

# Electronic waste: dismantling the industry



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growing waste streams in the world, with around 50 million tonnes produced every year and predicted to double by 2050.

But where do our devices end up? Although it's a legal requirement to ensure that electronic waste is treated correctly, up to 90% of the world's electronic waste, worth nearly £12bn, is illegally traded or dumped in developing countries each year, according to the UN Environment Programme.

These countries handle much of this waste by shredding, burning and dismantling everything in 'informal' recycling facilities which can have a string of devastating consequences.

The International Labour Organisation (ILO), a United Nations agency, reported that an estimated 80% of children in China suffer from respiratory diseases and high concentrations of lead in their blood.

According to WHO, about 70% of the heavy metals found in landfills come from electronic waste. Where electronic waste is burnt to recover the valuable metals the health risks from the toxins released are particularly acute. Looking at these facts, one has to wonder; are we really giving proper consideration to what is happening to our old electronics and the impact it has on others?

**WE are in a digital age. We have access to what we want, when we want it. To consume and manage this tidal wave of information we have seen a huge increase in electronic devices. This has resulted in a much shorter lifespan for electronics, as everyone rushes out to buy the latest "must-have" technology.**

These cultural shifts are the reason why electronic waste is one of the fastest

## SOCIAL CONSEQUENCES

### • Health

A significant number of electronics are deemed a hazardous waste due to toxic parts containing substances such as mercury, lead, flame retardants and polluting PVC plastics. These can severely harm human health in many ways from our blood and kidneys to central and peripheral nervous systems.

### • Child labour

Child labour is a devastating consequence to the 'informal' recycling industry. Children as young as five years old are working full time in the presence of toxic metals and dangerous chemicals.

According to a report by the Associated Chambers of Commerce and Industry of India (ASSOCHAM) about 35,000 to 45,000 children between the ages of 10



| Electronic Products Disposal                                | Hazardous Materials                    | Health Effects from Improper Disposal   |
|---|--|---|
| Batteries   | Cadmium, lead and mercury              | <ul style="list-style-type: none"> <li>• Birth defects</li> <li>• Brain, heart, liver, kidney and skeletal system damage</li> <li>• Nervous system damage</li> <li>• Reproductive damage</li> </ul> |
| Computer monitors   | Lead in glass cathode ray tubes (CRTs) |   |
| Electronic switches, light devices and flat screen displays | Mercury                                |   |
| Printed circuit boards                                      | Lead, chromium and mercury             |   |
| Solder on circuit boards                                    | Lead                                   |   |
| Older televisions, computers and electrical appliances      | PCBs (polychlorinated biphenyls)       |   |

and 14 are involved as 'scavengers' or 'waste-pickers' and dismantlers in the informal recycling sector in Delhi, India.

Following this, the International Labour Organisation (ILO), reported that in Ghana children between 11 and 18, and at times even children as young as five, were found to be involved in manual sorting, burning and manual dismantling of e-waste.

**• Corruption**

One of the main reasons why electronic waste is sent to developing countries is because it is much cheaper than investing in the means to recycle them properly. It is therefore easier for companies to export their problem. There are valuable metals in most electronic products and if you don't invest in the proper health and safety processes, there is a profit to be made if you can extract them at a minimal cost, for example by burning away the plastic sheath around a copper cable. This profit motive drives corruption on the importing, processing and sale of electronic waste and its component materials.

**ENVIRONMENTAL CONSEQUENCES**

**• Land**

As discussed, most electronic equipment contains toxic materials such as zinc, lead and barium. When released into our environment they not only affect our health but the soil and inhibiting wildlife as well. So much so, that in Ghana an egg hatched by a local chicken was found to exceed food safety standards on toxins which cause cancer and damage the immune system.

The throwaway culture, endemic in the technology industry, also means that there is an increase in mining, to supply materials for yet more devices.

Mining is associated with its own stark environmental impacts and can lead to changes in land use, for example taking away valuable rainforest or productive farmland.

**• Water**

Mining also has another significant environmental impact: drought. Water is diverted to mines to clean the ore dug from the ground and is therefore not available for drinking or use in farming. There is also another risk: when e-waste is improperly disposed of in landfill, the heavy metals can leach into local streams and ponds, damaging marine life and the condition of the water itself. In many cases, local people rely on these water systems for drinking, cleaning and cooking.

**ECONOMIC CONSEQUENCES**

It is important to understand that there are precious materials found in our electronic products, including gold, copper, palladium, silver, platinum and cobalt. With these materials being thrown away, we then must invest more in mining, meaning that we continue to extract more materials from the Earth. With this rate, we are looking at the possibility of these materials running out within 100 years. A recent report even indicated that current known reserves of copper, a product found in virtually all electronics, could be depleted by 2050.

**What we do to avoid these consequences**

Paper Round guarantees that your items are recycled appropriately and securely, ensuring that no electronic waste ends up in developing countries. We collect electronic waste and old IT equipment from our clients' offices and track it to our recycling facility.

Once there our staff decide on the most appropriate way to responsibly recycle the equipment. We reuse or recycle 98% of the electronics we collect.

In addition, we also work with the Children's Literacy Charity, donating the value of one tutoring session for a child in the UK at risk of illiteracy for every 15 working PCs or laptops we collect. To date we have provided over 1000 tutoring sessions via this partnership.

**What YOU can do**

The first line of defence is to minimise the electronic waste you produce. The less you buy, the less you'll have to dispose of.

Moving away from a throwaway culture means not only delaying the purchase of the latest model, it also means repairing the devices you have. While some manufacturers are designing products in ways that make it easier and even cheaper to buy a new product, when one considers the cost of environmental damage and health risks caused by disposal of these electronics in landfill or via illegal exports, a new item is not actually "cheaper".

It all comes down to asking the right questions and not trusting others to do the right thing for you.

