



E-waste: An Overview

What is e-waste?

Electronic waste, or e-waste for short, refers to discarded computers, televisions, cell phones, printers, PDAs and the thousands of other electronic devices commonly used in offices, homes and on-the-go. A more technical definition would refer to obsolete or discarded products that have their primary functions provided by electronic circuitry and components.

Why is e-waste a problem?

Electronic products are complicated assemblies containing dozens of compounds that are known to have adverse impacts on human health and the environment, including lead, mercury, arsenic, cadmium, polyvinyl chloride, and several classes of brominated flame retardants. Improperly disposing of these products in landfills or incinerators at the end of their useful life creates serious health and environmental threats.

How big is the e-waste problem?

The National Safety Council estimates that the current number of obsolete computers in the U.S. is between 315 million and 680 million - representing a minimum of 1.2 *billion pounds* of lead. By 2006, some 163,000 computers and televisions will become obsolete in the U.S. *every day*. Wisconsin's DNR estimates there were over 350,000 obsolete TVs in 2002.

Why should we treat e-waste any differently?

There are three important aspects to this question. First, electronics are far more complicated to manage than common curbside recyclables, like paper and glass.



Second, handling and recycling discarded electronics is considerably more costly than managing other recyclables. Currently, costs range from \$10 - \$60 per unit to recycle a computer system. Based on conservative, best-case estimates, the minimum costs for recycling and proper disposal of e-waste in the U.S. will reach some \$10.8 *billion* dollars between 2006 and 2015 - an unthinkable additional financial burden on taxpayers and local governments.

Third, historic means of financing some recycling programs, like advance recycling fees ("ARFs") or "advance disposal fees" ("ADFs"), are not adequate by themselves to solve the e-waste problems. ARFs do not create sufficiently strong market incentives to improve product design. ARFs do not reward innovative and leadership companies. ARFs do not adequately shift financial burden off of taxpayers.

How can we protect the environment and human health while saving taxpayer dollars?

The solution is called *producer responsibility*, or producer take-back. It shifts financial responsibility for managing products at the end of their useful life off of taxpayers and on to the brand owners and producers, creating a powerful market incentive to reduce the use of toxic and hazardous materials and increase recyclability and/or durability. Producer responsibility for e-waste is the law in Japan and European countries, resulting in improved product design and new business opportunities for producers and the private sector. At present, U.S. consumers are receiving second-class treatment from global companies that offer take-back in other countries but do not do so here.

Will producer responsibility be bad for business?

On the contrary. At full scale, a producer take-back system for consumer electronics would require thousands of jobs and dozens if not hundreds of local firms. Every 10,000 tons of electronic waste destined for recycling supports 290 recycling jobs. Moreover, several electronics and computer companies, like Xerox, HP and Dell, are recognizing the business opportunities inherent in producer take-back systems. Producer responsibility capitalizes on the business skills of industry and gives manufacturers the flexibility to design and implement systems that best suit their business models, either individually or in consortia with other firms.

Won't this hurt consumers?

It is necessary to create a system to recycle hazardous electronic products, and there are two ways to pay for this: 1. create or expand taxpayer-funded government programs; or 2. include the costs in the price of new products. It is most fair to have the product price reflect the true cost. Producers will pass their costs on to consumers, but those costs are a small fraction of the purchase price and will drop over time as economies of scale take hold. It is highly unlikely that sales will drop, given the dominance of electronic products in our daily lives and rapid product turn-over.