

E-Waste

Computers and Toxicity in India

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Waste is now electronic. It is ironic that the very speed of innovation that lies at the heart of computer manufacturing also leads to parallel product obsolescence. By current reckoning, the average computer platform has a lifespan of less than two years. Particularly in more advanced economies, it is cheaper and more convenient to buy a new machine than to upgrade an old one.

According to a recent US study, over 315 million computers will become obsolete by the year 2004. And by 2005, one computer will become obsolete for every new one put on the market. Preliminary research by the Basel Action Network (BAN) reveals that besides China, most e-waste exports are to Indonesia, India and Pakistan where they are processed in operations that are extremely harmful to human health and the environment. Even as the domestic electronic waste issue remains unattended, the export of hazardous waste such as outdated printed circuit boards, floppies and tonnes of copper sludge is going on in connivance with the authorities. According to a report in the Japanese newspaper *Nikkei Weekly*, in the aftermath of new laws, companies from the US and Europe are either disposing of their products or selling used components in the garb of recycled products to brokers for export to developing nations like India. The recycling industry thrives on electronic garbage. "We found a cyber-age nightmare" said Jim Puckett, coordinator of BAN. "They call this recycling, but it's really dumping by another name". Rather than banning it, the United States government is actually encouraging this ugly trade by failing to ratify the Basel Convention and exempting toxic e-waste from its laws governing exports, simply because the material is claimed to be destined for recycling.

India

Exporting Harm: The High-Tech Trashing of Asia, a groundbreaking investigation by an international coalition of environmental organisations, reveals that in Delhi, in Mandoli, Sadar Bazaar, Kantinagar Extension, Old Seelampur and Turkman Gate, e-waste trade is a thriving business. Indian e-waste dealers make bids on sea-going containers at the inland depot situated at Okhla. The material is taken, sorted and distributed between various recyclers according to specialisation. They obtain scraps from a process that involves using nitric acid on the circuit boards to remove gold and platinum. Both methods, open burning and acid baths, are fraught with occupational health risks as well as risks to the people living in the surrounding areas. Employees separate the parts from the circuit boards using wire-cutters and pliers. After some pin straightening, some of the IC chips and components are sold for reuse. Items not worth reusing are reduced to metals in outdoor fires. Following chip extraction and burning, the boards themselves are burned in an open pit to retrieve the rest of the solder and copper. After burning, the ashes are floated in water to remove lighter ash.

Waste is now electronic

China

The Guiyu, in the Guangdong Province of China, is another major area for working with e-waste, with about 100,000 poor migrant workers employed in breaking apart and processing obsolete computers imported primarily from North America, using nineteenth-century technologies to clean up the waste of the 21st century. These include computer monitors, keyboards, photocopy machines and television sets. Small Chinese companies, many of them in the southeast near Hong Kong, tear apart derelict computers and other electronic items to recover gold and other materials, with most workers having no protection from the toxic fumes released when melting down parts.

The operations involve men, women and children toiling under primitive conditions, often unaware of the health and environmental hazards involved in operations which include open burning of plastics and wires, riverbank acid works to extract gold, melting and burning of toxic soldered circuit boards and the cracking and dumping of toxic lead laden cathode ray tubes.

Tons of e-waste is dumped along rivers, in open fields and irrigation canals in the rice-growing area. The pollution in Guiyu is already so devastating that well water is no longer drinkable and water has to be trucked in from 30 kilometres away for the entire population.

Future Prospects

Experts have opened talks in Geneva to develop policies and technical guidelines for a major treaty on transporting and discarding toxic pollutants, which includes electronic wastes. The Basel Convention's Technical Working Group is expected to hammer out guidelines for environmentally sound management of waste, lead-acid batteries, metal and metal compounds, plastic wastes including electronic wastes, persistent organic pollutants (POPs) and the dismantling of ships.

What is required is a proper definition of electronic waste (which includes cathode ray-tubes, televisions and TV monitors, LCD screens and all circuit boards and equipment containing these items) as hazardous waste, as is mandated by the Basel Convention. Immediate steps are also required to forbid the import of e-waste into India. The growing problem of electronic waste is something computer companies too ought to take responsibility for.

Environmental organisations are also calling on the United States to follow Europe's example and immediately implement the global ban on the export of hazardous wastes to developing countries, and to solve the e-waste problem 'upstream' by mandating that the electronics industry institute 'take-back' recycling programs, toxic input phase-outs and green design for long life, upgradeability and ease of recycling.

Even the best hazardous waste recycling operations are known to leave polluting residues and emissions in the environment. The export of hazardous wastes to developing countries to take advantage of cheap labour markets or weaker environmental standards and enforcement ability disproportionately burdens such countries with pollution simply because they are poor. ICT is a double-edged sword – a life cycle assessment and clean production of ICT products is the only answer to deal with its negative features.



