



Highlights of [GAO-06-47](#), a report to congressional requesters

Why GAO Did This Study

Advances in technology have led to rapidly increasing sales of new electronic devices. With this increase comes the dilemma of managing these products at the end of their useful lives. Some research suggests that the disposal of used electronics could cause a number of environmental problems. Research also suggests that such problems are often exacerbated by the export of used electronics to countries without protective environmental regulations.

Given that millions of used electronics become obsolete each year with only a fraction of them being recycled, GAO was asked to (1) summarize information on the volumes of, and problems associated with, used electronics; (2) examine the factors affecting their recycling and reuse; and (3) examine federal efforts to encourage recycling and reuse of these products.

What GAO Recommends

GAO recommends that EPA strengthen the federal role in encouraging recycling and reuse of used electronics by (1) proposing options to the Congress for overcoming the factors deterring recycling and reuse, (2) promoting wider federal agency participation in promising EPA programs, and (3) taking steps to ensure safe handling of these products if exported. EPA agreed with most of GAO's findings, but disagreed with the first and second recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-06-47.

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

Strengthening the Role of the Federal Government in Encouraging Recycling and Reuse

What GAO Found

Available estimates suggest that over 100 million computers, monitors, and televisions become obsolete each year, and this number is growing. If improperly managed, these used electronics can harm the environment and human health. Available data suggest that most used electronics are probably stored in garages, attics, or warehouses, with the potential to be recycled, reused, or disposed of in landfills, either in the United States or overseas. If disposed of in landfills, valuable resources, such as copper, gold, and aluminum, are lost for future use. Additionally, some research shows that toxic substances with known adverse health effects, such as lead, have the potential to leach from discarded electronics in landfills. Although one study suggests that this leaching does not occur in modern U.S. landfills, it appears that many used electronics are exported to countries without modern landfills or with regulations less protective of human health and the environment.

Economic factors 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 them recycled or refurbished for reuse. Recyclers and refurbishers charge these fees because their costs exceed the revenue they receive from selling recycled commodities or refurbishing units. In addition to these economic factors, federal regulatory requirements provide little incentive for environmentally preferable management of used electronics. First, the governing statute, the Resource Conservation and Recovery Act, allows individuals and households to dispose of hazardous waste, including many used electronics, in landfills. Second, federal regulations do not provide a financing system to overcome the economic factors deterring recycling and reuse. Third, federal regulations do not prevent the exportation of used electronics to countries where disassembly takes place at far lower cost, but where disassembly practices may threaten human health and the environment. In the absence of federal actions to address these concerns, an emerging patchwork of state requirements to encourage recycling and reuse may place a substantial burden on manufacturers, retailers, and recyclers, who incur additional costs and face an uncertain regulatory landscape as a result.

In response to these challenges, EPA has spent about \$2 million on several promising programs to encourage recycling and reuse of used electronics. Participation in one program—the Federal Electronics Challenge—has already led the Bonneville Power Administration to substantial cost savings through the procurement of environmentally friendly and energy efficient electronic products. To date, however, federal participation in this and other EPA electronics recycling programs has been minimal because—unlike other successful federal procurement programs (such as EPA's and the Department of Energy's Energy Star program)—participation is not required.