

FOCUS ON RESOURCE SCARCITY PROMOTES PROFITABILITY



Key outcomes

Projected opportunities based on resource efficiency assessment.

Reductions (p.a)

Reduced water input

32% Reduction by volume
Savings of approx \$50,000

(based on current water costs)

Recycle initiatives	44,000 kL
Clean in place initiatives	28,400 kL
Maintenance and education	2,511 kL
Interface management	5,000 kL

Total 79,911 kL

Reduced trade waste output

35% Reduction by volume
Significant savings identified

Recycle initiatives	44,000 kL
Clean in place initiatives	28,400 kL
Maintenance and education	2,500 kL
Interface management	5,000 kL

Total 79,900 kL

Reductions in trade waste loads

Chemical oxygen demand (COD)	76%
Suspended solids (SS)	72%
Total phosphorus (TP)	41%
Total dissolved solids (TDS)	23%
Total Kjeldahl nitrogen (TKN)	36%

Further information:

Peter Gaudion

Manufacturing Manager, Bendigo

Tel: 1800 034 250

Email: peter.gaudion@parmalat.com.au

Web: www.parmalat.com.au

Or contact EPA

Tel: (03) 9695 2722

Email: business.programs@epa.vic.gov.au

Minimising water use and trade waste to ensure long-term viability and potential for business growth.

Dairy company Parmalat Australia Ltd has focused on water and trade waste minimisation at the company's Bendigo plant to ensure long-term viability and the potential for business growth in a water scarce environment.

The plant employs 170 people and processes approximately 50 million litres of milk product, 6.3 million litres of soy and 1.8 million litres of fruit juice annually.

'Bendigo has experienced almost ten years of drought, and local water reserves have dropped to less than 20 per cent capacity in recent times,' explained Peter Gaudion, the site's manufacturing manager. He said the scarcity of potable water in the area had the potential to influence the plant's long-term viability.

A resource efficiency assessment, undertaken as part of a trade waste partnership program with EPA Victoria and Coliban Water, resulted in the company identifying 13 opportunities for greater efficiency, spanning reduction in potable water consumption, extension of water reuse projects and reduction of effluent load from Parmalat's trade waste discharge.

The general approach used was to review the volumes and quality of water needed at each stage of the process. Opportunities identified by the assessment focus on minimising water consumption and capturing and reusing water where possible. These options provide the potential to reduce potable water intake by approximately 32 per cent and add \$50,000 to the bottom line from water reductions alone.

Closely linked to the reduction in potable water input is trade waste discharge. The assessment indicated that Parmalat has the opportunity to reduce trade waste volumes by 35 per cent, producing additional significant savings for the business yet to be fully calculated.

Gaudion also believes that a valuable outcome of this program was the improved awareness amongst senior management and staff of their role in improving environmental sustainability.

'Clear demonstration of the business case for resource-efficient initiatives has provided valuable information to assist in the allocation of capital investment in the Bendigo operation,' Peter continued.

'The exploration of new technology initiatives, along with the plans for waste and water reduction, means that we have much better long-term security for remaining in Bendigo, and can continue to contribute to the local economy in the region,' Peter said.

Additional options requiring significant capital input were also identified and may be considered in the future.

'You have to seriously consider resource-efficient opportunities that provide commercially attractive savings for business!'
Peter Gaudion,
Manufacturing Manager, Bendigo

SAVE WATER, SAVE ENERGY, REDUCE WASTE AND SAVE MONEY! — HINTS AND TIPS

Save Water

Understanding where water is used and lost in your business provides opportunities to quickly save water.

- Can existing processes use less water? Vacuuming, sweeping and high-pressure trigger nozzle hoses can be just as effective as cleaning with water.
- Review tank & system cleaning processes to identify opportunities to automate or amend to minimise water required for cleaning.
- Minimise water use in cooling processes by recycling cooling water, using fogging nozzles instead of running mains water, and shutting off flow when not in use.
- Identify opportunities to reuse or recycle your rinse, waste and greywater – the final flush may be able to be used as the first rinse.
- Establish a regular preventative maintenance program for water pipes to ensure blockages are removed, and leaks and overflows are minimised.
- Reduce water pressure where possible to minimise volume of water lost to leakage.
- Install rainwater tanks for irrigation use.
- Use non-potable water for appropriate end-uses in place of potable water (for example, dust suppression, on-site toilet flushing).
- Replace existing fixtures with more water efficient fixtures (for example toilets, taps and equipment).

Save Energy

Energy source and use has significant impact on profitability, productivity and greenhouse gas emissions.

- Install variable speed drives (VSDs) on pumps and other equipment.
- Optimise your boiler performance with regular maintenance and tuning and consider insulation, fixing steam leaks and installing economisers.
- Optimise your compressed air systems through insulation, fixing air leaks and optimising operating pressures.
- Review your plant lighting including efficiency of lighting, motion and day sensors and removing unnecessary lighting.
- Ensure your hot water system is insulated and running at an optimal temperature.
- Explore heat recovery options in industrial processes such as collecting condensate for use as feedwater for your boiler or using waste heat for space heating.
- Assess your heating, ventilation and air conditioning (HVAC) by adjusting your thermostat dependent on the weather (26 °C in summer and 18 °C in winter). Ensure systems are switched off out of operating hours.
- Regularly review plant equipment as upgrading equipment can often improve productivity and deliver energy savings.

Reduce Waste

Reducing waste can save your business money as well as saving valuable resources and helping the environment.

- Choose products with less packaging and purchase raw materials in bulk to minimise packaging.
- Plan ahead and avoid waste by matching raw material quantities to batch sizes.
- Educate and involve all staff in waste minimisation projects with rewards for new and creative approaches.
- Regularly review causes of 'off-spec' product and adjust systems and processes to minimise these occurrences.
- Establish 'take back' loops with suppliers such as packaging waste, product, which is faulty, or at the end of its useful life.
- Minimise product residue in packaging by removing more raw materials.
- Avoid product spillage through installing conveyor and gutter guards.
- Evaluate product design and manufacturing processes to find ways to avoid producing prescribed industrial waste.
- Investigate whether your waste could be used as a resource elsewhere and find opportunities for reuse.
- Share recycling resources with other businesses in your community to reduce cost. For ideas, see www.wasteexchange.net.au.

Leadership and Life Cycle

Learning how to manage your product or service life cycle more effectively can uncover a wealth of business, environmental and social benefits.

- Life Cycle Management supports evaluation of design and business decisions with the goal of reducing impact over the entire life of a product.
- Encourage innovation and work with colleagues and business partners to discover new ideas and solutions for improving sustainability.
- Actively seek information to better understand and address life cycle issues as they impact your specific business operations.
- Encourage staff from all levels to get involved by establishing an environmental committee.
- Beginning at product design, assess the life cycle impact of your product or service, looking at all activities that go into making, selling, using, transporting and disposing of a product or service.
- Train employees in specific Life Cycle Management skills.
- Investigate the use of life cycle tools such as Life Cycle Assessment and Ecological Footprint.
- Explore outcome-focused partnerships with your suppliers and customers to enable product and service delivery with the least possible environmental impact.

These are just a few of the opportunities available to improve profitability, productivity and your business environment. For other helpful weblinks and information on what other businesses are doing to improve their resource efficiency and sustainability visit www.epa.vic.gov.au/outcomes