

**IT PROCUREMENT AND DISPOSAL: APPLICATION
OF THE FEDERAL GOVERNMENT'S GREEN POLI-
CIES IN THE LIFE CYCLE MANAGEMENT OF IT
ASSETS**

HEARING

BEFORE THE
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
ORGANIZATION, AND PROCUREMENT
OF THE
COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM
HOUSE OF REPRESENTATIVES
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IT PROCUREMENT AND DISPOSAL: APPLICATION OF THE FEDERAL GOVERNMENT'S GREEN POLICIES IN THE LIFE CYCLE MANAGEMENT OF IT ASSETS

TUESDAY, OCTOBER 27, 2009

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
ORGANIZATION, AND PROCUREMENT,
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m. in room 2154, Rayburn House Office Building, Hon. Diane E. Watson (chairwoman of the subcommittee) presiding.

Present: Representatives Watson, Bilbray, Connolly, Cuellar, Quigley, and Luetkemeyer.

Staff present: Bert Hammond, staff director; Valerie Van Buren, clerk; Adam Bordes and Deborah Mack, professional staff; Adam Fromm, minority chief clerk and Member liaison; Kurt Bardella, minority press secretary; Stephen Castor, minority senior counsel; and Ashley Callen, minority counsel.

Ms. WATSON. The Committee on Oversight and Government Reform's Subcommittee on Government Management, Organization, and Procurement will come to order.

Without objection, the Chair and the ranking minority member will have 5 minutes to make opening statements, followed by opening statements not to exceed 3 minutes by any other Member who seeks recognition.

Without objection, Members and witnesses may have 5 legislative days to submit a written statement or extraneous materials for the record.

Now, today the subcommittee will hear from Members of Congress and Government and industry representatives about the U.S. Government's various programs designed to promote the purchase of environmentally preferable IT products and the responsible recycling and disposal of IT equipment at the end of the product's life cycle.

The U.S. Government spends in excess of \$70 billion annually on IT investments and disposes of more than 500,000 computers annually, or approximately 10,000 units each week. By default, it plays a pivotal role in shaping the IT marketplace.

This subcommittee is particularly interested in learning about what Government-wide policies and programs are now in place to promote the purchase of IT energy efficient products, the use of re-

cycled and other environmentally friendly materials in the manufacture of the new IT products, and the responsible disposal and recycling of the end-of-life-cycle IT assets.

The subcommittee is also interested in learning to what extent mandated U.S. Government green initiatives are being implemented by various agencies, as well as the level of interagency coordination and cooperation in the management and disposal of Government IT assets.

By way of example, Executive Order 13423 executed in the year 2007 requires that at least 95 percent of the agency's acquisition of IT and other electronic assets be registered, if available, with the Electronic Product Environmental Assessment Tool [EPEAT], which was developed with a grant from the Environmental Protection Agency in 2006 and is managed by the Green Electronics Council.

EPEAT-registered products, which include desktops, laptops, and printers, must meet requirements for energy conservation, materials, and life cycle management.

Earlier this month, President Obama issued Executive Order 13514, which focuses on improving the Federal Government's environmental, energy, and economic performance and also mandates agency procurement preferences for EPEAT. But according to press reports, only 13 Federal agencies, including the GSA and EPA, comply with the EPEAT requirement in 2008, which accounts for roughly a quarter of IT procurement spending.

While the Government's recycling and disposal programs have strong attributes, I am concerned that many of the programs are voluntary and not sufficiently integrated into the agencies' core mission. The absence of a clear set of standards and policies is perhaps most evident with the ad hoc treatment of electronic waste or e-waste, and the fact that national standards for the disposal of electronic products are lacking.

One must question the efficacy of the Government's green programs currently in place if we continue to fail to develop a national policy on the reclamation, recycling, and responsible disposal of IT assets.

So I look forward to both an informative and informational discussion of an issue that undoubtedly will grow in importance as the responsible and effective functioning of Government becomes increasingly dependent on and tied to the efficient management of its IT assets.

I thank all the witnesses for appearing before the committee today and look forward to their testimony.

I will now yield to our distinguished ranking member, Mr. Bilbray of California.

Mr. BILBRAY. Thank you, Madam Chair. I would apologize for my tardiness and in repentance I will just ask the unanimous consent that my written statement be included into the record.

Ms. WATSON. Without objection.

Mr. BILBRAY. I would just like to thank the witnesses. Again, I apologize for my lack of promptness.

Ms. WATSON. All right. If there are any Members that would like to have opening statements, we will give you 3 minutes. Mr. Cuellar.

Mr. CUELLAR. Thank you, Madam Chair.

First of all, I want to thank you for holding this meeting. I want to thank our colleagues, Representative Thompson and Representative Green. Very appropriate last name, Green, green programs. I will be leaving because I have to go chair a committee in Homeland, so I will be leaving in a couple of minutes.

The only thing I do want to emphasize, Madam Chair and Members, is that when you look at the emergent issues, one of them is the lack of uniform standards, which is the performance. What are the objectives? What are the goals? How do you indicate if you are meeting those goals or not? So I would like to emphasize that when we talk about emergent issues that uniformity or lack of uniformity is something that we would like to have.

I would like to see the agencies where we can at least see what their objectives are, what their goals are, and how they are measuring those indicators. That is the point that I want to just emphasize as one of emergent issues that we are looking at.

Ms. WATSON. Thank you.

Mr. CUELLAR. Thank you, Madam Chair.

Ms. WATSON. Mr. Quigley.

Mr. QUIGLEY. Just to thank you for having this meeting. We will be submitting a written document for the record.

Ms. WATSON. Without objection.

Mr. QUIGLEY. Thank you.

Ms. WATSON. There are no other opening statements. We will now go to our first panel.

I will now introduce the first panel. I would like to recognize Representative Mike Thompson. He has representing California's First Congressional District since 1998. He is a member of the House Committee on Ways and Means and the House Permanent Select Committee on Intelligence. Congressman Thompson also formed the E-Waste Working Group to develop a national approach to adequately dispose of e-waste.

Congressman Gene Green has represented the 29th Congressional District of Texas since 1992. He serves on the House Energy and Commerce Committee and on the House Committee on Foreign Affairs. Congressman Green is also a co-sponsor of H.R. 2595 to restrict certain exports of electronic waste.

I ask that each of the witnesses now give a brief summary of their testimony and to keep this summary under 5 minutes in duration, if possible. Your complete written statements will be included in the hearing record.

Congressman Thompson, would you please proceed.

STATEMENTS OF HON. MIKE THOMPSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA; AND HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

STATEMENT OF HON. MIKE THOMPSON

Mr. THOMPSON. Thank you, Madam Chair and Ranking Member Bilbray and other members of the committee. I really appreciate the fact that you have taken this issue on and are holding this hearing.

Congresswoman Watson, your mention of current programs, many of them being voluntary and not having something that incorporates into our everyday practice of Government is absolutely on point and something I think we all need to be working toward fixing.

My interest in this subject goes back to when I was first elected to Congress. As you mentioned, I started the group, but I have been involved in this for quite some time now. As we all know, because of the technological advances in electronic equipment, things are getting better, they are getting smaller, there is more bells and whistles. This is great for consumers, but on the other end of it we have products that have about a 2-year life expectancy, which means there is a heck of a lot of e-waste at the end of the day.

In the 111th Congress I have been working with my friend and colleague, Congressman Gene Green, on this legislation that you mentioned that would disallow the export of U.S. e-waste to any country that does not have high environmental standards. As I mentioned, there is a lot of it. We just sponsored a Capitol Hill e-waste collection day during the—I think it was the summer break. We had somewhere around 200 staffers who brought their e-waste in to be appropriately recycled or reused, so there is a tremendous amount of it there, and it should not be going overseas in a way that is irresponsible either environmentally irresponsible or morally irresponsible.

If you look at some of the recent TV investigatory pieces on what happens to e-waste, you know that they burn this stuff in open air pits to get the plastic and the coating on the wire out of the mix so they can salvage the valuable components. They have kids picking through this stuff, handling toxic materials to get these valuable components. And the areas where they are doing this—and most recently it was pointed out in Ghana, China, and Indonesia, some of the big offenders. The population, the people that are working there have all kinds of very serious skin diseases, respiratory problems throughout the entire community because of this open air burning. This has to stop. I think our legislation is the first step toward putting an end to this immoral behavior.

I am on the Intelligence Committee and chair a subcommittee, and I am very concerned about Government computers getting into the wrong hands. Again, some of these TV reporting entities have found examples. I have a picture of one of those that I would like to submit to you, Madam Chair, for the record.

The last thing we need are unfriendly foreign countries getting information as to how we do our business, intelligence or otherwise, here in this country.

In the Intelligence authorization bill for 2010, I was able to get an amendment in that requires a threat assessment report on the security of e-waste disposal of Federal property that is assigned to the U.S. intelligence community. These items just have a great potential of getting into the wrong hands and causing us a great deal of problems.

The EPA has estimated that the Federal Government discards some 10,000 computers every week, so we really need that national framework to better manage this. In the absence of that, I believe that our Federal Government and our Congress needs to lead by

example, not only help us get to that national framework, but while we are traveling to that point we need to do it right here.

In 2005 I had a concurrent resolution to get Congress and other legislative branch offices to work together to establish and implement a coordinated program for the reuse, recycling, and appropriate disposal of e-waste by offices of the legislative branch. I think that is an important effort and I am going to reintroduce that bill in the next couple of days, and I hope that I would be able to garner some support from this committee and others who may be watching your hearing and paying attention to your important work.

So I thank you again for bringing this to a much greater national audience. This is something we really need to get ahead of and get control of, and I look forward to working with you and this committee to make sure that happens.

I yield back the remainder of my time.

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

Testimony of Representative Mike Thompson (D-CA)**Committee on Oversight and Government Reform
Subcommittee on Government Management, Organization and Procurement****“IT Procurement and Disposal: Application of the Federal Government’s Green Policies in
the Life Cycle Management of its IT Assets”****October 27, 2009**

Thank you, Madame Chairwoman, for the opportunity to speak today on IT procurement and disposal practices within the federal government. I applaud the subcommittee’s work and interest on important issue. My own particular interest in this subject concerns the disposal of end-of-life IT components or “e-waste,” as it’s commonly referred to. This is a subject that I’ve been involved with since I was first elected to Congress. I am the founding member of the E-Waste Working Group on Capitol Hill. In past Congresses, our group has introduced comprehensive legislation on e-waste, participated in hearings on the subject, convened stakeholder meetings and released a bipartisan concept paper, which set forth an outline of a federal extended producer responsibility e-waste law.

As we all know, electronic products are becoming smaller and lighter, but they are also creating an ever-growing environmental and waste disposal problem. Today, the average lifespan of a computer is only two years, which is creating an avalanche of e-waste. More often than not, these discarded items wind up in the landfills of developing countries, where the waste becomes not just an environmental issue but a moral one as well. In the 111th Congress, I have been working with my friend and colleague, Gene Green, on legislation that would ban the export of U.S. e-waste to developing countries. I wish I could say that federal government property is never disposed of in this manner – but as the photo(s) I hereby submit for the record depict, that is not the case.

As a Subcommittee Chairman on the House Permanent Select Committee on Intelligence, I am especially concerned about the security of e-waste disposal of property assigned to the U.S. intelligence community and the potential for counterintelligence exploitation of these items. In

the Manager's Amendment to H.R. 2701, the Intelligence Authorization Act for Fiscal Year 2010, I was able to add language requesting a threat assessment report on such practices.

The Environmental Protection Agency (EPA) has estimated in the past that the entire federal government alone discards 10,000 computers each week. And so in the absence of a national framework for managing the growing mountain of computers, monitors and televisions that have become obsolete, I strongly believe that the federal government should lead by example.

To this end, in 2005, I introduced a concurrent resolution, which would have expressed the sense of Congress that Congress and other legislative branch offices should work together to establish and implement a coordinated program for the reuse, recycling, and appropriate disposal of e-waste by offices of the legislative branch. In the coming days, I plan to reintroduce a similar resolution, and hope to have your support.

Thank you for bringing much needed attention to this issue and to allow us to gather expert testimony on it.

Ms. WATSON. Thank you, Mr. Thompson, for your diligence and your concern and the work your subcommittee is doing. We appreciate it.

Congressman Green, would you please proceed?

STATEMENT OF HON. GENE GREEN

Mr. GREEN. Thank you, Madam Chairwoman and Ranking Member Bilbray for holding the hearing to look into, among other issues, the Government's end-of-life electronic waste management. It is an honor to be here to testify on the bill that myself and our staffs have spent countless hours, along with my colleague, Mike Thompson, on an issue we have been continuing to work to address.

My real interest in the issue comes from working on and chairing the now-defunct subcommittee of the Energy and Commerce Committee. We started with an e-waste working group to put forward principles and try to develop legislation to stem the export of electronic waste to countries and facilities that are disposing of the waste in ways that are extremely harmful to the environment and to human health.

Last summer I became chair of that subcommittee and made it one of top priorities in moving the issue forward. Shortly after that, we introduced H. Res. 1395 expressing concern over the current Federal policy that allows the exportation of toxic electronic waste to developing countries and expressed the sense of the House that the United States should join other developed nations and ban the export of toxic electronic waste to developing nations.

We also began working immediately on legislation that would ban the export of these products to developing countries that do not have the facilities to properly and safely handle this waste. What was produced is H.R. 2595, which amends the Solid Waste Disposal Act to do just that. While we are still working to strengthen language to ensure it cannot be manipulated broadly, it only allows export of products that we track through the refurbishment process back to the marketplace to prevent abuse.

H.R. 2595 sets the framework for this, and we are now working with various stakeholders to ensure the language is strong enough and provides enough transparency to ensure that it cannot be circumvented. We are also trying to address a current problem where much of the e-waste collected in the United States and exported for allegedly recycling or reuse is actually exported to developing countries such as China, Ghana, India, Nigeria, Pakistan, and Thailand for unsafe salvage and metals recovery.

There have been numerous reports and stories of toxic e-waste being burned in open fires with no safety equipment and often by children, and creating extremely toxic conditions. The fact that our electronic products are scrapped by children in developing countries using open fires and acid baths is a disgrace. We wouldn't want to import other peoples' hazardous waste, so we shouldn't send ours overseas.

These conditions have been documented in the film *Exporting Harm and Digital Dump*, National Geographic Magazine, 60 Minutes, and even a CSI New York had a segment on it about a year

ago, and many other media and government sources, including a GAO report released just over a year ago.

I am pleased Director Stephenson of the GAO Office of Natural Resources and Environment is on the next panel, and I'm sure he will discuss the report in more depth. Briefly, the GAO report that was released last September identified that Customs Border Protection already has a framework in place that could help EPA obtain data and improve oversight of exporting used electronics. It has also stated the agency's automated tracking systems electronically store information from shippers, export declaration forms, which include tariff codes, and that adding more detailed codes to the schedule could assist other countries in controlling used electronics exported from the United States.

Our legislation will attempt to build on this by directing the EPA to work with necessary agencies, including Customs and Border Protection, to set up a system to accomplish this while detailing what products can be exported and for what purpose. It is important to note there are currently no Federal laws in place to prevent the export of this waste.

H.R. 2595 includes strong protections that would make abuse of the export provisions illegal, costly, and unlikely, as well as providing complete transparency on where the exports are going. These protections demand that an export is only permitted if the competent authorities of the importing country certify annually in writing to the United States that such items intended for refurbishment are permitted by that country's laws and policy. If the competent authority of a country does not exist then the export to that country by companies within the United States would be banned.

Companies wishing to export must certify annually to the U.S. Government the export of such items is intended for refurbishment. False certifications would result in criminal violations and penalties under the Resource Conservation and Recovery Act [RCRA]. Companies wishing to export must also further notify the EPA of the name and contact information of the exporter, the name and the contact information of the importer at the receiving facility, and the type of used electronic equipment or parts that will be shipped, and must also keep copies of normal business records such as contracts demonstrating that each shipment of items was intended for refurbishment. The collection of such records will be critical to investigations of companies who are suspected of abusing provisions allowing for limited exports.

Finally, items exported for the purpose of refurbishment must be packaged according to standards which the legislation directs EPA to develop to prevent loss of functionality due to damage during transit. Such packaging environments would constitute significant cost to the companies wishing to export such items.

Madam Chair, I want to thank you again I want to thank you again for holding the hearing on the electronic life cycle and the role our Government's IT practice plays in it. It is an extremely important issue for our Nation to address.

Again, I want to thank Congressman Thompson for his leadership on the issue and thank you for the opportunity to testify.

[The prepared statement of Mr. Green follows:]

Congressman Gene Green
Committee on Oversight and Government Reform
Subcommittee on Government Management, Organization, and Procurement
“I.T. Procurement and Disposal: Application of the Federal Government’s Green Policies
in the Life Cycle Management of its I.T. Assets”
October 27, 2009

Madame Chairwoman, I want to start by thanking you for holding this hearing to look into, among other issues, the government’s end-of-life electronic waste management.

It is an honor to be asked to testify on a bill I spent countless hours working with my colleague here, Congressman Mike Thompson, on and an issue we continuing to work to address. My real interest in this issue comes from working on and chairing a now defunct subcommittee on the Energy and Commerce Committee.

We started years back with an “e-waste working group” to put forward principles, and to try to develop legislation to stem the export of electronic waste to countries and facilities that were disposing of the waste in ways that were extremely harmful to environment and human health.

Last summer, I became chairman of the subcommittee and made it one of my top priorities to move the issue forward.

Shortly after, I introduced House Resolution 1395 expressing concern over the current Federal policy that allows the exportation of toxic electronic waste to developing nations, and expressing the sense of the House that the United States should join other developed nations and ban the export of toxic electronic waste to developing nations. This resolution gathered 19 cosponsors.

We also began working immediately on legislation that would ban the export of these products to developing countries that do not have the facilities to properly, and safely handle this waste. What produced is H.R. 2595 which amends the Solid Waste Disposal Act to do just that.

While we are still working to strengthen language to ensure it cannot be manipulated. Broadly it only allows exports for products that can be tracked through the refurbishment process and back to the marketplace to prevent abuse.

H.R. 2595 sets the framework for this; we are now just working with the various stakeholders to ensure the language is strong enough and provides enough transparency to ensure it cannot be circumvented.

We are trying to address the current problem where much of the e-waste collected in the U.S. and exported for alleged “recycling” or “reuse” is actually exported to developing nations such as China, Ghana, India, Nigeria, Pakistan, and Thailand for unsafe salvage and metals recovery.

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These conditions have been documented in the films *Exporting Harm* and *Digital Dump*, *National Geographic Magazine*, *60 Minutes* and other media and government sources including a GAO report released just over a year ago.

I am pleased Director Stephenson from the GAO, office of Natural Resources and Environment is on the next panel, as I'm sure he will discuss the report in more depth.

Just briefly, the GAO report that was released last September identified that the "Customs and Border Protection already has a framework in place that could help EPA obtain data and improve oversight of exported used electronics."

It also stated that "the agency's automated tracking systems electronically store information from shippers' export declaration forms, which include tariff codes" and that "adding more detailed codes to the schedule could assist other countries in controlling used electronics exported from the United States."

Our legislation would attempt to build on this by directing the EPA to work with the necessary agencies, including CBP, to set up a system to accomplish this, while detailing what products can be exported and for what purposes.

Madame Chairwoman, I want to again thank you for holding this hearing to look at the electronic lifecycle, and the role our government's I.T. practice play in it. It is a tremendously important issue for our nation to address, and I again want to thank Congressman Thompson for his leadership and help on this issue – and thank you for the opportunity to testify today.

Ms. WATSON. Thank you, Congressman Green and Congressman Thompson, for taking your time to make statements.

I would like to call on Mr. Connolly if he has a statement to make.

Mr. CONNOLLY. Thank you, Chairwoman Watson, and thank you for holding this hearing on green procurement practices for the Federal Government.

This is an exciting time to be dealing with this topic, as we have unprecedented technological expertise, interest, and environmental leadership at the Executive level. By working together, I am confident we can advance an aggressive agenda for the Federal Government to set the highest standard in stewardship in the area of procurement.

I also want to thank our colleagues for their leadership, Congressman Thompson and Congressman Green, very powerful testimony this morning.

Congressman Kendrick Meek has also introduced legislation of which I am a co-sponsor, H.R. 1766, which would open GSA's supply schedules to local and State governments for purchases of green products. Since State and local governments have cumulative purchasing power in excess of \$2 trillion, giving them access to GSA's supply schedules would increase demand and drive down the prices Federal agencies pay for these green products. Small businesses make up 80 percent of the participants in the GSA supply schedule, so giving local and State governments access to that schedule will also help those small businesses.

I am submitting testimony from Fairfax County staff, my District, Madam Chairwoman, for the record. As their written statement explains, this legislation would help localities across the country move forward with their green purchasing initiatives, and as an example of the kind of local and Federal partnership we should seek to create.

The National Association of Counties and the National Government Purchasing Association have also endorsed H.R. 1766, because it would help counties like mine that wish to green their procurement practices. I hope this subcommittee has an opportunity to mark up H.R. 1766 in the not so distant future.

I applaud the representatives of the private sector who are here today as well, Madam Chairwoman, who are leading by example. In recent years there has been extensive news coverage of electronic waste being shipped overseas and dismantled in highly dangerous conditions for workers, as we have heard from our colleagues this morning. I was pleased to learn about Dell's initiative to prevent export of electronic waste that would be processed in unsafe, environmentally destructive manner.

I hope that we can strive to achieve these objectives, at a minimum. First, let's agree to mark up H.R. 1766, which would be a boon for local and State governments involved in green procurement. Second, to followup on the testimony we have heard from our colleagues, Representative Green and Representative Thompson, we should identify the next steps to prevent the Federal Government from shipping e-waste overseas. If there is an administrative solution, then we should monitor its implementation. If it requires legislation, then we should develop and pass such legislation.

Third, I would hope we could identify private sector best practices that could apply to the Federal Government. It sounds like we have a lot to learn.

Finally, based on private sector testimony, it would be worthwhile to learn more about what could be a framework for broader e-waste legislation that would address production, recovery, and recycling of e-waste. Since companies like Dell already are doing much of this, we should try to find out what a reasonable baseline for e-waste recovery and recycling economy might be.

Again, I want to thank you, Madam Chairwoman, for holding this hearing, and I thank our colleagues for their thoughtful testimony.

Ms. WATSON. Thank you, Mr. Connolly.

Before I go to our ranking member, Congressman Thompson, you said something about the computers and the e-waste. Is it possible that information could be pulled up out of our computer waste? Can you expand on that? When we get rid of a computer, is it still active? Can they still gain information from it?

Mr. THOMPSON. We have to be very careful as to how those are disposed of, and the Federal Government uses different processes for the disposal of the equipment. Oftentimes, computers are bundled and sold to salvage individuals and they will go through and maybe there will be some working computers amongst that group and they will pull those out and reuse them. The others oftentimes are sent abroad, as we both testified.

We just need to make very clear that there should be nothing—we cannot allow anything to be left on these computers that can be obtained by folks who want to do us harm economically or from a national security perspective. That is why we put the provision in the intel bill to make sure this wasn't a huge problem.

Some of the news shows—Congressman Green listed the ones that have done reporting on this subject—have actually found U.S. surplus equipment overseas in these facilities that we talked about, and if any of those do have information, sensitive information, we want to make sure that practice doesn't continue.

Ms. WATSON. Congressman Green.

Mr. GREEN. Thank you, Madam Chair.

I guess my concern is when we dispose of our own computers, because our personal information is on there. Obviously, as a country we don't want someone having our intelligence information or our information, but as individuals, when we dispose of our computers we want to make sure that our personal information is not on that, and it very well can be unless it is disposed of properly. That is our concern, although our legislation only deals with the export of it, because that is such a huge industry and we know from the publicity in both the news shows and other things how terrible it is in other parts of the world, that they are actually taking our waste and injuring themselves for it, and so that is what we want to control. I appreciate your having the hearing today.

Ms. WATSON. Thank you so much.

I now call on our ranking member, Mr. Bilbray.

Mr. BILBRAY. Madam Chair, just to echo what the gentlemen were talking about. I think you will remember there was a degree of concern when then Vice President Gore thought that investiga-

tors could not pull up his e-mail because he had erased them, but the fact is that it was embedded in the machine, itself. And so that trail does run with the hardware.

Congressman Thompson, your concern about your bill specifically keeping us from exporting into Third World countries, or areas with less environmental standards than we may think is appropriate, now, does that address the issue of Californians sending our waste to Texas? [Laughter.]

I have just got to say frankly, though, as Californians—

Mr. THOMPSON. I'm trying to work with this guy on this bill.

Mr. BILBRAY. I almost want to tell my colleague that calling Green was, in fact, a reminder that Mr. Green is an oil man or, you know, comes from one of the largest natural gas producers in the world. But I do worry about when we talk about this issue of where we are going. I think one of the things that we try to do in this committee is look at the fact of not just waste, but how do we sort of preempt it by going to pre-engineered hardware that is designed to reuse the equipment so that there is elimination of the waste problem but also the new material for future.

My biggest concern is this, and I think there are two of us here who have actually managed a waste stream and been responsible for it for millions of people: as we talk about making sure it doesn't leave the country, Californians are probably one of the worst culprits of this except for New York. New York is by far the worst of let's send our waste to somebody else.

Are we discussing at all at Energy and Commerce, my old haunts with you, Mr. Green, about the fact of what are we doing to require regions and areas to start siting the facilities, because it seems always so easy to stop a recycling facility from being sited, and stop people from being able to ship, but we don't find answers in the line. Have you guys even discussed the aspect of, if we stop the export—which we should—what are we doing proactively to site recycling facilities within the country?

Mr. THOMPSON. Let me just say there are a number of recycling facilities not only in our country, but in our State of California. I work with one in my District in northern California. Every time I have an event for my campaign, I allow folks or make available to folks the opportunity to bring their old e-waste in, and I have a company that comes and collects it, and they refurbish it or recycle it in a responsible way.

We did the same when we worked with House admin—

Mr. BILBRAY. So they are actually breaking out the components and reselling the material?

Mr. THOMPSON. Correct, here in this particular company in California. But we did the same when we did the staff pickup day on the Hill this year. We worked closely with House admin to really vet the company that we were using. We didn't want to bring somebody in to collect all this e-waste and find out they are sending it to one of these countries that does it incorrectly. So the answer is yes, we do have these facilities here. There are companies that do it and do it right. We need to take some responsibility to make sure that we do the leg work necessary, run all the traps to make sure they are the appropriate company.

Last, you mentioned the front-end engineering to make sure that these computers and electronic devices were more acceptable to recycling and reuse, and there is a lot of effort underway, and a lot of that is being done in the Science Committee by our colleague, Bart Gordon, who has taken a real keen interest in this and has been working I know with Gene and I not only on our issue, but—

Mr. BILBRAY. I know. As a member of that committee I am working with Bart with that, and we are trying to get the engineers basically to design the equipment up front to have recyclable products on here.

Mr. THOMPSON. It is very important.

Mr. BILBRAY. And I think both of you gentlemen will agree that one of the biggest problems we have had historically with the term recycling, it means separation and collection, but 99 percent of the material gets shipped to the Far East, to a Third World country.

We don't recycle in this country hardly at all. We separate, we collect, and we send it off to somebody else to do it. I am glad to hear you talking about we are actually being proactive about that. And our State has been the worst about trying to be an ally at siting these industries and these businesses within our own jurisdiction and having the environmental regulations compatible to that kind of environmental strategy, and one of our greatest frustrations.

Mr. Green.

Mr. GREEN. Our country does have experience with the Resource Conservation and Recovery Act, which prohibits exportation of toxic materials. The best example I know is in northern California and in Texas and Virginia there is these old moth-balled fleet ships that at one time they thought they could export them to other countries that don't have our standards, but you can't.

And so in northern California they actually have then cleaned those ships or they can ship to Brownsville, TX, or there is other yards on the east coast that will do it, because they can't export those to China although, again, it is a worldwide disaster what's happening to ships that are just run up on the banks in China, India, Bangladesh, and they build communities around taking apart that ship, and they have astronomically bigger problems than what we are dealing with.

But we can do the same thing with electronic waste. I would love to have those pre-engineering so those parts can be recycled. The problem we have today is that a lot of groups, including cities who do recycling, they assume it is going to be recycled safely, but they are really putting it in a container and ship to China. Our legislation would prohibit that.

I want us to develop the industry to deal with that ourselves, and we can do it in our country. We do it on lots of other things, and we can do it for electronic waste, because, again, that is a job base. My name is Green, but when we have the Green Blue Coalition, I'm more closer to the blue collar than I am to the green collar side. But in this way it can be a win for both, because we can have an industry that will recycle this and create jobs in our own country instead of devastating parts of the world.

Mr. BILBRAY. Yes. It is too bad that in a State that was one of the largest marine industries in the world we now have to ship our ships to Texas to be recycled because the infrastructure is so—

Mr. GREEN. Congressman Solomon Ortiz, who represents Brownsville, is very happy that you are having to do that.

Mr. BILBRAY. OK. Thank you very much.

I yield back, Madam Chair.

Ms. WATSON. Mr. Quigley.

Mr. QUIGLEY. No questions.

Ms. WATSON. OK. Mr. Luetkemeyer.

Mr. LUETKEMEYER. Thank you, Madam Chair. Just very quickly, I'm kind of interested to hear where will we dispose of computers that have sensitive information on it? Is there a protocol that we have for doing that? We mentioned a minute ago that some of this information is still on the hard drives. Is there not a protocol to keep that from happening?

Mr. THOMPSON. There are protocols, and I think the second panel I believe there is witnesses that can speak specifically to that. It falls within their jurisdiction as to how that is to take place.

Mr. LUETKEMEYER. OK. And just another quick question with regards to disposal of these e-products here. Do we have anything in the contract when we purchase it from the supplier for them to buy back or to dispose of it themselves? Is there any incentive to do that, or do we just buy it from the supplier and then we are going to do the disposal ourselves?

I mean, it looks like you could probably put something in there as a buy-back provision that would incent them to do something like we were just talking about, to develop recyclable type of materials so that if they knew they were going to have to buy it back they would be able to do this at a profitable scenario.

Mr. THOMPSON. I'm not certain as to all of the different Government contracts and what they include or don't include, but I do know that there are certain computer companies that have provisions whereby you can return the old computer to that company. It is a good thing, but at the same time that has been one of the stumbling blocks, trying to figure out how we get our arms around the whole issue of recycling e-waste.

Part of the problem we have right now is that you have 50 different States all trying to deal with what the State process and the State laws are going to be regarding this issue, and we are trying to figure out—maybe not all, but one of my issues is trying to figure out how to make that happen across the entire country. And one of the stumbling blocks have been when you get all the stakeholders together everybody agrees that it is a problem we need to do something about, but like so many other things the details become difficult.

There are some of the manufacturers who say, Wait, our hands are clean on this. We have a program internally where we bring this stuff back into our jurisdiction and do it.

So the answer is yes, some of them are, some of them aren't, and what the specific Government contracts are probably differ between different parts of the Government.

Mr. LUETKEMEYER. It would seem to me that if you had a requirement in the contract that they would certainly either develop

their own way of recycling or contract with somebody to do that, and it would solve some of our problems.

I will yield back. Thank you, Madam Chair.

Ms. WATSON. I want to thank Congressman Thompson and Congressman Green for your testimony this morning and your concern. We will be having you in again. Thank you very much, gentlemen.

Mr. GREEN. Thank you.

Mr. THOMPSON. Thank you.

Ms. WATSON. I would like now to ask for the second panel to come up and take your seats.

It is the committee's policy that all witnesses are sworn in, so I would like the witnesses to now stand as I administer the oath.

[Witnesses sworn.]

Ms. WATSON. Let the record show that the witnesses have answered in the affirmative, and you are now seated.

I would first like to introduce Mr. James Jones, he is the Principal Deputy Assistant Administrator of the U.S. Environmental Protection Agency's Office of Prevention, Pesticides, and Toxic Substances. He is responsible for managing the daily operations of the office which oversees the Nation's pesticide, toxic chemical, and pollution prevention laws. The office has had an annual budget of more than \$250 million, and employs over 1,200 staff. In his 20-plus years with the EPA, Mr. Jones has also served as Director of the Office of Pesticide Programs, where he was responsible for the regulation of pesticides in the United States, with a budget of \$150 million and 850 employees, making it the largest EPA headquarters program office.

Mr. John Stephenson is the Director of the Natural Resources and Environment for the Government Accountability Office. He has directed numerous studies and research projects, issued hundreds of reports, and he has testified many times before both the House and the Senate committees. Mr. Stephenson's area of expertise regarding environmental protection includes clean air and water, chemical controls, toxic substances, climate change, Superfund, and hazardous material spill prevention and cleanup. He has also conducted GAO studies and investigations related to information technology, Federal acquisition, and Federal grant areas. Mr. Stephenson has also worked as deputy staff director for the Senate Special Committee on the Year 2000 technology program.

And Ms. Casey Coleman has served as Chief Information Officer for the U.S. General Services Administration since 2007. As Chief Information Officer, Ms. Coleman manages the agency's \$500 million information technology program and she oversees the management, acquisition, and integration of GSA's information resources. Her oversight includes strategic planning, policy, capital planning, systems development, information security, enterprise architecture, and e-government.

Prior to this position, Ms. Coleman served as the Chief Information Officer for the Federal Acquisition Service in 2006. Her other experiences include GSA's Office of Citizen Services where she launched the USA Services governmentwide citizen customer service program.

And so as we get started, I would like to call on Mr. Jones.

STATEMENTS OF JAMES JONES, PRINCIPAL DEPUTY ADMINISTRATOR, OFFICE OF PREVENTION, PESTICIDES AND TOXICS, U.S. ENVIRONMENTAL PROTECTION AGENCY; JOHN STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE; AND CASEY COLEMAN, CHIEF INFORMATION OFFICER, U.S. GENERAL SERVICES ADMINISTRATION

STATEMENT OF JAMES JONES

Mr. JONES. Good morning, Madam Chair, Ranking Member Bilbray, and members of the subcommittee. Thank you for the opportunity to discuss EPA's role in the procurement and management of green initiatives related to IT assets.

I am glad to be here with colleagues from GAO and GSA, as well as representatives from the NGO community.

Over the last several years, the Environmental Protection Agency has been working very hard to green IT procurement and to reduce our environmental footprint at EPA and across the Federal Government. Today I will discuss several programs that EPA and the Federal Government uses to guide the management of our IT assets along their complete life cycle, from product manufacturing to purchasing to use, and ultimately to proper disposal.

Let me take a few minutes to briefly describe these programs.

The first one is Energy Star. Energy Star is a joint program of EPA and the U.S. Department of Energy. Since 1992, Energy Star has helped to revolutionize the marketplace for cost-effective, energy-efficient products. The program is a trusted source of unbiased information that helps homeowners, businesses, and other consumers understand their opportunities for energy savings with a simple and widely recognized logo.

The next one is EPEAT. EPEAT is a green purchasing system for electronics. It is managed by the Green Electronics Council, a 501(c)(3) nonprofit organization. EPA was an early funder of this effort and continues to provide technical support for the development of EPEAT green standards for new product types.

EPEAT evaluates and then registers products based on a total of 23 mandatory criteria to target many different environmental endpoints, from energy use to reduction or elimination of toxic metals and chemicals, and even product packaging. One of these criteria is that EPEAT products must meet Energy Star requirements for energy efficiency. This program helps people and institutions identify and buy environmentally preferable electronics and helps manufacturers gain market advantage by building greener electronic products.

The EPEAT program has had tremendous and enthusiastic response. There are almost 3,000 EPEAT-registered products from 32 manufacturers. In 2008, according to the Green Electronics Council, there were purchases of 44 million EPEAT products in the United States.

Given the enthusiastic participation so far, EPA is actively exploring opportunities with many EPEAT partners to expand the program beyond its current slate of computer products. Standards are being created for copiers and fax machines and televisions, and plans are in place to develop standards for servers and cell phones.

Given that the Federal Government is likely the largest purchaser of consumer products in the United States and spends an estimated \$74 billion a year on information technology, we know that this is an enormous opportunity for us to green our own house, so we work hard to lead by example on ways to purchase greener electronics products, reduce their impacts during product use, and manage obsolete electronics in an environmentally safe way.

To do that, EPA, working collaboratively with the Federal Environmental Executive, invited our Federal partners to participate in the Federal Electronics Challenge, which laid out the following goals by the end of 2010: 95 percent of computer purchases are EPEAT registered and 100 percent are Energy Star enabled; electronic equipment achieves an average life span of at least 4 years, and 100 percent of non-reusable electronic equipment is recycled using environmentally sound management.

Sixteen Federal agencies and more than 220 Federal facilities are participating in the Federal Electronics Challenge and are on track to meet virtually all of the 2010 goals. In 2008, FEC partners reported 88 percent of computers and monitors purchased in 2008 were EPEAT registered. The average life of computer equipment in 2008 was 45 months, just short of the goal of 48 months for 2010.

Finally, we also need to manage electronics effectively when they have outlived their useful lifetime. Specifically, the Federal Government manages the disposition of about 10,000 computers a week, not to mention other forms of electronics. In order to assist Federal agencies in recycling as much of these materials as possible and safely disposing of the remainder, EPA manages READ, the Recycling Electronics and Asset Disposition program. This program provides Federal agencies with a dependable method of properly managing electronic inventories, recycling electronic equipment, and disposing of excess or obsolete electronic equipment in an environmentally responsible manner.

EPA has awarded contracts to companies that can evaluate each piece of unwanted equipment and its components, and then reuse, recycle, or dispose of them under the following hierarchy: refurbish and resell them, using the proceeds to offset costs; donate them to charitable causes; recycle as much as possible; and properly dispose of the remainder. This program is now self-sustaining, meaning the sales from recycling pays for the program.

These program descriptions and results just scratch the surface of what is taking place in the world of greening IT in the Federal Government, and I would be happy to answer any questions that you may have.

Thank you.

[The prepared statement of Mr. Jones follows.]

October 22, 2009

**TESTIMONY OF
JAMES JONES
DEPUTY ASSISTANT ADMINISTRATOR FOR
PREVENTION, PESTICIDES AND TOXIC SUBSTANCES
BEFORE THE
SUBCOMMITTEE ON MANAGEMENT, ORGANIZATION AND
PROCUREMENT
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
U.S. HOUSE OF REPRESENTATIVES**

October 27, 2009

Good morning, Madam Chairwoman and Members of the Subcommittee. I am James Jones, Deputy Assistant Administrator for Prevention, Pesticides and Toxic Substances at the United States Environmental Protection Agency. I welcome this opportunity to discuss EPA's role in the procurement and management of the Federal Government's green initiatives related to IT assets.

The Environmental Protection Agency has taken a broad and ambitious approach to greening IT procurement in the Federal Government's purchasing practices, in the private sector in the US, and -- I'm pleased to note -- internationally, as well. As the nation's environmental agency, EPA has a leadership role in a number of programs designed to reduce environmental impacts across the full life-cycle of product manufacture, purchasing, use and disposal.

These programs help us meet -- and where possible, exceed -- the mandates of *Federal Acquisition Regulations* pertaining to green procurement, as well as several Executive Orders focused on pollution prevention, including Executive Order 13514 on *Federal Leadership in Environmental, Energy, and Economic Performance*, issued by the White House earlier this month. This latest Executive Order sets ambitious environmental goals for federal agencies, with strong accountability and transparency measures, and includes a requirement to "*leverage federal purchasing power*" in order to promote green products.

EPA is involved in a number of key programs that have helped us on the path to making electronics procurement more sustainable: **Energy Star**, **EPEAT** -- the *Electronic Product Environmental Assessment Tool* -- **FEC** -- the *Federal Electronics Challenge*, and **READ** -- the *Recycling Electronics and Asset Disposition* program. I'll describe the programs in just a moment, but first, I'd like to mention some of the broad principles that guide our actions here.

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--The first is **sustainability**. We are looking to reduce the environmental footprint of information technology -- equipment like computers, laptops, and monitors -- over the entire life-cycle of these products. From the time materials are first extracted from the earth through mining or drilling, to the end of the useful life of a computer product, our aim is to foster stewardship and reduce overall environmental impacts.

This *multi-attribute focus* includes:

- minimizing greenhouse gas emissions,
- less reliance on toxic materials such as lead and mercury,
- increasing use of recycled materials in manufacturing and assembling the product, and increasing the recyclability of components once the product is disassembled,
- increasing material and energy efficiency
- reducing the need for material disposal

--Second, we are committed to **building the partnerships** needed to achieve genuine and lasting results. EPA works closely with electronic manufacturers, standard-setting organizations, environmental and community groups, trade associations, states, and of course, other federal agencies, to create a broad consensus around sustainability, and build the framework for rigorous achievements in a partnership setting. We have extended these partnerships to the international community, as well, and are beginning to see global-scale results of our collective efforts.

--Third, I want to mention the importance of **transparency and accountability**. We are committed to an open, well-documented process where anyone can not only view program results, but can "drill-down" to get additional details as desired, and can view the modeling parameters that underlie the calculations of program accomplishments.

--The last key principle is **effectiveness**. These programs have realized substantial environmental results -- results that are increasing rapidly over time -- with only a very modest commitment of taxpayer dollars.

Let me take a few minutes to briefly describe these programs.

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ENERGY STAR

ENERGY STAR is a joint program of EPA and the U.S. Department of Energy helping save money and protect the environment through energy efficient products and practices. Since its inception in 1992, the ENERGY STAR program has overcome many market barriers and helped revolutionize the marketplace for cost-effective, energy-efficient products and services. The program is a trusted source of unbiased information that helps homeowners, businesses, and other consumers understand their opportunities for energy savings and identify the reliable, cost-effective, efficient products and services that capture these savings.

The ENERGY STAR program focuses on driving greater efficiency in the following areas:

- Helping consumers identify new energy-efficient products that operate well beyond federal minimum efficiency requirements across more than 60 product categories for the home and office.
- Constructing efficient new homes and commercial buildings—public housing, multifamily and single family housing, schools, office buildings, hospitals, hotels, and others—that exceed code and meet rigorous benchmarks for energy efficiency.
- Improving the efficiency of existing homes, commercial buildings, and industrial facilities through standardized measurement systems, proven energy management strategies, and new energy efficiency services that overcome lingering market barriers.

Through 2008, more than 15,000 organizations have partnered with ENERGY STAR. They have achieved and helped the country achieve significant environmental and financial benefits.

Results are already adding up. Our partners, with the help of ENERGY STAR, have reported saving enough energy in 2008 alone to avoid greenhouse gas emissions equivalent to those from millions of cars — all while saving billions on their utility bills.

EPEAT – which I’ll talk about next – and ENERGY STAR are closely entwined. Products must meet ENERGY STAR requirements in order to be EPEAT registered. ENERGY STAR staff participate in the development of EPEAT criteria, and the EPEAT and the ENERGY STAR programs co-market their work to federal purchasers.

EPEAT

EPEAT, helps purchasers identify and buy environmentally preferable electronics, and helps manufacturers gain market advantage by building greener electronic products. EPA supported the development of EPEAT -- providing grants, staff expertise, administrative and financial support -- to respond to the needs of the marketplace. Purchasers wanted a definition of an *environmentally preferable electronic product*, and a list of products meeting that definition. Manufacturers needed a way to get credit in the marketplace for going the extra mile to reduce the impact of the products they create.

EPEAT is comprised of three main components:

- 1) An IEEE voluntary environmental performance standard that defines "green" for computer desktops, laptops, and monitors,
- 2) a registry of products meeting the criteria laid out in this standard, and a rigorous verification process, both managed by the Green Electronics Council, and
- 3) a calculator that determines the environmental benefits of each purchase of an EPEAT registered product.

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EPEAT provides a marketplace 'reward' -- recognition as an EPEAT Bronze, Silver or Gold product -- for computers, laptops and monitors that meet EPEAT's stringent standards.

You can think of EPEAT as building on the successes of the ENERGY STAR program. In addition to meeting ENERGY STAR requirements, EPEAT registered products adhere to a total of 23 mandatory criteria adopted by the *Institute of Electrical and Electronics Engineers* as a National Standard (*IEEE 1680*). Participants who want Silver or Gold recognition can achieve it through adherence to some of the 28 optional criteria that are also included in the standard.

The criteria in the standard target many different environmental end-points, from energy use, to reduction or elimination of toxic metals and chemicals, and even product packaging.

The EPEAT program has had a tremendous and enthusiastic response. There are almost 3,000 EPEAT-registered products from 32 manufacturers. Think of any well-known computer manufacturer -- Apple, Dell, HP, Toshiba -- and they are EPEAT participants. EPEAT registered computers are now at airport screening stations across the country, and in every Kaiser Permanente hospital room, just to name a few purchasers of EPEAT products.

In 2008, according to the Green Electronics Council, purchases of 44 million EPEAT products in the US realized the following benefits:

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- Reduced use of toxic materials, including mercury, by 1,021 metric tons
- Avoided the disposal of 43 thousand metric tons of hazardous waste
- Eliminated 14,353 metric tons of solid waste
- Saved over 8.39 billion kilowatt-hours of electricity — enough to power over 700,000 US homes for a year
- Reduced more than 1.57 million metric tons of greenhouse gas emissions — equivalent to taking over one million US passenger cars off the road for a year

In fact, users will save an estimated \$794 million over the life of these products, chiefly from reductions in energy demand, in large part due to EPEAT products being required to meet the ENERGY STAR specifications.

It's not just the US market that realizes the environmental and economic benefits from EPEAT-registered equipment. Recently, international participants include most of Europe, Japan, and huge growing markets like China and Brazil. EPEAT is seeing environmental benefits in international markets on a similar scale to those I just described for the US, and is taking steps to more fully quantify results outside the US.

Given the enthusiastic participation thus far, EPA is actively exploring opportunities with the many EPEAT partners to expand the program beyond its current slate of computer products. Standards are being created for copiers and fax machines, and televisions, and plans are in place to develop standards for servers and cell phones. The program is also working with retailers and manufacturers to develop a plan to more actively market EPEAT products to consumers interested in procuring environmentally preferable electronics.

FEC

The Federal Government, perhaps the largest purchaser of consumer products in the US, spends an estimated \$74 billion a year on information technology, according to 2009 OMB estimates.

EPA, working with the *Federal Environmental Executive*, recognized this as an enormous opportunity for the Federal Government to green its own house, and set an example on ways to purchase greener electronic products, reduce their impacts during product use, and manage obsolete electronics in an environmentally safe way.

Accordingly, we invited federal facilities to participate in the *Federal Environmental Challenge*, to meet the following goals by the end of 2010:

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- 95% of computer purchases are EPEAT-registered, and 100% are Energy Star enabled.
- Electronic equipment achieves an average life span of at least four years.
- 100% percent of non-reusable electronic equipment is recycled using environmentally sound management.

Sixteen federal agencies and more than 220 federal facilities are participating in the FEC, and are on track to meet most of the 2010 goals. For instance, FEC partners reported that 88% of computers and monitors in 2008 were EPEAT registered...getting close to the 95% goal. The average life of computer equipment in 2008 was 45 months, close to the 4-year (48-months) goal for 2010.

Other goals are more of a challenge. While most FEC computers and monitors are ENERGY STAR equipment, not all equipment has energy-savings features fully enabled.

Thus far, operating with a budget of only \$50,000, EPA support to the FEC has helped achieve the following results in 2008:

- 426,181 megawatt-hours in energy savings
- Over 100,000 metric tons in primary material savings
- Over 31,000 metric tons of greenhouse gases avoided, and over a million metric tons of air pollution prevented
- Almost 4,000 tons of discharges to waterways prevented

And, I'm pleased to report, an estimated overall savings of about \$40 million in 2008 alone, from reduced energy and resource use.

READ

The Federal Government manages the disposition of about 10,000 computers a week, not to mention other forms of electronics. In order to assist federal agencies in recycling as much of these materials as possible, and safely disposing of the remainder, EPA manages READ – the *Recycling Electronics and Asset Disposition* program.

Pursuant to the 1996 Clinger-Cohen Act, OMB granted EPA the authority, in 2004, to create a *Government Wide Acquisition Contract* -- a single contract that can be used by all agencies – to handle recycling and disposal of used electronics.

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The READ program developed this contract in 2005, which provides Federal agencies with a dependable method of properly managing electronic inventories, recycling electronic equipment, and disposing of excess or obsolete electronic equipment in an environmentally responsible manner.

EPA has awarded contracts to companies that can evaluate each piece of unwanted equipment and its components, and then reuse, recycle, or dispose of them under the following hierarchy:

- Refurbish and resell them, using the proceeds to offset costs.
- Donate them to charitable causes.
- Recycle as much as possible.
- Properly dispose of the remainder.

In addition to providing environmentally responsible disposition of electronic assets, READ also provides data security and economic value. READ services include:

- Developing a reportable audit trail of the equipment's final destination;
- Addressing appropriate levels of security for sensitive electronic data;
- Maximizing potential revenues from usable electronic equipment through a share-in-savings program.

The READ program received the 2006 White House *Closing the Circle Award* for environmental excellence in the Federal Government.

These program descriptions and results just scratch the surface of what is taking place in the world of greening IT in the Federal Government, but I trust they provide a good sense of the opportunities before us.

I'll be glad to respond to any questions you may have.

QFRs – IT Greening Hearing with the House Subcommittee on Management, Organization and Procurement, the Committee on Oversight and Government Reform

11/23/09

EPA Responses to questions from the House Subcommittee on Government Management, Organization and Procurement following James Jones testimony

1. Overall, how much e-waste is generated by federal agencies?

Answer: We estimate that the federal government generates e-waste in excess of 750,000 used computers and monitors annually. We further estimate that these materials are managed in the following ways: 50% to reuse; 40% to recycling; 8% to sales; and 2% to disposal. These are estimates based on Federal Electronics Challenge (FEC) reporting data for FY2008. These numbers represent the majority of Federal Agencies, but not all.

2. What share of e-waste is generated by the U.S. out of 21 metric tons?

Answer: The European Union estimates that North America produces 21 million metric tons of waste electrical and electronic equipment (WEEE). The estimate includes equipment that depends on electric current in order to work properly and it covers a large array of products, including refrigerators, dishwashers, washing machines, vacuums, microwaves, power tools, and medical devices. EPA does not have any mechanism to estimate how much of this waste is generated in the United States.

EPA has estimated the amount of used consumer electronics such as computers, televisions, cell phones and hard copy peripherals (facsimiles, scanners, printers), generated in the US. Based on our analysis, detailed in the report "*Electronics Waste Management in the United States: Approach One*,"¹ we estimate that in 2007 (the latest year for which we have available data) Americans generated 2.25 million short tons of used and end-of-life televisions, computers, hard copy peripherals, and cell phones.

If we add additional types of electronics products to the estimate above (e.g., VCRs, DVD players, video cameras, stereo systems, and audio equipment), the estimate rises to approximately 3 million short tons of consumer electronics generated in 2007.²

3. What does the EPA do to ensure that recycling sites remain in the U.S.?

Answer: EPA focuses on promoting increased collection of used electronics in the US, as well as safe reuse, refurbishing and recycling of those materials, whether in the US or abroad. By promoting collection, EPA hopes to encourage domestic recycling operations to remain in the United States.

While there are many domestic recyclers which shred or perform initial dismantling and separating of materials and parts from used electronics, some of this material is ultimately exported. Circuit boards are likely to go to Canada, Belgium, Sweden, Japan and Germany. CRT glass is likely to go to smelters in Asia – particularly India and Korea. Plastics are

¹ US EPA. *Electronics Waste Management in the United States: Approach 1*. July 2008. EPA530-R-08-009 (<http://www.epa.gov/epawaste/conservation/materials/recycling/manage.htm>)

² US EPA. *Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2007*. Nov. 2008. EPA-530-R-08-010

QFRs – IT Greening Hearing with the House Subcommittee on Management, Organization and Procurement, the Committee on Oversight and Government Reform

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likely to go to Asia and reusable and refurbishable equipment is likely to end up in the developing world. This is because there are robust markets for this material abroad and downstream operations have moved abroad. For additional specifics, examples are provided below:

- There are no smelters in the U.S. equipped to process copper- and precious metals (gold, silver palladium) from circuit boards to a level pure enough for use. These markets are currently located in the developed world - Canada, Belgium, Sweden, Japan, and Germany. Thus all circuit boards must be exported for processing.
- There are no longer any cathode ray tube (CRT) glass furnaces in the Western Hemisphere which can recycle CRT glass. Most of them are in Asia, specifically India and Korea. Thus, most CRT glass is exported to glass manufacturing furnaces in Asia, where new CRTs are made using recycled glass. There is limited domestic capacity for processing CRT glass in lead smelters.
- Nearly all markets for recycling plastics from electronics are overseas, primarily in Asia.
- The major markets for electronics reuse (of both whole equipment and parts) are outside the U.S., mostly in developing countries.

4. (a) How many recycling facilities has the EPA cited in the past decade?

Answer: EPA has a well-established compliance monitoring and enforcement program for all Resource Conservation and Recovery Act requirements. EPA's enforcement actions in the area of used electronics (e-waste) have focused on exports of cathode ray tubes (CRTs). In January 2007, EPA's Cathode Ray Tube (CRT) regulations took effect requiring exporters to notify the EPA prior to shipping broken or unbroken CRTs to another country for recycling and receive written consent from the receiving country before shipments can be made. Since this rule became effective, EPA has initiated over thirty civil investigations in eight out of ten EPA Regions and plans to conduct additional inspections and information gathering efforts in FY 2010. To date, EPA has filed five administrative complaints. In addition, EPA has settled with two other companies for violations of the RCRA export requirements.

(b) What types of waste were recycled within the U.S.?

Bulk consumer electronics are frequently disassembled in the United States (e.g., separating out parts and some of the material streams, such as metals, plastics and glass.) Some glass processing and shredding of cell phones occurs in the U.S.

5. What is the EPA's strategy to work proactively with the recycling industry as a partner to increase recycling here in the U.S.?

EPA's strategy to date has been to increase the collection of electronics for recycling and to provide standards with an emphasis on due diligence to ensure that electronics recycling is safe, wherever it occurs. EPA does this through [Plug-in to eCycling](#), which encourages manufacturers and retailers to offer consumers increased opportunities to donate or recycle their used electronics

Ms. WATSON. Thank you, Mr. Jones.
We will now hear from Mr. Stephenson.

STATEMENT OF JOHN STEPHENSON

Mr. STEPHENSON. Thank you, Madam Chair, Congressman Bilbray, and members of the subcommittee. I am pleased to be here today to discuss our work on Federal procurement of computers and other electronic products and ways in which procurement of such products can reduce the impact of electronic waste, or e-waste. The Federal Government is the world's largest purchaser of electronic equipment, annually spending nearly \$75 billion in products and services, or 7 percent of the world market.

Through its purchasing decisions, the Federal Government has substantial leverage to enhance recycling infrastructures and stimulate markets for environmentally preferable electronic products.

E-waste disposal has become increasingly important because of rapidly advancing technology which has led to increasing sales of new electronic products, and in particular computers, monitors, PDAs, and cell phones. With this increase comes the dilemma of what to do with the old computers and electronics. If discarded improperly, a number of adverse environmental impacts may result, ranging from the loss of valuable resources in the electronics such as copper, gold, and aluminum, to the potential harmful substances such as cadmium, lead, and mercury entering the environment.

EPA estimates that the Federal Government disposes of 10,000 computers a week, as you have heard. Agencies generally can donate their usable equipment to schools or other nonprofit educational institutions; give them to a recycler; exchange them with other Federal, State, or local agencies; trade them in to offset the cost of new products; or sell them through GSA's surplus property program, which then sells equipment at public auctions.

Federal agencies, however, are not required to track the ultimate destination of their e-waste. Consequently, they don't know what happens to it. In our August 2008 report we show that some U.S. electronics recyclers, including ones that publicly tout their exemplary environmental practices, showed a willingness to violate U.S. hazardous waste export laws and export e-waste to countries in southeast Asia, where they were often dismantled under dangerous health conditions using methods like open air incineration and acid baths to extract precious materials, as you heard from the two Congressmen.

In November 2005 we reported on two promising initiatives that could help Federal agencies and others in procuring, operating, and disposing of electronic products and waste that would save costs and reduce such e-waste impacts. You just heard the EPA witness explain those.

First, EPA's EP program assists procurement officials in comparing and selecting computers with environmentally preferable attributes like energy efficiency features, snap-in components for ease of upgrade, and reduced toxicity of materials.

Second, the Federal Electronics Challenge [FEC], program helps agencies fully utilize the benefits of EPEAT-rated electronics by providing resources to help extend product life, operate them in an

energy-efficient way, and expand markets for recycling and recovered materials.

Notably, energy savings and environmental benefits to the Federal Government have resulted from these initiatives. EPA reports that 16 agencies and 228 Federal facilities representing about one-third of the Federal employees participated to some extent in these programs, and that for these participating agencies, 88 percent of all computers and monitors were EPEAT-registered products.

In addition, 50 percent of the electronics taken out of service were donated for reuse, 40 percent were recycled, about 8 percent were sold, and 2 percent were disposed of. These environmentally preferable choices enabled over \$40 million in savings at the end of 2008.

The problem is that not nearly enough Federal agencies and facilities are taking advantage of these electronics product stewardship programs. First, if one third of the Federal agencies are participating in these promising initiatives, it means that two-thirds are not, despite instructions to do so in Executive orders signed by both Presidents Bush and Obama.

Second, few participating agencies are maximizing the use of these initiatives. For some, participation merely means that the agency has identified its current practices for managing electronics products and set goals to improve them, but only two Federal facilities by the end of 2008 showed that they actually managed electronics products through all three life cycle phases—procurement, use, and disposal.

For perspective, we calculated that if Federal agencies in the normal course of procurement replaced 500,000 computers and monitors with EPEAT-registered products and operated and disposed of them in accordance with FEC goals, they could save over \$200 million in energy usage and realize other cost, waste, and emissions reductions. This is the equivalent of annual energy use for over 180,000 homes.

As the world's biggest user of electronics products, the Federal Government simply must take more of a leadership role in this area.

Madam Chair, that concludes my summary, and I will be happy to answer questions at the appropriate time.

[The prepared statement of Mr. Stephenson follows:]

United States Government Accountability Office

GAO

Testimony
Before the Subcommittee on Government
Management, Organization, and Procurement,
Committee on Oversight and Government
Reform, House of Representatives

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FEDERAL ELECTRONICS MANAGEMENT

Federal Agencies Could Improve Participation in EPA's Initiatives for Environmentally Preferable Electronic Products

Statement of John B. Stephenson, Director
Natural Resources and Environment



October 27, 2009

GAO
Accountability Integrity Reliability
Highlights

Highlights of GAO-10-196T, a testimony before the Subcommittee on Government Management, Organization, and Procurement, Committee on Oversight and Government Reform, House of Representatives

Why GAO Did This Study

Advancing technology has led to increasing sales of new electronic devices. With this increase comes the dilemma of managing them at the end of their useful lives. If discarded with common trash, a number of environmental impacts may result, ranging from the loss of valuable resources to the potential release of toxic substances, such as lead. If recycled, they may be exported to countries with waste management systems that are less protective of human health and the environment than those of the United States.

The federal government is the world's largest purchaser of electronics, spending nearly \$75 billion on electronic products and services in 2008. The Environmental Protection Agency (EPA) has helped implement several product stewardship initiatives to encourage responsible management of electronic products in all three phases of a product's lifecycle—procurement, operation, and end-of-life disposal. In response to a request to provide information on federal procurement and management of electronic products, GAO's testimony describes (1) EPA's electronic product stewardship initiatives, (2) federal agency participation in them, and (3) opportunities for strengthening participation. GAO's testimony is based on its prior work and updated with data from EPA. In our prior report, EPA agreed that increasing federal participation in its initiatives could be encouraged. Agency officials still agree with this finding.

View GAO-10-196T or key components for more information; contact John E. Stephenson at (202) 512-3841 or stephensonj@gao.gov.

FEDERAL ELECTRONICS MANAGEMENT**Federal Agencies Could Improve Participation in EPA's Initiatives for Environmentally Preferable Products****What GAO Found**

Federal government approaches to ensuring environmentally responsible management of electronic equipment from procurement through disposal rely heavily on two interrelated initiatives. The first initiative, the electronic product environmental assessment tool (EPEAT®), was developed along the lines of EPA's and the Department of Energy's Energy Star program and assists federal procurement officials in comparing and selecting computers and monitors with environmental attributes that also routinely save money through reduced energy usage over the products' lives. The second initiative—the federal electronics challenge (FEC)—helps federal agencies realize the benefits of EPEAT-rated electronics by providing resources to help agencies extend these products' life spans, operate them in an energy efficient way, and expand markets for recovered materials by recycling them at end of life.

The first 5 years of EPA's initiatives have resulted in notable energy savings and environmental benefits reported by participating agencies. According to facilities that reported information to EPA and the Office of the Federal Environmental Executive in 2008, 88 percent of all desktop computers, laptop computers, and monitors the facilities purchased or leased were EPEAT-registered. EPEAT participation reportedly resulted in procurement officials purchasing 95 percent of their monitors with Energy Star power management features enabled and 38 percent of computers with this feature. In addition, 16 federal agencies and 215 federal facilities—representing about one-third of all federal employees—participated in the FEC to some extent in 2008. As a result, participants reported that 50 percent of electronics taken out of service were donated for reuse, 40 percent were recycled, 8 percent were sold, and 2 percent were disposed of. The environmentally responsible choices associated with EPEAT and FEC resulted in a reported \$40.3 million in cost savings for participants.

The EPEAT and FEC accomplishments are steps in the right direction, but opportunities exist to increase the breadth and depth of federal participation. First, agencies and facilities representing about two-thirds of the federal workforce are not participating in these promising initiatives, despite instructions to do so in implementing Executive Order 13423. Second, few participating agencies and facilities maximize these programs' resources and their potential benefits. For some, participation simply means the agency identified its current practices for managing electronic products and set goals to improve them. Moreover, as the FEC aims to support participating agencies and facilities, it does not impose consequences for those that do not meet their goals. In fact, only 34 FEC facility partners showed they managed electronic products in 2008 in accordance with FEC goals for at least one of the three lifecycle phases, and only 2 facilities showed they did so for all phases. For perspective, GAO calculated that if federal agencies replaced 500,000 desktop and laptop computers and monitors with EPEAT-registered products and operated and disposed of them in accordance with FEC goals, they could achieve substantially greater energy reductions and cost savings.

Chairwoman Watson and Members of the Subcommittee:

I am pleased to be here today to discuss findings from our work on federal procurement of environmentally preferable electronic products and ways in which such procurement can lessen the impacts of electronic waste (e-waste) disposal. The federal government is the world's largest purchaser of information technology equipment, annually spending nearly \$75 billion on electronic products and services. Through its purchasing decisions, the federal government has substantial leverage to enhance recycling infrastructures and stimulate markets for environmentally preferable electronic products. Along these lines, the Environmental Protection Agency (EPA) has helped implement several product stewardship initiatives under its Resource Conservation Challenge. These initiatives encourage environmentally responsible management of electronic products from "cradle to grave"⁴—that is, from the initial procurement of environmentally preferable products, to their operation in an energy efficient manner, and finally to their reuse or recycling in an environmentally safe way.

Disposing of e-waste has become an important issue as rapidly advancing technology has led to increasing sales of new electronic products—in particular, computers, monitors, and handheld devices such as cell phones. With this increase comes the dilemma of managing these products at the end of their useful lives. Little information exists, for example, on whether obsolete electronic products are reused, stored, or disposed of in landfills. As we previously reported, if discarded with common trash, a number of adverse environmental impacts may result, ranging from the loss of valuable resources in the electronics such as copper, gold, and aluminum to the potential for harmful substances such as cadmium, lead, and mercury to enter the environment.¹ If donated or recycled, these products may eventually be irresponsibly exported to countries without modern landfills and with waste management systems that are less protective of human health and the environment than those in the United States. In our August 2008 report, we showed that e-waste exported from the United States to developing countries, such as those in Southeast Asia,

⁴GAO, *Electronic Waste: Strengthening the Role of the Federal Government in Encouraging Recycling and Reuse*, GAO-06-47 (Washington, D.C.: Nov. 10, 2006).

is often dismantled under dangerous health conditions, using methods like open-air incineration and acid baths to extract precious metals.²

Our testimony, which is based on our prior work and updated with data from EPA,³ provides observations on (1) EPA's electronic product stewardship initiatives, (2) the extent of federal agency participation in them, and (3) opportunities for strengthening participation. Our prior work was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The purchase price of electronic products primarily reflects their technological capabilities; it does not include all of the substantial costs that are incurred throughout the equipment's life. A study by Gartner Research, for example, shows that computers costing less than \$1,000 typically have a total cost of ownership of more than \$5,000 per year when all the energy and maintenance costs are included.⁴ Furthermore, the purchase price of electronics does not include the often substantial cost of disposal. Lifecycle costs are high, in part, because electronic products are not always designed to facilitate recycling.

EPA estimates that across the federal government 10,000 computers are disposed of each week. Once such products reach the end of their original useful lives, federal agencies have several options for disposing of them. Agencies generally can donate their reusable equipment to schools or other nonprofit educational institutions; give them to a recycler; exchange them with other federal, state, or local agencies; sometimes trade them

²GAO, *Electronic Waste: EPA Needs to Better Control Harmful U.S. Exports through Stronger Enforcement and More Comprehensive Regulation*, GAO-08-1044 (Washington, D.C.: Aug. 28, 2008).

³For updated EPA data, we examined EPA's procedures for accurately entering federal agency- and facility- provided data into its database, synthesizing the data, and using them for any calculations; we also interviewed EPA staff on steps they take to ensure the reliability of the data. We believe the data reported to EPA are sufficiently reliable for the purpose of updating information from our prior work.

⁴"Why is Total Cost of Ownership Important?" John Taylor Baily and Stephen R. Heidt. Darwin Magazine, November 2003.

with vendors to offset the costs of new products; or sell them through the General Services Administration's (GSA) surplus property program, which sells surplus federal government equipment at public auctions.

Federal agencies, however, are not required to track the ultimate destination of their donated or recycled e-waste. Instead, agency officials generally consider this to be the recipient organization's responsibility. Consequently, they often have little assurance that their e-waste is ultimately disposed of in an environmentally responsible manner. In our prior work, we found that some U.S. electronics recyclers—including ones that publicly tout their exemplary environmental practices—were apparently willing to circumvent U.S. hazardous waste export laws and export e-waste to developing countries. Specifically, we posed as foreign buyers of broken cathode-ray tube computer monitors—which are considered hazardous waste and illegal to export without a permit—in Hong Kong, India, Pakistan, and other countries; and 43 U.S. companies expressed willingness to export these items. Some of the companies were willing to export this equipment in apparent violation of U.S. law. As we showed in our August 2008 report,⁵ equipment exported to developing countries may be handled in a way that threatens human health and the environment.

Two Promising Initiatives Assist Federal Agencies in Procuring, Operating, and Disposing of Electronic Products in an Environmentally Preferable Manner

As we reported in November 2005,⁶ existing federal government approaches to ensuring environmentally responsible management of electronic equipment from procurement through disposal rely heavily on two interrelated EPA electronic product stewardship initiatives. The first, the electronic product environmental assessment tool (EPEAT®), assists federal procurement officials in comparing and selecting laptop computers, desktop computers, and monitors with environmentally preferable attributes. The second, the federal electronics challenge (FEC), helps federal agencies fully utilize the benefits of EPEAT-rated electronics by providing resources to help agencies extend these products' life spans, operate them in an energy efficient way, and expand markets for recycling and recovered materials by recycling them at end of life.⁷

⁵GAO-08-1044.

⁶GAO-06-47.

⁷FEC is sponsored by EPA and the White House Office of the Federal Environmental Executive.

EPEAT was developed along the lines of EPA's and the Department of Energy's (DOE) Energy Star program in which the federal government rewards manufacturers of energy-efficient products that ultimately save money and protect the environment by providing them with a label for their products that certifies these benefits. EPEAT-registered products are awarded a bronze, silver, or gold certification for increasing levels of energy efficiency and environmental performance. Using EPEAT, an on-line tool, federal procurement officials can evaluate the design of an electronic product for energy conservation, reduced toxicity, extended lifespan, and end of life recycling, among other things. For example, EPEAT can help agency procurement officials choose electronic products with attributes that make the products easier to upgrade. Some computers are now being built with modular features so that hard drives, processors, memory cards, and other components can be upgraded rather than replaced—thus extending their lifecycles. Agency procurement officials can also use EPEAT to choose among products that are designed to make recycling less expensive, such as those without glues or adhesives, with common fasteners and “snap-in” features, and with easily separable plastic and metal components—making their disassembly easier and recycling less costly. Finally, EPEAT can help procurement officials identify electronic products that contain less hazardous materials, which can also lessen their disposal and recycling costs.

Products with these attributes can, in many cases, save agencies money over the products' lifecycles when compared to those with similar technological characteristics but without environmental attributes. For example, according to one computer vendor, a particular desktop computer with energy-saving attributes cost \$35 more than a similar model that one federal program office had been buying; however, it will save \$15 per year in energy costs. Thus, after slightly more than 2 years of use, the EPEAT-rated desktop computer can save more money in energy savings than the additional increase in purchase price and result in measurable environmental benefits.

Currently, in the electronic products industry, purchasers can choose from 170 desktop computers, 637 laptop computers, and 487 monitors that meet one of the three EPEAT levels of environmental performance. The breadth of EPEAT products provides procurement officials with a range of devices to meet their technology and budgetary needs. For example, agencies have the flexibility to choose liquid crystal display monitors that meet all the required EPEAT criteria as well as numerous optional criteria, such as the lower levels of mercury in light switches and a reduced number of different types of plastics—attributes that can make recycling easier and

less costly. Agencies can also choose other monitors that meet these and other criteria, including additional reductions in toxic materials, along with end-of-life services such as a take-back and reuse program for packaging material. Of note, these different types of monitors can meet different technology needs, as there are some differences in display characteristics and power consumption.

As we said earlier, federal agencies also have the opportunity to participate in FEC—a program that first relies heavily on EPEAT for procurement considerations and then provides guidance to participants on how to extend electronic product life spans, operate them in an energy-efficient way, and reuse or recycle them at end-of-life. FEC differs from EPEAT in that where EPEAT assists officials in procuring environmentally preferable products, FEC provides participating agencies and facilities with resources to help ensure that electronic products are operated and disposed of in a manner that fully utilizes the environmental attributes of the EPEAT product.⁸ FEC has two partner levels: agency and facility. To participate, executive branch agencies or their subcomponents must register.

According to EPA documents, participation can provide agency officials greater assurance that the e-waste they donate to schools, or send for recycling, is ultimately disposed of in an environmentally responsible manner.⁹ For instance, in following FEC guidance, participants are to provide recipients of donated equipment with instructions on how to have the equipment recycled responsibly and how to verify that responsible recycling occurs—procedures known as “downstream auditing.” When donating equipment, FEC instructs agencies and facilities to ensure that recipients contact local or state environmental or solid waste agencies to obtain a database of vendors who recycle e-waste once the equipment is no longer useful to the recipient organization.

⁸Resources include instruction sheets, tips, and checklists, among other things, which participants can choose to use.

⁹If a federal agency or facility chooses to achieve gold-level participation in FEC, it must document that for all electronics recycling it used EPA-preferred recyclers, such as the recycling electronics and asset disposition services, federal prison industries (UNICOR), a manufacturer’s take-back service for EPEAT-registered electronics, or an electronics recycler that the participating agency or facility has conducted a physical on-site review of in the last 3 years.

FEC also recommends that participating agencies and facilities instruct recipients to avoid arrangements with recyclers that are unable or unwilling to share references and cannot explain the final destination of the e-waste they collect. When recycling equipment, participants are to determine how much electronic equipment the recyclers actually recycle, versus the amount they sell to other parties. If the majority of the incoming e-waste is sold, the recycling facility may be sending a significant amount of e-waste into landfills or for export overseas. In addition, FEC instructs participants to physically inspect potential recycler's facilities. E-waste in trash containers, for example, may indicate that the facility is not recycling it, and the presence of shipping containers may indicate that the facility exports it.

Federal Agencies and Facilities Have Increased Participation in EPEAT and FEC in Recent Years

As of December 31, 2008, EPA reported that 16 federal agencies and 215 federal facilities—representing slightly more than one-third of all federal employees—participated in the FEC to some extent. In addition, according to the 128 facilities that reported data to EPA, a majority of electronic products purchased during 2008 were EPEAT-registered. This is a sizeable increase from 2005, when we reported that 12 federal agencies and 61 individual federal facilities participated in FEC. Participating agencies include the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, Interior, Justice, Labor, Treasury, Transportation, and Veterans Affairs, as well as the Environmental Protection Agency, Executive Office of the President, General Services Administration, and the United States Postal Service.¹⁶

The benefits of federal agency and facility participation in EPEAT and FEC offer a glimpse of what can be attained through greater federal involvement. For instance, in 2008 FEC participants reported to EPA and the Office of the Federal Environmental Executive that 88 percent of all desktop computers, laptop computers, and monitors they purchased or leased were EPEAT registered. In addition, FEC participants reported that they extended computer life spans so that 63 percent of computers had at least a 4-year useful life. Procurement officials reported purchasing 95 percent of their monitors with energy-efficient power management features enabled and 38 percent of computers with this feature. Finally, participants reported that 50

¹⁶Some facilities within the Department of State, the Social Security Administration, and the National Aeronautical and Space Administration participate in the FEC, but these agencies have not registered with the FEC signifying participation.

percent of electronics taken out of service were donated for reuse; 40 percent were recycled; 8 percent were sold; and 2 percent were disposed of. Of those recycled, 95 percent were reportedly done so in an environmentally sound manner. These environmentally preferable choices from "cradle to grave" resulted in \$40.3 million in cost savings reported by participating agencies and facilities, energy savings that EPA found to be equivalent to electric power for more than 35,000 U.S. households for 1 year, and emissions savings equivalent to removing nearly 21,000 passenger cars from the road for 1 year.¹¹

Through participation in the FEC, numerous federal facilities have purchased greener electronic products, reduced the environmental impacts of electronic products during use, and managed obsolete electronics in an environmentally safe way. For example, officials with the Bonneville Power Administration within DOE reported to EPA that they adopted several environmentally responsible practices associated with the procurement and operation of electronic equipment. First, administration officials extended the lifespan of agency computers from 3 to 4 years. With over 500 computers procured each year at an annual cost of more than \$500,000, an administration official said that extending computer life spans generated substantial savings. Additionally, Bonneville Power Administration officials procured new flat-screen monitors instead of cathode-ray tube monitors, reducing both hazardous waste tonnage and end of life recycling costs. According to Bonneville Power Administration officials, they expect to save at least \$153 per unit over the life of each new monitor.

EPA's region 9 facility in San Francisco, California—a 20-story office building that houses nearly 900 EPA employees—also reported achieving substantial environmental benefits through participation in the FEC. The facility's energy subcommittee recommended an audit, which found that enabling computer and monitor power management features, such as those configuring computer monitors to the "sleep" mode instead of the screen saver mode, could save about 10 percent in total energy usage at no cost. In addition, with funding eliminated for new electronics purchases, region 9 staff reported that they reused 30 percent to 40 percent of existing electronics and extended the average lifespan of computers to 5 years. Finally, region 9 staff stated that they successfully recycled more than 10 tons of electronics that had been

¹¹EPA generated these results using agency- and facility- reported data entered into the agency's environmental benefits calculator, which was developed to assist organizations in estimating the environmental and economic benefits of "greening" their purchase, use, and disposal of electronics. EPA posted these results on its FEC Web site.

stored in an offsite warehouse. Although the cost of safely recycling the large quantity of electronics was high and regional staff found it difficult to locate a reputable recycler, EPA headquarters provided funds for the recycling costs and helped find a qualified vendor.

Opportunities Exist for More Federal Agencies and Facilities to Join EPA's Initiatives, and Current Participants Can Significantly Strengthen Their Participation

The EPEAT and FEC accomplishments achieved to date are steps in the right direction, but opportunities exist to significantly increase the breadth and depth of federal agency and facility participation. First, agencies and facilities representing almost two-thirds of the federal workforce are not yet participating in these promising initiatives, despite Executive Order 13423.¹² This executive order, signed by the President on January 24, 2007, generally requires that each agency (1) meets at least 95 percent of its requirements with EPEAT-registered products; (2) enables the energy saving features on agency computers and monitors; (3) establishes and implements policies to extend the useful life of agency electronic equipment; and (4) uses environmentally sound practices with respect to disposition of agency electronic equipment that has reached the end of its useful life. To implement these requirements, the Office of Management and Budget directed each agency and its facilities to either become a partner in the FEC or to implement an equivalent electronics stewardship program that addresses purchase, operation and maintenance, and end-of-life management strategies for electronic assets consistent with FEC's recommended practices and guidelines.

Second, most of agencies and facilities that participate do not fully maximize these programs' resources or the environmental benefits that can be achieved. While we acknowledge the efforts of FEC participants, the FEC statistics on participation may overstate these participants' adherence to the goals of the program, and their successes must be taken in context. Participation by 16 agencies and 215 facilities (representing slightly more than one-third of federal employees), for example, does not mean that all electronic products they purchase are procured, operated, and recycled or reused at end of life in an environmentally preferable fashion. Instead, participation simply means these agencies have identified their current practices for managing electronic products and set goals to improve them. Moreover, as the FEC is an initiative aimed to encourage

¹²Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic performance," Oct. 5, 2009, reiterates the requirement that agencies purchase EPEAT-registered electronics.

and support participating agencies and facilities, it does not impose consequences on those agencies who do not meet their goals. As a practical matter, only 34 FEC facility participants (16 percent of participants) reported to EPA that they managed electronic products in accordance with FEC goals for at least one of the three lifecycle phases—procurement, operation, or disposal—with only 2 facilities showing they did this for all three phases in 2008.¹³

The need for increased federal participation in these initiatives—in both breadth and depth—is further underscored by the federal government e-waste that continues to appear in online auctions and may subsequently end up overseas. As we reported in August 2008,¹⁴ significant demand exists for used electronics from the United States. We observed thousands of requests for such items on e-commerce Web sites—mostly from Asian countries, such as China and India, but also from some African countries. In our prior work, we showed that these countries often lack the capacity to safely handle and dispose of e-waste, as disassembly practices in these countries often involve the open-air burning of wire to recover copper and open acid baths for separating metals. These practices expose people to lead and other hazardous materials. In the several weeks leading up to this hearing, we monitored an e-commerce Web site where surplus federal government equipment is auctioned and found nearly 450,000 pounds of cathode-ray tube monitors for sale—items that, based on our prior work, have a high likelihood of being exported.

For perspective, using EPA's environmental benefits calculator¹⁵ we calculated the benefits that would result under a hypothetical scenario in which federal agencies replaced 500,000 desktop and laptop computers and computer monitors using EPEAT procurement criteria for each tier of environmental performance—bronze, silver, and gold. As part of this calculation, we added the environmental benefits attained if federal agencies operated all EPEAT units in an energy efficient manner (i.e., enabled Energy Star features) and reused and recycled the end-of-life

¹³Two facility participants from two agencies received an FEC gold award; 10 facility participants from five agencies received an FEC silver award, and 18 facility participants from seven agencies received an FEC bronze award.

¹⁴GAO-08-1044.

¹⁵EPA's environmental benefits calculator was developed to assist organizations in estimating the environmental and economic benefits of "greening" their purchase, use, and disposal of electronics.

electronics they replaced in accordance with FEC goals. We found that substantial energy savings and environmental benefits would result at all three EPEAT tiers. Specifically, greater participation could lead to environmental benefits 5- to 10-times greater than the accomplishments of FEC participants in 2008 described earlier. Additionally, if federal agencies were to purchase EPEAT-bronze, silver, or gold products, according to the EPA environmental benefits calculator, they would save approximately \$207 million at each level of EPEAT performance in energy usage and realize other cost, waste, and emissions reductions over the useful lives of these products. Table 1 shows the net energy savings and reductions in raw material extraction, greenhouse gas emissions, and toxic materials that would result if agencies and facilities recycled electronic products and replaced them with EPEAT-rated units, as compared to non-EPEAT computers and monitors.¹⁶

Table 1: Environmental Benefits of Agencies Procuring Computers and Monitors that Meet EPEAT's Bronze, Silver, or Gold Level of Environmental Performance and Operating and Disposing of Them in Accordance with FEC Goals

	Reduction in Energy Usage (kWh)	Reduction in Raw Material Extraction (kg)	Reduction in Greenhouse Gas Emissions (kg)	Reduction in Toxic Materials (kg)
EPEAT-Bronze				
Procurement	383,000,000	685,000,000	72,800,000	41,500
Operation	1,010,000,000	1,750,000,000	192,000,000	2,540
Disposal	794,000,000	10,800,000	42,400,000	8,310
Bronze Total	2,187,000,000	2,445,800,000	307,200,000	52,350
EPEAT-Silver				
Procurement	388,000,000	686,000,000	73,000,000	41,500
Operation	1,010,000,000	1,750,000,000	192,000,000	2,540
Disposal	794,000,000	10,800,000	42,400,000	8,310
Silver Total	2,192,000,000	2,446,800,000	307,400,000	52,350
EPEAT-Gold				
Procurement	393,000,000	687,000,000	73,300,000	41,500
Operation	1,010,000,000	1,750,000,000	192,000,000	2,540
Disposal	794,000,000	10,800,000	42,400,000	8,310
Gold Total	2,197,000,000	2,447,800,000	307,700,000	52,350

Source: EPA environmental benefits calculator.

¹⁶In addition, procurement using EPEAT criteria would lead to substantial reductions in emissions to air and water, as well as to the solid waste stream.

To help agency officials put in context the environmental and economic benefits that can result from using environmentally preferable electronic products, the EPA environmental benefits calculator also shows the benefits of procurement, operation, and disposal in accordance with FEC goals using common equivalents. Table 2 shows the environmental benefits of these practices when measured as the amount of household energy usage saved annually and the volume of automobile emissions saved annually.

Table 2: Common Equivalents to the Environmental Benefits of Procuring, Operating, and Disposing of Computers and Monitors in Accordance with FEC Goals

	Number of U.S. Households* Energy Usage Saved	Number of Passenger Cars Off Roadways
EPEAT-Bronze	182,796	206,257
EPEAT-Silver	183,151	206,349
EPEAT-Gold	183,570	206,543

Source: EPA environmental benefits calculator.

Concluding Observations

Understandably, when procuring electronics in a challenging fiscal environment, agency officials may give greater weight to price than environmental attributes. However, many of the environmental and human health problems associated with e-waste disposal can be averted through environmentally preferable procurement. Using EPEAT to purchase environmentally-friendly products, agency purchasers can often simultaneously meet their technology needs, benefit the environment, and realize dollar savings over the products' life. Using the success of the Energy Star program as a precedent, the federal government has taken steps to encourage environmentally preferable choices. We also applaud federal agency and facility donation and recycling practices for providing valuable learning tools to thousands of school children while, at the same time, providing at least some protection against their equipment ending up in landfills or overseas. Such programs have also demonstrated that relatively simple and inexpensive steps can help ensure that donated and recycled e-waste is ultimately managed in a responsible manner. In particular, the FEC provides a framework through which participants can help ensure responsible recycling through downstream auditing of recipient organizations' disposal practices and by following guidance on how to select responsible recyclers. The federal government has the opportunity to lead by example and to leverage its substantial market power by broadening and deepening agency and facility participation in

EPA electronic product stewardship initiatives, but meaningful results will only occur if federal agencies and facilities fully participate and utilize these promising initiatives' resources.

Ms. Chairwoman, this concludes my prepared statement. I would be happy to respond to any questions that you or other Members of the Subcommittee may have at this time.

**Contact and Staff
Acknowledgements**

Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. For further information about this testimony, please contact John Stephenson, Director, Natural Resources and Environment at (202) 512-3841 or stephensonj@gao.gov. Key contributors to this statement were Steve Elstein (Assistant Director), Nathan Anderson, Elizabeth Beardsley, Alison O'Neill, and Vasiliki Theodoropoulos.

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Ms. WATSON. Thank you.
Ms. Coleman.

STATEMENT OF CASEY COLEMAN

Ms. COLEMAN. Good morning, Chairwoman Watson, Ranking Member Bilbray, and members of the subcommittee. Thank you for inviting me here today to appear before you to discuss the application of green policies in the life cycle management of GSA's information technology assets.

GSA has taken a life cycle approach to our IT sustainability program. We buy energy efficient devices certified through the Electronic Product Environmental Assessment Tool [EPEAT], which you have just heard about, a program developed with a grant from the Environmental Protection Agency.

We encourage our users to rely on fewer devices, such as shared multi-function printers, rather than a printer on every desk. We employ modern approaches, such as virtualization, to reduce the number of servers required to perform the same amount of work. And we have a program to ensure that assets at their end of life are recycled responsibly.

GSA's path toward a sustainable green IT program began maturing in 2007. That year GSA began a program to consolidate all agency infrastructure and operations into one program called GSA IT Global Operations [GITGO]. We consolidated 39 contracts and 15 help desks into a single program under the management of the GSA CIO.

The GITGO program was critical to enabling our green IT efforts. Previously, our IT assets were not standardized and there was no central accountability or visibility into where we had assets deployed.

Through GITGO, the Office of the Chief Information Officer began to modernize, standardize, and consolidate the agency's infrastructure. Our goals were cost savings, improved sustainability, and equipping our work force with modern tools and effective support procedures necessary for them to perform their missions effectively.

Our infrastructure management efforts have yielded significant green benefits in several areas, including server and printer consolidation, telework support, and toner management.

On the broader scale, we are investigating new technologies such as cloud computing and green data center advances, which offer the promise of further significant reductions in energy consumption.

Madam Chair, Ranking Member Bilbray, and members of the committee, thank you again for the opportunity to appear before you to discuss this important subject. GSA is committed to environmentally friendly policies and procedures throughout the IT life cycle. We will continue our current initiatives and are constantly on the lookout for new and innovative ways to become even more green.

This concludes my testimony. I will be happy to answer any questions you may have.

[The prepared statement of Ms. Coleman follows:]

STATEMENT OF
CASEY COLEMAN
CHIEF INFORMATION OFFICER
U.S. GENERAL SERVICES ADMINISTRATION
BEFORE THE
COMMITTEE ON OVERSIGHT AND GOVERNMENT
REFORM
SUBCOMMITTEE ON MANAGEMENT, ORGANIZATION
AND PROCUREMENT
U.S. HOUSE OF REPRESENTATIVES
OCTOBER 27, 2009



Good morning Chairwoman Watson, Ranking Member Bilbray, and members of the Subcommittee. My name is Casey Coleman and I am the Chief Information Officer of the U.S. General Services Administration. Thank you for inviting me to appear before you today to discuss the application of green policies in the life cycle management of GSA's Information Technology (IT) assets.

GSA has taken a lifecycle approach to our sustainability program. We buy energy efficient devices certified through the Electronic Product Environmental Assessment Tool (EPEAT), a program developed with a grant from the Environmental Protection Agency. We encourage our users to rely on fewer devices, such as shared multifunction printers rather than a printer on every desk. We employ modern approaches such as virtualization to reduce the number of servers required to perform the same work. And we have a program to ensure that assets at their end of life are recycled responsibly.

GSA's path toward a sustainable, Green IT program began maturing in 2007. That year, GSA began a program to consolidate all agency infrastructure and operations into one program, called GSA IT Global Operations (GITGO). We consolidated 39 contracts and 15 helpdesks into a single program, under the management of the GSA CIO. The GITGO program was critical to enabling our Green IT efforts. Previously, our IT assets were not standardized and there was no central accountability or visibility into where we had assets deployed. Through GITGO, the Office of the Chief Information Officer (OCIO) began to modernize, consolidate, and standardize the agency's infrastructure. Our goals were cost savings, improved sustainability, and equipping our workforce with modern tools, along with effective support procedures, necessary for them to perform their mission effectively.

Our infrastructure management efforts have yielded significant green benefits in several areas.

Server consolidation: One important GSA-wide initiative was the modernization and consolidation of servers. In this initiative we modernized all of the agency's Local Area Network (LAN) and Citrix servers. Some of these servers were six to eight years old. By purchasing new, more powerful servers, virtualizing them, and centralizing operations (rather than the old model of operating every function in every region and every organization), we have shut down over 700 servers yielding green benefits in areas from lower electricity use to a smaller footprint and reduced overhead.

GSA Telework Challenge: In 2007 GSA undertook an ambitious program to increase the number of employees regularly teleworking. The benefits of telework are well known—increased employee morale and engagement, reduced roadway congestion, reduced dependence on foreign oil, and increased ability to operate in the event of a Continuity of Operations situation. Telework also has green benefits, due to employees working at home or a nearby telework center, thus

forgoing a long daily commute which reduces greenhouse gases emitted from automobiles as well as reducing the amount of gasoline consumed in commuting. The baseline from which GSA started in 2007 was less than 20% of its employees teleworking. We set ambitious goals for percentages of employees teleworking: 20% in 2008, 40% in 2009, and 50% in 2010.

In order to support the Telework Challenge, my office began an agency-wide workstation refresh program. We started with the organizations with the oldest and least efficient machines, and replaced them predominately with laptops, which are 20% more energy efficient than the machines they replaced. We implemented a telework training program and rolled out aids to help our employees make a successful migration to telework. After two years of this refresh, we are ahead of our goal. At last count, 46% of eligible GSA employees were teleworking.

Printer consolidation: Upon reviewing the deployment and use of printers within GSA, my office discovered that we had a ratio of almost one printer to every two employees, far greater than industry best practices of one printer for every 10 to 12 employees. We also had hundreds of different models, creating a very difficult support environment. To address this situation, I implemented a policy that encourages employees to rely on fewer devices, such as shared high-speed printers instead of personal printers on the desktop. The average printer is used less than 15 minutes per day, yet is powered on 24/7. In the past year under the initiative, GSA's number of printers has dropped 7%, which indicates that we are on the right track. We are also moving towards digital document management, which will ultimately reduce the number of printouts and paper that we consume. Both of these efforts have very tangible and immediate green benefits by reducing both electricity use as well as the amount of waste generated.

GSA has also implemented a strong series of initiatives to ensure that our IT assets are disposed of in an environmentally friendly and green manner. First, this is done by ensuring that no IT assets are simply thrown away. Instead, IT asset are disposed of through programs that allow for continuing use of the devices where possible. IT assets are first offered to other Federal agencies, where the agency requests the items. Next, a large percentage of IT assets for which GSA no longer has a need are given to schools and other non-profits through programs such as Computers for Learning. Finally, IT assets are put up for public auction, allowing the general public to bid on, and reuse, these devices. All these processes result in fewer IT assets going into landfills and help meet community needs.

Another area where GSA is ensuring environmentally friendly disposal of IT assets is with toner cartridges. We ensure that used printer toner cartridges are recycled, rather than ending up going to landfills. GSA's contract for printer services requires the contractor to provide prepaid return services and to ensure

that toner cartridges are recycled and remaining toner is recycled or disposed of in a manner that complies with all environmental and human health and safety laws.

In addition to the major initiatives I have discussed, GSA has implemented more mundane, but very important, procedures to green our IT operations. For example, we have implemented power settings on all of our laptop and desktop computers which switch those devices into standby or sleep mode when not in use. This simple change saves a large amount of electricity when multiplied across a large organization like GSA. We are also putting into place smart power strips that can be used to end electricity drain by so-called "vampire" devices, those devices that continue to use electricity even when turned off. On the broader scale, we are investigating new technologies, such as cloud computing and green data center advances, which offer the promise of further significant reductions in energy consumption.

Chairwoman Watson, Ranking Member Bilbray and members of the committee, thank you again for the opportunity to appear before you to discuss this important subject. GSA is committed to environmentally friendly policies and procedures throughout the IT lifecycle. We will continue our current initiatives and are constantly on the lookout for new and innovative ways to get even greener. This concludes my testimony, I will be happy to answer any questions you may have.

General Services Administration
Comments on
Question for the Record (QFR) from
CIO Casey Coleman Hearing on IT Procurement and Disposal before the
House Committee on Oversight and Government Reform's Subcommittee
on Management, Organization, and Procurement
October 27, 2009

Question One: Given GSA's high volume of purchases of IT and other equipment, describe the steps GSA takes--or the instructions GSA provides to other federal agencies--to ensure that donated, recycled, or publicly sold federal electronic equipment is not irresponsibly exported to developing countries where it may threaten human health and the environment.

- The vast majority of United States policies in the area of exporting property, including those that may threaten human health and the environment, are promulgated by other agencies, such as the Department of Commerce (see 15 CFR, Chapter VII) and the Environmental Protection Agency (see 40 CFR Part 262).

GSA Reference:

<http://www.bis.doc.gov/licensing/exportingbasics.htm>

http://www.access.gpo.gov/bis/ear/ear_data.html

<http://www.epa.gov/compliance/resources/policies/civil/rcra/intnltrahazwas-rpt.pdf>

- The current Federal Property Management Regulation (FPMR Part 101-42; 41 CFR 101-42), promulgated by GSA, provides the policies for the utilization and disposal of hazardous materials and certain categories of property. Throughout this Part are certifications that must be completed by the recipient or buyer (as appropriate) for the further use or disposal of certain categories of property. This GSA regulation also points the user to follow other laws and regulations promulgated by other authorities.

The full text of the FPMR Part 101-42, 41 CFR 101-42, is available at
http://www.access.gpo.gov/nara/cfr/waisidx_05/41cfr101-42_05.html
and

http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/41cfr101-42_01_R2J-n9M_0Z5RDZ-i34K-pR.html.

- GSA's Office of Governmentwide Policy, Office of Travel Transportation and Asset Management (MT) is working with its customer agencies and

policy stakeholders on a proposed amendment to the Federal Management Regulation, which would provide more detail on export restrictions than currently exists in the FPMR policies.

- At a more detailed level, when GSA advertises items for sale on our website, we include the following clause in the Online Sale Terms and Conditions which reads:

Special Security Notification. Bidders are warned that the misuse of items to compromise national security and/or to create or disseminate biological warfare agents is illegal. Further, the re-sale and/or exportation of certain technological items to countries subject to trade security controls is prohibited as outlined in the Online Special Terms and Conditions "Export Restriction Notice." Bidders may be subject to prosecution if items are used for illegal activity.

Question Two: Are there any mislabeled Energy Star products on GSA schedules? If so, what does GSA do about it?

The Federal Acquisition Service (FAS) has initiated partnerships with both ENERGY STAR and the Department of Energy's Federal Energy Management Program (FEMP) to accurately identify such designated products on GSA Advantage. FAS found that its vendors were inaccurately self-certifying their products as ENERGY STAR and FEMP-designated items. FAS removed the option for vendors to self-certify their products and partnered with the Environmental Protection Agency (EPA) to properly match products in the ENERGY STAR database with those appearing in the GSA Advantage system. FAS removed old designations prior to accepting data feeds from the ENERGY STAR Program to ensure that outdated designations were also updated. In August 2009, research by both EPA and FAS found that some products are still inaccurately labeled. EPA and FAS are actively working together to reduce the number of inaccurate listings, including standardizing matching elements between the ENERGY STAR and GSA Advantage databases. In addition, FAS has launched a Shopping Cart Warning on GSA Advantage that appears when customers attempt to buy products that are not compliant with Section 104 of the Energy Policy Act of 2005. When a non-compliant product is placed in a customer's shopping cart, the following message is displayed at the top of the GSA Advantage Shopping Cart page:

"This item has not been designated as EPACT compliant. Section 104 of the Energy Policy Act (EPACT) of 2005 requires agencies to purchase only Energy Star qualified or FEMP-designated products within specific product categories. You may continue shopping. Click here for more information."

Ms. WATSON. I want to thank all the witnesses. I would like to first start with Mr. Stephenson.

The Federal agencies probably are responsible for more e-waste than any others. Is data on e-waste maintained for the Federal Government as a whole, or is it maintained by individual agencies? Can you kind of clarify that for us?

Mr. STEPHENSON. GSA might be a better person to answer that, but I think they maintain their inventories, themselves; however, participation in the kinds of environmental programs we are talking about are maintained by EPA.

Ms. WATSON. Mr. Jones.

Mr. JONES. I'm not aware whether the Government is collecting the information across the entire Government or whether it is by individual agencies. We would have to get back to you on that.

Ms. WATSON. Mr. Stephenson, what would you suggest in order to have this analysis, data analysis?

Mr. STEPHENSON. Well, we are looking at the environmental stewardship programs, and we are pleased with the progress in the first 4 years of the program, but we just think there is a great opportunity to increase participation in the program, make sure that the EPEAT standards are rigidly adhered to. Both Presidents Bush and Obama expressed their desire for them to do so. In the Executive order that was just established 3 weeks ago, there is even a requirement for OMB and the Council of Environmental Quality to monitor agency participation in those programs.

I described the cost savings that could occur if we did that, let alone the implications of end-of-life disposal that you heard Congressman Green talk about.

Ms. WATSON. Thank you.

Of the e-waste generated by our Federal Government agencies, how much is sent for reuse and how much is recycled? Any one of the three of you?

Mr. STEPHENSON. Our statistics show that about 40 percent are recycled. Only about 2 percent are disposed of. The problem is recycled means giving to a recycling contractor, and without downstream auditing you are not sure what that recycling contractor is doing with it. The Federal Government doesn't do its own recycling; it contracts with others to do that. To assure that the recycler is credible, that is what we mean by downstream auditing, making sure they are good actors. We found in our analysis in 2008 that there are many bad actors out there that promise environmental stewardship but don't deliver. They are the very ones that wind up exporting this equipment overseas.

Ms. WATSON. And, again, Mr. Stephenson, we understand that agencies' compliance with EPEAT and other electronics stewardship requirements is reported to the OMB and via environmental score cards, and according to press reports, 13 agencies, including the GSA and the EPA, complied with EPEAT requirements in 2008, but they accounted for only one-quarter of the IT procurement spending. How much has compliance with EPEAT improved since then?

Mr. STEPHENSON. That is a better question for EPA, I think.

Ms. WATSON. OK, Mr. Jones. And you can jump in, any one of the three of you.

Mr. JONES. Thank you, Madam Chairwoman.

We expect that those numbers will be improving pretty dramatically in the coming years. One of the issues that we are dealing with in the executive branch as it relates to procurement is that IT contracts, as many contracts, are often on 5-year or 10-year cycles, so an agency that has a large IT procurement contract that expires, let's say, in 2013 will not be purchasing any IT until 2013, so when that contract comes up through the Executive order and a recent acquisition regulation that was promulgated in January 2009, we will be able to ensure that those acquisitions will be fully compliant with the EPEAT requirements that have been established in the Federal Government.

So we think that over the next 5 years, in particular—for some agencies a little bit longer than that if they have very long IT procurement contracts—those numbers will be climbing up pretty dramatically to ultimately reaching the goal of 95 percent of all IT procurement being EPEAT compliant.

Ms. WATSON. Ms. Coleman, determining how much e-waste is generated is difficult, we understand, and often attention is paid only to the end-of-life management of cathode ray tubes or CRTs, and almost nothing is known about other categories of e-waste such as keyboards, mice, flat panel monitors, central processing units, cell phones, which also contain hazardous constituents or recyclable materials, and it may be difficult to determine what happens to e-waste after it is collected by a recycler.

Recycling may include various activities such as sorting the waste, de-manufacturing it to remove hazardous constituents, and the export of certain components for further processing.

It may also simply involve the export of whole units for refurbishment and reuse or for processing for recycling. Recycling that involves entirely domestic operations will likely be more costly than those that simply export e-waste.

It is possible that the practices of any downstream vendors will be unknown, and so the policies of individual agencies may be relatively easy to find, but documentation that demonstrates compliance with these policies may not be easy to determine, particularly at the field level. . So, Ms. Coleman, given GSA's high volume of purchases of IT and other equipment, please respond to these questions.

Describe the steps that GSA takes on the instructions of GSA to provide to other Federal agencies to ensure that donated, recycled, or publicly sold Federal electronics equipment is not irresponsibly exported to developing countries where it may threaten human health and environment.

Ms. COLEMAN. Madam Chair, I can speak to the steps that GSA follows internally. I will have to get back to you with the information about GSA's information that would be shared externally with our customer agencies.

Within the agency we have a four-step process for our disposal of end-of-life IT assets. The first step is to put end-of-life IT units—monitors, computers, and so forth, printers—up for charitable donations through the computers for learning program. The second step is to make them available to other agencies that may have a

use for them. The third step is to put them up for public auction through GSA's online auctionsite.

The vast majority of our devices are handled through these first three channels. Those that remain are returned to the reseller as a credit for new devices, and the terms of the contract call for responsible recycling on their part.

Ms. WATSON. Mr. Bilbray.

Mr. BILBRAY. Thank you, Madam Chairwoman.

Mr. Jones, there is reported 21 million metric tons of waste produced in North America. Do you know what portion of that is United States? What is our national production of e-waste every year?

Mr. JONES. I don't know that, Mr. Bilbray. I would need to get back to you on that.

Mr. BILBRAY. But let's just say a lion's share of that 21 million metric tons would be United States, wouldn't you assume, between Canada and Mexico and the United States?

Mr. JONES. Yes, I would.

Mr. BILBRAY. What is our capability to recycle within those borders?

Mr. JONES. That is another question I don't think I have the answer to but would need to get back to you.

Mr. BILBRAY. I just think that we have a panel before us, just before you, that says we are going to outlaw the exporting to a large percentage, but we are not talking about what are we doing to pre-empt that export by siting. What does the EPA do to assure that we have recycling facilities within the United States to address this problem? What do you do today?

Mr. JONES. Well, as you probably know, Mr. Congressman, the recycling in the United States does not have a Federal mandate related to it. There is no Federal requirement related to recycling. We have worked with the private sector, interested parties, in developing certification programs. These are voluntary consensus standards, so that if a recycler claims to follow certain practices there is some third party verification of that. So it has largely been, from the Federal Government, a voluntary approach where we encourage recycling and then we work with interested third parties in establishing verification standards to ensure that recycling is followed according to good environmental practices.

Mr. BILBRAY. Does the EPA know how many facilities have been sited in the last decade and what is their volume capabilities that we have done? Basically, if it is automobile production, if it is the production of the units within the United States, you know, Department of Commerce can tell us what was produced within our jurisdiction. Can EPA tell us what was recycled within our jurisdiction?

Mr. JONES. The Agency could provide the data by a range of sectors, from newspaper to glass recycling to—I think that we actually probably could give you a fair amount of data on electronics recycling.

Mr. BILBRAY. When we get in here, when we talk about the recycling we are not talking about source separation, we are talking about a product, the waste stream being made into a marketable product within the United States.

Mr. JONES. So the recycling leading to some meaningful economic reuse?

Mr. BILBRAY. Within the jurisdiction of the United States.

Mr. JONES. I do not have access to that information with me, but I expect that the agency has a fair amount of specificity with respect to, by sector, that kind of data.

Mr. BILBRAY. OK. I will just tell you something, as somebody that has worked on environmental issues since 1970: it really pains me to watch the ships on the west coast drop off automobiles and get filled with cardboard, plastics, and steels, and whatever, and the ships go off to over the seas with our waste products and we do very little of that proportionately in this country.

My biggest concern is that, rather than reactionary and regulatory, we need to take with our environmental strategies the kind of approach that the Eisenhower Act did with transportation. We don't just wait for the private sector to come forward with a proposal for a highway. We don't wait for them to site it, to do the environmental regulations, and whatever, and then we just oversee it. We are proactive partners from the get-go to be able. To create the interstate system that all of us brag about, that wasn't just a result of the private sector doing all the heavy lifting and the Federal Government being a passive observer and a regulator. We were actually proactive in that.

I just would really like to see you be able to come back to this committee with, We have a strategy of making sure that we look for good locations, we look for good companies, we actually work with them, we help them site it. When a local community is opposing it based on this, we are proactive at working with them as partners, just like we do with a freeway. I mean, let's face it, the Federal transportation works with the State to site and to move forward with that. We haven't done that with our recycling facilities. We have been a passive, sort of hands-off approach.

I think with that is we are going to run into this crisis. We keep saying no, no, no, no, and that is our Government's obligation. It is easy to say no. But it is almost like me to asking my son to take out the trash but feel like I don't have the responsibility to make sure there is a trash can for him to put it in. That is your problem, son; my job is just to mandate that you have to get rid of this stuff.

I hope that as we are talking about, Madam Chair, outlawing the exporting of this material, that we bear the responsibility. With the right to restrict exporting comes the responsibility of being partners in citing the facilities to be able to recycle.

Mr. Jones, I apologize. I will give you a chance to respond to that.

Mr. JONES. I appreciate that, Congressman Bilbray. I will say that to date the executive branch, the EPA, in particular, our energy has been around the design of products, to try to work to design these products so that they do not create wastes that are difficult to manage, and I think you will hear somewhat from our colleagues with the Green Electronics Council about their efforts around EPEAT's design of electronics so that they do not create wastes that become difficult or potentially environmentally challenging to recycle.

So far our energies are around design as opposed to the actual recycling aspects of ultimately the disposition of these products.

Mr. BILBRAY. And the problem is people feel like they have a right to be able to regulate their own States, but they feel no responsibility to accommodate the waste stream. And California is one of the worst. I mean, our low-level radiation issue, our lack of siting medical waste facilities is a blatant example of just irresponsible environmental management, so I bear that. And the Chairwoman, both of us come from a State that has not set a good example on that and trying to reform ourselves.

Ms. WATSON. Thank you.

Mr. Luetkemeyer.

Mr. LUETKEMEYER. Thank you, Madam Chair.

I have a question for Ms. Coleman. In your testimony I was interested, you have highlighted the telework program that you work with. I was kind of interested to see, in order to set this up, you know, one of the things we are talking about here is conservation and getting rid of all our excess e-products here. To set this up, how much extra e-product do we have to purchase or use to be able to set up the ability of people to telework from home or from some sort of central location? It would seem to me like a computer at home, computer at work, still a computer. Am I missing something here, or is it basically about a tradeoff there?

Ms. COLEMAN. You point to a good issue, sir, that we addressed in 2007 with GSA's telework challenge, is the name of the program.

Mr. LUETKEMEYER. Yes.

Ms. COLEMAN. At that time, GSA had fewer than 20 percent of its employees teleworking, and we undertook an initiative to see that over 50 percent of our employees were regularly teleworking in order to reap the benefits such as reduced dependence on foreign oil, reduce congestion, improved employee morale, and improved ability to respond in the event of a continuity of operations or building emergency situation.

As I said in my opening remarks, we have instituted a policy that encourages the reliance on fewer devices. In order to do that and avoid the situation that you refer to where employees might have a computer at home, a computer at work, and perhaps another one in their car for emergencies, we outfitted all eligible employees for telework with laptop computers which we ask that they use either when they are teleworking at home or in the office in a docking station.

Mr. LUETKEMEYER. Have you seen the program increase productivity of individuals, or have you seen a drop-off, or has it been wildly successful? How do you analyze it, I guess?

Ms. COLEMAN. We believe the program has been and continues to be successful. Our goal in 2007 was 20 percent of our employees teleworking, and in 2008 40 percent. Then at the end of 2009 we were at 46 percent of our eligible employees regularly teleworking. It is viewed as both a benefit on the part of employees and a helpful aid in the part of management, because now we have employees who can work in situations where they might otherwise not be able to, in the event of a snow emergency or whatever.

Mr. LUETKEMEYER. Well, it increased participation, but did it increase productivity?

Ms. COLEMAN. Yes, sir.

Mr. LUETKEMEYER. It did. OK. Do you have any incentives for people to do this?

Ms. COLEMAN. We do not offer any particular incentives in terms of paying for broadband access. We do provide them with modern equipment. In some cases they have not only a laptop but also a voice over IP phone, which allows them to function as if they were in the office, with the same phone number and same access to our employee directories. So there is sort of an inherent benefit in telework through foregoing a daily commute that is viewed as part of the benefit of participating in telework.

Mr. LUETKEMEYER. How widespread is your program? Is it just in your agency, or are you promoting this throughout the Federal Government, or how are you administering this? Where are you going with it?

Ms. COLEMAN. GSA and the Office of Personnel Management jointly have a responsibility for the Government-wide oversight of the Federal executive branch telework program. GSA, because it has that role, viewed itself as obligated to be a leader in that effort, and that is the program I refer to is telework within our agency.

Mr. LUETKEMEYER. What do you anticipate being the ultimate goal to max out your program? I see 50 percent is your target here, and you have reached that, or very close to it already. Is that the optimum of where we need to go with this?

Ms. COLEMAN. We have not established a higher goal; however, we are looking at the program to see if perhaps, now that we have a regular practice of telework and a culture of telework, perhaps there is opportunity to do more. At this time we haven't reestablished new goals.

Mr. LUETKEMEYER. OK. Thank you.

Thank you, Madam Chair.

Ms. WATSON. Thank you.

Mr. Jones, the organization called Recycling Assets and Electronics and Assets Disposition Services, are referred to as READ?

Mr. JONES. Yes.

Ms. WATSON. How long do these contracts run?

Mr. JONES. Madam Chair, the existing contract actually expires at the end of this year, but I will say that we have been competitively put out of business in that there are alternative Government entities who are stepping up to the plate who will be able to provide that contract for cheaper than we were able to, and so when this contract expires that will be the agency's last contract.

Ms. WATSON. I see. Because the questions that we are concerned about, that we have been raising, what e-waste is sent for recycling and how is it managed and what types of assurances are obtained to show that the materials are handled properly and legally by downstream vendors throughout the recycling chain, and what criteria does the agency use to select a recycler, and is it primarily priced. These are some of the answers that we would like to have, and we will have you back.

But just recently the New York Times reported that both the Department of Energy and the EPA Inspector Generals have detected significant problems with the accuracy of Energy Star labels, with consumers buying products that are mislabeled, and this is a bad

precedent for consumers and the environment, as consumers pay more for Energy Star products, yet these appliances fail to save energy. So how serious a problem is this, and what steps has EPA taken to address this problem?

Mr. STEPHENSON. Thank you, Madam Chair. The agency takes the IG report—there were IG reports both with the Department of Energy and at the Environmental Protection Agency spaced about 9 months apart that basically said the same things. We have undertaken to develop a memorandum of agreement with our colleagues at the Department of Energy to more clearly define the roles of our agencies and verification, which is the issue that is raised in the New York Times article and in the IG. It is going to get much greater prominence and clarity with who has that responsibility. So we take the IG reports seriously and feel like we have put into place appropriate corrective action to address the issue.

Ms. WATSON. Ms. Coleman, have any mislabeled Energy Star products shown up on the GSA's schedules? If so, what is GSA doing to ensure that Federal agencies are not buying mislabeled products?

Ms. COLEMAN. Madam Chair, I am not aware of that occurring. I will go back and find out if we know of anything that I am not personally aware of at this time.

Ms. WATSON. OK. And let me then ask Mr. Stephenson, has the GAO investigated this matter, and, if not, are there plans to do so?

Mr. STEPHENSON. We haven't investigated this matter, nor have we been asked to do so at this point.

Ms. WATSON. Well, can you get back to us on this issue?

Mr. STEPHENSON. Yes.

Ms. WATSON. Since it was brought up in the papers?

Mr. STEPHENSON. Yes.

Ms. WATSON. OK. Are there any more questions?

Mr. STEPHENSON. Madam Chair, could I make one observation about Congressman Bilbray and recycling?

Ms. WATSON. Yes.

Mr. STEPHENSON. He is absolutely on the right track. There are very responsible recyclers in this country and abroad. The problem is there is not economic incentives for them to do their job right now because there is no Federal legislation that controls electronic waste. Right now some 20 States have various laws on the books that range from everything from landfill bans for computers, but there are currently no economic incentives to get those recyclers up to speed. There is probably more capacity right now than there is material to recycle because of that.

Your State, California, has an advanced recovery fee approach where the consumer pays a certain amount to enable recycling at the end. The State of Maine and most of the other States have what is called an extended producer responsibility program where the manufacturer is required to take back computers and then recycle them in a responsible way.

So that is why we called for, in our 2005 report, Federal legislation on this issue, and we are not concerned—export is just kind of an outgrowth of that. If we do a better job of procuring and managing end-of-life, we will do a better job with the recycling of illegal exports at the end.

Mr. BILBRAY. Madam Chair.

Ms. WATSON. Mr. Bilbray.

Mr. BILBRAY. California being an example, we have a surcharge on the products. How many facilities have we sited in California to finance that? In other words, where do those funds go? Do you know?

Mr. STEPHENSON. Well, right now in California they go to the recyclers, but they go to the collection agents and the recyclers. Exactly. And according to Congressman Thompson, there is a state-of-the-art facility in northern California. I think you are going to hear on the third panel another recycler that can explain in more detail the importance of the way the computer is designed and how it is managed, the materials it is made of, how easy it is to take apart.

Mr. BILBRAY. In fact, District One is so far north we think of that as southern Oregon. But it is a concern that we are quick to outlaw certain options.

Mr. STEPHENSON. Right.

Mr. BILBRAY. But we are not proactive at providing the good options in there, basically saying, Well, that is your problem; we are here to just make sure you dispose of it but don't ask us to participate in helping to create those options.

And the biggest concern I have, coming from a working class community, being born and raised there, is traditionally when you eliminate the other options the bootleg options start being forced in, and then we are the first ones to scream, How could all this illegal dumping bailout on? How could this ever happen? Well, we have created a situation that basically makes it very, very tempting to go to that option because all the other options, the good options, have not been made available because it wasn't our responsibility to provide the positive option.

I think that we have, in Government, to be more proactive at creating those positive options, and that our responsibility is not just to make sure that waste is not disposed of in the wrong way, but we have a responsibility to be proactive, like we did the freeways, and make sure there is a good option available to the capacity that we admit is there, you know, 21 million metric tons, so hopefully we will be able to see that cooperation.

And the States do have a right of control. But they also have a responsibility as a consumer, as a government agency, as we would say to consumers that you have a responsibility to make sure your waste stream is managed appropriately when you throw it out.

Thank you very much. I appreciate it.

Mr. STEPHENSON. Absolutely.

Ms. WATSON. Thank you, Mr. Bilbray. You see where we need to go, so we are going to have subsequent hearings on this matter. There are two bills available to us now, and within those two bills we might find a provision, Mr. Bilbray, where we can make the Federal Government more responsible in this regard.

I want to thank all the witnesses. This concludes the second panel.

I thank Mr. Jones, Mr. Stephenson, and Ms. Coleman for your testimony. You may be excused now. Thank you so much.

We are now going to turn to the third and the final panel, if they will come up: Mr. Biddle, Mr. Casellas, Mr. Goss, and Mr. Littlehale. You can stay standing.

As you know, it is the policy of the Committee on Oversight and Government Reform to swear in all witnesses before they testify.

[Witnesses sworn.]

Ms. WATSON. Let the record reflect that the witnesses answered in the affirmative.

I will now take a moment to introduce our distinguished panelists.

Mr. Michael Biddle is president and founder of MBA Polymers, which he started in Richmond, CA, in 1994. Previously, Mr. Biddle served as principal of Michael Biddle and Associates, as research leader for Dow Chemical Co., and as an adjunct professor at St. Mary's College in Moraga, CA.

Mr. Gilbert Casellas is vice president of corporate responsibility for Dell, Inc., where he oversees the company's global diversity, sustainability, and corporate philanthropy functions. He previously served as chairman of the U.S. Equal Employment Opportunity Commission, as General Counsel of the Department of Air Force, and as a co-chairman of the U.S. Census Monitoring Board.

Mr. Rick Goss manages the Information Technology Industry Council's Environmental Leadership Council, which promotes the Council's positions on electronics recycling, materials content and design, and green procurement. Mr. Goss represents the electronics industry before elected officials, regulators, and the media, and he has testified on behalf of high-tech manufacturers before Congress and in several States.

He also works on international regulatory issues related to the environment, energy, and sustainability, and he participates in several Federal and State planning teams and task forces on environmental priorities. His prior experiences include working for the Electronics Industries Alliance as vice president of environmental affairs.

Mr. Rich Littlehale is a senior at Yale College majoring in history. During his summers at Yale, Rich has worked on a construction team for an investment firm and at an investment bank, and in 2008 Rich took a leave of absence from Yale to found a green electronics reuse and recycling company called YouRenew.com, which helps people, businesses, organizations, and government recycle their old electronics equipment.

Finally, Mr. Jeff Omelchuck founded the Green Electronics Council in 2005 to reinvest society's relationship with electronics. In 2006 the Green Electronics Council was selected to oversee Electronics Product Environmental Assessment Tool [EPEAT], the global green certification program for electronics. Mr. Omelchuck was selected to serve as the executive director for both the Council and EPEAT. His prior experiences include founding a consulting and training practice and working as an engineer in Silicone Valley.

I ask that each of the witnesses now give a brief summary of their testimony, and keep this summary under 5 minutes in duration. Your complete written statement will be included in the hearing record.

We will now start with Mr. Biddle. You may proceed.

STATEMENTS OF MICHAEL BIDDLE, PRESIDENT AND FOUNDER, MBA POLYMERS; GILBERT CASELLAS, VICE PRESIDENT, CORPORATE RESPONSIBILITY AND CHIEF DIVERSITY OFFICER, DELL, INC.; RICK GOSS, VICE PRESIDENT, ENVIRONMENT AND SUSTAINABILITY, INFORMATION TECHNOLOGY INDUSTRY COUNCIL; RICH LITTLEHALE, CHIEF EXECUTIVE OFFICER, YOURENEW.COM; AND JEFF OMELCHUCK, GEC DIRECTOR AND EPEAT EXECUTIVE DIRECTOR, GREEN ELECTRONICS COUNCIL

STATEMENT OF MICHAEL BIDDLE

Mr. BIDDLE. Thank you, Madam Chairwoman.

Chairwoman Watson, Ranking Member Bilbray, and members of the committee, thank you for the opportunity to appear before you today. I would like to commend the committee for recognizing the importance of this subject and its relevance to some of the other challenges facing our country today.

I started MBA Polymers over 15 years ago to implement a more sustainable way to manufacture plastics, and I did it for a couple of reasons. The biggest perhaps is because I was watching this country consume about 100 billion pounds each and every year of plastics, and throw over 90 percent of that in landfills. The less than 10 percent, more like 6 or 7 percent, that we managed to collect for recycling, most of it ends up overseas, as Representative Bilbray has already pointed out. And I thought there was a better way to use this valuable resource.

MBA Polymers is now the world leader in mining and recycling plastics from end-of-life durable goods such as computers, electronics, and automobiles. We are headquartered in Richmond, CA, where we have an office and research center; however, we build our manufacturing plants, which are the most advanced plastics recycling plants on the face of the planet, overseas. We build them in Asia and we build them in Europe, because this is where the collection infrastructure for end-of-life durable goods like electronics has been developed.

Our company has been recognized for breakthrough technologies, like awards from the World Economic Forum, Tech Pioneer, Intel Corp.'s International Environmental Award, and the Thomas Alva Edison Award for Innovation. And we were just named 1 of the top 100 clean tech companies in the world.

On one side of our business we mine the plastics from the materials left over after electronics and automobile recyclers recover the materials from end-of-life products. We take what is called their shredder residue, which is a complex mixture of materials that would otherwise be landfilled or incinerated, and from this we recover a number of different plastics, and even some of the metals that they missed.

By working very closely with literally hundreds of computer and electronic recyclers all over the world, we know firsthand the breadth of approaches to collect, transport, and recycle end-of-life computers and electronics. We have seen the most primitive to the most sophisticated recycling approaches and technologies and everything in between.

On the other side of our business, we sell our recycled plastics to some of the largest IT, electronics, and automobile companies in the world, so we also know firsthand the challenges and opportunities manufacturers face in using recycled materials in their new products.

I hope this explains why I am here as a witness at your hearing today.

My testimony can be summarized very simply: we believe that the United States is missing both a timely leadership and an enormous economic opportunity by following our current practice of mostly wasting our unique and valuable resources. The United States has the largest deposit of end-of-life electronic equipment in the world, as we have already heard some of the other speakers testify to. You might say, from our perspective as a recycling and mining company, that we have the richest above-ground mines in the world.

To kind of put this in perspective, if you look at North America, with a population of over 300 million people, we generate, as Representative Bilbray already pointed out, over 20 million tons of e-waste a year. And I am using e-waste in the sense that the EU defines it—anything with a cord or battery, just so we understand the definition. That is almost 70 kilograms per each person in North America.

By contrast, Europe, with about twice our population, generates less e-waste, so they end up generating less than one-third per person than what we do here in the United States per year.

And in Asia, if you look at the other extreme, with a very large population and much less e-waste, they only generate about 5 percent per person per year, compared to the United States.

Now, much of the obsolete electronics in the United States are stored in closets and garages. I know my family is guilty of that. But the majority of the rest is disposed of in landfills or incinerators. The EPA estimates that less than 20 percent of even the high-value portions of this e-waste stream is recycled. Unfortunately, the small amount that is collected for recycling is mostly shipped overseas to developing countries, often without the knowledge or means to recycle the equipment and materials in a way that protects the workers or the local environment.

We have already referred to the shows on 60 Minutes, National Geographic, and the hundreds of news stories talking about what happens when e-waste is handled inappropriately in the potentially disastrous consequences.

Most of the e-waste that is handled inappropriately comes from the United States.

So three things that we would like to point out at this hearing:

First, our country should take a leadership position in the responsible management of our large collection of e-waste. We are one of the last developed countries to have a national policy for these wastes, even though we have the largest amounts of this waste in the world.

Second, and just as importantly, we are missing a significant opportunity to reach some enormous economic benefits by recovering these materials or this equipment domestically. Examples include shovel-ready green jobs. The scrap recycling industry here in the

United States already employs over 85,000 people and generates over \$85 billion in revenues, and we throw away a great deal of resources. This industry is ready to capture those resources, generate jobs, and generate revenues.

There is enormous energy savings that can be realized by reusing materials, compared to making them from new. If you just look at metals and plastics, for example, they require as little as 10 percent of the energy required to making them from virgin materials. I can't think of hardly any other opportunities where we can slash 90 percent of the energy use.

And there are also concurrent significant greenhouse gas savings from using recycled materials, so let me just put a few metrics on the table so you can kind of understand the magnitude of these savings.

I am going to focus on plastics, not just because we are a plastics recycler, but because it is the last major material category to be recycled anywhere in the world, including the United States.

The EPA estimates that less than 7 percent of our plastics are recycled in the United States, and the majority of that, about 75 percent of that, is actually shipped overseas for recycling, so there is a huge opportunity here that we are not capturing.

If we would only recover one-half of the plastics from end-of-life electronics and automobiles—and this is very conservative, because we recover much higher amounts of metals from what percentage of these end-of-life goods we actually recycle in the United States—we can save over nine billion barrels of oil per year, something like 15 billion kilowatt hours of energy per year, and over 5 billion pounds of CO₂ from being emitted to the atmosphere every year.

I have other examples of potential savings in my written testimony.

So third and finally, the U.S. Government can use its large purchasing power to accelerate the realization of these benefits. Manufacturers are often reluctant to use new materials, particularly recycled materials, and recyclers are reluctant to make the necessary expensive investments in plant and equipment unless they know that they have reliable supplies of raw material and a market for their recycled products.

The U.S. Government can prime the pump and help drive the market for recycled materials like plastics. Federal and State government policies to procure recycled paper, for example, were instrumental in driving up the availability of recycled paper and driving down the cost.

There already exists in a part of the Solid Waste Act dealing with Federal procurement that instructs Government agencies to procure such items composed of the highest percentage of recovered materials practicable. This policy seems to have mostly been focused on paper, and we believe there remains a huge opportunity to release the value in our e-waste streams. This would, in turn, create jobs, secure resources, save energy, reduce greenhouse gases, and protect people and the environment. I think these are all benefits that we would like to see happen.

Thank you, Madam Chair.

[The prepared statement of Mr. Biddle follows:]

Testimony of MICHAEL BIDDLE

President and Founder of MBA Polymers, Inc. of Richmond California

before the Subcommittee on

Government Management, Organization, and Procurement

of the Oversight and Government Reform Committee

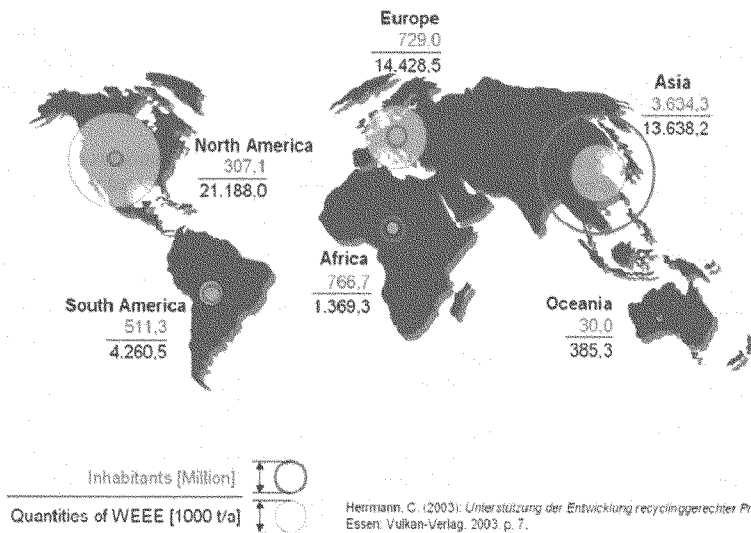
of the House of Representatives

October 27, 2009

Chairman Watson, Ranking Member Bilbray, members of the committee, thank you for the opportunity to appear before you today.

What is the problem that needs solving? The graphic below and the table that follows shows that North America has more “e-waste” or “WEEE” (Waste Electrical and Electronic Equipment) per capita than any other region of the world.

QUANTITIES OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT



The table below summarizes the per capita weights of WEEE based on this study and suggests that the average US citizen generates more than three times as much e-waste as the next most wasteful consumer, Europeans.

	Inhabitants, millions	Metric Tons/year of WEEE	kg of WEEE per inhabitant per year
North America	307	21,188,000	69.0
Europe	729	14,428,000	19.8
Asia	3,634	13,368,000	3.7
South America	511	4,260,000	8.3
Africa	767	1,369,000	1.8
Oceania	30	385,000	12.8

Europe and parts of Asia implemented programs over five years ago to deal with these wastes in an organized and responsible way. We can learn quite a bit from their experiences. MBA Polymers is in a unique position because it provides a state-of-the-art, economically and environmentally attractive answer for plastics, which remains the most problematic waste from WEEE. And as such, MBA has been invited in to most of the major and also very many smaller electronics recyclers around the world to help them solve their plastics waste problems. All, that is, except in the US where approximately 95% of the small of amount of e-waste plastic that is collected is shipped overseas.

MBA works both sides of the problem. It not only provides a home for the majority of the "waste" generated by electronics recyclers, MBA also recycles the plastic to a level where it is used back into new IT equipment – "Closing the Loop". To accomplish this, MBA works with some of the largest IT, electronics and appliance manufacturers in the world to enable them to put "PCR" (post-consumer recycled plastics) into their products.

As discussed below, this creates significant jobs, saves considerable amounts of energy and CO₂ emissions and provides a safe and reliable answer for complicated waste stream.

Why is a responsible and "in-country" solution for WEEE and plastics so Important?

Metals are recovered from end of life electronics equipment using a variety of well-established technologies and this is done by thousands of companies around the world. The US often sells its WEEE to brokers. This is done because the brokers pay a high price. They can pay high prices because they have no accountability for where it goes. Brokers might not import it legally into the often undisclosed destination country, thus avoiding considerable import handling, duties and VAT costs. Brokers, in turn, often sell it to processors who have extremely low overhead and processing costs because they use manual labor, little work protection costs, and little or no environmental controls as highlighted by major news sources such as the *New York Times*, *National Geographic* and *60-Minutes*.

This presents at least two major problems and many minor ones. First, these materials are often processed by people/companies without the knowledge or technology to handle these complicated and potentially hazardous materials properly. Much has been made of the problem in China and Africa by organizations like the Basel Action Network (BAN) and numerous news agencies all over the world, but it is much more widespread than just one or two countries. As Dr. Shyamala Mani, Director of the Indian Centre for Environment Education's Waste and Resource Management (WaRM) program says: "When e-waste exports are not subjected to regulations, toxic waste will always run downhill on an economic path of least resistance. And moreover, free trade in hazardous waste leaves the poorer people of the world with an untenable choice between poverty and poison."

At the first electronic-waste recycling day for U.S. Congress staffers in May 2009, the president of the electronics recycling firm running the event said: "Redemtech takes pride in refurbishing and recycling electronic products in the U.S., but about 90 percent of e-waste sent to U.S. recyclers gets shipped overseas, often to places where crude and unsafe methods are used to break down the electronics". The US is by far the largest supplier of electronics waste to developing countries.

Secondly, beyond the human and environmental implications of this lack of policy, we are letting others "mine" these valuable resources and only capturing in the US the minimum "scrap" value for these valuable materials. In fact, by collecting, preparing and shipping this material in organized ways, you could say that we are subsidizing other countries by providing them with low cost raw materials. Other countries are enjoying the significant added values available by actually recovering for re-use the most valuable materials from these waste streams.

Why single out plastics for a focus in WEEE? Plastic is the last major material category to be recovered and re-used in significant quantities in the United States. The consequences of "missing this opportunity" are significant. This represents a waste of a natural resource – America is also the largest "mine" of waste plastics in the world – and we are paying to dispose of this material rather than reaping the benefits of re-using it like a growing number of other countries. It means that the US uses much more natural resources to make plastics from petro-chemicals. It also means that we put much more CO₂ into the atmosphere than we would if we re-used/recycled these plastics like we do other materials. And finally, it means that we are more dependent on foreign oil than necessary. These missed opportunities are quantified below.

Regarding the environmental risks, some of the plastics used in used IT equipment contain heavy metals (like cadmium and lead), brominated flame retardants and other materials of concern. So the US today dumps potentially hazardous waste in our landfills or ships them to developing countries where the recovery of residual metals and technical plastics is often carried out in ways that can cause significant danger to people and the environment due to the lack of equipment, technology and knowledge about how to recover these materials safely.

More specifically, while we recycle over 90% of the metals in automobiles, electronics, appliances and other end-of-life durable goods that make it to a recycler, we recycle less than

10% of the other major component of these durable goods – plastics. In North America alone, approximately 7 billion pounds of plastics are consumed each year in just the electrical and electronic equipment and automotive sectors.

Metal recyclers capture over 90% of the metals from the collected and recycled WEEE and end-of-life automobiles. It is estimated that only 5-10% of the plastics from durable goods are recycled and most of this is done overseas, not the US. If the US were to only capture half of the plastics (not to mention the extra metal recovery) from just these two categories of end-of-life products, the benefits could be enormous:

- We could save over 9 million barrels of oil per year.
- We could save something like 15 billion kilowatt hours of energy per year.
- We could save over 5 billion pounds of CO₂ from being emitted into the atmosphere every year.
- Our supply of raw materials would be much more secure.
- We could create tens of thousands of new green jobs.
- We could help “save” some of our materials manufacturing base and make other manufacturing sectors more competitive with a home-grown sustainable supply of sustainable green materials.
- We would better protect the people and the environment in developing countries.

A growing number of plastics companies are shutting down in the US and moving to other parts of the world, particularly the Middle East, where the raw material is located. We need to realize that the US owns the largest “well-heads” of used plastics in the world and start “mining” this valuable resource.

Decades ago, Nucor was not even in the steel business and was “laughed at” by the virgin steel industry when it said that it would start making new steel from recycled steel. The virgin industry believed that recycled steel would always be inferior to virgin and that big users would never switch to recycled steel. But now Nucor is the largest and most profitable steel company in the US and it makes ALL of its steel only from recycled feedstock! Without Nucor and other similar “mini-mill” companies exploiting the electric arc furnace technology and using recycled steel for its feed, we might not have much of a domestic steel industry. MBA is often called the “Nucor of the Plastics Industry.”

So how does our country realize these benefits?

Tools: “Push side” take-back policy. Most developed countries have some sort of WEEE management policies in place to both protect the environment, but also to conserve their natural resources and to create “green jobs”. Even some states are leading the way with their own versions. We desperately need a national policy and the US government could set the example while such a policy is developed.

Europe is an example of a collection of governments that implemented policies to encourage recycling and green product development several years ago. The initial impetus was to protect their local environment and that of developing countries. But Europe has

since recognized that these programs make their countries and companies much more energy efficient (and therefore more competitive), provide energy and natural resource security, and create hundreds of thousands of jobs. Below is example of the resource security and sustainability program that is being promoted in Europe as a result of what they have learned about the advantages of re-using their precious resources compared to manufacturing new resources from dwindling raw material supplies.

Raw Materials Initiative

- Meeting EU's critical needs
- An integrated strategy, based on 3 major pillars:
 - Access to raw materials on world markets at undistorted conditions
 - The right framework to foster sustainable supply of raw materials from EU sources
 - Increase resource efficiency and promote recycling in EU






The other key component to developing this sustainable materials industry is to help create the market for these recycled materials.

Tools: “Pull Side” Procurement policy is a tried, successful way to incentivize this type of recycling. The success of “priming the pump” has been demonstrated in many different industries. In the recovered paper industry, for example, the US government procurement policies helped create a big enough market for this capital-intensive industry to develop the scale necessary to become more economically viable. Recycled paper, which used to be difficult to source and carried a significant price premium, is now much more available and more competitive with virgin.

The State of California was an early adopter of green procurement policies not only in recognition of the need to protect the environment, but also in recognition that recovered materials represented a valuable resource for the State. The relevant sections of the state’s Public Contracts Code provide:

“12153. The Legislature finds and declares all of the following:

(a) It is the policy of the state to conserve and protect resources for future citizens as well as the current population of the state.

(b) It is in the best interest of the state that the state alter its perception of solid waste to instead look upon this waste as resources that can be recovered and reused.”

The state of California also recognized the importance of creating a market for products with post-consumer recycled content through procurement policies:

“(c) ... Since recycling is a necessary component of this policy, the state shall encourage the use of recycled products to ensure that the state's industries have sufficient and adequate markets for products regeneratively utilizing the state's solid waste as recycled resources.”

The federal government has already begun to recognize that procurement policy – in some form – could help solve the “e-waste” problem. Executive Order 13101, which was signed by President Clinton in 1998, stated: “Section 101. Consistent with the demands of efficiency and cost effectiveness, the head of each executive agency shall incorporate waste prevention and recycling in the agency's daily operations and work to increase and expand markets for recovered materials through greater Federal Government preference and demand for such products. It is the national policy to prefer pollution prevention, whenever feasible.”

42 USC § 6962 – a part of RCRA (Resource Conservation and Recovery Act) dealing with Federal procurement provides:

Requirements

(1) After the date specified in applicable guidelines prepared pursuant to subsection (e) of this section, each procuring agency which procures any items designated in such guidelines shall procure such items composed of the highest percentage of recovered materials practicable (and in the case of paper, the highest percentage of the postconsumer recovered materials referred to in subsection (h)(1) of this section practicable), consistent with maintaining a satisfactory level of competition, considering such guidelines. The decision not to procure such items shall be based on a determination that such procurement items –

- (A) are not reasonably available within a reasonable period of time;
- (B) fail to meet the performance standards set forth in the applicable specifications or fail to meet the reasonable performance standards of the procuring agencies; or
- (C) are only available at an unreasonable price. Any determination under subparagraph (B) shall be made on the basis of the guidelines of the National Institute of Standards and Technology in any case in which such material is covered by such guidelines.

The recent Executive Order issued by President Obama on October 5, 2009 to reduce greenhouse gas emissions by the federal government, provided in part that: “The head of each agency shall: ... (h) advance sustainable acquisition to ensure that 95 percent of new

contract actions including task and delivery orders, for products and services ... contain recycled content ...”

Finally, NGO and government-accepted tools like EPEAT (Electronic Product Environmental Assessment Tool) recognize the importance of green procurement. EPEAT principles and guidelines attempt to: 1) offer market advantage for companies that provide products and services that achieve improved environmental performance, and 2) create rating credits for using recycled plastics content – but currently only an optional criterion rather than a required criterion.

Procurement policy goes right to the heart of the obstacles to recycling plastics from end-of-life durable goods. It provides the dependable market that erases the concerns that keep business from pursuing this course.

What are the specific concerns that manufacturers have that are addressed by the market created by a supportive federal government procurement policy? Companies striving to “green” their supply chains are most constrained by the inability to justify cost of implementation, according to “The Green Supply Chain Study,” a survey jointly conducted by CSC (NYSE: CSC), Manhattan Associates Inc. (Nasdaq: MANH), IBM and Supply Chain Management Review magazine. Manufacturers have always been reluctant to use recovered materials mostly due to fears regarding quality and supply and qualifying new materials, particularly ones for which they have concerns, is a time-consuming and costly process. Manufacturers are often unwilling to take on these added costs unless there is a clear benefit at the end – and a procurement incentive is the most clear and effective “reward” to these manufacturers.

On the infrastructure side, most material recovery systems require significant capital investment to provide the scale, quality and consistency required of end-users (even though this is usually less than required for the equivalent virgin industries). It takes a clear large market so material recyclers can raise the capital necessary to make these investments and generate sufficient returns to their investors and banks.

A recent example is the procurement incentives put in place by the federal government for recycled paper many years ago. Recycled paper was difficult to find, was of marginal quality used to cost considerably more than virgin paper. The US government provided incentives to procure recycled paper, which helped provide the incentives necessary for collection and processing infrastructure to develop. Once developed, this infrastructure grew, economies of scale were realized and market competitive forces drove supply up and prices down.

In summary, “priming the pump” works to create new industries like these. In the absence of this “pump priming”, the infrastructure will either be extremely slow to develop or not develop at all. US government procurement policy could provide a huge market for electronics and electronic appliances with high recycled content and thus can overcome these concerns. One key component of such a policy would be a clear preference for products with at least 25% post-consumer recycled material content.

Ms. WATSON. Thank you.
Mr. Casellas, you may now proceed.

STATEMENT OF GILBERT CASELLAS

Mr. CASELLAS. Thank you, Madam Chairwoman, Ranking Member Bilbray, members of the subcommittee, thank you for the chance to be here today to talk about Dell's commitment to being the greenest technology company on the planet and how we work with the Federal Government to help achieve its environmental, energy, and performance goals.

For Dell, responsibly reducing environmental impacts and economic cost depends on three things: improving our own operations, encouraging the supply chain, and empowering our customers to reach their environmental goals.

The first place Dell looks is within our walls. We already have met our goal of achieving operational carbon neutrality by reducing our energy use, purchasing green power where we can, and offsetting the rest. We source about 35 percent of our U.S. energy use from green power, and we aspire to 100 percent. In fact, we just completed construction of a 516-panel solar structure at our Round Rock, TX, headquarters. Just by taking some basic energy efficiency steps in our own facilities, we reduced our facilities' energy consumption 3 percent last year and will save nearly \$6 million annually.

In addition to improving our own operations, our second goal is to work with our supplies to expand environmental improvements into the supply chain. For example, we now require our primary suppliers to measure and publicly report their greenhouse gas emissions, and we ask them to set improvement goals of their own and set expectations for their suppliers.

We can make the biggest difference, though, through our third goal: by helping our customers achieve their goals around performance, cost, and environmental stewardship. IT is a big part of the solution to the challenge of reducing energy consumption. According to a recent report, for every extra kilowatt hour of electricity used to power IT tools, the U.S. economic saves 10 times that much.

We offer customers various services and solutions to address their energy and environmental needs, including energy efficiency calculators, our green print advisor, and a data center capacity planner. We were the first tech company to offer customers carbon offsets.

Dell leads the industry in packaging solutions, shrinking volume, increasing recycled content, and increasing the use of recyclable packaging material. We are the first manufacturer to offer free computer recycling to consumers worldwide, and we have been providing responsible recycling services for more than a decade. We regularly audit our re-suppliers to the highest standards of responsible disposition, and Dell is the first major computer manufacturer to ban the export of non-working electronics to developing countries.

We bring this experience to the table with our biggest customer, the Federal Government. President Obama's new Executive order requires Federal agencies to work to reduce their greenhouse gas

emissions and to buy environmentally responsible products and services. We help by participating in the creation of environmental procurement standards, as well as by providing tools, technology, and services. We participate in many partnerships to drive environmental standards, including as an original and active participant in both EPEAT and Energy Star, and we support EPEAT's efforts to become a global standard.

Many of our green products are described in my written testimony, but some that I am most proud of include our more than 90 EPEAT products, most rated as gold, and our broad Energy Star offerings. We were the first to announce a family of Energy Star servers, the first to announce Energy Star 5.0 products, and all of our displays are now Energy Star.

We also help our customers rethink their data center operations, including through virtualization, the technology enabling a single server to act as multiple servers, reducing the equipment, power, cooling, and space. In fact, we worked with EPA to assess EPA's own data center and computer use. Many of our high-volume products come with power management already enabled, allowing systems to be powered down when not in use and cutting electricity consumption by up to 78 percent. And for all our displays, we are transitioning to LED back-light technology, which is more energy efficient and is mercury free.

In conclusion, Dell applauds your efforts to help the Federal Government to lead by example with environmentally responsible procurement.

Madam Chairwoman, I am happy to answer any questions you may have. Thank you.

[The prepared statement of Mr. Casellas follows:]

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STATEMENT OF GILBERT F. CASELLAS

VICE PRESIDENT OF CORPORATE RESPONSIBILITY

DELL INC.

BEFORE THE

**HOUSE COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, ORGANIZATION,
AND PROCUREMENT**

October 27, 2009

**Congressional Testimony
Statement of Gilbert F. Casellas,
Vice President of Corporate Responsibility, Dell Inc.**

**IT Procurement and Disposal: Application of the Federal Government's
Green Policies in the Life Cycle Management of its IT Assets
House Committee on Oversight and Government Reform
Subcommittee on Government Management, Organization, and
Procurement
October 27, 2009**

Thank you for the opportunity to testify on the important issue of procurement of greener IT products and services, particularly regarding energy efficiency, recycled content, and responsible recycling and disposal. We are proud of our industry-leading commitment to help the federal government achieve its green goals and lead by example.

Dell's Green Strategy: Our Operations, Our Suppliers, and Our Customers

Our commitment to green policies starts at the top, with our Chairman Michael Dell. With his leadership, we are embarking on our new business platform, Enviro 2.0. We believe that responsibly reducing environmental impacts and economic costs depends on: improving our own operations; encouraging the supply chain; and empowering our customers to reach their environmental goals.

In addition to our environmental achievements discussed below, we've also set environmental stewardship goals for 2010 and beyond:

- Reduce our worldwide facilities' greenhouse gas (GHG) emissions by 40 percent by 2015 (from 2008).
- Increase take-back volume totals to a cumulative worldwide one billion pounds of collected equipment by 2014
- Make laptop and desktop products 25 percent more energy efficient by calendar year 2010
- Produce mercury-free laptops by 2010
- Continue expansion of far-reaching collection networks for unwanted electronics
- Eliminate 20 million pounds of packaging by 2012 (reduced product packaging and shipping materials by 9.5 million pounds in 2008)
- Sustain stakeholder engagements
- Increase employee engagement by seeking commitment to living green
- Recycle or reuse 99 percent of manufacturing nonhazardous wastes by 2012
- Strive for zero waste in operations (reduce, reuse, recycle)

Reviewing Dell's success in achieving environmental stewardship goals, reducing energy use, and realizing costs savings illustrates that the federal government also can successfully make such progress – and that Dell can help.

Greening Our Own Operations

We are determined to be the greenest technology company on the planet. By optimizing consumption of energy, we can reduce costs and shrink our carbon footprint **and** develop expertise that allows us to help our customers do the same.

In 2008, we met our operational carbon neutrality goals for our global operations ahead of schedule. We committed in early 2009 to further reduce our worldwide facilities' greenhouse gas (GHG) emissions by 40 percent by 2015. We source about 35 percent of our U.S. energy use from green power (approximately 27 percent globally), we evaluate options for on-site generation of low-carbon power, and we aspire to obtain 100 percent of our operational electricity needs from clean and renewable sources of energy – an aggressive approach that we believe is helping expand global generation of renewable energy. Just this month, we completed construction of a 516-panel solar structure, which will provide up to 130,000 kilowatt hours of energy to our Round Rock, Texas headquarters and help avoid the emission of about 145,000 pounds of CO₂ into the atmosphere each year. As an EPA SmartWay logistics partner, Dell has committed to reducing GHG emissions from freight operations by increasing the percentage of freight shipped by carriers with programs to minimize their fleet emissions, and we're working to make our inbound and outbound logistics operations as efficient as possible to reduce costs, delivery times, and GHG emissions. Also, we will responsibly offset the remaining GHG emissions from our operations and business air travel.

We'll save more than \$5.8 million annually at our own facilities worldwide by reducing our energy load from our buildings and our server centers, and we reduced our energy consumption 3 percent last year alone. In fact, we save \$1.8 million annually just by installing and using power-management software on employee computers.

In addition to our programs focused specifically on energy-use reduction, our programs to reduce the amount of materials we use and to increase internal reuse and recycling further reduce the energy (and costs) required for manufacturing and transportation.

Encouraging Our Suppliers to Make Environmental Improvements

We can have an even greater impact on environmental improvements by looking outside our own operations to those of our suppliers. We require our primary suppliers to measure and publicly report their GHG emissions, and we ask them to set improvement goals of their own and set expectations for their suppliers. We also are working with our suppliers on reporting and reducing the use of certain hazardous materials in our products and on meeting stringent environmental and safety requirements in recycling end-of-life products. We require that our suppliers comply with the Electronic Industry Citizenship Coalition Code of Conduct for labor, worker health and safety, and environmental conditions, and we're working to educate, share best practices, and partner with our suppliers to implement the Code.

Empowering Our Customers to Achieve Their Environmental Goals

Dell recognizes that our customers increasingly are interested in cutting their costs and reducing their environmental footprint. We are integrating environmental standards into our products and solutions, enabling our customers to achieve their own goals around performance, cost, and environmental stewardship.

IT Tools Drive Energy Efficiency: According to a recent report by the American Council for an Energy-Efficient Economy (ACEEE), *Information and Communication Technologies: The Power of Productivity*, IT is a net saver of energy and economic costs across the US economy. For every extra kilowatt-hour of electricity that has been demanded by IT technologies, the U.S. economy increased its overall energy savings by a factor of about 10. Dell is pleased to provide innovative products and services to help our customers significantly increase their energy efficiency and performance and reduce their environmental impact.

Green Planning Tools: To assist our customers with their own environmental goals, we've created a series of services and solutions that helps IT professionals assess their operations and identify ways to improve them, including energy-efficiency calculators, our Greenprint Advisor, and a data-center capacity planner. We were also the first tech company to offer customers carbon offsets, which allow customers to verifiably offset impacts of the use of products they purchase.

Improving Packaging Practices: Dell leads the industry in packaging innovations — creating the cube, content and curb metric (the “3 Cs”) to capture the benefits of smarter packaging. In December 2008, Dell committed to eliminate 20 million pounds of packaging by 2012 by shrinking packaging volume by 10 percent (cube), increasing by 40 percent the amount of recycled content in packaging (content), and increasing to 75 percent the amount of packaging material that is curbside recyclable (curb). We can help our customers by selecting the right packaging materials and using less packaging. We have introduced new packaging, such as air cushions in Europe, and other cushioning material, such as a thermal-form HDPE cushion. We strive to provide new packaging materials that are curbside recyclable, are designed for higher cube utilization and incorporate recycled material.

Responsible Recycling of Unwanted Electronics: Dell is committed to the environmentally responsible reuse and recycling of our products when our customers are finished with them. We are the first manufacturer to offer free computer recycling to consumers worldwide, and we have been providing responsible recycling services for more than a decade. We also offer customers in several countries around the globe the opportunity to donate used, working computers to benefit non-profit organizations in their communities. Our innovative, free, easy, responsible and convenient approach is about setting the highest standards in product recovery and responsible disposition. In FY2009, we exceeded our goal to recover 275 million pounds of materials through our take-back programs. Our global product development and recycling/take-back programs are certified to ISO 14001. We regularly audit our recyclers, and in December we will publish the electronics disposition standard we are developing.

Ban of Export of Nonworking Electronics: In May 2009, Dell became the first major computer manufacturer to ban the export of nonworking electronics to developing countries. Equipment must be tested and certified as “working” prior to export. Dell supports current efforts by some members of the U.S. Congress to place reasonable restrictions on the export of nonfunctional electronic products to developing countries that lack sufficient recycling and disposal infrastructure.

Federal Government Environmental Goals and Dell’s Role

The federal government is Dell’s biggest customer. We recognize that the federal government – like many state and local governments – is working to improve performance, reduce costs, **and** reduce its environmental impact. And as with other Dell customers, we believe that our products and services, partnerships, and technical assistance help the federal government achieve performance and environmental goals.

Executive Order 13514 (74 Fed. Reg. 52,115): Just as Dell’s commitment starts at the top, so, too, does the federal government’s commitment. On October 5, President Obama issued Executive Order 13514, which builds on and incorporates various efforts to encourage federal agencies to procure environmentally responsible products and services. The Order requires that agencies inventory and target reduction of GHG emissions, including GHG emissions of their vendors and contractors, which would include contracted data centers. In addition, each agency must:

ensure that 95 percent of new contract actions ... for products and services ... are energy-efficient (Energy Star or Federal Energy Management Program (FEMP) designated), water-efficient, biobased, environmentally preferable (e.g., Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives, where such products and services meet agency performance requirements[.]

[and] promote electronics stewardship, in particular by:

- (i) ensuring procurement preference for EPEAT-registered electronic products;
- (ii) establishing and implementing policies to enable power management, duplex printing, and other energy-efficient or environmentally preferable features on all eligible agency electronic products;
- (iii) employing environmentally sound practices with respect to the agency’s disposition of all agency excess or surplus electronic products;
- (iv) ensuring the procurement of Energy Star and FEMP designated electronic equipment; [and]
- (v) implementing best management practices for energy-efficient management of servers and Federal data centers[.]

The White House's Federal Environmental Executive, Council on Environmental Quality, and Office of Management and Budget assist federal agencies to meet these requirements by issuing technical guidance, providing regular scorecards, and coordinating interagency workgroups.

We at Dell also consider ourselves a critical partner of the federal government to assist in achieving environmental stewardship goals. Through our green tools, technology, and services, as well as our assistance in development and refinement of procurement standards, Dell works with the federal government to promote the purchase, management and use of its IT assets.

Helping to Develop Standards for Environmental Performance

Dell strongly supports environmental procurement policies based on standards that are measurable, implementable, based on strong methodology, and developed through broad stakeholder processes. Dell continues to participate in the process of developing and refining standards, such as ENERGY STAR, EPEAT, and FEMP.

EPEAT and ENERGY STAR: Dell has been an integral participant in the development of both EPEAT and ENERGY STAR, which is incorporated into EPEAT as one of the many required environmental criteria. Dell has assisted in the development of computer and server ENERGY STAR standards and criteria, and we are a member of the board of advisors to the Green Electronics Council, which owns the EPEAT database and verification process. Dell supports EPEAT's efforts to establish a global standard for green computing products, one that drives harmonization of the many green labels, registries, and certifications, including by incorporating into EPEAT a certified recycler standard to ensure responsible end-of-life disposition.

Responsible Recycling Practices: Two models of responsible disposition certification are being developed. EPA, with industry and other partners, including Dell, are finalizing "Responsible Recycling (R2) Practices for Use in Accredited Certification Programs for Electronics Recyclers." R2 identifies 13 principles to urge better management of items potentially hazardous to the environment or human health, promote re-use and recovery versus landfill or incineration, and offer guidelines to help stem export to developing countries. The eStewards standard is an approach that the Basel Action Network is developing.

EPA READ: Dell assisted EPA with the development of its Recycling Electronics and Asset Disposition (READ) Services Contract, under which EPA serves as the federal executive agent for government-wide acquisition of IT recycling and asset disposal services. The contractors under READ are all small businesses, however, so Dell is not able to participate in this program today. As EPA works to improve READ, Dell has offered for EPA to visit some of its recycling partners to see our industry-leading procedures and audit practices in action. To ensure robust standards in READ, Dell supports using the R2 certification process. Of course, outside of READ, Dell provides recycling services for many end-of-life EPA and other federal agencies' IT products.

Other Collaborative Forums: Dell also works closely with other industry partners in various federal environmental and energy partnerships, and is helping industry drive such forums on energy efficiency as the The Green Grid, Climate Savers Computing Initiative, Digital Environmental Solutions Campaign, and The Technology CEO Council. Dell assisted EPA last year in identifying how to reduce energy consumption by 65 percent across its computer installation portfolio. Dell is also a member of many EPA partnerships, including the Low Carbon IT Campaign the SmartWay Transport Partnership, the Green Power Partnership, and the Climate Leaders program.

Providing the Federal Government Green Tools, Technology, and Services

To meet the Executive Order 13514 and other energy efficiency and environmental goals, Dell provides the federal government with the latest green products and services, including EPEAT- and ENERGY STAR-compliant gear, server virtualization solutions, power management enabled at the factory, LED back light technology, and products with recycled content.

EPEAT Products: Dell currently has more than 90 desktops, laptops, monitors and workstations registered with EPEAT (www.epeat.net). The majority of Dell product registrations are declared to the highest levels of the standard: 100 percent of Desktops and Workstations are registered as Gold, and 78 percent of the remaining products are Silver. These are among the most environmentally preferable computer products ever released, and Dell was first to register an EPEAT Gold laptop.

ENERGY STAR Products: Dell makes available a broad range of ENERGY STAR products for federal government purchasers. In 2008 alone, Dell added 6 Dell Inspiron and 4 Studio ENERGY STAR configurations, 23 server power supplies (one Bronze EPEAT, 12 Silver EPEAT, and 10 Gold EPEAT), and 41 ENERGY STAR monitors, yielding a total offering of:

- 14 ENERGY STAR desktop configurations,
- 14 ENERGY STAR laptop systems,
- 5 ENERGY STAR workstation systems,
- 89 ENERGY STAR monitors,
- 12 ENERGY STAR multi-function devices, and
- 14 ENERGY STAR printers.

Dell was also the first to announce a family of servers meeting the new ENERGY STAR for Computer Servers specification, and the first to announce offerings under the ENERGY STAR 5.0 specification. Also, 100% of Dell monitors are ENERGY STAR.

Virtualization: Organizations large and small are turning to virtualization – technology enabling a single server to act as multiple servers – as a means of consolidating to fewer, higher performing servers. This approach not only reduces the amount of equipment needed but also decreases power consumption, cooling requirements, and data-center square footage. Dell also helps customers achieve energy efficiency in existing facilities and newly acquired data centers. We perform comprehensive assessments and develop customized remediation plans to reduce energy use in heating, ventilating, and air

conditioning (HVAC) and power-delivery systems. In fact, Dell recently participated in a project with other members of The Green Grid, where we worked with the EPA to assess one of EPA's mid-size data-centers to identify opportunities to make efficiency improvements that could be emulated by similar data centers in the public and private sector. A white paper describing that project was released earlier this year and can be found at www.thegreengrid.org.

Power Management: Power management allows systems to be powered-down when not in use and presents a significant, readily available opportunity for conservation. Dell high-volume systems – Latitude, OptiPlex and Precision – and all displays, printers and projectors, have power management enabled in the factory, which allows systems to save power when not in use, reducing electricity consumption of computers by up to 78 percent.

LED Transition: Effective December 15, 2008, two-thirds of Dell Latitude and E-family laptops were shipped with mercury-free light-emitting diode (LED) back light. We have committed to transition to LED technology by 2010. Dell's 15-inch LED display consumes an average of 43 percent less power at maximum brightness compared to cold cathode fluorescent lamp (CCFL) technology, resulting in extraordinary cost and carbon savings. Dell estimates customer savings of approximately \$20 million and 220 million kWh in 2010 and 2011 combined – equivalent to the annual GHG emissions from the energy use of more than 10,000 homes.

Recycled Content: Dell has launched multiple displays (E207WFP, E1909W, E1909WDD, E2209W, E2009W, G2210, and G2410) that contain 25 percent post-consumer recycled content in chassis plastic and one desktop (OptiPlex 960) that features 10 percent post-consumer recycled content in chassis plastic content. In 2008, we shipped more than 1.1 million pounds of post-consumer recycled plastic, equivalent to recycling more than three million water bottles.

Conclusion

Dell appreciates the opportunity to testify, to share some information about the products and services, partnerships, and technical assistance we provide to the federal government, and how we're helping the federal government achieve its goals to improve performance, reduce costs, **and** reduce its environmental impact. Dell applauds your efforts to help the federal government continue to lead by example in the area of environmentally responsible procurement. We look forward to any questions you may have and to any opportunities there may be to further assist your efforts.

Ms. WATSON. Thank you so much.
Mr. Goss.

STATEMENT OF RICK GOSS

Mr. GOSS. Thank you, Madam Chair, Representative Bilbray, and members of the subcommittee.

ITI is a trade association representing 43 high-tech and electronics manufacturers in the information and communications technology sector, including Dell. Through our Environmental Leadership Council we also represent several dozen additional prominent manufacturers in the high-tech sector.

Our member companies have long been leaders in sustainability. Many exceed the requirements on environmental design and energy efficiency and lead the way in product stewardship efforts.

I should also note that Newsweek Magazine recently issued its 2009 green rankings of America's 500 largest corporations based on their overall environmental performance, policies, and reputation. Our members occupy 4 of the top 5 positions and 14 of the top 40 slots overall.

ITI and our member companies are strong supports and active participants in Energy Star and EPEAT. Both of these programs promise valuable and concrete market rewards to those leadership companies that make significant time and resource investments. I should note that Energy Star is a required criterion under EPEAT, and that members of ITI and our Environmental Leadership Council dominate the EPEAT registry and presently manufacture 90 percent of the 419 EPEAT gold-rated products.

I have four recommendations I would like to offer in the area of Energy Star and EPEAT, if I may.

No. 1 is to increase Federal Government procurement of Energy Star and EPEAT-rated products. Purchasing requirements for Energy Star and EPEAT products are already included in the FAR. President Obama's new Executive order on Federal leadership in environmental, energy, and economic performance includes specific provisions on procuring Energy Star and EPEAT electronic equipment. ITI supports this commitment and looks forward to working with the administration and Congress on its fulfillment.

No. 2 is to provide targeted funding for education and outreach efforts. The largest and most immediate opportunity to secure additional energy and cost savings is by educating purchasers about the benefits of buying Energy Star and EPEAT-qualified products. Congress should consider funding for initiatives to promote broader awareness on energy efficiency and the Energy Star program, on effective use of power management features incorporated into ICT products and systems, and on the life cycle benefits of purchasing EPEAT products.

No. 3, maintain green focus of the Energy Star program on product energy use. U.S. EPA is considering a potential expansion of the Energy Star program to factor "additional energy impacts" into the specification. The success of the Energy Star label is due in large part to the fact that it is objectively measurable and verifiable. By focusing solely on the attribute of energy consumption of a particular product model, Energy Star offers product purchasers

a straightforward and objective means of evaluating the energy efficiency of that product.

Finally, No. 4, provide additional funding and oversight of EPEAT. Manufacturers want to see EPEAT succeed and be the premier international procurement program for green electronics. The administration of the EPEAT program is currently funded solely by manufacturer registration fees. The program is expanding at a rapid pace, but there has been no additional Government support to revise the original standard or provide for the long-term stability of this important program.

In addition, EPEAT is a Federal procurement requirement that is being increasingly recognized in international venues and by numerous private purchasers; however, the EPEAT program is managed by a small third-party single-source provider. ITI encourages Congress to provide additional funding and oversight of EPEAT to make sure this important program succeeds.

We also have recommendations in my written testimony on ensuring harmonization of procurement within Federal agencies, relying on advanced printing solutions, and having the Federal Government rely more on videoconferencing.

I should also make a couple of comments here about asset management and recycling. ITI members offer comprehensive asset management and product recycling services to the Federal Government, as well as to our commercial and institutional customers. In fact, our companies have provided for the proper recovery and management of well over 2 billion pounds of used electronics products. Functional equipment is typically refurbished and returned to commerce for environmentally beneficial reuse. Our members ensure that older or broken units are first used for spare parts as appropriate, and then recycled in an environmentally sound manner.

ITI members also use significant quantities of recycled materials, including glass, metals, and plastics, in new generations of our products, thus creating demand that helps sustain markets for these materials.

ITI and our members have been working in close coordination with U.S. EPA and other stakeholders to develop a set of responsible recycling or R2 practices. The R2 practices, which are in the process of becoming a recognized standard, will allow government, commercial, institutional, and residential consumers alike to know that their obsolete products will be properly managed.

Finally, a couple of words on the overall energy climate and economic benefits of ICT's systems and services.

Our sector plays a critical role in helping address major strategic challenges, including energy security, economic competitiveness, and the transition to a clean energy economy. The Smart 2020 report issued by the Climate Group recently concluded that ICT strategies for energy efficiency could reduce up to 15 percent of global emissions by 2020. The U.S. addendum to that report indicates that ICT strategies could reduce annual U.S. carbon emissions by up to 22 percent by 2020, which translates into energy and fuel savings of \$140 billion to \$240 billion.

We have two very specific recommendations in this regard. One is to drive energy efficiency considerations into Federal enterprise level ICT procurement. We are strong supporters of an amendment

drafted by Representative Anna Eshoo and Senator Mark Udall directing each Federal agency to collaborate with OMB to create an implementation strategy for the purchase and use of energy efficient information and communications technologies and practices.

Second, we support a provision to direct the Department of Energy to create metrics to determine the annual energy rating of enterprise level ICT systems.

ICT energy efficiency programs assist utilities in sharing information and best practices. This will drive more meaningful demand mitigation programs that will yield dramatic energy efficiency savings more quickly.

Thank you for the opportunity to testify today. I am happy to take any questions.

[The prepared statement of Mr. Goss follows:]



Information Technology Industry Council
Leading Policy for the Innovation Economy

Testimony of Rick Goss
Vice President for Environment and Sustainability
Information Technology Industry Council
before the
House Subcommittee on Government Management,
Organization, and Procurement
regarding
IT Procurement and Disposal: Application of the Federal
Government's Green Policies in the Life Cycle Management
of its IT Assets

October 27, 2009

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Vice President for
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INTRODUCTION

Thank you Chairwoman Watson, Representative Bilbray and Members of the Subcommittee for the opportunity to testify regarding the federal government's green policies related to the life-cycle management of its IT assets. My name is Rick Goss and I am the Vice President of Environment and Sustainability for the Information Technology Industry Council, or ITI. ITI is a trade association representing 43 major high-tech and electronics manufacturers in the information and communications technology (ICT) sector. Our members are global leaders in all facets of ICT innovation, from hardware to services to software. ITI promotes policies that favor innovation, sustainability and open market competition. Through our Environmental Leadership Council, we also represent several dozen additional prominent manufacturers in the high-tech arena.

Our member companies have long been leaders in sustainability: many exceed the requirements on environmental design and energy efficiency, and lead the way in product stewardship efforts. As a result, the Dow Jones Sustainability Index, the Financial Times Sustainability Index, and the Global 100 have consistently recognized numerous ITI members for their concrete environmental and sustainability achievements. In addition, *Newsweek* recently issued its 2009 Green Rankings of America's 500 largest corporations, based on their overall environmental performance, policies, and reputation. Our members occupy 4 of the top 5 positions, and 14 of the top 40 slots overall.

On behalf of our member companies, I am pleased to testify today regarding the ongoing environmental achievements of our companies and to offer our suggestions regarding federal government policies, practices and opportunities to improve IT life-cycle management. The federal government is the world's largest single purchaser of ICT equipment and services, and is expected to spend over \$75 billion in 2010. Consequently, the federal government has an unparalleled role to play in terms of driving continuous sustainability achievements in the ICT marketplace and in setting a leading example throughout the public and private sectors.



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I have divided my remarks and recommendations into two sections. The first focuses on the environmental attributes and life-cycle management considerations of ICT products procured by the government. The second addresses the broad energy, climate and economic benefits that the federal government can drive through its own procurement of advanced ICT systems and services, and by enacting policies that encourage ICT deployment throughout the broader economy.

In addition, I would be remiss in my testimony if I did not introduce the concepts of cloud computing and virtualization to the Subcommittee as a potential paradigm-shift in how the federal government procures ICT systems and services. I would recommend that the Subcommittee consider hosting a follow-up hearing to explore cloud computing and virtualization innovations and their impacts on future government enterprise ICT procurement.

SECTION 1: ICT PRODUCT ACHIEVEMENTS & CONSIDERATIONS

ICT manufacturers recognize that we have a critical role to play in the sustainability effort by continuously improving product environmental, energy and performance characteristics. 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 innovation throughout the entire product lifecycle: from environmental design to energy efficiency, beneficial reuse and proper end-of-life management.

It is also critical to emphasize that the competitive marketplace – rather than government mandates and regulation – continues to be the primary driver behind these improvements. On the whole, every year our products become more energy efficient, incorporate innovative and environmentally-preferable materials, 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. The federal government can and should continue to exert a major market influence.

Energy Star & EPEAT

Two of the federal government's key programs in the areas of green IT procurement are Energy Star and EPEAT - The Electronic Product Environmental Assessment Tool. ITI and our members companies are strong supporters and active participants in both of these key initiatives. Both programs promise valuable and concrete market rewards to those leadership companies that make the significant time and resource investments necessary to ensure that our products meet or exceed the requirements.

For purposes of today's hearing, the Energy Star program includes such key products as computers, copiers and fax machines, monitors, printers and scanners, and servers. For almost two decades, Energy Star has been the premier product energy efficiency



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benchmark, and is well recognized by public, private and individual purchasers alike. U.S. EPA reports that, since 2000, Americans have purchased more than 2.5 billion Energy Star qualified products, resulting in significant cost and energy savings. Over 80% of products sold are in the categories of home and office electronics. Energy Star is recognized globally as the de-facto standard for energy performance, and its strength is in the simplicity of its purpose and recognition as a brand.

The EPEAT program is based on IEEE 1680, a multi-attribute international standard developed by a diverse group of stakeholders through a consensus-based process. The EPEAT program was developed to allow IT purchasers to base procurement decisions on the full life-cycle environmental attributes of high-tech products. EPEAT incorporates recognized metrics and criteria, which can be measured, verified and consistently applied. The EPEAT standard currently applies to computers and monitors, and is currently being expanded to include (among other products) imaging equipment – another major product category purchased in large volume by the federal government and other major institutional purchasers.

Currently, federal, state and local governments, foreign governments, commercial entities and academic institutions have specified EPEAT in over \$60 billion worth of procurement contracts. Members of ITI and our Environmental Leadership Council dominate the EPEAT registry, and presently manufacture 90% of the 419 EPEAT Gold-rated products.

Energy Star and EPEAT Recommendations

ITI would like to offer the following recommendations in relation to Energy Star and EPEAT:

- 1. Increase Federal Government Procurement of Energy Star and EPEAT Products.** President Obama's new Executive Order on "Federal Leadership in Environmental, Energy, and Economic Performance" includes specific provisions on procuring Energy Star and EPEAT electronic equipment. This reinforces an Executive Order issued by President Bush in 2007. ITI supports this commitment, and looks forward to working with the Administration and Congress on its fulfillment.

Purchasing requirements for Energy Star and EPEAT products are already included in the Federal Acquisition Regulation. However, previous studies have demonstrated that federal agencies are not purchasing Energy Star products as directed. This lack of compliance has resulted in a reported annual taxpayer energy expense of over \$400 million, and associated emissions of approximately 3 million metric tons of carbon dioxide. Since Energy Star is a mandatory criterion in the EPEAT program, this means that purchases of EPEAT-registered products are also suppressed. This outcome also significantly undermines the market incentive for manufacturers to participate in these programs. ITI and our

2. **Provide Targeted Funding for Education and Outreach Efforts.** The largest and most immediate opportunity to secure additional energy and cost savings is by educating purchasers about the benefits of buying Energy Star and EPEAT qualified products. This includes informing purchasers regarding how to take full advantage of the energy-saving capabilities already designed into nearly every ICT product in use today. Congress should consider funding for initiatives to promote broader awareness on energy efficiency and the Energy Star Program, on effective use of power management features incorporated into ICT products and systems, and on the life-cycle benefits of purchasing EPEAT products.
3. **Maintain the Focus of the Energy Star Program on Product Energy Use.** U.S.EPA is considering a potential expansion of the Energy Star program to factor “additional energy impacts” into the specification. This proposal would result in a wide range of new and unclear factors and detract from the traditional focus of the Energy Star program on the energy consumption of products.

The consideration of additional energy impacts would necessitate a complex evaluation of a multitude of factors in order to account for the full picture of related energy impacts associated with a product. Among others, these would include the energy impacts associated with:

- Manufacturing operations
- Supply chain management
- Recycled or recovered content in products
- Product distribution
- Product packaging
- Telework programs for employees
- Product recycling programs

The process of quantifying and measuring these impacts would be highly complex, and would prove confusing for businesses and consumers. The success of the Energy Star label is due in large part to the fact that it is objectively measurable and verifiable. By focusing solely on the attribute of energy consumption of a particular product model, Energy Star offers product purchasers a straightforward and objective means of evaluating the energy efficiency of a product. Including other environmental considerations will dilute this benefit and introduce the consideration of complex impacts based largely on poor data quality. Energy Star would evolve into a multi-attribute eco-label based on vague criteria and an unknown means of verification.



EPA should maintain the focus of the Energy Star program solely on the energy consumption of products as used by the purchaser, without regard for other “additional energy impacts.”

4. **Provide Additional Funding and Oversight of EPEAT.** Manufacturers want to see EPEAT succeed and become the premier international procurement program for green electronics. ITI and our member companies have devoted hundreds of hours to developing this standard with other stakeholders, redesigning products to meet criteria and working with U.S. EPA and EPEAT staff to strengthen and improve the program.

EPEAT was created as an institutional procurement tool, with the federal government as its primary audience. U.S. EPA is a major EPEAT stakeholder and, since the program’s launch in 2007, has actively encouraged its expansion into additional countries, into the consumer marketplace and into several additional product categories. The program is expanding at a rapid pace, but is suffering from a lack of adequate funding and oversight.

The administration of the EPEAT program is currently funded solely by manufacturer registration fees. In addition, manufacturers are providing financial support for the development of the new EPEAT standard for imaging equipment. U.S. EPA funded the development of the original EPEAT standard for computers and monitors and provided a small grant to launch the program. While the agency has provided partial support for the development of four new standards, there has been no additional support to revise the original standard or provide for the long term stability of this important program.

In addition, ITI and our members strongly support additional federal government oversight of the EPEAT program. EPEAT is a federal procurement requirement and is being increasingly recognized in international venues and by numerous private purchasers. However, the EPEAT program is managed by a small, third-party, single source provider. ITI encourages Congress to provide additional funding and oversight of EPEAT to make sure this important program succeeds.

Additional Product Recommendations

1. **Ensure Harmonization of Procurement Requirements Between Federal Agencies.** As federal agencies seek to implement the new Executive Order, the federal government should ensure that procurement requirements are consistent. A lack of consistency can lead to a fragmented federal marketplace, with different contract specifications and paperwork requirements. This could result in delays and increased costs that neutralize the advantages for manufacturers that meet or exceed the requirements.



2. **Rely on Advanced Printing Solutions.** New digital and two sided thermal printing technologies increase printing speeds and avoid print overruns while saving energy, paper and consumables. By relying on networked printers and digital printing solutions, public and private sector entities alike can achieve significant cost savings while increasing efficiency and reducing associated carbon emissions. According to industry estimates, for every one dollar of actual printing, there are \$5-8 of other costs, including warehousing, distribution and inventory obsolescence. Each of these has an associated energy use and emissions footprint, and each can be reduced by switching to “on-demand” digital solutions. The carbon abatement potential due to minimizing overruns of books, magazines and newspapers through digital printing services is on the order of 114 to 251 million tons of CO₂ equivalent (this estimation includes a rough estimate of the embedded carbon and energy use of the printers as well as the paper production).
3. **Increase the Use of Video Conferencing.** ITI members have pioneered the development of video conferencing technologies that make virtual meetings possible. Video conferencing improves productivity while avoiding thousands of miles of car and air travel and associated carbon emissions. The federal government can achieve significant cost and energy savings and play an important role in the deployment and broader adoption of these technologies by increasing its own use of video conferencing solutions.

Additional Product Considerations

The Subcommittee has indicated that it has a particular interest in learning more about the use of recycled materials in ICT products and about proper management of used and obsolete devices.

Recycled Content

ITI member companies use significant quantities of recycled materials, including glass, metals and plastics, in new generations of our products, thus creating demand that helps sustain markets for these materials. To qualify for EPEAT, at least 65 percent of the materials in the product must be reusable or recyclable using current infrastructure and technologies. In addition, our companies have continuously decreased the volume of packaging materials while simultaneously increasing the percentage of recycled content.

Asset Management & Recycling

ITI members offer comprehensive asset management and product recycling services to the federal government as well as to our commercial and institutional customers. In fact, our companies have provided for the proper recovery and management of well over two billion pounds of used electronics products. Our members or their authorized contractors recover used devices, transfer data to new systems, remove sensitive information and properly manage recovered equipment. Functional equipment is typically refurbished



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and returned to commerce for reuse. This is an environmentally-beneficial practice that helps derive the most value from the resources used to manufacture the equipment. Our members ensure that older or broken units are first used for spare parts, as appropriate, and then recycled in an environmentally-sound manner, with any commodities reclaimed for subsequent reuse.

ITI and our member companies have been working in close coordination with U.S. EPA and other stakeholders to develop a set of Responsible Recycling practices for electronics recycling. The R2 practices are intended to ensure that obsolete electronics are managed and recycled in a safe and environmentally-appropriate manner that is protective of human health and the environment. R2 is in the process of becoming a recognized standard, which will allow government, commercial, institutional and residential consumers alike to know that their obsolete products will be properly managed.

On the consumer side, many of our leading members offer voluntary national programs at little or no cost to our residential customers. Unlike the government and commercial marketplace, where our companies often sell thousands of units under a single contract, the consumer marketplace is very fragmented, as sales are often made one at a time at retail. In addition, manufacturers must rely on a national infrastructure of wholesalers, distributors and retailers to transport our products (often across state lines) and deliver them for final retail sale. With few exceptions, we do not have a direct connection with our customers at the point of sale.

As part of our corporate commitments on environment and sustainability, manufacturers believe we have a role – though not the only role – to play in offering recovery and recycling solutions to consumers. Our members provide a variety of recycling options to consumers, which include a combination of collection centers, special collection events, and mail-back programs.

SECTION 2: THE ENERGY, CLIMATE AND ECONOMIC BENEFITS OF ICT SYSTEMS AND SERVICES

The ICT sector plays a critical role in helping address major strategic challenges, including energy security, economic competitiveness and the transition to a clean energy economy. ICT hardware and software innovations yield transformative energy efficiency improvements, enable revolutionary Smart Grid, Smart Building and Smart Transportation systems and drive state-of-the-art renewable energy technologies. The ICT industry has powered major gains in U.S. and global economic productivity, has created tens of thousands of high-paying jobs here at home, and connects communities the world over to vital economic, educational and health resources.

Consider the following examples:

- The American Council for an Energy-Efficient Economy (ACEEE) concluded that “[f]or every extra kilowatt-hour of electricity that has been demanded by ICT,



the U.S. economy increased its overall energy savings by a factor of about 10. These productivity gains have resulted in significant net savings in both energy and economic costs. The extraordinary implication of this finding is that ICT provide a net savings of energy across our economy.”

- In a July 2009 report, ACEEE also concluded that energy efficiency measures are capable of delivering up to 50% of the emissions reductions necessary to meet the President’s 2050 emissions reductions goals.
- The Smart 2020 report issued by The Climate Group concluded that ICT strategies for energy efficiency could reduce up to 15% of global emissions by 2020. The U.S. addendum to that report indicates that ICT strategies could reduce annual U.S. carbon emissions by up to 22% by 2020, which translates into energy and fuel savings of \$140 to 240 billion dollars.
- The Information Technology & Innovation Foundation estimates that spurring an additional investment of \$30 billion in America’s IT network infrastructure would create approximately 949,000 U.S. jobs through expanded broadband networks, health IT and the Smart Grid.

Policy Recommendations

I have provided an addendum to my testimony that includes a number of suggestions to drive the accelerated deployment of ICT systems and services and help realize these clear benefits. I would also like to provide specific information in my testimony regarding two recommended policy approaches.

1. Drive Energy Efficiency Considerations into Enterprise-Level Federal ICT Procurement. EPA’s 2007 Report to Congress on Server and Data Center Energy Efficiency concluded that public and private sector data center managers rarely factor energy efficiency into their procurement and operational decisions:

- “The barriers that prevent data centers from adopting changes that offer very reasonable paybacks are typically not technological but organizational. ... [one of these is] *Split incentives*: In many data centers, those responsible for purchasing and operating the IT equipment are not the same people that are responsible for the power and cooling infrastructure, who in turn typically pay the utility bills. This leads to a split incentive, in which those who are most able to control the energy use of the IT equipment (and therefore the data center) have little incentive to do so” (Page 11).
- “Under this arrangement, most IT managers never see the energy bill for their equipment, and their job performance is not evaluated based on energy costs. While improved energy efficiency may benefit the organization overall, the data center manager will see little reward” (Page 86).
- “In many organizations, it is standard practice to base IT equipment and software purchasing decisions on TCO [total cost of ownership], which includes the lifetime maintenance and support costs. These TCO calculations for IT equipment rarely include energy as a factor, but they should include



both the cost of electricity to run and cool the hardware as well as the cooling, power conditioning, and other capital equipment required to support the IT hardware in the data center” (Page 109).

Targeted federal action can help resolve this split-incentives issue, especially when it comes to innovations in areas such as advanced metering infrastructure, efficient data center strategies, applications modernization and rationalization, building systems energy efficiency, and telework. Therefore, ITI has been actively supportive of amendments by Representative Anna Eshoo and Senator Mark Udall that direct each federal agency to collaborate with OMB to create an implementation strategy for the purchase and use of energy efficient information and communications technologies and practices. Under this approach, each agency would (1) evaluate how ICT infrastructure could yield cost and energy savings; (2) meet new performance goals for energy efficient information and communications systems; and (3) be eligible to realize the savings and rewards brought about. The Eshoo Amendment is included in HR 2454 – the American Clean Energy and Security Act of 2009, and we strongly urge support for this provision. We are also hopeful that the President's new Executive Order will be implemented in a manner that helps address this problem, and look forward to working with the Administration to achieve this result.

2. **Direct the Department of Energy to Create Metrics to Determine the Annual Energy Rating of Enterprise-Level ICT Systems.** Energy efficiency is the most immediate and available method for reducing U.S. energy demand and increasing energy security. From “Smart” systems to advanced renewable energy technologies to electronic health records, policies in Washington will continue to rely more on ICT-led solutions to public policy challenges, thereby driving greater and more widespread adoption of ICT systems.

Facing this trend, major ICT companies have unleashed a wave of hardware and software innovations to make each generation of systems more energy efficient than the last. Several public utility companies have quantified the dramatic energy savings associated with cutting edge technology that greatly improves the energy efficiency of enterprise ICT systems including Data centers, servers, network, and storage systems. With models that quantify energy savings associated with efficiency improvements in systems and configurations, these utilities can offer rebates to their customers that undertake ICT consolidation and virtualization projects. These rebates are based on the energy savings that will be achieved by the customer over a given time period. The efficiency improvements incentivized can reduce energy consumption in data centers by 60% or more.

The primary barrier to the more widespread adoption of these programs is the absence of a recognized, government-approved methodology for quantifying these energy savings. Testing programs for ICT systems can be expensive to replicate, and many utilities lack the internal resources necessary to fully vet and



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substantiate industry best practices and create rebate programs. Moreover, industry participants are more likely to base economic incentives on methodologies that are validated by the DOE, rather than models developed by a private contractor or fellow utility. DOE should form partnerships with the utility companies to validate their ICT energy efficiency programs and to assist the utilities in sharing information and best practices. This will drive more meaningful demand mitigation programs that will yield these dramatic energy efficiency savings more quickly.

Thank you again for the opportunity to testify today on this important set of issues. I would be happy to respond to any questions.



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The Benefits of Information and Communications Technology **Green Job Creation · Energy Security · Clean Energy · Economic Productivity**

The Information and Communications Technology (ICT) sector plays a critical role in helping address major strategic challenges, including energy security, economic competitiveness and the transition to a clean energy economy. ICT hardware and software innovations enable revolutionary Smart Grid, Smart Building and Smart Transportation systems and drive state-of-the-art renewable energy technologies. The ICT industry has powered major gains in U.S. and global economic productivity, has created tens of thousands of high-paying jobs here at home, and connects communities the world over to vital economic, educational and health resources.

Further investments in ICT can expand these key benefits:

CREATE GREEN JOBS THROUGH ICT INVESTMENT & INNOVATION

“ITIF estimates that spurring an additional investment of \$30 billion in America’s IT network infrastructure in 2009 will create approximately 949,000 U.S. jobs” through expanded broadband networks, health IT and the Smart Grid.

- *The Information Technology & Innovation Foundation, January 2009*

DRIVE ECONOMIC PRODUCTIVITY AND ENERGY EFFICIENCY

“For every extra kilowatt-hour of electricity that has been demanded by ICT, the U.S. economy increased its overall energy savings by a factor of about 10. These productivity gains have resulted in significant net savings in both energy and economic costs. The extraordinary implication of this finding is that ICT provide a net savings of energy across our economy.”

- *American Council for an Energy Efficient Economy, February 2008*

PROMOTE ENERGY SECURITY AND MITIGATE CLIMATE CHANGE

“Altogether, ICT enabled solutions could cut annual CO₂ emissions in the U.S. by 13 - 22% from business-as-usual projections for 2020. This translates to gross energy and fuel savings of \$140 - 240 billion dollars.”

- *The Climate Group and the Global e-Sustainability Initiative, November 2008*

Specific policy options that would achieve these objectives include:

- **Fully fund the Green Jobs Act of 2007 and expand it to include Smart Grid-related jobs.** The Green Jobs Act of 2007 authorizes \$125 million each year to provide job training and workforce investment in the energy efficiency and renewable energy sectors. Since Smart Grid technologies enable increased energy efficiency and deployment of renewable energy technologies, these jobs should be added to the list of industries eligible to receive this funding.
- **Increase funding for Smart Grid investments.** Funding will support research, modeling and pilot projects; encourage qualified investments; and, facilitate the ability of renewable energy sources to connect to the nation’s electrical grid.

- **Provide Incentives to Electric Utilities to Invest in Energy Efficiency and Renewable Energy.** Consistent with section 1307 of the Energy Independence and Security Act of 2007 (EISA), allow utilities to recover a reasonable rate of return on capital expenditures for the deployment of Smart Grid technologies; and for investments in other energy efficiency and renewable energy projects.
- **Drive further innovation in energy efficient products, consumables and IT-enabled renewable energy.** Provide tax or financial incentives to stimulate the purchase of energy efficient products, consumables, smart energy technologies and IT-enabled renewable energy sources. This could include allowing companies to completely expense ICT investments in 2009, or providing a manufacturing tax credit for producers of technology that maximizes yields of renewable energy supplies.
- **Promote efforts to measure, monitor and encourage the increased energy efficiency of ICT products and systems.** Increase funding for initiatives to promote public awareness on energy efficiency and the Energy Star Program, and on effective use of power management features incorporated into ICT products and systems; consistent with section 453 of EISA, support the development and broad adoption of consensus data center energy efficiency metrics.
- **Green the Government.**
 - Direct GAO to study barriers to government procurement of energy efficient products and to the ability to meet purchasing requirements for Energy Star qualified products.
 - Provide state and local governments with access to federal acquisition contracts for purchasing energy efficient technologies, ICT-enabled renewable energy, and to pursue greening initiatives.
 - Of the funds appropriated to each federal agency for infrastructure upgrades, include projects that reduce operating costs and improve energy efficiency in federal buildings. These projects should include renewable energy generation, IT consolidation and the procurement of energy-efficient products and technologies.
- **Drive energy efficiency standards in buildings and infrastructure and provide incentives for building efficiency retrofits.** Enhance and increase tax credits and other incentives for qualified energy efficiency improvements in existing homes and businesses as well as new development.
- **Expand the R&D tax credit.** Expanding the R&D tax credit would encourage companies to develop new energy efficient products and technologies and create additional high-skilled, high-paying jobs here in the U.S. R&D is the driver in innovation and this credit is necessary for many companies that otherwise could not afford to make these critical investments.
- **Maximize the benefits of high speed broadband.** Widespread broadband deployment can help reduce and even avoid energy use. Provide competitive grants for rural broadband deployment in un-served areas; create tax credits and expensing provisions to upgrade existing broadband infrastructure; and enable small and medium sized businesses to expense broadband equipment and applications.

Ms. WATSON. Thank you so much.
Mr. Littlehale, you may proceed.

STATEMENT OF RICH LITTLEHALE

Mr. LITTLEHALE. Madam Chair, Ranking Member Bilbray, and members of the subcommittee, thank you for the opportunity to testify today. My name is Rich Littlehale, and I am a co-founder of YouRenew.com, a company that is focused on helping people, businesses, cities, and other organizations find the best outlet for their old electronics, whether that be our specialty of re-marketing the devices through retail channels or sending the devices to our partner recyclers to be broken down and reused.

Today I plan on briefly discussing three things: first, I will give a brief overview of our company; second, I will discuss what we believe are three main market needs to increase re-marketing and recycling rates; and, third, I will talk about how our company is trying to meet these market needs and provide our service to individuals, companies, and governments.

My co-founder and I started the company in May 2008 at the end of my junior year at Yale University after noticing the low national recycling and reuse rates for electronics. After much research, we believe that reuse is the highest form of recycling, because these devices' lives can be extended in the hands of someone who might not be able to afford brand new ones.

I took last year off from school to get the company started. We have since raised capital, grown from 2 to close to 20 people in the last 7 months, and have recently hired an experienced CEO to continue to scale the company. I am now splitting my time between working at YouRenew and finishing my senior year at Yale.

After over a year of speaking with some of the best minds in the country on reuse and recycling and working nonstop to attract and serve customers, I believe we have arrived at three critical needs for a successful recycling and re-marketing service.

The first is incentive. Traditionally, organizations and people are charged to have their electronics recycled responsibly. At YouRenew we actually pay these organizations and people for their old devices that we can put back into use. This helps offset the cost of equipment that needs to be recycled. This is both a win for the organization and for our electronics recycler partner. By partnering with partner recyclers, we can move more quickly on helping more people and organizations manage their end-of-life solutions.

The second need is transparency. There is concern over where the electronics go and if they are being recycled properly. Our goal is to continue to be the most transparent company on the market and only work with electronics recyclers with the highest environmental standing and credibility.

The third need is convenience. We compete against the trash can. Much of our innovation is making it easier for the consumer to send in their old electronics. While we have achieved great success so far, our company's journey has just begun, and it is obvious to us that a great market need still exists. For example, as you can see on the screen, we recently worked with the city of New Haven to help them recycle and re-market their old electronics. These electronics were literally in a box in the closet of the IT manager's

office, who did not know what to do with them. We helped explain the proper channels for reuse and recycling and have since created a great relationship.

Our vision for YouRenew is to provide full life cycle management for individuals and large organizations. That means first helping them make the best decisions about which electronics to buy through standards like EPEAT, and second using our service to help them find the right outlet for the reuse or recycling of those devices.

In the next year, we at YouRenew are aiming to work with electronics manufacturers, recyclers, individuals, and the U.S. Government to set up a more efficient and transparent framework for the second life of electronics. We will work hard with these partners to continue to craft the best incentives, transparency, and convenience.

In conclusion, we are ready and willing to help provide the best service and excited for what the future holds.

Thank you again for the opportunity to testify.

[The prepared statement of Mr. Littlehale follows:]



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October 19, 2009

Representative Diane Watson, Chairwoman
House Subcommittee on Government Management,
Organization and Procurement,
Committee on Oversight and Government Reform

Re: October 27 testimony before the Subcommittee regarding "IT Procurement and Disposal:
Application of Federal Government's Green Policies in the Life Cycle Management of its IT Assets"

Dear Chairwoman Watson:

Thank you for the opportunity to testify before the Subcommittee on the above referenced matter.
Below is a moderately expanded version of my intended testimony. I hereby request that you enter this
letter and the attached as my written testimony.

Thank you again for the opportunity to testify before the Subcommittee.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Littlehale".

Richard Littlehale
Co Founder



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Testimony for the Committee on Oversight and Government Reform, Subcommittee on Government Management, Organization and Procurement

I. Introduction

Thank you for the opportunity to talk about YouRenew's business model and development. Given the United States' vast electronic and IT equipment consumption, we believe that creating convenience, transparency, and incentive to reuse and recycle is important to raise our low national recycling rates. Our business model attempts to achieve those goals.

Our company uses the word "renew" to define the reuse and recycling of old electronics, because we believe it is important to encourage a full-life cycle solution to electronic devices. Encouraging a full-lifecycle requires some of the great work that EPEAT and manufacturers are doing to create more environmentally friendly electronics, but also a end-of-life solution that companies like ourselves are providing.

Incentives, convenience, and transparency are necessary to encourage an optimal reuse and recycling program. Organizations and individuals often have to pay money to recycle electronics or IT equipment responsibly, have trouble finding safe outlets for these materials, and are often inconvenienced by the time or travel required. The aim of developing YouRenew is to create a central hub for the market that will bring incentive, convenience, and transparency to what has been a murky process in the past.

We believe that the federal government can be a leader in setting up a full life cycle program that buys both environmentally friendly IT assets and has a centralized program for the reuse and recycling of its old electronic assets. With the right support and leadership, we believe that the reuse and recycling of electronics will become a booming American industry.

II. Research

According to the Consumer Electronics Association, the average U.S. household owns 24 electronic devices,¹ and wireless telecom and personal computer ownership are nearly universal in the U.S. As of June, 2009, there were 276.6 million wireless subscribers in the U.S. representing 89% of the total population.² As technology continues to advance, so does consumer taste and device acquisition. The average life of a cell phone is now below 18 months, and five-year-old devices are considered obsolete.

¹ Consumer Electronics Association. *Market Research Report: Trends in CE Reuse, Recycle and Removal*. April 2008.

² "Wireless Quick Facts." CTIA. Web. <www.ctia.com>.

Unfortunately, device turnover is creating a growing problem: unused electronic devices, such as cell phones, are piling up at an alarming rate and very few are finding their way to new users or responsible recyclers. Cell phones have the lowest recycling rate of any of the major categories of electronics tracked by the EPA. Of the 140.3 million cell phones retired in 2007 (the most recent year for which data is available), only 14 million devices were recycled (a recycling rate of 10%).³ Small electronics lag behind every other form of recyclable product. By comparison, the US paper recycling rate is 56%,⁴ and even televisions and computers each reached recycling rates of 18%.⁵ For other consumer electronics that we currently work with: mp3 players, digital cameras, graphing calculators, laptops, gaming consoles, external hard drives, DVDs, and video games, these statistics are similar, revealing a troubling issue for the environment and, ultimately, for the consumers who so eagerly and willingly discard working phones in favor of the latest technology.

We quickly realized that rapid innovation by manufacturers of new devices created high turnover rates of still-working devices. However, there were no dominant players offering customers assistance recovering value from their used devices and connecting them to responsible recyclers, even though there is a tremendous need and massive market opportunity.

We decided to focus our company as a link between people and traditional electronics recycling, because we believe that reuse is the highest form of recycling. Thus, we coined the term “renew” to describe a reuse or recycling policy based on the device’s condition and type. Reusing and recycling electronics offers a great option to help people participate in creating a more sustainable planet, because it reuses natural resources, saves energy, and lowers greenhouse gas emissions. The EPA noted in 2008 that “[I]f American’s recycled 100 million phones, we could save enough upstream energy to power more than 194,000 U.S. households for a year. If consumers were able to reuse those 100 million cell phones, the environmental savings would be even greater, saving enough energy to power more than 370,000 U.S. homes each year.”⁶

III. Market Need

While investigating solutions for managing and properly disposing of used electronics, we quickly discovered a lack of awareness regarding the proper avenues to do so. Electronic devices continue to turn over at an increasingly rapid rate and there is still a major informational gap because most consumers have no knowledge of how best to do so. As aforementioned, we believe these problems are a result of a lack of (1) incentive, (2) transparency, and (3) convenience.

- (1) Incentive – Traditionally, organizations and people need to pay to have their electronics recycled responsibly. At YouRenew, we are trying to offset the cost of electronics recycling by paying organizations and people for their old devices that we will put back into use.
- (2) Transparency – There is concern over where the electronics go if they are being recycled. Data security is also a concern. We are a young company, but our goal is to continue to be the most

³ Environmental Protection Agency. Statistics on the Management of Used and End-of-Life Electronics. Raw data. <http://www.epa.gov/epawaste/conservation/materials/recycling/manage.htm>.

⁴ Bratkovich, Steve. *Paper Recycling in the United States and Beyond: An Update*. Rep. Dovetail Partners, Inc., 2008.

⁵ Environmental Protection Agency. Statistics on the Management of Used and End-of-Life Electronics. Raw data. <http://www.epa.gov/epawaste/conservation/materials/recycling/manage.htm>.

⁶ Smith, Roxanne. “Cell Phone Recycling is an Easy Call” The Environmental Protection Agency Press Release, 8 January, 2008. <<http://yosemite.epa.gov/opa/admpress.nsf/1ef7cd36224b565785257359003f533f/489508efdf85e4f5852573ca0058bb98!OpenDocument>>

transparent company on the market and only work with electronics recyclers with the highest environmental standing and credibility and offer the best data clearing process.

- (3) Convenience - recycling programs and remarketing programs compete against the trash can or closet. For our model to work, we work tirelessly on improving the ease for an organization or consumer to work with us. Electronics recycling solutions are often difficult to find and not easy to use. Unlike plastic, glass, and paper, electronics recycling options are not well known or often inaccessible. This is often a result of the fact that people have to pay for recycling or can only do so on a few inconvenient days during the year.

As a result, old phones, MP3 players, computers, and other electronics end up gathering dust in closets or worse, are sent to a landfill. It is important to note that this issue confronts not only individuals, but also corporations, hospitals, municipalities, and even the federal government. We are attempting to offer a solution that can get those old items out of the closet and into the hands of someone or some organization who can give them a second life. We allow people to take action in reusing or recycling responsibly and even get paid in the process.

IV. Our Service

The genesis of YouRenew came from my co-founder and my desire to build a dynamic business with a strong social conscience. After investigating numerous potential sectors we came to believe there was a viable opportunity in the reuse and recycling of electronics devices. Our research led us to the Green Electronics Council (GEC), the leading authority in the area of green electronics. We were captured by the GEC's Mission Statement which is:

"We inspire and support the effective design, manufacture, use and recovery of electronic products to contribute to a healthy, fair and prosperous world."

We believe that YouRenew plays a vital role in helping the GEC carry out its mission; that is, we fulfill the need to recover used devices effectively in the most environment friendly fashion. And, we pay our customers for it.

For too many years, used electronic devices, like many other products, have found their way into landfills. While this still happens today, given the growing public awareness of green initiatives, most of these devices do not end up in landfills, but they end up in our closets, our attics, our garages, or any other out-of-the-way place we can find. Businesses, governments and other large organizations have a similar problem. Most organizations we visit have their used electronics sitting in box in an office or a warehouse, just taking up space and people who go through the website denote a similar problem. Individuals know they cannot merely dispose of the devices, but, candidly, do not quite know what to do with them. If they do anything, they pay someone to haul it off, frequently unaware as to how the devices will be disposed. Even if a device is recycled properly, a large percentage of used devices are still fully functional and should be appropriated for reuse rather than broken down for raw materials.

This is where YouRenew provides a very valuable role in helping create a full life cycle for electronics. Our contribution lies in our intervening to determine the optimal means of disposal. Devices that are in good working condition are sold back into the market, where a strong demand exists for people or organizations that might not be able to afford brand new devices. We currently sell our products through third party marketplaces like EBay and Amazon, but our long-term goal will be to have a sufficient volume of devices flow through our operation to merit our own online store. Devices that are operable but not in the requisite condition for resale are sold to our wholesale partners who either

refurbish the devices for resale or break down the devices, keep and reuse the working parts and recycle the non-working components. If nothing is salvageable, we forward the device on to one of our recycling partners, who have the highest levels of certification and are members of the E-Stewards initiative. As such, our process ensures that working devices and working parts are re-used, thereby increasing their useful life.

We have customers across the entire electronic user spectrum, from individuals, to businesses, to non-profit organizations, to government entities. We market to them via online and offline channels. Irrespective of the channel, our goal is to first, educate our customer as to the need to recycle and second, make it as easy as possible to complete a transaction with us. Our services include an immediate pricing proposal delivered over the web and an email transmission of a prepaid shipping label. Once devices are received in our facility, we conduct specific diagnostic procedures that dictate the avenue of disposition. We either confirm or adjust the pricing where appropriate and make payment to the customer. Last, in preparing a device for resale, we have data-clearing process to ensure the confidentiality of our customers.

We are deeply committed to improving and building our business in all facets. In the six months since the launch of our platform, we have processed tens of thousands of devices and created fourteen jobs in New Haven, CT. We are excited to work in a budding industry with strong potential. All profits that we generate will be reinvested back into our platform to allow us to make more people and organizations aware of the need to recycle and to make the process of recycling easy and painless. Again, we pay our customers a fair and competitive price to be green.

IV. Conclusion

We've seen incredible growth in the last seven months since launching YouRenew.com out of our dorm room at Yale College. The company was two full-time individuals in the beginning of June and we now have close to twenty and are hiring more.

In the next year, we at YouRenew are aiming to work with manufacturers, electronics recyclers, individuals, organizations, and the U.S. government to set up a more efficient and transparent framework for the second-life of electronics. We want these partners to help us create the best (1) incentive, (2) transparency, and (3) convenience. We think we have made positive steps so far and have a great service. It will take time to find the perfect solution for everyone, but we are excited and optimistic that it can be done.

Ms. WATSON. Thank you.
Mr. Omelchuck, you may proceed.

STATEMENT OF JEFF OMELCHUCK

Mr. OMELCHUCK. Thank you, Madam Chair Watson and Ranking Member Bilbray, for this opportunity to testify before your committee today.

My name is Jeff Omelchuck, and I am the executive director of the Green Electronics Council and of EPEAT. The Green Electronics Council is a 501(c)(3) nonprofit organization based in Portland, OR, with the mission of reinventing society's relationship with electronics.

The invitation to testify today said that the committee was interested in the Government's procurement and disposal of electronics products. I am going to focus more on the purchasing end, but I want to clearly make the point that the two are related. If you buy greener electronics, you will be disposing of greener electronics.

The invitation also said that the committee was interested in learning more about EPEAT, the Electronics Product Environmental Assessment Tool, and about the Government's use of EPEAT to buy greener IT products, so I will focus my comments on those subjects.

EPEAT is a comprehensive green purchasing system for electronics that covers the environmental impacts of products' complete life cycle, including reduced toxics in the product, design for extended life, and more efficient recycling, energy efficiency, greener packaging, and EPEAT also requires that the manufacturer provide certain services, including end-of-life take-back of batteries, packaging, and the product, itself.

EPEAT makes it as easy to specify and buy full-scope green products as Energy Star makes it to buy energy efficient products.

Further, EPEAT-registered products cost no more than conventional products, and EPEAT costs purchasers nothing to use.

EPEAT was developed and launched with the support of EPA and hundreds of volunteer stakeholders from all facets of society, including environmental NGO's, industry, researchers, larger purchasers, and public officials. I think you have heard a lot of support in this hearing so far for the parties that have participated.

EPEAT is now marginally financially self supporting. It represents a unique and successful public/private partnership that is changing an industry using market forces rather than regulation.

The U.S. Federal Government uses EPEAT to specify green electronics for its own purposes. The Federal Acquisition Regulation, the FAR, and two Executive orders require all agencies of the U.S. Federal Government to satisfy 95 percent of their need for electronics with products that are EPEAT-registered.

Many other organizations around the world also use EPEAT to specify and use green electronics, including Federal agencies, States, cities, education systems, hospitals, and corporations from Brazil to Thailand. These purchasers combined contracts for EPEAT-registered products has created a \$60 billion market incentive for manufacturers to make greener products. This market for green electronics has attracted the participation of leading American manufacturers, including HP, Dell, Apple, most European and

Asian industry leaders, and many small innovative manufacturers globally.

Now that I have introduced you to EPEAT, I would like to urge this committee to do a few things that I think could make a huge difference.

First—and Mr. Goss alluded to this—despite the fact that two Executive orders and the FAR require all agencies of the Federal Government to buy EPEAT-registered products, many Government contracts present catalogs of products to Federal purchasers that include many non-EPEAT-registered products, and they do not identify which products are EPEAT-registered, making it very difficult for purchasers to comply with Federal regulation.

I urge Congress to require that Government contracts and contractors clearly identify EPEAT-registered electronics so that Federal purchasers can more easily comply with Federal purchase regulations.

Second, the U.S. Government has for many years done a good job of using their own purchasing power to create demand for greener products, but this doesn't go far enough. Promoting green purchasing to the public based on sound, life cycle-based programs educates consumers on what they can do and strengthens demand for environmentally preferable products.

EPEAT is the program vetted by the U.S. Government and used for its own purchasing of electronics. EPA should support and promote EPEAT and other sound green purchasing systems to the public.

Third, Congress justifiably has interest in developing a national e-waste recycling program. We fully support that. It is a critical environmental need that can only be accomplished by regulation probably. However, recycling is fundamentally an end-of-the-pipe activity that recovers perhaps a few percent of the environmental investment in electronic products.

To fully address the life cycle impact of electronics, we must address them earlier in the product life cycle. By specifying EPEAT, purchasers apply market pressure to change the design, manufacturing, and service practices of electronics makers globally and reduce impacts throughout the life cycle, including making products more easily and efficiently recycled. Again, if you buy greener electronics, you will be disposing of greener electronics, so buying greener electronics as defined by EPEAT should be recognized and supported as a necessary part of any long-term solution to e-waste.

Finally, EPEAT was made possible through the support and involvement of EPA, Department of Energy, and other Federal agencies. EPEAT is a working example of an innovative and powerful new model of public/private partnership that is using market forces rather than regulation to drive better materials management practices throughout a complex supply chain.

We urge Congress to increase support for EPEAT and similar programs.

Thank you for this opportunity to testify before this body. I look forward to your continued and increased support for EPEAT. I would be happy to answer any questions.

[The prepared statement of Mr. Omelchuck follows:]


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**Written Testimony before House Committee on Oversight and Government Reform,
Sub-committee on Management, Organization, and Procurement
Presented by Mr. Jeff Omelchuck, EPEAT Executive Director
27 October 2009**

Congressional Action Requested

- EPEAT is a sound green purchasing system for electronics that covers the complete lifecycle of environmental impacts, from toxics to packaging, including design for recycling. EPEAT is applying market-based forces to globally drive the design, manufacturing, and service practices of electronics makers to reduce impacts throughout the lifecycle, including making products more easily and efficiently recycled.
- The Federal Acquisition Regulation (FAR) and two Executive Orders require all agencies of the US Federal government to satisfy 95% of their need for electronics with products that are EPEAT registered. Yet many government contracts present catalogs of products to federal purchasers that include many non-EPEAT registered products and they do not identify which products are EPEAT registered, making it very difficult for purchasers to comply with federal regulation. **We urge Congress to require that government contracts and contractors clearly identify EPEAT registered electronics so that federal purchasers can more easily comply with federal purchasing regulations and Executive Orders.**
- The US government has for many years done a good job of using their own purchasing power to create demand for greener products. But this doesn't go far enough. Promoting green purchasing to the public based on sound lifecycle based programs educates consumers on what they can do and strengthens demand for environmentally preferable products. EPEAT is the program vetted by the US Government and used for its own purchasing of electronics. **EPA should support and promote EPEAT and other sound green purchasing systems to the public.**
- Developing an effective e-waste recycling program in the US is a critical environmental issue. However, recycling is fundamentally an "end of the pipe" activity that recovers perhaps a few percent of the environmental investment in electronic products. To fully address the lifecycle impact of electronics, we must address them earlier in the product lifecycle. By specifying EPEAT, purchasers apply market pressure to change the design, manufacturing, and service practices of electronics makers globally and reduce impacts throughout the lifecycle, including making products more easily and efficiently recycled. **Buying greener electronics as defined by EPEAT should be recognized and supported as a necessary part of any long-term solution to e-waste.**

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EPEAT Overview

- EPEAT is a “green purchasing system” for electronics. It is based on an open consensus-based standard that covers a full spectrum of green attributes, including energy efficiency, reduced toxics, design for recyclability, product longevity and sustainable packaging, and requires manufacturers to have take-back programs for product, batteries, and (optionally) packaging. Products are rated Bronze, Silver or Gold - green, greener, greenest.
- “The EPEAT System” is a growing complex of people and organizations working collaboratively. The “green standards” used in EPEAT are developed by hundreds of independent experts working in a formal public standards development process administered by The Institute for Electrical and Electronic Engineers (IEEE), an ANSI accredited standards body. EPEAT Inc. acts as the hub of the system and manages the web based product registry, product verification, and marketing the system to purchasers.
- EPEAT Inc. is an independent non-profit organization. It is not a program of US EPA or any other government agency. EPEAT now has 3 full time staff, half a dozen part time contractors, and dozens of volunteers who donate their time to promote EPEAT, provide advice, etc.
- EPEAT has received significant support from US EPA throughout its development and start-up but EPEAT Inc. is now supported by fees paid by manufacturers to register their products in the system. EPA is currently providing some support for the development of IEEE “EPEAT green standards” for new products types but is not providing any funding support for operations, consumer outreach, or periodic updating of the product standards.
- ENERGY STAR participated in developing EPEAT, and EPEAT’s primary energy efficiency criterion is compliance with ENERGY STAR. ENERGY STAR is also providing significant staff support for the development of EPEAT energy efficiency specs for printer-type products and TVs.
- EPEAT is used by the US federal government and public agencies in many other countries, states, and cities and private companies globally to specify “green” when they write purchase contracts for IT.
- All agencies of the USG are required by Executive Order and the Federal Acquisition Regulations (FAR) to satisfy 95% of their requirement for electronic products with EPEAT registered products, where an EPEAT standard exists for the product category. Currently that covers desktops, laptops, workstations, thin clients and displays. OMB reports that most agencies’ compliance is good and improving but not perfect.
- The USG’s purchasing power, combined with that of the other global users of EPEAT, has created a \$60 billion market incentive for manufacturers to design and manufacture greener electronics. In combination with other global regulatory and voluntary initiatives, this aggregated purchasing power helps drive environmental innovation in the design, manufacturing, and service

practices of electronics companies globally, from the largest multinational brands to small local brands.

- Green purchasing must be an important component of any solution to the e-waste issue. While recycling electronics responsibly is critical, recycling alone, even where manufacturers are required to participate in or underwrite end of life management, does not effectively change the design of electronics over time to reduce their environmental impact. A green purchasing system creates a market incentive for manufacturers to design and manufacture greener products that can more easily be recycled. **EPEAT is a sound green purchasing system for electronics and should be recognized and supported as part of the long-term solution to e-waste.**
- Public awareness of the environmental issues associated with electronics is growing. However, consumers are not yet generally aware of their role in reducing those impacts. In particular, consumers are not aware of how to identify greener electronics and how purchasing green electronics benefits them, their communities, and their planet.
- EPEAT does not have the resources for broad public promotion and the USG has provided no support for that. ENERGY STAR has a long and successful history of promoting the importance of energy efficiency in the consumer market, due to decades of significant and consistent government funding. EPEAT and ENERGY STAR continue to explore possible collaboration on public promotion.
- It is good public policy, and a very efficient use of public resources, for EPA to support public promotion of green purchasing based on sound programs like EPEAT, the program the government uses for their own purchasing. **EPA should provide EPEAT support for public promotion, development of new standards and updating of existing standards.**
- **EPEAT is a new and innovative model of a powerful way to change materials management and achieve sustainability goals that should be studied and copied in other industries.**

History and Development of EPEAT

The Green Electronics Council is a 501(c)(3) non-profit organization that manages EPEAT, the green purchasing system for electronic products. EPEAT was developed beginning in 2003 by a group of diverse volunteer stakeholders representing all stakeholder constituencies interested in electronics and the environment, including industry/manufacturers, environmental advocates, private and public purchasers of electronics, researchers, recyclers, government staffers and others. The process was facilitated by the non-profit Zero Waste Alliance, supported by a grant from US EPA (more info at <http://www.zerowaste.org/epeat/index.htm>). As the process of criteria development moved forward, the stakeholders decided to formalize the system and criteria they were developing as a public technical standard working through the Institute of Electrical and Electronic Engineers, and in April 2006 they released public standard IEEE 1680. The standard contains both the environmental performance criteria for personal computer products and the design of the EPEAT system itself, through which those criteria are applied to products. The "EPEAT Standard" contains 51 criteria – 23 required and 28 optional - covering the product's entire life-cycle, from toxics to energy efficiency to design for recyclability to packaging, company performance, and product and battery takeback. Products that meet the 23 required baseline criteria are rated EPEAT Bronze. Products that meet 50% of the additional criteria are recognized as EPEAT Silver and the greenest products, which meet 75% or more of the optional criteria, earn a rating of EPEAT Gold.

The Green Electronics Council was selected by EPEAT's stakeholder "Implementation Team" to manage the EPEAT system. With support from an EPA start-up grant, in July of 2006 GEC launched the EPEAT registry at www.epeat.net, an on-line searchable database of products that are registered by their manufacturers as meeting each of the 51 criteria. On EPEAT's launch there were 3 participating manufacturers and 60 products. Today the EPEAT registry has separate product registries for each of 40 countries, with over 40 participating manufacturers, including all the leading global brands and a large number of small brands, and over 1200 products registered in the US alone. EPEAT is now entirely self-supporting, funded by the annual fees that manufacturers pay to register their products.

In December of 2006 President Bush issued Executive Order 13423 requiring all federal agencies to satisfy 95% of their requirements for electronic products with products that are EPEAT registered. A year later the EPEAT purchase requirement was codified into the Federal Acquisition Regulations (FAR SubPart 23.7). In September of 2009 President Obama renewed the USG's commitment to buy EPEAT registered green electronics in Executive Order 13514. EPEAT registration is now required by purchase contracts from government agencies in Canada, New Zealand, Australia, Mexico, Brazil, Singapore, Thailand, Poland, and Lithuania, and on a large number of contracts from state and municipal agencies, universities and colleges, healthcare facilities and systems and private corporations globally.

In 2009, partially supported by an EPA grant, stakeholders began developing IEEE/EPEAT Standards for Imaging Equipment (printers, fax machines, copiers, etc) and for televisions. They are expected to complete that work in 2010 and those product types should appear on the EPEAT registry in late 2010 or 2011. Standards development processes for servers and then cell phones will follow.

EPEAT is a remarkable example of a public-private partnership that is greening the design of electronics products and related service offerings using market forces rather than regulation.

US Government Use of EPEAT as a Green Purchasing Standard for IT

- **January 2007** Executive Order 13423 was signed by President Bush – This E.O. consolidates and strengthens five executive orders and two memorandums of understanding related to environmental, energy, and transportation performance and accountability, and required all Federal Agencies to purchase 95% or higher EPEAT registered products in all eligible product categories.
- **December 2007** The FAR Council integrated a requirement for use of EPEAT into the Federal Acquisition Regulations (FAR) as an interim rule.
- **February 2009** The FAR interim rule became final.

USG Compliance with Executive Order and FAR Ruling

OMB tracks each agency's compliance with FEC requirements, including the requirement to buy EPEAT registered products. OMB reported to the Office of the Federal Environmental Executive the following.

- **FY 2007 Federal Electronics Challenge Partner EPEAT Purchasing Results**
 - 80% of desktops, laptops and monitors purchased by FEC partners were EPEAT registered
 - Suppliers reported sales of over 1 million EPEAT registered products to the Federal Government
- **FY 2008 FEC Partner EPEAT Purchasing Results**
 - 88% of computer desktops, laptops and monitors purchased or leased by Federal Electronics Challenge participants were EPEAT registered. Of those products, 2% were EPEAT Bronze; 46% were EPEAT Silver, and 40% were EPEAT Gold
- **Federal Purchase Totals** EPA estimates total Federal EPEAT purchasing to date (Fall 2009) at ~ 2 million units.

Results compiled from the 2008 OMB Scorecard and Federal Electronics Challenge reporting provide insight into Federal agencies' successful implementation of the FAR requirement

- o Thirteen of 22 Federal Agencies reported meeting or exceeding the goal of 95% or higher EPEAT purchasing in their 2008 IT acquisitions. Individual descriptions of these agencies' successes are listed below.
- o The remainder of the Agencies reporting showed significant success – with the average compliance rate between 65-75%

Agencies Meeting FAR EPEAT Requirement in full in FY 2008

Department of Veterans Affairs: 100% of the 290,623 Dell desktops and monitors leased by VA between September 2007 and December 2008 were EPEAT gold or silver products (i.e., 135,598 EPEAT gold desktops; 4,345 EPEAT silver desktops; and 150,680 EPEAT silver monitors).

Department of the Treasury: Of the 64,686 computer desktops, laptops/notebooks, and monitors Treasury purchased in FY 2008, a total of 64,491 (or 99.7%) were EPEAT-registered products. The EPEAT-compliant products were 68.5% Silver and 31.2% Gold.

Department of Energy: DOE purchased more than 50,000 EPEAT registered computers and monitors in FY08, constituting more than 96% of DOE's approximately 52,000 total purchases. All but 4% were Gold (49%), Silver (45%) or Bronze (2%).

Social Security Administration: 100% of the 24,673 desktop computers purchased by SSA were EPEAT-registered Gold. All of the 26,948 LCD monitors purchased were EPEAT-registered, 15,600 were EPEAT-registered Silver, and 11,348 were EPEAT-registered Gold.

Department of the Interior: DOI purchased through their Agency-wide mandatory-use IT Hardware Contract a total of 34,737 desktops, 17,548 laptops, and 4,237 monitors, i.e., a total of 56,522 EPEAT compliant units in FY 2006-2008.

Department of State - All of State's Global Information Technology Modernization Program (GITM) purchases in FY 2008 were EPEAT Silver or Gold products: 7,515 EPEAT-registered Gold desktops and 5,370 EPEAT-registered Silver monitors.

Department of Commerce: DOC purchased 6,618 computers, monitors, and laptops in FY 2008; 6,423 (or 97%) of these were EPEAT-registered.

NASA: In 2008, the Outsourcing Desktop Initiative for NASA (ODIN) program purchased 12,256 EPEAT-registered computers and monitors for NASA personnel.

Tennessee Valley Authority: TVA purchased 2,496 desktop computers, 3,500 monitors, and 1,017 laptops that were EPEAT-registered, for a total of 99.3% EPEAT compliant purchases in FY 2008.

Office of Personnel Management: OPM added EPEAT requirements into the IT Procurement Authorization tracking system (ITPA). All of the CIO-approved purchases were either Gold or Silver rated. A total of 1,541 desktop/laptops and 1,619 LCDs were procured in FY 2008.

General Services Administration: GSA purchased more than 600 EPEAT certified computers in FY08. All computers were 100% compliant with EPEAT purchases.

US Environmental Protection Agency: In 2008, EPA used an IT Blanket Purchase Agreement (BPA) that specifies EPEAT-registered equipment for electronic purchases. EPA estimated that 99% of eligible electronics purchases were EPEAT-registered. In FY09, EPA is standardizing its user-provisioned computer equipment for headquarters employees and providing more than 12,000 EPEAT-registered computers to its staff.

Department of Labor: DOL instituted a new requirement that any non-EPEAT purchase be registered as an exception to purchasing policy. No exemptions were reported in FY 2008, indicating 100% compliance with the EPEAT purchasing requirement.

Commercial and Environmental Impacts of EPEAT

Manufacturers that register their products in EPEAT are required to annually report to GEC the number of EPEAT registered products that they sell. In 2008 EPEAT participating manufacturers sold more than 44 million EPEAT registered products in the US alone. In future years GEC will track and report sales in all 40 supported countries.

By feeding the manufacturer-provided data into an Electronics Environmental Benefits Calculator (EEBC) that was developed by University of Tennessee Center for Clean Products working on an EPA grant, GEC is able estimate the lifecycle environmental benefits that result from the purchase of EPEAT registered green products as compared to the purchase of conventional products.

2008 US purchases of EPEAT registered laptops, desktops, and monitors over conventional products will:

- Reduce use of toxic materials, including mercury, by 1021 metric tons, equivalent to the weight of 510,949 bricks
- Eliminate use of enough mercury to fill 149,685 household fever thermometers
- Preclude the disposal of 43 thousand metric tons of hazardous waste, equivalent to the weight of almost 22 million bricks.
- Eliminate 14,353 Metric Tons of solid waste, equivalent to the amount 7202 U.S. households generate in a year

In addition, due to EPEAT's requirement that registered products meet ENERGY STAR's energy efficiency specifications, these products will consume less energy throughout their useful life, resulting in:

- Savings of over 8.39 billion kWh of electricity — enough to power over 700,000 US homes for a year
- Reduction in use of 14.8 million metric tons of primary materials, equivalent to the weight of more than 114 million refrigerators
- Avoidance of 34.2 million metric tons of air emissions (including greenhouse gas emissions) and over 71,000 metric tons of water pollutant emissions
- Reduction of over 1.57 million metric tons of greenhouse gas emissions — equivalent to taking over one million US passenger cars off the road for a year

In addition to these benefits, reported global sales demonstrate EPEAT's potential for reducing the environmental costs of computing worldwide. Despite only 27% of participating manufacturers reporting their Canadian EPEAT sales and only 20% reporting their Rest of World sales, the estimated benefit of EPEAT sales to these regions is still significant:

- Reduction of 2.8 million metric tons of primary materials
- Elimination of over a million kilograms of toxic materials, including enough mercury to fill 157,311 household fever thermometers
- 16,297 Metric Tons of solid waste eliminated
- Greenhouse gas emissions equivalent to removing 2.3 million US cars from the road for a year

Click here to read the [FULL EPEAT 2008 Environmental Benefits Report](#)

EPA Financial Support of EPEAT

EPA has provided, and continues to provide, both financial and in-kind support to elements of the "EPEAT System", as identified below:

- 2002 – 2006 EPA provided a cooperative agreement in the amount of \$290,000 to the Zero Waste Alliance to support facilitation of the multi-stakeholder consensus process that developed EPEAT and resulted in publication of the IEEE 1680 standard and selection of an organization to manage EPEAT.
- 2006 – 2008 EPA provided a cooperative agreement in the amount of \$420,000 to Green Electronics Council to launch EPEAT as a working commercial system. EPEAT is now financially self-sustaining.
- 2007 EPA provided in-kind support for development of marketing materials.
- 2008 – 2011 EPA provided a grant in the amount of \$419,000 to University of Tennessee Center for Clean Products to support management/facilitation of the IEEE standards process to develop EPEAT green standards for Imaging Equipment (printers, copiers, fax, etc.), televisions, server computers, and cell phones. This work is now in-process.

In addition, 2 half-time EPA employees continue to work significantly with EPEAT, and several EPA, DOE, and other federal employees sit on EPEAT advisory boards or

participate in the standards development process to provide a Federal Government perspective.

EPEAT in the Consumer Market

EPEAT was developed primarily by and for purchasers who buy electronics on purchase contracts, and it has seen astonishingly rapid growth in that market. Manufacturers, retailers, and others now see EPEAT as a credible way to communicate the “greenness” of their products in the consumer market and the use of EPEAT in that market is rapidly growing.

In the institutional market, the attractiveness of a brand is not very important. Professional purchasers rely on specifications and contract language rather than a catchy name and a crisp logo. However, in the consumer market brand image is vitally important. In response to the demand from both environmental and manufacturer stakeholders that EPEAT become a better resource in the consumer market, in early 2009 EPEAT started a project to investigate branding for the consumer market. We have been incredibly lucky to receive the services of one of the world largest and best regarded brand development agencies pro bono to assist us in that effort. We expect to complete that project by YE 2009 with an identity optimized for the consumer electronics market. Our challenge then will be to introduce the new brand to the consumer market.

ENERGY STAR has achieved a remarkable 75% recognition in the consumer market through 20 years of consumer market promotion and brand building, enabled by stable funding provided by a congressional line item. Without the resources to promote EPEAT’s new brand in the market it is unclear how fast consumer recognition will grow.

EPEAT Collaboration with ENERGY STAR

In order to reduce duplication of effort and harmonize with other standards worldwide, EPEAT stakeholders incorporated numerous other environmental standards by reference, including the EU RoHS, EPA’s Plug Into E-cycling Guidelines, and ENERGY STAR. ENERGY STAR staff participated in the development of EPEAT, and stakeholders have relied extensively on ENERGY STAR product definitions, technical approaches, and energy specifications in developing the energy efficiency requirements of the IEEE/EPEAT standards. As a result EPEAT’s primary requirement for energy efficiency is compliance with current ENERGY STAR requirements. Therefore, **all EPEAT registered products meet ENERGY STAR energy specifications**. Stakeholders now developing energy efficiency criteria for EPEAT Imaging Equipment and TV standards continue to use ENERGY STAR specs as the required baseline for those products. In addition, we expect that stakeholders will likely include “more efficient than ENERGY STAR” criteria in those and future standards as part of the optional criteria.

In the past EPEAT has largely relied on ENERGY STAR to verify that ENERGY STAR qualified products actually meet ENERGY STAR criteria. We have discussed with ENERGY

STAR the possibility of cooperating on those verifications and expect that this may come to fruition in late 2009 or 2010.

Finally, EPEAT and ENERGY STAR have discussed several options for working together more closely to promote green electronics in the consumer market. It has been difficult to work out the brand/label issues and we continue to discuss options.

Ms. WATSON. I would like to thank all the witnesses for your testimony.

We are now going to move to the question period, and we will proceed under a 5-minute rule. I would like to first start with Mr. Biddle.

With all the concerns about IT recycling operations we have heard about in the news, some people say it is actually better for the environment if we just warehouse the old IT products or even send them to landfills where there is likely to be some protection against the leaching of toxic components. This may seem illogical, but is there any truth to this statement?

Mr. BIDDLE. Thank you. I think that is actually a good question, because I have heard similar sentiment before.

I think from my oral testimony you probably surmised that I believe there is a lot of value to be recovered if it is done appropriately, and I think that is the key, that it be done appropriately and that the e-waste be handled by companies that have the technology and the knowledge to recycle these products appropriately.

Let me just use one example that might highlight this issue. The European Union enacted what is called WEEE legislation—waste, electrical, and electronic legislation—a number of years ago, and it was primarily initially done to protect the environment, both their local environment and the environment of countries where their e-waste was also being exported.

What they have found since—and they figured that this was going to be a costly enterprise to do this—what they have found since is that it didn't cost as much as they thought, and, in fact, sometimes it pays for itself, as we have heard. Some of these products can pay for themselves from the recycling or their reuse. And, second, what they found is that, more importantly, or just as importantly as protecting the environment, they are now recovering valuable resources that their manufacturers in Europe are using to make new products more competitively, more sustainably. So I hope that—does that answer your question?

Ms. WATSON. That alludes to it. Does the recycling industry have data regarding total amounts of e-waste generated or sent for reuse or recycled domestically or exported abroad?

Mr. BIDDLE. There is a number of different figures out there that have been compiled by different organizations. In my oral testimony I alluded to some, and in my written testimony there is a little bit more data. The number that I used, again, is all electrical and electronic equipment by the EU definition, anything with a battery or a cord, and that is more than 20 million metric tons per year of e-waste estimated via North America. A good portion of that, of course, is in the United States. I don't have the particular figure for what percentage of that is the United States.

Of that, EPA did a study that I also alluded to, about 17 or 18 percent of e-waste is collected for recycling in the United States, but the e-waste that they looked at was just what I call the high-value e-waste, the most prominent e-waste, so these were computers and peripherals and cell phones. That stuff does have a much higher recycling rate for the reuse reasons we heard about and the inherent value in some of the materials in that particular type of question.

So that over-estimates, I think, the recycling rate for all of electronics, and the majority of that, 18 percent, is shipped overseas, not recycled here in the United States.

Ms. WATSON. Mr. Goss, some experts say that it is important to design IT products to make them easier to recycle, for example, by using more modular construction and reducing the use of certain kinds of chemicals, and others say that this is not practical and it is more important to design more effective and environmentally friendly recycling processes like smart shredders that can separate the material.

What do you think is the best approach, and what, other than funding, do you think Federal agencies can do to help in this regard?

Mr. GOSS. Thank you. On your first question here, I think our companies have demonstrated through their actual achievements here what they are able to do based on customer demand, based on competition, market competition, etc. As I noted in my testimony here, our member companies make 90 percent of the 400-plus gold-rated EPEAT products here, so our companies are competing against one another and in the marketplace here, and, frankly, the Federal Government's support through the FAR, through the Executive order for EPEAT and Energy Star is a major driver here.

So what our companies are demonstrating is that they can and will, in the absence of regulation, just based on competitive advantage here, design in these types of features. And, as Mr. Omelchuck has mentioned, EPEAT is a full life cycle assessment, going all the way through the design, through the active use of the equipment, through its beneficial reuse and appropriate recycling.

In terms of the Federal Government, I think I will go back to a couple of the key points I made in my testimony here. The Federal Government has a major role to play in terms of helping to drive that market demand, in terms of making sure that EPEAT and Energy Star products are purchased at the levels as prescribed in the Executive order and in the FAR, and continuing to provide that market incentive to our companies to make these improvements.

Ms. WATSON. Thank you. We will go now to Mr. Bilbray, ranking member.

Mr. BILBRAY. Thank you, Madam Chair.

Madam Chair, I would like to follow a different line of questioning here.

Mike, we can talk about that there is a lot of economic opportunities for recycling, but it is not equal. I mean, you are willing to admit that there are portions of these products that are not going to be economically viable to recycle, right? But I think anyone who has worked with the waste streams will understand that doesn't mean in the future that material may not be very profitable to recycle.

Wouldn't you agree that one of the things that we need to look at while we are talking about recycling is the concept of stockpiling or disposing or storing the other material that may not be today in isolation, because that is one of the things you get. You have it in isolation, you have it separated. Once you have it separated, that is a huge part, isn't it, of being able to make it recyclable for the future?

Mr. BIDDLE. Again, another good question. I agree with your general statement that some things are more expensive to recycle than others, and I would allude again to my comment about the European Union, where they found that a surprising amount of stuff is now paying for itself to be recycled. I think one of the more problematic materials would be CRT glass, for example, finding a positive value from that, from cathode ray tubes, TVs, and the like.

As far as storing the stuff, I am a little reluctant to go down that path because I think there is so much inherent value in the materials if the infrastructure were developed. It is a bit of a chicken and egg, and that is what the European Union found out. There are economies of scale associated with doing recycling and doing it economically, as well as doing it environmentally soundly, and now that the economies of scale have been built out in Europe and parts of Asia, these recyclers have found that it is actually quite profitable to recycle the majority of electronic waste that comes their way.

Mr. BILBRAY. But, to interrupt here, there is a chicken and egg thing here.

Mr. BIDDLE. Yes.

Mr. BILBRAY. First of all, a lot of it may be on the political process, just the entire environmental political process of saying no, no, no. The fact is that if you are confronted with one of two options, recycle or site a disposal site, and make the siting of the disposal site compatible with future recycling, then you start creating an issue that there is more of a motivation to recycle because you can't just go down the cheaper throw-it-into-a-landfill option.

Mr. BIDDLE. Right. I think you are absolutely on the right track. Let me just say three things would make it easier for us to recycle these things economically in the United States.

The first is getting the stuff back. Clearly we have more of this stuff in the United States than any other country in the world, so I think that is a huge opportunity as much as it is a problem. And, just like in technology, getting fiber to your home or cable to your home, the last mile is the most expensive. Perhaps you are familiar with that concept.

In recycling, it is just the opposite. It is the first mile that is the most expensive. Getting recyclables out of the hands of consumers has always been the most expensive part of the recycling equation. If that infrastructure develops for collecting this material in an effective way, most of the other process pays for itself. So the first issue to solve is how can we collect it effectively and efficiently. This is, again, something we can learn from countries in Europe and Asia.

The second is—I think you have already alluded to it—make it easier for recyclers to develop their plants and stop throwing up so many barriers. Again, I will give you an example—

Mr. BILBRAY. Now, you are an example where you developed it. You are a company in California. You are in California, but you don't have one site in the United States?

Mr. BIDDLE. No. Raised over \$100 million from investors right here in the United States, gotten funding from the U.S. Government agencies to develop the technology more than 10 years ago,

and where are we exploiting that technology? We are exploiting it—

Mr. BILBRAY. Now, most people in Washington would say that you are one of those corporations that are just so mean spirited that you are creating jobs overseas and don't care about the Americans.

Mr. BIDDLE. I am creating jobs overseas because that is where I can get my hands on the raw material. I can tell you there is no person in this country more frustrated than myself that I can't build plants here in the United States.

Mr. BILBRAY. What can we do to make it possible for you to do that?

Mr. BIDDLE. Well, the first one is getting the raw material on the electronic side. On the second point, which again you have already alluded to, make it easier for recyclers to make the investment, because there is a risk. My investors demand of me that I show them a return on their money, and that has to do with risk base. If I can get my hands on materials in Europe and Asia, that lowers the risk, my investors are happy.

Mr. BILBRAY. But isn't a portion of that risk base is that when you go in there it is a whole lot different than saying I plan on going in and building a facility here.

Mr. BIDDLE. Yes.

Mr. BILBRAY. The difference between going to an investor and saying I am planning on building a facility as opposed to I have a sited facility that is permitted and is ready to go, that is a huge, huge difference, isn't it?

Mr. BIDDLE. Yes. Absolutely. And that is my point, too. Let's make it easier for recyclers to grow the infrastructure here in the United States, and the first one is getting the raw material, but second is making the permitting process easier. The permitting process was much easier for us in Asia and Europe and where we are building our second plant right now in the U.K., which will be the largest such plant in the world. We would like to duplicate that plant here in the United States, and we are ready to do it tomorrow. I can employ the funds tomorrow if we can get over some regulatory hurdles.

This happens to do with automotive shredder residue, not the topic for this panel right here, but the point I can make with that, that material is already available in the United States. Ten billion pounds of it we put in landfill every year, already collected, already concentrated, and I can't build a plant to mine it like the plant we are building in the U.K. right now because of regulatory barriers, so I need some help on that.

Finally, on the procurement part, I think the rest of the panel has talked better than I can on the procurement end. That helps recyclers to have a market for recycled materials.

Thank you.

Madam Chair, just an example as being in California, I served 6 years on the California Coastal Commission, and there are issues that sort of the push and pull of government regulation. We are always looking at pushing, but no pull. One of the things that the California Coastal Commission did that really has worked is, where you had communities that did not want to build hotels, visitor re-

ceiving facility, because the local pressure was we don't want those tourists in our town, we don't want this hotel in our neighborhood.

But what finally happened was without the hotels people were renting out homes in neighborhoods, and people were so outraged about, wait a minute, I don't want people renting next to my house that are just going to be here for 2 weeks. I bought into a single family residential area. And the Coastal Commission finally said, OK, you can outlaw those short-term rentals, but only if you build an alternative, the hotel. Now you have communities that historically have blocked hotels being motivated to do the responsible thing.

I would like to see us try to see how, as a policy, our environmental regulations can create that carrot and stick approach, that push and that pull.

Thank you very much. I yield back.

Ms. WATSON. Thank you.

Mr. Connolly.

Mr. CONNOLLY. Thank you, Madam Chairwoman.

Just picking up on the last point, I think it would be a mistake to indicate that there is no recycling going on in the United States. There is metal recycling from electronic waste. I am aware of one plant in Pottstown, PA. I am aware of another plant in Arizona where we, in fact, are recycling and there is a market here, though the gentleman's point is correct that site location for such plants obviously is always a challenge. But it would be a mis-impression, I think, to suggest that none of that goes on in the United States, that all of it goes on overseas. That is not true.

Mr. BIDDLE. I completely agree, and I'm sorry, I did not want leave that complete impression. I said there were 85,000 jobs here in the United States.

Mr. BILBRAY. If the Congressman would yield, before you came there was that point that there is this activity; it is just that proportionately it is way off what we produce.

Mr. CONNOLLY. Of course. And some of it is, as you suggest, Mr. Bilbray, it is permitting, it is licensing. Sometimes with the best of intention for environmental rationales we actually are preventing the ability to do this kind of recycling and to get that market vibrant here in the United States.

Let me begin, Madam Chairwoman, by congratulating Dell, in particular, for their leadership. I mean, it really is impressive that a company such as yours would step up to this issue, not ignore it, and take it under their wing as an important part of their corporate responsibility. I just say that as somebody coming from twenty years in the industry. I am impressed, and I thank you for your leadership.

Mr. CASELLAS. Thank you, Congressman.

Mr. CONNOLLY. Let me ask this of our two Dell reps. Could you support and how might it work, from your point of view, legislation that would support the establishment of national regulations for e-waste take-back and recycling?

Mr. GOSS. Thank you, Congressman. Just to clarify, I work for ITI, the trade association that represents Dell, among several dozen other companies.

Let me start by saying that about 4½ years ago, early 2005, our industry came to Congress and asked Congress to consider national comprehensive electronics recycling legislation. At that time, only two States, California and Maine, had e-waste laws on the books, and our industry had a strong preference for a consistent Federal approach as opposed to a hodgepodge or a patchwork of State approaches. Well, in the absence of Federal action, over the last four-plus years we now have 20 States, Wisconsin being the latest this past week, plus the city of New York with their own distinct electronic recycling laws on the books.

This has created quite a bit of confusion, additional costs for our member companies, consumer confusion in addition because not two States are alike. Some are similar in terms of their approaches, but they have different product scopes, different financing requirements, registration reporting, etc. I think everybody understands the picture here.

We would still be very interested in having a discussion with this committee and with Congress about where we can go as a group of stakeholders, including the recyclers, the retailers, the NGO's, EPA, and other Government players here about how to try to bring a solution to this.

I would also add that we have been working with Congressman Green and Congressman Thompson for well over a year on the specific bill that they mentioned in the first panel here, which has to do with controls on electronics exports.

Two quick points I would like to make on that is we strongly support controls on the export of obsolete equipment going to non-OECD countries. That is a very legitimate issue and it is something that, as manufacturers, we would like to see resolved here.

I would also add as a caveat that we want to make sure that we are allowed to continue with our beneficial product refurbishment programs. Some of our members export large amounts of used late model equipment for appropriate repair, refurbishment, and subsequent resale in the global commerce. That is a very environmentally beneficial outcome and we want to make sure we get the most resources and the most use out of those products, so we want to make sure that, while we have restrictions on export of obsolete products, that we still maintain some reasonable ability to move goods for proper refurbishment.

Thank you.

Mr. CONNOLLY. And following up on that, if I may, Mr. Goss, does ITI support the idea of prohibiting exports of hazardous e-waste?

Mr. GOSS. We support controls on the export of obsolete material for recycling. I will point out that an absolute prohibition on the export of used products for recycling would actually create a regime, a U.S. regime where you can't, for instance, export a laptop at all, but you would still, under RCRA, be allowed to export a drum of hazardous waste to the same developing country under notice and consent. I think there needs to be some reasonable authority given to EPA to come up with some rules on when and where certain shipments could be made. But we do support controls on the export of obsolete equipment to countries that don't have the capacity to manage it safely.

Mr. CONNOLLY. OK. Great.

And my final question, Madam Chairwoman, to Mr. Biddle, in your testimony you note that metal recyclers capture 90 percent of the metals collected and recycled in end-life automobiles. And you contrast that with sort of the sorry state of 5 to 10 percent of the plastics. I wonder if you could expand on that a little bit, because one of the things that struck me, having done a little bit of work on the metals side, is that a niche market was created for the metal extraction and recycling of those metals on the metal market.

Frankly, so long as the price of metals was relatively good, it makes for a viable recycling industry and market. I don't know that we have a similar analogous situation for plastics. What do we need to do to try to help spur the creation of such a secondary market?

Mr. BIDDLE. First, I'd like to thank you for the question, because that question is near and dear to my heart, as you might imagine.

First let me say on the metals side—and we work with the largest metal recyclers in the world. We know them very well and have worked with them for 15 years. If you look back at the history of metal recycling, steel was the first metal recycled because it is easy to recycle. All it takes is a magnet to separate steel from everything else. There was no such thing as a magnet for copper, aluminum, magnesium, and some of the other non-ferrous metals, the non-steel metals. So that material, up until about two decades or three decades ago, was not recovered in high volumes. It was hand picked, and much of it actually ended up in the waste stream 30 years ago.

Technology came along to now separate those materials using color, density differences, electrical differences, magnetic property differences, and so forth, and now that material has an incredibly high recycling rate because the technology came along and, as you pointed out, the inherent value of the materials is there.

Plastics on average, particularly from computer and electronic equipment, is on par on a price per weight basis or cost per weight basis with aluminum, so it is a valuable material. We know the recycle rates for aluminum are quite high because it is a valuable material. Plastics are roughly in the same ball park as far as value, and much more valuable than steel on a price per weight basis. So the material has inherent value; it is that the technology to sort all these materials from each other was not available, just like it was not for non-ferrous. That technology is now available, has been developed over the last decade, not just by our company but by other companies, and is now starting to be employed. So the technology barrier was probably the first barrier.

The second has been the collection. Again, if I just focus on electrical and electronic equipment, we are building plants overseas quite a lot these days simply because we can get our hands on the byproducts from the electronics recyclers, which is predominantly mixed plastics, so our technology is being employed to do that. If that material was being collected here in the United States, I would be happy to build plants here in the United States, as would other recyclers.

Ms. WATSON. Thank you. Your time is up.

Mr. Bilbray.

Mr. BILBRAY. Yes. I appreciate that. And I think that one of the things we don't talk about—we think of these in isolation—the whole issue of fossil fuels being phased out. This is a major part of fossil fuel use, at least oil, is into these plastics, so as those supplies drop the demand for recycling is going to go up.

Mr. Littlehale, there is this issue that we are going to shift totally over, and that is the data security on this issue. You are sort of the expert on that on the reuse, the transport on there. What do you do to make sure of that security issue? Where are your safety valves in there, because you are actually picking up hardware, redesigning it, and reusing it, so there is this potential. How do you address that issue?

Mr. LITTLEHALE. We take a variety of steps, which start with giving the customer the instructions on how to data clear his or her device with the standards of the manufacturer, which usually are the recommended version. Once we take the device into our facility, what we do is we have a technician go through and hand data clear the device through the same specifications that the manufacturer recommends. We then use a service, which I would be happy to write more about later, which we plug in and sort of does a clean wipe, and then we—for cell phones, for instance, which is the highest volume of what we use, for smart phones we wipe the operating system and then reinstall the operating system.

This is one thing, data security in particular, that I think that, if manufacturers developed an easier way to data clear, these devices would be more reusable. That is something that would make the electronics greener in that sense because they would be easier to reuse.

We use the highest standards that are available currently, and our constantly looking to improve.

Mr. BILBRAY. Now do you feel, once you go through that, that security is up to the level you would prefer, or do we need to continue to improve the ability to data clear?

Mr. LITTLEHALE. I think that is it up to the level that the manufacturers—it is the best that we can do, that the manufacturers give, and also the extra service that we pay for as a company that specializes in the data clearing, and there is security software that is Department of Defense certified, as well, that is out there and available, mostly for computers. Bigger computers we are actually not dealing with as much. We are more focused on sort of the handheld electronics, cell phones, MP3 players currently.

But I do think that it could be better, only because it is a tedious process going through the hand wipe, going through the plugging and the wiping and the reinstalling and the data clearing, and if there was—you know BlackBerry actually, for instance, RIM Technologies is a leader in this field and is doing a pretty good job. It is about 5 minutes and the whole thing is wiped.

Mr. BILBRAY. Well, let me just say in the 1990's there were a lot of officials that wished they had your service. I know you weren't available, you were busy at grade school. But I want to thank you for that.

I think that, in all fairness, when we talk about this we also have to remember that there is going to be some consultation with

law enforcement. I'm sure that our law enforcement agencies have seen this as being a great tool, being able to get "erased" information. That obviously will be something that is dialoged into the formula.

Thank you very much for having this hearing, Madam Chair.

Ms. WATSON. Thank you.

The last two questions will go to Mr. Omelchuck and Mr. Casellas. I knew that bell would be heard.

I just want to raise these issues and end up with you, Mr. Casellas. First, with Mr. Omelchuck, what are the EPEAT-listed products and why are they so limited? And let me just go down my list and you can answer in response. What is being done to add more products? What kind of Federal support was involved in the development and implementation of EPEAT? And does the Federal Government still need to be involved, or can expansion and improvement of EPEAT be done with only private funding from now on?

And then if you will end up, Mr. Casellas, to what extent does the private sector regulate the safe disposal of used IT equipment, and are there any regulatory approaches proposed or enacted at the State level that would provide increased incentive for industry design for environment initiatives? And we will end with you.

So, Mr. Omelchuck, if you could just combine all those questions into one response, we would appreciate it.

Mr. OMELCHUCK. Thank you for your question, Madam Chair.

I think your first question was why the limited number of products in EPEAT, and I would address that in two ways. The first is EPEAT covers a limited set of number of types of products today. It applies to laptops, desktops, and monitors. Those are the products that stakeholders chose to begin with because they are products purchased in volume by large institutional purchasers like the U.S. Federal Government, who is an important stakeholder in the process.

Within that product set, I am not sure if you were focusing on product types or numbers of products within that product set.

Ms. WATSON. Both.

Mr. OMELCHUCK. OK. So within laptops, desktops, and monitors, the products that we cover today, we have at testifying point 1,300-some products from 40-plus manufacturers that are registered. The key thing is I would say that the manufacturers choose which products to register. They present them to us. We don't go out and grab them from the manufacturers.

And I think it is important to note that a manufacturer pays a fixed annual fee to participate in EPEAT, so all the leading manufacturers that have at least one product registered in EPEAT, which is all the recognized multi-nationals, it costs them not one penny additional to register additional products. So there is really only one reason why they don't EPEAT-register the products that they haven't chosen to EPEAT-register, and that is because they don't meet the green criteria.

So why don't the leading manufacturers register more of their products is a better question addressed to them.

What would it take to add more products? Let me touch on what would it take to add more product types first. Stakeholders have

begun the process to develop the green standards for printer type products—that is printers, fax machines, copiers, that kind of product—and for televisions, that process is underway. EPEAT standards are developed by a broad range of stakeholders working in a public standards development process, so it is a long process. It is not five of us getting in a closet and dreaming up the criteria; it takes hundreds of people working through hundreds of meetings over a period of years to come to agreement, consensus across NGO's and manufacturers and others what the criteria are.

So those are started. We have a product road map that includes servers and handheld cell phone products after that, so those products are kind of on the way.

What would it take to add more products within the products we cover today? I think the key would be increased consumer awareness and consumer demand for green electronics. It is true that the majority of products registered in EPEAT are those sold to institutions, and that is because that is the market that requests them.

As I said in my testimony, one of the things that EPA can do to increase the range of products is to promote EPEAT to the public. Today we are in a bit of the chicken and the egg situation, where manufacturers say they don't want to promote EPEAT to the public and they don't EPEAT-register their public products because the public doesn't recognize it. And, of course, until they do the public can't recognize it. There is nothing to recognize.

So we are in a bit of the chicken and the egg situation in the marketing, and EPA and the Federal Government could break us out of that deadlock by simply promoting it to the public.

Ms. WATSON. OK.

Mr. OMELCHUCK. You asked a couple more questions but I realize I am out of time.

Ms. WATSON. Yes, we are out of time, but I think we get the gist of it.

I want to go to you, Mr. Casellas.

Mr. CASELLAS. Thank you, Madam Chair. I will be brief.

Fundamentally this is about good business, at least from Dell's perspective, and being a green business for us means we are going to be a successful business. So as we think about green technology we think about it strategically, and if we can get ahead of the curve we will be successful in the long term. That is why all of the efforts—when our chairman declared we will be the greenest technology company on the planet, it was sort of like President Kennedy saying we are going to get to the moon by a certain period of time. Now we have to work all of those partnerships, a lot of hard work to try to make it happen.

Among the things you asked about were disposal, and we have some very high standards around disposal. We audit our recyclers, for example. I mentioned in my testimony about banning the export of non-working equipment. The idea is to set the highest standards and push toward them.

You know, it is kind of like physical fitness. You reach a level and you don't stop, you have to push to the next level, one, because it is the right thing to do and it is good for you, and second because you know your competition is going to drive you to the next level in any event.

In terms of the State level question you asked, I would say that we have been working with Congressman Green, as well, on some of the recycling laws at the State level. I think what we need is some incentives to make recycling more efficient, and I think the Federal Government, in particular, could help by creating further incentives for recycling.

Ms. WATSON. I want to thank all of you. You know, these are emerging fields, and I liken it to developing the H1N1 virus. People are complaining that there is not enough available. Well, they don't know the process that has to be done in the laboratory to grow what is necessary to put it in the inoculation and all. And as I was listening to you this morning, and now afternoon, we are trying to support you in the private sector, as well as the public sector, as you start to discover and develop and compete with each other. We are trying to do that in health care. Oh, I should never have gone there.

But, anyway, we understand all the pieces and the parts that it takes to come up with good policy, so that is the reason why we started off with the two Members that were here with their bills. And we will then be amending their bills with some of the input we have today.

I just want to say to all of you thank you for what you are doing. We hope that we can consult with you as we make policy, and if there are any new pieces of information that you think will help us, don't fail to contact us.

With that, this hearing is adjourned. Thank you so much to all the witnesses.

[Whereupon, at 12:08 p.m., the subcommittee was adjourned.]

