

Electronic Waste: A Wasted Opportunity?

Did you know that Making one desktop computer and monitor uses the same amount of chemicals (22kg), water (1500kg) and fossil fuels (240kg) as a mid-size car? A typical computer monitor contains lead, barium and hexavalent chromium. Other toxic ingredients include cadmium in chip resistors and semiconductors, beryllium on motherboards and connectors, and brominated flame retardants in plastic casings. Furthermore, 70% of lead, cadmium and mercury in landfill come from electronic waste.

Three million computers are sold in Australia each year, and three out of four computers are either land-filled or stock-piled. About 12 million Australians own one or more mobile phones and exchange or upgrade them on average every 18-24 months. In just over a decade, the number of personal computers worldwide increased fivefold — from 105 million in 1988 to more than half a billion in 2002. Worldwide, discarded computers, mobile phones and electronic gadgets now account for 5 per cent of waste, according to the United Nations Environment Programme. In the US, between 14 and 20 million PCs are dumped each year. Electronic waste is the fastest-growing waste category in Europe, with the UK alone producing 1 million tonnes a year.

Technology, which was meant to reduce the impact on the environment through such concepts as a paperless office has increasingly become a significant waste source on its own. There is no doubt that technology is important, as I sit here typing on a faster laptop (than an year ago) equipped now with a mobile wireless broadband device. A feat I could have only achieved by traveling to the office five to seven years ago. But, this speed and access comes at a heavy cost as enunciated by some of the facts illustrated above. So, what are the solutions?

According to the New Scientist, in 2001, a critical shortage of landfill sites forced the Japanese government to pass a law adding the cost of recycling home appliances to the retail price. This gave manufacturers guaranteed revenue to invest in recycling plants. In 2004, 540,000 Sony televisions were recycled at the company's 15 recycling centres. With over 80 per cent of Japan's TVs now being recycled, the initiative has easily outperformed government targets. In Australia, the ACT is the only State that bans computer waste to landfill. In five years, 30 countries will have take-back laws for electronics, but not Australia.

Another, and more sustainable solution, is developing mechanisms for durable design, so that items of technology are produced to be upgraded rather than updated. Engineers are key to such sustainable design and eco innovation programs.

Source articles included Computer Facts by Environment Victoria and Better by Design: *Battling the Throwaway Culture* by The New Scientist (January 2007).

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