

The proof is in the PRINTING

Corporate stationery, marketing kits and the like are a necessary part of business communication. So what can businesses do to reduce the environmental impact of such material? A lot, as *Ecos* discovered during an environmental audit of its own printing procedure.

While *Ecos* strives to be as sustainable as possible, we thought we could do better in the way we print the magazine.

In October 2006, as part of an environmental audit, we researched several Australian printers who claimed, to varying degrees, to have 'green' printing credentials.

The Australian printing industry has an annual turnover of over \$15 billion and employs more than 120 000 people.¹ While some companies are genuine about 'green printing', many others will rely on pressure from customers to make their operations more sustainable.

Printers have traditionally been the source of much waste – paper, chemical and water – which impacts significantly on the environment. The following categories were just some of the criteria we considered when determining which printer would be the best fit for the magazine.

Paper

The average Australian will use 187 kg of paper products – including newspapers, writing papers and product packaging – in one year,² so paper was the obvious place to start in reducing the environmental footprint of our print requirements.

Ecos was particularly interested in papers accredited by the Forest Stewardship Council (FSC), a not-for-profit organisation that sets international benchmarks for the responsible management of forests. Only forest managers and producers that meet rigorous FSC



***Ecos* is printed on FSC-certified paper and delivered in biodegradable plastic wrap.**



standards can be approved for accreditation. So far, more than 90 million hectares have been certified in over 82 countries.³

Papers are also characterised by the type of recycled fibre they contain. Post-consumer recycled papers contain fibres from paper reclaimed from the waste stream after use, such as office waste paper. Pre-consumer recycled papers are made from fibres recovered from pulp and paper mills or printers' offcuts before the paper reaches the consumer.

Monza Recycled, on which *Ecos* is printed, is an FSC-certified, mixed-source paper made from 55 per cent recycled fibre – 30 per cent pre-consumer and 25 per cent post-consumer – and 45 per cent FSC-certified pulp. It is also elemental chlorine-free (ECF), a bleaching process for pulp involving the use of less harsh chlorine compounds to replace the elemental chlorine traditionally used to bleach papers to their whiteness.

¹ www.printingcareers.com.au

² http://www.printnet.com.au/pages/our_industry/facts_and_figures.html

³ www.fsc.org



Traditional inks are petroleum based but vegetable-derived inks are progressively replacing them.

Ron Summers

While printing produces paper, chemical and water waste, demand for 'green' printed products should see more printers moving to more sustainable operations.

johnnyscriv

Ink

A printer's green credentials should extend beyond offering environmentally friendly papers. Printing plants have traditionally used petroleum-based inks. The emission of VOCs (volatile organic compounds) from these inks is a concern, as it contributes to airborne pollution.

Some types of printing process can emit over 100 kg of VOCs on a daily basis, according to the Environmental Protection Authority (EPA). Under the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007* adopted in July, companies emitting more than this level will now require works approval or licences from the EPA.

New technology has allowed the introduction of vegetable-based inks into the printing process. Sources for these non-toxic inks, such as soy and linseed, are renewable. With the printing industry using about 36 000 tonnes of ink each year, using a renewable alternative will leave a smaller environmental footprint.

The containers in which inks are supplied have also evolved from tins – which would end up in landfill – to recyclable cartons.

Plant design and equipment

In the printing process, chemical solvents are used as a carrier for the printing ink. New filtration systems can filter solvents from the printing press to allow for reuse. One printer said this system helped to reduce his chemical use by over 85 per cent – a significant reduction, with both economic and environmental benefits.

Digital printing also helps with waste reduction. Computer-to-plate (CTP) technology has helped the industry almost eliminate the need to generate photographic film for making plates.

Investment in more efficient presses can also help reduce energy consumption and pollution. For example, water-cooling systems in newer machines help minimise the heat generated by the equipment, reducing air-conditioning requirements within the plant.

Paul Nieuwhof, National Environment Manager with the Printing Industries Association of Australia (PIAA), warns that companies that don't adapt won't last.

'For the larger operators and investors in new technology, they are on top of these issues. Smaller printers using outdated equipment and methods are going to struggle to be economically and environmentally sustainable.'

Location and disposal

Location was an important factor when *Ecos* assessed different printers. We insisted on finding a local printer, so that we did not incur a large transport footprint in shipping the magazine from printer to warehouse.

We also asked about the disposal of printed products after the end-user no longer needs them.

Nieuwhof says the environmental impacts of printed products are variable.

'Post-production book printing would probably have a zero impact on the environment since people hang on to their books or they are handed on and reused. On the other hand, marketing material placed in letter boxes or packaging can have an impact on the environment if they are disposed of in an inappropriate way.'

He says programs such as kerbside pick-up of residential recycling help, but similar initiatives for collection of recyclables from commercial sites is still difficult.

'The contamination of otherwise recyclable material, or the lack of infrastructure to collect and recycle used paper products, remains a problem,' he notes.

'It is the post-production fate of all forms of printed material and the industry's ability to close the waste loop that remains a challenge.'

Claire Lombardozi, Marketing Manager at Visy Recycling, Australia's largest recycling company, says the biggest challenge is convincing people to recycle when they are at the office.

'For a good recycling system to operate in the workplace, people simply need to replicate their behaviours from home when they are going about their business at the office or commercial premise,' she says.

'Office waste can be between 60–80% paper and cardboard, which is all 100% recyclable.'

Visy Recycling collects paper and cardboard from more than 35 000 business across Australia, turning over 1 million tonnes of it into reusable paper and cardboard boxes.

Lombardozi says educating the public on the benefits of recycling is essential.

'It is important that recycling in general is promoted to all members of the community because such a small behaviour change can make a world of difference to our environment.'

The same applies to plastic packaging. Using plastic carriers to ship *Ecos* magazine to subscribers forced us to reconsider a more environmentally viable option.

The magazine is now distributed in plastic packaging that is claimed to be 100% biodegradable, thanks to a product called biowrap.⁴ The manufacturer says the impact of air, sunlight and wind 'will result in the complete degradation of the plastic wrap in a short space of time', due to a unique formula which includes an additive that speeds up the degradation process.

Of course, the ultimate solution to reducing the environmental footprint of a print publication is to go online, but for the moment at least, our market research has indicated that many people still prefer magazines like *Ecos* in printed form.

Price

Using 'greener' forms of printing generally incurs a higher cost. While pricing is nevertheless reasonably competitive, there is room for improvement. The higher cost of printing 'green' should be alleviated by an increase in demand, but printers will need to play a part in this price reduction as well.

Nieuwhof argues that clients, and the Commonwealth, have a big role to play. 'It cannot be stressed enough that customers, and especially government, must recognise



According to Visy Recycling, people need to take their good recycling habits from home to the workplace.

Visy

that buying print from cheap overseas sources will not only destroy the local (sustainable) industry but it will simply reward those with environmentally poor records who are currently polluting the atmosphere and natural water systems.'

The Australian Department of Environment and Water Resources' website offers an environmental purchasing checklist⁵ for printing services to assist government departments and agencies in examining environmental criteria when procuring printing services.

The checklist recommends the use of environmentally friendly stocks, inks, finishes, bindings and treatments for print publications. Whether agencies routinely implement these guidelines, of course, is another matter.

Industry initiatives

The ISO 14001 Environment Management System is a set of standards for printers who want to improve their environmental performance. Application for accreditation under this system is voluntary, so printers who are certified to ISO 14001 are really demonstrating their commitment to the environment.

The Western Australian branch of the PIAA, in conjunction with the Western Australian Department of Environment, has established the Green Stamp Program, which provides information on how printers can improve their environmental credentials and reduce their waste – from basic compliance to more advanced measures.⁶

Such initiatives are already showing positive results. For instance, EPA Victoria's Industry Greenhouse Program, in which licensed printing businesses reported their energy savings over the course of three years, has shown that these companies considerably reduced their CO₂ emissions. According to an EPA spokesperson, these printing companies have achieved over 80 per cent of forecast CO₂ savings by reducing their in-house energy use – a good outcome for the environment.

● Tracey Millen

More information:

Visy, www.visy.com.au/

PIAA, www.printnet.com.au/

⁴ Patent applied for.

⁵ <http://www.environment.gov.au/settlements/publications/government/purchasing/printing.html>

⁶ http://portal.environment.wa.gov.au/pls/portal/docs/PAGE/DOE_ADMIN/GUIDELINE_REPOSITORY/GREENSTAMP/BASELINE_CERTIFICATION_5.PDF