



Battery Recycling

A record number of batteries are being used in a wide range of technologies including mobile phones, laptops, personal organisers, cars, alarms and clocks. Single-use batteries have significant environmental impacts at every stage of their life-cycle.

The Problem

Types of batteries

Primary batteries are the most common household battery. They are also known as single-use batteries because they cannot be recycled, and are disposed of after use.

These batteries automatically convert chemical energy into electrical energy using zinc and manganese chemistry.

Secondary batteries are also known as rechargeable batteries because they can be used repeatedly upon being recharged.

Recharging occurs when electrical current is applied to the battery, reversing the chemical reactions that occur during battery use.

Secondary batteries are usually composed of nickel cadmium, nickel metal hydride or lithium ion chemistry.

Lead-acid batteries are the oldest type of secondary battery¹.

These batteries are typically used to power vehicles.



Environmental Impacts

Batteries are the most common form of household hazardous waste².

But the environmental impact of batteries is not limited to the waste stream. Environmental impacts occur in the production, distribution and end-of-life phases of the battery life cycle.

Production

Mineral resources must be extracted to produce batteries. Mining is energy-intensive and requires the burning of large amounts of fossil fuels. As well as contributing to global warming, mining can also destroy wildlife habitat and create air and water pollution.

Distribution

Hundreds of millions of batteries are imported each year and transported to warehouses, shops, homes and workplaces³. Fossil fuels are burned to create energy for transport and natural areas are cleared to build infrastructure. Plastic packaging is often used to package batteries. Plastic is made from fossil fuels.

End-of-life

In landfill, the chemicals inside batteries can leach from their casings and pollute land and water with heavy metals that are toxic to life.

If placed in household recycling, a battery can leach chemicals. One battery can contaminate the contents of a recycling container.

Did you know?

Although batteries are recyclable, 97% end up in landfill. That's about 8000 tonnes each year!²

Batteries are sent overseas for recycling². The Australian Battery Recycling Initiative is working towards establishing battery recycling facilities in Australia⁴.

The Sanyo Eneloop battery is a secondary battery that can be recharged up to 1000 times! It does not need charging prior to use⁵.

Electronic waste is growing at 3 times the rate of general household waste in Australia³.



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The Solution

What can you do?

Recycle Batteries

Keep batteries out of the waste stream.

Make sure you return used batteries to the appropriate collection points for recycling.

Choose Secondary Batteries

The vast majority of batteries in landfill are primary batteries that have been used once only prior to disposal.

In the past, secondary batteries were inconvenient because you needed to charge them prior to use, and they did not last as long as they do today.

Whilst secondary batteries will eventually lose their charge, new technology means that batteries manufactured today can be used hundreds of times.

Advantages of Secondary Batteries

- Divert hazardous waste from landfill by using batteries again and again.
- Reduce the environmental impacts of mining virgin resources for primary batteries.
- Reduce the environmental impacts from transporting large volumes of primary batteries around the world.

Where can you recycle batteries?

Battery recycling services	
SITA	www.sita.com.au
Batteryworld	www.batteryworld.com.au
Cleanaway	www.cleanaway.com.au/batteries
Local council	Check with your local council
Clean Up Australia Mobile Phone Recycling	www.cleanup.org.au



References

1. Energy Matters, "Deep Cycle Battery Guide"
<http://www.energymatters.com.au/renewable-energy/batteries/>

2. Battery World, "Battery Recycling"
<http://www.batteryworld.com.au/asp/index.asp?pgid=11219&cid=6466&id=622>

3. Australian Bureau of Statistics, "Feature Article - Solid Waste in Australia" in 4613.0 Australia's Environment: Issues and Trends, 2006
<http://www.abs.gov.au/ausstats/abs@.nsf/featurearticlesbyReleaseDate/3B0DD93AB123A68BCA257234007B6A2F?OpenDocument>

4. Australian Battery Recycling Initiative
www.batteryrecycling.org.au

5. Sanyo, "Sanyo Eneloop FAQs"
<http://www.eneloop.info/home/faq.html>