

PAPER & CARD RECYCLING

INTRODUCTION

Paper is one of the most important and widely used consumer materials, with an endless ability to be recycled and transformed. The earliest known paper was made from papyrus plants by the Egyptians in 2200 BC. Recycling paper and cardboard uses less natural resources, energy and water than manufacturing it from virgin materials. Writing paper, printed paper, newspapers, magazines, cardboard and packaging are in daily use by most Australians and can easily be recycled multiple times.



HOW IS PAPER MADE?

The basic paper making process has not changed for 2,000 years. The main raw material, wood pulp, is made out of wood fibres, which are soaked in liquid, drained on a fine wire screen and then dried under pressure and heat.

PAPER & CARDBOARD

THE PROBLEM

Each Australian consumes on average 230kg of paper products per year.¹ In 2016, Australian paper mills produced 1.4 million tonnes of paper.² The paper industry today requires substantial inputs, especially trees, water and energy, and landfill is still a common end-of-use route.³

The enormous growth in the use of computers, mobile devices and e-readers has made little impact on the use of paper in workplaces. However, newspaper consumption has fallen greatly and ACT schools and Government Directorates are moving to paperless processes. Nonetheless, the 'paperless office' or 'paper free school' seems a distant prospect.

The rise in consumption of single use disposable food packaging has also led to a rise in paper and cardboard waste. In 2017, paper and cardboard items accounted for 13% of the total litter collected on Clean Up Australia Day.⁴

Confusion about what can and can't be recycled, complex packaging design and poor labelling, combined with failure to dispose of cardboard and paper responsibly means paper consumption costs millions of trees – one great reason to recycle this valuable resource.

GREENHOUSE GAS EMISSIONS

There is an emissions cost to paper production, with an average emission of 1.6 tonnes of greenhouse gases (predominantly nitrogen oxides and carbon dioxide) per tonne of paper produced.⁵ If paper or cardboard is not recycled and instead ends up in landfill it decomposes to release methane (a powerful greenhouse gas with four times the impact of carbon dioxide). Recycling paper or cardboard reduces these emissions by 0.6 tonnes of carbon dioxide for every tonne of paper recycled.⁶

THE SOLUTION

Follow the "Avoid, Reduce, Reuse, Recycle" principle when shopping. When we 'buy recycled' we are increasing the demand for recycled content and helping to close the loop.

REDUCE



- Go digital and use double-sided printing or copying when hard copies are essential
- Place a 'no-junk' mail sign on your letterbox
- Avoid buying goods that use excessive packaging.

REUSE



- Use unwanted printouts as notepaper
- Reuse gift-wrapping paper, paper bags, paper boxes
- Buy, swap and sell old books and magazines, or donate them to libraries or charities.

RECYCLE



- Support recycling programs by buying recycled paper and cardboard products
- Set up a container for paper recycling at home, the office or at school.

MATERIALS THAT CAN'T BE RECYCLED

- Carbon and self-carbonised paper
- Facial tissues and soiled paper towels
- Sticky tape and adhesive labels
- Tissue paper
- Heavily waxed boxes
- Thermal fax paper

EXPERIMENT AT HOME

Have a go at making your own recycled paper – A simple tutorial www.tenplay.com.au/channel-eleven/scope/extra/season-2017/diy-science-recycled-paper.

DID YOU KNOW?

- Approximately 20 full-grown trees are required to produce a tonne of non-recycled paper.
- Making just one tonne of paper out of virgin material uses over 90,000 litres of water, the equivalent of two Olympic swimming pools.
- Recycling paper and cardboard reduces the environmental impact of production by half.
- More than 100 million trees are harvested each year to make junk mail.
- The average office worker uses around 50 kg of paper a year – equivalent to some 10,000 sheets of A4 paper.
- Australia is a global leader in the recycling of newsprint with a 78% recovery rate.

REFERENCES

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5. Confederation of European Paper Industries (CEPI) [http://www.cepi.org/system/files/public/documents/publications/sustainability/CEPI-Report09Final\(Web\).pdf](http://www.cepi.org/system/files/public/documents/publications/sustainability/CEPI-Report09Final(Web).pdf)
6. NSW Environment Protection Authority <http://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/regulator/benefits-of-recycling>

Read more at: australianscience.com.au/environmental-science/paper-consumption-impact-in-australia.

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