



March 9, 2011

Federal Interagency Task Force on Electronics Stewardship
c/o OSWER Docket
Office of Resource Conservation and Recovery
U.S. Environmental Protection Agency, Mailcode: 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Attention Docket ID No. EPA-HQ-RCRA-2011-0185

Dear Members of the Federal Interagency Task Force on Electronics Stewardship:

We are writing on behalf of the Electronics TakeBack Coalition, a national coalition of environmental and consumer groups which promote green design and responsible recycling of electronics in the United States.

We were very pleased to see the November 15 Presidential Proclamation on electronic waste asking the federal agencies to work together to determine their potential for helping to solve the e-waste problem.

Our comments herein will answer the specific questions asked in the EPA's request for comments published in 76 FR 11243. However, a [November 8, 2010 letter](#) from CEQ Chairwoman Nancy Sutley to Administrators Lisa Jackson and Martha Johnson raised some other very important issues that are under discussion by the Task Force and upon which we are also providing comments first.

The letter instructed the Task Force to develop an action plan that included five elements. We wanted to begin by addressing the first and fifth of these elements as these are of greatest importance in our view and yet appear to be contradictory in part.

Element 1. An action plan directing Federal agencies to exercise all appropriate authorities to achieve the electronic stewardship goals, consistent with domestic and international law.

Element 5. A plan to reduce exports of used electronics to developing countries that lack capacity to properly manage them, and assess how Federal agencies can improve their ability to deter these exports. The plan will include a strategy to build capacity within and share best practices with developing countries, so they can improve their ability to safely handle used electronics, while promoting economic development

We are pleased to see that the CEQ is asking for a plan consistent with international laws. What has us very concerned, however, is that Element 5 actually conflicts with the stated goal in Element 1. Element 1 requires the plan to respect international laws. But Element 5 asks for "A plan to reduce exports of used electronics to developing countries that *lack capacity* to properly manage them."

Any program whereby we would send e-waste to developing nations that are Basel Parties (even if the facilities are considered by someone to be environmentally sound) would be a violation of these countries' importing laws. Therefore Element 5, as framed, is not a strategy that should be pursued by this Task Force.

Why respecting the international laws is so important

We agree that the action plan needs to outline programs and partnerships that are consistent with domestic and international laws. Currently, much of the e-waste collected by recyclers in the U.S. is sent abroad, rather than being processed domestically. It is critical that the Task Force considers the relevant international laws and the laws in importing countries that apply to this trade from the U.S. to those countries. The Task Force must make sure the U.S. electronics stewardship program does not violate these laws. However the language in Element 5 of the CEQ's November 8 letter suggests that the agencies may be of the opinion that it's fine to send e-waste to what someone might consider "good" facilities in developing countries when in fact international law makes no such qualification (e.g. ok for certain facilities). Thus the administration is already signaling that it may be willing to violate other country's laws in exporting federally owned electronic waste. This is a major disconnect and one which must be corrected and clarified as a matter of urgency.

What are the international laws?

It is useful to describe the relevant international laws, and how they apply to e-waste trade from the U.S. There are three primary sets of laws that are relevant here: The Basel Convention, the OECD waste shipment accord, and specific bi-lateral or regional waste trade agreements.

A. The Basel Convention is an international treaty regulating trade in hazardous wastes. There are now 175 Parties to the Convention which means that most of the destination and transit countries for e-waste shipments are Parties to the Basel Convention, although the U.S. is not a Party. The Basel Convention forbids countries who are Parties to the Convention from trading in hazardous wastes (as defined by the Convention) with non-Parties unless there is a recognized multilateral accord in place with similar obligations as the Basel Convention.¹ One such accord that the United States is Party to is the OECD waste shipment accord.

B. The OECD waste shipment accord. The OECD (Organisation for Economic Cooperation and Development) is an organization of the "developed" countries of the world. They help ensure that the environmental implications of development are taken into account as countries develop economically and socially. They have created various legally binding agreements, including a multi-lateral waste shipment accord which addresses trade in wastes for recycling within OECD countries, ([Decision C \(2001\) 107/FINAL](#)) This agreement allows OECD countries to establish slightly different rules (from Basel) for trading among themselves and allows also the U.S. to take part in the trade among OECD member states even while the U.S. is not a Party to the Basel Convention. Wastes listed on this agreement's "green list" may be traded without a formal notification to the recipient/transit county. But wastes on the "amber"(caution) list requires the exporting country to

¹ Basel Convention, Article 4, paragraph 5, and Article 11, <http://www.basel.int/text/documents.html>

notify the recipient/transit country, giving them the opportunity to refuse the trade, or to monitor it more closely.

C. Bi-lateral trade and regional agreements play a role as well. Currently there are a few bilateral agreements between the U.S. and other countries regarding waste trade. The ones with developing countries however, correctly only allow wastes to move into the U.S. and not the other direction. More important are several regional agreements such as the Waigani Treaty (South Pacific) and the Bamako Convention (Continent of Africa) which among other things would forbid wastes from being sent from the U.S. to non-OECD country Parties of those treaties.

How do these international laws impact e-waste exports from the U.S.?

First, it's important to recognize that there are 141 countries that are not in the OECD (and therefore not covered by the OECD waste shipment accord), but that are Basel Parties. These countries therefore cannot legally accept Basel wastes from the U.S. because we are not a Basel Party. Thus, even though the U.S. has exempted most e-waste from its definitions of "hazardous waste," these recipient countries are legally bound to consider most electronic wastes as hazardous wastes ("Basel wastes") because the treaty they are party to does. For these countries, import of Basel listed wastes from the U.S. is illegal and is a criminal act. While some contend that it's acceptable to send these Basel wastes to facilities in developing nations with "environmentally sound management," this doesn't change the fact that any export from the U.S. to any of these 142 nations (including China, India, and many other e-waste destinations) will have violated these countries' importing laws. This trade is considered criminal trafficking in these countries. INTERPOL (the international criminal police organization) has a global e-waste crime group which has been working to prevent and prosecute trade that violates these laws.

The Task Force needs to make sure that we do not conduct exports which we know will violate other countries' laws and be considered illegal traffic in any part of the world. **An electronics stewardship program should never be based on a fundamentally illegal trade and should at the outset recognize, respect and daylight for all stakeholders, these legal restraints.**

Why the federal agencies should set the bar at stopping, not just reducing hazardous exports of e-waste to developing countries.

A "leadership" position by the federal agencies would be to join the rest of the world and stop sending any toxic e-waste, including untested or non-working used electronic products, to developing nations, regardless of the level of technology used there. There are significant reasons why exports to developing countries from the United States must be prohibited.

It's illegal. First and foremost, as explained above, it is illegal for most of developing countries to accept hazardous waste from the U.S., Therefore, regardless of the perceived 'capacity to properly manage' electronics, this Task Force should not make recommendations that will result in importing countries (non-OECD, non-EU countries) violating their obligations under the Basel Convention not to trade with non-Parties.

Global obligation to manage toxics in country that generated them. Even if the U.S. were to become a Party to the Basel Convention, such exports to developing countries would be counter to the Convention and global community policy. A primary obligation of the Basel Convention is to strive to reduce “transboundary movement” of hazardous waste to a minimum– that’s a core tenet of the Basel treaty.² Many countries in the world have accordingly already sought to bar the exports of greatest concern -- all exports from developed to developing countries regardless of the level of capacity in those countries. They did this by adopting the Basel Ban Amendment to the Basel Convention, an amendment that says that developed nations can’t send their toxic waste to developing nations for any reason. Thirty three of the 41 developed nations of the world to which the Ban applies, (including all of the European Union) have already implemented this into law.

It’s an environmental justice issue because it means we are externalizing the real costs onto the developing nations and doing so disproportionately.

When we export hazardous wastes from a developed nation to a weaker economy, this is a form of **environmental injustice**. It allows economic status to justify a disproportionate burdening of risks to those in developing countries. When we export to weaker economies, we are **externalizing the real costs** onto the developing nation, because cheap labor invariably comes with a context of weak infrastructure and safety nets for maintaining and supporting a hazardous waste facility and all of its downstream residual management. The export of hazardous waste to developing countries has been identified by the international community as being the most egregious form of the abuses of environmental justice and cost externalization.

“Environmentally sound management” in developing nations is not realistic when looked at holistically. The strategy of sending hazardous wastes to a facility with “environmentally sound management” ignores the reality that there are a whole host of elements that need to be in place surrounding a given facility to completely protect workers and the nearby communities from the hazards of processing e-waste. These include strong environmental and worker health and safety laws, supported by strong enforcement and willingness to hold industry accountable, the rights of workers to organize to protect their rights (right of association), whistleblower protections, anti-corruption laws, as well as effective systems for managing the residual toxics (that must go into a hazardous waste landfill). These measures simply don’t adequately exist in developing nations as decent wages and safety nets are both a function of societal wealth – they cannot be delinked.

It’s true that other high-risk industry costs (including manufacturing) are also externalized via globalization. But the export of hazardous waste is particularly problematic because if you accounted for all of the externalized costs, short-term and long-term, such exports will almost always far outweigh any economic benefits. For this reason the practice of exporting toxic waste has been condemned by the international community. The U.S. should do likewise starting with its policy on export of electronic waste, particularly of the e-waste generated by the Federal Government.

² Basel Convention, Article 4, paragraph 2 (b) and (d).

Exporting e-waste means exporting jobs and stifling green design innovation upstream. As long as we are exporting e-waste, we are exporting recycling jobs with that e-waste – jobs that could be performed here in the U.S. Many recyclers say they are operating under capacity, and would ramp up (and hire more people) if the waste stream was sent to them instead of being exported. But exporting e-waste also stifles business innovation - it creates inefficiencies and denies opportunities upstream to address waste at the source through green design and clean production methods. We should be seeing much more investment in new technologies for processing e-waste upstream. But as long as cheap and dirty dumping is allowed, there is less economic incentive to solve the problem more efficiently upstream. It is always more efficient to prevent problems at the source than to mitigate them downstream. This practice of exporting therefore takes away jobs and prevents the U.S. from being a global leader in green technologies. It's far better to benefit from trade in green technologies rather than toxic waste.

We do support building capacity in developing countries for managing their own electronic waste, but this concept must be de-linked with handling exports from the U.S. That is, no e-waste management in developing countries can be predicated or in any way be complicit with receiving imported U.S. waste but must instead be designed to manage domestic e-waste generation. Further, until the U.S. is able to halt its trafficking in electronic waste, which is criminal trafficking according to the laws of other countries once it has crossed our borders, it is inappropriate for the U.S. to become involved in building capacity in developing countries for waste management. First a significant effort must be made to stem the tide of illegal exportation that is the key source of the problem with respect to e-waste in developing countries to be seen as credible in solving a problem. Until that happens, all efforts to help developing countries 'build capacity' will simply appear to the world and the environmental community as the U.S. continuing its policy of exporting hazardous waste, as defined internationally, to developing countries, in violation of their laws.

Finally, if we are talking realistically about reducing or ending exports of toxic e-waste to developing countries, we must acknowledge that without laws in place making such exports illegal it is not likely that exports will be reduced in any meaningful way, due to the profitability of cost externalization via such export.

Questions from the Request for Comment

1. What actions should the Federal Government take to further encourage the design, manufacture, procurement, and use of greener electronics?

We are very pleased to see that the CEQ has included the issue of long-term design of electronics on this list. We believe that there has been too little attention from the electronics industry to some significant long-term design issues, particularly:

- Designing out the toxics, and finding safer chemicals for the production of and use in their products,
- Making products with materials that can be recycled indefinitely and,

- Making products that last longer, are more durable and upgradeable, and provide a better use of resources in the whole product lifecycle. This should include exploring economic incentives for product longevity.

Federal agencies have a tremendous amount of purchasing power with the electronics companies, and could play a very significant role in pushing this industry towards some badly needed but very significant design changes to promote sustainability.

A. Go beyond EPEAT for purchases now

Currently, the only EPEAT standards are for computers and monitors, and those have been in place for five years, and no longer really represent “leadership” in that sector. New standards for televisions and imaging devices are being developed now. We have participated in these current standards setting processes, and we are very disappointed that the current drafts of these standards do not reward true leadership in design in most cases, but are merely a reflection of what’s already fairly common in the marketplace. So for federal purchases, agencies should be asking for more than just EPEAT registered products if they are serious about promoting sustainability.

But that isn’t hard to do. Purchasers simply need to ask for some additional criteria when crafting RFPs. We have developed a list of purchasing criteria that go beyond what EPEAT currently addresses. Purchasers should look for products registered to the Bronze level or above, and then ask additional questions. [Click here to see some sample RFP questions](#) that go Beyond EPEAT.

B. Push the industry to providing some truly green options in the future by stating long-range sustainability goals for future products

Using any purchasing guidelines or criteria like EPEAT allows purchasers to select among the “greenest” of available products. But the real problem is that we don’t actually have a lot of green options to choose from at this point. In fact, these products are far from green. What we do have are products made with thousands of chemicals (largely untested), including many toxic chemicals which pose significant hazards along the product life cycle. Even though manufacturing new electronics is hugely resource intensive, products have shrinking lifespans, designed to be obsolete. They either don’t last or new technologies lead to newer versions, and old products can rarely be upgraded. And despite company claims that their products are fully recyclable, many of the materials used are not wanted as recycled commodities, or can only be recycled a limited number of times, after which they go to the landfill or incinerator.

Because purchasing criteria like EPEAT are limited to products already on the market, they can’t serve as a real catalyst for serious design change. The industry simply has not made significant advances in most areas of sustainability, other than product energy consumption and adhering to the ROHS directive on a handful of chemicals. One of the primary reasons (they tell us) is that they don’t hear demands from their customers for greener products.

Of course, the Federal Government is a giant customer of some of these companies. Therefore, the federal agencies have great potential for pushing this industry towards designing more sustainable products and giving us better “green” options. We think the best thing the agencies could do would be to articulate specific sustainability goals for

future products – goals that companies don't meet now, but could meet in future years – giving them time to incorporate these needs into product design.

We encourage the GSA and EPA to develop a “Purchaser’s Vision for Sustainable Electronics Design,” with which the Agency would notify its electronics suppliers that the Agency wants to be able to purchase from companies that are making significant efforts to design the toxics out of their products, to make products more recyclable, and longer lasting. This document would not be an RFP, but a vision statement, indicating what it will be putting in future RFP’s as measurements of movement toward sustainable design. This needs to be a BIG vision for where this industry needs to go, that would take many years to fully implement.

Here is what we suggest for the contents of GSA’s “Purchaser’s Vision for Sustainable Electronics Design.”

GSA’s Purchaser’s Vision for Sustainable Electronics Design

The GSA supports the goals of green and sustainable design in electronics. As a large purchaser of computers and other electronic devices, the GSA would prefer to use federal taxpayer dollars to purchase products which are less toxic, more recyclable, and made to last longer. In order to encourage these advances in sustainable design, the GSA’s future RFP’s for electronics purchases will seek to identify suppliers who can meet the following incremental criteria by the years specified, and who have clear plans for continuous improvement towards these goals.

Future GSA requirements for designing out the toxics

1. Know and disclose product chemistry.

Disclosure of all chemicals in the product. In 2 years, the GSA will only purchase products for which manufacturers provide full disclosure of the product chemicals. Disclosure should include the presence of nanomaterials.

Why: Many manufacturers don’t actually know all of the chemicals in their own products. We believe that manufacturers need to find out all the chemicals in their products in order to begin to understand how to design out the toxics.

2. Know and disclose whether each chemical in product has been tested.

In 4 years, the GSA will require disclosure of all chemicals in the product, as well as disclosure of whether each chemical has been tested and evaluated for potential hazards (at all phases of the lifecycle) compared to a designated comprehensive list of hazard traits. [Note: We suggest using the list developed by the California Office of Environmental Health Hazard Assessment.³]

Why: Most chemicals are not adequately tested to identify hazards before they are used in products. So the second step towards designing out the toxics is for companies to take their list of chemicals (above) and determine (and disclose) whether they have been tested and evaluated against a designated list of hazard traits. We believe this disclosure will reveal that most chemicals are not adequately tested.

3. Know and disclose chemicals, and require adequate testing for all chemicals in products.

³ http://oehha.ca.gov/multimedia/green/pdf/GC_packet121710.pdf

RFP's (in 10 or more years) will seek products which contain only chemicals that have been adequately tested and evaluated against designated list of hazard traits. This will demonstrate that the manufacturer has identified the hazardous chemicals that need to be targeted for safer alternatives.

Why: The third step towards designing out the toxics is to make sure that all the chemicals are actually tested. This requirement will encourage companies to make sure the testing happens. Currently most companies rely on minimizing use of chemicals on existing lists of chemicals "of high concern." But that approach simply encourages companies to move to chemicals that are untested. In the long run, we need to see companies fully testing materials. This is an ambitious goal, that will need to be phased in over time.

4. Replace hazardous chemicals with safer alternatives.

Products may not contain chemicals that are found to be hazardous in the testing. This will be a long range goal that will need to be implemented in phases.

Why: Once chemicals are actually tested and the hazardous ones are identified, companies must show that they are replacing those deemed hazardous with safer alternatives. This step can begin now with chemicals already known to be hazardous. This work will need to be phased in over time.

Future GSA requirements to promote recyclability

1. Disclosure of true recyclability.

RFP's in 2 years will ask for a listing of each product's materials inventory, and analysis of each material stream and its recyclability score on a spectrum running between no recyclability (solid waste) and infinite recyclability (the material can be recycled over and over, producing only infinitely recyclable stream or nutritive waste). Inventory should include breakdown of "critical minerals." This disclosure will not provide confidential business information because it is not asking for exact formulations.

Why: Companies often state that their products are "fully recyclable." But that might mean that large volumes of materials – like plastics – can only be recycled once or twice, and then they become solid waste. This is not true recyclability. Instead, we want companies to tell us which materials used can be recycled into new products indefinitely. A disclosure of the product's materials inventory would show whether the materials used COULD be recycled into new electronics products (even if that has not yet occurred).

2. Disclosure of recycled content used in product. RFP's in 5 years will ask for a materials inventory that shows the percent of each material that is derived from recycled content – indicating if it is from content that's infinitely recyclable, or if has limited recyclability.

3. Specified level of materials with high recyclability scores. The GSA will seek products with specific levels of infinite recyclability (or nutritive wastes) content. This number will increase over time.

Future GSA requirements to promote product longevity and durability

The GSA will be seeking products that can demonstrate superior performance in the area of product longevity, upgradeability and reparability. Specific examples could include:

- Modular construction and easy replacement of components and assemblies (including motherboard) to keep up with software changes

- Increased use of consistent parts in multiple products
- Designed for remanufacturing
- Disclosure of which components are upgradeable
- Encouraging easy repair/refurbishment by developing methods for easily testing and diagnosing problems, showing a refurbisher what's working and what's not.
- Disclosure of failure rates and identifying specific parts or components responsible for failures.

Longer warranties.

Products with standard warranty periods of a minimum of five years for computers, three years for other products.

2. What are the challenges to designing and manufacturing products in which rare and valuable materials are 100% recyclable, and are recycled at end of product life? What can the Federal Government do to help address those challenges?

Critical minerals. Currently many critical metals (including rare earth metals) and potentially recyclable materials are not being recovered in the normal e-waste recycling processes available in the U.S. In the case of rare earth metals, China currently has a virtual monopoly over the supply of these very critical metals, which creates a vulnerable situation for the U.S. and the rest of the world, should that source be cut off for any reason. The problem is that we need better technologies for recovering these rare earth minerals – as well as other “critical minerals”, often used in very small quantities in each product, in an economical way here in the US. (One U.S. recycler just announced a partnership using a new technology to recover rare earth minerals from the phosphors used inside Cathode Ray Tubes).

The U.S. needs to invest in research and development for finding ways to recycle fractions that currently are not readily recyclable. These streams include LEDs, Solar Cells, Liquid Crystals, Lithium Ion batteries as well as rare earth and critical metals.

3. What are best practices for used electronics management that the Federal Government should adopt? What examples of best management practices of used electronics have been implemented in your community, organization or institution?

Develop federal agency protocol for managing used electronics

In our view, the most important result of the task force’s work would be the development of a policy and protocol for responsible management of used electronics that are owned by the Federal Government. This policy and protocol should promote the following principles for the highest level of responsibility for managing used products and e-waste. Then vendors used should be those who are certified as meeting these protocols (such as e-Stewards):

Protocol	Why
<p>No export of toxic e-waste to developing countries No toxic e-waste (including non-</p>	<p>We have covered this extensively above. In short:</p> <ol style="list-style-type: none"> 1. The exports are illegal under international law.

Protocol	Why
<p>working or untested products or parts, or materials derived from electronics) should be exported to developing countries for disposal, recycling, or reuse.</p> <p>All toxic materials derived from federal e-waste must be kept in the U.S. or other developed countries, throughout final disposition.</p> <p>This doesn't mean no exports at all – non-hazardous exports would certainly be allowed. And all exports to developed nations would be allowed.</p>	<p>2. Exports violate the U.S. principle of environmental justice as they disproportionately burden poorer populations.</p> <p>3. Exports should not externalize costs which would be more efficiently and ethically internalized upstream.</p> <p>4. Exports should not outsource jobs that could be generated in the U.S.</p> <p>5. Exports diffuse and lose for all time critical metals resources due to the lack of collection and management infrastructure in developing countries.</p>
<p>Export of working products for reuse should be encouraged as long as:</p> <ul style="list-style-type: none"> - the equipment/parts are tested and fully functional prior to export - the data is wiped prior to export - such exports are formally accepted by the importing country for viable reuse - there is a financial and tracking mechanism to ensure they are collected and sustainably managed at end-of-life. <p>U.S. Agency electronics should be triaged and prepared for reuse prior to leaving the U.S.</p>	<p>Re-use, when done diligently and with care, is always better for the environment than recycling. However, much of the exporting that currently occurs now is done in the name of reuse, even though the products or parts won't actually be reused. Or even if they are reused, the repair operations result in discarding hazardous parts in the importing country (such as bad batteries, mercury lamps, circuit boards, etc). Even when the equipment is fully functional prior to export, sometimes there is no viable reuse market and the equipment gets destroyed (e.g. the case of imported CRTs in Ghana). Further, often the equipment is so old or so poorly repaired that it dies very quickly in receiving countries. Finally, exports for charitable reuse of functional products must provide the funding for a viable means of ensuring collection and environmentally sound management at end of life. (The IBLF Ethiopian Project - where Lisa Jackson just visited - is an excellent model to follow in this regard).</p>
<p>No prison labor Toxic e-waste should not be sent to companies or agencies using prison labor for processing.</p>	<p>Federal agencies should stop using UNICOR or other prison processing for used electronics. There have been enormous health and safety problems with this operation (for prisoners and prison staff), most recently documented by the Inspector General. Instead, the Task Force should recommend to the Department of Justice that UNICOR close down its hazardous e-waste recycling business for the following reasons:</p>

Protocol	Why
	<ul style="list-style-type: none"> ▪ Prisoners lack the rights and privileges allowing them to question and redress their working conditions (including unannounced safety inspections) ▪ There are serious concerns about convicted criminals handling hard drives with sensitive private data ▪ It uses taxpayer money to subsidize the prison operation that then underbids and undercuts the recycling industry ▪ This “cheap” but low-road solution works at cross purposes to green design, upstream solutions and the development of a robust national infrastructure for managing electronic waste.
<p>No disposal of toxic e-waste in solid waste landfills or incinerators</p>	<p>Municipal landfills and incinerators are not designed for toxic waste. The small generator and household exemptions add up to large quantities of e-waste in the trash. Once Congress has acted to stop the export of toxic e-waste, the EPA should revisit these exemptions and eliminate them.</p>
<p>Due diligence and verification To assure that the Federal Government protocols are being followed, vendors selected must be able to control and have independent verification that they and their downstream vendors are adhering to the same requirements.</p>	<p>There can be many vendors involved in handling used electronic products before the various materials or parts reach their “final disposition.” So you need to have a system to vet the recycler that you hand over used products to, as well as all the “downstream vendors” that the recycler uses. Truly responsible recyclers will do that vetting of all their downstream vendors. But still, the Agencies should look for certification programs that also provide independent verification that the downstream vendors are adhering to the same requirements that the first tier recycler does.</p> <p>Use of vendors certified to the e-Stewards Standard or any other standards that uphold these requirements is preferred.</p>
<p>No auctions Used products or parts must not be auctioned.</p>	<p>Auctioning as currently practiced, gives no oversight to or control over eventual disposition of the products, and can easily result in irresponsible management of federal e-waste.</p>
<p>Transparency All federal agencies must provide to the public full transparency of their electronics disposition including</p>	<p>This is an important element of leading by example. Transparency demonstrates that the agencies are committed to the principles here and stand by their activities and their vendors.</p>

Protocol	Why
downstream vendors and final processors.	
<p>Tracking donated equipment. Federal agencies making donations always need to have a plan and funding mechanism in place for ultimately recycling those items responsibly, once they are no longer useful to the schools and other recipients. The plan must also be able to track the donations so they can be accounted for later.</p>	<p>Federal agencies donate a lot of used equipment to schools. It's good to prolong the life of the products, but schools (with limited budgets) are rarely able to afford responsible e-waste recycling. Like far too many government agencies, they simply seek the lowest cost vendors available, and don't question why that vendor is the lowest cost.</p>
<p>Tracking all federal e-waste. Federal agencies should be tracking and reporting on total volumes of federal electronic products that are recycled or reused annually, accounting for units and weights. Existing bar codes with unique serial numbers on each whole device can be used for this purpose.</p>	<p>We suspect the volumes here are very large. We don't believe there is any data currently collected like this. Any program to ensure responsible management will need to track all materials to final disposition.</p>

4. How can the amount of electronics that are recycled in the United States be increased, while ensuring that they are managed safely and properly?

First, we need close the door on the e-waste that is shipped off to developing nations.

Second, we should make it illegal to put e-waste in landfills and incinerators. (This should happen only after we have closed the door on export, or this will simply fuel the export stream).

Third, we need the manufacturers and retailers to ramp up their takeback and recycling programs. One hurdle is providing convenient collection. We've seen that if it's convenient for consumers to bring back products (and the marketing lets them know about it) they will recycle their used electronics. While some of the retailers like Best Buy and Staples now act as e-waste collection points in partnership with some manufacturers, others do not. Yet this is a logical place to bring back your old products – to the place where you bought them. While many manufacturer programs offer mail-back options, these are not really viable takeback programs, as almost no one will go to the bother of mailing back their old products. And it's not even an option for collecting televisions, which are too big and heavy. Some countries have used national post-offices and this could be explored were the costs not borne by taxpayers.

Fourth, we need the manufacturers to design the products with economic recyclability in mind – selecting materials for which there is a recycling market. If there is a market for

something as a recycled commodity, then collectors will make the effort to collect the product. Most manufacturers design with product functionality in mind, but they are not considering end of life impacts. That's why one of the things we want the GSA to include in their "Purchaser's Vision Statement" is a set of metrics that addresses increased use of recyclable materials.

5. What additional infrastructure is needed, and what can be done to encourage its development, in the United States to responsibly reuse and recycle used electronics from governments, businesses and private consumers?

Many recyclers are currently operating far below their capacity due in large part to the legality of dumping e-waste offshore and in municipal landfills and incinerators. We have seen the recycling industry quickly "ramp up" their operations in states that pass takeback laws, to meet the increased demand. Some expand their existing operations, others open new facilities in these states. Electronics recycling has been demonstrated to be the kind of industry that can expand very rapidly. What recyclers need to see before they make significant capital investments however is a guaranteed supply – a steady stream of product inflows. So the industry will respond rapidly if the demand is there and is not being dumped elsewhere at home or abroad.

But what we do lack is the domestic infrastructure for processing certain hazardous materials derived from e-waste, like CRT glass and circuit boards because traditional outlets for such recycling are disappearing from the U.S. and in some cases worldwide. We need to research and develop acceptable recycling and disposal solutions to leaded CRT glass, the frit line from CRTs (79% lead), and the CRT processing residues, such as CRT fines, phosphors, etc. The glass-to-glass recycling industry is collapsing around the world, and the U.S. needs to provide some viable solutions for U.S. recyclers. In addition, there is industry research occurring for processing circuit boards without thermal processes, but it would greatly benefit from support from Task Force efforts. What we need is more R&D into developing alternate, safer technologies for processing these materials, which would create domestic jobs. We need to develop the capacity to manage the downstream of e-waste here at home, without the need to export.

6. What innovations in electronic design exist that would enable electronics to be tracked until disposal?

Forms of shared mass balance accounting, combined with RFID radio tagging are likely to be the most effective ways.

7. What information would be most helpful to you when deciding how to dispose of used electronics?

We want to know that the collector will give the products to a recycler who won't export them, won't send them to prison labor, or municipal solid waste systems, won't poison workers or the environment, will cleanse all the data, and we want the recycler to make sure that everyone else in the chain of custody will meet these same requirements. When deciding whether to use a manufacturer takeback or asset recovery program, we also want to know that manufacturers are managing ALL of their products (not just a few of their streams) according to a high standard, and that all of their recycling/refurbishment vendors are independent certified as conforming to the high standard. This applies to streams of

electronics coming back from trade-ins, exchanges, off-lease, warranty returns, takeback schemes, and regulatory programs.

8. What projects, practices or efforts, are you aware of that addresses the problem of used electronics from the United States being exported and being handled in a way that causes harm to health and the environment?

The most important practice is to not allow these products to be exported in the first place, unless they are tested and found to be fully functional. The effort to introduce legislation to ban exportation is the most important step.

The second most important step is certification. The only certification that prohibits such export and is consistent therefore with international law is the e-Stewards Certification.

9. How could public-private partnerships help resolve any or all of the questions above?

We are seeing many more manufacturers and retailers launch voluntary takeback programs. This is commendable, but we would like to see some common elements with each of these programs. It would be helpful if the task force can encourage these voluntary efforts to include the following:

1. Certified vendors. Takeback programs should use only recycling and reuse vendors and downstream processors that have been independently certified by accredited certification bodies to strong electronics recycling standards (such as e-Stewards) who will not export toxic e-waste to developing nations, or to prison recyclers, and who will track and restrict their streams to final disposition.

2. Voluntary programs should be transparent, publicly disclosing:

- All vendors used, and what recycling standard they are certified to
- Volumes collected and recycled by each manufacturing company
- Breakdown of volumes for 100% of their programs: business streams (lease returns, asset recovery, product exchanges and trade-ins) and consumer takeback. If companies are not required to break these streams down into these categories, they will lump in their business returns (like lease returns) in with their consumer takeback volumes, obscuring the true voluntary takeback efforts they are making.
- Efforts that go beyond simply complying with takeback laws. Reporting should be by state, and by product category, and should distinguish volumes recycled as the result of laws compared to volumes recycled voluntarily, i.e. beyond legal compliance.

3. Performance goals. There are 23 states with some form of producer takeback law on the books. We now are beginning to get enough data from these state programs to see trends. One thing is crystal clear: **most of the manufacturers will make little to no effort to take back their products if the law doesn't require it.** The states with laws that have strong drivers (like meaningful collection goals or convenience requirements) are seeing huge quantities of e-waste being recycled, and wildly successful programs. States with laws

lacking these performance measures see almost ALL of the companies underperforming, with the exception of Dell and Samsung. That said, we feel strongly that it is not a good idea to establish a national takeback law at this time, as the state programs are providing a good testing ground of some different concepts on how to legislate takeback, and we believe a national law would undercut the good work being done in the States.

Honestly, we are skeptical that a voluntary national effort by this industry will make a significant dent in this problem, when up until now most of their voluntary programs have been lackluster at best. But if the Administration is serious about expecting a voluntary national effort to address the problem, then **any announcement of a voluntary effort MUST include clear and significant performance goals and expectations** for each of the companies. And there must be transparent and frequent reporting of performance by each company against those goals.

Additional recommendations for steps the Task Force should include in its plan:

Expand Executive Order to apply environmental justice concept internationally.

In 1994, President Bill Clinton issued executive order 12898 on Environmental Justice. This order unfortunately creates a serious double standard as it confines the actions on Environmental Justice strategy and policy to the territories of the United States. To appropriately apply Environmental Justice principles they must be applied to all populations globally and should not cease application at our borders.

Add Harmonized Tariff Codes. The EPA should create new, more detailed harmonized tariff codes to cover trade in e-waste fractions of various types and whether or not the equipment has been tested for functionality, prepared for recycling etc. This will allow them to be tracked better, to gather data and to require exporters to be transparent about what they are exporting or face fraud charges.

Worker health and safety. There has been very little attention to worker health and safety in the e-waste industry in the U.S. Even the most responsible employers in this industry have little guidance for how they can best protect workers – particularly in operations with mechanical shredders, which generate significant amounts of possibly harmful dust. While some recyclers monitor their workers for some heavy metals like lead, they are not generally monitoring (and have no guidance for monitoring) for exposures from all the potential toxics their workers handle, including CRT phosphors, mercury, beryllium and the various halogenated compounds and other additives found in plastics. Likewise there are no limits or information about exposure to and hazards from nanoparticles in shredders or in thermal processing. We recommend the Agencies:

- a. Conduct a NIOSH study of recycling workers, to identify the workplace hazards and make recommendations for monitoring or revisions in appropriate safety levels (PELs). This should include looking at specific concerns about nanoparticles, as well as looking at possible take home exposures from toxics on clothing.
- b. OSHA should become more actively involved in monitoring the recycling industry, particularly in the “high risk” sites with shredding, CRT crushing, manually removing mercury lamps, etc.

- c. Enact regulations that prohibit shredding of batteries and any mercury containing lamp or other device. We know that both mercury lamps and batteries end up in shredders, because they are sometimes difficult to remove.

Thank you for considering our comments. Please don't hesitate to contact us if you have any questions.

Sincerely,



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