

# E-Waste

E-waste has emerged as a new threat to the environment. Increased domestic e-waste generation, dumping by the developed nations and lack of scientific disposal facilities are the major causes of worry for countries like India. An improper disposal of e-waste can lead to dangerous health and environmental hazards from toxic chemicals.

## What is E-waste?

E-waste, i.e. waste electrical and electronic equipment (WEEE), is a generic term. Computers, laptops, TVs, radios, refrigerators, mobile phones, DVD players, etc. that have outlived their life and so have been disposed of by their users go into the building up of e-waste. In the absence of a standard definition of the WEEE, the general perception of it is restricted to consumer electronics and information and telecommunications (IT) equipment. In broader terms, the WEEE comprises all the discarded appliances that use electricity.

The most widely accepted definition of e-waste is given in the European Union (EU) directive for the WEEE; it includes ten categories of electrical and electronic equipment (see box on e-waste categories).

## Safety Concern

Heavy metals like lead, cadmium, chromium, mercury, etc. and other chemicals like polychlorinated biphenyls (PCBs) and phthalates are

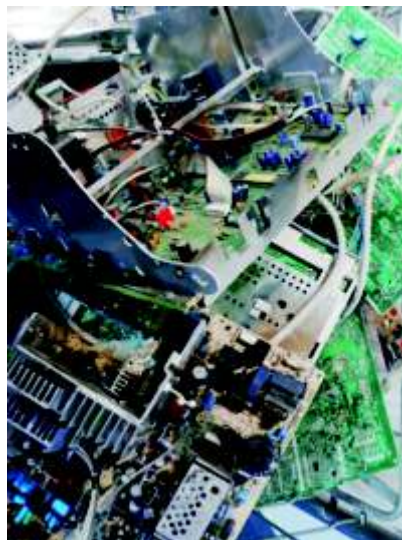
some of the toxic substances found in e-waste. Many of these are carcinogenic and neurotoxins. Long-term exposure to these substances damages various vital systems of the body. If not handled properly, such substances can cause irreversible damage to the environment and human health. Breaking, recycling or disposing of e-waste in an uncontrolled environment and without proper safety precautions cause harmful health effects not only to the workers involved in such processes but also to the local residents.

Landfilling of e-waste— one of the common methods of disposal— is hazardous for the soil and water resources. Older landfills and uncontrolled dumps also pose danger of hazardous emissions. The burning of wires and printed

wiring boards is another hazardous recycling process. All such commonly used processes of e-waste recycling and disposal release toxins into the air, soil and water resources that may easily enter into the food chain through crops and fodders from nearby fields.

## Indian Scenario

In India, a huge amount of e-waste is being generated every year, mostly in large cities. Almost 90 per cent of these comes from the three categories of WEEE — large household appliances (42.1 per cent), IT and communications equipment (33.9 per cent), and consumer electronics (13.7 per cent). More than 60 per cent of the total



## E-waste Categories

1. **Large household appliances:** refrigerators, washing machines, air-conditioners, etc.
2. **Small household appliances:** irons, toasters, coffee machines, vacuum cleaners, etc.
3. **Office, information and communications equipment:** PCs, laptops, mobile phones, telephones, fax machines, copiers, printers, etc.
4. **Entertainment and consumer electronics:** TVs, radios, VCRs, CD/DVD players, etc.
5. **Lighting equipment** (except GLS and halogen bulbs): fluorescent tubes, sodium lamps, etc.
6. **Electric and electronic tools** (except large stationary tools/machines): electric saws, lawn mowers (using electricity), etc.
7. **Toys, leisure, sports and recreational equipment**
8. **Medical instruments and equipment**
9. **Surveillance and control equipment**
10. **Automatic issuing machines.**

comes from 65 cities. Mumbai ranks first among the top 10 cities generating e-waste. According to a Manufacturers' Association of Information Technology (MAIT) report, India in 2007 generated 380,000 tonnes of e-waste from discarded computers, mobile phones and televisions, that is expected to exceed 8,00,000 tonnes by 2012. The scenario is further worsened by the dumping, particularly of computers, by the developed countries.

The legal framework for e-waste management has been regulated in the Hazardous Waste Management and Handling Rules (2003). In the absence of any specific legislation or Standards for disposal and proper mechanism for handling e-wastes, most of these hazardous wastes end up in landfills or are partly

recycled in an unscientific way and partly thrown into the waste streams. Most of the recycling is done by the informal sector. Only two small recycling facilities are working in the formal sector. India's first organised e-waste recycling unit — E-Parisaraa— has been set up in Bangalore and another is functioning in Chennai.

## E-waste Initiatives

The growing menace of e-waste has drawn the attention of the stakeholders — the government, industry, users and the NGOs. To identify, plan and implement all issues involving e-waste in the country, a National WEEE Task Force was formed in July 2004, headed by the Chairman, Central Pollution Control Board (CPCB). In March 2008, the Union Ministry of Environment and Forests issued "Guidelines for Environmentally Sound Management Of E-Waste", which is a reference document for the management, handling and disposal of e-wastes. Besides the technical aspects, it emphasises the need for an "extended producer responsibility" as a strategy that makes the producer responsible for the entire life cycle of the product, including take-back, recycle and final disposal of the product, and suggests a public-private partnership model for the purpose.

In India, some brands like WIPRO and HCL have started take-back programme, but these are not working as well as they should, says a *GreenPeace* report. A more efficient collection and treatment infrastructure and awareness programme for consumers and manufacturers would surely alleviate the situation.

Source: [www.cpcb.nic.in](http://www.cpcb.nic.in), [www.ewasteguide.info](http://www.ewasteguide.info), [www.e-waste.in](http://www.e-waste.in), [www.iimm.org](http://www.iimm.org), [www.greenpeace.org](http://www.greenpeace.org), [www.wikipedia.org](http://www.wikipedia.org)

