

Cleaner Production Case Study

Cleaner production involves reducing the consumption of raw materials (including water and energy) and reducing the volume and toxicity of waste and other emissions.

Industry:

Printing

Focus Press

Focus Press is a modern lithographic printing company offering a fully integrated range of services including design, pre-press (artwork production), computer-to-plate (CTP) plate production, printing, binding, finishing, packing and distribution. The company's printing capabilities include large and small format sheet-fed printing, digital printing, CTP pre-press and full finishing facilities. Flexographic and web printing is outsourced.

Company characteristics

Focus Press is family-owned. It moved to new premises in South Strathfield in 1994. Since then the business has grown from 3 to 35 staff and has become highly automated. All equipment has been upgraded or renewed in the last two years.

Environmental successes

This is one of a series of case studies featuring companies that participated in the Department of Environment and Conservation (NSW) \$5 million 'Profiting from Cleaner Production' – Industry Partnership Program.

NSW companies are discovering that cleaner production not only protects the environment but also reduces operating costs, streamlines processes, boosts profits and improves staff engagement and morale.

Green printing reaps dividends

By establishing an Environmental Management System (EMS) to review its activities and introduce new procedures and materials, Focus Press has significantly reduced its use of raw materials and the amount of waste generated, achieving huge savings. Since introducing 'computer-to-plate' (CTP) digital workflow in 1999/2000, productivity has increased by up to 90% and profits have grown accordingly. The EMS has also encouraged team building and as a result staff morale is soaring.

What did they do?

Identify risks and opportunities

In 2002 Focus Press applied for funding under the NSW Government's Industry Partnership Program to put in place an EMS. The company's aim was to integrate environmental issues into its printing processes and operating systems.

With a consultant's help, Focus carried out an assessment to investigate environmental risks, research best practice and identify areas for potential environmental improvement. The company collected benchmarking data on waste generation, electricity usage, water usage and discharge of effluent to sewer and put in place systems for recording and monitoring improvements.

Train staff in environmental responsibility

The consultant developed an environmental awareness program to educate staff about cleaner production, inform them about regulatory requirements, and involve them in the EMS process. Following the training an Environment Committee was established to help develop and implement the EMS.

Benchmark against best practice

A literature search of Australian and international environmental best practice for lithographic printing identified opportunities for improving environmental performance.

These included:

- replacing alcohol used in the printing process with alternative wetting solutions
- using vegetable-based inks
- reducing the quantity of solvents used in inks
- using environmentally friendly blanket wash systems.

Reduce energy consumption

All heat-generating equipment has been boxed and ventilated. This has not only reduced ambient noise levels within the factory but has also reduced winter heating costs because the trapped heat is pumped back into the factory. Building insulation has also resulted in a reduction in electricity usage of around 20%.

Introduce digital workflow

Computer-to-plate (CTP) technology, introduced four years ago, has increased productivity by 88.5% and improved environmental performance through a significant reduction in water usage of 62.5% and the elimination of photographic film, silver and other chemicals. Make-ready time is about 80% less, labour costs are lower, paper usage has fallen by about 80% due to the reduction in 'overs' required for setting up and running jobs and machine time and energy usage have also reduced.

Proofs are now sent to clients electronically as web browser documents, avoiding waste from printed proof sheets.



'There is a real misconception in the market place, when it comes to printing, that being environmentally friendly is expensive. This is a fallacy. All print production at Focus Press is environmentally friendly and most of it costs the same or less to produce as traditional printing methods.'

David Fuller, Managing Director

Improve waste handling and disposal

A waste sorting and extraction system has been set up, connected to the paper trimmer in the bindery. This cost about \$40,000 and has a payback period of about 3–4 years. Focus created income from the waste paper collected and reduced its labour costs. A waste sorting system at the printing presses separates contaminated and non-contaminated waste. Soiled rags are now cleaned on the premises for reuse rather than being disposed of.

Reduce hazardous waste

By removing chemicals such as silver and fixer from the pre-press process, harmful chemicals are no longer collected, transported and destroyed.

A new filtration system enables developer used on printing plates to be reused, thereby reducing the amount of new developer used and the disposal of used developer as hazardous waste. The filtration system cost \$7,500 and had a payback period of 12 months.

Certification

A gap audit and certification audit were undertaken by Lloyds as part of ISO 14001 certification. This was awarded in February 2004, 12 months after the project started. The certification report indicated that Focus Press met, and in many instances exceeded, the requirements of the international standard.

Why did they do it?

Managing Director David Fuller wanted Focus Press to be a leader in environmental best practice. The company received certification for Quality Assurance (ISO 9001) in 2002, but David wanted to extend this to environmental certification, using this to drive continual environmental improvement on the site. The obvious way to achieve this was to put in place an EMS and through this establish processes to control, measure and monitor environmental impacts.

What are the environmental gains?

- The quantity of alcohol used is at least 60% lower.
- Waste sent to landfill has reduced from 9 m³ to 3 m³ a week (saving \$3,000 per year).
- Water consumption has dropped by over 62.5%, with further gains to come.
- By changing to soy-based inks, ink usage has reduced by 30%.
- Usage of paper and other raw materials in setting up and running print jobs has reduced by up to 58%.
- Quantities of hazardous substances used have been reduced.

Usage has been reduced by:

Solid waste to landfill	150 m ³ /yr
Haz. waste disposal	95%
Water	2,500 kL/yr
Low flashpoint solvents	100%

Energy usage is significantly lower.

What were the costs and savings?

Annual savings:
over \$65,000.

Costs:

Waste sorting and extraction system
\$40,000; 3-year payback period.

Developer filtration system
\$ 7,500; 12-month payback period.

Where to now?

Focus Press recognises it still has a long way to go. It plans to achieve even greater environmental gains by:

- refining existing processes
- implementing new processes as they are developed here and overseas
- working with environmental groups, industry leaders and government departments to identify areas for further improvement
- educating clients and the industry in general about the benefits of cleaner production
- sourcing new materials and consumables to reduce production costs and lower the environmental impact of the printing process.

More information

David Fuller, Managing Director
Focus Press, phone (02) 8745 4000
14 Dunlop Street South Strathfield

Department of Environment
and Conservation (NSW)
Cleaner Industries Unit
Phone 02 8837 6000
cleanerind@epa.nsw.gov.au