

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:

Chemical manufacturing

JohnsonDiversey

JohnsonDiversey is a global manufacturer and distributor of commercial cleaning products. Some examples of popular JohnsonDiversey brand names are Jif, Comfort, Windex, Mr Muscle and other household and commercial brands.

Company characteristics

JohnsonDiversey is located in the Smithfield Wetherill Park Industrial Estate. The company employs approximately 150 people in Australia.



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.

Cleaning the way to a sustainable future

JohnsonDiversey joined a group of thirteen other businesses from the Smithfield Wetherill Park Industrial Estate to work with Fairfield City Council and the local Chamber of Commerce on an Industry Partnership Program cleaner production project.

With the support of the Council and a specialist environmental consultant, JohnsonDiversey established its own cleaner production team, bringing together staff from across the business to help identify and implement plans for environmental improvement.

What did they do?

Source reprocessed content

JohnsonDiversey's cleaner production team discovered the company could source reprocessed 200 litre drums from a local drum recycling centre with dangerous goods licence approval. Requiring 250 of these drums per week, this discovery has resulted in tremendous benefits to the company and the environment, saving over \$600,000 each year and diverting 2400 m³/314 tonnes of plastic drums from landfill each year. The company is now striving to collect 200 litre drums from all its customers throughout Australia, send them to the nearest recycling centre then purchase them again at a much lower price.

Reuse wastewater and reduce chemical consumption

Water used in a wash-out process is now being reused by the company in the next production batch of the same product. This has reduced water consumption by 144,000 litres each year and slashed annual water bills by \$10,000.

Most of the products produced by JohnsonDiversey are alkaline and one consequence of the waste stream mixing is a moderately alkaline effluent requiring neutralisation within the water treatment plant. The initiative to reuse wash-out material has significantly reduced the amount of phosphoric acid used to treat the wastewater.

Recycle chemical dust

Powder production areas on site incorporate a number of local dust extraction units and a large central dust extraction system. JohnsonDiversey has started to segregate dust from the production process and reuse clean, chemically active dust in subsequent production runs. This will optimise use of raw materials and lead to a corresponding reduction in waste disposal costs.

Recycle drinking cups and paper

Like many workplaces, JohnsonDiversey was using disposable drinking cups in lunch rooms and other locations and disposing of them in the general waste. By introducing recycling bins the company has succeeded in recycling 114 m³ of plastic cups and other plastic waste as well as 144 m³ of paper and cardboard per year.

Provide pressure cleaners

The JohnsonDiversey plant is fitted with several product tanks and vessels that require regular cleaning. Significant resources are directed towards the thorough cleaning of tanks to ensure product security and quality control. High-pressure cleaners were purchased to reduce the time required for cleaning tanks and increase productivity. An added benefit was a consequent reduction in water consumption. It is estimated that 150,000 litres of water are saved by using this process.



200 litre drums ready for transportation to the local recycling centre. Recycling drums has generated substantial savings and diverted over 3,000 drums from landfill each year.



Wash-out water is now reused in production.

Why did they do it?

The company was approached by Fairfield City Council to become involved in a cleaner production project with a group of businesses in the Smithfield Wetherill Park Industrial Estate. It got involved in order to improve its environmental performance and raise its profile.

JohnsonDiversey derived great benefit from obtaining an outsider's perspective of its operations. This was a significant help with examining business processes and identifying ways to improve performance. Operations Manager, Darren Reemeyer, said, "It's easy to think you know all the solutions, but it's also easy to fall into a routine and stop looking at your surroundings. Having a fresh set of eyes has boosted both the environmental and economic performance of the company tremendously."

For JohnsonDiversey, cleaner production has brought more than economic benefits. The program has improved company culture and shifted staff attitudes towards a more positive approach to applying environmental principles at work.

What were the costs and savings?

| Initiative | One-off costs | Savings per year |
|---|----------------|------------------|
| Recycled drums | \$200 | \$613,000 |
| Reuse of wash-out material | \$500 | \$10,260 |
| Recycling bins for plastic cups, paper, cardboard | \$200 | \$4,700 |
| Pressure cleaners | \$265 | \$1,400 |
| Power savings | \$0 | \$3,000 |
| Efficiency improvements | \$0 | \$37,800 |
| Totals | \$1,165 | \$670,150 |

What are the environmental gains?

- Recycled content**
 3,000 plastic chemical drums or 2400 m³ diverted from landfill each year.
- Water consumption**
 294,000 litres water saved each year by reusing wash-out material and installing pressure cleaners.
- Reduction in use of toxic chemicals**
 450 litres phosphoric acid saved per year by reducing wastewater.
- Recycling**
 114 m³ of plastic cups and cartons and 144 m³ of paper and cardboard recycled per annum.
- Energy savings**
 30,000 kW.h of energy saved by repairing compressed air leaks and improving lighting.

Where to now?

JohnsonDiversey has come a long way in terms of environmental management and fulfilling its commitment to sustainable development. In addition to collecting drums from customers for recycling, the company plans to explore other opportunities such as introducing different water treatment chemicals, and accelerating its waste minimisation and recycling drive to achieve a zero waste level.

More information

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 Conservation (NSW)**

Published by: Department of Environment and Conservation (NSW)
 59-61 Goulburn Street Sydney; PO Box A290 Sydney South 1232
 Ph: (02) 9995 5000 (switchboard); Ph: 131 555 (information/publication requests)
 Fax: (02) 9995 5911; Email: info@environment.nsw.gov.au;
 Website: www.environment.nsw.gov.au; ISSN 1445-2332 DEC April 2005

