of Goodwill Industries, central Texas, and is also distinguished by being an Ohio State alum and further distinguished by being a former resident of Port Clinton, Ohio, in the Fifth District of Ohio.

<sup>3</sup>"Lessons Learned from Multi-stakeholder Dialogues", Catherine Wilt, Resource Recycling, August 2005.

**STATEMENT OF GERALD L. DAVIS**

Mr. DAVIS. And it is a particularly hard time to live in Austin, Texas, these days. Not after Saturday.

Chairman Gillmor, Ranking Member Solis, members of the subcommittee, first I want to say that our prayers and sympathies go out to those affected by Hurricane Katrina, our agencies in New Orleans and Gulfport and their 700 employees who have suffered devastating losses. Goodwill agencies from Texas to Arizona to North Carolina are gearing up for increased demand in job placement and career services as tens of thousands of Americans arrive in new cities looking for shelter, food, and work, including Austin.

Many Goodwills have already helped out with donation gathering and distribution. We have 207 community-based autonomous Goodwill agencies in the U.S. and abroad. We fund our mission through revenues earned from donated goods, government contracts, and workforce development funding. Goodwill industries is one of the world's largest nonprofit providers of education training and career services for people who have physical, mental, and emotional disabilities as well as those with disadvantages such as welfare dependency, criminal history, lack of work experience, and dislocation.

Donors play a pivotal role in our ability to fulfill our mission. Last year, we had nearly 54 million donors. In the past decade, we have seen a growing number of computers and other electronic devices donated. Many of these items are dropped off at our stores or drop-off locations. But because of the environmental concerns specific to computers and other electronic devices, we have to grapple with a number of issues, from effective disposal of these items to successful recycling of them. Unlike clothing and household goods, we cannot always simply sort them and place them back in our retail stores for sale. However, a number of Goodwill agencies have come together to seek innovative solutions to this problem. On the policy side, we have been involved with initiatives both local and national. And on the business side, we have been seeking various partners to help us develop reasonable solutions to the e-waste problem, while at the same time sustaining our funding to help the disadvantaged and those with disabilities.

For many of our agencies, e-waste represents anywhere from 10 to 30 percent of all electronic donations. We consider this to be one of our top concerns. As a charitable organization with retail stores across the country, Goodwill has a unique perspective on the problem of e-waste. Nearly all Goodwill agencies receive computers through donation streams, although some do not willingly accept them. In 2004, Goodwill Industries received over 23 million pounds of used electronics. A large number of these donations are unusable, and the cost of safely and responsibly disposing of these products can directly impact the job training and career services offered by Goodwill Industries.

More and more, landfills refuse to accept electronic products and charge a hefty disposal fee. In 2003, a quarter of all Goodwill agencies reported having to pay a landfill fee, again taking money from mission. All of the fees vary according to agency, the State, and the locale.

As part of our policy efforts, Goodwill participated in the NEPSI initiative, National Electronics Products Stewardship Initiative, a multi-stakeholder initiative focused on the recycling of used electronic products. Unfortunately, the group was not able to reach consensus. Recently, we joined the Congressional E-waste Working Group, a bipartisan group consisting of Members of the U.S. House of Representatives and other stakeholders working together to discuss end-of-life management solutions that are mutually beneficial to all stakeholders.

Increasingly, local Goodwill agencies are developing innovative business solutions to address the growing surplus of computer donations. Some Goodwill agencies are refurbishing and demanufacturing equipment, reselling systems and components, expanding client training and career services and avoiding high disposal costs. Through pilot programs with computer companies like Dell, county and city governments, as well as other organizations, Goodwill is exploring socially responsible ways of managing consumer electronics in a cost-effective manner.

We are using four models. The first is a retail model which focuses on collecting, demanufacturing, refurbishing and reselling computer systems. You will find these models in L.A., Santa Cruz and Austin. The client model, a model integrating client technology training and workforce development, can be found in Charleston, South Carolina. A third model, a corporate model, focuses on erasing hard drives and preventing identity theft is one that is being used at Pittsburgh Goodwill. And last, the collaborative model, one you will find in San Francisco, is a mixture of many things from stores to relationships with cities and counties as well as the Goodwill agency.

In Austin, where I am the President, we began in 1997, as a training program, a retail outlet for donated computers. We sell all forms of systems and products in a dedicated computer store called Computer Works. There is one in Orange County and Fort Worth. We are well positioned in Austin and these other Goodwills in both refurbishing and recycling used computers. We have developed a well-proven, state-of-the-art dismantling and sorting process similar to what you would find at any third party recycling vendor and what they can offer on the marketplace. This year, we look at processing 2 million pounds.

We are sharing the results of our business model with other Goodwill agencies in Charlotte, Dallas/Ft. Worth, Portland, and San Antonio. So we are spreading best practices.

The Federal Government plays a leadership role in e-waste disposal. We also believe in the shared responsibility approach and support the concept of advanced recovery fees.

We recognize there are significant costs with any recycling program, and the cost will be borne by consumers and manufacturers primarily. We believe that the government has a role in balancing the impact of the costs in developing safe disposal methods and standards. We believe the Federal Government can play a vital role in assisting the development and sustainability of a recycling reuse infrastructure. The Federal Government, using incentives perhaps could, aid and perhaps encourage necessary private sector investment in the used electronic recycling and reuse markets.

We believe that one possibility is a tax credit. Not just for the manufacturers, but also the consumers. Recycling grants and other initiatives could also spur innovative solutions.

We also hope that the Federal Government would support pilot projects for sustainable initiatives. And other projects that would result in the development of recycling and reuse infrastructure.

We believe that the government can play a key role in educating consumers, especially those in the residential marketplace where many of the used computers are.

Goodwill Industries looks forward to working with the subcommittee in finding electronic waste management solutions. Thank you very much for your time.

[The prepared statement of Gerald L. Davis follows:]

PREPARED STATEMENT OF GERALD L. DAVIS, PRESIDENT & CEO, GOODWILL INDUSTRIES OF CENTRAL TEXAS, INC. (AUSTIN), CHAIRMAN, GOODWILL INDUSTRIES INTERNATIONAL, INC.

Mr. Chairman and members of the Subcommittee, I am pleased to testify today on the role of various stakeholders, including government and businesses, in the safe disposal of the growing problem of electronic waste in our country.

My name is Jerry Davis, and I am the President and CEO of Goodwill Industries of Central Texas located in Austin, Texas and the Chair of the Board of Directors for Goodwill Industries International, Inc. Goodwill Industries of Central Texas is the 15th largest of the Goodwill agencies, and this year we mark our 47th anniversary.

I want to say that our prayers and sympathies go out to the victims of Hurricane Katrina. Our prayers are with the hundreds of thousands of people who have lost their homes and loved ones. Goodwill Industries has agencies in the affected Gulf Coast areas: Alabama, Louisiana, and Mississippi. Our agencies are mobilizing efforts to assist with relief to the victims of the hurricane.

#### BACKGROUND

We have 207 local, autonomous Goodwill agencies in the U.S. and abroad, and we fund our mission through revenues collected from donated goods, government contracts, and workforce development funding. Goodwill Industries is one of the world's largest nonprofit providers of education, training, and career services for people with physical, mental, and emotional disabilities, as well as those with disadvantages such as welfare dependency, criminal history, and lack of work experience. Donors play a pivotal role in our ability to fulfill our mission.

Founded in Boston in 1902 by Rev. Edgar J. Helms, a Methodist minister, Goodwill Industries first put people to work by hiring them to repair and sell donated goods. Today, Goodwill Industries trains people for careers in fields such as financial services, computer programming and health care. To pay for its programs, Goodwill Industries sells donated clothes and other household items in more than 2,000 retail stores, and online at [www.shopgoodwill.com](http://www.shopgoodwill.com). The organization also builds revenues, and creates jobs, by contracting with businesses and government to provide a wide range of contract services, including janitorial work, packaging and assembly, food service preparation, and document shredding. Eighty-four percent of revenues are channeled back into programs and services. More than 723,000 people benefited from Goodwill's career services in 2004.

Last year, collectively we had nearly 54 million donors. However, during the past decade, we have seen a growing number of computers and other electronic devices donated to Goodwill agencies. Many of these items are dropped off at our stores or drop off locations. Because of the environmental concerns specific to computers and other electronic devices, we have to grapple with a number of issues, from effective disposal of these items to successful recycling of them. Unlike clothing and household goods, we cannot always simply sort through computers and electronics and place them back in our retail stores for sale.

However, a number of Goodwill agencies have come together to seek innovative solutions to this problem. On the policy side, we have been involved with initiatives both local and national, and on the business side, we have been seeking various partners to help us develop reasonable solutions to the e-waste problem, while at the same time sustaining our funding to help the disadvantaged and those with disabilities. For many of our agencies, e-waste represents anywhere from 10-30 percent



of donations. For example, in Orange County California, our agency there receives approximately 8,000 televisions and 280,000 pounds of monitors annually; in Richmond, Virginia, they receive 353,000 pounds of computers and 390,000 pounds of televisions.

My testimony today will focus on our business-to-business solutions and possible policy venues to address this problem that should be considered by local, state, and federal governments. Many state and local governments are developing and passing legislation to address the issue of e-waste.

As a charitable organization with retail stores across the country, Goodwill Industries has a unique perspective on the problem of e-waste. Nearly all Goodwill agencies receive computers through their donation streams, although many do not willingly accept them. In 2004, Goodwill Industries received over 23 million pounds of used electronics. A large number of these donations are unusable and the cost of safely and responsibly recycling or disposing of these products can directly impact the job training and career services offered by Goodwill. As our generous donor base (which averages 40 pounds per drop-off) continues to grow, the challenge of disposing of non-recyclable and unusable donations in landfills also increases. Some of our agencies have been able to negotiate reduced landfill fees with their localities or to seek a waiver of these fees.

But, more and more, landfills refuse to accept electronic products, or charge a hefty disposal fee. In 2003, 24% of Goodwill agencies responding to an internal survey reported paying a landfill fee. The landfill fees vary by agency. State governments are imposing stricter guidelines on the proper disposal of e-waste and a patchwork of differing laws appears to be emerging.

As part of our policy efforts, Goodwill Industries participated in the National Electronics Product Stewardship Initiative (NEPSI), a multi-stakeholder initiative formed a few years ago and focused on the recycling and reuse of used electronics; unfortunately, the group was not able to reach consensus.

Recently, Goodwill Industries joined the Congressional E-Waste Working Group, a bipartisan group consisting of members of the U.S. House of Representatives and other stakeholders working together to discuss end-of-life management solutions that are mutually beneficial to all of the stakeholders.

Currently three states (California, Maine and Maryland) have enacted laws governing electronics end-of-life management. California's law is based on an advance recovery fee paid by the consumer. We have 13 Goodwill agencies in the state of California and already a number of them have applied to the state to become recyclers to benefit from the new law. It is too early to tell whether this particular model is a success, but early indications appear that the fund has raised revenue available for recycling efforts.

In Maine, the law requires producer-financed collection, recovery, and recycling of electronic waste. In Maryland, a new law requires manufacturers to offer a take back program and pay a fee. Still, other states have banned landfills from accepting Cathode Ray Tube (CRT) monitors, or have commissioned study committees on the issue. In May, the New York City Council passed a bill—the first ever to be introduced by a municipality—which requires manufacturers to develop and divulge specific plans to reuse, recycle, and properly dispose of waste.

In 2004, 26 states introduced e-waste legislation. This year 30 states introduced e-waste legislation and in state legislatures across the country 109 bills were introduced with 12 of those bills enacted; 84 will carryover to next year. While we applaud the efforts of localities in addressing this issue, we do believe that the various models and financing mechanisms can become confusing to consumers, businesses, and manufacturers that have business across state lines. A leadership role does exist for the federal government to bring agencies together and to develop a national, comprehensive solution to this growing problem.

#### GOODWILL AGENCY E-WASTE PROGRAMS

Nonprofit organizations that accept donated goods, such as Goodwill Industries, are often left with a surplus of unusable computers and televisions that they have to pay to dispose of safely. Unfortunately, the payment to recycle and to dispose of these items diverts funds from critical human services we provide in communities. Where permitted by law, some Goodwill agencies dispose of unwanted electronics in landfills.

Increasingly, however, local Goodwill agencies are developing innovative business solutions to address the growing surplus of computer donations. Some Goodwill agencies are refurbishing and de-manufacturing equipment; reselling systems and components; expanding client training and career services; and avoiding high disposal costs.

Through pilot programs with computer companies like Dell, Inc., county and city governments, as well as other organizations, Goodwill Industries is exploring socially responsible ways of managing used electronics in a cost-effective manner. An internal Goodwill Industries taskforce has researched the issue and has identified four innovative e-recycling models that have so far been successful in meeting Goodwill Industries' revenue goals, concern for the environment, and most importantly, our charitable mission.

Specifically, the various models are as follows:

(1) **Retail**—a model focusing on collecting, de-manufacturing, refurbishing and re-selling computer systems and components in a dedicated retail store.

(2) **Client**—a model integrating client technology training and workforce development programs into computer collection, recycling and reuse.

(3) **Corporate**—a model integrating corporate services into computer collection, recycling and reuse.

(4) **Collaborative**—a model utilizing partnerships and collaboration to address computer collection and recycling.

In Austin, Texas, where I am the President and CEO, we employ a retail model. Beginning in 1997 as a training program and retail outlet for donated computers, we sell all forms of systems, products, and accessories in a dedicated computer store called Computer Works. Some of the benefits that are a direct yield from our computer recycling business include the creation of new jobs for people with disadvantages and disabilities while increasing revenue from parts and component sales. Our computer business operations also result in little or no waste going to landfills, which is also important to us as we strive to be better stewards of our environment.

In Austin, Texas, we are well-positioned in both refurbishing and recycling used computers; we have developed a well-proven state of the art dismantling/sorting process, similar to what any third party recycling vendor can offer in the marketplace. This year, we are looking at processing two million pounds; 50 percent of what's collected gets refurbished or dismantled; of that, 20 percent will get refurbished and be sold as complete systems in our store; 75 percent will be broken down and sold as parts in the store; and 5 percent will be broken down and sold to a third-party recycler. We are sharing the results of our business model with other Goodwill agencies.

The reduction in landfill deposits coming from programs like the one we use in Austin, we believe, is encouraging. As this subcommittee is well aware, the overburdening of landfills with otherwise recyclable electronics is problematic. In addition to aggravating the cost and availability of landfills, electronics products contain materials that increasingly cannot be treated as common waste.

Recent studies show that the component materials of electronic items threaten human health and the environment, especially water and air quality. Computers contain heavy metals such as lead, chromium, nickel, and zinc. CRT glass picture tubes found in television and computer monitors contain five to eight pounds of lead. CRT monitors are the biggest e-waste cost factor for noncommercial computer refurbishers.

#### LEGISLATIVE AND POLICY SOLUTIONS

The federal government can play a leadership role in e-waste disposal. A "shared responsibility approach" must be applied to future policy and we cannot compromise on environmentally sound disposal practices. The financial burdens should be shifted from nonprofits (for example, the average landfill fee per unit is \$25.00). We do support collection of "point of sale" fee/deposit shared by consumer and manufacturer, but realize that other solutions in the immediate period are feasible, such as working directly with manufacturers in various partnerships.

In Europe, the European Commission in 2003 published the WEEE (Waste Electrical and Electronic Equipment) and RoHS (Restriction of Hazardous Substances) Directives to regulate component materials. Under the WEEE and RoHS Directives, all but a few exempted electronics applications will have to comply with the elimination of lead in their manufacture by July 2006. The substances to be banned are: Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE). While we do not have a formal position on WEEE, it seems that policymakers in the U.S. could look to the European Commission's work with respect to the regulation of component materials. The Environmental Protection Agency (EPA) during the course of the last year, has held meetings of the various stakeholders and has played a role by hosting ongoing conference calls on the issue. We hope these efforts continue.

Goodwill Industries supports the development of a national solution that embraces and balances environmentally sound disposal practices with market-based so-

lutions that are inclusive of nonprofits recyclers/collectors and will aid in the development of a reuse infrastructure. Goodwill Industries supports product recovery requirements for electronic manufacturers and incentives for businesses (including nonprofits) and individuals that recycle.

At present, several legislative approaches have been introduced in Congress. The Electronic Waste Recycling Promotion and Consumer Protection Act (S.510) introduced by Sens. Wyden (D-ORE) and Talent (R-MO) recommends among other things, the use of tax-credits as an incentive to “jump-start” the building of a recycling infrastructure. Similarly, the Tax Incentives to Encourage Recycling Act (H.R. 320) by Rep. Duke Cunningham (R-CA) would also provide tax incentives.

Another legislative approach provides an advanced recovery fee (ARF) model similar to legislation enacted in California. Utilizing grants as an incentive, H.R. 425 the National Computer Recycling Act, introduced by Rep. Mike Thompson (D-CA) creates a fund generated by the collection of ARFs to be managed by the Environmental Protection Agency (EPA). This is one approach supported by Goodwill Industries, because we do believe there is a role for the model using ARFs.

We recognize that there are significant costs with any recycling program and the costs will be borne by consumers and manufacturers primarily. We believe that the government has a role in balancing the impact of the costs and in developing safe disposal methods and standards for computer manufacturers. To that end, Goodwill Industries supports market-based incentives for nonprofit collectors/recyclers and a national solution to the issue that brings together manufacturers, recyclers and other stakeholders.

We believe the federal government can play a vital role in assisting the development and sustainability of a recycling/reuse infrastructure. The federal government, by utilizing incentives, could aid and encourage necessary private sector investment in the used electronic recycling/reuse markets. This can be done through tax credits for manufacturers and consumer, recycling grants, and other initiatives that could spur innovative solutions and help stakeholders handle this problem.

Additionally, increased federal support for pilot projects and other sustainable initiatives would be helpful in promoting the development of a recycling/reuse infrastructure. The federal government also can play a key role in educating consumers. Through increased consumer awareness, a greater impact can be made upon the established and developing markets, particularly the residential market. A developing infrastructure could benefit greatly from increased federal support of consumer education campaigns.

For example, one such consumer awareness project that Goodwill Industries has recently become involved with is eBay’s “Rethink” initiative. The Rethink Initiative is a web portal linking the public to e-cycling programs and information. Goodwill has partnered with eBay in their mission of educating and enabling eBay’s computer users to take action to reduce e-waste. By helping buyers and sellers connect it makes it easier for people with idle computers and electronics to find others who can put them to good use. Putting old products to new use extends their useful life and delays their entry into the waste stream.

Lastly, the federal government should play a role in the handling of orphan waste (electronic waste produced by a company that is no longer in business or cannot be identified). A significant stumbling block to the development of a recycling/reuse infrastructure is the problem of who is responsible for orphan waste.

Existing companies that have been justly rewarded by surviving in a competitive marketplace through innovation and efficiency are naturally hesitant to bear responsibility for the remaining products of companies no longer in business. Goodwill believes that product recovery requirements that also require current manufacturers to be share responsibility for orphan waste is necessary and appropriate for the development of a recycling/reuse infrastructure.

#### CONCLUSION

Goodwill Industries looks forward to working with the Subcommittee in finding electronic waste management solutions. Goodwill Industries remains committed to environmentally sound disposal practices; the exploration and development of nationally based solutions leading to the development of a recycling and reuse infrastructure; and supports product recovery requirements for electronic manufacturers and tax incentives for businesses and individuals that recycle and grant-based incentives for nonprofits—all of which supports our mission of helping the disadvantaged and individuals with disabilities find employment and become productive members of society.

Mr. GILLMOR. Thank you Mr. Davis.

Mark Murray of Californians Against Waste.

**STATEMENT OF MARK MURRAY**

Mr. MURRAY. Good afternoon, Mr. Chairman. My name is Mark Murray, the executive director of the nonprofit environmental group, Californians Against Waste. It is a 28-year old environmental group that has been involved in a wide spectrum of solid waste and recycling policies from direct producer responsibility programs, advanced disposal fee programs, command and control types of recycling programs. So we have had a great deal of experience, and we were the legislative sponsor of State Senator Byron Sher's S.B. 20, the 2003 legislation which enacted California's first in the Nation e-waste recycling law. Along with Senator Sher, we developed the initial proposal for the legislation which was a hybrid of direct producer responsibility and advanced disposal fee producer responsibility. We consider both of those concepts producer responsibility. It is a matter of whether you are charging the fee directly or it gets internalized. We organized the support for that, and we negotiated the final language with the various industry players.

Today, I would like to briefly describe a number of things: No. 1, the features of the California law; No. 2, summarize the progress to date; No. 3, describe the unique political coalition that came together to create and implement and move this legislation; and finally, identify a few areas where I think the Federal Government might focus.

No. 1, you have already heard from a representative of the State of California at a previous hearing describing the details of the California law. My written testimony provides those details as well. Let me just summarize that the California law that went into place on January 1 is a producer responsibility system that utilizes a front-end advanced disposal fee. Under the system, public, private, and nonprofit collectors of covered electronic waste—in California, covered electronic waste is devices with a screen, flat screen, CRT screen. Those are the devices we are concentrating on right now and providing a financial incentive that is designed to cover the average net cost of recycling those devices. And the concept is to provide a network of free and convenient recycling opportunities for consumers, both individual, residential as well as business consumers and industry, institutional consumers.

The system is financed by a front-end fee that ranges from \$6 to \$10 per device, depending on the size. It is great that we are actually able to talk about the program after just talking about talking about the program for several years; now to be talking about a program that is up and running. In the 10 months since implementation, 286 e-waste collectors and 39 recycling have stepped forward and are providing recycling opportunities at more than 500 locations in California. These locations include nonprofit thrifts, such as Goodwill and the Salvation Army, to local government operated household hazardous waste collection depots. There are also local governments and private sector recyclers who have partnered with electronics retailers to provide point of purchase recycling opportunities. Additionally, many e-waste collectors and most e-waste recyclers in the State are providing direct pick up and recovery services for business and institutional generators of electronic waste. In

some locations, the added cost of those collections is paid for by the generators, but at this point in time, the environment is so competitive for recycling that these services including these Cadillac recycling services are being provided at no additional cost to the generators.

With 6 months of program data, it is premature to speculate on the success of California at this point. The exponential growth both in the opportunities for recycling and the volumes of collected recyclable e-waste is worth noting. There are 500 locations in the State of California where folks can drop off material for recycling; 311 of these are certified physical locations in the State, permanent locations, where people can know that they can on a regular basis drop off their devices. There are an additional 250 locations that provide some level of drop-off. Sometimes it is a store that is running a promotion that allows folks to bring back their devices. And in some cases, it is something that is a mobile recycling location.

Free and convenient e-waste recycling opportunities are available across the State for most Californians. To date, more than 20 million pounds of covered electronic waste has been collected in the first 6 months that has been reported being collected. There are additionally more than a million pounds of materials in the system. We are projecting that for the first year of the program, we will see 50 million pounds of covered electronic waste recycled in the State of California.

The State board of equalization, which collects the fee from manufacturers, has reported collecting \$30.8 million dollars in e-waste fees. The sales of consumer electronic devices that the board of equalization has tracked represents 80 to 85 percent of the devices that the industry is projecting should have been sold in the State of California. Concerns about materials slipping through the cracks has not manifested itself.

For the first year of the program, we are projecting \$60 to \$70 million in revenue which will be more than sufficient to cover the costs of recycling.

I just want to mention briefly that the California law was supported by a broadbased coalition of local governments, environmental groups, retailers, and a large sector of the manufacturing industry. Those entities continue to support the program. Private sector recyclers and private sector waste haulers also supported the program and continue to support it.

In terms of a Federal role, I want to identify a couple of areas. No. 1, there are some devices and fees that are slipping through the cracks, and that is, devices that are sold by or sold to Federal agencies in the State of California. It would be helpful if the Federal Government in their purchases of devices used in California would pay the fee. Right now, they are not doing that.

Second, States could use assistance in terms of providing a framework for dealing with the export problem. States have limited ability to deal with the export problem, and we are continuing to see devices slip through the cracks and go to the developing world. It seems like an appropriate role for the Federal Government.

Additionally, we believe that the State of California and other States have the legal authority to impose an environmental protection responsibility on entities, be it in the form of a fee or a manu-

facturer responsibility on entities outside of the State when they are impacting the State. However, we are relying on court decisions. It would be helpful if the Federal Government would provide clarity to the State on the their authority to do that.

In wrapping up, I want to say that, at this point, we feel like we have a successful program under way in California. And we look forward to reporting to your committee, continuing to report on our progress.

[The prepared statement of Mark Murray follows:]



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Arnold  
Schwarzenegger

**Testimony of Mark Murray, Executive Director**

**Californians Against Waste**

**U.S. House Subcommittee on Environment and Hazardous Materials**

**Thursday September 8, 2005**

**"Electronic Waste: Does the Federal Government Need to Play a Role"**

**Introduction:**

Good morning, Mr. Chairman and members, my name is Mark Murray, and I am the Executive Director of the non-profit environmental organization, Californians Against Waste. Californians Against Waste is a 28 year old grass roots advocacy organization that has been instrumental in the development and implementation of virtually every solid waste and recycling policy enacted in California for the last two decades.

I have been with the organization for 18 years, the last 10 as the executive director and senior legislative representative.

Californians Against Waste was the legislative sponsor of State Senator Byron Sher's Senate Bill 20, the 2003 legislation which enacted California's first in the nation e-waste recycling law. Along with State Senator Sher, we developed the initial proposal for legislative introduction,

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organized support, and negotiated the final language with a wide range of stakeholders and policy makers.

This morning, I would like to provide the members of the committee with a brief update on the status of the California program.

Additionally I've been asked to talk a little about how the SB 20 compromise came to be.

Finally, I would like to provide our perspective on what additional role the Federal government might play in addressing the e-waste problem.

**California's E-waste Recovery & Recycling Act: A Mid-year Update**

**Program Overview:**

On January 1, 2005, California began full implementation of the state's pioneering Electronic Waste Recovery and Recycling Act. The intent of this program is to provide cost-free recycling opportunities for consumers, to reduce and prevent illegal dumping of electronic waste (and reduction in e-waste "stockpiling"), and to decrease the use of hazardous materials used in electronic devices and ultimately entering the environment.

The most prominent and visible feature of this act is the direct funding of public, private and non-profit e-waste collectors and recyclers in order to provide California business, institutional and residential consumers with a 'free and convenient' network of e-waste recycling opportunities. The entire system is 100% self financed through a front-end 'advance recycling fee' collected from all retailers of 'covered electronic devices (CED's)'. The initial fee, set at \$6, \$8, or \$10 per device depending on size, is generally passed on to consumers of CED's at the time of purchase.



Recovery payments are made by the state to authorized recyclers of covered electronic waste (CEW) and set at a level to reimburse recyclers and collectors for the net cost of proper material management. Combined, the collected revenue and the payment system are intended to:

- Provide cost-free recycling opportunities for consumers throughout the state
- Provide financial relief to local jurisdictions
- Reduce / prevent illegal dumping
- Reduce / eliminate the stockpile of waste monitors/TVs

Electronic devices (CED's) covered under the act include: cathode ray tubes (CRT), CRT containing devices, computer monitors w/ CRT, laptops with liquid crystal display (LCD), desktop computers containing LCD, TVs w/ LCD, TVs w/ CRT, and plasma TVs.

**Provisions for Adding Devices**

The DTSC has statutory authority to adopt regulations that identify electronic devices that are presumed to be, when discarded, a hazardous waste pursuant to this chapter. For example, as of July 2005, plasma and LCD screen TVs were added to the program through this avenue.

**Fee Amount**

The IWMB may annually review and adjust (increase or decrease) the covered electronic waste recycling fee to assure that there are sufficient revenues to fund the program. This process will use data provided by participants in the Act and the IWMB will use this information to calculate a fee amounts that will be adequate to fund the program but not build large reserves in the program.

**Payment Amount**

The CIWMB, may adjust the payment schedule every two years to cover the net costs of recycling (for an authorized collector to operate a free and convenient system for collecting, consolidating and transporting covered electronic wastes generated in this state and for an electronic waste recycler to receive, process, and recycle each major category, as determined by the board, of covered electronic waste received from an authorized collector).

**Manufacturer Responsibility Under California's E-waste Law**

While the Act places the financial responsibility on retailers through payment of the fee, manufacturers still play a role in implementation of the program. They must submit to the board a report that includes all of the following:

1) An estimate of the number of covered electronic devices sold by the manufacturer in the state during the previous year.

2) A baseline or set of baselines that show the total estimated amounts of mercury, cadmium, lead, hexavalent chromium, and PBB's used in covered electronic devices manufactured by the manufacturer in that year and the reduction in the use of those hazardous materials from the previous year.

3) A baseline or set of baselines that show the total estimated amount of recyclable materials contained in covered electronic devices sold by the manufacturer in that year and the increase in the use of those recyclable materials from the previous year.

4) A baseline or a set of baselines that describe any efforts to design covered electronic devices for recycling and goals and plans for further increasing design for recycling.

5) Finally, manufacturers must make information available to consumers, that describes where and how to return, recycle, and dispose of the covered electronic device and

opportunities and locations for the collection or return of the device, through the use of a toll-free telephone number, Internet Web site, information labeled on the device, information included in the packaging, or information accompanying the sale of covered electronic device.

**Restricting the Use of Hazardous Materials: California Law and EU RoHS Directive**

A key provision of California's act was to reduce the use and generation of hazardous materials in the environment. However, rather than adopting a California specific ban on certain materials, California policy makers chose to piggy back on similar policies already evolving in Europe.

The EU Directive on the Restriction of use of certain Hazardous Substances restricts the use of six substances (lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers) in electrical and electronic equipment placed on the market after July 1, 2006.

The provisions of the Act require DTSC to adopt regulations that prohibit an electronic device from being sold or offered for sale in this state if the electronic device is prohibited from being sold or offered for sale in the European Union (as a result of Directive 2002/95/EC). The deadline for this manufacturer compliance component in California is January 1, 2007.

**Current Progress: A mid year assessment**

In the 10 months since implementation, 286 e-waste collectors and 39 e-waste recyclers have stepped forward and are providing consumer and business recycling opportunities at more than 311 locations in the State of California. These locations include everything from non-profit thrifts such as the Goodwill and Salvation Army, to local government operated Household Hazardous Waste collection depots. Several local governments and private sector recyclers have partnered

with electronics retailers to provide point of purchase recycling opportunities. Additionally, many e-waste collectors and most recyclers are providing direct pick-up and recovery services for business and institutional generators. While in some locations, the cost of this added convenience is paid by the generator, in most urban areas of the state, the market-place is so competitive that this service is provided at no additional charge. In most areas of the state, consumers and businesses have multiple, convenient opportunities for recycling e-waste.

**California Recycling Opportunities and Volumes:**

With just 6 months of program data, it would be premature to speculate on the success of the California program. Still, the exponential growth to date in both opportunities for recycling and volumes collected for recycling are worth noting:

- More than 311 'certified' physical locations in the state for e-waste drop-off and recovery.
- Additionally, more than 250 additional locations where electronics retailers, local governments, non-profits or other handlers accept e-waste for drop-off and pick-up by certified collectors or recyclers.
- Free and convenient recycling opportunities for e-waste are now available for most Californians.
- With the exception of some rural areas in Northern and South Eastern California, every county and medium to large city has at least one location for the 'no cost' drop-off of used CEDs.
- To date, e-waste recyclers have submitted recovery payment claims for more than 20 million pounds of covered electronic waste collected during the first 6 months of 2005. A recent survey of the state's certified recyclers revealed that at least 1 million additional pounds were collected, but claims have yet to be submitted.

- Based on our ongoing survey of e-waste recyclers, we are projecting that California will collect in excess of 50 million pounds of CEDs in 2005.
- Recovery payments are set by the California Integrated Waste Management Board and total 48 cents per pound, of which 28 cents is retained by recyclers and 20 cents is passed on to collectors.
- The State Board of Equalization (BOE) has reported collecting approximately \$30.8 million in e-waste fees during the first 6 months of 2005.
- Sales of CEDs for which the BOE has collected fees for the first 6 months of 2005 equal 80% to 85% of California's share of national sales for the same period, suggesting that the vast majority of 'internet', 'reseller', as well as 'brick and mortar' retailer sales are being captured.
- First year program revenue is projected to be \$60 to \$70 million, which is projected to be more than sufficient to cover first year recovery payments and administrative costs.
- Start up administrative costs are budgeted at approximately \$8 million for the first year, and then expected to stabilize at \$5-6 million annually.

**Getting to Yes: A Brief History of how the SB 20 Compromise Came to Be**

The adoption of California's first in the nation E-waste recycling law in September 2003, was explicitly the product of a nearly three year public policy making process which culminated in adoption of Senate Bill 20.

**E-waste Policy Issues Demanding a Federal Role:**

**Restricting E-Waste Exports to developing World**

A key policy objective of the California program is to ensure that hazardous e-waste generated in California is not exported to the developing world for management, dismantling or improper disposal. At the same time, the act recognizes that many of the legitimate end-use markets for e-scrap materials properly processed for recycling and ready for remanufacture exist in the same developing countries (i.e. China, India, Southeast Asia) where improper management has previously occurred. California's program attempts to address this dilemma with the following provisions:

In order for an entity to export electronic waste to a foreign destination it must do the following at least 60 days prior to export:

- (a) Notify the California Department of Toxic Substances Control (DTSC) of the destination, contents, and volume of covered electronic waste to be exported.
- (b) Demonstrate that the importation of covered electronic waste is not prohibited by any applicable law or regulation of the country of destination and that any import is conducted in accordance with all applicable laws. As part of this demonstration, required import and operating licenses shall be forwarded to the department.
- (c) Demonstrate that the exportation of covered electronic waste is conducted only in accordance with applicable international law.
- (d) Demonstrate that the management of the exported covered electronic waste will be handled within the country of destination in accordance with applicable rules, standards, and requirements adopted by the Organization for Economic Co-operation and Development for the environmentally sound management of electronic waste.
- (e) Demonstrate that the covered electronic waste is being exported for the purpose of reuse or recycling.

In order to protect legitimate recycling endues markets, these requirements do not apply to a component part of a covered electronic device that is exported to an authorized recycler or manufacturer and that is reused or recycled into a new electronic component.

Despite the detail and thoughtfulness of these provisions, it is unlikely that the provisions of state law—any state law, can be wholly successful in monitoring, regulating and appropriately restricting international trade.

*Addressing the continuing problem of the export of hazardous electronic waste from the United States to the developing world for improper management and disposal, is an issue that remains best addressed by the federal government.*

#### **Internet and Catalog Sales Concern**

There is little question that California and other state's have the legal authority to assess environmental mitigation fees—such as the SB 20 e-waste recycling fee—on out of state entities for products sold in California. The question is not a legal one, but one of logistics. The State may simply not be able to readily track and collect the fees from individual consumers who purchase covered devices from some out-of-state internet retailers

However, despite the doom and gloom predictions, the California experience has demonstrated that the vast majority of internet and catalogue retailers are participating in the CA Electronic Waste Recycling Program. And while the State may not be able to readily track and collect the fees from individual internet consumers, the consumer is still responsible for paying the fee as mandated by the law. The California BOE can and will be able to enforce fee payment on large consumers such as businesses if they purchase covered electronic devices from out of state

retailers for use in California, but it is inevitable that some small percentage of individual consumer transactions will slip through the cracks.

And while the impact of the 'internet sales issue' as it relates to 'advance recycling fees' has been blown out of proportion, state government's will continue to lose sales tax as well as environmental and other legitimate fee revenue from internet sales.

*Addressing the 'out-of-state/internet sales' issue, limiting loopholes, increasing state authority, is another issue that may be best addressed by the federal government.*



Mr. GILLMOR. Thank you very much, Mr. Murray.  
Renee St. Denis of the Hewlett-Packard company.

**STATEMENT OF RENEE ST. DENIS**

Ms. ST. DENIS. Hello Mr. Chairman. I want to thank you for giving me this opportunity to speak to you today. I am Renee St. Denis. I am the director of America's Product Take Back for the Hewlett Packard Company, and we submitted written comments, but I wanted to highlight a few key points today. I will try to keep it brief to get to the questions.

First of all, I want to share with you a little bit about HP's experience and insights in the area of electronics recycling. You probably all know HP, but one thing that you may not know is that HP is the largest electronics recycler in the country. The 2 billion pounds of electronics that Mr. McCurdy spoke about being recycled, 25 percent of that, half a billion pounds, was recycled in the U.S. facilities of HP. That is a huge achievement for HP and a great contribution to the environment.

HP runs these recycling facilities, and we invest in technology. We have partners in the recycling business, many of them members of ISRI whom we work with, but HP does have intellectual property in this area as well. HP offers recycling services to our customers in a variety of forms: easy-to-use, over-the-web services where we pick up at a customer's house. We offer services to small and large businesses. We have partnerships with retailers such as BestBuy. We did a promotion last year, over 7 weeks in the summer with Office Depot, where we collected 10.7 million pounds in 7 weeks. Another very significant achievement and something that I have yet to see us be able to duplicate, although we are working on another one soon.

HP is a global entity, and we look at product take-back as a global issue. We draw on worldwide experience. We are familiar with recycling around the world in all major markets, and we view this as an important market issue. One thing we want to stress is that these products are mostly metals and plastics. The plastics are an embedded source of energy, and we are looking at ways to reuse that embedded energy, to take the plastics and put them back in new products and not use raw plastics or oil out of the ground.

This is something I think we can all really think about as we move forward with this, what kind of incentives are going to get us to keep these valuable resources in the stream of commerce and not have them go to waste.

I want to talk to you a little bit about HP's position and how we arrived at it. HP favors a market-based solution that is flexible and promotes innovation. And I have heard many other witnesses talk today about a take-back system, it is what we call manufacturer responsibility, and those are solutions that are structured to provide incentives for improved performance, for environmental design, and for reducing costs in the system.

I have to agree with Mr. Vitelli. No matter what system we come up with, the costs are going to be borne by our customers, our shared customers, your constituents. And no matter how we structure the deal, it is true that today's consumers are going to have to pay for yesterday's waste.

I think the one thing we all share is a desire to keep those costs as low as possible while still meeting environmental goals. And our solution is really built out of the needs of our customers who have said to us they want to solve this problem, but they don't want to pay for government bureaucracy and lots of overhead; they would really like to have solutions put in place that work and work well for them.

We know that a one-size-fits-all approach is not going to be the most effective approach. Customers, like I said, have different needs; they interact with us in different ways in business today. We expect that as this is yet another part of our business, they will want to interact with us in different ways when it comes to disposing of their old electronics.

HP looks at electronics recycling as a continuation of our supply chain. We design our products, we manufacture them, we distribute them, we take care of them in the customer's home, and we want to be a part of taking care of those products at the end of their lives.

We have a responsibility to provide solutions to our customers, but we need to have flexibility to implement these in a cost-effective way that meets the needs of our customers and our business. We want to limit government enforcement. Governments should be there to provide a framework, but we need to allow the private sector to utilize our expertise, our inventiveness, our technology to address this challenge without, again, investment in overhead or bureaucracy.

And it is clear that we need to reduce the burden on local governments, but at the same time provide them opportunities and provide opportunities for nonprofits like Goodwill to participate in a solution where they can do so in a cost-effective way. They should not be granted an open checkbook to provide Cadillac services when those aren't necessarily the most effective ways of providing services to customers.

The one thing that is clear is that new taxes on technology products are good at one thing, and that is raising a lot of money. In California, they have raised over \$30 million in the last 6 months. By our estimates, 10 to 15 percent of that money came from sales of HP products, so we are talking about \$3 to \$4.5 million. I run a recycling center for my day job, and I can tell you that for \$3 to \$4.5 million, we could have provided services to every customer in California that HP has.

There is really not an incentive for improvements or cost savings or superior performance in a system that just assigns one—or in the case of California, one of three flat fees or taxes to the sale of new products. We want something that is sufficient, but doesn't just give the bare minimum, and we are clear that as industry continues to innovate, we are going to have ways to drive cost out of this system and efficiencies up. We have seen that in our experiences in our facilities in California and Toronto.

So finally, we are here to ask for some help. One thing that would be very helpful to all of us here at this table is a harmonized national solution. It is clear that the patchwork increases everybody's costs, increasing the complexity of doing business, and increases the complexity of complying with the law. To the extent

that we have a national solution, I think our lives become easier. And again, that money that is spent on those administrative burdens will go to actually relieving the burden of these items ending up in local landfills.

In addition, there are improvements that can be made to regulations applicable to these products at the time they are recycled. As Mr. McCurry said, we believe that these products don't pose any more harm at the point where we determine that they are destined for recycling than they do in use. It is at the point when you start working with them that we need to make sure the regulations are in place.

That is it for me. I am happy to answer questions.

[The prepared statement of Renee St. Denis follows:]

PREPARED STATEMENT OF RENEE ST. DENIS, DIRECTOR, AMERICAS PRODUCT TAKE BACK, HEWLETT-PACKARD COMPANY

On behalf of Hewlett-Packard Company (HP), I am pleased to provide this testimony on the recycling of used electronics. My name is Renee St. Denis, and I am Director, Americas Product Take Back, based in Roseville, California. HP is a technology solutions provider to consumers, businesses and institutions globally. The company's offerings span IT infrastructure, global services, business and home computing, and imaging and printing. More information about HP is available at [www.hp.com](http://www.hp.com).

HP applauds Chairman Gillmor for convening this second part of the hearing to discuss electronic waste and for providing HP with an opportunity to testify. Today's hearing is a valuable first step in advising Members of the House and the public on the emerging challenge of managing and recycling used electronics in the United States. HP supports increased recycling to conserve natural resources and protect our environment through a harmonized national approach. HP calls on Congress to support a national solution to the challenge of recycling used electronics, the adoption of recycling incentives and the removal of regulatory barriers to cost-effective recycling, and market-based solutions to finance government recycling programs. HP believes that the Congress should reject attempts to impose a new tax on American consumers and to create bureaucratic recycling programs. Imposing more taxes on consumers will needlessly increase costs to the public and fail to achieve our nation's recycling goals in an efficient manner. Several decades of experience in implementing environmental laws and regulations in this country have proven that environmental goals can best be achieved by providing the private sector with flexibility and incentives to innovate.

As a major manufacturer of a broad range of technology products, as well as a leading recycler of these products, HP has a strong interest in the development of policies relating to electronics recycling. HP has nearly twenty years of first-hand experience in product take-back and recycling. Since 1987, HP has successfully collected and recycled more than 600 million pounds of used or unwanted computer-related equipment globally. With our vast knowledge and experience, HP's goal is to recycle 1 billion pounds of equipment by the end of 2007. HP has established a recycling service throughout the US (as well as other countries around the world) that provides consumer and commercial customers with a convenient opportunity to recycle their old products in an environmentally sound manner. For more information see: <http://www.hp.com/hpinfo/community/environment/productinfo/design.htm>.

HP currently operates two large, state-of-the-art recycling facilities in the U.S., in California and Tennessee, and recently signed a contract with a partner company for a third facility in Canada. All materials are managed in the U.S. and Canada in an environmentally sound manner; under HP's program, no waste materials are shipped overseas and no electronic material is sent to a landfill. In the past year, HP has recycled almost 3.5 million pounds of electronic waste each month and re-used or donated an additional 400,000 pounds annually.

HP encourages Congress to allow companies such as HP to maintain this flexibility in implementing recycling—which provides American companies opportunities and incentives to continue to focus on innovation—and efficiently achieve superior recycling results that best protect our nation's natural resources for future generations.

We wish to emphasize the following points in our testimony today:

- A harmonized national approach to the recycling of used electronic products is necessary to avoid a patchwork of varying state and local requirements.
- As first steps in the development of a national approach, Congress should adopt incentives for recycling, such as those set forth in the “Electronic Waste Recycling Promotion and Consumer Protection Act” (S.510); expand federal support for recycling projects; and remove regulatory impediments to recycling.
- A comprehensive national approach should promote innovation and allow for flexible implementation to achieve recycling goals in the most efficient manner.
- Congress should reject calls for new taxes on technology products and new government recycling programs.

#### I. A NATIONAL APPROACH IS NECESSARY AND APPROPRIATE

A national solution for the recycling of used electronic products can help promote efficiency and avoid a patchwork of inconsistent state approaches. Electronics recycling is an emerging national challenge resulting from the growing use and enjoyment of technology products and consumer electronics throughout our society. As an emerging environmental challenge, the country as a whole would benefit from a national approach that enables the U.S. to address this issue at a relatively early stage in its development. Environmental challenges are too often addressed by the Congress after a problem already exists. This issue presents an opportunity for the Congress to act proactively in developing a solution to an emerging challenge.

A patchwork has already begun to develop. Three states—California, Maine, and Maryland—have adopted comprehensive recycling laws for certain electronic products, but each of these laws is significantly different from the other. The most important differences are the varying methods of financing the recycling system. California has imposed a new tax on consumers to fund a bureaucratic government recycling program. In contrast, Maine has developed an innovative shared responsibility model in which the burdens of recycling are shared by various stakeholders. Manufacturers are required to pay for consolidation and recycling or to conduct recycling of their products on their own. Maryland has imposed a fee on manufacturers to finance computer recycling programs around the state, with the fee varying depending on whether a manufacturer offers a computer take-back program. Moreover, numerous states, and even some localities, have been and are considering proposals to address the management of used electronics, and we anticipate that this trend will continue.

This emerging patchwork of differing state laws is adding significant new costs and impeding the development of an efficient nationwide infrastructure, while creating the potential for consumer confusion. A consistent national approach is necessary and appropriate.

We recognize, however, that solid waste issues are traditionally managed by the states and localities. Nonetheless, a federal solution is needed in this instance because of the potential for disparate state programs to result unnecessarily in added costs to consumers and companies, while failing to achieve our environmental goals in an effective manner. In addition, a national solution is desirable because of the connection between the recycling of used electronics and the adoption of state-specific design standards. Several states have adopted, or are considering, mandated design requirements on new technology products as part of their recycling laws or other environmental initiatives, driven largely by concerns with environmental issues associated with disposal of used electronic products. Differing state design requirements are problematic for HP and other technology companies because our products are designed and manufactured for global distribution. Conflicting state design requirements can impair our ability to sell products globally, may needlessly raise costs, and ultimately restrict innovation in the development of new products. An effective national solution can address the concerns of the states with the disposal of used electronics, thereby avoiding the need for design standards at the state level that may balkanize the global technology marketplace.

#### II. RECYCLING INCENTIVES, FEDERAL SUPPORT, AND REMOVAL OF REGULATORY IMPEDIMENTS ARE APPROPRIATE FIRST STEPS IN THE DEVELOPMENT OF AN EFFICIENT RECYCLING INFRASTRUCTURE

To further the development of an effective recycling infrastructure for used electronics, HP believes that incentives to promote recycling are a useful first step. One such incentive is a tax credit for consumers to return their products for recycling and for manufacturers to offer recycling services to their consumers. In this regard, HP supports the “Electronic Waste Recycling Promotion and Consumer Protection Act” (S.510), a bipartisan bill introduced by Senator Talent and Senator Wyden. This bill would provide tax credits to help manufacturers, retailers, the recycling in-

dustry, and others to establish an efficient national infrastructure for the environmentally sound recycling of computers and other products and to encourage consumers to return their products for responsible recycling. These incentives can serve as a catalyst for voluntary, market-based solutions that avoid the need for potentially burdensome, costly mandates at the federal or state level.

Similarly, expanded government support for pilot projects and other initiatives can help promote the development of an efficient recycling infrastructure for electronics. Programs such as the “Plug-In to eCycling” initiative of the U.S. Environmental Protection Agency have played a useful role in successfully recycling large volumes of products and collecting data on the nature of the issue and the range of approaches that can be successful. For example, during the summer of 2004 HP partnered with Office Depot stores nationwide on an in-store takeback program that collected and recycled approximately 10 million pounds of products in less than seven (7) weeks. The recycling of this amount of products was accomplished in a manner that was convenient for consumers and efficient for the two companies. Another retail return program, in which HP participated, involving Staples stores in New England also proved to be successful. Continued and expanded funding for these “Plug-In to eCycling” programs can facilitate more recycling of used electronics and the development of new approaches.

Finally, the federal government can play an important role in promoting recycling by removing regulatory impediments to cost-effective recycling. Under current federal and state regulations, used electronics are sometimes classified as “hazardous waste,” even though they are routinely used in our homes and offices and, when recycled, pose no risk to human health or the environment. When these used products are classified as hazardous waste, they become subject to burdensome and costly regulatory requirements associated with their collection, storage, transportation, and processing. Congress and the EPA should reform these regulatory requirements to facilitate recycling of used electronics, while continuing to protect human health and the environment.

### III. A NATIONAL APPROACH SHOULD PROMOTE INNOVATION AND ALLOW FOR FLEXIBLE AND EFFICIENT IMPLEMENTATION

HP supports a comprehensive, national approach to the recycling of used electronics that allows for flexible implementation and innovative approaches that can achieve our recycling goals in the most efficient manner. In discussions with several states, we have advocated a Product Stewardship Solution that is based on implementing a market driven system for recycling CRT-containing computer monitors and TVs (“CRT devices”). The approach requires manufacturers to take responsibility for the recycling of a specified amount of CRT devices, either by implementing a recycling program to cover this specified amount or by assuming financial responsibility for this amount. It places limited responsibilities on retailers and state government and avoids creation of new taxes and government bureaucracies. It provides funds to local governments for CRT device collection, consolidation, and recycling. As a result, the approach promotes flexible and efficient implementation of CRT recycling.

Under the Product Stewardship Solution, manufacturers must take responsibility for their “equivalent share” of CRT devices—including orphan CRT devices—returned by households (individual consumers and home businesses) for recycling. They can do this either (1) by establishing a recycling program or (2) by paying the state reasonable collection, consolidation, and recycling costs for their equivalent share.<sup>1</sup> Manufacturers implementing a recycling program have the flexibility to design their program as they see fit, so long as they recycle their equivalent share in compliance with applicable laws and regulations.

Manufacturer equivalent shares are determined annually by the state. A manufacturer’s equivalent share is that manufacturer’s portion of the annual CRT device waste stream. The equivalent share concept allows manufacturers that choose to run a recycling program to satisfy their obligations with CRT devices of any brand or their own brand. This approach avoids the need for brand sorting, but preserves the ability of manufacturers to implement recycling programs that collect only their own brand products. It provides an efficient recycling system with multiple options for consumers.

<sup>1</sup>This is a hybrid approach that combines elements of a producer responsibility system and the widely supported Maryland Statewide Computer Recycling Pilot Program (HB 575). A producer responsibility system enables manufacturers to assume responsibility for their products by establishing a recycling program. The Maryland law requires manufacturers to pay to the state an annual registration fee—the amount of which varies depending on whether the manufacturer offers a computer takeback program.

Manufacturers will be held accountable to the state to meet their equivalent share obligations. This is a self-implementing performance standard keyed to a specific amount of CRT devices to be recycled. Thus, a manufacturer that chooses to provide a recycling program but fails to recycle its equivalent share has a predetermined payment obligation for the shortfall to the state. This system is designed to achieve recycling results by manufacturers, not merely to generate revenue or establish government recycling programs.

The Product Stewardship Solution has numerous benefits and advantages compared to alternative approaches such as advance recycling taxes or fees (“ARFs”):

*A. Provides efficiencies through market-based solutions and the opportunity for improvements over time, thereby offering a lower cost solution to consumers.*

*Relies on and leverages the expertise of manufacturers to produce competitive, market-based solutions.* Key recycling responsibilities are placed on manufacturers competing among themselves in the private sector, rather than on the government, which faces no competitive pressure.

*Provides flexibility to allow manufacturers to develop over time least-cost recycling arrangements.* Manufacturers have broad flexibility to act individually or in partnership with others to develop recycling programs or to pay for their recycling responsibility. This provides manufacturers with maximum flexibility to be innovative and to work with recyclers to develop least-cost alternatives.

*Allows collection costs and responsibilities to be determined by the market.* Manufacturers that choose to run recycling programs are required to recycle their equivalent share of discarded CRT devices. But no particular entity has a mandated responsibility to collect discarded CRT devices. This fosters development of cost-effective, market-driven collection methods by manufacturers, non-profits, independent collectors, municipal governments, and others.

*Provides consumers a broad range of collection/recycling options.* Consumers may return their unwanted CRT devices to recycling programs offered by manufacturers or to any other recycling program—whichever collection/recycling option best suits their needs.

*B. Avoids new taxes on consumers.*

*The Product Stewardship Solution imposes no point-of-sale taxes on consumers.* ARF proposals are simply a new tax on consumers to finance new government recycling programs.

*C. Places key responsibilities on manufacturers, not government, to achieve recycling goals, including recycling of orphan CRT devices.*

*Manufacturers are responsible for their contribution to the household-CRT device waste stream—the fundamental performance goal of a recycling program.* Manufacturers are responsible for their equivalent share of CRT devices that are discarded each year by households, i.e., the contribution that their products make to the annual CRT device waste stream.

*Manufacturers are responsible for the orphan waste stream.* This includes both unlabeled CRT devices and CRT devices for which the manufacturer is no longer in business and has no successor in interest.

*D. Places minimal responsibilities on retailers.*

*Retailers are not required to impose and collect new taxes and are not obligated to collect products.* The only obligations of retailers are not to sell unlabeled and unregistered CRT devices. Retailers will also certify annually that they checked the state CRT device registration website to determine if the branded CRT devices they sell are registered.

*E. Limits government involvement to enforcement and other necessary functions, avoiding the creation of new taxes and new agencies.*

*Requires government to perform limited administrative and enforcement functions.* These limited functions will be sufficient to establish the level playing field that makes it possible for manufacturers to provide market based recycling solutions. Among the functions performed by government are determining annual manufacturer equivalent share obligations, enforcing the requirements of the law, and collecting and compiling recycling data.

*Avoids establishing new taxes and new agencies.* By placing fundamental recycling responsibilities on manufacturers, there is no need for consumers to pay new taxes on their purchases of CRT devices or for new agencies to be created to collect or administer a tax. The limited government responsibilities required by the approach are designed, like the other parts of the approach, to achieve overall recycling goals efficiently.

*F. Reduces burdens on local governments by providing manufacturers with incentives to keep CRT devices out of the municipal waste stream and by providing a funding source for CRT device collection, consolidation, and recycling.*

*Provides manufacturers with incentives to keep their CRT devices out of the municipal waste stream.* Manufacturers' equivalent share obligations are based on the percentage of CRT devices for each manufacturer that are collected in local government recycling programs. Thus, manufacturers have incentive to keep their CRT devices out of the municipal waste stream.

*Provides local governments with a funding source for CRT device collection, consolidation, and recycling.* Manufacturers that elect to pay the government for their recycling obligation, or that are required to pay for failing to meet their equivalent share obligation, provide local governments with a funding source for collecting, consolidating, and recycling CRT devices.

*G. Provides the opportunity for design improvements.*

*Allows manufacturers to benefit from improved environmental design and innovation.* Those manufacturers that collect their own brand products can benefit from design improvements they have made. Moreover, the system provides an incentive to improve product design by removing materials of concern, enhancing recyclability, and incorporating recycled content into their new products.

#### IV. CONGRESS SHOULD REJECT NEW TAXES AS A MEANS OF FINANCING RECYCLING PROGRAMS

California has adopted a new tax, or "advance recycling fee" ("ARF"), to finance a government recycling program, and other states are considering this approach.<sup>2</sup> Congress should reject this approach. HP believes that a new tax on technology products to raise revenue for government to use for recycling is a poor way of achieving recycling goals.

This new tax on consumers will raise the price of technology products and, assuming it is used for its intended purpose, establish a new government program that will likely result in efficient recycling solutions. There is no incentive for improvements over time—all products are subject to the same fee regardless of the cost of recycling that product. Manufacturers and others have little incentive to reduce these costs. This new tax is a one-size-fits-all approach that removes incentives for innovation and market-based solutions, thereby likely resulting in higher overall costs. Moreover, there is the risk that the funds collected by the government would be used for purposes other than recycling, thereby failing to address the issue.

A tax-based approach suffers from other deficiencies, including the following:

*A Tax Finances A Large New Government Program.* A tax-based system requires receipt and administration of new sales taxes on consumers transmitted by likely thousands of retailers and distribution of the tax proceeds to hundreds of collectors and recyclers. The result is a large new government program with substantial administrative expenses.

*The Tax Revenues Can Be Diverted For Other Governmental Purposes.* The tax revenues may be diverted to finance other governmental programs. Given tight government budgets and numerous competing priorities, governments often shift spending from one area to another. Indeed, there is no way to prevent a future legislature from taking such action. Numerous recycling and other environmental programs based on special taxes or fees that are presumably dedicated to a specific purpose have witnessed the funds being shifted to other uses.

*A Tax System Does Not Guarantee That Any Amount of Electronic Devices Will Be Recycled.* Although proponents of tax-based recycling systems typically call for achieving numeric collection goals, the proposed systems provide no mechanism for enforcing these goals or ensuring that any amount of electronic devices are actually recycled. The California ARF statute does not require that any amount of discarded electronic devices must be recycled. The only guaranteed outcome of these tax-based systems is the generation of new tax revenue for government, not the recycling of products.

*A Tax on Products Is Burdensome To Retailers.* The Consumer Electronics Retailers Association ("CERC"), supported by retailers such as Best Buy Co., Circuit City Stores, Inc., Radio Shack Corp., Sears Holdings, Target, and Wal-Mart, opposes an

<sup>2</sup>Supporters of this approach refer to it as a "fee" and not a tax. The law generally distinguishes between "taxes" and "fees" based on whether the payment provides a public benefit (a tax) or a specific service (a fee). *National Cable Television Assn. v. United States*, 415 U.S. 336 (1973). Because the revenue raised provides a general public benefit and not a specific service for the consumer paying the tax, an ARF is properly characterized as a tax.

ARF because an ARF is “administratively burdensome for all parties;” and “too complicated for all parties.”<sup>3</sup>

*Collection And Administration Of Taxes By A TPO Raises Concerns of Efficiency, Expertise, Legality, and Accountability.* Some proponents of new taxes advocate the formation of a “Third Party Organization” (TPO) to receive and administer the government-imposed taxes collected by retailers. This proposal raises concerns of efficiency, expertise, legality, and accountability:

- The TPO duplicates functions currently performed by government agencies.
- The TPO lacks the expertise of existing tax collecting agencies and is unlikely ever to acquire equivalent expertise.
- The lack of accountability of the TPO to the government for TPO expenditures of public revenues raises significant legal issues. A TPO would control public tax revenues without congressional oversight over appropriations.
- TPO proposals provide no accountability if the TPO fails to achieve recycling goals or fails to meet other obligations. There is no ability by the government to enforce against a TPO.

*An ARF Constrains Competition And Limits The Efficiencies To Be Gained From Competition.* A new tax to fund a monopolistic recycling program fails to establish a competitive environment that will provide incentives for improved performance. Under the California ARF system, all collectors and recyclers receive a uniform rate of compensation set by the state. In ARF systems that depend on a TPO, the only possibility of competitive bidding is with a monopoly organization that sets the bid requirements. This is not the same as a fully functioning private market with multiple manufacturers seeking recycling services.

#### V. CONCLUSION

HP supports a Product Stewardship Solution that requires manufacturers to take responsibility for their equivalent share of CRT devices returned for recycling by households, that places minimal responsibilities on retailers and state government, and that provides local governments with funds for CRT collection, consolidation, and recycling. Overall, this approach offers a more efficient and flexible way to achieve our recycling goals.

HP looks forward to working with the Subcommittee and other Members of Congress on the development of a national recycling system that leverages the capabilities and expertise of manufacturers, retailers, recyclers, and others to achieve efficient and low cost opportunities for all consumers.

For more information, please contact Renee St. Denis at 916-785-8034 or [renee.stdenis@hp.com](mailto:renee.stdenis@hp.com).

Mr. GILLMOR. Okay. Thank you very much.

Let me start with the questions, and direct this to the whole panel, those of who you want to respond; I would imagine that would be those of you in the retailing or manufacturing.

Many of the organizations have been members of several stakeholder processes, including the National Electronic Product Stewardship Initiative, that have been trying to seek a consensus of recommendations of what a Federal response should be, but each time the talks have not produced a resolution. So I guess I would ask why is that, what lessons have you learned from those meetings, and is there a possibility of a consensus developing, or are we going to be in the position of having no consensus and then just trying to pick what would appear to be the best solution? Dave.

Mr. MCCURDY. Mr. Chairman, it is a very appropriate question. And EIA was very involved in the NEPSI dialog, as were many other stakeholders here. And I think you hit the key point first, and just let me quickly reiterate. I think what happened during NEPSI and through this process is that there was a number of areas of consensus. We started with a lot of disharmony on a lot of these issues and a lot of miscommunication and people talking past each other, and I think throughout this process—and EPA did

<sup>3</sup>See <http://www.ceretailers.org/cerc/CERC—Position—on—eWaste.pdf>.



facilitate and work and tried to even hold the hammer over us at some point trying to build the most consensus.

In the areas that we mentioned before, national consistency and electronic recycling, we really want to see a streamline in uniform regulatory framework. I don't think there is disagreement on this panel; if there is, it is rare. A viable infrastructure that requires coordinated efforts—and we say shared responsibility, it really comes down to a funding issue which I think is really the crux of the question. And I think there was consensus as well. And in California there was a debate, and I think there was agreement, this is a solid waste management and resource conservation issue. There is a consensus on that. There are those on the fringe who will argue it is hazardous waste. That is not the case. This is a resource conversation issue.

We want to see a limited and defined scope of products, and again, Mr. Murray from California said the screen was the nexus. The size of the screen actually we had a lot of debate on, and industry was involved in that. We also saw that there was a need to harmonize labeling product information and regulatory reporting requirements. That is important.

And then last, regulations or standards for recyclers, there is a discussion there, and there have been questions and kind of sub-questions that are just waiting to be asked of this on issues such as export. And I think it is important our manufacturers and others believe that the recyclers have a role to play, and there is a need for safe, environmentally sound management there, and that there have to be standards and certification of those recyclers that are responsible for the product they take back in order to make sure that it doesn't end up in the wrong place or that it is misused or not controlled. Those areas we have reached consensus, I think; I think it is safe to say. So as the subcommittee looks at this, don't write those off. Those are really critical.

The other question, though, is on the issue of financing. Recycling unfortunately today, the cost of the transportation, the labor of dismantling, the collection far exceed the value of the end product, the recycled product, so there is a differential, and that really is the crux of the problem is how do you manage those costs.

California, we didn't oppose the California bill as an alliance. Some of our companies support it; some opposed it. We as an association didn't oppose the final compromise, but I will say that I think the jury is still out on what happens in California. There is a bureaucracy at work there. We will see how that is managed. And what I think we are asking the subcommittee to do at the end is help us find a way to reach a consensus so that we don't have a main solution and a California solution multiplied across the country.

Mr. GILLMOR. Thank you, Dave.

My time for questioning is expiring, but I want to give anybody else that wants to take a crack at that the opportunity, then go to Ms. Solis and Mrs. Bono. And I have been informed that probably in about 10 minutes they are going to start a series of votes on the floor, so we will need to conclude.

Anybody else want to take a crack at that question, or did Mr. McCurdy so profoundly sum it up that we are all set?

All right. Ms. Solis.

Ms. SOLIS. Thank you.

My question is for Mr. Thompson from Panasonic. You raised a good issue. What should the EPA do in terms of recommending a national study? The last one you mentioned wasn't out until 1999. Give me some idea of what you would see in something like that.

Mr. THOMPSON. I have a quotation in my testimony that was written by the NEPSI coordinator, and she said, "Prior to starting a full-fledged dialog, an adequate level of base research must be in place. In the NEPSI dialog this baseline did not exist at the outset, which created recurring disagreements through the dialogs on basic facts."

What I see as a manufacturer who participated in NEPSI and supported the NEPSI consensus, if you will, was that we didn't have an understanding of how many products are being generated and how many products are actually of concern. We didn't have an understanding of the capability of the domestic recycling industry in terms of its capacity, its technology, the markets for materials. We didn't have an understanding of the adequacy of secondary markets for materials containing electronic products, both in the United States and around the world. We didn't have an understanding of the volumes of products being exported and the adequacy of overseas recyclers. And we didn't have an understanding, probably most importantly to me, of the different economic consequences and ramifications of different systems.

So, for example, we have talked about California, and California has a centralized bureaucratic approach that is very easy to focus on and associate a cost on that. If you look at an approach that is being suggested in Maine, for example, the take-back approach, you will have a number of consolidation facilities, probably 10 to 20, I am not sure what that number will be yet, to which local governments will collect and deliver electronic products. Those products will have to be sorted by brand, and then once that is done, manufacturers will be assessed a cost for paying for their brands at those consolidation facilities, including transportation, dismantling and recycling. That, when you combine all those together, you are going to have a large number of what I will call minibureaucracies that is also going to be a very substantial cost.

Ms. SOLIS. Because my time is short, what are you recommending then? Obviously we need to do an inventory of what is going on, and that has to be done.

Mr. THOMPSON. Plus focus on the different economic consequences for American society of different approaches.

Ms. SOLIS . Is there anyone on the panel that differs from that and wants to speak to that? No?

Mark.

Mr. MURRAY. I think there has been so much focus on assessing the different approaches, and I think, and I may disagree with some with regard to the need for a national solution, that it is appropriate to allow these two experiments in California and Maine to move forward and allow the real world to determine which approach works and what are the strengths and weaknesses of those systems. I think that is going to be more valuable than a U.S. EPA study of those kinds of systems.

It seems to me that there are specific areas that the Federal Government can play a role. The export issue is one of those areas; again, State authority to impose responsibility on any of these that are outside of their State, whether it is an advanced disposal fee responsibility or a direct manufacturer responsibility. Those are two areas where States could use some assistance from the Federal Government. But my recommendation would be, rather than studying what system works from a theoretical perspective, allow these two experiments to move forward and see how the real world emerges there.

Ms. SOLIS. My next question is for Mr. McCurdy. Since you represent the high-tech industry there, is your organization planning on addressing the issue of phasing out toxic materials that are used in the manufacturing processes?

Mr. MCCURDY. Yes, ma'am. As I stated in my testimony, the design cycle is very important. We don't just talk about manufacturing and sale, it is a life cycle. And our manufacturers and representative here, as well as Mr. Thompson, indicated in the consumer electronic sector, in the IT sector our companies invest in literally hundreds of millions, perhaps billions, of dollars in the design of products that not only make them more efficient, reduce these materials—again, if they are suitable alternative materials—and again, they have to apply science to do that. Our company is, I think, ahead of implementation or ability to implement directives.

Again, I mentioned lead free. A lot of our companies today are talking about green manufacturing. They are looking at this as potential market enhancement for them or competitive advantage.

So, yes, there are many, many examples, incredible steps, and we see it every single day. Mr. Largent showed you the examples of the different systems. Look at televisions today. The television today, most models—and hopefully the price points of these are coming to the point that they are going to be readily available—instead of having these big tubes, are going to be thin-screened, just like your computer screens today. Those are computers and televisions at the same time. That is where the future is going.

Mr. BRUGGE. Can I just add to that? You asked about contaminants like lead and cadmium. There is already agreement among wireless carriers to completely phase those out by mid-2006, next year.

Mr. GILLMOR. The gentlelady from California.

Mrs. BONO. Thank you, Mr. Chairman. I actually am going to pass on any questions, which is very strange, I know. But I want to point out to the panel that I look forward to working with each of you on a solution as we move forward here. And I did have a question for Steve Largent, but I will talk to you about it in person as we move forward.

So, again, thank you all for your time. And you know that I am personally interested in this, and I look forward to working with each and every one of you.

Thank you, Mr. Chairman, also, for holding this hearing.

Mr. GILLMOR. I also commend the gentlelady for her leadership and the interest that she has evidenced in this issue over a period of time.

I would like to ask the panel, I think, because everything was going on, our membership at this hearing was not what we would like, but there may be some members wanting to submit questions to the panelists in writing, and we would ask if you would be willing to respond to that.

With that, I want to thank you all very much for being here. It was very informative. And we will conclude.

[Whereupon, at 3:20 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows.]

PREPARED STATEMENT OF CAROLYN BRANDON, VICE PRESIDENT, POLICY, CTIA—THE WIRELESS ASSOCIATION™

Chairman Gillmor, Ranking Member Solis, and members of the Subcommittee, thank you for the opportunity to appear before you today to testify on the issue of electronic waste and the appropriate role of government, be it local, state, or Federal, to address this matter. My name is Carolyn Brandon and I am CTIA's Vice President for Policy. CTIA—The Wireless Association™ and its members have been committed to the goal of sustainable development in the wireless industry and the environmentally sound management of discarded, recycled, or refurbished wireless mobile phone products.

CTIA'S COMPREHENSIVE, VOLUNTARY REUSE AND RECYCLING PROGRAM

CTIA members are at the forefront of providing consumers with wireless products and services that facilitate communications wherever and whenever. Concurrent with the industry's business goal of providing ubiquitous wireless coverage, CTIA members recognize that one of our responsibilities as good corporate citizens is a commitment to environmental stewardship. This commitment is reflected in the industry's voluntary disposal recycling program—Wireless... The New Recyclable.

WIRELESS... THE NEW RECYCLABLE

What is "Wireless... The New Recyclable?" It is a multi-faceted program the wireless industry launched in October of 2003 to facilitate environmentally sensible management of wireless products at end-of-life. The initiative provides a voluntary and uniform set of guidelines allowing manufacturers and carriers to upgrade the management of their environmental practices in the disposition of used wireless devices. It has been embraced and adopted by numerous CTIA members, including all of the national carriers and mobile phone manufacturers.

The program guidelines incorporate all aspects of the recycling process: collection, transportation, re-use, refurbishment and materials reclamation.

PUBLIC OUTREACH AND AWARENESS

"Wireless... The New Recyclable" is designed to inform, educate, and encourage consumers to recycle their "end-of-life" wireless products through a wide range of company initiatives and incentives. In particular, the program focuses the public's attention on the importance and ease of recycling wireless devices by 1) supplying the wireless industry with public awareness materials, such as posters and bill stuffers, to reinforce the message to recycle wireless devices and; 2) directing consumers to [www.recyclewirelessphones.com](http://www.recyclewirelessphones.com), a central website that provides consumers with important information on the recycling of wireless products and links to CTIA member company sites which provide information on where consumers can recycle phones.

CTIA ENVIRONMENTAL PRINCIPLES

"Wireless... The New Recyclable" incorporates CTIA's ten environmental principles that set forth the wireless industry's commitment to sustainable development and the proper management of wireless devices at their end-of-life. The principles are listed on the second page of a handout that I've included with my testimony.

VOLUNTARY GUIDELINES

The guidelines assist companies in ensuring that the wireless devices that are collected are managed, transported and reused, refurbished or recycled in a responsible way and in accordance with federal and state environmental laws. Promoting the re-use, refurbishment or recycling of wireless devices minimizes waste destined for

landfills or incineration. Just as importantly, the recycling guidelines facilitate the recovery of raw materials that are then used in the manufacture of new products.

#### CELL PHONES ARE DIFFERENT FROM OTHER ELECTRONICS

A key aspect of any re-use or recycling program is the collection of the product. The industry has been able to establish effective voluntary collection programs that are a function of the small size and portability of mobile phones and mobile devices. These voluntary programs include collection at municipal centers, return of products to service providers or other retailers, or mail-in returns to manufacturers. The size and relative lack of portability of most other electronics products, such as TVs and computers may not practically or economically allow for this range of collection options.

For example, Verizon Wireless has a program that collects cellular telephones in retail outlets and accepts the return of its products via mail through the charitable program, *HopeLine<sup>SM</sup>*; this program offers these collected products to help the victims of domestic violence. T-Mobile's *Give More, Get More* accepts used phones through the mail and donates 100% of the recycling proceeds to charitable organizations. Cingular, SprintNextel, and other companies also collect previously used wireless phones and donate either the refurbished phones or the proceeds from the programs to charitable organizations. Finally, The Wireless Foundation, a charitable organization created by CTIA, has sponsored collection events and charitable programs, such as Donate-a-Phone<sup>®</sup>.

#### SIZE, PORTABILITY, AND REDUCED ENVIRONMENTAL IMPACTS

Wireless handset manufacturers have responded to consumer' preference of the "less is more" approach when it comes to the development of new mobile phones. One only has to look at the size of mobile phones ten years ago juxtaposed to the size of phones being manufactured today to see the tremendous strides the industry has made not only in technological capabilities, but also environmental compatibility. The new generation of wireless devices weigh approximately 42% less than earlier models and are being constructed in a more environmentally friendly manner. As mobile phone and device manufacturers comply with the European Union's Restriction of Hazardous Substance (RoHS) Directive, we also see the reduction of hazardous materials such as lead and cadmium in wireless phones marketed in the United States.

We anticipate that the design changes required for sale in, or import to, the European Union will also be applied to products marketed and sold in the United States. Such design changes will facilitate recycling and re-use and further reduce any potential environmental impacts from the recycling or disposal of mobile phones or mobile devices.

#### MARKETS EXIST FOR USED MOBILE PHONES AND MOBILE DEVICES

The market for used mobile phones and mobile devices is different from most of the electronics industry. Mobile phones have a relatively high re-use value creating an ongoing market for these devices; therefore, the market forces providing incentives to collect and re-use these devices would be more efficient than for other electronics products. This is evidenced by the current efforts of ReCellular and HOBI International, Inc., two for-profit companies established to collect and refurbish used telephones for return to the market. The operation of for-profit companies is unusual in the electronics recycling and re-use market and is a clear indication of the strength of the market for wireless device re-use.

#### CLOSE CONTACT BETWEEN CONSUMERS AND SERVICE PROVIDERS

Unlike most electronics manufacturers and retailers, wireless service providers and consumers are typically in close contact during mobile phone or mobile device replacement and billing. This contact presents the opportunity for efficient and cost-effective collection. Many wireless customers return to a service provider or independent agent to replace their devices. Moreover, through monthly billing, service providers are in communication with their customers on recycling and re-use options. This readily available occasion for re-use or recycling opportunities is not common to most other electronics industries. Success of "Wireless...The New Recyclable<sup>®</sup>"

Carriers, recyclers, and refurbishers are all in the process of evaluating the best way to expand and assess the success of their respective recycling and/or refurbishing programs. With that being said, I can share with the Subcommittee the following statistics:

- ReCellular, a refurbisher, has collected approximately four million phones in 2004, up from 1.5 million in 2002.
- Nextel has collected 4.4 million phones since 2002. Nextel also has refurbished 2.3 million phones since 2002.
- The Wireless Foundation's take-back programs have collected nearly three million phones since 1999.
- Verizon Wireless has collected approximately two million phones through their HopeLineSM charitable donation program.
- GRC Wireless Recycling has collected approximately one million phones since 2001.
- Old Cell Phone Co. reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.
- RMS Communications Group collected one million phones in 2004, and has been collecting phones for the past ten years.
- eBay reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

#### STATE-BY-STATE REGULATION IS UNWORKABLE

Mobile phones and mobile devices are a consumer product in national commerce best addressed at the national level. The re-use and recycling of these wireless devices present issues unlike those presented by traditional state solid waste management and disposal. The size, marketing and re-use and recycling options available for wireless devices are also distinct from other types of electronics. In our view, a voluntary, industry-supported national program will facilitate the re-use and responsible recycling of wireless devices regardless of where the devices are purchased or where the devices wind up.

The re-use and recycling of mobile phones and mobile devices is a national environmental challenge. We believe that state-by-state regulation is counter-productive and a one-size fits all national approach is not workable for the entire electronics industry. Rather, this challenge demands a comprehensive, voluntary national solution tailored to address the issues raised by mobile phone and mobile device end-of-life. Consumers and industry are already confronting inconsistent state requirements, as evidenced by the inconsistent take-back, financing and manufacturing requirements already enacted in California and pending in several other states. Absent a definitive federal endorsement of a voluntary national recycling program, it seems that a piecemeal and inconsistent network of state regulatory programs will be the default solution. The wireless industry fears that a state-by-state system would lead to regulatory uncertainty and confusion, high compliance costs, and the inefficient use of resources, all of which combined will lead to increased costs for consumers and a much less efficient and effective take-back program, particularly for wireless providers and manufacturers that serve multiple markets. The environmental benefits of such an approach are also questionable.

Wireless consumers will pay, either directly or indirectly, for inefficient and inconsistent state regulatory programs. Increased regulatory costs will invariably be passed through to the consumer as a result of an increase in product costs.

It's unfortunate, but true, that regulatory systems simply cost more and those states that choose to adopt such programs will incur potentially significant costs, at both the state and local level, to implement a mandatory regime, including costs of collection, administration, oversight and enforcement. Again, consumers will ultimately pay for these increased costs through local taxes.

Working with industry to promote product re-use and recycling on a national level will help the United States in its efforts to work with other nations in finding environmentally sound, effective, workable solutions to address the increasing volume of used wireless devices elsewhere. A piecemeal state-by-state approach will leave the United States without a strong basis for a leadership role in the international discussion on recycling issues.

#### EPA AND DEPARTMENT OF COMMERCE CAN PLAY AN IMPORTANT ROLE IN ASSISTING INDUSTRY TO TAKE THE LEAD ON PROMOTING PRODUCT STEWARDSHIP

The EPA has an established record of comprehensive, voluntary re-use and recycling programs. EPA's programs, such as "Waste Wise" and "Resource Conservation Challenge," are good examples of government/industry partnerships designed to produce environmental results without the need for new regulation. In May of 2004, EPA issued national guidelines for the management of "end-of-life" electronics.

Additionally, EPA has worked with states and industry for several decades in developing national markets for traditional recycled materials, such as aluminum, glass and paper. The Department of Commerce has expertise in technology and

markets. We believe mobile phones and mobile devices demand a comprehensive, voluntary national program for re-use and recycling that takes into account the unique characteristics of mobile phones and mobile devices and we are committed to working with the EPA and the Department of Commerce to continue to promote the industry's initiative, "Wireless... The New Recyclable"—a program with a proven track record of success in protecting our nation's environment.

Thank you for the opportunity to share the wireless industry's views on this important issue, I welcome any questions you may have.

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HEWLETT-PACKARD COMPANY  
ROSEVILLE, CA 95747  
October 6, 2005

Paul E. Gillmor, *Chairman*  
*Subcommittee on Environment and Hazardous Materials*  
2323 Rayburn House Office Building  
Washington, DC 20001

DEAR CHAIRMAN GILLMOR: On behalf of HP, it is my pleasure to respond to the questions we received from the Subcommittee on Environment and Hazardous Materials regarding electronics recycling. I also would like to take this opportunity to thank you for allowing me to address your committee on September 8, 2005, about this important issue and HP's views.

HP applauds Chairman Gillmor for holding hearings on this emerging issue and we hope that you view, as we do, that the hearings were a success. In our view, the hearing succeeded in raising the awareness and advising the Members of the House and the public on the challenges of managing and recycling used electronics in the United States.

Thank you again for this opportunity. Please do not hesitate to contact me should you have any additional questions.

Sincerely,

RENEE ST. DENIS  
*Director, Americas Product Take Back*

Attachment

cc: The Honorable Hilda L. Solis, Ranking Member,  
Subcommittee on Environment and Hazardous Materials

HEWLETT-PACKARD ANSWERS TO QUESTIONS FROM HON. PAUL E. GILLMOR

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: As between whether electronic waste is a resource conservation issue or a hazardous waste issue, HP sees electronic waste as primarily a resource conservation issue.

As a company committed to environmental stewardship, HP believes that society has an interest in minimizing waste and that the recycling of electronic products can help to conserve natural resources. HP believes that the determination of whether electronic devices generally warrant hazardous waste management remains debatable. While we recognize that some stakeholders view mismanagement of electronic waste as posing potential environmental issues, studies also have been conducted that indicate minimal risks. For example, in a recent letter to Senator Thune, the Solid Waste Association of North America (SWANA) and the National Solid Wastes Management Association (NSWMA) stated that electronic products can be safely managed in municipal solid waste landfills and that the natural processes occurring within a municipal solid waste landfill, such as precipitation and absorption, effectively inhibit heavy metals from dissolving into the leachate or being released from the landfill in the form of landfill gas.<sup>1</sup> In addition, landfill liner systems substantially prevent leaking of leachate from the landfill to the land upon which the landfill is constructed.<sup>2</sup> And, as industry moves to put EU RoHS compliant products on the world-wide market, waste concerns should become even more limited. HP can provide other examples if needed. While considering the above in-

<sup>1</sup> Letter from John Skinner & Bruce J. Parker to the Honorable John Thune (Aug. 16, 2005), at 1-2.

<sup>2</sup>*Id.*

formation from the solid waste management experts, HP believes and is involved with this issue because it is an important resource conservation issue.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the “orphan” and legacy waste that is sitting in peoples’ homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: HP finds that legacy and orphan waste are a significant—but not the biggest—electronic waste issue. The major issue is developing and implementing a national, uniform approach to electronic waste recycling that will achieve our recycling goals in a fair, flexible, and efficient manner, including providing incentives for improved performance over time. Regarding legacy and orphan wastes, we think it important to understand that these waste streams derive from different sources.

“Legacy wastes” result from electronic products that are currently in use or otherwise owned by households and that were sold without being subject to any requirements regarding recycling or end of life management. When companies sold these products, there was no expectation that manufacturers would be responsible for managing them at end of life. End-of-life management of these wastes will be taken care of by many recycling approaches, including HP’s Product Stewardship Solution.

“Orphan waste” results from discarding products that: (1) are not labeled with a manufacturer’s brand; or (2) for which the manufacturer of the product is no longer in business and has no successor in interest. A key fact about orphan waste is that it is much smaller in amount than what is regularly attributed to it. Preliminary data circulated by the Maine Department of Environmental Protection suggest that orphan waste currently constitutes approximately 10 percent of returns to local waste collection systems. Thus, while orphan waste is an issue, it is not as big an issue as many assumed that it might be. The orphan waste percentage can be minimized going forward by enforcement of labeling requirements and a thorough assessment of which manufacturers are in business or have a successor in interest. End-of-life management of orphan waste will be taken care of by many recycling approaches, including HP’s Product Stewardship Solution.

In the absence of federal or state laws, a grant program for state or local governments would assist in jump-starting the solutions necessary to address this emerging environmental challenge. This has been demonstrated in the EPA’s Plug Into E-cycling programs such as the Staples/Product Stewardship Institute (“PSI”) take back offerings. HP is an active participant, both financially and through establishing taking back programs, in many of these programs and continues to support the government role in supplying grants.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: The various ways that state and local governments address the electronic waste issue demonstrate that a federal solution is appropriate and, in fact, the best solution.

First, state and local governments are not treating electronic waste in the same way that they generally treat household waste. State and local governments are not managing and financing the collection, handling, and recycling of electronic products on a local basis in the traditional way, either through drop-off fees or through taxes that residents pay. Instead, state and local governments are requiring global manufacturers to manage and finance unique electronic waste collection and recycling systems.

Second, the three states—California, Maine, and Maryland—that have enacted electronics recycling laws have imposed fundamentally different requirements on manufacturers. (See Answer to Question No. 4 below for more information.) The effect of this patchwork is to increase the costs to manufacturers of managing electronic waste at its end-of-life. Manufacturers have to incur higher costs to meet these differing state schemes than the costs that manufacturers would incur to meet a uniform, federal scheme.

Third, state electronics recycling proposals often include design mandates. Thus, rather than managing the local collection and disposal/recycling of electronic waste, these new state electronic waste proposals reach back to manage the *design* of electronic products. In addition, design mandates affect movement of products in both interstate and global commerce. Traditional state and local government waste management programs do not affect interstate or global commerce. In sum, these design mandates underscore that electronic waste should not be treated as a local problem.

Fourth, unlike household waste, which is disposed of in solid waste disposal facilities, state electronic waste proposals require electronic waste to be recycled. Local-



ities have access to local solid waste disposal facilities for disposal. Electronic recycling facilities typically are not located within each local government jurisdiction and may not be located within a state. Thus, electronic recycling often involves interstate commerce issues as well as other transport and management issues associated with the need to use recycling rather than landfill disposal facilities.

Due to these unique features of electronic waste recycling programs (both enacted and proposed), HP supports a uniform federal approach to electronics recycling.

*Question 4.* H-P sells in not only brick-and-mortar stores, but also over the Internet. Your testimony states: “the emerging patchwork of differing state laws is adding significant new costs and impeding the development of an efficient nationwide infrastructure, while creating the potential for consumer confusion.” Could you please tell me, specifically, how this is a problem?

Response: The three current systems—in California, Maine, and Maryland—have imposed significant costs on HP and other manufacturers that could be avoided under a uniform, national electronics recycling program. The three distinct sets of rules in these states that HP has to examine, comply with, and communicate throughout our company and to our retail partners, most of whom are doing business on an interstate basis, add significant complexity to establishing a nation-wide infrastructure.

Compliance with the California electronics product tax requires HP to undertake a broad range of activities, from developing internal IT systems, to identifying those individual products covered by this new law, to collecting new taxes on our internal and direct sales in California and remitting to the state the required amount on those products. All of these requirements combined impose significant costs on HP. For example, HP incurred a cost of more than \$3.5 million to meet only one of these requirements—collecting taxes on HP’s direct sales within California.

In contrast, to comply with Maine’s producer responsibility program, HP will not be forced to make any changes to our IT systems nor impose new taxes on our consumers. HP’s requirement is to develop and finance a statewide electronic waste management plan.

Maryland has established yet a different electronic waste management system. The Maryland law requires manufacturers to pay the state a registration fee. HP can reduce the amount of that fee by establishing an electronic waste recycling program. The requirements of an electronic waste recycling program in Maryland will likely differ from those required in Maine.

Increasing the compliance complexity for HP is that each state has imposed its electronic waste recycling requirements on a different scope of products. California’s and Maine’s programs both address computer monitors and televisions containing a screen greater than four inches measured diagonally. California’s program, however, covers only computer monitors and televisions that have been identified as hazardous wastes by regulation. Maryland’s program addresses only computers and computer monitors and does not address televisions. In addition, electronic products tax requirements are more difficult to administer than an ordinary sales tax because the taxes differ by product type (e.g., California’s tax ranges from \$6 to \$10 depending on screen size). These inconsistencies restrict the development of nationwide solutions. Keeping track of these three systems is a challenge. Imagine if there were 47 others.

The emerging patchwork of differing state laws also has the potential for consumer confusion. Consumers may be using common carriers or the U.S. mail to ship devices for recycling. Having different management standards for electronic waste in different states complicates compliance by both senders and transporters. In addition, in our mobile society, consumers moving from state-to-state may be confused by a wide variety of systems.

The US EPA’s proposed rule for managing cathode ray tubes (CRTs) is one example of how a national approach could simplify and increase the efficiency of managing end-of-life CRTs. The proposed rule would exclude from the definition of solid waste CRT devices sent for recycling. To the extent that states adopt the rule it would enable companies to ship CRT devices to recycling centers without worrying about multiple differing state labeling, shipping paper, and other requirements.

As shown by the discussion above, the emerging patchwork of different state electronic waste management laws will impose on manufacturers’ significant new costs, impede the development of a national electronic waste recycling infrastructure, and cause consumer confusion.

*Question 5.* Your testimony mentions that several states have adopted or are considering mandated design requirements or new technology products as part of their recycling laws or other environmental initiatives. What are your feelings about the use of environmental statutes to govern individual manufacturing processes? Do you support this type of action or think it is a wise precedent to have set?

Response: We find that state mandated design requirements are not a wise precedent.

At the outset, it is important to distinguish between environmental regulation of “manufacturing processes” and establishing product design mandates. Environmental regulation of manufacturing processes is the traditional approach of most environmental statutes, such as establishing controls on end-of-pipe wastewater discharges through NPDES permits. These state (and sometimes local) environmental requirements are imposed on and met by individual HP facilities. Product design mandates, on the other hand, apply to products before they are even *created* and force manufacturers to apply such mandates to all products or to sell differently designed products on a state-by-state basis. HP questions the wisdom of state-by-state design standards as a matter of law, policy, and cost.

Several recent state electronics recycling proposals have included RoHS or RoHS-type requirements. As you are aware, the European Directive called “Restriction of Hazardous Substances” (“RoHS”) limits the amounts of the certain chemical substances that can be present in electronic products sold within the European Union. HP considers having individual states impose provisions of the RoHS directive at a state level to be inappropriate for a number of reasons. Manufacturers generally are complying with RoHS on a worldwide basis. Incorporating RoHS requirements into state legislation will not provide any additional incentives to increase the recyclability of products. Moreover, inclusion of such material restrictions in U.S. state legislation will create confusion and interfere with the flow of these products in interstate commerce because the state requirements may be different from RoHS or may be interpreted by state agencies differently than the worldwide standard.

*Question 6.* Your testimony recommends expanding government support for pilot projects and other initiatives to promote the development of an efficient electronics-recycling infrastructure. In particular, you single out the U.S. EPA’s “Plug-In to e-Cycling” program—the same one praised by Maryland Secretary of Environment in the first part of our hearing. What do you see as being needed and do you see a lack of support for these or other Resource Conservation Challenge Programs?

Response: The results of implemented pilot projects demonstrate their value. By showing what works, pilot programs can also serve as a guide for development of electronics recycling programs. For instance, during the summer of 2004, Staples, Inc., in partnership with the Product Stewardship Institute (“PSI”) and the U.S. EPA—with participation from state agencies, a recycler, and ten electronics manufacturers, including HP—launched a program to measure the success of retail-based electronics recycling. Staples collected used computers and related equipment from customers at retail stores and businesses in five northeastern states, then transported the materials to a recycler. The program report concluded that customers were overwhelmingly positive about the program and wanted it to continue. From an operational perspective, the program was easy to implement. The cost of collection was competitive with other electronics collections. (See Answer to No. 3 of Mr. Dingell for detailed cost information for the Staples, Inc./PSI pilot project.) Overall, the program was a success.<sup>3</sup>

In several meetings, including a recent meeting held in Minnesota, EPA has stated that the Plug-in program has raised awareness of the electronics recycling issue. To continue this progress, it is apparent that additional funding and support are needed now to support additional pilot programs. Pilot programs started with government seed money can grow into self-supporting programs and lead to the development of permanent recycling infrastructure.

*Question 7.* Your testimony mentions H-P’s strong advocacy of a “Product Stewardship Solution.” Could you please explain this program and why you consider it so much better than the California, Maine, or Maryland approaches? Does this guarantee that all CRTs are eventually addressed? What is H-P’s burden vis-a-vis the rest of the consumer products industry, particularly if you use as the basis the number of annual cathode ray tube devices sold? What do you estimate to be the economic or other practicality burden on your competitors or other sectors of the e-waste recycling chain?

Response: We summarize the key elements of HP’s Product Stewardship Solution below and show that the approach is not biased in favor of any particular manufacturer, including HP. The Product Stewardship approach provides a fair and equitable allocation of end-of-life management responsibilities for manufacturers’ electronic products based on the amount of each manufacturer’s contribution to the electronics waste stream.

Under Hewlett-Packard’s Product Stewardship Solution, manufacturers must take responsibility for their “equivalent share” of CRT-containing computer monitors and

<sup>3</sup> For more information, see [http://productstewardship.us/pilot\\_takeback\\_staples.html](http://productstewardship.us/pilot_takeback_staples.html).

TVs (“CRT devices”)—including orphan CRT devices—returned by households (individual consumers and home businesses) for recycling. They can do this either (1) by establishing a recycling program or (2) by paying the state reasonable collection, consolidation, and recycling costs for their equivalent share. Manufacturers implementing a recycling system have the flexibility to design their program as they see fit, so long as they recycle their equivalent share in compliance with applicable laws and regulations.

Manufacturer equivalent shares are determined annually by the government. A manufacturer’s equivalent share is that manufacturer’s portion of the annual CRT device waste stream. The equivalent share concept allows manufacturers that choose to run a recycling program to satisfy their obligations with CRT devices of any brand or their own brand if they desire. This approach avoids the need for brand sorting, but preserves the ability of manufacturers to implement recycling programs that collect only their own brand products. It provides an efficient recycling system with multiple options for consumers and manufacturers.

Manufacturers will be held accountable to the government to meet their equivalent share obligations. This is a self-implementing performance standard keyed to a specific amount of CRT devices to be recycled. Thus, a manufacturer that chooses to provide a recycling program but fails to recycle its equivalent share has a predetermined payment obligation for the shortfall to the state. This system is designed to achieve recycling results by manufacturers, not merely to generate revenue or establish government recycling programs.

This approach has many benefits:

- Provides efficiencies through market-based solutions and the opportunity for improvements over time, thereby offering a lower cost solution to consumers.
- Avoids new taxes on consumers.
- Places key responsibilities on manufacturers, not government, to achieve recycling goals, including recycling of orphan CRT devices.
- Places minimal responsibilities on retailers.
- Limits state government involvement to enforcement and other necessary functions, avoiding the creation of new taxes and new agencies.
- Reduces burdens on local governments by providing manufacturers with incentives to keep CRT devices out of the municipal waste stream and by providing a funding source for CRT device collection, consolidation, and recycling.
- Provides the opportunity for design improvements.
- Provides a simple approach that can transition to a national system.

HP supports a comprehensive national solution to the challenge of recycling discarded electronics. While federal legislation based on the principles of product stewardship outlined above would be the most efficient approach, we recognize that several states will likely act prior to the adoption of a federal program and are working with state governments to enact our Product Stewardship Solution.

HP’s Product Stewardship Solution includes elements of the widely supported Maryland Statewide Computer Recycling Pilot Program. The Maryland law requires manufacturers to pay to the state an annual registration fee—the amount of which varies depending on whether the manufacturer offers a computer take back program. Thus, both HP’s model bill and Maryland’s approach offer manufacturers the opportunity to “pay” or “play.” Maine’s Electronics Waste Law requires manufacturers to submit to the state a statewide electronic waste management plan for the collection and recycling of computer monitors and televisions produced by the manufacturer and generated as waste by Maine households. We do not consider our approach superior to the Maryland or Maine approaches, but we have improved our model based on experiences in Maryland and Maine.

HP believes that its approach is superior to the California approach and other advance recovery fee (“ARF<sup>TM</sup>”) approaches. An ARF system fails to provide the benefits of the Product Stewardship Solution. In particular:

- The ARF “fee” is a new tax on consumers.
- The ARF is burdensome to retailers.
- The ARF creates a large new government program.
- The ARF does not guarantee that any amount of electronic devices will be recycled.
- An ARF constrains competition and limits the efficiencies to be gained from competition.
- An ARF favors remote sellers at the expense of in-state retailers because states cannot require ARF collection by remote sellers that lack nexus to the state.

No system can guarantee that all CRTs are eventually addressed because end-of-life product management depends on consumer behavior. Under HP’s approach, manufacturers provide information about how CRT devices may be returned via a

website and/or toll-free telephone number. Local governments, charities, retailers, and other organizations will offer other recycling opportunities including programs implemented in cooperation with manufacturers. This variety of programs lets consumers choose the programs that best suit their needs. This broad flexibility of choices for consumers increases, rather than decreases, the likelihood that they will recycle their CRT devices.

Under HP's approach, the economic burden on HP's competitors would be no greater or less than the burden on HP. All manufacturers must take responsibility for their equivalent share, i.e., the contribution of their CRT devices to the annual CRT device waste stream. Our approach would be advantageous for all manufacturers in that it offers flexibility. Manufacturers can choose whether to provide a recycling program or to pay the state reasonable collection, consolidation, and recycling costs for their equivalent share. Manufacturers choose whether to act individually or in partnership with other manufacturers. Finally, manufacturers that choose to provide a recycling program can select among many approaches to obtaining their equivalent share. HP's approach fairly apportions the economic burden of electronics end-of-life management to each manufacturer based on each manufacturer's contribution to the electronics waste stream.

*Question 8.* As I understand it, H-P opposed California's advanced recovery fee because it believes that manufacturers should be responsible for the recycling of their products. Is that correct? Why do you believe manufacturers should be "tagged" with responsibility for product recycling as well as "legacy" and "orphan" waste? What has been H-P's experience in California since enactment of the California law, are you losing money because of it?

Response: You are correct that HP opposed California's advanced recovery fee law. We did so for a number of reasons, including its high cost, which we discuss below. As discussed more fully in the Answer to Question No. 7 above, HP supports a product stewardship approach through which manufacturers take responsibility for their "equivalent share" of CRT devices returned by households (individual consumers and home businesses) for recycling, either by implementing a recycling program or by assuming financial responsibility for their equivalent share. HP's opposition to California's approach stems from our belief—now borne out by experience—that a one-size-fits-all tax on consumers at the point of sale is not the most efficient approach to electronics recycling.

Under any electronics recycling program—including HP's Product Stewardship Solution and California's electronic products tax—consumers are ultimately "tagged" with the cost of product recycling. Accordingly, our goal should be to develop a system that imposes the lowest overall costs on consumers and includes mechanisms for consumers to gain from efficiency improvements over time. Creating a new bureaucracy to fund a new tax program as California has done is not, and was not at the time of adoption, the best solution for consumers.

Consider the following California ARF system costs. Start-up administrative costs are budgeted at approximately \$8 million for the first year and then expected to stabilize at \$5-6 million annually.<sup>4</sup> In the first six months, revenues were about \$30.8 million.<sup>5</sup> As of early August, claims amounted to only about \$8.1 million and about \$3.5 million in payments had been approved.<sup>6</sup> The California program pays \$0.48/lb for collection and recycling,<sup>7</sup> which is more than 40% higher than the cost of collection and recycling under the Staples, Inc./Product Stewardship Pilot ("PSI") (\$0.34/lb).<sup>8</sup> (For a description of the Staples, Inc./PSI pilot study, see the Answer to Question No. 6 above.) The overall cost of this system, in relation to the overall costs to recycle is high. The gross revenues under California's proposal is expected to be \$60-70 million, and the estimates are that they will recycle approximately 50 million pounds of products in 2005.<sup>9</sup> As a result, the overall system costs of this approach are approximately \$1.20 to \$1.40 per pound, and these costs will ultimately be borne by consumers in the state. In contrast to California's tax program, HP's approach is intended to provide efficiencies through market-based solutions and op-

<sup>4</sup>Testimony of Mark Murray, Executive Director, Californians Against Waste, to U.S. House Subcommittee on Environment and Hazardous Materials (Sept. 8, 2005) at 7.

<sup>5</sup>*Id.*

<sup>6</sup>California Integrated Waste Management Board, *California E-Waste Updates: Implementing SB 20/SB 50* (Aug. 3, 2005).

<sup>7</sup>14 Cal. Code Reg. § 18660.34(a).

<sup>8</sup>Product Stewardship Institute, *The Collection and Recycling of Used Computers Using a Reverse Distribution System, A Pilot Project with Staples, Inc., Final Report to the U.S. Environmental Protection Agency* (June 2005) at 47, available at [http://productstewardship.us/pilot\\_takeback\\_staples.html](http://productstewardship.us/pilot_takeback_staples.html).

<sup>9</sup>Murray Testimony, at 7.

portunities for improvements over time. HP's market-based, flexible approach offers a lower overall system cost, which will result in lower costs for consumers.

In addition, HP's approach is more equitable for manufacturers because individual manufacturers must take responsibility for their own "legacy" waste, and all manufacturers share the responsibility for "orphan" waste. In contrast, under California's electronic products tax, a tax on current sales funds recycling of "legacy" and "orphan" waste. This means that new market entrants and manufacturers with a growing market share disproportionately shoulder the responsibility for product recycling. In addition, based on data for the first six months of 2005, sales of covered electronic devices for which the California State Board of Equalization has collected taxes equal 80% to 85% of California's share of national sales for the same period.<sup>10</sup> This suggests that 15% to 20% of sellers, most likely internet and other remote sellers, are not collecting and remitting the tax. Overall, California's electronic products tax creates an unlevel playing field among manufacturers.

In response to your question about HP's experience in California since enactment of California's electronic products tax, HP has been forced to spend over \$3.5 million on a single aspect of the program—tax collection on direct sales in California. This expenditure was incurred by HP as our role as a retailer under this program. The \$3.5 million does not include HP's costs to update our systems with new SKUs (stock keeping units) for new products, or other costs incurred by HP in our role as a manufacturer. In addition, this cost does not include HP's expenditures as a consumer and the new taxes that we have had to pay the state for covered products used by our California employees.

#### HEWLETT-PACKARD ANSWERS TO QUESTIONS FROM HON. JOHN D. DINGELL

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: HP's Product Stewardship Solution provides the opportunity for manufacturers to benefit from improved environmental design and innovation, whereas an advance recycling fee/tax approach provides no such opportunity.

Under HP's approach, manufacturers take responsibility for their "equivalent share" of CRT devices returned by households (individual consumers and home businesses) for recycling, either by implementing a recycling program or by paying the state reasonable collection, consolidation, and recycling costs for their equivalent share. Those manufacturers that collect and recycle their equivalent share can benefit from design improvements they have made. Moreover, the system provides an incentive to improve product design by allowing market forces to decrease recycling costs for those improved products. To the extent that recycling costs can be decreased, manufacturers—both those that run their own recycling programs and those that pay the state for collection, consolidation, and recycling costs—will benefit.

An advance recovery fee/tax approach itself provides no identifiable incentives to design for the environment.<sup>11</sup> Under this approach, commercial recyclers conduct recycling. Consumers pay the tax. And manufacturers are divorced from the recycling process. Therefore, recyclers have no incentive to reduce recycling costs where market forces are divorced from the system and they are paid a fixed price per pound. The uniform fee/tax imposed on products has no linkage to recyclability of the products. Consequently, manufacturers gain no benefit from product improvements they make.

*Question 2.* At the Subcommittee hearing on July 20, 2005, Mr. Breen of the Environmental Protection Agency testified that a good rule of thumb for the cost of recycling a desktop computer is \$15, while the value of the materials recovered is anywhere between \$1 and \$2.50.

Do you agree with the economics of recycling desktop computers as described by Mr. Breen? If not, please provide your views.

Response: Although the estimates might not be the same in all regions, we agree with Mr. Breen's fundamental point that the current costs of recycling electronics in an environmentally sound manner are greater than the value of the materials recovered. At least part of this disparity is due to the fact that electronics recycling is in its infancy and markets are lacking for the recovered material. These economics are not fixed and may vary well change over time. Government policy should be

<sup>10</sup>Murray Testimony at 7.

<sup>11</sup>Some ARF systems (e.g., California's program) incorporate an independent regulatory mandate to comply with the European Union's restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS") requirements.

drafted in a way to provide incentives for changing these economics, and manufacturers and customers should benefit from any improvement in such economics. A fixed uniform fee fails to provide such incentives and does not allow companies or customers to benefit from any efficiencies that are gained over time.

*Question 3.* How much does it cost to recycle a laptop computer and what is the value of the recovered materials?

Response: The recent Staples, Inc./Product Stewardship Institute (“PSI”) pilot study provides the information you requested. The Staples/PSI study estimated the cost of handling computer equipment in a retail store, shipping it to a distribution center and then on to recycler, and recycling it to be \$0.337/lb.<sup>12</sup> HP’s Notebook computers weigh on average about 7 pounds. Thus, the recycling cost of a Notebook computer would be \$2.36. In contrast, under California’s electronics product tax, the California Integrated Waste Management Board pays recyclers \$0.48/lb,<sup>13</sup> resulting in \$3.36 for a 7-pound Notebook computer. Thus, under California’s program, the cost of recycling a Notebook computer is more than 40% higher than under the Staples, Inc./PSI pilot study. The cost figures in the Staples and California programs are net of any recovered value and do not include administrative overhead and other costs. Recovered value of the commodities varies depending on available markets. For the recovered value to increase, markets need to develop.

*Question 4.* Will your company be able to comply with the waste electrical and electronic equipment (WEEE) directive of the European Union, which requires the elimination of mercury, cadmium, lead, chromium, and other substances by July 1, 2006?

Response: We assume that the question is referring to the European Union’s restriction of the use of certain hazardous substances in electrical and electronic equipment—the RoHS Directive—rather than the WEEE directive, which establishes a manufacturer electronics waste recycling system.

HP is committed to compliance with all applicable laws and regulations, including the RoHS Directive, which will restrict the use of lead, mercury, cadmium, hexavalent chromium and two bromine-containing flame retardants: PBB (polybrominated biphenyls) and PBDE (polybrominated diphenyl ethers) in electrical and electronic products. HP’s goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the RoHS Directive).

In addition to HP’s commitment to adherence with the RoHS Directive, HP is participating in the development of global standards for the restriction of hazardous substances and is working with industry partners through several consortia to accelerate industry’s transition to alternative materials. As similar regulations are adopted by other countries, we believe harmonized global standards will also accelerate the industry transition.

HP’s initiative to address the RoHS Directive is part of the company’s Design for Environment program which includes using materials more efficiently, finding alternatives for hazardous materials, designing for energy efficiency, and designing products that can be easily recycled.

*Question 5.* After July 1, 2006, will your company discontinue selling electronic products, such as computers or televisions, in the United States that contain mercury, cadmium, lead, or chromium and other substances covered by the WEEE directive?

Response: As in the Answer to Question No. 4 above, we assume that the question is referring to the European Union’s restriction of the use of certain hazardous substances in electrical and electronic equipment—the RoHS Directive. HP is committed to compliance with all applicable laws and regulations, including the RoHS Directive, which will restrict the use of lead, mercury, cadmium, hexavalent chromium and two bromine-containing flame retardants: PBB (polybrominated biphenyls) and PBDE (polybrominated diphenyl ethers) in electrical and electronic products.

HP’s goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (to levels below legal limits) for all HP electronic products subject

<sup>12</sup> Product Stewardship Institute, *The Collection and Recycling of Used Computers using a Reverse Distribution System, A Pilot Project with Staples, Inc., Final Report to the U.S. Environmental Protection Agency* (June 2005) at 46, available at [http://productstewardship.us/pilot\\_takeback\\_staples.html](http://productstewardship.us/pilot_takeback_staples.html).

<sup>13</sup> 14 Cal. Code Reg. § 18660.34(a).

to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the RoHS Directive).

*Question 6.* Is it correct that the proposal described in your testimony would allow companies to opt out of their take back responsibilities and pay a fee? If so, on what basis would that fee be calculated and who would get the revenues?

Response: You are correct that HP's proposal would allow companies to opt out of their take back responsibilities and pay a fee. Under HP's Product Stewardship Solution, manufacturers must take responsibility for their "equivalent share" of CRT-containing computer monitors and TVs ("CRT devices")—including orphan CRT devices—returned by households (individual consumers and home businesses) for recycling. They can do this either (1) by establishing a recycling program or (2) by paying the state reasonable collection, consolidation, and recycling costs for their equivalent share. An individual manufacturer's payment amount is logically related to the actual costs that the local government would incur to collect, consolidate, and recycle the amount of that manufacturer's CRT devices that constitute the manufacturer's equitable share. The state determines the payment amount annually by a simple calculation.

To determine the payment amount for an individual manufacturer who opts to pay, the state multiplies two values: the reasonable cost per pound for collection, consolidation, and recycling services and the total weight in pounds for which the manufacturer is responsible (i.e., the equivalent share).

Reasonable collection, consolidation, and recycling costs for CRT devices are determined annually by the state based on the cost per pound incurred for such services by local governments in the state that provide such services. An annual determination of these costs allows the state to adjust the values based on the actual experience of local governments in the state. The state notifies manufacturers of its annual determination of reasonable collection, consolidation, and recycling costs.

Equivalent shares are calculated annually by the state by a simple calculation: each manufacturer's return share percentage of CRT devices collected in local government recycling programs is multiplied by the total weight of CRT devices collected in manufacturer and local government recycling programs. Return share percentages are simply the number of CRT devices identified for an individual manufacturer divided by the total number of CRT devices identified for all manufacturers, based on periodic samplings by local governments. Equivalent share calculations are made separately for CRT computer monitors and TVs.

Under HP's proposal, manufacturers who opt to pay—as well as manufacturers who run recycling programs but fall short of their equivalent share obligations—make payments to the state agency that implements the program. Funds collected by the state agency are used for collection, consolidation, and recycling of CRT devices by local governments.

For more details on HP's Product Stewardship Solution, please see HP's White Paper attached hereto.

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RESPONSE FOR THE RECORD BY PARKER E. BRUGGE, SENIOR DIRECTOR AND  
ENVIRONMENTAL COUNSEL, CONSUMER ELECTRONICS ASSOCIATION

*Questions from The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: CEA concurs with the U.S. EPA that electronic waste, if properly managed and disposed of, presents little or no risk to human health or the environment. The Agency views the issue of electronics recycling as one of resource conservation and solid waste management, and so do CEA and its members.

Although resource conservation issues have received relatively less attention in the U.S. relative to solid waste toxicity issues, CEA recognizes the long-term importance of good stewardship of our natural resources. Development and implementation of wide-scale electronics recycling programs will relieve the need for energy-intensive resource extraction activities that can significantly affect on the environment.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the "orphan" and legacy waste that is sitting in peoples' homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: CEA agrees that an immediate e-waste challenge is what to do with the historic and orphan waste now residing in peoples' homes. While these unwanted "legacy" products sitting in basements and attics are the immediate challenge, the volume of unwanted/waste products over the next decade is expected to increase as currently utilized products become obsolete. However, from the industry's perspective, the overarching issue is the development of a national, uniform system for electronics recycling. This is a complex issue with many challenges but the biggest challenge is probably the creation of adequate national infrastructure.

CEA supports federal tax incentives or other measures fostering development of recycling systems and infrastructure and defraying costs of recycling program implementation. CEA would support grant funding for state and local communities to help finance and build the infrastructure to address this waste stream.

While CEA recognizes that grant programs can be helpful to build infrastructure, the projected rise in volume of unwanted product calls for a sustainable funding source. Furthermore, such a grant program might not address CEA's overriding concern about the growing patchwork of conflicting state programs.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: CEA believes that a national solution is the most appropriate means to addressing this public policy challenge, primarily as a means to avoid an undesirable patchwork of state legislative mandates.

Existing and proposed state legislative mandates on electronics have a significant effect on interstate commerce and extend well beyond the scope of traditional solid waste management systems that are financed by local fees or taxes on local waste generators (including households) for local waste management services. These new existing and proposed state mandates attempt through various means to redirect the cost of waste management into the commerce of producing and selling new electronic products—and thus calls out for a Federal solution.

Ideally, a Federal program would establish a consistent set of financing and compliance rules but allow for implementation and flexibility at the local level. Such a system should be established using a common set of metrics to facilitate evaluations of program effectiveness from one geographic implementation area to another, and to provide a means to evaluate national performance.

*Question 4.* Your testimony presents a classic "good news-bad news" situation where the ingenuity and creativity of the electronics industry has created a situation where competition has driven down prices of consumer electronics, thus the economic incentives for consumers is to replace a product rather than repair it. What do you suggest be done to decelerate the "throw-away" mindset that this creates? What specifically are your companies doing to responsibly address the potentially negative environmental legacy of their growing success?

Response: CEA would argue that the competition and falling prices characteristic of our industry confers benefits to consumers that far outweigh the environmental challenges caused by technology innovation. By extending information and entertainment to everyone—regardless of income or geographic location—our members' products have improved lives and changed the world. Meanwhile, America stands as the global leader in innovation, ingenuity and creativity. The electronics and software industry is also responsible for much—some claim most—of the extraordinary gains in American productivity during the past decade. These are no small benefits to the United States and CEA is proud of our industry's contribution to society.

CEA also acknowledges, however, that as our products become increasingly affordable it is often more economical for consumers to replace a product with a new one than to repair older equipment. This is especially true for televisions, where the end of analog signals will provide consumers an additional incentive to replace their outdated television with the superior picture and audio performance of a new digital television. This is an economic reality that has an impact on the environment. CEA suggests that in lieu of attempting to change the economic reality of new technology application and adaptation, the Federal Government establish a national framework for responsible recycling of these products once they are no longer wanted. While these displaced products may have reached the end of their lives or be out-of-date, they certainly are too valuable to be completely discarded.

To address the long term effects of our products on the environment, CEA and its member companies have been and will continue to be fully supportive of the safe and appropriate recycling and reuse of consumer electronics products. A number of our member companies, both manufacturers and retailers, have partnered in voluntary pilot projects to collect and recycle computers, monitors and other consumer electronics. Many of our member companies have participated in EPA programs



such as Plug-In To eCycling, a consumer electronics campaign working to increase the number of electronic devices collected and safely recycled in the United States.

CEA recently joined eBay's Rethink initiative, which brings together leading technology companies, government agencies, environmental groups and millions of eBay users to confront the issue of electronic waste through consumer education via comprehensive information on options available to reuse or responsibly recycle, as well as disposition tools such as assisted selling, convenient local drop-off, trade-in programs and charity donations. We believe that the Rethink initiative can serve as a component of an important element in electronics recycling—consumer education.

A primary responsibility shared by manufacturers of consumer electronics lies in product design. Advances in technology have been accompanied by large reductions in the consumption of energy, fewer materials of potential concern, and other positive environmental attributes. Further, manufacturers use significant amounts of recycled content, such as glass, plastics and metals, in the production of new devices.

*Question 5.* I am very intrigued about how you explain the issue of electronic waste components in landfills and why regulating the materials and manufacturing of your companies' products could have negative effect on public health. As you know, EPA testified at the first part of our hearing on July 20 that they believed properly lined and operated landfills could handle e-waste. Could you please explain to me the health benefits of using some of the constituent materials that others would ordinarily characterize as hazardous waste and seek to discourage their use in your products?

Response: Although certain substances of concern, such as lead, mercury and cadmium, are present in electronic products, they are there for a good reason. For example, lead shields users of cathode ray tube (CRT) monitors and televisions from harmful x-rays. While CRTs are still made and sold, flat panel screens have displaced CRTs as the primary display product of choice, thereby removing the need for this leaded shielding in most product displays on the market today.

Another example is mercury. One of the largest overall impacts to the environment is emissions from power plants. Since electronic products require electricity, the more energy efficient the product, the fewer emissions will be created. Mercury is an extremely energy efficient material used for backlighting in LCD displays that reduces electricity use, thereby decreasing power plant emissions. Recognizing this important environmental benefit, the European Union exempted mercury used in compact fluorescent lamps from the material bans included in the RoHS directive.

According to U.S. EPA, these compounds, if properly managed and disposed of, present little or no risk to human health or the environment. Additionally, forcing the elimination of these materials in new products could have negative environmental consequences if the alternatives are less environmentally friendly.

*Question 6.* Your testimony focused on the size of the Federal government and its substantial purchasing power with electronics products. Could you please elaborate on the involvement of your member companies in Design for Recycling efforts at EPA, including Energy Star, the Federal Electronics Challenge, and E-PEAT? What has been your member companies experience with Federal and state government electronics purchasing and recycling efforts? What more do you think can and should be done?

Response: CEA supports the creation of reasonable federal procurement policies based on environmental criteria. The market power of the government can play a significant role in providing a direct sales-based incentive to manufacturers. States can augment this by adopting federal environmentally sensitive procurement guidelines, increasing the market and the incentive for manufacturers. In addition, federal and state governments will capture cost-savings through reduced energy usage and other advantages offered by these products.

In order to demonstrate industry leadership and shared responsibility in electronics recycling in its product design efforts, CEA supports market-driven environmental design initiatives, such as workable federal and state government programs on purchasing of environmentally preferable display devices.

One of the biggest challenges in implementing and devising government procurement is consistency and recognition. Many government agencies at the federal and state levels have their own, specific and sometimes conflicting criteria for what makes a product "environmentally preferable." Compounding this problem is the fact that government procurement officials are not always informed about environmental purchasing programs and their benefits. EPA attempted to address this problem in the negotiated stakeholder process to create the Electronic Product Environmental Assessment Tool (EPEAT). Manufacturers, government officials, environmental groups, and others reviewed and established a set of environmental criteria and a scoring system for evaluating electronic products. In order for this program

to be successful, it must be used in a consistent manner at all levels of government and it must be promoted by all stakeholders to raise awareness.

CEA members have supported and been very involved in Energy Star, FEC, and other affirmative procurement efforts (i.e. Executive Order on standby power). CEA also supports reasonable federal procurement policies currently under development, such as EPA's EPEAT. The Federal government should use EPEAT as a government wide standard for EPEAT electronics, and encourage or require use of EPEAT by state and local governments as well.

*Question 7.* Why do you think the creation of a private, Third Party Organization is a good idea to collect and disburse government sanctioned revenue. Would a "check-off" program funded by manufacturers and retailers seem like a better, more responsible way for the industry to fund education and recycling efforts that will ultimately benefit their sales?

Response: In the context of electronics recycling systems, an industry-led Third Party Organization (TPO) could efficiently fulfill one or more roles that otherwise would be borne by government or individual companies. For example, once authorized by Congress, a primary TPO function could be to provide a mechanism of delivering e-waste management services that engages electronics manufacturers to help achieve national program objectives. Such a TPO could, but not necessarily, collect and disburse government sanctioned revenue. Congress could decide that a TPO be created or designated to operate a national recycling system under U.S. EPA oversight using appropriated federal funds. Alternatively, Congress could authorize a TPO, or authorize U.S. EPA to authorize a TPO, to fulfill a universal manufacturer requirement for participation in a national electronics recycling program. There are a number of wholly private and quasi-public organizations authorized by Congress to perform very specific duties identified as a national or multi-state concern. As the outlines of a workable national electronics recycling system becomes clear, CEA offers its services to Congress in identifying efficient system implementation strategies.

Towards this end, CEA is actively working with the National Center for Electronics Recycling to support the creation of a national third-party organization to assist states considering a TPO system, to provide a national clearinghouse for consistent product scope, and to ensure stable harmonization of state-level systems. CEA believes that a national TPO should include manufacturers, retailers, and recyclers in its governance structure. A national TPO that is available to states can serve as a further incentive to ensure any state-level systems complement an ultimate national solution. If additional federal authority to enable harmonization is required, CEA will work with Congress as appropriate to put that authority in place.

In contrast with check-off programs designed to promote various agricultural products, a TPO as envisioned above would not directly contribute to the sales of electronics. CEA also notes that there are many problems with such check-off programs, including recent federal court decisions that question the constitutionality of many of these check-off programs to require payment for speech found objectionable by the payee. As stated above, CEA recognizes the immediate e-waste challenge of what to do with the historic and orphan waste now residing in peoples' homes—it is not fundamentally a problem of consumer education. Therefore CEA would not support a check-off program if established similar to the programs administered by the U.S. Department of Agriculture.

*Question 8.* Your testimony specifically says that your members primarily support seeing the Federal government ensure a level playing field nationally for all electronic products recycling stakeholders in complying with state-level recycling programs. Since you are worried about the creation of a patchwork of state regulations, does this mean you support either or both of: (1) minimum Federal guidelines for states or (2) pre-emption of state programs?

Response: CEA suggests that the role of the federal government lies primarily in ensuring a level playing field nationally for recycling stakeholders complying with state-level recycling systems.

CEA strongly believes that a successful national framework should be established to address the management of electronics recycling. The current de-facto framework is an evolving patchwork of state-by-state approaches. As this Subcommittee is aware, three states (California, Maine and Maryland) have passed legislation to manage used electronics. These inconsistent state requirements likely will soon be joined by even more conflicting state requirements, as there were over twenty-five states that introduced legislation on the subject in 2005. This conflicting, ad-hoc approach imposes unnecessary burdens on global technology companies and consumers alike. Electronics recycling is a national issue that warrants a national solution.

CEA believes that a national solution is the most appropriate means to addressing this public policy challenge, primarily as a means to avoid an undesirable patchwork

of state legislative mandates. Therefore, CEA supports a national framework providing localized, flexible implementation options that preempts the evolving patchwork of state programs. A national framework that preempts conflicting state programs would substantially relieve the ever-increasing burden on interstate commerce created by new state electronics recycling mandates. CEA recommends that any such federal solution should begin with a measured approach and, once demonstrated as successful, should be reviewed and possibly expanded.

CEA recognizes the reluctance of Congress to assume such authority, and industry recognizes that there will be a transition period for existing state programs required for any national program. But the sooner such a national framework is created, the less difficult such a preemptive approach will be. For example, the new California electronics recycling statute explicitly allows for deferral to a national program, and the new Maryland law is structured as a pilot program that expires in 2010.

Short of a federally legislated program that preempts conflicting and duplicative state programs, the federal government should at a minimum put measures in place that enable states to ensure a level competitive playing field for in-state retailers with Internet and out-of-state retailers. CEA supports federal authority to ensure interstate compliance with state-level market-based or visible fee-based systems.

*Questions from The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: CEA recognizes that a primary responsibility shared by manufacturers of consumer electronics lies in product design. Advances in technology have been accompanied by large reductions in the consumption of energy, fewer materials of potential concern, and other positive environmental attributes. Further, manufacturers use significant amounts of recycled content, such as glass, plastics and metals, in the production of new devices.

That said, CEA notes that recycling programs usually have little effect on the design process. Some stakeholders claim that mandatory take-back programs provide this benefit, but this is only true if two conditions are met: 1) the program is not retroactive to any product sold before the effective date; and 2) manufacturers can retrieve only their branded products in the recycling system. These conditions cannot be currently met because 1) to be effective, any program must address the historic and orphan waste that is currently stored in homes and businesses, and 2) it is not cost-effective or feasible to sort collected products by brand in order to return to the original manufacturer.

Furthermore, the longer the product life span, the more irrelevant any design benefit due product take-back requirements. For example, a recent study by State of Florida found that the average age of returned televisions is 14 years. Similar analysis by the ongoing residential collection program in Hennepin County, Minnesota identified the average age of a returned television at 17 years. It is highly unlikely that a company will spend extra dollars today to recoup potential savings more than a decade away in recycling costs. Long product life cycles accentuate uncertainties about any return on investment in new recycling designs—uncertainties about the future state of recycling technologies that may be fundamentally different by the time the product enters the waste stream, the level of commodities markets, the reuse market for product components, etc.

*Question 2.* At the Subcommittee hearing on July 20, 2005, Mr. Breen of the Environmental Protection Agency testified that a good rule of thumb for the cost of recycling a desktop computer is \$15, while the value of the materials recovered is anywhere between \$1 and \$2.50.

Do you agree with the economics of recycling desktop computers as described by Mr. Breen? If not, please provide your views.

Response: Many electronics recycling programs use 50 cents per pound as a starting estimate for the overall costs of collecting, shipping and recycling waste electronics. This estimate is close to the 48 cents per pound reimbursement rate established in California for costs incurred by approved electronics recyclers. If one assumes that the average weight of a desktop computer is 30 pounds and assumes a 50 cents per pound cost estimate is reasonable, the total average cost of recycling a desktop computer would be \$15.

Although CEA has not performed any specific studies on these estimates, \$15 per desktop computer appears to be on the high end of a reasonable range for estimating overall per unit costs. Per unit processing costs would likely decline if a national system were put into place and economies of scale realized.

CEA does not have data on the average value of recovered materials.

*Question 3.* How much does it cost to recycle an average size television and what is the value of the recovered materials?

Response: Using California's existing reimbursement rates for televisions (48 cents per pound) and assuming the weight of an average returned television is 50 pounds, the cost to recycle an average size television would be approximately \$25.

Although CEA has not performed any specific studies on these estimates, \$25 per television appears to be on the high end of a reasonable range for estimating overall per unit costs. Per unit processing costs would likely decline if a national system were put into place and economies of scale realized.

CEA does not have data on the average value of recovered materials.

*Question 4.* How much does it cost to recycle a laptop computer and what is the value of the recovered materials?

Response: Using California's existing reimbursement rates for laptop computers (48 cents per pound) and assuming the weight of an average returned laptop is 8 pounds, the cost to recycle an average size laptop computer would be \$4 per unit.

Although CEA has not performed any specific studies on these estimates, \$4 per laptop appears to be on the high end of a reasonable range for estimating overall per unit costs. Per unit processing costs would likely decline if a national system were put into place and economies of scale realized.

CEA does not have data on the average value of recovered materials.

*Question 5.* Will your Member companies be able to comply with the waste electrical and electronic equipment (WEEE) directive of the European Union, which requires the elimination of mercury, cadmium, lead, chromium, and other substances by July 1, 2006?

Response: A primary responsibility shared by manufacturers of consumer electronics lies in product design. Advances in technology have been accompanied by large reductions in the consumption of energy, fewer materials of potential concern, and other positive environmental attributes.

CEA members have pioneered the concept of "design for the environment" as products are now engineered from the earliest design stages to ensure maximum recyclability and minimal use of potentially hazardous materials.

The restrictions cited in the question are the result of the Restriction on Hazardous Substances (RoHS) Directive, not WEEE. While these new requirements will increase manufacturing costs and may well inhibit product improvements and even functionality, the primary challenge for compliance will be on small and medium size businesses. Nearly all larger manufacturing companies have invested significant resources and are on track to comply. CEA expects all of its members selling into the European market to comply with the RoHS Directive, although some smaller companies may comply by no longer selling those products into that market.

*Question 6.* After July 1, 2006, will your Member companies discontinue selling electronic products, such as computers or televisions, in the United States that contain mercury, cadmium, lead, or chromium and other substances covered by the WEEE directive?

Response: For large companies with overseas operations, the answer is yes. There is less certainty for smaller niche market players who may not sell in the EU or China. There is also a possibility that components made for larger companies that are compliant will be available for smaller companies, but these components may be more expensive and therefore drive out some of the smaller and niche players.

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RESPONSE FOR THE RECORD BY GERALD L. DAVIS, PRESIDENT & CEO, GOODWILL INDUSTRIES OF CENTRAL TEXAS, INC.

*The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leaching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: On the topic of leachability, Goodwill understands that at present there is a difference of opinion as to whether landfills can safely contain electronic waste for extended periods of time without leaching into the ground. Goodwill is aware of various studies that comment on the suitability of landfills to properly accommodate electronic waste deposits.

Most recent, the United States Government Accountability Office (GAO) on July 26, 2005, testified before the Senate Subcommittee on Superfund and Waste Management under the Environment and Public Works Committee. Testifying on behalf of the GAO, John B. Stephenson, Director, Natural Resources and Environment offered the following:

... standard regulatory tests show that some toxic substances with known adverse health effects, such as lead, have the potential to leach into landfills. Although one study suggests that leaching is not a concern in modern U.S. landfills, it appears that many of these products end up in countries without modern landfills or the environmental regulations comparable to the U.S. Regarding the issue of toxicity, the research we have reviewed to date is unclear on the extent to which toxic substances may leach from used electronics in landfills. On one hand, according to a standard regulatory test RCRA requires to determine whether a solid waste is hazardous and subject to federal regulation, lead (a substance with known adverse health effects) leaches from some used electronics under laboratory conditions. Tests conducted at the University of Florida indicate that lead leachate from computer monitors and televisions with cathode ray tubes exceeds the regulatory limit and, as a result, could be considered hazardous waste under RCRA. On the other hand, the study's author told us that these findings are not necessarily predictive of what could occur in a modern landfill. Furthermore, a report by the Solid Waste Association of North America suggests that while the amount of lead from used electronics appears to be increasing in municipal solid waste landfills, these landfills provide safe management of used electronics without exceeding toxicity limits that have been established to protect human health and the environment.

Without having the technical expertise required to comment on landfill leachability, Goodwill cannot state definitively whether landfill deposits of electronic waste are based upon "real concerns" or not. However, as an organization we are very interested in landfill leachability and what effect this debate ultimately has upon landfill use in particular and electronic waste recycling generally. Goodwill believes this issue should be further examined, and that forthcoming public policy decisions should be based on disinterested, unbiased scientific assessment.

Goodwill believes also that the creation of a recycling infrastructure would help to significantly reduce the amount of electronic waste ending up in landfills, thereby lessening or eliminating the potential affects of leachability.

On the topic of resource conservation, Goodwill has been in the reuse, recycle and conservation business for over 100 years. By selling used clothing and household goods "including used, refurbished computers at some Goodwills—we fund our mission of helping people with barriers to employment find and keep jobs. We are very proud of the significant role we have played in keeping millions of tons of waste out of landfills across America. Through the de-manufacturing programs used at some of our Goodwills, we have been able to keep large amounts of used electronics out of landfills. And through the refurbishing and re-selling of these operating units and used components, Goodwill provides meaningful work for many disabled and vocationally disadvantaged job seekers, who in turn, become tax-paying members of the U.S. workforce.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the "orphan" and legacy waste that is sitting in peoples' homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: "Orphan" and legacy waste is a very significant problem. However, we believe a related concern—the nonexistence of a recycling/reuse infrastructure in the United States—is a greater problem. The development of a properly functioning recycling/reuse infrastructure would address the larger problem of used electronic management, particularly on the residential level.

However, to say that the nonexistent infrastructure is a greater problem is not to dismiss concerns surrounding orphan/legacy waste. A significant stumbling block to the development of a recycling/reuse infrastructure is the problem of who is responsible for orphan waste. To the extent that major manufacturers are reluctant to agree to an end-of-life management solution for the United States because of the issue of orphan/legacy waste, the problem is only further compounded. "Beginning of life" solutions, (i.e., the development of newer computers), continue to develop at a rapid pace as newer and better computers and other electronic devices flood the U.S. marketplace with great speed and efficiency in natural response to market demands of the tech-savvy society we now occupy. Conversely, the "end of life" solutions that are necessary to properly manage the disposal and/or recycling of older computers simply cannot keep pace without market incentives.

We recognize that there are significant costs associated with the development of a recycling/reuse infrastructure and that the costs will be primarily borne by consumers and manufacturers. Goodwill believes that the government has a role in balancing the impact of the costs and in developing safe end-of-life standards. To that end, Goodwill Industries supports market-based incentives for nonprofit collectors/

recyclers, and a national solution that considers the interests of manufacturers, recyclers and other stakeholders. We believe the federal government can play a vital role in assisting the development and sustainability of such an infrastructure. The federal government, by utilizing incentives, could aid and encourage necessary private sector investment in the used electronic recycling/reuse markets. This can be done through tax credits for manufacturers and consumers, recycling grants, and other initiatives that could spur innovative solutions and help stakeholders handle this problem. Additionally, increased federal support for pilot projects and other sustainable initiatives would be helpful in promoting the development of a recycling/reuse infrastructure. Collection and dismantling grants, in particular, could prove to be an effective method of processing orphan/legacy waste without financially burdening the public. The resale “value” of these reused, recycled computers could help offset the amount the federal government would pay to collectors and recyclers. The federal government also can play a key role in educating consumers. Through increased consumer awareness, a greater impact can be made upon the established and developing markets, particularly the residential market. A developing infrastructure could benefit greatly from increased federal support of consumer education campaigns.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: Goodwill believes that electronic waste management is a national environmental challenge. While household waste is exempt from the federal regulations governing hazardous waste, states and municipalities increasingly have stricter regulations that ban household hazardous waste and specifically electronics. Even if the state or municipality allows landfill deposits of household hazardous waste including electronics, many charge landfill fees that negatively impact our ability to provide critical services to our clients. Consumers, manufacturers and other stakeholders are already confronting inconsistent state requirements. In California, for example, where electronic waste is regulated at state level, the state requires collectors and recyclers to document the origin of every used computer in order to verify that the state is only incurring processing costs for used computers from California. Requirement such as this can be particularly problematic for nonprofits that accept computer donations because donors frequently “drop-off” their donations without providing any information. Under a national solution the need to document the origin of the computer would be nonexistent. For these reasons, Goodwill believes that state-by-state regulation is counterproductive. The continuation of state-level solutions, we believe, could create regulatory uncertainty and confusion, high compliance costs, and the inefficient use of resources, all of which combined will lead to increased end-of-life management costs.

Goodwill seeks to find environmentally responsible methods of managing our used electronic donation stream that at a minimum are not financially burdensome to the fulfillment of our charitable mission. The costs associated with inefficient and inconsistent state regulatory programs are a significant reason why various state-based laws will not sustain a nation-wide recycling/reuse effort. We believe a national solution—be it federal or otherwise’ offers the best potential for creating a nation-wide recycling/reuse infrastructure.

A national solution will also help the United States in its efforts to work with other nations in finding environmentally workable solutions to address the increasing volume of U.S. manufactured electronics in foreign nations. A piecemeal, state-by-state approach will leave the United States without a strong basis for taking a leadership role in the international discussion of recycling issues.

*Question 4.* I am interested in the way that Goodwill is involved in the acceptance and recycling of electronics products. Some relief organizations, including some Goodwill outlets, will not take these kinds of items. When and why did Goodwill decide to accept donations of these items? What liabilities or other disincentives exist that prevent other relief groups from taking these types of donations? Do you sort out these items for resale or do you simply send them for recycling?

Response: Goodwill Industries is a network of 205 community-based, autonomous member organizations. The common thread that unites each independently-operated Goodwill is the goal of helping people with workplace disadvantages and disabilities become and remain gainfully employed. Community-based employment and training programs are central to the Goodwill mission. Most Goodwill member organizations provide services that fall into four general categories: vocational evaluation, vocational adjustment, job-seeking skills/job placement services and transitional employment. To fund our mission, Goodwills collect donated clothing and household goods to sell in more than 2,000 retail stores and online at [www.shop.goodwill.com](http://www.shop.goodwill.com).

Goodwills decide on an individual basis whether to accept any kind of donation, including used electronics. The decision to accept used electronics depends primarily on the local Goodwill's ability to generate income that will fund its job training and employment assistance programs.

Among the Goodwills that willingly accept used computer donations, a variety of methods are used to handle the items "including sorting, demanufacturing and third party recycling.

Donors play a pivotal role in our ability to fulfill our mission. Yet Goodwills that do not accept used electronic donations, frequently must handle unwanted donations. Local Goodwills that refuse used computer donations at the donation site, often find used computers that have been dumped at Goodwill locations after hours. The reality for many organizations that accept and rely on non-cash donations is that used computer donations "wanted or not" are a part of the donation stream.

For some Goodwills, properly managing and disposing of used computer donations in an environmentally responsible manner is a financial strain. Where permitted by law, some Goodwill agencies dispose of unwanted electronics in landfills. More and more, landfills refuse to accept electronic products, or charge a hefty disposal fee. The average landfill fee per unit is \$25. In 2003, 24 percent of Goodwill agencies responding to an internal survey reported paying a landfill fee. The landfill fees vary by agency. While some of our agencies have been able to negotiate with their localities for reduced landfill fees or a waiver of these fees, this is not so for many of our organizations.

Software removal or software licensing for refurbished systems can also be a disincentive to organizations that do not wish to enter into used electronics as a business line. Additionally, some Goodwills express concern over potential liability issues for personal data left on a computer.

*Question 5.* Several of the manufacturer and national retailer groups testifying here today are calling for a national solution to e-waste because they are concerned about a patchwork of state regulations. Your testimony, too, expresses concern about the development of the same "patchwork of differing laws." Could you please explain to me why this is a concern to Goodwill Industries and what the practical effects of this fragmented legal scenario will be on Goodwill's operations?

Response: There are 171 North American Goodwills, crossing many state and county boundaries. It is not uncommon for a local Goodwill to operate in a geographic territory that crosses three state lines. As a result, it can be a tremendous challenge for local Goodwills to comply with different sets of laws. The costs attributed to these additional compliance requirements can quickly drain the limited financial resources of local Goodwills that could be better used in furtherance of our charitable mission.

As Goodwill attempts to promote a national computer-recycling program in partnership with manufacturers, or recommend best practices to our local member organizations, conflicting state-level legislation and local regulations could greatly restrict the ability of organizations, like Goodwill, to implement recycling/reuse plans on a national scale.

Further, even where state laws are not in conflict, state-level laws "by the limited geographical scope of their authority" simply cannot abate certain issues, such as the requirement to document the origin of used electronics as discussed in our response to Question 3.

*Question 6.* Your testimony identifies four (4) e-recycling models that Goodwill uses. Could you please tell us the percentages of use of each model by Goodwill and whether there are specific models that have had particular success with a certain part of your mission or in certain parts of the country? Is there a governmental authority that oversees these models and are there any legal impediments to your deployment of these models?

Response: The used electronic management systems being used by Goodwills that accept used computer donations fall under one of the following models. Some Goodwills employ a "retail model" that focuses on collecting, de-manufacturing, refurbishing and reselling computer systems and components in dedicated retail stores. Other Goodwills use a "client model" that integrates technology training and workforce development programs with computer collection, recycling and reuse efforts. Still other Goodwills use a "corporate model" that integrates corporate services into computer collection, recycling and reuse. Lastly, some Goodwills implement a "collaborative model" that utilizes partnerships and collaboration to address computer collection and recycling.

In Austin, Texas, Goodwill employs a retail model and enjoys a high level of success. Beginning in 1997 as a training program and retail outlet for donated computers, it sells all forms of systems, products, and accessories in a dedicated computer store, Computer Works. Some of the benefits that are a direct yield from its

computer recycling business include the creation of new jobs for people with disadvantages and disabilities, and increased revenue from parts and component sales. The model also results in little or no waste going to area landfills.

Not all Goodwills participate in used electronics recycling. Of those Goodwills that do participate, 6 percent operate a retail model; 20 percent operate a client model; 3 percent operate a corporate services model; and 31 percent operate a partnership/collaborations model.

*Question 7.* Your testimony suggests that Goodwill does not oppose the imposition of an advanced recovery fee, but prefers a manufacturer responsibility/take-back approach? Why do you think requiring manufacturers to take-back their products is a preferable policy choice? You mention tax incentives as a way to develop an infrastructure and market for e-recycling. Could you please talk about your work with E-Bay and Dell and what you have learned from it?

Response: The primary policy objective of Goodwill regarding electronic waste is to advocate for a national solution(s) that: (1) replaces the financial burden of used electronic disposal borne by charitable organizations with end-of-life management incentives; (2) promotes the development of a national recycling/reuse infrastructure; and (3) includes nonprofit recyclers in the eventual design and implementation of a national recycling/reuse infrastructure.

Goodwill has in the past and continues to support Advanced Recovery Fees (ARFs). We believe the National Computer Recycling Act introduced by Rep. Mike Thompson (D-CA) which would create a fund generated by the collection of ARFs to be managed by the Environmental Protection Agency (EPA), has merit. Some of the benefits that Goodwill believes an ARF could provide include establishing a visible, national fee at all points of purchase; making the system as administratively simple as possible; and a means to equitably allocate costs of historic product.

Through our education and awareness campaigns, and by participating in task forces and forums with regulatory organizations like the EPA, we have learned that some manufacturers disapprove of an ARF-based system. Opponents of an ARF-based system argue advanced recovery fees raise consumer prices and hurt retail sales.

As Goodwill looks to address our immediate concerns over landfill disposal fees for unwanted waste, we also look to expand our charitable services by commercially utilizing the electronics that are a part of our natural donation stream. To that end, Goodwill Industries' internal public policy committee amended its public policy position to include support for market-based incentives for nonprofit collectors/recyclers and support for a national solution that brings together manufacturers, recyclers and other stakeholders. The rationale behind Goodwill's support for this alternative is largely based upon the inability of stakeholder groups to craft a consensus solution under the EPA-sponsored NEPSI project.

At the same time, we maintain our support of the ARF-based legislation (National Computer Recycling Act) as a possible solution. Goodwill is also encouraged by the current ARF-based system operating in California that "notwithstanding our previously mentioned concerns over state-level limitations" appears to be working.

From our involvement with Dell, Goodwill has learned that there is a market for recycled computers, and especially computer parts. Dell can use its influence to drive donations and has been useful in providing some specific technical knowledge.

Through our involvement with eBay, Goodwill has learned the importance of consumer education.

The Rethink Initiative is an Internet-based consumer awareness project. Through a web portal linking the public to e-cycling programs and information, consumers are provided information on computer reuse. Goodwill has partnered with eBay in its mission of educating and enabling eBay's computer users to take action to reduce e-waste. By providing a venue for buyers and sellers to connect, eBay makes it easier for people with idle computers and electronics to find others who can put them to good use.

*The Honorable Paul E. Gillmor (continued)*

*Question 8.* Your testimony supports "market-based incentives for recyclers and collectors of electronic waste, but also advocates the precedent-setting, European-style, command and control of electronics manufacturing through the European Union's Waste Electrical and Electronic Equipment Directive (WEEE). How do you justify heavy government regulation on the front end for manufacturers and minimal governmental oversight once the products get to you or other recyclers?

Response: Goodwill Industries supports the development of a national solution that embraces and balances environmentally sound disposal practices with market-based solutions that are inclusive of nonprofits recyclers/collectors and will aid in the development of a reuse infrastructure. We believe the development of a recy-



cling/reuse infrastructure is critical to effectively manage the current and growing stockpile of used electronics. We believe that the government has a role in balancing the impact of the costs and in developing safe disposal methods and standards for computer manufacturers.

With respect to the European Union's Waste Electrical and Electronic Equipment Directive (WEEE), Goodwill has not adopted a formal position. In our written testimony, Goodwill noted that "policymakers in the U.S. could look to the European Union's work with respect to the regulation of component materials." Goodwill also believes that the WEEE model has potential value for American lawmakers and policy experts in that it offers another perspective on a tremendously difficult and complex problem.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: Goodwill believes that the development of a recycling/reuse infrastructure is of critical importance to dealing with the problem of electronic waste in the United States. We believe that establishing such an infrastructure can best be accomplished by providing incentives for all stakeholders, and particularly manufacturers, given their unique position as generators in the computer industry.

The question as to which approach presents manufacturers with the strongest incentive to design their products for recycling is difficult and complex. As you know, Goodwill participated in the EPA-sponsored NEPSI process and worked with other stakeholder groups in an attempt to tackle this very question. While the NEPSI group was unable to reach consensus, the discussions were not without great value. Out of those discussions, Goodwill learned the concerns of different stakeholders as well as the public, and some of the potential effects proposed solutions could possibly have upon them.

To that end, Goodwill believes that federal regulation would provide manufacturers with the strongest incentive to reevaluate computer design. We believe federal regulations that, over time, phase in percentage reductions by specified dates (similar to the requirements under SB20/50) would be the strongest incentive for manufacturers to place greater emphasis on computer design. Without clear goals driving this system, we do not foresee any significant improvements in the areas of computer design. Manufacturers should be given the freedom to innovate with design, but they must be held to certain performance goals, or they will not be motivated to improve design. Noncompliance with such goals would result in graduated fines and possibly the inability to sell noncompliant products.

Also, we would note our belief that manufacturers, inasmuch as they generate the source of the waste stream, are not alone responsible for electronic waste generation. To the extent that our country relies upon computers for all of the obvious benefits enjoyed by their existence, we all have some measure of responsibility. Accordingly, Goodwill recommends that any solution include incentives for other relevant stakeholders, like nonprofits, in addition to incentives for manufacturers.

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RESPONSE FOR THE RECORD BY JOEL DENBO, CHAIR, INSTITUTE OF SCRAP RECYCLING INDUSTRIES, INC.

*The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leaching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: ISRI regards the laws that govern the recycling of electronics scrap as resource conservation measures. According to the testimony provided by the EPA during the Subcommittee's first hearing on electronics recycling, there is still insufficient evidence to support the argument that there is a leaching problem for household electronic goods disposed of in Subtitle D disposal facility. Nevertheless, we recognize that potentially toxic components are present in many obsolete electronics; if properly recycled, however, these components pose no greater threat to the environment than during their original use. Nevertheless, ISRI is concerned about the materials present in obsolete electronics products because they can affect the ability to recycle the product, as well as the quality of the recycled materials. ISRI has encouraged manufacturers in all industries to design their products, from the outset, with recycling in mind. We refer to this as Design for Recycling<sup>®</sup> and promote it as a way to reduce the use of hazardous materials. By reducing or eliminating haz-

ardous materials in the manufacturing of electronics, the materials we recover and process have more market value and are, therefore, more cost effective to recycle, and are more environmentally friendly.

In addition, as stated in our written testimony, we respectfully request that electronics destined for recycling be referred to as—recyclable materials, or “commodities,” and not “waste.” Saddling obsolete electronics with the stigma of “waste” imposes a whole host of unwarranted regulatory burdens that will likely undermine the ability to make the system work. Therefore, it is eminently important that we avoid confusing these valuable commodities with “wastes,” especially with hazardous wastes.

*Question 2.* It seems to me, though, in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the “orphan” and legacy waste that is sitting in peoples’ homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

*Response:* The most significant problem is how to get the general public to pay a fee for the costs of recycling certain obsolete electronic materials with negative value, such as monitors with CRTs, rather than disposing of their systems at curbside or at their local Subtitle D disposal facility, or elsewhere in the environment.

ISRI has put forward two proposals to change the economics of electronics with negative values. First, we support a producer responsibility model that requires manufacturers to pay for the costs of collecting, sorting, transporting and recycling obsolete electronic materials that have a negative intrinsic value until end-use consumer markets are economically sustainable and viable. Second, ISRI supports dedicating a portion of funds generated from the manufacturers’ management plan to be used for the development of end-use consumer markets for recycled materials, e.g. technology to recycle computer glass and plastic. Once research and development dollars are spent and end-use electronics markets are economically viable and can support a sustainable electronics recycling infrastructure, ISRI strongly supports ending producer financial responsibility.

ISRI is not opposed to a grant program if it, too, addresses end-use consumer markets, promotes Design for Recycling<sup>®</sup> and provides funds to compensate recyclers for handling obsolete electronics with negative values. Should the Congress wish to proceed with a grant program, it may wish to consider a dual system where the grant program pays for orphaned systems and a producer responsibility system pays for legacy equipment.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstance, the state government. Why do you support a federal solution to an otherwise local program?

*Response:* ISRI favors a national solution that provides for product stewardship and promotes Design for Recycling<sup>®</sup>. Creating a level playing across all 50 states will more quickly and efficiently produce stability in the recycling business. A multiplicity of laws and regulations will understandably inhibit economies of scale and efficiencies. Although ISRI is concerned that 50 different approaches will hinder the development of a sustainable recycling infrastructure and thereby slow the development of end-use consumer markets for these materials, we are not opposed to a state-by-state approach in the absence of federal law.

*Question 4.* Your testimony states that your group represents 1,260 private, for-profit companies that conduct recycling activities at 3,000 locations world wide, however, only 300 of your members “a little less than 25 percent—actually handle electronics waste. What percent of all electronic waste that is recycled in this country do your members handle? Is the trend showing that increasing amounts of e-waste are becoming available? Do landfill bans of electronic waste components have a material affect, in the jurisdiction of the ban, on the amount of electronic waste being recycled?

*Response:* ISRI does represent over 1265 companies the process, broker, and consume paper, glass, plastics, metals, textiles, rubber and electronics materials for recycling. ISRI represents over 300 companies that make up the electronics recycling infrastructure. Unfortunately, ISRI does not collect recycling data in a manner that answers your market-share question.

*Question 5.* In testimony before the Senate Committee on Environment and Public Works, the GAO stated that in their interviews with eight electronics recyclers these recyclers “were unanimous in emphasizing that they could not cover the costs without charging fees.” In addition, testimony that we received in the first half of this hearing on July 20, 2005 suggested that the economics of private recycling businesses that voluntarily take on the electronics in waste streams were poor. Yet, I

think your testimony suggests that you think there is money to be made in recycling consumer electronics products. Could you please set the record straight? Is this a business your members want to pursue and can make money in a free-market, non-governmentally subsidized atmosphere or do you need government to artificially create this market for you?

Response: ISRI and its electronics recycler members believe that there is money to be made in recycling consumer electronics in a free-market, non-governmentally subsidized atmosphere. As stated above, under current market conditions, there remain some obsolete electronic products that have a negative value. To recycle these products, recyclers must charge a fee to cover the cost of recycling. However, economies of scale may mitigate some of the negative value of obsolete electronic products. Bulk recyclers may ultimately charge less to recycle these negative valued materials than smaller recyclers.

Some products already have a positive recycling value, such as CPUs, laptops, cell phones, and larger copy machines or “tanks.” In lieu of charging a fee, recyclers could, and in some cases do, pay consumers for these materials.

ISRI believes that to resolve the discrepancy between negative and positive valued materials, end-use electronics markets must be developed. Increasing the value of recycled obsolete electronic glass and plastic could have a significant effect on reducing the negative valued costs, thus creating a sustainable infrastructure.

Therefore, to cover the short-term costs of recycling negative valued obsolete electronics, ISRI believes a financial mechanism needs to be put in place. ISRI strongly supports ending any subsidy as soon as end-use markets are economically viable, that is, once negative valued recycled materials no longer enter the market place or have a negative value.

*Question 6.* Your testimony mentions ISRI’s Recycling Industry Operating Standard is the proper means to address environmental concerns with electronics recycling. Could you please tell me, specifically, what RIOS is and how this applies and will be helpful to promoting and sustaining electronics recycling?

Response: ISRI developed RIOS, an integrated management system standard designed specifically for the scrap recycling industry, as a means of providing recyclers of all scrap commodities—including electronics—with an affordable tool to monitor their quality, environmental, health and safety goals. RIOS seeks to provide consumers with the same assurances of compliance that they have come to expect from programs like ISO 9001, ISO 14001, and the proposed OSH 18000 standard. RIOS combines the applicable parts of these types of systems into an integrated system designed specifically for the recycling industry. Our goal is to assure consumers that, if they buy from a recycling company that is registered to RIOS, they are obtaining scrap materials that are manufactured consistently, according to a quality management plan in a facility that has a recognized environmental management system and safety program. Attached you will find a recent article that explores RIOS in greater detail (“ISRI at Your Service: Rolling Out RIOS,” Kent Kiser, September/October 2005).

*Question 7.* Your group supports a regime whereby manufacturers of consumer electronics products should be held responsible for recovering used products and then recycling them. Since your members would stand to benefit from a consistent stream of materials under this scenario or would benefit from the California-style advanced recovery fee, why was it so important for your group to take this policy position that it did? It seems that the promotion of a producer responsibility plan really shifts the costs from you to the manufacturer, particularly since it could result in electronics product designs that make recycling less expensive. Do you think the government should be used in this way to either mandate design or manufacturing activities or to determine economic winners and losers?

Response: To respond to the latter part of your question first, virtually every time the Congress legislates in the environmental or economic arenas, it chooses winners and losers. This goes to the heart of legislating for the public good. While it is true that recyclers of obsolete electronic products are benefiting from California’s advanced recycling fee, or consumer tax, the real issue is how to avoid overwhelming our landfills with the enormous tonnages of obsolete electronic equipment at reasonable or no cost to the taxpayer. Asking manufacturers to internalize life cycle costs will, more quickly than any other device, allow the industry to reach a point where electronics recycling can stand on its own.

If manufacturers internalize all life cycle costs, i.e., cradle to grave costs, they will, using good manufacturing and business sense, use every tool at their disposal to minimize the marginal costs of producer responsibility. They likely will do this by finding solutions to the glass and plastics issues, which currently minimize the value of obsolete electronics. By building electronic products in a manner by which it could be easily disassembled, thereby preserving the integrity of the recyclable

parts, they will also increase the value of their obsolete electronic products. Achieving these objectives will likely assure a positive, rather than a negative, value of electronic recyclables. Only manufacturers can achieve this.

*Question 8.* Your testimony encourages Congress and the states to “end any financial mechanism as soon as markets for recyclable electronics become viable.” Under what conditions would you consider markets for recyclable electronics viable? Do you consider any of the current state sponsored financial mechanisms for electronic product recycling to be unconstitutional restraints on trade between states under the dormant portion of the Commerce Clause in the United States Constitution?

Markets will be viable when the value of electronics recyclables is positive rather than negative. At that point, the market place will respond without artificial subsidies. With regard to the Commerce Clause, ISRI would refer the Chairman to a recent case on point in Maine. See attached case. *Alliance of Automobile Manufacturers v. Gwadosky*, 304 F. Supp. 2d 104, D.Me., 2004.

*Question 9.* What, specifically, are ways in which manufacturers can be encouraged to adopt Design For Recycling techniques? What are the potential costs to the consumer? Do you have any advice for “common sense” techniques the manufacturers can take to advance Design for Recycling?

Response: Manufacturers should be asked to address, in the product design stage, ways to improve environmental and recycling impacts of their products. It is not the role of government to dictate design engineering or manufacturing behavior. Government can ask manufacturers to report annually on what, if any, design changes they have made in their products that are intended to minimize adverse environmental impacts and to increase product recyclability at the end of a products useful life. As an example, we have attached a recent mercury bill (Mercury Switch Removal Act of 2005) that was enacted in Arkansas that contains specific Design for Recycling language beginning on page 8.

There will likely be little or no increase in consumer cost if manufacturers incorporate environmental recyclability decisions in the design phase of their products. Recent examples should provide context for your question. Concern for mercury in the environment and state legislation addressing mercury products have resulted in significant design changes. Children’s sneakers that contained lights that blinked when children walked were produced with mercury. Manufacturers no longer use mercury to cause the sneaker lights to blink. Another mercury design issue involves HID headlamps currently used in many vehicles. They are produced with mercury. After many complaints and concerns, Honda asked the lighting manufacturer, OSRAM, to produce an HID lamp without mercury. OSRAM has now done so, and Honda will utilize the non-mercury in its next vehicle design change. In addition, years ago, the house appliance manufacturing industry ended their use of “Harvest Gold,” and Avocado paints. Those colors were achieved with the use of cadmium, which is a hazardous substance. This market approach will depend on public scrutiny and consumer choices.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: Producer Responsibility/Cost Internalization provides the strongest incentive for manufacturers to implement Design for Recycling<sup>®</sup> policy. It is important to understand that ISRI has been advocating that manufacturers design their products to increase their end-of-life recyclability since the early 1980’s. Our long standing policy is based on the premise that implementing greater Design for Recycling will increase recycling productivity that will in return ensure a stronger, more sustainable economic and recycling infrastructure.

ISRI believes that once manufacturers internalize the costs to collect, sort, transport and recycle certain obsolete electronics they will improve product design in order to maximize the value of the obsolete product, thereby helping to create a sustainable electronic recycling infrastructure. In addition, manufacturers can create a model that will be less bureaucratic and cheaper to recycle.

Cost internalization utilizes the flexibility that manufactures naturally have in their production process. It is the manufactures that understand the details of their production lines, their financial bottom lines, their supply chains and the desires of their consumers. Unfortunately, although some progress has been made by electronics manufactures to implement Design For Recycling—policy, voluntary measures have largely failed to spur industry wide change in design policy. As a result, requiring manufactures to internalize the costs is the next appropriate step to encourage greater design policy.

*Question 2.* How much does it cost to recycle a cell phone and what is the value of the materials that can be recovered?

Response: Cell phones have a positive re-sale and intrinsic value. Before cell phones are scrapped, recyclers analyze factors for re-sale such as, age, model and the condition of the phone. The re-sale market for current, vintage cell phones is somewhere between \$10 and \$20 dollars. If a cell phone can not be resold, recyclers then scrap or recycle the phones.

Cell phones are at the highest end of the value chain because they contain recoverable amounts of precious metals. Generally, cell phones contain up to 10 ounces per ton gold (without batteries) and some palladium value as well. Thus, depending on the gold and palladium markets, recycling cell phones yields a positive value of approximately \$2.90 per pound without a battery and a positive value of \$1.80 per pound with a battery. The recycling cost is roughly \$1.00 per pound.

*Question 3.* At the Subcommittee hearing on July 20, 2005, Mr. Breen of the Environmental Protection Agency testified that a good rule of thumb for the cost of recycling a desktop computer is \$15, while the value of the materials recovered is anywhere between \$1 and \$2.50.

Do you agree with economics of recycling desktop computers as described by Mr. Breen? If not, please provide your views.

Response: If a desktop computer means a central processing unit (CPU), then no, ISRI does not agree with Mr. Breen's economic analysis. The recycling industry's definition of a desktop computer does not include the monitor, the printer, the keyboard, or the mouse. As with most electronics recycling, the economics vary on whether the unit can be resold or needs to be scrapped. The resale value is largely contingent on the processing speed and whether the unit has a CD and/or DVD player and the capacity of the hard drive. Desk top sales equate to approximately 10 cents a mega hertz, (based on an average 1 gig desktop), which yields a resale value between \$50-\$70 dollars. Note: these prices are typically marked up 20-25% by used computer sellers on the public market.

Domestic recyclers can offset the costs of scrapping CPUs since the units have a positive intrinsic value. In today's market, recycling a CPU yields a positive value of \$5 dollars a unit, or 10 cents a pound. Although circuit boards contain 5-10 ounces per ton of gold, they only account for 5-10% of the weight of the unit. Therefore, the entire unit contains only 1 ounce per ton of gold. Residual copper value can be found in power supplies. And, depending on the age of the unit, there may be recoverable amounts of steel and aluminum in the chasis.

*Question 4.* How much does it cost to recycle an average size television and what is the value of the recovered material?

Response: Unlike cell phones, CPU's and laptops, average size and larger televisions have a negative value. Recyclers must charge their customers to off-set the costs of recycling televisions. Recyclers charge between 20-30 cents a pound (based on truckload bulk equations and an average TV weight: 90-100 pounds). The value of the recovered material is less than 20 cents a pound.

*Question 5.* How much does it cost to recycle a laptop computer and what is the value of the recovered material?

Response: Due to the re-sale value, 99% of laptops are resold in there entirety, repackaged with value added and then sold or de-manufactured for its parts. Thus, in today's domestic market, the vast majority of laptops are not being scrapped. The resale market yields between \$300 and \$550 a unit.

*The Honorable C.L. "Butch" Otter:*

*Question 1.* I understand that recyclers in California are having a great deal of difficulty in being compensated for their recycling activities. Can you tell us about the practical problems being encountered by your members?

Response: The most significant issues for recyclers in California are the amount of paperwork to process claims and the time delay for compensation.

Burdensome paperwork requirements unnecessarily increase the costs of recycling electronics. Employees are required to complete forms that track the type and origin of products, which adds to the costs of recycling operations. When considering the small margins for these commodities and limited end-use consumer markets, these costs become even more significant as markets tighten. The delay for compensation is approximately six months.

## RESPONSE FOR THE RECORD BY STEVE LARGENT, PRESIDENT AND CEO, CTIA-THE WIRELESS ASSOCIATION

*The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: The wireless industry is committed to the goal of sustainable development and the environmentally-sound management of their wireless products at the end-of-life. CTIA members continue to reduce the use of various materials through design for environment (DfE) initiatives and compliance with new legal mandates, such as the E.U. RoHS Directive. For those reasons, CTIA views resource conservation as the primary drive of industry-led recycling initiatives and legal measures targeting e-waste.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the "orphan" and legacy waste that is sitting in peoples' homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: CTIA has found that many consumers do hold on to used wireless phones in anticipation of future use by the original user or future use by a family member or friend. CTIA believes that the unique attributes of wireless products (small size and availability of wireless retail establishments) allow used phones to be collected for re-use and recycling through voluntary initiatives. CTIA would support a grant program for initiatives aimed at raising awareness among consumers on the benefits and options for the re-use and recycling of mobile phones.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: The wireless industry supports a national solution, in order to avoid a piecemeal and inconsistent network of state regulatory programs for managing end-of-life electronic equipment. Such a state-by-state approach would lead to regulatory uncertainty, high compliance costs, the inefficient use of resources and less effective take-back programs. CTIA supports federal legislation that would discourage the disposal of wireless products in municipal landfills and incinerators as part of a broader effort to promote re-use and recycling. CTIA does not support legal mandates for the collection of used mobile phones, as programs are currently being implemented by carriers on a voluntary basis that will promote the recycling and re-use of wireless phones. These costs will ultimately be passed on to the consumer. Finally, having a national program will make it easier for the United States to assume a leadership role in working with other nations in finding environmentally-sound, effective, workable solutions to the management of end of life wireless devices.

*Question 4.* How are you ensuring that the wireless devices are being collected, managed, transported and reused in a responsible way and in accordance with federal and state environmental laws? What types of organizations do you contract with to implement these voluntary guidelines?

Response: The CTIA voluntary Guidelines assist companies in ensuring that the wireless devices are being managed in an environmentally-sound way. Companies can encourage materials recovery facilities to conduct their operations in a manner that is protective of both workers and the environment by pledging to send materials only to facilities that satisfy the CTIA Guidelines. For instance, a company may choose to require an audit of a recycling facility's environmental management system, by an independent third party, before the company agrees to send materials to the facility.

*Question 5.* Do you have an estimate of what percentage of total U.S. cell phones in use currently gets reused or recycled? What, in your estimate, is the best way to increase these numbers?

Response: There is no single source for data on handsets collected, nor is there a single methodology for collecting it. Carriers, recyclers, and refurbishers are all in the process of evaluating the best way to assess the success of their respective recycling and / or refurbishing programs. The wireless recycling market is highly competitive with many participating organizations, and a multitude of collection points. CTIA is working with the EPA and organizations such as the National Center for Electronics Recycling to develop a national repository for data on the collec-

tion, recycling, reuse, and disposal of electronic waste. With this said, CTIA has been able to determine the following:

- a. ReCellular, a refurbisher, has collected some four million phones in 2004, up from 1.5 million in 2002.
- b. Nextel has collected 4.4 million phones since 2002. Nextel also has refurbished 2.3 million phones since 2002.
- c. The Wireless Foundation's take-back programs have collected nearly three million phones since 1999.
- d. Verizon Wireless has collected approximately two million phones through their HopeLineSM charitable donation program.
- e. GRC Wireless Recycling has collected approximately one million phones since 2001.
- f. Old Cell Phone Co. of Port St. Lucie, FL, reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.
- g. RMS Communications Group collected one million phones in 2004, and has been collecting phones for the past ten years.
- h. eBay reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

The key to a successful recycling program is consumer education. CTIA's "WirelessThe New Recyclable—" program is designed to do just that. The program focuses on educating the public on the importance and ease of recycling wireless devices and providing useful and simple information on the recycling of wireless products and where consumers can recycle phones.

*Question 6.* What types of cost to the consumer do you charge, if any, for your voluntary return programs, whether it be at municipal centers, other retailers, or mail in returns to manufacturers?

Response: CTIA members take-back used mobile phones at no charge to consumers. In order to encourage consumers to recycle their used mobile phones, all barriers to recycling must be avoided. Recycling can be encouraged by providing tax incentives for recycling wireless devices.

*Question 7.* You stated in your testimony that the size of mobile phones has greatly decreased over the past 10 years. While the size can certainly have environmental benefits, just because they are now smaller, does that mean necessarily that less toxic materials such as lead, mercury, and cadmium are used? Do new technologies, such as I-pods and LCD screens consist of any other types of toxic metals or materials?

Response: Mobile phones are being constructed in a more environmentally-friendly manner than they were 10 years ago. In addition to reducing the size and weight of wireless devices (and, therefore, reducing the materials/resources used) manufacturers are maximizing the use of recycled materials and are increasingly designing for recyclability. For instance, manufacturers of wireless devices are phasing out the use of cables containing lead and cadmium and PVC from decorative parts of their products. More importantly, as mobile phone and device manufacturers comply with the European Union's Restriction on Hazardous Substances Directive, we are also seeing a reduction of hazardous materials in wireless phones marketed in the United States. All mobile phones sold in the European Union are expected to be RoHS compliant by June 2006. All CTIA members are expecting to deliver RoHS compliant products to the U.S. on or before the June 2006 deadline.

*Question 8.* How successful have the for-profit companies, established to collect and refurbish used cellular phones, been? Can you as an industry trade association do anything more to encourage your members to participate in your voluntary programs and add more incentives to these markets?

Response: For-profit companies established to collect and refurbish used phones have been quite successful, due to the unique attributes of mobile phones (size and the availability of secondary markets). Mobile phones have a relatively high re-use value creating an ongoing market for these devices; therefore, the market forces provide incentives for the collection and re-use of these devices. The availability of convenient retail collection points, combined with the portability of mobile phones and the availability of secondary markets, distinguish mobile phones from other types of electronic waste.

There are several successful for-profit companies that are in the business of collecting and recycling mobile phones:

- ReCellular, a refurbisher, has collected some four million phones in 2004, up from 1.5 million in 2002.
- GRC Wireless Recycling has collected approximately one million phones since 2001.
- Old Cell Phone Co. of Port St. Lucie, FL, reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.

- RMS Communications Group collected one million phones in 2004, and has been collecting phones for the past ten years.
- eBay reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

*Question 9.* As technology becomes more advanced and consumers demand newer and more efficient cell phones or other electronics, do you envision a time where a mandatory federal regulatory policy could be needed, or do you think products will get better, last longer, and demand will decrease, therefore lessening need for end of life cycles?

Response: Although technology will improve the functionality and performance of products over time, there will always be a need to ensure that end of life mobile phones are properly managed. In the case of mobile phones, we do not feel that a mandatory national system will be necessary. Federal agencies can play an important role in working with industry to promote a national system for voluntarily recycling mobile phones. However, due to the unique character of mobile phones and mobile devices, it will be more efficient and effective, to promote existing voluntary programs such as CTIA's "Wireless...The New Recyclable™" program. The House Subcommittee on Environment and Hazardous Materials can play a key role in increasing public awareness of "Wireless...The New Recyclable™" by encouraging the EPA to designate the initiative as part of the [name?] program. This designation would reap tremendous benefits to the wireless industry's recycling efforts and the environment.

*Question 10.* Does your industry have bigger plans for industry wide universal recycling? How can you maximize these results?

Response: Carriers, recyclers, and refurbishers participating in the "Wireless...The New Recyclable™" program are constantly evaluating the best way to expand and assess the success of their respective recycling and/or refurbishing programs. We expect the program to grow substantially as we are able to educate more consumers, and businesses, about the importance of proper cell phone recycling, through our public outreach efforts. CTIA believes that consumer education companies will be the key to increasing the collection, re-use and recycling of used mobile phones in the U.S.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: Programs that encourage carriers and Original Equipment Manufacturers to collect used mobile phone for re-use and recycling provide market-based incentives for design improvements over time. In fact, a combination of social and economic incentives already exist for more efficient design of handsets and accessories, and for the recycling of retired devices. These include the RoHS directive, carrier and manufacturer interest in the more efficient production of wireless devices, as well as consumer demand for environmentally friendly devices.

*Question 2.* How much does it cost to recycle a cell phone and what is the value of the materials that can be recovered?

Response: CTIA understands that recycled phones that are run through a smelter for precious metal recovery net approximately \$0.20 per handset. Most LCD screens are sent through a re-use channel, and increase the value to between \$0.25 to \$0.30 per phone or \$1.25 to \$1.50 per pound. Currently, companies collecting phones for resale pay consumers donating the phones anywhere from \$3 a handset to \$100 a handset depending on the model.

*Question 3.* How many cell phones are discarded each year in the United States and of that total number how many are collected and recycled?

Response: Most of the available data on reuse or recycling is localized, and there is, to our knowledge, no single-source that provides reliable national statistics reflecting the number of phones discarded or recycled each year. While approximately 47 million consumers change providers on an annual basis, their phones are not necessarily "discarded." In some cases, the phones are provided to family members or friends, or are retained by the owner. In 2004, approximately 47 million consumers "disconnected" service with a provider. Some 10 million of these disconnections actually reflect the consumption or expiration of prepaid service packages, which may have been subsequently renewed by the subscribers, without a change of handset. The remaining 37 million disconnections may reflect either changing service providers, or simply discontinuing wireless service for at least some time. ReCellular and RMS Communications Group, alone, collected five million phones in 2004 (ReCellular collected four million phones, while RMS collected one million phones.) ReCellular's collections increased 166 percent between 2002 and 2004. As



previously noted, there are many companies and organizations involved in carrying out recycling and phone collection programs which have collected more than 17 million phones in the last five years, refurbished more than 2.3 million, and resold more than four million phones during the same time period. These include phones collected and recycled by:

- a. ReCellular, which collected some four million phones in 2004, up from 1.5 million in 2002.
- b. Nextel, which collected 4.4 million phones since 2002. Nextel also has refurbished 2.3 million phones since 2002.
- c. The Wireless Foundation's take-back programs, which collected nearly three million phones since 1999.
- d. Verizon Wireless, which has collected approximately two million phones through their HopeLineSM charitable donation program.
- e. GRC Wireless Recycling, which has collected approximately one million phones since 2001.
- f. Old Cell Phone Co. of Port St. Lucie, FL, which reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.
- g. RMS Communications Group, which collected one million phones in 2004, and has been collecting phones for the past ten years.
- h. And eBay, which reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

*The Honorable Tammy Baldwin*

While we all enjoy cell phones, personal laptops, and other gadgets that help us be able to communicate and be more efficient, it is clear from these e-waste hearings that we must be vigilant in making sure the toxic substances in these electronic devices are properly disposed of and safely recycled.

Overall, I believe the manufacturers of these products should have the primary responsibility for the cost of collecting, transporting and recycling of electronic products, not consumers or taxpayers. If manufacturers do not have a financial stake in their products at the end of their useful life, then they will never have an incentive to design them to have longer life spans, to be easier to recycle, and to contain less toxic materials in the first place.

Let me give you an example of why I believe this. I have authored legislation in this Congress that would help encourage the safe disposal of recycling of the toxic element mercury, which is found in dozens of household and industrial products, including many electronic devices. As you probably know, exposure to mercury can have serious health effects to a person's liver, kidneys, nervous system, and brain functions. Small children and pregnant mothers are most at risk to the harmful effects.

One provision in this bill is a nationwide ban on the sale of thermometers that contain mercury. As communities have become more aware of the harmful impact of mercury on the public health and the environment, more and more state and local governments have passed their own legislation banning the sale of mercury thermometers.

Manufacturers have since responded to these laws and now make and sell more digital thermometers, which are just as effective but much safer. State and local laws may have pushed them to make a less dangerous product, but they also found it made good business sense that improved their bottom lines.

As the amount of e-waste grows, I believe we are not doing enough to give manufacturers the primary responsibility for managing the toxic substances in their products. This is thwarting the development of a strong private market for the safe recycling of these products and the development of products that contain nontoxic alternatives and that are easier to recycle.

*Question 1. Mr. McCurdy, Mr. Largent, and Mr. Vitelli—As representatives of these industries, do you agree with this, and if not, how can you justify making consumers and/or taxpayers shoulder most of the burden?*

Response: CTIA member companies have voluntarily taken responsibility for reducing the presence of various materials in their products, and will continue to do so, through design for environment (DfE) initiatives and compliance with new legal mandates, such as the E.U. RoHS Directive. The wireless industry shoulders its fair share of the cost of such programs. In fact, the take-back and recycling programs managed by most major service providers, manufacturers, and third-party recyclers of which we are aware, do not charge consumers for the collection or recycling used handsets. Indeed, a number of programs pay consumers for the return of some wireless devices. Wireless devices may be returned at many retail locations, or via mail-in pouches, and have been collected through both industry-wide and company-specific initiatives, such as the industry's Wireless...The New Recyclable™ initiative,

as well as the efforts of third-party organizations such as local school groups or charitable organizations. Such voluntary initiatives are not obligatory, and supplement the collection activities of wireless providers of all sizes, as well as the initiatives of manufacturers and for-profit recyclers.

The wireless industry is highly-competitive, and consumer demand for its products and services is price-sensitive. (Over the past year, several studies have noted the extent to which wireless is already subject to taxation, and the extent to which increases in prices reduce demand. It has been estimated that for every one percent increase in price, consumer demand is reduced by as much as 1.29 percent.) In a highly-competitive environment, wireless carriers cannot simply absorb the cost of additional mandates. The wireless industry in 2004 paid \$14.6 billion in federal, state and local sales and transactions taxes and surcharges, \$900 million in sales taxes on handsets, and contributed \$2.6 billion in universal service funding.

Moreover, as of 2004, the wireless industry had already paid more than \$24 billion to the Treasury for spectrum, and invested more than \$174 billion in building-out networks to deliver service to consumers. This year the industry made another \$13 billion in additional infrastructure investment.

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RESPONSE FOR THE RECORD BY DAVE MCCURDY, PRESIDENT AND CEO, ELECTRONIC INDUSTRIES ALLIANCE

*The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: EIA believes it is essential to consider the science related to electronics products as part of any public policy discussion regarding recycling. Compounds such as lead and mercury are present in some electronics products because they provide clear safety, performance and energy efficiency benefits. As our industry and others have developed viable substitutes, manufacturers have successfully incorporated them into our products. However, these compounds cannot yet be replaced in all applications. For example, the European Union (EU) Directive on the Restriction of Hazardous Substances (the RoHS Directive) provides narrow exemptions for specified uses of these materials to provide for product safety or energy efficiency, or when no technically or environmentally suitable alternatives exist.

Nonetheless, these compounds can and should be appropriately managed at the end of life. The U.S. Environmental Protection Agency (U.S. EPA) shares this view, and has consistently stated that used electronics products, when properly managed, do not represent a human health or environmental concern. The agency considers electronics recycling as fundamentally a solid waste management and resource conservation issue. *Likewise, our member companies recognize that reusing and recycling electronics at the end of life is the most environmentally preferable option, and we support reasonable efforts to develop the recycling infrastructure.*

In regards to whether or not compounds in electronics pose a leaching concern in landfills, I will refer to the testimony delivered to the Subcommittee in the first part of this hearing by Barry Breen, Deputy Assistant Administration for U.S. EPA's Office of Solid Waste and Emergency Response. Mr. Breen clearly indicated that the agency believes that electronics can be safely managed in properly permitted and operated municipal solid waste (MSW) landfills. In 1991, EPA updated the MSW landfill criteria to ensure that these landfills are protective of human health and the environment, even if they accept household hazardous waste or conditionally exempt hazardous waste. Furthermore, recent studies indicate that landfill leachate is very unlikely to impact drinking water due to low levels of metals present in the leachate of MSW landfills, and due to leachate collection and treatment systems. In fact, the National Solid Wastes Management Association (NSWMA) and the Solid Waste Management Association of North America (SWANA)—two leading professional organizations in the waste management field—maintain that electronics can be safely managed in municipal landfills.

Additionally, in September 2004, the U.S. EPA, Office of the Inspector General released a comprehensive evaluation of the agency's various electronics recycling programs. The report is entitled *Multiple Actions Taken to Address Electronic Waste, but EPA Needs to Provide Clear National Direction*. The report includes several noteworthy statements from U.S. EPA's Office of Solid Waste regarding electronic waste.

- “Regardless of how much E-waste that may exhibit a hazardous characteristic finds its way into municipal landfills, EPA does not believe that this will pose an environmental risk” (page 30).
- “Our primary interest in focusing on increasing recycling of E-waste is based on resource conservation and minimization of the environmental insults that result from materials extraction rather than on environmental risks from landfilling the waste in properly managed landfills” (page 30).
- “We do not agree that there is any need to define contingency plans regarding volumes of e-waste discarded in landfills because we strongly believe MSW landfill management practices consistent with our requirements are protective of human health and the environment” (page 31).

In short, while compounds such as lead and mercury are present in some of our products, their mere presence does not translate into risk to human health or the environment. While our products can and should be properly managed at the end of life, an impact could only occur if there were to be a completed exposure pathway to a substance of concern at a high enough dose and for a long enough duration for a negative outcome to result. This is clearly not an issue when our products are properly used and safely managed.

As an aside, it is also important to recognize that even recycling generates by-products that must themselves be properly managed. Many resource recovery techniques, including plastic and metal recovery, may result in the generation of secondary materials such as ash and slag that is often disposed of in landfills.

To reiterate, the high-tech and electronics industries recognize that reusing and recycling electronics at the end of life is the most environmentally preferable option, and we support reasonable efforts to develop the recycling infrastructure. By developing a viable and self-sufficient recycling infrastructure, many of the perceived risks posed by the use of compounds of potential concern in electronics can be mitigated. However, we also believe that it is critical for policymakers to consider these products in their proper scientific context.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the “orphan” and legacy waste that is sitting in peoples’ homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: EIA and our members believe that the primary issue with electronics recycling is the potential confusion arising from competing state and local laws and regulations. The lack of national consistency, combined with numerous initiatives under consideration at the state and local levels, threatens to create a costly, inefficient and perhaps conflicting set of requirements that will only raise costs to consumers for electronics products.

That said, the handling of orphan and legacy wastes is also an important challenge under any electronic recycling program. Orphan devices—those used products for which there is no longer a viable brand owner—should be fairly addressed in any comprehensive system. As noted in our testimony, EIA and our member companies support the principle of shared responsibility. When applied to orphan products, shared responsibility means that all the major stakeholders—not just the manufacturers—should combine to address this portion of the recycling stream.

Legacy wastes are indeed a major part of the challenge. Since older products are generally larger and heavier than contemporary devices, it costs more to collect and transport them for recycling. The goal of any national recycling approach should be to address these legacy wastes—which, by definition, are ready to be collected and recycled now—but to also establish a viable and comprehensive infrastructure to collect used products over the long term. EIA would support grants to states and municipalities as part of a coordinated approach to developing such a permanent infrastructure. Grant money could be used for collection and recycling activities, public education and to aid in the purchase of new capital equipment for recycling. Grant funding could also be used to advance the technology of recycling by supporting research into methods to make the processes more efficient, for example, or to maximize the nature and types of materials that can be recycled.

Our members have also expressed interest in exploring the approach embodied in the Wyden-Talent legislation (S. 510). This proposal would provide tax incentives to consumers and recyclers to stimulate the development of recycling capacity. While grants and tax incentives can be pieces of the solution, national consistency and shared responsibility are required to ensure reliable funding for appropriate electronics recycling activities.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by

local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: The problem is that various states and municipal governments are choosing to handle this issue differently, mandating different fees, programs and results, thus creating a competitive imbalance. This patchwork is already beginning to develop. Three states—California, Maryland and Maine—have enacted recycling laws for certain electronic wastes, but each of these laws establishes a significantly different financing and compliance system. This confusion of state laws, with several more states poised to enact new laws or regulations, is adding significant new costs and is confusing consumers. A federal solution will harmonize a system for the financing of an electronic recycling infrastructure and operation of the program.

In addition, the financing approaches that have either been enacted or are being considered by various states primarily focus on assessing a fee on each sale of a covered product made in the state, or on determining each manufacturer's market/return share in the state. Focusing on the sale of products elevates the debate from a solid waste issue to one regarding interstate commerce and market competitiveness, thus warranting federal involvement. Furthermore, used electronics must often be transported across state borders to qualified recycling facilities. If separate states regulate the transport of used products differently, this will cause artificial regulatory burdens that will lead to inefficiencies and increased costs. Finally, national involvement is necessary to make sure that products imported by foreign manufacturers that otherwise have no U.S. presence are included in the system. EIA supports a national approach that would provide balance and consistency and pre-empt the various inconsistent state approaches.

*Question 4.* In your testimony you stated EIA member companies use significant quantities of recycled materials, including glass, metals, and plastics, in new generations of their products, thus creating demand that helps sustain markets for these materials. This statement addresses a fundamental problem with domestic recycling infrastructure in this country and the ability of a recycler to make a profit when other viable options, such as exporting to China exist. How do you think the electronics industry can build on this market demand and create a competitive domestic recycling market?

Response: There are three major elements of an electronics recycling system: collection, transportation and the actual disassembly and recycling. The physical collection of used electronics represents arguably the biggest single economic barrier to recycling. With millions of televisions and computers spread out across urban, suburban and rural areas, collection becomes an enormous and costly logistical challenge.

With this in mind, it is likely that recycling will remain an overall cost. As detailed above, collection and transportation costs each represent a significant part of the overall expense. Even with greater markets for products and the establishment of a viable recycling infrastructure, these costs will still remain fixed within a range. The value of the resulting commodities still won't pay for the overall costs of collecting and recycling products, at least not at the present time.

*Question 5.* Are there any ways the numerous small producers and generic brand manufacturers that cannot necessarily be compelled to participate in a recycling program can be overseen in our current free market? Have there been any ideas generated within your industry regarding this anti-competitive imbalance in your ideas for a requested federal solution? What are these?

Response: EIA and our member companies continue to have serious concerns over whether states can effectively compel small market participants to play by the rules. For instance, two separate California agencies have issued conflicting opinions regarding whether the state can impose a fee collection obligation on out-of-state retailers that have no physical presence in the state. While the state of Maine does not implement its recycling program until 2006, EIA members already have significant doubts over whether state officials can take effective enforcement actions against small foreign producers or generic manufacturers to pay their fair share of recycling costs. While individual manufacturers in these categories are usually small, they nonetheless collectively represent a noteworthy segment of the market. In fact, Maine is proposing to release companies with a smaller share of the current recycling stream from certain financial obligations that will apply to larger, brand-name producers. This will clearly benefit small foreign and generic producers in the intense competition over market share.

The financing mechanism aside, a national approach to electronics recycling would resolve many of these issues. First, it would prevent small domestic manufacturers from selling into regulated markets while escaping responsibility or enforcement. Second, a national system could address products manufactured by foreign companies with no physical presence in the U.S. Some foreign producers frequently

change brand names; their products then end up designated as orphans even though the company is still in business and selling products under yet another temporary brand. Manufacturers with no U.S. presence could be required to provide some financial security in order to sell into the U.S. market. Alternately, the importer of these products could be considered the responsible party.

The federal government should consider requiring all manufacturers of certain electronics devices to include their brand label on their products. This would serve to reduce the volume of “orphan” products which other parties must finance. While this is already a requirement in certain states, it has limited effect. The major manufacturers already place their brand names on their products. The small and foreign producers who are the real target of these provisions are largely outside state jurisdiction. In addition, the federal government could consider a registration requirement for all manufacturers of certain electronics devices. All manufacturers (or importers of products) would provide basic contact and business information to make sure they stepped up and participated in any national system.

*Question 6.* Given the fact that shared responsibility is one of your goals and developing a recycling infrastructure that is convenient for the residential consumer, how do you envision manufacturers being involved in the process other than environmental design and product stewardship? What, in your view is a fair contribution from each industry, and how do you pass along the costs to the consumer?

Response:

#### *Manufacturers*

The EIA manufacturers are leading innovators in environmental design and product stewardship; since we design and manufacture the products, our single largest contribution is in this arena. On the whole, every year our products become more energy efficient, use fewer materials of potential environmental concern, and become easier to upgrade, disassemble and recycle.

In addition, our member companies see their roles as also including the following:

- Participating in a shared responsibility approach with the other key stakeholders to resolve the challenge;
- Continuing the broad industry effort to drive environmental innovations throughout the global supply chain;
- Working to educate the public regarding the benefits of recycling and to provide them with recycling resources, such as EIA’s Consumer Education Initiative ([www.eiae.org](http://www.eiae.org));
- Using recycled materials, including glass, metals and plastics, in new generations of products;
- Continuing to handle our own used electronics responsibly, for reuse, recycling, or refurbishment;
- Offering refurbishment programs where we buy-back used products, or where one product can be traded-in for another, and marketing refurbished products to our consumers;
- Designing newer more environmentally-preferred technologies/materials/parts into older products which are still being marketed;
- Continuing to participate in recycling partnerships with retailers, recyclers, government (including U.S. EPA’s Plug-in to eCycling campaign) and non-governmental organizations to develop a recycling infrastructure and expertise;
- Funding brand sort and data collection projects to help better understand the context of the recycling challenge; and,
- Participating in U.S. EPA’s effort to establish standards for electronics recyclers to make sure that used equipment is properly and safely managed.

While manufacturers are a key partner in the process, it is also important to recognize that our role is ultimately limited.

#### *Retailers*

Retailers also have a critical role to play within a properly structured and funded recycling system. The vast majority of electronics products are sold through traditional distribution and retail channels. In this system, retailers serve as the intermediary between manufacturers and consumers, and transfer the product to the end-user in exchange for financial consideration. In general, manufacturers sell products in bulk to distributors, who sell them to retailers (although many large retailers buy directly from manufacturers). Retailers in turn sell them to consumers through a network of thousands of retail locations. These products then have years of useful life, and are often re-sold, passed along to friends or family members, or donated to schools or charities. In most cases, manufacturers do not have a direct relationship with the end user at the time of initial sale, let alone years later when the product is ready to be placed into the recycling stream. (According to the non-

profit National Center for Electronics Recycling (NCER), the average life of a television is about 17 years, and the average life of a computer is about 11 years.)

Unlike any other stakeholder in the process, retailers have millions of face-to-face interactions with consumers every year. When consumers come into a retail store to purchase a new computer or television, it is often to replace an older unit that is ready to be collected and recycled. Many large retailers have already participated in successful recycling events—often in partnership with manufacturers, NGOs and government—that include collecting used devices at major, usually company-owned retail locations. Because retailers have a direct and special relationship with the public, and maintain numerous stores as well as transportation and distribution networks, they can play a vital role in educating consumers and partnering with others to provide recycling solutions.

Manufacturers also act as retailers in some cases. In those instances, they must also share the responsibility of retailers.

#### *Recyclers*

Recyclers need to provide their services in a safe, cost-effective and environmentally-sound manner. EIA is working with the U.S. EPA, recyclers and other stakeholders to help develop appropriate standards and a certification process for electronics recyclers.

#### *Consumers*

As noted in our testimony, the combined goal of the institutional stakeholders should be to develop a recycling infrastructure that is convenient for the residential consumer. Ultimately, recycling can only succeed if citizens themselves participate by turning used products in to the system. According to the non-profit National Center for Electronics Recycling (NCER), the average life of a television is about 17 years, and the average life of a computer is about 11 years. These products are purchased by consumers and provide benefits to the consumer for years. It is also important to remember that these products, once sold to distributors, retailers or consumers, no longer belong to the manufacturer. They become personal property, just like all other goods, and no one can compel consumers to properly manage their personal property at the end of its useful life.

#### *Costs*

As noted above, recycling will remain an absolute cost on the system for the foreseeable future. Consequently, whether recycling costs are paid for by a point-of-sale fee, are internalized in the cost of new products or are addressed in some other manner, the consumer will ultimately end up paying the difference.

*Question 7.* Do you think, because demand for market driven environmental design is growing, that the free market could best handle this issue of e waste? Or do you feel because states are acting, and so many others have legislation under consideration, there is no choice but to pursue federal legislation?

*Response:* Since the total costs of recycling exceed the value of the commodities recovered, it is already difficult enough to try and develop a free market solution to this challenge. If states continue to enact distinct and possibly conflicting statutes and regulations, the obstacles will be even more insurmountable. As noted in our testimony, there is clearly a federal role. The federal government should focus on removing artificial regulatory barriers to encourage the free movement of these products for safe and appropriate recycling. If the federal government can ensure a level playing field, and if all stakeholders can resolve the funding challenge, it is possible that a free market solution will emerge.

*Question 8.* What, in the industries that you represent, should be the definition of e-waste? Should it remain fluid? Or should it be defined by products or by toxic components that make up the product? How much debate is there going on within your industry about this term and are certain states defining the term differently?

*Response:* Any definition of e-waste or e-scrap should initially focus on a limited number of products. It is our belief that the solution should start with an identifiable and manageable subset of devices, rather than attempting to address the universe of all electronic equipment at once. We are currently discussing this very issue within our membership, and would be happy to provide an update to the Subcommittee in the future.

Also, the EIA member companies would prefer that any recycling approach apply only to household products. However, we recognize the challenges in differentiating between consumer products and certain non-household products, both at the point of sale and at end-of-life. Electronic devices from non-households (i.e., businesses, institutions and government) are typically required to be appropriately managed at the end of life by the entity disposing of the equipment. However, in certain cases, non-household electronic devices are re-sold and ultimately end up in the household

waste stream. Any approach needs to consider options to ensure that businesses handling their end-of-life devices responsibly as required by law are not penalized by paying for recycling services they are not able to use, while ensuring that devices that eventually become household waste finance the collection mechanism that they will use. EIA and our members are willing to work with the Subcommittee on mechanisms to differentiate household from non-household products.

On the second part of the question, states are indeed using different definitions of electronics scrap or covered electronics devices. Maine's approach covers all televisions and computers, including laptop computers, regardless of the technology involved. California started with cathode ray tube (CRT) televisions and computer monitors, and LCD monitors and laptop computers. The state has since expanded the list of covered devices to include plasma and LCD-screen televisions. Maryland's new statute applies only to computers.

*The Honorable Tammy Baldwin*

*Mr. McCurdy:*

*Question 1.* Do you or any of the companies you represent currently export e-waste to other countries?

Response: In response to this first question, please refer to EIA's statement on electronics recycling, which is attached as the last two pages of this document. This statement includes our position on the export of end-of-life electronics.

*Question 2.* If so, how much do they export?

Response: We are not aware of any EIA member company that sends end-of-life electronics anywhere but to appropriate facilities in North America or other developed countries. EIA does not have statistics regarding the volume of end-of-life electronics that our members may send to appropriate facilities in developed countries. Please note that electronics devices exported for reuse or refurbishment are not considered electronic waste because they still have value as products.

*Question 3.* Where do they export this waste?

Response: Please see the response to Question 2.

*Question 4.* Do they demand any safety standards or safety gear for their employees when processing this waste?

Response: Per our statement on electronics recycling (included below), our member companies require that any facility that manages their end-of-life electronics meets stringent requirements that include appropriate worker health and safety criteria.

*Question 5.* Do they plan to continue exporting this waste to other countries?

Response: Please see the response to Question 2.

*Question 6.* How would federal legislation banning the export of e-waste impact the companies that are currently doing so?

Response: First, it is important to note that the 30 member governments of the Organization for Economic Co-operation and Development (OECD) have concluded an agreement that governs cross-boundary shipments of wastes destined for recycling within the OECD. See *OECD Council Decision C (2001)107/Final*. In addition, the U.S has concluded bilateral accords governing waste exports to Canada and Mexico. These international accords have been in place for some time, and exports of end-of-life electronics to these OECD or "developed countries" raises few, if any, issues. A prohibition on exports to these developed countries would significantly disrupt current trade and recycling practices.

Second, it is our understanding that exports of end-of-life electronics to non-OECD countries are primarily being made by numerous small recyclers. Federal legislation banning the export of electronic scrap would likely minimize this practice, assuming aggressive enforcement. However, such an approach could also discourage future investment in needed recycling infrastructure in non-OECD countries. Rather than an outright ban on exports, EIA recommends that Congress and EPA consider actions to ensure that exports of end-of-life equipment for recycling are only allowed where the receiving facility can ensure safe and environmentally sound management. Appropriate recycling facilities that can safely and properly manage electronic scrap should not be excluded from the market simply because they are located in non-OECD countries.

*Question 7.* As the amount of e-waste grows, I believe we are not doing enough to give manufacturers the primary responsibility for managing the toxic substances in their products. This is thwarting the development of a strong private market for the safe recycling of these products and the development of products that contain nontoxic alternatives and that are easier to recycle.

Mr. McCurdy, Mr. Largent, and Mr. Vitelli—As representatives of these industries, do you agree with this, and if not, how can you justify making consumers and/or taxpayers shoulder most of the burden?

Response: EIA does not agree that the materials content of our products is “thwarting the development of a strong private market for the safe recycling of these products.” As noted above, compounds such as lead and mercury are present in some electronics products because they provide clear safety, performance and energy efficiency benefits. As manufacturers and others develop appropriate and innovative alternatives to these compounds, we readily incorporate them into our products. Used products that contain these compounds can and are being safely recycled. As discussed in our response to question #4 from Chairman Gillmor above, collection and transportation costs each represent a significant part of the overall expense. These costs have virtually nothing to do with the materials content of the products themselves. The real obstacle to the development of a viable, comprehensive recycling infrastructure is that the value of the resulting commodities does not currently cover the overall costs of collecting, transporting and recycling products. In other words, even if all applications of compounds of concern could somehow be replaced tomorrow, there would still be a major economic barrier to the development of a free market recycling infrastructure.

We also do not agree that more needs to be done to “give manufacturers the primary responsibility for managing the toxic substances in their products.” As manufacturers, we already recognize that we have primary responsibility for product design. On the whole, every year our products become more energy efficient, use fewer materials of potential environmental concern, and become easier to upgrade, disassemble and recycle.

Finally, we do not agree that any perceived lack of manufacturer responsibility is thwarting “the development of products that contain nontoxic alternatives and that are easier to recycle.” Some stakeholders promote onerous design mandates by claiming that manufacturers “choose” to include compounds such as mercury and lead in our products. This is a fundamental misstatement of fact. As materials technology has improved and viable substitutes have become available, manufacturers have made enormous progress in reducing the presence of compounds of potential concern in our products. We are continuing to make advances towards minimizing or eliminating the use of these compounds. However, that is not yet possible in all instances.

To give just one example, mercury lamps, which typically contain only a few milligrams of mercury, are used for illumination in a variety of electronic products due to their high energy efficiency. While technically there are substitutes, such as CRTs, that do not contain mercury, these alternative lighting sources vastly increase the energy demand of the product. Increased energy demand results in increased power plant emissions, which are the single largest source of mercury in the environment. Out of recognition of the greatly enhanced energy efficiency provided by mercury lamps, the European Union has exempted the use of mercury lamps in backlighting for LCD monitors from the RoHS Directive. The European Union has granted similar exemptions, for example for high-temperature lead solder, out of recognition that no technically or environmentally-preferable alternatives currently exist. In short, the uses of these compounds for certain specified purposes are dictated by necessity, not by choice.

Also, please see our response to question #1 from Congressman Dingell below that details the broad market forces that drive our manufacturers to constantly improve product design. These improvements translate directly into products that are smaller, lighter, and more efficient, and are easier to upgrade and recycle.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: The competitive marketplace continues to be the primary driver behind improvements in product design, efficiency and performance. The electronics industry continues to achieve significant and sustained environmental progress throughout the entire product lifecycle: from design, through beneficial use, to end-of-life. In fact, many of our companies have long-standing design-for-environment or product stewardship programs that pre-date the adoption of the European Union Directive on the Restriction of Hazardous Substances (the RoHS Directive) by several years. On the whole, every year our products become more energy efficient, use fewer materials of potential environmental concern, and become easier to upgrade, disassemble and recycle. This process of continuous evolution—driven by market demand and competition—can be readily observed by comparing today’s products to similar products that were manufactured just a few years ago.

There is intense competition in the consumer electronics marketplace, and therefore any manufacturing efficiencies that a company achieves can result in increased



output while simultaneously decreasing per-unit production costs. In addition, technological advancements that extend product life increase the marketability of the products while creating opportunities to sell more product extensions and upgrades after the initial purchase. These market-driven innovations on the production side directly translate into benefits for reuse and recycling. Please consider the following examples:

1. Manufacturers have a clear incentive to streamline and simplify product assembly by, for instance, using fewer screws and connectors. Not only does this improve production efficiency, but it makes these products easier to service during their useful lives. It also makes these products easier to upgrade, disassemble and recycle at the end of life.
2. To achieve valuable economies of scale, manufacturers are increasingly purchasing larger volumes of a single plastic, instead of smaller amounts of different plastics. The use of a uniform type of plastic makes these products easier and less expensive to recycle at the end of life.
3. Larger and heavier products cost more to transport. Accordingly, our companies strive to use lighter-weight materials as they become available in order to control transportation costs for distribution and sale. To achieve production efficiencies and meet market demand, our members are also constantly innovating to create smaller products without sacrificing functionality or performance. Since transportation costs represent one of the single largest expenses associated with recycling, these ongoing innovations directly result in products that are less expensive to recycle.
4. Metals and certain other compounds are present in electronics products because of their important safety, performance or energy efficiency characteristics. However using these materials can add costs to the manufacturing process, as companies may need to implement additional measures to ensure proper management. As technically and economically viable substitutes become available, EIA member companies have worked to reduce or eliminate the uses of these compounds. These efforts also facilitate the recycling of electronics products.

EIA member companies have also gained invaluable knowledge by recovering products themselves and by working with independent recyclers. Understanding the requirements for recycling also helps manufacturers factor in end of life management considerations into the design of new products.

*Question 2.* At the Subcommittee hearing on July 20, 2005, Mr. Breen of the Environmental Protection Agency testified that a good rule of thumb for the cost of recycling a desktop computer is \$15, while the value of the materials recovered is anywhere between \$1 and \$2.50.

Do you agree with the economics of recycling desktop computers as described by Mr. Breen? If not, please provide your views.

Response: First, it is important to note that the EIA member companies are manufacturers, not recyclers. Our member companies contract with independent recyclers to manage their own used equipment. In addition, many EIA manufacturers have been involved in recycling partnerships with retailers, government and NGOs where used equipment is collected and sent to qualified private recyclers. Consequently, the vast majority of our members have little or no direct experience conducting recycling activities themselves. Some EIA member companies that are directly involved in recycling activities cited confidentiality concerns regarding recycling costs.

However, the non-profit National Center for Electronics Recycling (NCER) has developed the following estimates for the costs related to electronics recycling:

- Processing costs: 24 cents/lb.
- Collection costs: 7 cents/lb.
- Shipping costs: 5 cents/lb.
- Recycling system administration: 3 cents/lb.

Under California's electronics recycling statute, qualified collectors and recyclers are eligible for total payments of 48 cents per pound. A general rule of thumb in the recycling industry seems to be approximately 50 cents per pound. Regarding materials value, EIA does not maintain information on prices in the commodities market.

Please note that recycling can also include extending the useful life of various components and subcomponents of a computer system. For example, the hard drive, optical drive and various other parts have potential resale value in the secondary electronics market. The parts recovered in this recycling process have a much higher value than the commodities grade materials.

*Question 3.* How much does it cost to recycle an average size television and what is the value of the recovered materials?

Response: EIA does not maintain information on recycling costs, or on prices in the commodities market. We are in the process of checking with appropriate sources in those markets, and we will share with the Subcommittee whatever information they are able to provide. Costs will likely differ from recycler to recycler and state-to-state due to different processing requirements.

*Question 4.* How much does it cost to recycle a laptop computer and what is the value of the recovered materials?

Response: Please see the response to Question 3.

*Question 5.* Will your Member companies be able to comply with the waste electrical and electronic equipment (WEEE) directive of the European Union, which requires the elimination of mercury, cadmium, lead, chromium, and other substances by July 1, 2006?

Response: (For questions #5 and #6, we believe you are referring not to the WEEE Directive but to the RoHS Directive. It is this latter Directive that addresses the restriction of metals and other substances, and is scheduled to take effect on July 1, 2006.)

First, it is important to note that the RoHS Directive does not require the elimination of the listed compounds; rather, it limits their concentration in certain products, and also provides broad exemptions for certain applications when there are no technically or environmentally-preferable alternatives available.

The EIA manufacturers are fully committed to complying with the RoHS Directive when it takes effect next year. However, there are still several major areas of uncertainty regarding the Directive which make compliance difficult to measure. First, the EU has yet to establish the uniform testing procedures that will be used to determine whether products and components are in compliance. As a result, there is still no formal way to demonstrate that a given device is (or is not) within the regulatory requirements. Second, the EU has yet to rule on several dozen proposed exemptions to the Directive. Consequently, even at this late date manufacturers do not know whether they will be allowed to use these compounds in certain critical applications. We understand from recent discussions with representative from the EU and from the United Kingdom's Department of Trade and Industry that final decisions on these exemptions may not be made until 2006. This leaves virtually no time for the global supply chain to make any needed changes in electronics components. Finally, the EU has yet to issue any guidance on compliance and enforcement requirements under the RoHS Directive. Manufacturers throughout the global supply chain therefore do not know what certifications, declarations or other paperwork requirements may be needed. In short, RoHS is a moving target. The EIA member companies have been working diligently to comply with those elements that are already established, and will also comply with additional requirements once they are finally set.

*Question 6.* After July 1, 2006, will your Member companies discontinue selling electronic products, such as computers or televisions, in the United States that contain mercury, cadmium, lead, or chromium and other substances covered by the WEEE directive?

Response: Owing to the uncertainties in the process detailed in our response to the previous question, there are still numerous questions regarding what will constitute a "RoHS-compliant" product. Regardless, the EIA member companies are driving the RoHS requirements throughout the global supply chain. In short order, we expect that all components used in our products worldwide will meet the RoHS requirements (once all the RoHS requirements are established).

Many of our member companies have indicated that they will only be selling RoHS-compliant products worldwide as of next July 1st. Other companies have noted that, until current inventories are depleted, there may still be some products sold in U.S. and other markets that do not meet the RoHS requirements. This will be limited both in terms of time and number of products affected. From that point forward, and assuming that all RoHS requirements are finalized by the EU, our members will be manufacturing and distributing only RoHS-compliant products throughout the entire global marketplace.

*July 26, 2005*

#### EIA STATEMENT ON RECYCLING

##### *General Statement*

The electronics industry continues to make significant advances in minimizing the environmental impacts of electronic products throughout their lifecycle: from design, to use, to end-of-life. This progress results from a commitment to sustainability as our companies consistently design for environment, reuse and recycling. On the

whole, every year our products become more energy efficient, use fewer materials of potential concern, last longer and become easier to disassemble and recycle.

#### *Electronics Recycling*

EIA and our member companies recognize that reusing and recycling electronic products at the end of life is the most environmentally preferable option, and we support the proper management of these products through public education, grant programs, public-private partnerships and voluntary industry initiatives. Through these approaches, we support efforts to reduce the volume of electronic products being disposed of in landfills and to increase the beneficial reuse of materials.

EIA promotes shared responsibility for the management of used electronic products. Shared responsibility involves a system in which all stakeholders (including designers, producers, governments, suppliers, consumers and recyclers) accept collective responsibility and participate in a system for the end-of-life management of electronics depending on their particular expertise and role. National consistency is essential in electronics recycling. EIA and our member companies have been working closely with U.S. EPA and members of Congress to try and find a common solution to the electronics recycling challenge.

Implementing a system based on shared responsibility principles will increase the efficient collection of electronics and ensure economies of scale by taking advantage of existing infrastructure. Manufacturers effectively contribute to shared responsibility through the design phase by enhancing ongoing efforts to limit the use of compounds of concern in electronic products, increasing their energy efficiency and making them easier to recycle. Our member companies are also involved in numerous recycling initiatives—individually, collectively and/or in collaboration with U.S. EPA, state and local governments, retailers, recyclers and charitable organizations.

#### *Exports*

EIA member companies strongly support the safe and environmentally-sound management of used electronics. EIA shares the concerns expressed by many stakeholders over the export of used electronics to facilities that lack the capacity and expertise to properly and safely manage these products, and we do not condone this practice.

In fact, our member companies require recyclers to satisfy strict requirements to be eligible to manage end-of-life electronics. This includes a verifiable commitment that all used products will be properly managed in appropriate facilities in developed countries.

Other actions that EIA members typically take to ensure proper recycling of end-of-life products include:

- Site visits;
- Independent auditing;
- Proper insurance;
- Written operational procedures for proper handling of materials;
- Proper record keeping;
- List of all subcontractors; and
- ISO 14001 certification or an equivalent environmental management system, or compliance with the OECD Environmentally Sound Management (ESM) guidelines for recycling, or International Association of Electronics Recyclers (IAER) certification.

Once the used devices are appropriately processed, materials such as cleaned CRT glass, scrap metal, and sorted and baled plastics become commodities that should be permitted to move unencumbered for beneficial reuse in new products.

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RESPONSE FOR THE RECORD BY MARK MURRAY, EXECUTIVE DIRECTOR, CALIFORNIANS AGAINST WASTE

#### *The Honorable Paul Gillmor*

*Question 1:* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Murray Response 1: Testing of electronic devices by the California Department of Toxic Substances Control has demonstrated that virtually all electronic devices possessing a circuit board or batter exhibit the characteristics of toxic under both state and federal law. We believe that obsolete electronics pose a very real threat to public health and the environment, and their disposal in Solid Waste facilities should be uniformly prohibited.

Having said that, the primary motivation of Californians Against Waste in addressing the need for and potential of e-waste reduction and recycling policies is the desire to conserve resources and reduce pollution associated with the raw materials extraction and processing in the manufacturer of electronics.

*Gillmor Question 2:* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the “orphan” and legacy waste that is sitting in peoples’ homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Murray Response 2: The term “orphan” waste as it is used in the e-waste policy arena generally refers to those electronic devices carrying a brand name for a company that no longer exists. The continued existence of these “manufacture-less orphans” has been identified by some as a limiting vulnerability for some public policy approaches, such as direct manufacturer takeback or a Maine style producer responsibility approach.

The fact that many households and small businesses have been stockpiling obsolete electronics represents both a significant component of the problem, as well as an opportunity. Clearly the e-waste management “problem” is greater than the current rate of obsolescence. At the same time, the fact that these long obsolete devices have yet to be illegally disposed presents policy makers with a “second chance” for policies and programs to catch up with market realities.

Worse than doing nothing to address the e-waste problem would be to rely on “tail pipe” waste managers to collect and process devices for recycling, as well as to finance those efforts with back-end disposal fees. We know that back-end fees have a tendency to drive illegal disposal, be it on the side of the road leading to a transfer station, or stuffed in a garbage can or dumpster.

While local government and private sector waste managers can and should play a role in the collection and processing of obsolete devices for recycling, the costs of that management must separately financed, either through front-end “Advance recycling fees” or similarly internalized into the price of the product by manufacturers.

As a tax payer, I would object to the notion of providing general fund or some unrelated special fund dollars to address this problem.

In terms of the actual mechanics of providing “front-end” collected funds to collector/processors, it is our experience that performance based payments (i.e. payments for materials actually collected/processed) is vastly superior to a speculative “grants-based” approach. Grants are notoriously expensive to administer, and, in our opinion, should only be used to supplement a direct payment program.

*Gillmor Question 3:* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Murray Response 3: The regulation and enforcement of wastes, including hazardous electronics wastes, has long been a responsibility of state’s, and we are supportive of that status quo. Californians Against Waste is not advocating, nor holding our breath for, a Federal solution to the e-waste problem.

We have simply called for agencies and facilities of the Federal government to support and cooperate with state and local governments in the implementation and enforcement of state and local solid and hazardous waste policies when operating in jurisdictions. To date, some Federal agencies have ignored California’s e-waste recycling law.

*Gillmor Question 4:* I am very interested in the involvement of your group in the passage of California’s e-waste law. As I understand it, many environmental groups pulled their support from the final bill, but your group did not. Why? What lessons do you think our panel should know about obtaining or maintaining support from environmental groups that will still allow for meaningful e-waste legislation to become law?

Murray Response 4: Californians Against Waste was the sponsor of Senate Bill 20, the legislation which enacted California’s first in the nation e-waste recycling law. In this capacity, we worked with and negotiated with a broad spectrum of stakeholders representing electronics retailers, electronics manufacturers, private and non-profit e-waste collectors and recyclers, local governments, as well as local, state and national environmental organizations.

During the final weeks of the 2003 legislative session, Senator Byron Sher and Californians Against Waste had succeeded in organizing the support of recyclers, local governments, environmental groups and retailers around a “hybrid” proposal that would cover 100% of the cost of collecting and recycling covered electronics through a front end fee, while allowing manufacturers to opt out of that system

upon demonstration of a system to takeback devices. It is worth noting that this “producer takeback” option allowed manufacturers to takeback an amount of *any brand* of covered devices equal to 50% of sales. While electronics manufacturers were uniformly opposed to the proposal at this stage, the industry was split on their rationale. For simplicity I’ll categorize these divergent perspectives as Hewlett Packard (HP) vs IBM and the TV makers.

While California has historically been a leader in the enactment of forward thinking environmental policies, California is also the home of the Silicon Valley and the headquarters of much of the hi-tech industry, and as such we faced considerable political pressure to forge a final proposal with at least some support from electronics manufacturers.

Without getting into a blow-by-blow of those final negotiations, I will say that there was a real desire by Senator Sher, CAW, and other supporters, to try to reach an accommodation with HP around the concept of “direct producer responsibility”. However, the stumbling block then (and now) is HP’s unwillingness to accept responsibility—financial or otherwise—for the collection of covered devices, as well as their recycling. A preliminary analysis by the State of California indicates that collection costs—which fall predominantly on local governments and non-profit thrifts (Goodwill), 40-45% of total program costs. Senator Sher and our coalition could not accept allowing this cost burden to fall on local governments and other collectors, so we forged an agreement with the IBM/TV Manufacturer coalition which was willing to support a proposal covering both collection and recycling costs.

As part of this agreement, Senator Sher agreed to drop the “manufacturer opt out” language. As I recall, this change caused three environmental supporters—Silicon Valley Toxics Coalition, Computer Take-back Campaign, and Basil Action Network—to remove their support for the legislation. Californians Against Waste, along with most of the major State and National environmental groups, including: Sierra Club, Natural Resources Defense Council, League of Conservation Voters, CALPIRG, Planning and Conservation League, and many others; remained in support of the final legislation.

*Gillmor Question 5:* One of the more prominent problems in addressing e-waste disposal is the problem of people who illegally dump their electronics into landfills. Your testimony mentions that the California law will: “reduce/prevent illegal dumping”. Could you please tell us if you consider illegal dumping a problem and why do you think the California law will be able to successfully prevent it?

Murray response 5: Because covered electronic devices are hazardous, their disposal in California’s municipal solid waste stream is prohibited. The bulk of “illegal dumping” of covered devices occurred when residents and businesses disposed of devices in trash cans and dumpsters, with some devices being dumped on roadsides and open spaces.

There are three primary factors that prompt illegal disposal:

- 1) Lack of consumer information regarding the disposal ban and opportunity for recycling;
- 2) Lack of opportunities for recycling; and
- 3) Presence of back end disposal/recycling fees that create a financial disincentive for generators to properly managed covered electronic wastes.

California’s e-waste recycling policy helps address each of these factors. The program provides direct resources for public education—approximately \$1million in program funds for the current year. The program creates an incentive for private sector collectors and recyclers to provide information to the public in order to drive volume. The program provides expanded opportunities for collection/recycling—to date more than 300 collectors are providing “free and convenient” recycling opportunities at more than 500 locations in the state. While some collectors continue to charge fees—mostly for additional service such as at home pick-up, consumers no longer face the choice of “pay as you throw” recycling vs “free” illegal disposal.

*Gillmor Question 6:* The California e-waste law makes the consumer electronics retailers, who produce a minor quantity of electronic products, the collector of the advanced recovery fee, even though they are merely a conduit of commerce; while direct internet sales treated differently. Why was this choice made to use the retailers? With California’s budget situation, how can you be sure that advance recovery fees will actually go to e-waste recycling activities rather than to other state funding priorities?

Murray Response 6: Retailers were designated as fee “collectors” under the California law for three basic reasons:

- 1) Retailers already pay sales tax to the state of California, and it was determined that the most efficient, lowest cost fee collection mechanism would “piggy-back” on this existing system.

- 2) Assessing the fee directly on manufacturers may prove problematic in some instances where a manufacturer is unable to make a determination as to where devices delivered to distributors and ultimately retailers are actually sold.
- 3) California retailers (via the California Retailers Association) specifically supported the assessment of a “retailer” based fee in SB 20. This was undoubtedly based on the generally positive experience California retailers have experienced with other, similar environmental fees.

The term “retailer” as it is used in the context of the California e-waste law may need some explaining. The definition reads:

“Retailer” means a person who makes a retail sale of a new or refurbished covered electronic device. “Retailer” includes a manufacturer of a covered electronic device who sells that covered electronic device directly to a consumer through any means, including, but not limited to, a transaction conducted through a sales outlet, catalog, or the Internet, or any other similar electronic means.

Many actual “fee payers”, including most “computer retailers” are in fact not traditional “brick and mortar” electronics retailers, but rather electronics manufacturers—Dell, HP and IBM are among the largest, computer resellers, and others selling over the internet or through other channels. Because most of these entities are currently obligated to pay sales tax on these sales—including most internet sales, the addition of the California e-waste recycling fee has proven to be substantially less problematic than some critics anticipated. The California Board of Equalization has thus far identified just under 2400 “fee payers” who account for better than 85 percent of California sales.

The California E-waste Recycling fee is legally an environmental mitigation “fee” and as such the state is constitutionally prohibited from expending fee revenue for any purpose unrelated to that for which the fee was collected.

*Gillmor Question 7:* Your testimony mentions that the drafters and supporters of the California e-waste law made a clear decision to avoid a California-specific ban on certain electronics components and their constituents and rather adopt a European directive on prohibiting certain wastes? Why was the choice made to mirror European legislation as opposed to creating a California solution for Californians? Considering the size of the California market, did you consult with Federal trade or commerce officials regarding the impacts of your state’s action on larger domestic economic issues?

*Murray Response 7:* Our research revealed that the European Union, in developing the ROHS directive, had developed more than simply a listing of prohibited toxic materials, but rather an interactive stakeholder process for identifying and phasing out a range of toxic materials. We recognized that California had neither the time nor the resources to replicate this process.

It should be noted that part of our motivation in tracking the EU directive—rather than being silent on the issue—was to help ensure that California not become the dumping ground for toxic devices that could no longer be sold in Europe.

*Gillmor Question 8:* Maine and Maryland have both enacted state e-waste laws that are widely different than your own state law. Do you think that their laws are effectively protecting the environment and promoting recycling? Do you think it is wise for our country to have many states with different plans and processes, especially, if contrary to the construct in the Solid Waste Disposal Act, there is no Federal set of minimum standards underpinning it all?

*Murray Response 8:* The e-waste policy adopted in Maine, while different from the California law in its scope and approach, represents a valid and responsible policy maker response to the e-waste problem. Our only issue with the Maine law is that its “shared responsibility” approach leaves an unfunded cost burden on local government. To the extent that generators are required to pay the cost of device collection at point of “disposal” rather than at the point of purchase, this may discourage participation and result in some level of “illegal” disposal.

I’m not sure that the Maryland law in its present form actually represents any kind of meaningful solution to the e-waste problem.

Whether it is wise or not for the country to have a patchwork of state e-waste policies, it is decidedly irresponsible for policy makers and the public to allow the wasting of valuable resources and the continued disposal of toxic materials in facilities incapable of safely containing those materials.

While we welcome the attention that this committee and some members of congress have provided to the e-waste issue, the Federal government’s abdication of any interest or responsibility over materials recovery policy has been made evident by the lack of any meaningful Federal action on any problem waste issue over the last 15 years.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Murray Response to Dingell: Both the California Advanced Recycling Fee and Maine Shared Producer Responsibility approach provide manufacturers with a direct financial incentive to design their products for recycling.

Under the California policy, the front end fee on devices sold is adjustable based on the system costs of recycling. Whether paid directly by manufacturers or by their customers through third party retailers, manufacturers want to keep the cost of their product down. By designing for recycling, manufacturers can lower the cost of recycling, thereby lowering the front-end fee.

The Maine policy works similarly in that manufacturers, whether taking direct physical responsibility for the recycling of their devices, or contracting with a third party recycler, will need to internalize the cost of recycling. By designing for recycling, manufacturers can lower the cost of recycling, thereby lowering the internalized cost.

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RESPONSE FOR THE RECORD BY DAVID A. THOMPSON, DIRECTOR, CORPORATE ENVIRONMENTAL DEPARTMENT, PANASONIC CORPORATION OF NORTH AMERICA

*Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: Our Coalition's view is consistent with the position of the U.S. Environmental Protection Agency. In its testimony delivered to the House Energy and Commerce Subcommittee on Environment and Hazardous Materials, EPA Office of Solid Waste Assistant Administrator Barry Breen noted that the real issue is resource conservation, not hazardous waste disposal. In fact, Breen pointed out that of the 2,000 operating municipal solid waste landfills in the U.S., most meet 1991 standards for leachate collection. He added that the typical landfill Ph is about neutral and would not lead to large leaching of metals by landfills.

Similarly, the Solid Waste Association of North America (SWANA) concluded in a 2004 report that municipal solid waste landfills can provide safe, long term management of products containing heavy metals such as electronics. SWANA's report found that "the natural processes that occur within a MSW landfill, such as precipitation and absorption, effectively inhibit heavy metals from dissolving into the leachate or being released from the landfill in the form of landfill gas."

Nonetheless, The Electronic Manufacturers Coalition for Responsible Recycling believes that proper management of the growing electronics waste stream represents an important policy objective. By supporting an advanced recycling fee as a viable, long-term financing solution to the challenge of electronics waste, our Coalition welcomes a uniform, proactive approach from the Congress.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the "orphan" and legacy waste that is sitting in peoples' homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: Certainly, "orphan" and "legacy" wastes represent a challenge to any comprehensive approach to the management of electronics products at their useful end of life. The challenge, however, is not so much the volumes awaiting proper recycling or processing. Rather, our real task is the development of an equitable approach to financing that does not disproportionately burden long-time product manufacturers to the benefit of market newcomers, who, it might be noted, employ relatively few, if any employees in the United States.

Maine's approach to orphan products, however, is especially arbitrary and capricious in that it relegates financial responsibility for these products to historical manufacturers. It is not clear that any economic analysis has been done to justify making one subset of the current sellers in the marketplace (i.e., those who have been in business long enough to actual have a waste stream share) versus making all current sellers responsible for a share of the orphan products. After all, neither historical manufacturers nor market newcomers are responsible for creating the orphan problem. Indeed, the return share approach to allocating financial responsibility may serve to exacerbate the orphan problem as marginal historic manufactur-

ers are driven from the market by this arbitrarily imposed competitive disadvantage.

Instead, any approach should be advocated with an eye toward the potential for greater market development of the recycling industry. Our Coalition views the ARF as the simplest way to accomplish this objective.

Grant programs designed to stimulate and develop collection and recycling infrastructure have long been supported by many of our Coalition companies. Since 2001, JVC, Panasonic, Sharp and Sony have supported an innovative program called the Shared Responsibility Program (SRP). Under SRP, we selected a number of recyclers and arranged with them to develop and operate collection events for electronic products. Our contribution was to cover the cost of recycling our own branded products. The rationale behind SRP was to 1) develop actual data on collection volumes and costs; 2) stimulate the development of local collection events and programs by subsidizing costs; and 3) provide these recyclers with increased volumes of materials needed to justify new investments in technology and develop new markets for the materials contained electronic products. SRP, over the years, supported over 1,000 events in more than 20 states and has collected almost 10,000 tons of products. While SRP has stimulated collection and infrastructure development, the program has not been as effective as we had hoped due to the difficulty of counting brands in order to apportion contributions.

Thus the Coalition believes that a well-designed grant program will be productive in stimulating recycling collection and infrastructure.

We also note that perhaps the most important challenge is not just historical waste, but to assure that present and future products are increasingly more recyclable. Our challenge is to design a recycling program that harnesses the ability of the free market to create competitive pressure on manufacturers to design products that are ever more easily recycled. Contrary to what the names "Manufacturer Take-back" and "Cost Internalization" might imply, because of the long lives of products such of televisions, little, if any, real market pressure is imposed on manufacturers to improve the recyclability of their products. The recycling process does not occur until many, many years after the product is manufactured and sold. Only an approach such as Advanced Recovery Fee, which is very visible to the consumer, can make consumers critically aware of the importance of recycling.

The sure result of this visibility will be that manufacturers will use recyclability as a way to gain competitive advantage.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: Traditionally, as you note, the collection of household wastes has been the purview of municipal governments, with many communities around the country already operating permanent drop-off sites or hosting frequent collection events. This governmental service has been funded through locally generated tax revenues, which clearly link the individual household costs to a public service. However, in today's era of tighter local budgets, some municipalities are looking for financial assistance to address a growing source of solid waste: end of life electronics.

The main problem posed by locally financed collection of waste electronics is that some communities may elect not to collect the products, thus reducing consumers' options for disposal. This disparity in collection availability on a community by community, and state by state basis, could be averted through federal legislation. A federal ARF would in effect level the playing field by providing all consumers with an expanded opportunity to properly dispose of their electronics products. From a manufacturers' perspective, avoiding a patchwork of differing state electronics recycling laws is highly desirable.

*Question 4.* Your testimony strongly supports the use of an advanced recycling fee being charged to consumers when they purchase their electronics device. I have three questions. First, you suggest that a third-party group govern the use of this funding—is there a precedent for this type of arrangement? Second, aren't you really suggesting creation of a marketing and educational "check-off" program shifts the "check-off" fee from producers to consumers? Third, how can you be certain that all the money you raise will be available for the programs you envision rather than used for other governmental spending?

Response: Our broad-based manufacturers' coalition supports an advanced recycling fee because our experience suggests that it is the simplest way to achieve an efficient, environmentally sound, and sustainable system for the collection and recycling of electronic products. We are proposing that collected funds be managed by a private third-party organization (TPO) utilizing multi-stakeholder governance.



While we are not aware of direct precedent, we do think Congress could place the ARF funds in a special recycling account that would be used by US EPA to contract with responsible Third Party Organizations (TPO) capable of operating collection and recycling programs for electronic products that are covered by the program. Several members of our Coalition are now engaged in a US EPA led project in the Pacific Northwest to research the development of such a TPO and would be happy to report in more detail as the project develops.

It is our understanding that so-called "check-off" programs used to promote farm products are funded through assessments based on product sales, production, or imports. The collected funds can be used to finance a variety of programs including advertising, consumer education, marketing research, and foreign market development.

In contrast, an advanced recycling fee is intended to fund all facets of electronics collection and recycling and is therefore more akin to a "user fee" commonly associated with used oil and tire recycling, and just recently increased funding of airport security. The visible fee itself serves as the primary consumer education vehicle. We also think a visible fee will enable consumers to exert pressure on manufacturers and government to minimize the cost of collection and recycling. The fee is NOT intended for marketing purposes but rather to provide a specific service to consumers of electronics products as well as to support environmental objectives of resource conservation and preservation.

Experience has shown there is no absolute way to guarantee a federally raised source of revenue will not in part be used for unrelated purposes. Spending of the social security trust fund for other purposes is perhaps a prime example of this. However, we are confident that the Congress can adequately "firewall" funds earmarked for electronics recycling, just as funds derived from the federal gasoline tax are used only for transportation-related initiatives.

*Question 5.* Your testimony mentions how Panasonic and other companies in the Manufacturers Coalition for Responsible Recycling have been leaders in the redesign of your products to address environmental concerns as well as have taken efforts to promote the use of recycled materials. What was the motivation for Panasonic and these other companies to take these steps? What roles did perceived or actual governmental action, either in this country or abroad, have in propelling these decisions and practices?

Response: Our Coalition members have been actively redesigning our products in recent years to place a greater emphasis on energy efficiency, hazardous materials minimization, and to make them easier to recycle. Panasonic alone has spent about \$850 million in the last 5 years on eco design improvements for our products. Many of our Coalition companies have attempted to incorporate environmental design achievements into our marketing programs.

Upon examination of published environmental reports of our Coalition members, you will find similar commitments to sustainability and environmental preservation. Quite simply, leading global electronics manufacturers including all members of our Coalition, recognize that our future business success is literally dependent upon meeting society's demands placed upon us. These societal demands include the expectation that manufacturers develop and market products that are less burdensome to the environment.

Response: It is accurate to conclude that far-reaching laws such as Europe's Restriction on Hazardous Substances (RoHS) Directive have served to hasten product evolution toward global redesigns with a lesser environmental footprint. However, such broad mandates are often enacted without the benefit of a basis in sound science and can serve to unnecessarily inhibit the development of new technologies. All members of our Coalition market products on a global basis so laws governing product content in one region can have a great impact on our design practices.

*Question 6.* As you know, our full committee has jurisdiction over telecommunications policy in this country and many of us are aware of the global nature of telecommunications equipment and electronics equipment sales. As such, I noticed two things in your testimony: a call for fair play among all entities involved in the manufacture, sale, and recycling of electronics products and a reference in your testimony to the European Union's Waste Electrical and Electronic Equipment Directive (WEEE). Since Panasonic and all the other electronics producers in your coalition, minus IBM, do not have their company headquarters based in the U.S., are your companies seeking a legal construct on e-waste in the United States that would economically advantage their positions while at the same time financially disadvantage hi-tech American based companies?

Response: Due to the global nature of the electronics business, there are no large manufacturers that market exclusively to one geographic region. This includes U.S. based manufacturers who are as dependent upon overseas markets for their busi-

ness success as they are on the domestic marketplace. Given that all of our Coalition's members have a substantial employment presence in the U.S., this issue should not be viewed as a means by which to advantage "foreign" manufacturers.

There exists no sound basis upon which to support the claim that an advanced recycling fee approach to financing the disposition of waste electronics hurts "domestic" manufacturers. What an ARF does ensure, however, is equitable treatment for all manufacturers, regardless of where their primary headquarters is located. It is competitively neutral, serving to level the playing field for all companies including those without a presence in the historical waste stream.

*Question 7.* Your testimony calls for a "system of consistent laws and regulations that do not burden commerce in new products and recyclable materials unnecessarily." Could you please expound on this statement as to what you mean and provide the subcommittee specific instances of where you see a problem and what recommendations you have to remedy that problem?

Response: A high profile example of the need for regulatory relief has been the struggle to get a so-called "CRT rule" enacted by the U.S. EPA. Over the past seven years, industry has worked closely with the U.S. EPA seeking the enactment of a Cathode Ray Tube rule that in essence removes current hazardous waste designations as they apply to shipments of intact waste CRTs across state borders. By removing the hazardous designation, shipments and treatment of waste CRTs can be safely done at substantially reduced costs and by additional recycling facilities, thus contributing to the future economic vitality of this nascent industry.

Through an EPA-convened, multi-stakeholder dialogue known as the Common Sense Initiative, the CRT-rule was developed and ultimately approved by all stakeholders. The rule, although garnering support from EPA, has unfortunately languished pending extended internal reviews at the agency and by the Office of Management and Budget. It is unfortunate a rule that all relevant parties agreed was needed and would have a beneficial impact on the recycling of waste electronics has yet to reach fruition despite being conceived back in the 1990s.

*Question 8.* Your testimony calls for new and expanded research on the scope of the electronic waste as well as an investigation of and what can be done from an economic and technical feasibility standpoint. With the voluntary programs at EPA, such as EPEAT, Plug-In to e-Cycling; work by the Department of Commerce to analyze the current situation; regional and national stakeholder meetings on electronic waste; and now this hearing; could you please tell me what you seek to obtain through your "support of a national study to be conducted by U.S. EPA" that is not already being discussed or debated in these other forums?

Response: The initiatives and studies you cite have all provided pieces of invaluable information and contributed toward increased recycling of waste electronics in the U.S. Despite this, there remains a strong need to learn more about the issue.

Frankly, no one really has a good handle on how many products are really out there awaiting recycling and the oft-cited data from the National Safety Council study is now over six years old—a lifetime ago in the world of high technology. We also need to better understand the capacity for recycling electronics products in the U.S. in order to better plan needed facilities. We also have information gaps concerning the adequacy of secondary markets to promote growth in the electronics recycling sector.

Perhaps our greatest single need is for a better understanding of the economics of different recycling systems. Under manufacturer mandated take-back and cost internalization, recycling costs will be marked up as the product moves through distribution to the final consumer. What will this mark-up cost consumers? Allocating financial responsibility to manufacturers based on return or waste stream share requires sorting by brand at every recycler, with significant, ongoing administrative costs? What will this cost consumers? Implementing the ARF approach is often portrayed as resulting in a costly new bureaucracy, but it frankly is unknown which approach is most efficient economically in getting the job done.

We need an objective and comprehensive focus on the economics of different approaches to the finance of waste electronics collection and recycling. Absent this detailed analysis, we are left to choose between various options, many of whom we have little information on and no existing precedent upon which to make an educated decision.

Finally, the materials contained in electronic products all require energy inputs to create, and contain an imbedded energy value. It is quite possible that collecting and recycling them—essentially reclaiming this imbedded energy value—will consume less energy than would be required to mine and produce new virgin materials. If so, this would result in a net reduction of greenhouse gas emissions. In the Coalition's view it would be very useful to document this saving with a view to developing a greenhouse gas emission / imbedded energy credit trading system that recy-

clers could utilize to market the energy savings obtained through recycling electronic products.

*The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: Electronics manufacturers always have and will continue to design products based on customers' wants and needs. This process has produced dramatic improvements to our lives and lifestyles as new technologies both entertain and inform to levels unimaginable even a few short years ago. However, with the many benefits associated with use and enjoyment of new technologies comes a responsibility we share a manufacturers. Our Coalition members continue to advocate the sustainable and environmentally sound management of electronic products at their end of life. We firmly believe it is our societal obligation to develop an environmentally conscious plan to recycle our end of life products.

At present, there exists several "models" for electronics collection and recycling. Based on our members' collective experience recycling used electronics products and in developing product recycling systems in the U.S., Japan, Europe, and other countries, we have concluded that a system financed through an advance recycling fee is the optimal approach.

Our Coalition supported ARF legislation in California that became effective in January 2005. The California legislation embodies our concept of a shared responsibility system based on a consumer user fee, where all stakeholders have defined roles of responsibility. . To date, the California law has proven to be successful at diverting waste CRT-containing products from the waste stream. The law also has boosted the growth of the recycling industry in the state.

It is erroneous, though popular to conclude that manufacturer takeback mandates will drive meaningful product redesign. Most manufacturers endeavor to design products where the value of the materials contained within will cover the cost of collection and recycling. However, these design changes will not benefit the recycling process until the newly improved designs are received back into the waste stream, which in the case of TVs is about 15 years out.

This significant time lag calls into question the belief that takeback mandates will drive product redesign. In fact, mandatory takeback requirements could result in the unintended consequence of limiting the amount of design resources available to implement design improvements in order to comply with otherwise well-intentioned laws. There simply is no supporting evidence of any design improvements being driven by takeback requirements.

Under the California statute, manufacturers are tasked with designing products that are more environmentally sound. Manufacturers must comply with the RoHS requirements as well as submit detailed reports on the amount of designated chemicals contained in our products, our use of recycled content materials and our plans to make products easier to recycle. Interestingly, manufacturers that achieve RoHS compliance do not have to report on chemical content, unless the subject chemicals are contained in a RoHS exempt component, such as CRTs. This so-called reporting exemption represents a strong incentive to achieve RoHS compliance in advance of the deadline.

Still another incentive system can be seen in the fledgling Electronic Product Environmental Assessment (EPEAT) Tool Project. EPEAT is a system that scores products based on environmental performance criteria for computers. This information will be made available to government and large scale purchasers who can then evaluate which products are environmentally preferable. An incentive that takes place at the time of sale will be much stronger than one delayed 15 years into the future.

*Question 2.* How much does it cost to recycle an average size television and what is the value of the recovered materials?

Response: While costs will vary by recycler and will be dependent up commodity market conditions, we understand that costs to dismantle and process the materials for shipment to reclamation or recycling facilities for an average television range from \$0.16-\$0.22 per pound. Commodity values for the materials contained in an average TV range from \$0.03-\$0.05 per pound.

The average television now weighs about 60 pounds

*Question 3.* Will your company be able to comply with the waste electrical and electronic equipment (WEEE) directive of the European Union, which requires the elimination of mercury, cadmium, lead, chromium, and other substances by July 1, 2006?

Response: Panasonic will comply with the WEEE Directive. Other Coalition members also will comply with the European law as enacted by individual nations in the European Union.

*Question 4.* After July 1, 2006, will your company discontinue selling electronic products, such as computers or televisions, in the United States that contain mercury, cadmium, lead, or chromium and other substances covered by the RoHS directive?

Response: Panasonic will comply with the RoHS Directive both in Europe and in all other markets including the United States upon its effective date.

RESPONSE FOR THE RECORD BY MICHAEL VITELLI, SENIOR VICE PRESIDENT, BEST BUY, ON BEHALF OF CONSUMER ELECTRONIC RETAILERS COALITION

*Questions from The Honorable Paul E. Gillmor*

*Question 1.* Do you consider the issue of electronic waste one that is generated from real concerns about the impacts to the environment from the leeching of hazardous materials used in the construction of electronics products or does your company or organization regard e-waste laws as resource conservation measures?

Response: We do not have a position on the nature of environmental impacts of electronic waste. We understand that many are concerned about the potential of hazardous materials and that many others are concerned with the size and space issues of such waste in landfills. What we do know is that regardless of the nature of the issue, the surest way to reduce the overall costs associated with electronic waste is to involve manufacturers in the processes required to deal with the waste. Only manufacturers can reduce the toxicity of the products. Only manufacturers can reduce the costs of dismantling these products. And it is only in a system where the costs of recycling are set by the market (and not mandated by government) that the costs of recycling are reduced over time.

*Question 2.* It seems to me though in listening to your comments that the biggest problem with e-waste right now is the question of what to do with all the "orphan" and legacy waste that is sitting in peoples' homes. Do you agree with that assessment? If so, would a grant program of some sort, for states and local communities, help finance and build the infrastructure areas need to address this waste stream?

Response: Orphan and legacy waste are not the only or the biggest problem with e-waste. We do think, however, that there might be some solutions that haven't yet been discussed if the policy debate can separate the discussion between orphan waste, legacy waste, and future waste. There may need to be a couple of solutions, especially if we want to find a solution that drives to least cost and efficiency. If there were a funding mechanism or a tax incentive program for existing orphan/legacy waste, it could go a long way to provide an immediate incentive to deal with that waste over the next few years. If coupled with a program of manufacturers' responsibility for future products, the end result could be a total solution that drives to least cost and maximum efficiency over time and provides the right, limited incentives to jump start and capitalize recycling programs in the near term.

*Question 3.* Collecting of household waste, whether solid waste or waste that qualifies under the household hazardous waste exemption, is governed mostly by local officials or in limited circumstances, the state government. Why do you support a Federal solution to an otherwise local problem?

Response: Ultimate passage of differing solutions in each of the 50 states would present real compliance challenges and costs for retailers and manufacturers. In addition, differing solutions in each of the 50 states will cause great confusion for consumers. Products purchased in one state with a fee added at the time of sale, may need to be recycled in another state where the solution may be a charge at the time of recycling. The potential confusion for customers presents the most compelling reason for a consistent solution. Without consistency, recycling programs' success could be limited.

*Question 4.* In searching for a national solution, have you looked to past Federal policies or examples of recycling, such as batteries, for guidance and the lessons learned from them in seeking policy options at the Federal, state, or local level?

Response: We have looked at a number of different solutions. In short, the vast majority of successful recycling programs are those where the collected product or its residual parts have a market value that exceeds the costs associated with recycling of that product. Unfortunately, that is not the case with a majority of e-waste products. The recycling of electronic waste will probably always cost more than value of the residual scrap. Thus a system that provides an incentive to reduce the costs of recycling through design of the product has the greatest potential to ultimately provide the least cost solution to this issue.

*Question 5.* How is the industry currently reacting to the implementation of state e-waste laws, particularly in California? Have you needed to change your business models and strategic planning in certain areas of the country? What problems have you encountered along the way and what do you expect to face?

Response: Compliance with the California e-waste recycling law has been costly for Best Buy. Best Buy has spent nearly \$1 million in California to update our point-of-sale systems, to educate our store personnel and consumers, and to ensure compliance going forward. Since these point-of-sale fees are not added to all products, like a sales tax often is, but rather added to only some products (and not even all products in a given category of products,) the cost of compliance is high. In addition, each time changes are made to the fees and to the list of applicable products, these systems must be updated, adding costs. Finally, if different states implement differing schedules of fees, the costs of compliance will increase.

A significant issue resulting from the California e-waste recycling law is that not all retailers are treated equally under the law. Retailers who do not have a physical presence in the state cannot be compelled by the state to either collect or remit the fee on the products they sell into the state. This establishes an unfair price advantage for those retailers and lets some consumers avoid paying for the recycling process established by the state and funded by the fee. This advantage is in addition to the similar advantage afforded by sales tax laws in each state. This issue can only be remedied by federal action and only an act of Congress can satiate the requirements of the U.S. Supreme Court's Quill decision which controls states' ability to compel compliance.

A final reason to be concerned about the use of advance recovery fees, such as those charged in California, is that it lets renegade or foreign producers "off the hook" for the costs associated with the recycling of their product. Under such a system, these manufacturers have no requirements to develop environmentally friendly products or to simplify the recycling requirements of their products. The result is that their products will drive the cost of recycling up.

*Question 6.* Although the retailers have a limited role in the lifecycle of the products you sell, how do you envision a "shared responsibility" approach that will encompass the access that you have to the consumers without imposing all the costs? How much does product stewardship really shift the burden of end of life management from the public sector to include the private sector, especially in light of other international policies and product directives such as those in the European Union?

Response: Under any solution, the consumer ultimately pays the cost of recycling products. If the government provides the solution, consumers pay in the form of additional taxes. If the government mandates a fee, the consumer pays. If the manufacturer must include recycling in their product costs, the consumer pays. But it is only in this last solution—where the costs of recycling are part of the cost of the products—that there is an inherent incentive to reduce both the need to recycle and the long term costs of recycling. Given the reality that the consumer will pay under any scenario, it seems best to find the solution that will drive efficiencies and reduce costs over time.

In the manufacturer responsibility model, manufacturers are responsible for working with consumers to properly recycle their product. This can mean that they provide direct recycling, work with a recycler or in some instances, fund a recycling system. Retailers are responsible for the education and outreach of consumers, working with manufacturers to ensure that they are carrying product from manufacturers who are compliant with the law. Retailers are also responsible as a manufacturer; if they produce private label brand products (Best Buy brands include Insignia and Dynex.) Consumers are responsible for the proper disposal of products and recyclers must meet environmentally sound practices when working with consumers and manufacturers.

The role of the public sector in this solution can be as large or as small as the government determines. There will always be some compliance role for government if it mandates a system.

*Question 7.* Does the producer responsibility solution you advocate change the cost of each electronic device if each manufacturer has to raise its price by the same amount, how is it different than having the retailer collect it or having the tax levied? Where is the incentive?

Response: In the manufacturer responsibility model, manufacturers are responsible for working with consumers to properly recycle their product. This can mean that they provide direct recycling, work with a recycler or in some instances, or fund a recycling system. Under the manufacturer responsibility model, the manufacturer is ultimately responsible for their product at end-of-life which provides the double incentive to both develop environmentally-friendly products and to find the most cost effective ways to recycle product. Ultimately consumers will pay for recycling

through either higher taxes, fees at the time of purchase, or additional costs included in the cost of the product by the manufacturer. Only the latter offers an economic incentive for improvements.

If the government mandates the cost of recycling and requires that each product be assessed a certain fee, the incentive either for developing more environmentally-friendly products or for reducing the costs associated with recycling does not exist. Under such a system we could almost guarantee that the costs of recycling will increase over time, not decrease, as the bureaucracy of such a system grows. In addition, the funds raised through the collection of such fees could be easily “raided” when budget issues threaten, thus completely hindering the original intent of providing a solution.

*Question 8.* You state that BestBuy has helped consumers nationwide recycle over 2.6 million pounds of electronics. Just to get a sense of the problem, how many pounds of electronics has BestBuy sold in the same time period?

Response: The 2.6 million pounds of electronics we have helped recycle is a very small fraction of the number of products we have sold. We do not sell products based on weight and cannot estimate the weight of the products we have sold during this time.

*Questions from The Honorable Tammy Baldwin*

While we all enjoy cell phones, personal laptops, and other gadgets that help us be able to communicate and be more efficient, it is clear from these e-waste hearings that we must be vigilant in making sure the toxic substances in these electronic devices are properly disposed of and safely recycled.

Overall, I believe the manufacturers of these products should have the primary responsibility for the cost of collecting, transporting and recycling of electronic products, not consumers or taxpayers. If manufacturers do not have a financial stake in their products at the end of their useful life, then they will never have an incentive to design them to have longer life spans, to be easier to recycle, and to contain less toxic materials in the first place.

Let me give you an example of why I believe this. I have authored legislation in this Congress that would help encourage the safe disposal of recycling of the toxic element mercury, which is found in dozens of household and industrial products, including many electronic devices. As you probably know, exposure to mercury can have serious health effects to a person’s liver, kidneys, nervous system, and brain functions. Small children and pregnant mothers are most at risk to the harmful effects.

One provision in this bill is a nationwide ban on the sale of thermometers that contain mercury. As communities have become more aware of the harmful impact of mercury on the public health and the environment, more and more state and local governments have passed their own legislation banning the sale of mercury thermometers.

Manufacturers have since responded to these laws and now make and sell more digital thermometers, which are just as effective but much safer. State and local laws may have pushed them to make a less dangerous product, but they also found it made good business sense that improved their bottom lines.

As the amount of e-waste grows, I believe we are not doing enough to give manufacturers the primary responsibility for managing the toxic substances in their products. This is thwarting the development of a strong private market for the safe recycling of these products and the development of products that contain nontoxic alternatives and that are easier to recycle.

*Question 1.* Mr. McCurdy, Mr. Largent, and Mr. Vitelli-As representatives of these industries, do you agree with this, and if not, how can you justify making consumers and/or taxpayers shoulder most of the burden?

Response: As a representative of a company that sells many of these products and a company that commissions the design and products of private label products, I agree with your assertion that manufacturers need to be responsible for the end of life issues of their products.

One of the driving reasons this issue requires government action is that the recycling of electronic waste will probably always cost more than value of the residual scrap. Thus a system that provides an incentive to reduce the costs of recycling through design of the product has the greatest potential to ultimately provide the least cost solution to this issue.

A complicating factor is that there is currently a significant amount of historic waste waiting for a solution. These products were manufactured without the expectation that they would need to be recycled. This adds a “hurdle” of initial cost to any new system. If the issue of historic waste could be handled through a different program than the ultimate, ongoing program, the solutions might be easier to

achieve. The Talent-Wyden approach provides a significant incentive to tackle this initial cost “hurdle” and could help start a recycling process that ultimately does not need the incentives provided through the Talent-Wyden approach. This is a limited government role, providing the necessary incentive to reach the ultimate goal of a non-governmental program.

*Questions from The Honorable John D. Dingell*

*Question 1.* Please provide your views as to which approach to electronic recycling creates the strongest incentives for manufacturers to design their products for recycling and indicate the reasons for your views.

Response: There are 3 central points I want to make regarding electronics recycling:

1. A Federal solution is far preferable to 50 differing state solutions. This issue needs Federal leadership. Of course I believe this because it simplifies our participation. I also think a federal solution is required because it will simplify the process for consumers and will ensure that no state is either disadvantaged by a system or left with a large amount of the waste. The Federal Government needs to actively study this issue, thereby providing assurance to states that a federal solution may be found and potentially reducing the number of individual state actions. Many states are acting only because they do not see a federal action.
2. This issue is complicated. There is the waste that is currently waiting to be recycled. There are the products that are still in use but will need recycling in the near future. Neither of these categories of products—historic waste—was produced with the understanding that they would have to be recycled. And then there are the products that will be produced in the future. It may be helpful in finding a solution to think about these two categories of waste separately.
3. In any scenario, the public will pay for the recycling of electronic waste. If the government provides the solution, consumers pay in the form of additional taxes. If the government mandates a fee, the consumer pays. If the manufacturer must include recycling in their product costs, the consumer pays. But it is only in this last solution—where the costs of recycling are part of the cost of the products—that there is an inherent incentive to reduce both the need to recycle and the long term costs of recycling. Given the reality that the consumer will pay under any scenario, it seems best to find the solution that will drive efficiencies and reduce costs over time.

It is the combination of points 2—that there may need to be a couple of solutions—and 3—that the best solution in the future is one that drives to least cost and efficiency—that drives CERC to support the concepts of the Talent Wyden approach. This tax credit proposal could go a long way to provide an immediate incentive to deal with the historic waste over the next few years. If coupled with a program of manufacturers’ responsibility for future products, the end result could be a total solution that drives to least cost and maximum efficiency over time and provides the right, limited incentives to jump start and capitalize recycling programs in the near term.

*The Honorable C. L. “Butch” Otter*

*Question 1.* I understand that retailers have spent a great deal of money in administering the California fee program, and that the 3 percent retained by the retailers does not cover the costs. Can you describe the requirements and problems you have encountered?

Response: Compliance with the California e-waste recycling law has been costly for Best Buy. Best Buy has spent nearly \$1 million in California to update our point-of-sale systems, to educate our store personnel and consumers, and to ensure compliance going forward. Since these point-of-sale fees are not added to all products, like a sales tax often is, but rather added to only some products (and not even all products in a given category of products,) the cost of compliance is high. In addition, each time changes are made to the fees and to the list of applicable products, these systems must be updated, adding costs. Finally, if different states implement differing schedules of fees, the costs of compliance will increase.

A significant issue resulting from the California e-waste recycling law is that not all retailers are treated equally under the law. Retailers who do not have a physical presence in the state cannot be compelled by the state to either collect or remit the fee on the products they sell into the state. This establishes an unfair price advantage for those retailers and lets some consumers avoid paying for the recycling process established by the state and funded by the fee. This advantage is in addition to the similar advantage afforded by sales tax laws in each state. This issue can only be remedied by federal action and only an act of Congress can satiate the re-

quirements of the U.S. Supreme Court's Quill decision which controls states' ability to compel compliance.

A final reason to be concerned about the use of advance recovery fees, such as those charged in California, is that it lets renegade or foreign producers "off the hook" for the costs associated with the recycling of their product. Under such a system, these manufacturers have no requirements to develop environmentally friendly products or to simplify the recycling requirements of their products. The result is that their products will drive the cost of recycling up.

**Post Follow-up Questions & Answers for the Record**  
**House Energy and Commerce Committee**  
 Submitted by **Barry Breen**  
 Deputy Assistant Administrator  
 Office of Solid Waste and Emergency Response  
 U.S Environmental Protection Agency  
 September 21, 2005

"Electronic Waste: An Examination of Current Activity, Implications for Environmental Stewardship, and the Proper Federal Role"

**The Honorable Paul E. Gillmor**

**1. Are you comfortable with the present involvement by the Federal government in electronic waste – either through voluntary programs or existing regulations – or do you think that Congress needs to rethink the role of the Federal government in this area? As it specifically relates to the voluntary "take back" initiatives currently underway within the wireless industry, do you agree that these kinds of programs are contributing to the proper management of wireless products and other electronic equipment? Why?**

Because there is much yet to learn about how best to facilitate the efficient and effective collection and recycling of electronics, we are comfortable with the Federal Government's present involvement with electronic wastes. As Mr. Breen noted in his testimony, EPA has been working with industry, government and other stakeholders for several years on a number of fronts -- including design, energy conservation, reuse, greener purchasing, data collection and helping encourage partnerships between stakeholders-- to improve electronics design reuse and recycling. We believe that these projects are helping to "green" electronics design and increase safe recovery of electronics at end of life. Also, as part of the Resource Conservation Challenge (RCC), the Agency is specifically focusing on electronic wastes, and has developed an Action Plan that should provide additional information and help guide EPA's efforts to increase the recycling and reuse of electronics.

As to cell phones in particular, there is active industry and recycler involvement in the collection, reuse, and recycling of cell phones. Cell phones are unique in electronics recycling in that the collection infrastructure for end-of-life phones is driven by market forces. With a relatively high reuse value, and small size and portability, cell phones can be easily dropped off by consumers at collection points. Manufacturers, retailers, refurbishers and others are offering take back programs to a wide range of consumers. While there are still millions of phones being stockpiled in peoples' drawers and closets, it is not for lack of available infrastructure. Consumers simply aren't aware of reuse and recycling options. EPA is working with the industry to improve outreach and education to consumers. So long as the potential for refurbishing, reusing and reselling end-of-life cell phones - especially in foreign markets - has positive market value, collection and recycling will respond to meet this demand.



**2. In 1980, Congress enacted the Low-level Radioactive Waste Policy Act. Under this law, a state is given the responsibility to select disposal sites for low-level radioactive waste – a type of waste that generally consists of low concentrations of relatively short-lived hazardous waste. Several states have banded together to address this serious waste concern and have set up and joined congressionally approved interstate compacts to handle low-level waste disposal, while others are developing single-state disposal sites. Recognizing the interstate nature of electronics sales and product take-back and refurbishment programs, is this model something that makes sense to EPA?**

Any response to electronics recycling needs to provide flexibility to account for differing circumstances and needs of individual states and regions. At the same time, a response must provide some degree of harmonization to help business operate across state and regional lines. While we have not evaluated the approach taken in the Low-level Radiation Policy Action, it would appear that such an approach is worth examining for the potential it offers to meet both of these needs. Efforts such as those of the Northeast states (under the auspices of the Council of State Governments and the Northeast Recycling Council) to develop model state legislation for electronics recycling are another way to encourage regional solutions to this problem.

**3. Our world is becoming a more global marketplace with goods and services easily moved among countries. In addition, many countries have varying standards concerning how these materials should be handled or disposed. What lessons has EPA learned from activities either in other states or countries about how our country can deal with this issue? What do we know about how these activities are affecting our own domestic manufacturing, retailing, and recycled products industry?**

The rise of the global marketplace effectively means that manufacturers in the United States are increasingly moving toward producing goods that meet the demands of all the markets to which they export. Industry believes that manufacturing one product for all markets is more efficient than tailoring products to meet the demands of a single state, country or region. While other countries' requirements may affect domestic activities, domestic activities are also providing leadership, incentives, and training to help U.S. industries consider potential environmental and human health risks as they make business decisions. The United States has essentially set the global standard for energy efficiency among many electronic products via our ENERGY STAR programs and gone further toward examining the risks and life-cycle impacts of alternatives for various substances than other countries. EPA has learned the importance of monitoring non-U.S. actions that can also inform and benefit our domestic activities.

One example of how the U.S. has drawn from international criteria is the final draft Electronic Product Environmental Assessment Tool or EPEAT. EPA has been an active participant in this multi-stakeholder effort to develop a tool to evaluate the environmental performance of electronic products throughout their life. Development of EPEAT has entailed coordinating and harmonizing a plethora of design criteria, including international design criteria. Once the EPEAT tool is fully implemented, it will be used

to help meet the growing demand by large institutional purchasers to buy greener electronic products.

Other examples include efforts like EPA's Design for Environment (DfE) Program which formed a Lead-Free Solder Partnership, to conduct a life-cycle assessment of tin-lead solder and several leading lead-free solder candidates. The work of this partnership, while focused on lead solder, will assist industry in moving eventually toward the total elimination of lead from electronic products and make informed decisions over the life cycle impacts of viable alternatives. The electronics industry is using DfE information to choose safer alternatives to 176 million pounds of tin-lead solder annually. The DfE program has also conducted similar analyses with Printed Wiring Boards, Cathode Ray Tubes, and Liquid Crystal Displays and most recently with the furniture industry to explore the human health and environmental characteristics of alternatives to certain flame retardants. This effort, which recognizes the key role that flame retardants play in protecting lives and property, will help the industry choose safer alternatives to millions of pounds of flame retardants annually.

**4. What work have you done with other international countries and stakeholders regarding electronic waste and recycling?**

Over the last several years, EPA has been very active in coordinating with other countries and international stakeholders regarding approaches to the management of e-waste. In addition to closely following progress of the EU in implementation of their WEEE and RoHS directives, we have been a leader in the development of approaches for improved management of e-waste in two international fora. In the OECD, the U.S. actively participated in the development of recommendations and guidelines pertaining to the environmentally sound management of wastes, including e-waste. Of particular note, EPA led the development of OECD guidelines on the sound reuse and recycling of personal computers. Although the U.S. is not a party to the Basel Convention, we contribute to its technical efforts.

Over the last several years, EPA has participated in a Basel Convention partnership effort with industry that is developing guidelines for the safe reuse, recycling and transboundary movement of used and scrap mobile phones. The U.S. has also participated in a technical workshop with many Asian countries regarding issues with management of e-waste in that region of the world.

EPA also is currently exploring options for trilateral cooperation with Mexico and Canada on electronics through our work under the Commission for Environmental Cooperation (CEC). The North American Pollution Prevention Partnership (a partnership of the Canadian, Mexican, and U.S. Pollution Prevention Roundtables and the CEC) is developing an initiative on clean electronics in North America with the goal to facilitate the transition to global standards, such as EPEAT, and those of the European Union and Japan, while at the same time helping to sustain an important economic sector and advance clean production strategies in North America.

- 5. Users of recycled electronic products require certainty that the commodities they are purchasing are consistent in quality in order to be used in new products. The Institute of Scrap Recycling Industries or ISRI has developed specifications for electronic materials. How are these and other industry specifications and management system operating guidances being relied upon to ensure these quality issues achieve certain environmental goals?**

With the increase in e-waste recycling in the last several years, recyclers and other stakeholders requested that ISRI develop scrap material specifications for e-waste. These stakeholders felt that specifications would facilitate recycling of e-waste by assisting buyers and sellers to more readily and definitively identify the scrap material. The need for such specifications is particularly pronounced due to the wide variety of materials contained in e-waste, including numerous metals, plastics and glass types. ISRI specifications are internationally recognized by buyers and sellers of scrap materials of many types. Since ISRI issued specifications for e-scrap in 2004, they are being relied upon increasingly to further the environmental goals of (1) increased recycling, as a result of greater efficiencies in buying and selling, and (2) minimizing the presence of contaminants and unwanted materials that may have to be discarded rather than recycled at the receiving destination, since the specifications contain limits on the amount of undesirable materials that are allowed.

- 6. Some of the State laws or bills now under discussion suggest the need for collectors and recyclers to be “certified” by a set of regulatory guidelines. Do you believe these regulations are necessary from the standpoint of environmental protection? If not, do these regulations undermine the contracts or unnecessarily burden the current commercial-to-commercial relationships that govern company due diligence and contractual obligations for recycling businesses?**

Consistent with the OECD recommendations that the U.S. helped develop regarding environmentally sound management of wastes, and consistent with the Plug-In to eCycling Guidelines for Materials Management that EPA has issued, we do believe there would be great utility in some type of “certification” program for e-waste recyclers. These earlier efforts point towards an approach that involves an environmental management system, as well as specific performance or operational “standards.”

As agreed to at a stakeholder meeting last March, EPA will be convening a meeting of interested stakeholders to discuss the process for development of “standards” and a certification program for electronics recycling. At this point, we believe a voluntary EMS-plus type of certification program to be the least likely to unnecessarily burden industry and business, in particular the recycling industry. We are especially concerned that any certification program be practicable for small recycling businesses. Several industry trade associations, such as ISRI and the International Association of Electronic Recyclers, already have or are developing certification programs. These existing and

developing programs will be among the options considered at the upcoming EPA-sponsored meeting of interested stakeholders.

**7. Could you please specify how EPA defines “electronic waste” and does EPA consider recycling these products important in order to avoid an environmental hazard? Please describe which research or other analytical methods were used to come to this conclusion. In addition, how much consideration has EPA given to the amount of landfill capacity that would be needed to address the disposal of increased electronics products?**

EPA generally considers “electronic waste” to be discarded electronic material. For purposes of our voluntary electronics programs, we have focused primarily on televisions, personal computers (including monitors), laptops, and cell phones.

Defining “electronic waste” in more specific terms becomes important when regulatory or other types of actions, such as voluntary collection programs, are being taken. We have not formally promulgated a definition of “electronic waste” in a regulatory context. Rather, we rely on the traditional RCRA definitions of what is waste and when waste is considered hazardous to determine which electronics constitute hazardous waste. With regard to the Agency’s voluntary efforts, as noted above, we have focused primarily on televisions, personal computers (including monitors), laptops, and cell phones.

Reuse and recycling of electronics is an important way to conserve resources and to minimize environmental harms that results from upstream activities involved in the extraction and manufacture of materials used in electronic products. EPA does not believe that landfilling of electronics, in modern landfills, presents a significant risk. Rather, we believe that electronics can be safely disposed in municipal solid waste landfills (MSWLFs) that are properly managed. In October 1991, EPA issued updated criteria for MSWLFs to ensure the protectiveness of these landfills. The environment of landfills does not promote much leaching of heavy metals. And when metals leach, they are generally captured by the leachate collection systems required for most MSWLFs. Even if a system fails or if a landfill does not have such a system, any leachate containing metals is likely to have very low levels (two times drinking water standards or less). Subsequent dilution of the leachate when it reaches groundwater will bring the metals well below drinking water standards. Recent studies (including one by the Solid Waste Association of North America) indicate that landfill leachate is very unlikely to cause drinking water contamination due to low levels of metals present in the leachate. The University of Florida is conducting further research on the effects of electronic waste in MSWLFs.

As of 2003 (our latest figures), e-waste constitutes about 1.5% of total municipal solid waste discards in the US. Thus, even with increasing amounts of electronics in use, we do not believe that there is likely to be a landfill capacity problem due to electronics disposal. Further, as reuse and recycling of electronic waste increase, less electronic waste is likely to be disposed in landfills.

**8. EPA participated in the National Electronics Product Stewardship Initiative (NEPSI), whose mission was to develop a system – including a viable financing mechanism – to maximize the collection, reuse, and recycling of used electronics. NEPSI ended last year with no agreement being reached. Would EPA agree that the NEPSI process was useful in identifying issues associated with the development of such a system? What did EPA learn through the NEPSI process? In framing any Federal approach, how can Congress benefit from the work of NEPSI?**

NEPSI was very useful in all of these regards. NEPSI stakeholders reached consensus on a number of critical issues necessary in a national system over the course of three years' work. This included a scope of products, environmentally sound management procedures, market development opportunities, a minimum level of collection infrastructure that should be funded under the system, and aspects of a third-party organization that could manage the system (as an alternative to the traditional government-management model). In addition, the NEPSI process generated a tremendous amount of data about electronics management that continues to inform the e-waste discussion in the United States.

NEPSI identified many of the key issues associated with developing a financing system for recycling used electronics, including the scope of products that should be covered by a program, the collection and recovery costs that should be reimbursed by a financing system, possible numerical goals for a program, alternatives to government management of a financing system (e.g., including industry and other stakeholders in the direct management of the recycling system), environmentally sound recycling protocols and more. EPA learned a great deal about how the electronics industry works from this process and especially about how different financing solutions could affect different players in the industry either positively or adversely. We also believe that Congress can gain from reviewing records of the NEPSI proceedings. Documents developed during the NEPSI process can be accessed by going to the NEPSI web site, [www.nepsi.org](http://www.nepsi.org). Of particular note are the documents, listed under "Final Documents", called "NEPSI Work Products".

**9. Maryland Secretary of Environment, Kendi Philbrick testified that Maryland's journey to its success with an electronic waste law began with its participation in EPA "eCycling" Pilot Project. Is EPA seeing other state electronic waste and recycling laws, bills, regulations, or program developments being fleshed out from their participation in RCC activities?**

Virtually, all state electronic waste and recycling laws and program developments are being influenced by some degree of involvement in the projects that EPA has sponsored or participated in regarding electronics, which is one of the focus areas under the Resource Conservation Challenge, whether it be collection pilots such as the eCycling Pilot or other pilots under the auspices of the Plug-In to eCycling partnership, the safe recycling guidelines issued under the Plug-In programs, or from data or learnings stemming from the NEPSI dialogue or design-related efforts such as development of the

EPEAT tool to encourage procurement of “greener” electronic products. All of these projects have helped to inform state policymakers as well as industry, retailers, recyclers, NGOs and other participants in policymaking at the state and local level.

**10. You mentioned that EPA is working on Electronic Product Environmental Assessment Tool to be used as a rating system, based on performance criteria in eight categories of product performance, including reduction or elimination of environmentally sensitive materials; design for end of life; life cycle extension; energy conservation; and end of life management. Does EPA have plans for EPEAT beyond its target of laptops and computers at the end of this end?**

EPEAT currently covers only computer desktops, laptops, and monitors. The EPEAT Implementation Team, including key stakeholders from the IT manufacturing community, electronics recyclers, private sector, federal, state, and local government purchasers, trade associations, environmental non profits, academia, and EPA, have agreed that EPEAT should expand in the future to create voluntary environmental performance criteria for other electronic products. However, a timeline for these efforts has not yet been developed. The EPEAT host organization, currently being selected through an EPA grant solicitation process, will be responsible for identifying and selecting future products to address. It will do this in consultation with its advisory group, which will most likely include members of the EPEAT Implementation Team.

**11. Recognizing EPA’s concern about limiting heavy metals in landfills, the EPA’s Design for the Environment (DfE) is working with industry on ways to “green” the manufacture of printed wiring boards, assess the life cycle impacts of CRTs and flat panel displays, and also assess the life cycle impacts of tin-lead and lead-free solders used in electronics. Does EPA foresee this program expanding? Is information like this also being generated on the State level or is this really the domain of EPA and other federal agencies?**

EPA remains committed to its DfE program and continues to focus its activities on reducing the use of toxic chemicals in a wide range of products and processes, including electronics and related products and decreasing their presence in the waste stream. To make the most efficient use of existing resources, the DfE Program is exploring ways in which the information needed to guide industry toward cleaner materials and technologies can be developed in a faster and more cost-efficient manner (e.g., through the use of hazard-based alternatives assessments and the development of a streamlined Life-Cycle Assessment methodology). Some State programs are working with industry and other stakeholders to develop information about available alternatives to chemicals of concern, including those that are relevant to the electronics industry. However, due to limited State resources and the fact that electronics industry members are located across the country, EPA headquarters, along with interested EPA Regions, are taking the lead on these activities. More information on the DfE Program is available at [www.epa.gov/dfe](http://www.epa.gov/dfe).

*Completed Electronics Partnerships:* The Design for the Environment (DfE) Program has formed successful partnerships with the electronics sector to address priority environmental issues associated with the design and manufacturing of electronic products, and wire and cable technologies. These partnerships have produced measurable results and received positive feedback from both industry and environmental stakeholders.

- The Computer Display Partnership evaluated the life-cycle environmental impacts of cathode ray tube and liquid crystal display technologies. The study found several areas where improvements can be made during the life cycle of both technologies, such as reducing energy consumption during manufacture, cutting back on the use of chemicals that contribute to global warming or aquatic toxicity risks, and eliminating the use of mercury.
- The DfE Lead-Free Solder Partnership conducted a life-cycle assessment of tin-lead solder and several leading lead-free solder candidates to help the industry move toward the elimination of lead from all electronic products. As part of this effort, the partnership examined the effects of lead-free solders on recycling and reclamation at the end of the electronic product life-cycle, and assessed the leachability of the tin-lead and lead-free solders. The information in the report will help industry as it chooses alternatives for the 176 million pounds of tin-lead solder now used each year.
- The DfE Printed Wiring Board (PWB) Partnership conducted two Cleaner Technologies Substitutes Assessments with the PWB industry, identifying cleaner alternatives for making holes conductive (MHC) and surface finishing steps of the PWB manufacturing process. Information from the MHC CTSA helped to reduce the use of formaldehyde by 240,000 lbs. per year, and to save 400 million gallons of water and 15 billion BTUs of energy per year. Use of the alternative surface finishes was estimated to reduce lead use by 1,000 tons annually in the years immediately following the release of the DfE surface finishes CTSA.

*Current and Future Electronics Partnerships:* The DfE Program is engaged in partnerships and is exploring areas for future work, focusing on opportunities to reduce potential exposures to chemicals of concern.

- The DfE Program and the Massachusetts Toxics Use Reduction Institute (TURI) are collaborating with the wire and cable industry supply chain to assess the life-cycle impacts of traditional and alternative materials (e.g., lead-free heat stabilizers) used in wire and cable technologies. The information will help the industry identify environmentally preferable formulations, while still meeting cost and performance goals. The estimated total amount of U.S. shipments of copper-insulated wire and cable in 2004 was 2.7 billion pounds and \$9 billion in sales.

DfE is exploring a potential partnership with the electronics industry's High Density Packaging User Group International Inc. (HDPUG) to evaluate the human health and

environmental properties of the dominant flame retardant, tetrabromobisphenol A (TBBPA), and alternative flame retardants used in manufacturing printed wiring boards. Manufacturers are seeking alternative flame retardant materials and would like to better understand their environmental profiles. The amount of TBBPA used in 2002 in the United States was 24 million pounds, with a total of 260 million pounds used world wide. This partnership would involve a broad set of stakeholders and use the alternatives assessment model developed for the Furniture Flame Retardancy Partnership.

**12. Has EPA achieved full participation by the Federal government and its agencies through the Federal Electronics Challenge (FEC)? If not, what percentage would you say has been achieved? What barriers, if any, is EPA facing in trying to expand participation?**

On November 15, 2004, the Executive Office of the President and eleven Federal departments and agencies signed a Memorandum of Understanding (MOU) to develop and promote common strategies for using environmentally sustainable technologies and practices to improve the quality, performance, and environmental management of Federal electronic assets throughout their life cycle. The eleven agency signatories include (in descending order by fiscal year 2005 enacted information technology budget): Department of Defense, Department of Health & Human Services, Department of Homeland Security, Department of Energy, Department of Transportation, Department of Justice, Department of Agriculture, Department of Veterans Affairs, Department of Interior, General Services Administration, and Environmental Protection Agency. The signatories agreed, among other things, to actively encourage the participation of all of their facilities in the Federal Electronics Challenge (FEC). The twelve signatories represent approximately 83 percent, or \$44 billion of the over \$60 billion Federal information technology budget.

The FEC is designed to assist Federal agencies implement best practices in all three phases of the electronics life cycle: procurement, use, and end-of-life management. An agency's actual participation in the FEC is usually at the facility level, with individual Federal facilities registering as FEC Partners. To date, approximately 60 individual Federal offices and facilities have signed up as FEC Partners. The Departments of Defense, Justice, Health & Human Services, Transportation, Energy, and Veterans Affairs have issued memoranda to their facilities strongly encouraging them to become FEC Partners; the other electronics stewardship MOU signatory agencies may do the same.

While the FEC has been successful in engaging agencies representing approximately 80 percent of the Federal information technology budget, some facilities may have difficulties initially communicating across traditionally separate functions such as environmental management, procurement, information technology support, and facilities management. The FEC provides tools to help Federal facilities improve internal communications, but some Federal facilities have voiced the concern that participation in the FEC still represents a substantial investment of staff time.



**13. Please respond regarding the status or future plans of EPA's activities towards: (1) developing standards for environmentally safe electronics recyclers and a process for certifying these recyclers, and (2) its partnership with the National Center for Electronics Recycling to develop a centralized database to collect nationwide information for electronics recyclers and provide information and status on national, state and local e-waste initiatives?**

Note: For information regarding EPA's activities on development of standards and a certification process for e-waste recyclers, please see our answer to Gillmor #6.

EPA is collaborating with the National Center for Electronics Recycling (NCER) on populating the database and developing a national baseline assessment of electronics recycling. The centralized database, designed by a range of key stakeholders in conjunction with the NCER and EPA, is intended to provide recycling program designers and managers, as well as policy makers, with information on electronics recycling program structure, costs, and results. Program managers representing ongoing and pilot programs, including all Plug-In To eCycling partners, are being asked to share their data. Key data issues EPA is assisting in answering include: 1) how much historic product is currently available for recycling; 2) how much historic product is being recycled now versus how much is being stored, exported and disposed; 3) typical life-spans for different types of products; 4) amount of equipment sold to institutions and businesses that end up in households to be ultimately discarded by households; and 5) expected maximum rate of participation for consumers in any electronics collection system.

The NCER recently called on all recycling program managers, non-profits, recyclers, and others to submit their data to its Centralized Data Repository. They have created a "Call for Data" form and are requesting its distribution to any and all involved in the electronics recycling issue. For more information on this project, please go to <http://www.electronicrecycling.com/ncer/data>.

**14. In your written statement, you mention that even after EPA completes its key collaborations that were borne of EPA's spring electronic meeting there will remain some gaps in needed infrastructure. Could you please identify what or where these gaps are?**

It is true that even after key collaborations currently underway are completed -- including launching of the green procurement tool (EPEAT), collaborating with the National Center for Electronics Recycling on a centralized electronics data repository, and facilitating (with stakeholders) a national certification system for electronics recyclers -- some challenges to electronics recycling will remain. Probably the most important of these is increasing the availability of affordable and convenient recycling options for consumers and businesses. Right now, a number of communities across the country offer ongoing or episodic electronics drop-off or pickup programs. There are periodic industry and retail-sponsored pilot collection efforts (as well as mail-back programs of a more ongoing nature). And there are non-profits and recyclers that also offer some recycling services.

However, by and large, most consumers and businesses do not have a strong awareness about electronics recycling or convenient, affordable opportunities for such recycling. These problems stem largely from the cost of electronics recycling and the reluctance of government and others to charge high fees for recycling of unwanted electronics at the end of their useful life for fear that consumers will not participate.

**15. Since many of the programs EPA uses to target electronic waste are in the Resource Conservation Challenge and are voluntary in nature, what has been EPA's experience with participating industries regarding their capabilities and incentives to reduce wastes in the processing and use of material resources?**

Manufacturers and retailers voluntarily participating in EPA's Plug In to eCycling initiatives to help provide opportunities for consumer electronics recycling (and to contribute to the costs of this recycling) have done so for two primary reasons: 1) to demonstrate that they are good corporate citizens and are interested in helping find solutions to this problem; and 2) to learn more about the problem, what works and what does not work. Many participating companies have told us that their voluntary activities are not sustainable for the long run because of the costs of electronics collection and recycling (which they believe they cannot pass down to their consumers unless competitors do the same thing) and because many of their competitors are not participating in these voluntary efforts. Most participating companies, therefore, do not believe that voluntary solutions are sustainable and they tell us that "mandatory" solutions are necessary so that all manufacturers and retailers are placed on a "level playing field" as to any new obligations.

**16. Some people have argued for – and some communities and business adopted – a "zero-waste" goal. Could you please explain to me what you consider to be a zero-waste goal and the viability of it?**

A "zero-waste" goal is cited by some generators, collectors, and recyclers of electronics waste as a reference to their "no-disposal" policy. That is, they send all their electronics discards to reuse, refurbishment, or recycling rather than landfilling or incineration. However, both refurbishment and recycling lead to some volume of material that must be disposed of at some point in the process. Although many generators, collectors, and recyclers of e-waste can properly claim that they have a "zero-waste" policy, materials that are generated from refurbishment and materials that go to recycling are not, in the end, 100% recycled. For example, although many recyclers do not send e-waste materials to landfills or incinerators, they do send the materials to downstream recyclers who then recover and purify specific raw materials, such as various types of metals, plastics, or glass. There are often residuals from these downstream processors that must be disposed. Thus, most e-waste recyclers are actually pre-processing facilities, which then send separated or partially-separated (most separation is done manually, but some is done mechanically) materials to facilities such as smelters and furnaces who recover some, but not all, of the e-waste materials.

Goals for “zero waste” at early stages in the collection and processing of some e-waste are laudable. However, such a goal for all e-waste, even at the collection stage, may not be practicable, especially for smaller electronic equipment and components.

**17. In the Office of Solid Waste’s Strategic Planning Document, your office stated: “we have already set national goals that can only be accomplished through the voluntary cooperation and commitment of government agencies, businesses, and the public.” These goals include a 50 percent reduction of 30 priority chemicals in hazardous waste by 2005 and a cap of municipal solid waste at 4.5 pounds per person. Your testimony states only 10 percent of consumer electronics were recycled in 2003. Why do you believe only voluntary cooperation and not regulation can get you to achieve these goals?**

Electronics waste currently comprises a very small portion of overall municipal solid waste discards (1.5% in 2003). It is true that we are interested in seeing much more of this waste recycled than the current 10% (approximate) rate. We have not taken a position on whether or not mandates are needed to achieve a higher rate of electronics recycling. As to the issue of achieving significant reductions in priority chemicals and a cap on overall municipal solid waste generation, these are far more complex issues involving a far larger amount of waste and many more industries and citizens. We do not believe that regulation can effectively turn around the larger issue of waste generation in this country. The issues are far too complex and intertwined. This is best accomplished, as we said, in our Strategic Planning Document, by the voluntary cooperation and commitment of many different players, including governments at various levels, businesses and the public, as well as the thoughtful deployment of market incentives.

**18. It has been argued by some that EPA should use the Universal Waste Rule to address electronic waste disposal and/or recycling, including for cathode ray tubes. Please respond to the viability, as well as the plusses and minuses, of using such a regulatory approach?**

In June, 2002, EPA proposed an exclusion from the definition of solid waste for CRT’s and CRT glass sent for recycling. The Agency discussed in the proposal its rationale for why an exclusion from the definition of solid waste is more appropriate for cathode ray tubes (CRTs) than adding these materials to the universal waste program. It is true that CRTs largely fit the regulatory criteria for universal wastes, principally because they are generated in a wide variety of settings and are present in significant volumes in the municipal wastestream. Also, the regulated community, states, and municipalities are familiar with the universal waste program. However, in our view, CRTs and processed CRT glass resemble commodities more than wastes, especially if conditions are promulgated to ensure that they will be handled as objects of value. Processed CRT glass sent to glass manufacturers currently has a value of approximately \$100 per ton.

We also want to emphasize that under a regulatory exclusion, conditions can be imposed on CRTs sent for recycling that are virtually identical to those found in the universal

waste program. These potential conditions include, but are not limited to, packaging and labeling, limitations on storage, and conditions for CRTs that are exported. Other management requirements of the universal waste program (such as tracking and records retention for larger handlers) may not be as appropriate for CRTs, especially intact CRTs which present a very low probability of environmental releases. A regulatory exclusion allows us to tailor conditions more specifically for these materials.

In addition, under the universal waste approach, CRTs destined for recycling would still be classified as hazardous wastes. In the case of CRTs, this classification could discourage recycling. We are concerned that nonprofit organizations and others might refuse to help collect used CRTs because of this hazardous waste classification. Without their participation, CRT recycling would be greatly inhibited.

With that said, the Agency did describe in the proposal and specifically requested comment on an alternative approach that would regulate CRT's and CRT glass sent for recycling under the universal waste rule, instead of excluding them from the definition of solid waste. The Agency received many comments on this "request for comment" which have been carefully evaluated and considered in the draft final rule, which is currently undergoing interagency review. With respect to other types of electronic wastes, the Agency has not made a decision about whether or not to add them to the universal waste rule. Such decisions would have to be made taking into account the characteristics of these other materials.

**The Honorable Hilda L. Solis**

**1. There is a lack of information on the U.S. electronics waste stream - such basic facts as current and projected amounts of electronic waste, the amounts and types of heavy metals and other toxic substances contained in such products, how such waste is managed, and the impact of its disposal on the environment are all essentially unknown. Many have relied on a baseline study published by the National Safety Council in 1999 – data that are now seven years old. Is EPA keeping track of the number of E-waste generated? How much is being tracked? What the amount of E-Waste was reused or recycled? How is EPA tracking these numbers?**

We do not agree that basic facts of the type described in the question are not available on electronics. Much of this information is available in many different locations. In addition, EPA produces a report every two years entitled "Municipal Solid Waste in the United States" that contains information on the amount of consumer electronics generated, recycled and discarded. The most recent report contains information from 2003, the last year for which we have complete data. To access this report, please go to <http://www.epa.gov/msw/msw99.htm>.

We certainly agree that better data would benefit all who are interested in this topic. Thus, EPA is currently conducting a more detailed baseline assessment of e-waste generation and management. The main goals of this assessment are to estimate the number of specific electronic devices disposed, recycled, stockpiled, and reused in a given year, as well as establish the amount of chemical constituents and precious metals in these devices. We expect this baseline assessment to be available in the spring of 2006. EPA is also working with the National Center for Electronics Recycling on development of a Centralized Data Repository for electronics recycling. For more information on the Centralized Data Repository, please see the response to Gillmor #13.

**2. E-Waste is also exported overseas to countries that are least able to deal with them appropriately. Exporting E-Waste pollutes the air, water and soil in countries that have minimum environmental standards. Is EPA keeping track of electronic products that are exported to other countries? How is EPA working with these countries to monitor end of life cycle of these products?**

A large amount used electronics and materials derived from used electronics are exported from the U.S. to markets in other countries. Export is likely to continue because international markets are essential for the reuse and recycling of electronics. Without international markets, many of the efforts currently underway in the U.S. to divert obsolete electronics away from disposal and toward reuse and recycling could not be sustained.

Specifically, the reuse of used electronics is the most desirable alternative. However, the major markets for reuse (of both whole equipment and components) are outside the U.S., mostly in developing countries. Although we are working hard in the U.S. to maximize reuse domestically, the fact is that demand for used electronics here will always be a fraction of foreign demand. The infrastructure for the export of used electronics for reuse is rapidly expanding, and there are many very legitimate enterprises (both for-profit and non-profit) that exist at this time. It is clear that the reuse of used electronics in developing countries is playing a positive role in economic and educational development in those countries.

If reuse of whole equipment or electronic components is not possible, the next most desirable disposition for obsolete electronics is materials recycling. Here again, the markets are often foreign ones. The U.S. exports large volumes of scrap materials of all kinds—not just scrap from electronics. There are many reasons for this, not the least of which is that these are raw materials for manufacturing, much of which now occurs outside of the U.S. For example, there is not a single smelter/refiner in the U.S. that can convert copper and precious metal (gold, silver, palladium) bearing electronics materials into metals that are pure enough for use. In addition, there are no longer any cathode ray tube (CRT) glass manufacturers in the U.S. that utilize post-consumer CRT glass. Thus, export markets are essential to recycling of these materials.

There are many very legitimate foreign markets for used and end-of-life electronics and components and materials derived from them. These legitimate markets are in locations all around the world. However, some e-waste is exported to facilities in foreign countries that are not legitimate reuse or recycling destinations and/or are not environmentally sound. This is most unfortunate, and is a situation that needs, and is getting, both domestic and international attention.

A comprehensive solution is not in place at this time. But there are several things that are well underway that will positively impact the export situation. Because the challenge of how to manage e-waste exports is one that is worldwide in scope, EPA has been very active in coordinating with other countries regarding approaches to sound management of e-waste. We have been a leader in the development of approaches for improved management of e-waste in two international fora. In the OECD, the U.S. actively participated in the development of recommendations and guidelines pertaining to the environmentally sound management of wastes, including e-waste. Of particular note, EPA led the development of OECD guidelines on the sound reuse and recycling of personal computers.

Although the U.S. is not a party to the Basel Convention, we actively contribute to its technical efforts. Over the last several years, we also have participated in a Basel Convention partnership effort with industry that is developing guidelines for the safe reuse, recycling and transboundary movement of used and scrap mobile phones. Furthermore, the U.S. has participated in a technical workshop with many key Asian countries regarding issues with management of e-waste in that region of the world.

As part of our Plug-in to eCycling program, in May 2004, EPA issued Guidelines for Materials Management that specifically address approaches that should be taken to provide assurance that export of e-waste is for legitimate and environmentally sound purposes. For example, these guidelines (1) emphasize the need for due diligence on the part of recyclers and others to fully understand the ultimate fate of exported materials, and (2) encourage domestic processing of certain materials prior to export for recycling.

We are also beginning a process that we hope will lead to a certification program for e-waste recyclers. EPA will begin the development of this program with a meeting of many stakeholders in October. This program will undoubtedly include provisions pertaining to the proper export of used electronic equipment and component materials.

In general, EPA does not track the export of electronic products to other countries. However, if the export were of materials that would qualify as hazardous waste, then our system of notice to and consent by the receiving country would be required prior to export. Under U.S. rules, this would be most likely in the case of export of e-waste for disposal, which is not a likely scenario. If the e-waste is considered a hazardous waste in the receiving country, then the exporter would be required by the laws of that country to receive consent prior to import.

**3. What are the key lessons that EPA learned in the NEPSI process? What would you do differently?**

The NEPSI dialogue was a valuable product stewardship initiative. It produced a large amount of information on electronics waste management which is contributing to the ongoing debate regarding electronics waste management in the United States.

A number of lessons can be drawn from the NEPSI dialogue which will help guide future product stewardship dialogues. Areas for improvement include careful consideration of the size and membership of the stakeholder group, setting more reasonable expectations of the outcomes and resources required to successfully complete a dialogue, and clear understandings of the roles and capabilities for key stakeholders.

For future dialogues, it would be wise to establish limits on the size of the stakeholder group, as well as rules for subsequent additions of new stakeholders. It is also critical to have an adequate level of base research in place prior to starting a full-fledged dialogue.

There is a need to have realistic expectations for the amount of time and resources necessary. NEPSI actively worked on the issues for almost four years. This timeline was far longer than originally anticipated. However, it should be noted that many product dialogues and negotiations on European product directives may take anywhere from six to eight years. The level of time commitment on the part of individual stakeholders and their organizations, as well as the level of funding required to manage and support such a dialogue, is considerable.

Perhaps most importantly, there needs to be a clear understanding and acknowledgment of the roles and capabilities of different stakeholders. This necessitates spending time on developing intragroup agreements before agreement could be developed in the full group. EPA too, as an important participant in such dialogues representing the key environmental and regulatory agency, needs to make clear at the outset on its role within such dialogues.

As for the lessons learned specific to electronics, please see our response to Gillmor #8.

**4. What type of process do you think would best enable stakeholders to reach a national consensus on electronics legislation?**

NEPSI was a very useful process and it was able to elicit a great deal of information and educate an important segment of business, state, recycling and NGO representatives on electronics issues. By the time the NEPSI dialogue came to a close, the primary concerns of government had been laid on the table. The key issues remaining to be resolved were how to finance the system and how the money should flow; these issues must be resolved by the manufacturer and retailer interests. At this point, the best path forward probably lies in having the manufacturers reach a financing compromise amongst themselves that the retailers can agree to. This may be a process that the manufacturers and retailers can facilitate themselves. As long as this compromise falls within the general parameters of the interests defined by states and local governments in the NEPSI process, it is likely that this solution could achieve a national consensus.

**5. What role can EPA and Commerce play that will encourage agreement on national legislation?**

At this time, the Administration does not have a position on the need for or outlines of national legislation to address electronics recycling.

**6. Which electronics financing model do you think might work best in the United States, and why?**

The question of which financing model, whether a visible fee at point of purchase, a fee on manufacturers, a hybrid of both, or some other financing fee not yet described is the best solution is not one on which EPA has an opinion. These questions are essentially business issues—not environmental questions. The affected businesses are in the best position to determine which financing system will work best, so long as it covers the costs necessary to make the system work efficiently and effectively. It is incumbent upon the affected businesses, at this point, to reach a consensus on a system they can live with.



**The Honorable Charles F. Bass**

**1. We know that many electronic products contain hazardous materials such as lead, mercury, and cadmium that can be harmful if released into the environment. Could you take a moment and talk about the problems and obstacles in implementing a reduction, recycling, or reusing program with the product at "end-of-life" being labeled hazardous? Do you agree that this would place an undue burden/cost on the stakeholders that would make it impossible for coordination and implementation? And don't you think a better approach would be to reform EPA regulations to help promote more recycling, rather than erecting barriers?**

If "end-of-life" products are classified as hazardous waste when disposed, collection and recycling may sometimes be more difficult. However, it is possible to tailor RCRA requirements for recycling so that barriers to recycling are greatly reduced even though disposal is still fully regulated. For example, EPA has often promulgated exclusions from the definition of solid waste which impose certain streamlined conditions on materials sent for recycling. These streamlined conditions can ensure safety, while at the same time reducing the barriers associated with full hazardous waste management.

**The Honorable John D. Dingell**

**1. Does the Environmental Protection Agency (EPA) support the European Union directive, which requires that as of July 1, 2006, new electrical and electronic equipment put on the market eliminate lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers? If not, please explain why not?**

The Environmental Protection Agency (EPA) supports the European Union's efforts to protect human health and the environment. However, as a domestic regulatory agency, it is not EPA's standard practice to develop positions on the legislation of foreign governments.

Nevertheless, we acknowledge that the RoHS Directive is having a world-wide impact on the design of electronic products, by driving the search for alternatives to the use of lead, mercury, cadmium, chromium and brominated flame retardants in these products.

This Directive will have a major effect on many electronic products consumed in the US. Many electronic products are designed for sale around the world and so must meet the most stringent global design requirements. Thus, many products sold in the US will meet the RoHS directive even though there is no equivalent mandate at the Federal level in the US. Even products made for the US market alone will be affected by the RoHS Directive

because of California's recent decision to enact its own version of the RoHS Directive for products sold in California.

**2. Does the EPA have statutory authority to require the collection and recycling of electronic waste (i.e. cell phones, computers and televisions)?**

The Resource Conservation and Recovery Act (RCRA) does not contain any provisions that specifically require collection and recycling of electronic waste. In general, Subtitle C gives EPA the authority over hazardous waste that is either listed or exhibits a hazardous waste characteristic, and allows EPA to regulate the storage, treatment, and disposal of such waste as may be necessary to protect human health and the environment. For some types of Subtitle C hazardous waste, RCRA section 3004 authorizes EPA to prohibit some methods of land disposal and establish treatment standards for some hazardous wastes. But RCRA also establishes conditions for exercising these EPA authorities.

Many types of electronic waste come principally from households. Under our regulations, household wastes are excluded from Subtitle C coverage as hazardous wastes. 40 C.F.R. § 261.4(b) (1). The Agency promulgated this exclusion on the basis of legislative intent expressed in the legislative history (Senate Report No. 94-988 at 16 (1976)). Congress subsequently recognized the household waste exclusion in sections 3001(i), 4005(c), and 4010(c) of the Hazardous and Solid Waste Amendments of 1984, P.L. 98-616 (HWSA). Because household electronic waste is not a Subtitle C waste, it is not subject to regulations governing storage, treatment, and disposal, including the section 3004 provisions that allow EPA to prohibit land disposal and establish treatment standards.

In addition, based on information received to date, many types of electronic products from other sources do not contain sufficient amounts of lead or other constituents to be classified as Subtitle C hazardous waste when disposed. The Agency does not have the authority to impose Subtitle C regulations requiring collection and recycling of non-hazardous wastes.

RCRA section 3004 authorizes the Agency to promulgate performance standards for the treatment, storage, and disposal of Subtitle C listed or characteristic hazardous wastes from industries and businesses. For certain hazardous wastes that are readily recycled (e.g., mercury-bearing wastes and lead-acid batteries), we have promulgated treatment standards that require recycling. We have not proposed similar standards for electronic wastes that are classified as characteristic hazardous wastes when disposed of, such as cathode ray tubes (CRTs). Hazardous CRTs sent for disposal would be subject to current treatment requirements, which in fact would act as a significant disincentive for disposal.

**3. The Government Accountability Office (GAO) surveyed more than 50 representatives from Federal, State and local governments, environmental organizations, recyclers, retailers, equipment manufacturers and academicians with expertise in electronics recycling. The GAO has recently testified that "about 75 percent of the survey**

**respondents to date said that a national disposal ban should be enacted to overcome the economic and regulatory factors that discourage recycling and reuse of used electronics.” Does the EPA agree that a national disposal ban would create significant incentives for more recycling of electronic waste?**

EPA has not analyzed the potential impact of a national disposal ban on the recycling of electronic waste. However, one could expect a national disposal ban to lead to greater demand for and opportunity to recycle electronic waste. At the same time, a disposal ban also would likely have significant cost implications for municipal governments which do not currently have the funding or infrastructure to deal with diverting electronics from disposal.

**4. Does the EPA have statutory authority to ban electronic waste from being disposed in municipal solid waste landfills?**

Much electronic waste is generated by households. EPA’s regulations provide that household wastes are not regulated as Subtitle C hazardous wastes and so are not banned from disposal in municipal solid waste landfills under Subtitle C authorities. The Agency promulgated this exclusion on the basis of expressed legislative intent in legislative history (Senate Report No. 94-988 at 16 (1976)). Congress subsequently recognized the household waste exclusion and included it in sections 3001(l), 4005(c), and 4010(c) of the Hazardous and Solid Waste Amendments of 1984, P.L. 98-616 (HWSA). In section 4010(c)(1) Congress authorized EPA to establish criteria for Subtitle D facilities that receive hazardous household waste as “necessary to protect human health and the environment,” taking into account the “practicable capability” of the receiving facilities. EPA did not establish specific criteria addressing electronic waste pursuant to that Subtitle D authority, and to do so the Agency would have to demonstrate that a specific ban was justified under the statutory criteria.

Concerning electronic waste from other sources, available information shows that many electronics do not contain sufficient amounts of lead or other constituents to be classified as hazardous when disposed. For electronics that cannot be classified as hazardous when disposed, the Agency does not have the authority to ban disposal in municipal solid waste landfill under Subtitle C and would not have any basis for banning that practice under Subtitle D.

Under Section 3004 of RCRA, the Agency has the authority to promulgate standards for the treatment, storage, and disposal of Subtitle C hazardous wastes generated by industries and businesses. Electronic wastes from these sources that are classified as Subtitle C hazardous wastes, principally because of the presence of lead, are currently banned from being disposed in municipal solid waste landfills.

**5. Four states -- California, Maine, Massachusetts, and Minnesota -- have imposed more stringent disposal requirements for used electronics because of potential environmental and health concerns. Does the EPA support the right of States to impose more stringent requirements governing the management and disposal of solid waste?**

Under Section 3009 of RCRA, States may impose more stringent requirements for hazardous waste than those contained in the federal regulations. States may do the same for solid wastes. EPA supports the right of States to impose more stringent requirements for solid wastes, even if such requirements would not be appropriate nationally.

**6. Is the EPA seeking new statutory authority for the purpose of regulating the collection and recycling of electronic waste to promote recycling and minimize the landfilling of such wastes?**

The Administration has not taken a position on the need for federal legislation regulating the collection and recycling of electronic waste.

**7. At the Subcommittee hearing on July 20, 2005, you testified that a nationwide electronics recycling data repository was being developed. What information regarding recycling is included in the repository and how is it able to be accessed?**

The Centralized Data Repository is an open, collaborative public/private data sharing project which is addressing the need for up-to-date information on the collection and recycling of electronic waste. It receives voluntary submissions of data from states, local governments, retailers, manufacturers, and recyclers on pilot electronics collection events and ongoing electronics collection programs. This project is being managed by the National Center for Electronics Recycling. Types of information currently contained in the repository include: total volumes collected by year, volumes collected by state, volumes collected by product type, estimates of waste collected per individual participant and estimates of participants by state, and information about brands of collected electronics. There are plans to expand the data repository in hopes of gathering more detailed information in such areas as product lifespan, and costs of transport and secondary processing. For more information on the Centralized Data Repository, go to <http://www.electronicrecycling.org/cdr>. This is also the way to access the data base itself. For more information on EPA's collaboration with the National Center for Electronics Recycling on the development of this Data Repository, please see our response to Gillmor #13.

**8. At the Subcommittee hearing on July 20, 2005, you testified that a good rule of thumb for the cost of recycling a desktop computer is \$15 while the value of the materials recovered from it is anywhere between \$1 and \$2.50. What is the basis for the cost and value numbers in your testimony? If the cost of recycling a desktop computer is anywhere from 6 to 15 times more expensive than the value of the recovered materials, please explain how it will be economically viable to sustain significant recycling activities for desktop computers?**

The cost estimate of \$15 for a desktop computer is based on the \$0.48/lb fees currently paid by the State of California for collection and recycling and the approximate weight of

the average desktop computer which is about 30-35 pounds. Other sources for information on the costs of demanufacturing computer equipment include annual reports issued by the International Association for Electronics Recyclers (IAER). IAER reports costs per ton to recycle computers along with net revenues, including revenues from commodity sales less disposal costs. IAER does not report revenues obtained by recyclers from the fees they charge for their recycling services.

The basis for the \$1-2.50 value of materials recovery is several industry sources, including IAER reports and discussions with a variety of electronics recyclers. These estimates do not factor in the value of reusing or reselling a desktop computer or the costs of disposal. According to the IAER's 2003 report entitled, "Electronics Recycling Industry Report," revenues from recovered materials vary substantially. Commodity recovery values range from \$1.50 to \$2.00 per machine. In some cases the values are decreasing. For example, a newer model CPU might have 2 pounds of precious metals that could be recovered, whereas an older model might have more.<sup>1</sup> Older equipment tends to have much more steel and non-ferrous metal that can be recovered, whereas newer products have more plastics. However, the price of steel has been going up so the value of the steel in these products, even if there is less of it, may be more than it once was. Also, the value of parts recovered from computers varies considerably with the age of the product. It can be as high as \$100 for a machine that is less than 3 years old, to virtually nothing for a machine that is over 10 years old.<sup>2</sup>

As to how recycling of electronics can make sense when the cost is far higher than the potential revenue, it is important to remember that the value of collected electronics is not limited solely to the value of the materials recovered. Newer computer equipment that is in working condition or needs only minor refurbishment can be resold. Also, there is value in working parts in relatively recent computer equipment that cannot be resold as is. It is also important to realize that expert observers expect the unit cost of electronics recycling to go down as the volume of electronics recycling increases. Finally, as products are increasingly designed for recycling at the end of their useful life this will also lower the costs of recycling and improve the markets for the materials recovered from these products (especially if electronics manufacturers want these materials back for reuse in new products).

**9. Please provide the cost of recycling a laptop computer and the value of the materials that can be recovered from it.**

Assuming the average weight of a laptop computer is about 10 pounds and applying the collection and recycling fees currently paid by the State of California (about \$.50/lb total, see Question 8 above), we estimate the cost to recycle a laptop at about \$5.00. The value of the materials recovered from laptops varies depending on the condition of the device

<sup>1</sup> Grenchus, Edward J. and Robert A. Keene, "A Technique Used for Estimating the Processing Cost of IT Equipment Received by an Asset Recovery Center." Conference Record, 2003 IEEE International Symposium on Electronics and the Environment, May 19-22, 2003, Boston, MA.

<sup>2</sup> IAER Electronics Recycling Industry Report, International Association of Electronics Recyclers, 2003.

and market prices. For these reasons, it is not possible to provide an average total value for recovered materials. Nevertheless, based on information from an electronic recycler, if the recycled laptop is in very good condition, then selling components can earn anywhere between \$90-150 (main boards can sell for \$20-200 depending on the model of the processor).<sup>3</sup> On the other hand, if the laptop is sold as scrap, including the hard drive, it is worth approximately \$10.

**10. Please provide the cost to recycle a cell phone and the value of the materials that can be recovered from it.**

According to two collectors/recyclers, CollectiveGood and ReCellular, the cost of collecting a cell phone at end-of-life ranges between \$2.50 and \$5.00. This includes building awareness for collection, transportation, and "triage" to determine if the phone is suitable for reuse/refurbishment or destined to be recycled.

Recycled phones generate between \$0.20 and \$0.40 per handset from the reclamation of 15 kinds of metals, including gold, silver, platinum, copper, and lead. Accessories such as chargers generate around \$0.02 per pound. ReCellular ships batteries to battery recyclers and receives \$0.25 per pound for them. Phones that are reused or refurbished can be typically resold for \$10-12 apiece.

**11. Please provide the cost to recycle a 27-inch television and the value of the materials that can be recovered from it.**

Assuming the average weight of a 27-inch CRT television is about 84 pounds and applying the collection and recycling fees currently paid by the State of California (approx. \$.50/lb), we estimate the cost to recycle a 27-inch television is about \$40. The average total value of materials that can be recovered is approximately \$6.<sup>4</sup>

**12. What studies or analyses has the EPA conducted on the economics and marketplace conditions that exist for the recycling of: (a) desktop computers (b) laptop computers (c) televisions (d) cell phones?**

**Please provide copies of any such studies that have been conducted.**

EPA has conducted two studies to date: "Economic Analysis of Cathode Ray Tube Management," and "Analysis of Five Community Consumer/Residential Collections: End-Of-Life Electronic and Electrical Equipment."

<sup>3</sup> These values were obtained from one of the nation's largest electronics recyclers.

<sup>4</sup> This value was obtained from one of the nation's largest electronics recyclers.

**13. Does the EPA plan on conducting future studies or analyses pertaining to the recycling of desktop computers, laptop computers, televisions, or cell phones? If so, please describe the studies that are planned.**

EPA is currently conducting a baseline assessment of e-waste generation and management. The main goals of this assessment are to estimate the number of electronic devices disposed, recycled, stockpiled, exported or reused in a given year, as well as establish the amount of chemical constituents and precious metals in these devices. We expect this baseline assessment to be available in the spring of 2006. In addition, EPA is planning to conduct risk and benefits analyses pertaining to the recycling and disposal of e-waste.

**14. What is the average amount and value of gold in the following items: (a) desktop computer (b) laptop computer (c) cell phone (d) television?**

EPA is assessing the composition of these devices to determine the amounts of chemical constituents and precious metals in these devices. Due to constant market fluctuation of metals like gold, we are unable to provide information as to the value of the gold in these items.

**15. What is the average amount and value of copper in (a) desktop computer (b) laptop computer (c) cell phone (d) television?**

The only data we have on the average amount of copper in these products is quite old and may no longer be valid. This data indicates that the average amount of copper in some of these devices is as follows: (a) a laptop computer averages 39 grams of copper per kilogram of its weight<sup>5</sup> (b) a cell phone contains approximately 27.22 – 58.97 grams<sup>6</sup>, and (c) a CRT television contains approximately 24.5 grams per kilogram of product<sup>7</sup>.

The typical value of copper fluctuates, but the International Association of Electronics Recyclers has reported that copper recovered from electronics demanufacturing operations typically ranges between 11-67 cents per pound.

<sup>5</sup> Hazardous Material Laboratory, California Department of Toxic Substances Control. "SB20 Report: Determination of Regulated Elements in Discarded Laptop Computers, LCD Monitors, Plasma TVs and LCD TVs," 2004, Table 2.

<sup>6</sup> Bhuie, A.K., et al., "Environmental and Economic Trade-Offs in Consumer Electronic Products Recycling: A Case Study of Cell Phones and Computers." IEEE, 2004, 75. Based on cell phones weighing 0.30 – 0.66 pounds.

<sup>7</sup> Matuso, T., et al., "Material and Heavy Metal Balance in a recycling facility for home electrical appliances," Waste Management 24 (2004), 434, Table 5.

To get better estimates, EPA is conducting composition assessments to determine the amounts of chemical constituents and precious metals in these devices.

**16. What is the average amount and value of aluminum in the following items: (a) desktop computer (b) laptop computer (c) cell phone (d) television?**

The only data we have on the average amount of aluminum in these products is quite old and may no longer be valid. The data we have on the average amount of aluminum in some of these devices is as follows: 1) a cell phone contains approximately 13.61 – 27.22 grams of aluminum; and 2) approximately 1.79 kilograms of aluminum may be recovered per 100 kilograms of television recycled.

The typical value of aluminum fluctuates, but the International Association of Electronics Recyclers has reported that aluminum recovered from electronics demanufacturing operations typically ranges between 19-49 cents per pound.

To get better estimates, EPA is conducting composition assessments to determine the amounts of chemical constituents and precious metals in these devices.

**17. How many used desktop computers are collected each year in the United States? What percentage are (a) reused, (b) recycled, (c) exported, or (d) disposed of by landfilling or incineration?**

A study conducted for the EPA in 2004 examined the flow and management of cathode ray tubes (CRT).<sup>8</sup> This study estimated that in 2003, households generated 8.8 million CRT computer monitors. An estimated 730,000 CRT monitors from households went to reuse, and 824,000 were reclaimed and processed. For that same year, approximately 4.7 million household CRT computer monitors were landfilled and 544,000 were exported.

Other organizations involved with electronics end-of-life management have developed additional estimates. The International Association of Electronics Recyclers estimates that approximately 40 million personal computers are discarded annually (this includes storage, reuse, export, and disposal).<sup>9</sup> CompuMentor, a nonprofit group that facilitates reuse, estimates that 13% of PCs are recycled for their materials and only 2% are reused. H. Scott Matthews of Carnegie Mellon University has stated that by 2005, only 12% of US computers will be recycled and 26% of discarded computers will go to landfills.<sup>10</sup>

<sup>8</sup> US Environmental Protection Agency Office of Solid Waste. *Flow and Capacity Analysis of Cathode Ray Tube Management for Households and CESQGS: Final Report*. ICF Consulting, June 4, 2004.

<sup>9</sup> International Association of Electronics Recyclers (IAER) *Electronics Recycling Industry Report*, 2003

<sup>10</sup> H. Scott Matthews and Deanna Matthews, "Information Technology Products and the Environment," *Computers and the Environment: Understanding and Managing Their Impacts*, Bost Kluwer Publishers, 2003



To get better estimates, the Agency is currently conducting a baseline assessment to estimate the number of TVs, computers and peripherals recycled and disposed each year. In this assessment, we will attempt to estimate how many units remain in storage and what quantity of material is exported. The assumptions and the methodology for conducting this study are being developed using a process that includes reviews by industry experts and other offices at EPA.

**18. How many used laptop computers are collected each year in the United States? What percentage are (a) reused, (b) recycled, (c) exported, or (d) disposed of by landfilling or incineration?**

The baseline assessment discussed in the answer above will also look to quantify laptop generation, reuse, recycling, export and disposal.

**19. How many used televisions are collected each year in the United States? What percentage are (a) reused, (b) recycled, (c) exported, or (d) disposed of by landfilling or incineration?**

A study conducted for the EPA in 2004 examined the flow and management of cathode ray tubes (CRT).<sup>11</sup> That study found that in 2003 households generated approximately 11.3 million color CRT televisions. For that same year, an estimated 12,000 CRT televisions went to reuse, and 248,000 were reclaimed and processed. Around 8.4 million household CRT televisions were landfilled and 0.58 million were exported

To get better estimates, the Agency is conducting the baseline assessment discussed in the previous questions. This assessment will estimate the number of TVs generated, reused, recycled and disposed each year. It will also look at how many units remain in storage and what quantity of material is exported.

**20. How many used cell phones are collected each year in the United States? What percentage are (a) reused, (b) recycled, (c) exported, or (d) disposed of by landfilling or incineration?**

See also the testimony of Steve Largent, President and CEO of CTIA – The Wireless Association, testified before the House Committee on Energy and Commerce, Subcommittee on Environment and Hazardous Materials, on Sept. 8, 2005, for a snapshot of some current cell phone reuse/recycling statistics:

- ReCellular, a refurbisher, has collected approximately four million phones in 2004, up from 1.5 million in 2002.

<sup>11</sup> US Environmental Protection Agency Office of Solid Waste. *Flow and Capacity Analysis of Cathode Ray Tube Management for Households and CESQGS: Final Report*. ICF Consulting. June 4, 2004.

- Nextel has collected 4.4 million phones since 2002. Nextel also has refurbished 2.3 million phones since 2002.
- The Wireless Foundation's take-back programs have collected nearly three million phones since 1999.
- Verizon Wireless has collected approximately two million phones through their HopeLineSM charitable donation program.
- GRC Wireless Recycling has collected approximately one million phones since 2001.
- Old Cell Phone Co. reportedly buys back 30,000 used cell phones a month, and has been doing so since 2002.
- RMS Communications Group collected one million phones in 2004, and has been collecting phones for the past ten years.
- EBay reportedly sells 130,000 used phones a month on its website, and has sold approximately four million phones over the past five years.

Cell phone service providers, recyclers and refurbishers are currently in the process of evaluating the best way to gauge the success of their respective recycling and/or refurbishing programs.

The baseline assessment discussed in the previous answers will also look to quantify cell phone generation, reuse, recycling, export and disposal.

**21. Under the export regulations promulgated pursuant to the Resource Recovery and Conservation Act, are used electronics (i.e. televisions, computers (including CRT monitors), and cell phones) considered to be a waste if they are exported for reuse?**

Electronics exported for reuse are considered to be products rather than wastes (see 67FR40511; June 12, 2002).

**22. What safeguards are in place to insure that used electronics, which are exported for reuse, are actually reused?**

Over the past several years, the Agency has been very active in coordinating with other countries on the sound management of electronic waste. In the OECD, the U.S. actively participated in developing recommendations and guidelines for the environmentally sound management of wastes, including electronic waste. Of particular note, EPA led the development of OECD guidelines on the sound reuse and recycling of personal computers. Although the U.S. is not a party to the Basel Convention, we actively contribute to its technical efforts. We have also participated in a Basel Convention partnership effort with industry that is developing guidelines for the safe reuse, recycling, and transboundary movement of used and scrap mobile phones. Furthermore, the U.S. has participated in a technical workshop with many key Asian countries regarding management of electronic waste in that region of the world.

As part of our Plug-in to eCycling program, in May 2004, EPA issued Guidelines for Materials Management that specifically address approaches that should be taken to provide assurance that export of electronic waste is for legitimate and environmentally sound purposes. For example, these guidelines emphasize the need for due diligence on the part of recyclers and others to fully understand the ultimate fate of exported materials.

**23. Does the EPA have statutory authority to oversee and/or require tracking of used electronics that are exported to insure that they are actually reused?**

Used electronics exported for reuse, that is, directly used without any processing or only minor refurbishing, are considered to be products rather than wastes. As such, our jurisdiction over these materials is limited.

**24. Are used electronics being exported anywhere other than Europe for the purpose of recycling (as opposed to reuse)? If so, please identify each foreign country that is receiving U.S. exports of electronic waste for the purpose of recycling.**

Used electronics are exported to many countries for the purpose of recycling. The primary destinations are likely Canada and various Asian countries, especially China. Much electronic circuitry is exported to Canadian and Belgian smelters for copper and precious metals recovery. Some likely also goes to Sweden. Materials for copper recovery are also exported to China. Plastics are largely sent to Asian recycling facilities, particularly China. Glass from cathode ray tubes is exported to Brazil, Indonesia, as well as China and Malaysia and other countries. Whole used electronics are also exported for dismantling in Canada, Mexico, and a number of Asian countries.

EPA does not track the export of materials that are not hazardous wastes. Thus, EPA does not have collect data on export destinations of many of these materials.

**25. Is it correct that only two types of plastic resins, polyethylene terephthalate (PET) and high-density polyethylene (HDPE) have economically viable recycling markets?**

**What are the plastic resin types in the plastic that is a component of desktop computers, laptop computers, and televisions? Please describe the market economics of recycling these plastic components?**

Any type of plastic could be valuable for recycling if it is cost effectively available in sufficient quantities and there is a market for the recovered material. PET and HDPE plastic bottle recycling is so widespread because bottles generally have minimal contamination, and are able to be cost effectively collected in large quantities. In addition, there are sufficient markets for the recovered material.

With respect to TVs and computer equipment, the plastics used in these products are more complex because of the many performance characteristics required for these devices, such as durability, heat and corrosion resistance, insulation properties, etc. Television housings consist mostly of high-impact polystyrene blend (HIPS) plastic, whereas computer plastics consist mostly of Acrylonitrile Butadiene Styrene (ABS) and Polyphenylene Ether/High-Impact Polystyrene blend (PPE/HIPS or PPO).<sup>12</sup> According to the American Plastics Council, televisions account for nearly half of the electronics recovered from the residential waste stream, but they are not a rich source of high-value engineering plastics. Computers, on the other hand, do contain high-value plastics and, therefore, have greater potential for effective recycling.<sup>13</sup>

The key factors influencing whether it is economically feasible to recycle any given type of plastic, include:

- Cost effectiveness of collecting sufficient quantities – collection and transportation costs account for a significant portion of overall recycling costs.
- Minimally contaminated material - better identification and separation technologies are needed to allow sufficient quantities of homogeneous material streams.
- Existence of markets for the specific plastic formulation – formulations designed for specific product applications in the past may or may not be useful by the time these materials are recovered for recycling.

Plastics from end-of-life electronics are currently being recycled into new products such as lumber, outdoor furniture, and roadbed materials. All plastics can be recycled into new feedstock and reformulated into methanol and other petrochemicals, however, the technology required to do this is not economically feasible in the U.S. at this time.<sup>14</sup>

**26. With respect to plastic resins HIPS and ABS, please indicate whether there is significant recycling of these plastic resins taking place in the United States.**

Refer to answer 25.

**27. What is the EPA's definition of electronic waste?**

EPA generally considers "electronic waste" to be discarded electronic material. For purposes of our voluntary electronics programs, we have focused primarily on televisions, personal computers (including monitors), laptops, and cell phones.

<sup>12</sup> American Plastics Council, 2000. "Plastics from Residential Electronics Recycling." A Summary Report from the Electrical and Electronics Group of the American Plastics Council.

<sup>13</sup> Ibid.

<sup>14</sup> Personal communication with Michael Fisher, American Plastics Council, September 8, 2005.

Defining “electronic waste” in more specific terms becomes important when regulatory or other types of actions, such as voluntary collection programs, are being taken. We have not formally promulgated a definition of “electronic waste” in a regulatory context. Rather, we rely on the traditional RCRA definitions of what is waste and when waste is considered hazardous to determine which electronics constitute hazardous waste.



**TESTIMONY OF THE COUNCIL OF STATE GOVERNMENTS/EASTERN  
REGIONAL CONFERENCE BEFORE THE U.S. HOUSE ENERGY AND  
COMMERCE SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS  
MATERIALS**

July 20, 2005

Contact: Rona Cohen, Senior Policy Analyst  
The Council of State Governments/Eastern Regional Conference  
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Chairman Gillmor and Members of the Subcommittee:

The members of the Council of State Governments/Eastern Regional Conference (CSG/ERC) are pleased to have the opportunity to provide you with this testimony regarding our efforts to address the proliferation of electronic waste in our region.

CSG/ERC comprises state officials from all three branches of government in the ten Northeastern states from Maine to Delaware,<sup>1</sup> the U.S. Virgin Islands, Puerto Rico and the Eastern Canadian provinces New Brunswick, Nova Scotia and Québec. During the fall of 2004, several members of the CSG/ERC Energy & Environment Committee, concerned with the lack of comprehensive programs to collect, reuse, process and recycle discarded computers, televisions and other electronic devices in their states, requested that CSG/ERC facilitate a process to help legislators develop a uniform, coordinated legislative effort governing end-of-life electronics management in the Northeast.

Currently, there is no national program to address the proliferation of e-waste in a comprehensive manner. Three states – California, Maine, and Maryland -- have passed laws that mandate different approaches to financing and administering electronics end-of-life management systems. More than twenty other states have introduced legislation governing electronic waste. Many state officials and stakeholders in the Northeast agree that in lieu of a national program, a coordinated regional effort is preferable to having a patchwork of laws and regulations resulting in increased management and compliance costs and decreased reuse and recycling opportunities.

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<sup>1</sup> Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

Since February 2005, CSG/ERC, in collaboration with the Northeast Recycling Council, Inc., (NERC), a non-profit organization that operates in the same ten Northeastern states as CSG/ERC, has been facilitating a dialogue among legislators in the region with the goal of creating model legislation that can be filed in each of the participating states. As part of this dialogue, CSG/ERC and NERC solicited direction from state environmental agency solid waste management and recycling staff in the ten Northeastern states regarding electronics end-of-life legislation. CSG/ERC and NERC also hosted a one-day stakeholder dialogue in New York City on April 29, 2005 that brought together legislators and legislative staff from ten states and the Canadian province of Québec. The legislators met with more than sixty representatives of electronics manufacturing companies, retail companies, leasing companies, recycling companies, reuse organizations, environmental groups, state recycling organizations, local and state recycling agencies to hear their suggestions regarding key elements of potential electronics legislation.

Since the April 29 stakeholder dialogue, CSG/ERC and NERC have been facilitating bi-monthly conference calls with legislators and legislative staff from the region, with the objective of forging consensus on a range of critical issues governing electronics end-of-life management. They include:

- **Scope of Covered Products:** There is a diversity of opinion among legislators concerning the types of devices that should be covered in electronics legislation. Suggestions have ranged from cellular telephones to large industrial equipment. Legislators participating in the CSG/ERC – NERC effort generally believe that it is important to reach consensus on a minimum array of covered products, provided that they do not conflict with existing state laws. Additionally, some officials have suggested that legislation should be flexible enough to allow products to be added over time, as needed; and provide the state environmental agency with the regulatory authority to determine a product's inclusion in the program.
- **Financing Mechanism:** Currently, the two different financing mechanisms that are being implemented in the U.S. are the Advance Recycling Fee (ARF) model, as is exemplified by California's electronics management system, established by passage of SB 20 in 2003; and the Shared Producer Responsibility model that Maine is implementing following passage of LD 1892 in 2004. Our regional effort has examined these two financing mechanisms, with the objective of determining their potential to encourage Design for the Environment (DfE); promote reuse; provide an equitable and simple system for covering orphan and historic (legacy) products; place the least financial burden on municipalities and state government; stimulate local job creation; and educate the consumer about the importance of reusing and recycling their discarded electronic products, among other practices.

- **Environmentally Sound Management (ESM) Standards:** ESM standards establish specific criteria and performance standards that an electronics recycler must meet.
- **Disposal Ban:** Some experts suggest that a disposal ban is an essential component of electronics legislation, but caution that it should be phased in to ensure that an adequate infrastructure exists for the collection and processing of covered electronic products. Several states have already implemented bans through regulation and legislation.
- **Phaseout of Toxic Constituents:** Legislative participants in the CSG/ERC – NERC effort generally favor the idea of phasing out the use of toxins in electronic devices. Throughout their deliberations, participants have debated the issue of how best to encourage the practice – through mandatory, international, or voluntary efforts.

On July 15, CSG/ERC and NERC released an initial working draft for model electronics legislation that addresses the above issues, and other critical elements of end-of-life electronics management systems. This model is reflective of the stakeholder input and the bi-monthly legislative discussions that have occurred.

Our organizations have scheduled a working session for legislators and state agency officials and staff on July 25, to be followed by a stakeholder dialogue to hear comment on this draft legislation. All interested parties are invited and have the opportunity to comment orally and in writing on this working draft.

We would like to emphasize that the draft does not reflect the positions of either CSG/ERC or of NERC, and will likely undergo several revisions in the coming weeks as we receive feedback from stakeholders and state officials in our region. Our goal as facilitators of this regional process is to forge consensus among a broad range of interested parties on the key elements of electronics end-of-life management legislation. We expect to finalize the document by October 2005.

Please feel free to contact us if we can provide you with any additional information concerning our regional effort. Thank you for providing us with the opportunity to discuss our project with you.

The draft legislation and an accompanying discussion document are attached for your reference.



**Discussion Document for July 15, 2005 Draft:  
An Act Providing for the Recovery, Reuse and Recycling of Used Electronic Devices**

**Introduction:**

Since February 2005, the Council of State Governments/Eastern Regional Conference (CSG/ERC) and the Northeast Recycling Council (NERC) have been working on a collaborative project to develop a unified, coordinated legislative approach to end-of-life electronics management in the Northeast. In recent months, CSG/ERC and NERC have been facilitating an effort among legislators and legislative staff from ten states<sup>1</sup>, the U.S. Virgin Islands and Québec to craft model legislation. As part of this process, legislators solicited input from state environmental agency solid waste management staff, and held a one-day meeting with more than 90 stakeholders to hear what they wish to have included in regional legislation governing electronics end-of-life management. The legislators also participated in a series of bi-monthly conference calls during which they debated key elements of electronics management systems.

Throughout this process, CSG/ERC and NERC have sought to forge consensus among legislative participants from the region on the scope and content of electronics legislation. With the July 15 release of the draft model legislation, we are seeking input from stakeholders on the initial approach agreed to by the legislative participants. The purpose of this Discussion Document is to provide background about the legislators' deliberations regarding some of the key issues that were raised during the process of drafting model regional electronics legislation.

**Scope of Products (Section 1 (h)):** The products covered in the draft legislation were agreed to by stakeholders who participated in the National Electronic Product Stewardship Initiative. Participants in the CSG/ERC – NERC effort generally agreed that we should limit the scope of covered products to this list in the interest of keeping it simple. Others felt that we should include an option for the state regulatory agency to expand the array of products as they saw fit. We have included the latter provision in the July 15 draft (please see Section 2, p. 4).

**Financing Mechanism (Section 6):** Legislators felt strongly that the financing mechanism for an end-of-life electronics management system must not impose direct fees on the consumer, and that the financial responsibility must rest with the manufacturers. Another priority was to create a simple and equitable system for covering orphan waste, and to ensure that a minimal burden would be placed on municipalities for the collection and transport of used electronics to consolidation or processing centers. In addition, many legislators wanted to create a financial incentive for the development of manufacturer-run programs.

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<sup>1</sup> Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

In order to address all of these criteria, a compromise solution was crafted: an Internalized Advance Recycling Fee (IARF) paid by the manufacturer based on retail sales. Manufacturers who develop their own take-back programs would be eligible for a sizeable rebate of their fees. The rebate would fall short of 100% to compensate for the costs of processing orphan products, state oversight and enforcement, and administration of the statewide program. There was a recommendation made to implement uniform fees and uniform rebates (in terms of percentages of fees paid) in every state that chooses to adopt this approach.

The IARF would be paid into a fund that would be managed either by a third-party organization (TPO), or by a state agency – depending on the inclination of each particular state.

**Phaseout of Toxic Constituents:** Many legislative participants felt that the legislation should require a phaseout of toxic constituents. Participants discussed the possibility of mandating compliance with the provisions of Directive 2002/95/EC of the European Parliament on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive), as is required in California's e-waste legislation, established by passage of SB 20 in 2003. RoHS would ban the use of certain hazardous substances in electronic equipment, with some important exemptions.

However, many participants were uncomfortable with the notion of requiring compliance with an EU directive. Others noted that RoHS has not yet been finalized. In addition, it is generally believed that, since all manufacturers who sell their products in the European Union must comply with RoHS when it takes effect in mid-2006, major electronics producers will be compelled to phase out their use of toxins in the coming months regardless of U.S. state mandates.

The compromise decision, therefore, was for the draft legislation to remain silent on this issue but to include incentives for decreased toxicity and increased recycled content. These incentives include: a reporting requirement that demonstrates a decrease in the use of toxic materials and an increase in recycled content (Section 7); a requirement that such demonstration be made in order for companies to become eligible for a partial refund of IARF payments (Section 13(1)(b)); and the opportunity to receive formal recognition for producing and selling greener products (Section 10(9)).

**NEXT STEPS:** After the stakeholder dialogue on July 25<sup>th</sup>, the legislators will consider the input that was received and will continue to work on the draft legislation with the intention of developing a consensus document by October 1<sup>st</sup> that can be filed in the Northeastern states.

**DISCUSSION DOCUMENT ONLY – HAS NOT BEEN REVIEWED OR APPROVED BY  
ANY LEGISLATOR, LEGISLATIVE BODY, OR OTHER ENTITY**

**An Act Providing for the Recovery, Reuse and Recycling of  
Used Electronic Devices**

**Purpose:** Through producer responsibility, establish a comprehensive electronic devices reuse and recycling system that ensures the safe and environmentally sound handling, reuse and recycling of electronic devices and components and that encourages the design of electronic devices and components that are less toxic and more recyclable; and promote the development of a state, regional and national infrastructure for the reuse and recycling of used electronics.

**Findings:**

WHEREAS, televisions, computers, and other electronic devices are omnipresent in modern society, and

WHEREAS, the numbers of obsolete, worn-out, or otherwise used televisions, computers, and other electronic devices will surely increase, and

WHEREAS, used electronic devices contain lead, mercury, and other hazardous substances that pose a threat to human health and the environment if improperly disposed of at the end of their useful life;

WHEREAS, the cathode ray tube currently found in most discarded televisions and computer monitors is a problematic material in discarded electronic devices because of the lead content and because of the negative value of the glass and other constituent materials, and

WHEREAS, the printed circuit boards found in almost every discarded electronic device contain heavy and precious metals that can pose a threat to human health and the environment if disposed of improperly, and

WHEREAS, cathode ray tubes and printed circuit boards are estimated to be the largest current source of lead in the state's municipal solid waste stream, and

WHEREAS, many flat-panel-display televisions, computer monitors, and laptop computers contain a mercury-containing lamp for backlighting purposes, and

WHEREAS, the reuse, repair, or recycling of televisions, computers, and other electronic devices can: protect public health and the environment by reducing the potential for the release of heavy metals and mercury from landfills and municipal waste combustors into the environment; provide jobs and business opportunities for state residents; recover valuable components and materials; reduce energy consumption, air and water pollution and greenhouse gas emissions, and conserve valuable landfill space, and

WHEREAS, the responsibility for the environmentally sound management and product stewardship of end-of-life electronics products should be shared among the consumer/purchaser, the manufacturer, retailer, and state and local government waste management agencies, and

WHEREAS, the State of \_\_\_\_\_ has an interest in resource conservation, waste minimization, pollution prevention, job creation, and recycling, and

WHEREAS, the Legislature finds that the establishment of a system to provide for the collection, reuse and recycling of electronic devices in this State is consistent with its duty to protect the health, safety and welfare of its citizens, enhance and maintain the

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quality of the environment, conserve natural resources, prevent air, water and land pollution and stimulate economic growth.

NOW, THEREFORE,

Be it enacted by the Legislature of the State of \_\_\_\_\_:

**Section 1: Definitions**

For the purposes of this Act, the following terms have the following meanings:

- (a) "Agency" means the *[State Environmental Agency]*
- (b) "Board" means the Board of Directors of the Corporation formed to implement this Act.
- (c) "Cathode ray tube" or "CRT" means a vacuum tube or picture tube used to convert an electronic signal into a visual image.
- (c) "Central processing unit" or "CPU" means the circuit boards, components, and associated circuitry system that processes electronic information in a computer and the case that contains such a system.
- (d) "Circuit board" means a printed wiring board and attached components that are used to control the flow of electrons and that contain solder as a component.
- (e) "Computer" means an electronic, magnetic, optical, electrochemical, or other high-speed data processing device performing logical, arithmetic, or storage function, and may include both a computer central processing unit and a monitor, but such term does not include an automated typewriter or typesetter, a portable hand-held calculator, or other similar device.
- (f) "Consumer" means an individual who purchases a covered electronic device in a transaction that is a sale.
- (g) "Corporation" means the not-for-profit organization formed for implementing this Act.
- (h) "Covered Electronic Device," for the purposes of this Act, is desktop/personal computers, computer monitors, portable computers, desktop printers, CRT-based televisions, non-CRT-based televisions, television peripherals (e.g., cable or satellite receiver, VCR, DVD), central processing units (CPU), and small computer peripherals (e.g., mice, keyboard, modem).

"Covered electronic device" does not include any of the following:

- i. A covered electronic device that is a part of a motor vehicle or any component part of a motor vehicle assembled by, or for, a vehicle manufacturer or franchised dealer, including replacement parts for use in a motor vehicle.
- ii. A covered electronic device that is contained within a piece of industrial, commercial, or medical equipment, including monitoring or control equipment.
- iii. A covered electronic device that is contained within a clothes washer, clothes dryer, refrigerator, refrigerator and freezer, microwave oven, conventional oven or range, dishwasher, room air conditioner, dehumidifier, or air purifier.

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- iv. Telephones of any type unless they contain a display area greater than 4" measured diagonally.
- (i) "Covered electronic recycler" means any of the following:
  - i. A person who engages in the manual or mechanical separation of covered electronic devices to recover components and commodities contained therein for the purpose of reuse or recycling.
  - ii. A person who changes the physical or chemical composition of a covered electronic device, in accordance with the requirements of \_\_\_\_\_ [Health & Safety code or similar code] by deconstructing, size reduction, crushing, cutting, sawing, compacting, shredding, or refining for purposes of segregating components, for purposes of recovering, reusing or recycling those components, and who arranges for the transport of those components to an end-user.
- (j) "Fiscal Year" means the Fiscal Year of the State.
- (k) "Historic Product" means a covered electronic device that was discarded prior to the effective date of this Act and the producer of which is still in business.
- (l) "Household" means a single detached dwelling unit or a single unit of a multiple dwelling unit and appurtenant structures.
- (m) "Manufacturer" means any person who, either as of the effective date of this legislation or thereafter, and irrespective of the selling technique used, including by means of remote sale: 1) manufactures covered electronic devices under its own brand for sale in this State; 2) manufactures covered electronic devices for sale in this State without affixing a brand, 3) resells in this State covered electronic devices produced by other suppliers under its own brand or label; or 4) imports or exports covered electronic devices into the United States that are sold in this State.
- (n) "Person" means an individual, trust firm, joint stock company, business concern, and corporation, including, but not limited to, a government corporation, partnership, limited liability company, and association.
- (o) "Manufacturer's brands" means a manufacturer's name, brand name, or brand label, and all manufacturer's names, brand names, and brand labels for which the manufacturer has legal responsibility, including those names, brand names, and brand labels of companies that have been acquired by the manufacturer.
- (p) "Monitor" means a separate visual display component of a computer, whether sold separately or together with a computer central processing unit/computer box, and includes a cathode ray tube, liquid crystal display, gas plasma, digital light processing, or other image projection technology, greater than four inches when measured diagonally, and its case, interior wires and circuitry, cable to the central processing unit, and power cord.
- (q) "Orphan products" are covered electronic devices for which 1) the manufacturer no longer exists and a successor cannot be identified or 2) no manufacturer can be identified.
- (r) "Portable Computer" means a computer and video display that can be carried as one unit by an individual (e.g., a laptop computer).
- (s) "Purchase" means the taking, by sale, of title or of the right to use, in exchange for consideration.

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- (t) "Recycling" means any process by which covered electronic devices that would otherwise become solid waste are collected, separated, and processed to be returned to use in the form of raw materials or products, in accordance with environmental standards established by the Agency.
- (u) "Retail sales" includes sales of products through sales outlets, via the Internet, mail order, or other means, whether or not the seller has a physical presence in this state.
- (v) "Retailer" means a person who owns or operates a business that sells new covered electronic devices in this State by any means to an end user.
- (w) "Reuse" means any operation by which a covered electronic device or component changes ownership for the same purpose for which it was originally put on the market and includes repair and the continued use of whole systems or components.
- (x) "Sell" or "sale" means any transfer for consideration of title or of the right to use to a consumer, including, but not limited to, transactions conducted through sales outlets, catalogs, or the Internet, or any other, similar electronic means, and excluding wholesale transactions with distributors or dealers.
- (y) "Television" means a stand-alone display system containing a CRT or any other type of display primarily intended to receive video programming via broadcast, having a viewable area greater than four inches when measured diagonally, able to adhere to standard consumer video formats such as PAL, SECAM, NTSC, and HDTV and having the capability of selecting different broadcast channels and support sound capability.
- (z) "Video Display " means an output surface having a viewable area greater than four inches when measured diagonally that displays moving graphical images or a visual representation of image sequences or pictures, showing a number of quickly changing images on a screen in fast succession to create the illusion of motion, including, if applicable, a device that is an integral part of the display (and cannot be easily removed from the display by the consumer) that produces the moving image on the screen. Displays typically use a cathode ray tube (CRT), liquid crystal display (LCD), gas plasma, digital light processing, or other image projection technology.

**Section 2: Scope of Products**

The scope of products is the same as "Covered Electronic Devices". [The scope of products may be modified by regulation by \_\_\_\_\_].

**Section 3: Goal**

It is the goal of the State to promote producer responsibility and to ensure that all covered electronic devices and their components discarded by households are reused or recycled.

**Section 4: Sales Prohibition**

On and after \_\_\_\_\_, the following sales prohibitions apply to manufacturers:

- (1) A manufacturer not in compliance with all reporting, financial, and other requirements of this Act is prohibited from offering a covered electronic device for sale in this State. A manufacturer not in compliance with this section shall

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immediately provide the necessary information and notification to retailers, and no later than 15 days after failing to be in compliance, immediately ensure that the manufacturer's covered electronic devices are not offered for sale in this State until such time that the manufacturer is in full compliance.

**Section 5: Labeling Requirement**

On and after \_\_\_\_\_, a manufacturer or retailer may not sell or offer for sale a covered product to any person in the State unless:

- i. The covered product is labeled with the manufacturer's brand, and which label is permanently affixed and readily visible, and
- ii. That label contains a toll-free phone number and Web site that maintains current information about how and where to properly recycle or reuse the device.

**Section 6: Financing Mechanism**

(1) On and after \_\_\_\_\_, for every unit of covered electronic devices sold in [STATE] during each Fiscal Year, the manufacturer or its agent shall pay to the [Corporation created hereunder] [Managing Organization] a fee.

(a) The fee schedule shall be as appears in the following table, until or unless modified by regulation:

<b>Per Covered Computer Device Sold in [State] Each Year</b>	<b>Fee Per Unit</b>
Each video display unit that measures 27" or less diagonally	--
Each video display unit that measures more than 27" diagonally	--
Each desktop printer, television peripheral, CPU, or small computer peripheral	--
For each computer system sold at one time to one customer (which includes a CPU, video display 27" or smaller measured diagonally, keyboard, and associated small peripherals), including laptop computers	--
For each computer system sold at one time to one customer (which includes a CPU, video display greater than 27" measured diagonally, keyboard, and associated small peripherals), including laptop computers	--
Other as established by regulation by the Agency	

(b) On or before \_\_\_\_\_, and thereafter no more frequently than annually, and no less frequently than biennially, the Board of the [Corporation] [Managing Organization], in collaboration with the Agency, shall review, at a public hearing, the covered electronic device recycling fee and shall make any adjustments to the fee to ensure that there are sufficient revenues in the account to fund the covered electronic device reuse and recycling program established pursuant to this Act. Adjustments to the fee that are

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made on or before \_\_\_\_\_ shall apply to the next Fiscal Year. The Agency shall base an adjustment of the covered electronic device fee on both of the following factors:

- i. The sufficiency, and any surplus, of revenues in the account to fund the collection, reuse, and recycling of covered electronic devices that are projected to be recovered in the state.
- ii. The sufficiency of revenues in the account for the Board and the Agency to administer, enforce, and promote the program established pursuant to this Act, plus a prudent reserve not to exceed 5 percent of the amount in the account.

**Section 7: Manufacturer Responsibility**

(1) On and after \_\_\_\_\_ and at least once annually, each manufacturer of a covered electronic device sold in this state shall do all of the following:

(a) Submit to the [Corporation][Managing Organization] a report that includes all of the following information:

- i. An estimate of the number of covered electronic devices sold by the manufacturer in the State during the previous Fiscal Year.
- ii. A baseline or set of baselines that show the total estimated amounts of mercury, cadmium, lead, hexavalent chromium, and PBB's used in covered electronic devices manufactured by the manufacturer in that year and the reduction in the use of those hazardous materials from the previous year.
- iii. A baseline or set of baselines that show the total estimated amount of recyclable materials contained in covered electronic devices sold by the manufacturer in that year and the increase in the use of those recyclable materials from the previous year.
- iv. A baseline or a set of baselines that describe any efforts to design covered electronic devices for recycling and goals and plans for further increasing design for recycling.
- v. A description of the manufacturer's programs and efforts, and the amount of funds spent on those programs and efforts, to promote the reuse of covered electronic devices, including such programs as the remanufacture and sale of its own brand in the current and previous years.
- vi. A description of the manufacturer's programs and efforts, and the amount of funds spent on those programs and efforts, to educate consumers about the need to reuse or recycle covered electronic devices, in the current and previous years.

(b) In lieu of an individual report, manufacturers may submit the information in a collated report submitted via a trade association provided that information about an individual company can be made available to the [Corporation] [Managing Organization] upon written request by the [Corporation] [Managing Organization]. The [Corporation] [Managing Organization] may not make public any confidential business information claimed by the manufacturer in the report.

(c) A report submitted to another state or to the federal government that contains the same information as required in this section must be accepted by the [Corporation] [Managing Organization] in lieu of a separate report for the state.



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(2) Each manufacturer of a covered device sold in this state shall make information available to consumers that describes where and how to reuse and recycle the covered electronic device and opportunities and locations for the collection or return of the device, through the use of a toll-free telephone number and Internet Web site labeled on the device, and may also include information in the packaging, or accompanying the sale of covered electronic device.

(3) The covered electronic device recycling fee shall be due and payable quarterly on or before the last day of the month following each calendar quarter. The payments shall be accompanied by a return in the form as prescribed by the [Corporation] [Managing Organization].

(4) Manufacturers may determine the way in which to calculate and deliver the fees to the [Corporation] [Managing Organization], but must demonstrate the basis for this calculation in a clearly understandable manner and one that can be documented should it be challenged.

(5) The [Corporation] [Managing Organization] may require the payment of the fee and the filing of returns for other than quarterly periods.

(6) Any information submitted to the [Corporation] [Managing Organization] or Agency pursuant to \_\_\_\_ of this Act that is proprietary in nature or a trade secret shall be subject to protection under State laws and regulations governing that information.

**Section 8: Retailer Responsibility**

(1) A retailer may only offer for sale in this State a covered electronic device of a manufacturer that is in full compliance with the requirements of this Act. The non-profit [Corporation] [Managing Organization] shall maintain a list of all manufacturers in compliance with all reporting, financial, and other requirements of this Act and post the list on an Internet Web site. Retailers shall consult the list prior to selling covered electronic devices in this State. A retailer shall be considered to have complied with this responsibility if on the date that the product was ordered from the manufacturer or its agent, the manufacturer was listed as being in compliance on the aforementioned Web site.

(2) A retailer must clearly post and provide information that describes where and how to reuse and recycle the covered electronic device and opportunities and locations for the collection or return of the device, through the use of a toll-free telephone number, Internet Web site, information included in the packaging, or information provided accompanying the sale of the covered electronic device.

- a. This information shall be provided in clear written form in English and Spanish and any other languages deemed to be primary languages by the State Department of Education.

**Section 9: Not-for-Profit Corporation**

**PLEASE NOTE: Some states may prefer to assign the responsibilities for the fee and program management to one or more state agencies or to an existing non-**

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**profit organization. The importance of this section is that it defines the roles and responsibilities that need to be clearly recognized and assigned via the legislation. The issue of whether these responsibilities should be carried out by a third-party organization or a state agency is not the central point of this section; but rather, the focus is on the substance of what needs to be accomplished for an effective state program.**

(1) A not-for-profit Corporation must be designated or created by the Agency within one calendar year of the passage of this Act as a not-for-profit Corporation organized under Act \_\_\_ that qualifies for tax exempt status under United States Code, title 26, section 501(c)(3), to collect and administer the fees remitted by manufacturers for the sale of covered electronic devices. The purpose of the Corporation will be to collect fees from manufacturers, develop, and implement statewide reuse and recycling programs for covered electronic devices, distribute fee proceeds, provide reports on the program to the Agency and the Legislature, and make recommendations regarding the improvement of the program and adjustments in fees.

(2) No fees shall be required of manufacturers until such time as the Corporation has been fully incorporated and legally constituted.

(3) The Corporation shall submit a budget annually to the Agency and spend no more than five percent of the total fees collected under Section 6 for its administrative expenses.

(4) The Corporation shall annually remit to the Agency three percent of the total fees collected under this Act for administrative, education and enforcement responsibilities of the Agency under this Act. Those fees shall be deposited no later than 30 days after the beginning of the Fiscal Year into a dedicated account to be used solely and absolutely for the purposes of administration, public education, and enforcement associated with this Act. It shall be unlawful, and subject to the provision of the Citizen Lawsuits authorized by section \_\_\_ below, for those funds to be diverted for any other purpose or activity.

**Section 10: [Not-for-Profit Corporation] [Managing Organization] Responsibilities**

(1) The [Corporation] shall be governed and operated by a multi-stakeholder Board of Directors for fulfilling the responsibility for management of a cost-efficient and environmentally sound statewide collection, transportation, reuse, and recycling system for covered electronic devices.

(2) The [Corporation] [Managing Organization] must organize, administer, and ensure that electronics collection opportunities are available throughout the state and in such a manner as to be convenient, to the maximum extent feasible, to all consumers in the state.

(3) The [Corporation] [Managing Organization] shall rely primarily on the existing collection and consolidation infrastructure for handling covered electronic devices to the extent that this infrastructure is accessible on a regular and ongoing basis to at least

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85% of the population of the State, is cost effective, and meets the environmentally sound management requirements of section \_\_\_\_\_.

(4) The [Corporation][Managing Organization] shall both contract and compensate for the collection, recycling and reuse of covered electronic devices, whether by government, for-profit Corporations, or non-profit Corporations, retailers, manufacturers or any other party, for the reasonable costs associated with these activities. A reimbursement schedule shall be annually established by the [Board of the Corporation] [Managing Organization] for this purpose.

(5) The [Corporation] [Managing Organization] shall receive fees from manufacturers for the sale of covered devices.

(6) The [Corporation] [Managing Organization] shall organize and coordinate public outreach. The Corporation shall utilize local and regional authorities to reach consumers and determine appropriate methods for education.

(7) The [Corporation] [Managing Organization] shall use the fees for the sole purpose of fulfilling its responsibilities under this Act. In the event that expenses from administration, education, collection, transportation, reuse, and recycling activities exceed revenues, the Corporation may borrow up to ten percent of the projected annual net fee funds from outside sources. Borrowed funds must be repaid within two years.

(8) On April 1 of each year, the [Corporation] [Managing Organization] shall report to the Agency and the Legislature on the implementation of the system during the previous Fiscal Year. The report must include:

- i. A list of all parties participating in the system with whom the Corporation has contracts, the amount of payments it has made to those parties, and the purpose of those payments.
- ii. The total amount of covered electronic devices sold in the State the previous year as reported to the Board.
- iii. The total amount of covered electronic devices collected in the State the previous year as reported to the Board.
- iv. The total decrease in toxic constituents used in covered electronic devices sold in the State the previous year as reported to the Board.
- v. The total increase in recycled content used in covered electronic devices sold in the State the previous year as reported to the Board.
- vi. The total amount of fees collected.
- vii. A summary of funds expended by category:
- viii. Education
- ix. Administration (both [Corporation][Managing Organization] and Agency)
- x. Collection
- xi. Transportation
- xii. Recycling
- xiii. Reuse
- xiv. Disposal
- xv. Other
- xvi. Any surplus funds carried forward.

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- xvii. A complete listing of all collection sites operating in the State in the prior Fiscal Year, the parties who operated them and the amount of material collected at each site.

The [Corporation] [Managing Organization] shall annually post the report on its Web site.

(9) On April 1 of each year, and beginning two years after the date of enactment, the [Corporation][Managing Organization] shall publicly announce through widespread press announcements and posted on the [Corporation][Managing Organization] Web site, which manufacturer and/or brands of covered electronic devices in the previous fiscal year contained the least mercury, cadmium, lead, hexavalent chromium and PBB's, which contain the highest recycled content, and which have demonstrated the greatest overall improvements in recycled content and decreased toxic content. Manufacturers and/or products so recognized will have the right to use this status in its advertising, promotion, and for any other lawful purpose.

(10) The [Corporation] [Managing Organization] shall be fully audited at the end of each Fiscal Year and said audit report submitted to the Agency and the Legislature.

(11) The Agency shall annually establish, and update as necessary, statewide recovery, reuse, and recycling goals for covered electronic products.

(12) The [Corporation][Managing Organization] and Agency shall maintain on their Web sites complete and up-to-date listings of where consumers can bring covered electronics products for reuse and recycling under this Act.

(13) The [Corporation][Managing Organization] and its Board shall not be held financially liable or responsible for any violation of, state or local law by a reuse organization or recycler under contract to the [Corporation][Managing Organization] or to whom the [Corporation][Managing Organization] makes payment pursuant to Section \_\_\_\_\_.

(14) The [Corporation] [Managing Organization] shall encourage collectors, transporters, reuse entities and recyclers of covered electronic devices to coordinate their efforts in order to minimize costs. All contracts issued by the [Corporation][Managing Organization] for collection, transportation, reuse and recycling must be competitively bid under a process created by the [Corporation][Managing Organization] and may not prohibit or affect any contract, franchise, permit, or other arrangement regarding the collection, transportation, reuse or recycling of other solid or household hazardous waste.

**Section 11: Fees for the Collection, Reuse or Recycling of Covered Electronic Products**

No fees may be charged to consumers for the collection, reuse or recycling of covered electronic products by any person or entity participating in or being compensated by the statewide program operated and funded by the [Corporation] [Managing Organization] or by a manufacturer for a recycling or take-back or any other program for the reuse or recycling of covered electronic devices.

**Section 12: Not-for-Profit Corporation Structure**

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(1) The Corporation shall have a Board of Directors consisting of 11 members appointed by the Director of the Agency. The Board members shall be appointed for two-year terms, except that for the initial term, six members shall be appointed to one-year terms and five members shall be appointed to two-year terms. The Director shall appoint a replacement if any vacancy occurs.

The Board shall consist of representatives from:

- (1) Five manufacturers of covered electronic devices;
- (2) Two retailers of covered electronic devices;
- (3) One not-for-profit organization with experience in the reuse and recycling of covered electronic devices;
- (4) One for-profit organization with experience in the reuse and recycling of covered electronic devices; and
- (5) Two government representatives, including one from local government who shall be compensated pursuant to section -----.

NOTE: This structure is based on the NEPSI deliberations. Because the manufacturers are paying the cost of the system it was concluded that they should have the majority number of seats for a single stakeholder group. However, manufacturers do not represent the majority of the seats.

In addition, one representative of the Director shall serve as a non-voting, ex officio member of the Board.

(b) The Board shall hire an executive director who shall run the day-to-day operations of the Corporation and report to the Board at least once a year.

(c) The executive director shall hire such staff as is required to fulfill the responsibilities and requirements of the Corporation.

**Section 13: Manufacturer-Operated Programs**

(1) Beginning three years after the effective date of this legislation, a manufacturer may annually petition [the Corporation] [Managing Organization] [the Agency] for a rebate of a percentage of the fees it paid on a per-covered-product unit basis in the previous fiscal year upon an adequate demonstration that it:

- a. Fully funded (at no direct cost to the consumer, local or regional government, including for collection, transportation or otherwise) the collection, reuse and recycling for a specific number of covered products recovered for reuse or recycling from consumers in [State] during the previous fiscal year, and
- b. Decreased the use of toxic constituents and increased its use of recycled content through its annual filings required in Section 7 above.

The rebate will be based on a per-item basis of covered products that were collected, reused, or recycled and, to the extent that the petition is successful, the rebate will be based on a percentage of the fee schedule in place in the prior Fiscal Year.

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- c. The percentage of the fee available for rebate shall be determined by the [the Corporation] [Managing Organization] on an annual basis. Funds shall only be available for rebate upon a finding that 100% of the funds required to cover the costs of operating and enforcing the statewide program, including a buffer of 10% in excess of those amounts, are in hand and available for financing that system. As such, funds shall only be available for rebate if the [the Corporation] [Managing Organization] determines that there are funds available in excess of the needs of the program.
- d. The criteria for an adequate demonstration to be applied by [the Corporation] [Managing Organization] [the Agency] shall be set by regulation by the Agency no later than 9 months after the date of implementation of this Act.
- e. Appeal from an adverse decision by the [the Corporation] [Managing Organization] [the Agency] must be made within 30 days of such a decision. [In the case of the Agency being the decision maker, the appeal shall be an Administrative appeal process.] [In the case of the Corporation [Managing Organization] being the decision maker, the appeal shall be made to Superior Court].
- f. The amount of the rebate may be changed by regulation no sooner than three years after the implementation of this Act should the Agency determine through public hearing and comment that the cost of administration, operation, enforcement and education, including the costs of collecting and managing historic and orphan equipment, to the [Corporation] [Managing Organization] and Agency are more than 80% of the fees collected on a per unit covered product as remitted. After three years, the allowed rebate percentage may be adjusted by regulation as determined to be necessary and appropriate by the Agency.

(2) It is the intention of the rebate system to allow individual manufacturers to create, fund and operate alternate collection, transportation, reuse and recycling programs to those created and funded by the [Corporation] [Managing Organization]. It does not, however, relieve those manufacturers from the financial responsibility of contributing to the educational, administrative, operational, and enforcement costs of the program, including those of the [Corporation][Managing Organization] and the Agency, and those for the management of orphan and historic products.

**Section 14: Reimbursement for Collection, Transportation, Reuse & Recycling**

(1) For covered electronic devices collected for reuse or recycling on and after the effective date of this Act, the [Corporation][Managing Organization] shall make electronic device recovery payments and electronic device reuse or recycling payments for the collection, transportation, reuse and recycling of covered electronic devices to an authorized or approved entity upon receipt of a completed and verified invoice submitted to the Corporation by the authorized entity in the form and manner determined by the [Corporation][Managing Organization].

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- a. In order to receive a payment proof will be required:
- i. That the covered electronic device was collected from an individual resident of the State after the effective date of this Act.
  - ii. That the collection, transportation, reuse or recycling of the device was conducted in accordance with all local, state, and federal laws, including the requirements created by this Act and its associated regulations.
  - iii. Additionally, the amount of payment shall be based on the schedule established pursuant to Section 10(4) above, but in no case shall payment be in excess of the amount to be compensated by competitive contract issued for like services by the [Corporation] [Managing Organization].

**Section 15: Environmentally Sound Management Requirements**

(1) Covered electronic devices collected through any program in [State], whether it be by manufacturers, retailers, for-profit or not-for profit corporations, units of government, or organized by the [Corporation][Managing Organization], must be reused or recycled in a manner that is in compliance with all applicable federal, state, and local laws, regulations, and ordinances, and must not be exported for disposal in a manner that poses a significant risk to the public health or the environment.

(2) The [Corporation] [Managing Organization] shall establish performance requirements for reuse organizations and recyclers eligible to receive funds from the [Corporation] [Managing Organization]. All entities shall, at a minimum, demonstrate compliance with the United States Environmental Protection Agency's (EPA) Guidance on Environmentally Sound Management of Electronic devices as issued and available on the EPA's Web site in addition to any other requirements mandated by state law.

**Section 16: Disposal Ban**

Two years after enactment of this law, it shall be illegal for any person to dispose of any of the covered electronic devices in any solid waste disposal facility in the [State].

**Section 17: Attorney General Lawsuits Authorized to Enforce this Act**

The Attorney General shall be authorized to independently initiate action to enforce any provision of this law, including failure by the manufacturer to remit the fee to the [Corporation][Managing Organization]. The money collected by the Attorney General must be used to offset enforcement expenses. Money in excess of the enforcement expenses shall be deposited with the [Corporation][Managing Organization].

**Section 18: Regulatory Authority**

The Agency may adopt rules and regulations for the purpose of administering this Act.

**Section 19: Relation to Federal Law**

This Act is intended to govern all aspects of the collection, reuse, and recycling of covered electronic devices as those terms are defined herein. Upon the implementation of a national program to collect, reuse, and/or recycle covered electronic devices, the

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provisions of this Act are thereafter intended to supplement the provisions of said national program and, to the extent of any inconsistency between the terms of this Act and those of the national program, the terms of this Act shall remain in full force and effect unless expressly preempted by federal law.

**Section 20: Penalties**

(a) Civil liability in an amount of \_\_\_\_\_ may be administratively imposed by the Board against manufacturers for failure to comply with this Act, except as otherwise provided in \_\_\_\_\_.

(b) An offense shall be considered the sale of a single item by a manufacturer or retailer not in full compliance with the provisions of this Act.

**Section 21: Effective Date**

Unless otherwise specified, this Act shall take effect 90 days after the date of enactment.

**Section 22: Severability Clause**

The provisions of this Act shall be severable, and if any part of this Act is declared to be invalid or void by a court of competent jurisdiction, the remaining portion shall not be affected, but shall remain in full force and effect and shall be construed to be the entire Act.



**Key Elements of Model Regional Electronics Legislation  
July 15, 2005**

**1. Scope of Products**

- Desktop/personal computers,
- Computer monitors,
- Portable computers,
- Desktop printers,
- CRT-based televisions,
- Non-CRT-based televisions,
- Television peripherals (e.g., cable or satellite receiver, VCR, DVD),
- Central processing units (CPU), and
- Small computer peripherals (e.g., mice, keyboard, modem).

Does not include:

- Motor vehicle components,
- Industrial, commercial, or medical equipment ,
- Clothes washer, clothes dryer, refrigerator, refrigerator and freezer, microwave oven, conventional oven or range, dishwasher, room air conditioner, dehumidifier, or air purifiers or their components, or
- Telephones of any type unless they contain a display area greater than 4" measured diagonally.

**2. Funding Mechanism**

- Internalized fee based on the units of sale to be paid by manufacturer (internalized advance recovery fee).
  - Opportunity for partial reimbursement of fees for manufacturers who operate their own collection, reuse and recycling programs.
  - No end-of-life fees permitted.

**3. Management of Funds**

- Third-party organization [although some states have indicated that they would prefer to assign responsibility to state agency(ies)].

**4. Manufacturer Responsibility**

- Paying of fees.
- Annual reporting of green design efforts, toxicity content, recycled content, number of units sold in previous year in state.
- Labeling with the manufacturer's brand and a toll-free phone number and Web site providing information about how and where to properly recycle or reuse the device, and opportunities and locations for the collection or return of the device.

**5. Retailer Responsibility**

- Only sell products of manufacturers that are in full compliance with law.
- Post and provide public information that describes where and how to reuse and recycle the covered electronic device and opportunities and locations for the collection or return of the device.

**6. State Agency Responsibility**

- Enforcement.
- Same as third-party organization if state law assigns program management to the agency rather than the organization.
- Establish annual statewide recovery, reuse and recycling goals for covered electronic products.

**7. Third-Party Organization (TPO) Responsibility**

- Develop and implement statewide reuse and recycling programs for covered devices that rely primarily on existing collection and consolidation infrastructure.
- Collect and administer fees.
- Distribute fee proceeds for reimbursement for collection, transportation, reuse, and recycling.
- Establish performance requirements for reuse organizations and recyclers eligible to receive funds.
- Maintain a Web site of manufacturers in full compliance with law.
- Organize and coordinate public outreach.
- Receive and review annual reports from manufacturers.
- Provide reports on the program to the state agency and the Legislature.
- Make recommendations for the improvement of the program and for adjustments in fees.
- Publicly announce which manufacturer and/or brands of covered electronic devices in the previous fiscal year offered for sale: 1) contained the least amount of mercury, cadmium, lead, hexavalent chromium and PBB's; 2) contained the highest percentage of recycled content; and 3) demonstrated the greatest overall improvements in recycled content and decreased toxic content.
- Spend no more than five percent of total fees collected for administrative expenses.
- Be fully audited at the end of each fiscal year, with the report submitted to the Legislature and agency.

**8. Disposal Ban**

- Two years after date of enactment.

