

CLEANER PRODUCTION STRATEGIES For Screen Printers



The printing industry has a tradition of pride, excellence and care for natural resources. However printing, like most industrial activities, uses hazardous chemicals, requires energy and water, and generates waste.

The average printer is not a major source of pollution, but collectively the impact of dozens of printers can be substantial. In adopting Cleaner Production practices opportunities exist to **reduce environmental, and health and safety impacts, increase productivity and reduce costs.**

COMMITMENT

Environmental Policy & Plan

Work with staff to develop an **environmental policy** that incorporates goals for reducing air emissions, energy, water and waste.

This demonstrates your company's commitment to Cleaner Production and demonstrates how and when action is carried out.

Back this up with a **work programme or plan.**

See environmental policy attached

STAFF INVOLVEMENT

Training & Supervision

Provide staff with information and incentives to minimise waste and hazardous materials.

Train staff on waste reduction practices and goals – enrol them in seminars or workshops.

This may include **training staff on new practices** that minimise wastage. Note: Press operators are key to the successful changeover to Cleaner Production (e.g. with new cleanup procedures or new inks, etc)

Standard procedures should be used on equipment – these must be taught not assumed!

Staff Incentives

Reward your staff for new ideas to minimise waste – or when they continue to reduce waste through routine practices. Encourage them to build on your successes!

This will ensure that your staff are continually supporting your company's goals.

AUDITS

Look at your shop with new eyes!

Develop a **good picture of your business activities** (including materials, water and energy), gather information on quantities and their related costs.

This helps prioritise actions, and helps assess the benefits of possible changes.

Energy Audits

Monitor energy use to identify peaks (high use times) and valleys (low use times).

This is to ensure that energy and machinery is used and running efficiently

When buying new equipment always check its energy rating.

Water Audits

Monitor water use to ensure it is not being wasted. Carry out a water audit.

A water audit is done to ensure that there are no leaks or dripping taps. Hidden leaks are common and expensive if not detected. You can calculate the amount of water wasted from meter readings.

A simple way to check for leaks is to inspect the meter at the end of the day (when all machines etc are off) – record the meter reading and the time, then do the same in the morning. If the meter has moved water is being used somewhere. You probably have a leak.

Toilets/ urinals are often areas where water is wasted.

Solid Waste

Monitor your waste.

Check what is in your waste bins regularly. Ensure that all hazardous wastes, recyclable material and non-recyclable waste are separated out.

All waste has cost you money to purchase and costs you again when you dispose of it. Look for opportunities to reduce the generation of waste at its source.

PLANNING WITH YOUR CLIENTS

Work With Your Customer

Check that the customer has approved the print job. **Make sure you get it right the first time!**

Be sure you have a **common target and establish customer** requirements, communicate those within the shop and check processes are followed to ensure quality.

Finished products that don't meet your customers' needs are very expensive.

Ideas...

- Get a colour sample from your customer. Then check the colour before printing.*
- Ensure the lighting is to industry standard!*

Offer Customers Alternatives

Help your customers **understand the impacts of their job design.**

Promote the use of left over colours, recycled inks, materials etc...

By increasing your business to business relationship you can build customer loyalty

FINDING NEW INFORMATION

Find Information Sources

Information can come from **suppliers, trade associations, and from your peers.**

See the back page for useful contacts and information.

Join the Auckland Environmental Business Network

PLANNING

Estimate Ink Quantities

Reduce wasted ink by **accurately estimating copy and coverage.** Once you have the correct amount record it along with other job details for any future reprints.

This results in reduced ink waste ~ saving on ink purchasing, as well as disposing of waste.

HOUSEKEEPING

Inventory Control	Set-up a ' materials inventory system '. Record all materials you have in stock and their shelf life. Return unused samples to suppliers.	<i>This will assist in avoiding products expiring, over-ordering, or running out of products.</i>
Preventative Maintenance	Make sure that you practice a routine preventative maintenance programme with all equipment. Develop a checklist for basic press maintenance.	<i>This includes monitoring water and energy, as well as machinery, products and materials. Preventative maintenance saves downtime, waste and product variation, and therefore saves money!</i>
Reduce Spoilage & Waste	Keep the floors clean and litter free . Keep all tools clean.	<i>This will reduce spoilage from dirt and grime on machines, etc.</i>
Calibrate Equipment	Periodically calibrate any equipment and measuring tools.	<i>This keeps equipment running at an optimum level.</i>
Loss Prevention	Ensure lids are on all chemicals, solvents and inks to reduce loss. Use funnels or pumps to transfer any liquids. Store wastes in-doors or undercover (out of the rain) and away from drains.	<i>This is to prevent any evaporation, spills, skinning or contamination. This includes transferring any liquid wastes to storage. This is to prevent water damage and erosion, or spills of solvents into waterways</i>
Spills	Ensure that you have a spill contingency plan in place.	<i>Spills are costly and can result in serious environmental and health problems.</i>
Protecting Against Spills	Always have a fully stocked spill kit handy . Regularly inspect waste skips and bins area for	<i>Try to use dry methods for cleaning wherever possible</i>

potential spills or leaks

RAW MATERIAL SUBSTITUTION

Work With Your Suppliers

Help suppliers understand your environmental challenges and ask them to find solutions.

Prior to purchase review product content for possible impacts on wastewater, hazardous waste generation and air emissions.

Suppliers should provide clear & accurate information on alternatives & demonstrate how to use them.

Make sure that you understand the information provided in MSDS's.

Solvents & Cleaners

Investigate the benefits of using safe, environmentally friendly cleaners

Work with your suppliers to find a solvent or cleaner that best suits your needs.

Inks

Find out what is in your inks and look for mineral oil free inks instead of conventional 'heavy metal' based inks

Always cover ink when in storage to reduce skinning, and to maintain ink quality

Heavy metals are classified as hazardous

Vegetable based inks do not contain petroleum oil-based materials

PROCESS & EQUIPMENT CHANGES

Process Control

Understand and document what each piece of equipment needs to consistently turn out high-quality printing.

This enables you to have better control over your printing processes.

Ink Clean-ups

When cleaning out inks use high-pressure or low volume water sprays.

This results in less water used if managed properly.

WASTE & RECYCLING

Packaging Reduction

Work with your suppliers to get appropriately sized containers and enquire if they can be returned for refilling.

This will reduce your waste bill!

Ink Waste Reduction

Improve your ink estimating and your ink handling techniques.

By reducing waste ink you save on purchase cost as

Reduction

Cover all ink containers.

well as disposal costs.

Have any waste ink reformulated into recycled black ink. Use left over ink for in-house work or offer to customers at a reduced rate.

Recycled ink can be offered to customers at a cheaper rate.

SEGREGATE WASTES

Waste Segregation

Separate both hazardous and non-hazardous wastes, as well as recyclable and non-recyclable wastes.

This minimises costs as well as ensuring hazardous waste doesn't go to landfills. Ask your waste contractor what is acceptable in your waste.

Recycling

Separate the following for recycling:

- Paper and cardboard
- Plates
- Cans
- Solvents
- Silver
- Waste inks
- Rags
- Drums
- Plastics
- Aluminium etc

Contact your local recycling operator or regional waste exchange (RENEW).

Contact your suppliers to purchase inks and chemicals in bulk and in returnable containers (that can be refilled).

Keep recycling area undercover to avoid rain infiltration.

FINISHING

Materials

Show a preference for recyclable or recycled materials.

Close the recycling loop by buying recycled products.

PVC

Avoid the use of PVC plastic for bindings, binders, folders and/or packaging.

PVC has a number of suspected environmental and health issues associated with its manufacture and disposal – it is better to avoid using it.

Where to go for information

Waitakere Printing Project. the Council has a specific programme for Lithographic Printers. [Contact us](#) for more information

Eco Water – the Council has a business unit for water. Contact [Eco Water](#) for advice on reducing water use.

Solid Waste Business Unit - the Council has a business unit for solid waste – Contact them for specialist information on waste collection or recycling.

OSH –Occupational Safety & Health is a service provider for the Department of Labour and is responsible for the administration and enforcement of the H&S Employment Act 1992. [Contact them](#) for any information relating to Health and Safety issues in your workplace.

NZEPMU – the New Zealand Engineering, Printing and Manufacturing Union aim to educate and promote safe working practices amongst their print members.

PIA – the Printing Industry of Auckland aims to foster and encourage the development of the industry along sound lines and generally to promote, protect and safeguard the interests of members in trade matters. Contact them for information on new products and services available.

Print Product Suppliers and Manufacturers – A range of new and improved products are available. Contact your supplier and enquire about the benefits of their new product range and services.

Regional Councils – For information on the reduction of waste and water, hazardous waste, environmental legislation and other related issues contact your local or [Regional Council](#).

RENEW Wasteline – RENEW Resource Exchange is a region-wide information exchange designed to help your business find markets for your industrial by-products, surplus materials and waste.

EECA – [The Energy Efficiency & Conservation Authority](#) offers advice to businesses about energy savings. Contact the Authority

RECYCLER LIST

FOR THE AUCKLAND PRINTING INDUSTRY



MATERIAL	COMPANY	DETAILS
Pre-press Developers & Fixers; Plates (Aluminium); Silver Film (for silver recovery)	Ground Control	PO Box 187 Albany Ph: 413 7255 Fax 413 7256
Solvents only	United Environmental	PO Box 58032 Greenmount Ph: 274 7963 Fax:274 1065
Ink Containers <ul style="list-style-type: none"> • Plastic • Steel (Cleaners/Washes) 	Whitehall Technical Services	P O Box 87 Clevedon Ph: 296 1826
Solvent & Solvent Containers	Refined Solvents Limited	PO Box 13-364 Auckland 6 Ph: 274 9469 Fax 273 7147
Aluminium/ Steel Containers	Sims Pacific Metals Ltd	731 Great South Road PO Box 22648 Otahuhu Ph: 276 1809 Fax 276 6407
Metal Containers and Plates <ul style="list-style-type: none"> • Aluminium • Lithographic plates • Containers 	Metal Salvage Services	16 Hillside Road Glenfield Ph: 444 6368 Fax 444 8069
Steel Cans only	Steel Can Recycling	PO Box 92121 Auckland Ph: 835 0737 Ph/ Fax direct: (06) 835 0737
Steel and Plastic Drums	Drum Factory	112 Railside Rd Henderson Ph: 837 2801 Fax: 837 2711

RECYCLER LIST

cont...



MATERIAL	COMPANY	DETAILS
Plates (aluminium) Paper & Wooden pallets	Printing Technologies	PO Box 97242 South Auckland Ph: 2621445 Fax 2621447
Wooden Pallets and Wood Offcuts	Henderson Pallets	PO Box 21679 Henderson Ph: 835 1403 Fax: 820 0929
Cardboard Cartons - new and used	Carton Traders	PO Box 12187 Penrose Ph: 636 1364 Fax 636 1389
Cardboard Cartons - for resale	Packaging Recyclers	36 Bancroft Cres. Glendene Ph: 818 7105 Fax: 818 2979
Cardboard, Newsprint & Paper	Paper Chain (Carter Holt Harvey)	PO Box 12 689 Penrose Ph: 0800 444 600 Fax: 0800 444 605
Cardboard & Paper, Glass, some Plastics and Cans.	Paper Reclaim	PO Box 12 187 Penrose Ph: 571 0242 Fax: 525 0615
Cardboard & Paper Waste only	Wastecare	PO Box 12200 Penrose Ph: 571 1400 Fax: 571 1415
Plastic Film (Shrink Wrap)	Astron Plastics Ltd	PO Box 58128 Greenmount Ph: 2740477 Fax 2741018

Environmental Policy (sample)



Declaration of Commitment

Our business recognises our responsibility to implement good business practices and to minimise the environmental impacts of our business activities.

Policy

We aim to achieve this by implementing Cleaner Production to reduce business wastes and emissions by focusing on the practises, processes and products that produce them.

We aim to:

- ◆ Reduce air emissions from volatile organic compounds (VOCs) by purchasing inks, cleaners and washes which contain no or low VOCs
- ◆ Meet or exceed the requirements of all applicable governmental acts and regulations, and industrial safety standards
- ◆ Minimise our use of energy, water and resources
- ◆ Apply the principles of prevention, reduction, reuse and recycling to minimise waste
- ◆ Work in partnership with suppliers and the customer in achieving the aims of this policy
- ◆ To provide all employees with the training, support and resources required to meet our targets
- ◆ Monitor and review our performance against our aims on an annual basis
- ◆ Report and promote achievements to staff, suppliers and customers
- ◆ Seek continuous environmental improvement through regular assessments and setting of objectives, involving input from employees, suppliers, customers and trade associations
- ◆ Offer our customers the option of 'green printing' by promoting the use of recycled paper, mineral oil free inks, recycled inks and sound product design.

Components of a **SUCCESSFUL** Environmental Policy

The Environmental Policy is unique to each organisation. It expresses management intentions and goals of the organisation. It is a public statement, which can appear in annual reports and company literature.

An Environmental Policy should contain measurable goals specific to the organisation.

A policy should include:

1. Declaration of commitment
2. Simple and concise aims outlining what you want to achieve and how
3. Commitment from senior management to establish the policy and provide the resources and support for employees to implement it
4. Appointment of a co-ordinator who is motivated and responsible for the day to day implementation of the policy
5. Education of all employees - let them know why and how your business is going to fulfil it's environmental objectives, this is extremely important to achieve your goals
6. Provision of incentives for employees to contribute to the success of the policy
7. A report of successes to staff, suppliers and customers

Commitment, education, co-ordination and review are key factors to implementing and maintaining a successful environmental policy