



Highlights of [GAO-05-937T](#), a testimony before the Subcommittee on Superfund and Waste Management, Committee on Environment and Public Works, United States Senate

Why GAO Did This Study

Advances in technology have led to rapidly increasing sales of new electronic devices, particularly televisions, computers, and computer monitors. With this increase comes the dilemma of how to manage these products when they come to the end of their useful lives. Concerns have been increasingly expressed that while millions of existing computers become obsolete each year, only a fraction of them are being recycled.

Some have alleged that the disposal of used electronics causes a number of environmental problems. They note, for example, that toxic substances such as lead can leach from used electronics. They have also noted that computers and other electronic equipment contain precious metals that require substantial amounts of energy and land to extract. These metals, they say, can often be extracted with less environmental impact from used electronics than from the environment.

In this testimony, GAO summarizes existing information on the amounts of, and problems associated with, used electronics. GAO also examines the factors affecting the nation's ability to recycle and reuse electronics when such products have reached the end of their useful lives.

This testimony discusses preliminary results of GAO's work. GAO will report in full at a later date.

www.gao.gov/cgi-bin/getrpt?GAO-05-937T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact John Stephenson at (202) 512-3841 or Stephensonj@gao.gov.

ELECTRONIC WASTE

Observations on the Role of the Federal Government in Encouraging Recycling and Reuse

What GAO Found

Available estimates suggest that the amount of used electronics is large and growing, and that if improperly managed can harm the environment and human health. While data and research are limited, some data suggest that over 100 million computers, monitors, and televisions become obsolete each year, and that this amount is growing. These obsolete products are either recycled, reused, disposed of in landfills, or stored by users in places such as basements, garages, and company warehouses. Available data suggest that most used electronics are probably stored. The units still in storage have the potential to be recycled and reused, or disposed in landfills; or, they may be exported for recycling or reuse overseas. If disposed of in landfills, valuable resources, such as copper, gold, and aluminum, are lost for future use. Additionally, standard regulatory tests show that some toxic substances with known adverse health effects, such as lead, have the potential to leach from discarded electronics into landfills. Although one study suggests that this leaching does not occur in modern U.S. landfills, it appears that many used electronics end up in countries without either modern landfills or with considerably less protective environmental regulations.

Economic factors, such as cost, inhibit the recycling and reuse of used electronics. Consumers generally have to pay fees and drop off their used electronics at often inconvenient locations to have their used electronics recycled or refurbished for reuse. Consumers in Snohomish County, Washington, for instance, may have to travel more than an hour to the nearest drop-off location, which then charges between \$10 and \$27 per unit, depending on the type and size of the product. Recyclers and refurbishers charge these fees because costs associated with their processes outweigh the revenue received from recycled commodities or refurbished units. In addition to the challenges posed by these economic factors, federal regulatory requirements provide little incentive for environmentally preferable management of used electronics. The governing statute, the Resource Conservation and Recovery Act, regulates the disposal practices of large generators of hazardous waste (including electronic waste) but exempts individuals and households from these requirements.

In the absence of a national framework for dealing with the problem, a patchwork of potentially conflicting state requirements appears to be emerging. Manufacturers in one state, for instance, may have an advance recovery fee placed on their products, but the same manufacturers may have to take back their products and pay for recycling in another. This patchwork may be placing a substantial burden on recyclers, refurbishers, and other stakeholders. As GAO concludes its work, it will examine the implications of these findings for the ongoing efforts among the states to deal with this growing problem, for the various legislative solutions that have been proposed to create a uniform national approach, and for options the federal government can pursue to encourage recycling and reuse of electronics.