



# Managing waste in the textiles manufacturing industry

## Introduction

If you operate a small to medium sized textile manufacturing facility, including wool scouring, cotton and dyeing processes, then this fact sheet could help you to:

- reduce input and waste disposal costs
- improve your environmental performance
- be more competitive!

This fact sheet provides a range of practical and cost effective waste management options. Some offer immediate savings and associated benefits while others may involve an upfront cost that can be recovered within a few months or years.

## Major waste generating activities

Textile manufacturers undertake a range of waste-generating activities such as washing/drying, warp preparation, weaving, dyeing, printing, finishing, quality and process control, and warehousing.

The major wastes generated by this sector are fibre wastes. These include soft fibre wastes, yarn spinning (hard fibre) wastes, beaming wastes, off-cuts, packaging, spools and creals.

Wet finishing processes use up to 200 litres of water per kilogram of fibre, making waste water the largest waste in this sector by volume.

## Benefits of reducing waste

Improving waste management can benefit your business and the environment by:

- reducing the cost of purchasing materials (e.g. by maximising fibre reuse)
- increasing profitability (as lost product means less profit)
- minimising solid waste treatment and disposal costs (and generating an alternative income stream if there is a market for recycled fibre)
- improving waste water quality and reducing treatment costs
- reducing environmental impacts by reducing use of raw materials and producing less waste
- improving your public image and employee satisfaction through promoting an environmentally responsible image and providing a safer workplace.

## Things to consider when improving waste management practices

Implementing waste management improvements may require forward planning and some changes to the way your business operates. For example:

- Proposed actions, such as on-site waste water recycling and other systems that change the way wastes are managed, may need to be discussed with managers, workplace safety representatives, unions, insurers, investors, suppliers and customers to identify possible risks to quality, productivity, work conditions or security and check that they are acceptable.
- Employee training and awareness may be required to successfully implement actions and support the introduction of new equipment or processes, such as better segregation of wastes into fibre types, colours and processes that maximise recycling opportunities and 'waste' value.
- Results are more likely to be achieved and maintained if you have a written plan and clear targets agreed by all areas of management. Prioritise actions and consider beginning with the 'low-hanging fruit' for fast gains and to generate enthusiasm.
- Monitoring waste generation and disposal, such as checking collection contractors' invoices or benchmarking production against raw material purchases, is important for environmental compliance, stock control and to measure (and reward!) improvements.

The costs, savings and payback periods for the waste reduction options provided overleaf are a rough guide only. They include estimates of up front costs such as capital, labour and installation, but do not include ongoing costs unless these are fundamental to the option itself (e.g. improved maintenance regimes).

The suitability and benefits of each option depend on the nature and size of your business and the scale of application. You should also check that they comply with local environment, safety and other requirements. The waste hierarchy provides a framework for managing waste: avoid; reduce; reuse; recycle; and dispose. Waste avoidance generally delivers the best financial and environmental outcomes.

\$ up to \$1,000	\$\$ \$1,000 - \$10,000	\$\$\$ \$10,000 - \$50,000	\$\$\$\$ \$50,000+		
PROCESS CHANGE			EQUIPMENT / PLANT UPGRADE		
OPTION	COST	SAVING	PAYBACK PERIOD	WASTE	
Manage stock and ordering to minimise spoilage wastes and obsolete stock (e.g. implement a rotation scheme to set an age limit for storage and ensure that materials are used before their expiry date). Develop strategies for reviving old stock (e.g. redye old stock in saleable colours).	\$\$\$	Stock losses and waste disposal	Immediate	Avoid/ Reuse	
Monitor and minimise reprocessing rates (e.g. < 10%) to reduce wastage.	nil	Raw materials and waste disposal	Immediate	Avoid	
Minimise product waste by matching roll lengths to the job at hand and using the roll ends for alternative products (e.g. turn carpet roll ends into mats).	nil	Raw materials and waste disposal	Immediate	Avoid/ Reuse	
Reduce the amount of fabric used for quality tests (e.g. by reducing the fabric sample size or undertaking on-line non-destructive testing).	nil	Waste disposal	Immediate	Avoid	
Reuse off-cuts in pillow stuffing, shredding, felting and other applications to turn potential wastes into profit.	nil	Waste disposal	Immediate	Recycle	
Reduce packaging wastes by replacing yarn packing cartons and strapping with plastic film wrap and cardboard dividers. Investigate opportunities to buy in bulk or in recyclable containers and to return packaging to suppliers for reuse.	nil	Packaging consumption	Immediate	Avoid/ Recycle	
Reuse yarn spools and fabric cores internally. Use recyclable or compostible materials in these spools and cores for added environmental benefit.	nil	Material consumption	Immediate	Reuse	
Reduce waste water by using efficient processing systems (e.g. low liquor ratio dyeing machines), reducing rinsing, adding scours to dye baths, and applying finishes with paddlers.	various	Waste water	Various	Avoid	
Collect cooling water for use in dyeing and scouring processes.	\$\$	Water consumption	2-3 years	Reuse	
Install shredders to reprocess waste fibre into a floc that can be reblended into a loose fibre for spinning. Install stillages to maximise segregation of waste fibres by colour and type so they can be reblended into specific blends or to take advantage of other recycling opportunities.	\$\$\$ (\$)	Raw materials and waste disposal	3-5 years (Stillage 0-1 year)	Reuse/ Recycle	
Install a treatment system to recycle waste water.	\$\$\$\$	Water consumption	> 5 years	Recycle	

## Further information

If you would like further information, or to talk to someone who can help get you started, please contact Ai Group's Energy and Sustainable Business Helpdesk on **1300 733 752** or at [sustainablebusiness@aigroup.asn.au](mailto:sustainablebusiness@aigroup.asn.au) or visit the Ai Group website at [www.aigroup.com.au](http://www.aigroup.com.au).