

Technology's Toxic Trash Is Sent to Poor Countries

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by John Markoff

SAN FRANCISCO, Feb. 24 — The global export of electronics waste, including consumer devices, computer monitors and circuit boards, is creating environmental and health problems in the third world, a report to be issued on Monday by five environmental organizations says.

The report says that 50 to 80 percent of electronics waste collected for recycling in the United States is placed on container ships and sent to China, India, Pakistan or other developing countries, where it is reused or recycled under largely unregulated conditions, often with toxic results.



A woman in rural China prepares to smash a cathode ray tube to retrieve its copper. The process releases toxic phosphor dust and lead into the environment.

The groups said there were no precise estimates of the amount of such waste currently created by the disposal of obsolete consumer electronic and computing gear. The Environmental Protection Agency estimated last year, however, that in 1997 as many as 3.2 million tons of "e- waste" ended up in United States landfills and that the amount might increase fourfold in several years.

The groups also cited National Safety Council estimates that as many as 315 million computers have or will become obsolete from 1997 to 2004, generating a wide range of potentially toxic wastes.

For example, each color computer monitor or television display contains an average of four to eight pounds of lead, which can enter the environment when the monitors are illegally disposed of in landfills.

"We've created a problem that has to be dealt with," said Ted Smith, executive director of the Silicon Valley Toxics Coalition, one of the groups that participated in the report. The others are the Basel Action Network, Toxics Link India, Pakistan's Society for the Conservation and Protection of the Environment and Greenpeace China.

An E.P.A. scientist, Robert Tonetti, acknowledged that a significant portion of the nation's obsolete consumer electronics gear was exported. He said, however, that there was no systematic reporting of the shipments, so there was no way to gauge the extent of the problem accurately. "No one has a good grasp of the numbers," said Mr. Tonetti, a senior environmental scientist in the E.P.A.'s office of solid waste.

Mr. Tonetti said that figures in a 1999 National Safety Council report showed that about 723,000 computer monitors had been recycled in the United States and 100,000 had been exported. The report noted that more than a million monitors were unaccounted for and that many of them may have gone to parts brokers who subsequently exported the gear.

There is an international debate over how to deal with the problem, Mr. Tonetti said, adding that the European Union was moving toward requiring manufacturers to take cradle-to-grave responsibility for their products, particularly when they contain potentially hazardous materials. In contrast, the United States industry has resisted this approach, he said.

While there is no consensus on a solution, he said the environmental groups had focused on important issues that should have more attention. Mr. Tonetti added, however, that the cradle-to-grave approach was not endorsed by the United States government. Environmental groups, he said, have overlooked that much electronics manufacturing is now outside of the United States and Europe, complicating the issue of manufacturer responsibility.

He also said that a significant factor in the increased export of obsolete electronics from the United States was the closing of smelters here in recent years, frequently because of environmental regulations.

The report, "Exporting Harm: The Techno-Trashing of Asia," focuses on electronics recycling around the region of Guiyu in Guangdong province in China. The area, which is northeast of Hong Kong, includes a cluster of small villages that since 1995 have become a booming recycling center for electronic gear arriving from all over the globe through the port of Nanhai.

The region has a work force of approximately 100,000 people focused on recycling, the report stated, with the process broken into small, specialized cottage work groups. In one neighborhood, plastics may be salvaged, while in another, circuit boards may be smelted to extract trace amounts of gold and other valuable materials, according to the investigators, who visited the region in December last year.

One casualty of the recycling boom in the region has been drinking water, the report says. Since 1995, as a result of groundwater pollution, water has been trucked in from 20 miles away.



Basel Action Network

Electronics recycling centers like this one near the Lianjiang River in China are releasing toxic pollutants, environmental groups say.

The investigators said the recycling operations often involved young children, many of whom were unaware of the hazards. The hazardous operations included open burning of plastics and wires, riverbank acid works to extract gold, the melting and burning of soldered circuit boards and the cracking and dumping of cathode ray tubes laden with lead.

The report described certain areas of Guiyu that were dedicated to dismantling printers. In those areas, toner cartridges were recycled manually, according to Jim Puckett, an author of the report.

"Workers without any protective respiratory equipment or special clothing of any kind opened cartridges with screwdrivers and then used paint brushes and their hands to wipe the toner into a bucket," the report said. It added that the process created constant clouds of toner, which were routinely inhaled.

Mr. Puckett, coordinator of the Basel Action Network, said, "They call this recycling, but it's really dumping by another name." The network is an international watchdog group that is trying to enforce the Basel Convention, a 1989 United Nations treaty intended to limit the export of hazardous waste. The United States is the only developed nation that has not signed it.

The convention calls on countries to reduce exports of hazardous wastes to a minimum and deal with their waste problems within their own borders where possible.



Basel Action Network

Tags recovered from equipment being recycled in China indicate their origins.

The authors of the report argue that stricter environmental regulations in the developed world have caused a trend toward exporting hazardous materials to the poorest countries, where occupational and environmental protections are inadequate.

The environmental groups took water and soil samples along the Lianjiang River and had them tested by a private center in Hong Kong. The results, the groups said, revealed alarming levels of heavy metals that corresponded directly with metals most commonly found in computers. The water sample, taken near a site where circuit boards were processed and burned, showed levels of toxic materials 190 times the levels for drinking water recommended by the World Health Organization.