

# SAVING WATER MAKES US HAPPY LITTLE VEGEMITES



## Key outcomes

### Savings (p.a)

#### Reduction in energy costs

Savings of approx. **\$80,000**

#### Reduction in water costs

Savings of approx. **\$100,000**

#### Reduction in trade waste costs

Savings of approx. **\$370,000**

### Volume reductions (p.a)

#### Water

Savings of approx. **74,500 kL**  
**39% reduction**

(Equivalent water consumption of 266 average Melbourne households)

#### Trade waste

Savings of approx. **88,500 kL**  
**55% reduction**

#### Energy

Savings of approx. **1,450 tonnes CO<sub>2</sub>-e**  
(Equivalent to taking 335 cars off the road)

### Return on investment

Cost of labour & equipment **\$3.2 million**

Recovery of implementation costs  
(average over 5 projects)

**3 years**

### Other benefits

- Increased productivity
- Increased revenue
- Less product wastage therefore more product to market

### Further information

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Cost savings of \$550,000 and a reduction in water use of 70 million litres have been identified by Kraft at their Port Melbourne site, home to Vegemite.

Kraft manufactures salad dressings, peanut butter and a wide range of snack foods, including the iconic Australian food Vegemite, at its factory in Port Melbourne.

In 2003–04, Kraft consolidated the world's manufacturing of Vegemite to Port Melbourne (in 2006 alone, Kraft produced 31,300 tonnes of product, 25 per cent of which was Vegemite). In doing so, the company improved the economies of scale and the change delivered substantial savings in water use, wastewater generation, energy and CO<sub>2</sub> emissions across its Australian and New Zealand operations.

In 2007, buoyed by these successes, Kraft undertook a cleaner production study in partnership with South East Water and EPA to identify further resource efficiency opportunities.

A consultant was appointed to investigate opportunities for improvement, with the cost shared by all parties. The aim was to reduce water consumption and generation of trade waste. The study looked at production processes and how the quality of trade waste generated and discharged could be improved by focusing on total dissolved solids, biological oxygen demand and total suspended solids.

The study concluded that the production of Vegemite required 60 per cent of all water usage and generated 80 per cent of trade waste.

Vegemite production was also identified as the main contributor to trade waste quality.

The majority of the resource efficiency opportunities were related to reducing product

'The benefits and opportunities identified from the resource efficiency study are compelling. Our products can be made with less waste generated, which in turn creates more sustainable processes with real economic, social and environmental savings.'

**Calvin Miller,**

Manager Group Manufacturing Australia,  
Kraft Foods Limited

loss, optimising equipment use and achieving more efficient cleaning practices.

Kraft has committed \$3.2 million over the next three years to implement opportunities identified by the project that will reduce its annual potable water use by 39 per cent, trade waste discharge by nearly 90 million litres and inorganic salt discharge by 180,000 kilograms.

Resource efficiency adopts a holistic business management approach that enables organisations to reduce daily operating costs, increase efficiency and generate more saleable products. It optimises the use of raw materials that substantially limit generation of waste products.

Kraft, EPA and South East Water are dedicated to continuing to work together to identify and achieve further savings.

### Some initiatives include

Optimising Clean in Place (CIP) systems

- Water reductions 11,800 kL/year
- Trade waste reductions 11,800 kL/year

Recirculation of equipment safety water

- Water reductions 10,000 kL/year
- Trade waste reductions 10,000 kL/year

Untampered production water reuse for non-food processes

- Water reductions 25,700 kL/year
- Trade waste reductions 25,700 kL/year

# 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](http://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/casestudies](http://www.epa.vic.gov.au/casestudies)