

Mobile phones



Did you know?

- More than 1.5 billion people in the world use a mobile phone and the numbers are rising.
- In Australia it is estimated that 3.5 million new mobile phones were sold in the past 12 months.
- The average Australian typically upgrades their phones every 18 to 24 months.
- It is estimated that Australians are hoarding 10 million old phones.

About mobile phones

A lot has changed since Alexander Bell invented the telephone in 1876. Phones can now be taken away from the home and used for much more than just making and receiving calls. In Australia, the first mobile phones of the 1980s were bulky and expensive. These days they can fit into the palm of your hand and have calculators, games, cameras and MP3 players built into them. A simple mobile phone can be bought for less than \$100 and top-of-the-range phones with designer logos and a whole array of accessories sell for thousands of dollars.

The resources used to make mobile phones

Mobile phones, like most electronic equipment, are made up of a number of different parts from a number of different minerals. These minerals are sourced from all over the world, extracted, processed and assembled to make the millions of phones that are sold each month.

The minerals needed for a mobile phone include lead, cadmium, gold, beryllium, iron, chlorine, aluminium, tin, zinc, copper, bromine, chromium, platinum, crude oil, silicon, nickel, bismuth, silver, tantalum, antimony, arsenic and palladium. These minerals are commonly extracted from different parts of the world including Russia, Peru, Mexico, Australia, Saudi Arabia, China, South Africa, USA and Chile.

Life cycle of the mobile phone

Every product produced has a life cycle that involves extraction, processing and manufacturing, distribution and sale, usage and disposal. The mobile phone life cycle is complicated because many of the parts needed for assembly are from extracted minerals from all around the world. These mobile phone parts need to be shipped or flown to one location for manufacturing, commonly China, Taiwan and India. The assembled mobiles are then distributed around Australia to be sold and used by more than 15 million Australians.

The disposal of mobile phones causes almost 90 per cent of the environmental problems associated with the mobile phone technology. This is due to unnecessary disposal and upgrades, the numerous heavy metals used in mobile phones and their batteries, and the low rate of recycling of mobile phones in Australia. It was estimated that between 1999 and 2005 only four per cent of mobile phones were recycled.



How the environment is affected

One of the mined minerals needed for mobile phones is tantalum, which is found in Canada, Australia, Thailand and the Democratic Republic of Congo. Tantalum is mined because it contains small amounts of an ore called coltan. Coltan is an abbreviation for columbo-tantalite, a substance commonly used in the manufacture of mobile phones, hand-held gaming devices and laptops. It is in huge demand and therefore fetching high prices on the world market. Coltan is found in the East Congo, where the lowland eastern gorilla lives. Mining activities put pressure on the estimated 400 gorillas that survive in the area.

How to be Waste Wise about mobile phones

Reduce

It is important to think about consumerism, and how this impacts the amount of waste going to landfill. One way to reduce the number of mobile phones going to landfill is to keep a mobile phone for as long as possible. Do not replace it just because fashions or technologies have changed.

Reuse

It is important to focus on the principle of reuse and aim to minimise the impact mobile phones have on the environment. What cannot be reused should be recycled, with zero waste going to landfill.



Recycle

In Australia there are now more than 3,000 collection points for mobile phones and the good news is that in 2008, the number of people aware of mobile recycling was 75 per cent, however only six per cent of phones are being recycled. Over 16 million mobile phones are still in the drawers and cupboards of Australian households, or have gone to landfill.

The large number of mobile phones going to landfill is unnecessary. More than 90 per cent of the materials in mobile phones are recyclable. The batteries are recycled to make stainless steel, and the cobalt and cadmium are used to make new batteries. The plastics from the handset and accessories are shredded to make new plastic products. The circuit boards, where most of the heavy metals are used, are separated and melted to extract the minerals, such as gold and silver. One tonne of mobile phone circuit boards can yield the same amount of gold as 110 tonnes of gold ore, and the same amount of silver as 123 tonnes of silver ore.

Sources

Waste in the Wireless world – the challenge of cell phones
www.mobilemuster.com.au

Tantalium-Nibodium International Study Centre, Coltan
www.tanb.org

Charles Darwn University, *Coltan: In and beyond the democratic Republic of Congo*
www.cdu.edu.au/ehs/globaleducation/ColtanInBeyondDRC/coltan.htm

Websites

www.cellular-news.com/coltan/

www.arp.net.au/envcha.php

www.secret-life.org/index.php

The Waste Wise Schools Program

Department of Environment and Conservation
Locked bag 104, Bentley DC, WA 6983
Fax: (08) 6467 5532
Email: wastewise@dec.wa.gov.au
Web: www.wastewise.wa.gov.au



Department of Environment and Conservation
Waste Authority

