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Government Management, Organization, and Procurement

of the Oversight and Government Reform Committee

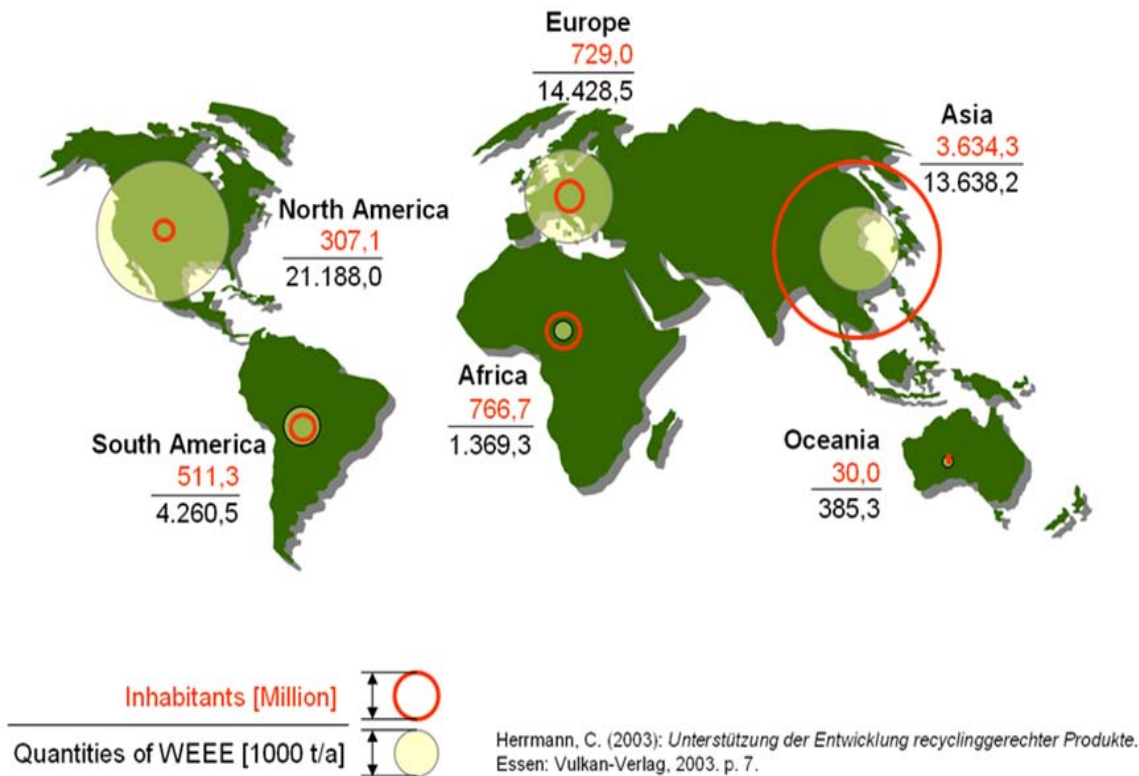
of the House of Representatives

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 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) programme 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

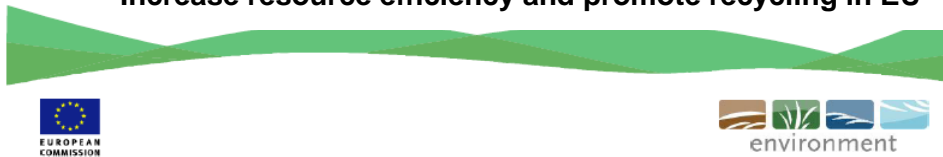
since recognized that these programs make their countries and companies much more energy efficient (and therefore more competitive), provide energy and natural resource security, and create hundreds of thousands of jobs. Below is example of the resource security and sustainability program that is being 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.