

Case study – Bergriver Textiles

When the company started out with cleaner production projects, they had no idea what to expect and went through a major evolution. Juan was originally the factory manager, but as a result of the CP initiatives, a new factory manager was appointed and new position made for him as Resource Maximisation manager. His role is to look at all inputs and outputs to the factory and processes and to focus on continuous improvement.

The cleaner production (CP) programme at Berg River started with new awareness of CP as a result of the Danida project; the main driver being participation in the Waste Minimisation auditor training course, where the methodology of how to systematically go about these changes was explained. The global scope of potential savings presented in this course lead to "what if" scenarios within the company which were a big driver for CP at Berg River Textiles. Other reasons why CP was initiated included legal compliance requirements, long-term economic sustainability, respectful utilization of depleting natural resources, acting responsibility to nature and fellow human beings, as well as restoring destruction of past decades.

The process started with the gathering of global information, and removing Rand-value trend effects from figures. They then obtained more detailed information in the form of resource unit per unit manufactured. This led to the discovery of inconsistencies everywhere, and the company realised how little they knew about the process. Once this awareness came, management realised they had to start controlling their processes and start moving closer to the source of the generation of waste.

The first step was to admit that they were polluting and that there was room for improvement. Then using the "what if" scenarios, they started to look into opportunities for savings and risk impacts. This led to an investigation of all resources, such as water, steam and electricity. The focus shifted from a global company view, to each department, and then to each process. CP is not rocket science - it means just questioning current operations.

The approach for improvement must be to look at source reduction first before reuse/recycling. There is so much potential for improvement with simple management and control improvements. It is essential to measure in order to manage, and this measuring must be sustained, so that once the focus has shifted, progress can still be monitored. A set person must be made accountable for each section with key performance criteria included in the job description.

Below is a summary of the projects implemented at Berg River Textiles:

PROJECT	TYPE	RESOURCE	QUANTITY/YR
Jet Cooling Water	Re-use	Water	1020 kL
		Steam	7 ton
Bleaching Rinse Water Flowrate	Optimisation	Water	13 464 kL
		Steam	3699 ton
Caustic Recovery Cooling	Re-use	Water	16152 kL

Water		Steam	3177 ton
Caustic Recovery	Optimisation	Water	8508 kL
Condensate		Steam	1248 ton
Bleaching Rinse Water pH Control	Elimination	Water	13 464 kL
		Steam	3699 ton
Mercerizer Rinse Water	Re-use	Water	24 235 kL
		Steam	2040 ton
Bleaching & Mercerizer Integration	Re-use	Water	~40 000 kL
		Steam	~5200 ton
Padsteam Range Flowrates	Optimisation	Water	~22 500 kL
		Steam	~4245 ton

For the projects currently in progress, a total steam reduction of 23,315ton/yr and a total water reduction of 139,343kL / yr have been achieved, with a return on investment of 2weeks to 5 months (real). There have been 31 future projects identified for wet processing and 6 for dry processing.

Prior to implementing waste minimisation, water and steam usage per unit production was very inconsistent indicating little control over the process. After measurements began (Nov 2001), waste minimisation procedures could be implemented and there is a decreasing trend in consumption of both utilities. The target set for specific water use decreased from 75L/metre in July 2001 to 50L/metre in 2002. It has now been reset to 40L/metre.

CP means total commitment and a total cultural change from the sweeper to the CEO. The project cannot be driven by the champion only - those projects that are driven by individuals only are not sustainable. CP must be part of every manager's key performance areas such that each operator measures his performance against a standard and is accountable for waste. Don't only measure globally - go down to each machine and even each batch. Each process requires key performance indicators. Determine key focus areas and re-evaluate effectiveness. Always measure unit/unit production (take volume & price variables into account).

Juan commented that what Berg River had implemented so far is just addressing the obvious. They have optimized their business and put money straight onto the bottom line. Intensive training is required for organizational and cultural change, and swift implementation of project plans is essential for success.