

CONTINUOUS IMPROVEMENTS PROVIDE SAVINGS



Industry Greenhouse Program Key outcomes

Savings (p.a.)

Reduction in energy costs

Savings of approx. **\$19,360**

Volume reductions

Reduction in Greenhouse Gas emissions

2,211 tonnes of CO₂-e
(Equivalent to taking 514 cars off the road)

Return on investment

Implementation costs (to date) **\$23,500**
(estimated - excluding loader fleet)

Recovery of implementation costs **14 months**

Further information

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Awareness of energy cost, rigorous procurement processes and energy monitoring have contributed to savings for Carter Holt Harvey's plant in Myrtleford.

Overall awareness of electricity consumption and associated costs has been improved at the Myrtleford site, which produces timber and plywood from environmentally sustainable forests.

Carter Holt Harvey demonstrates how continuous improvement will provide benefits beyond the timeframe of the Industry Greenhouse programme. Ongoing equipment upgrades have provided more than half of the greenhouse gas emission reductions achieved at the site since 2004.

An example of the continuous improvement process has been control of the kilns. The kilns are used for drying timber and are the largest energy using process on site. Recent improvements to the measurement of moisture content of wood means that kiln operation can be better optimised to match energy demand. This helps prevent excess energy application, beyond what is required, for the optimal drying of the timber. Savings of over \$13,000 a year can be attributed to this initiative costing approximately \$1,000 to implement.

When Carter Holt Harvey was planning to introduce a new fleet of log loaders, the site assessed the fuel consumption of the different makes and models on the market. This is part of the routine procurement process applied by the company. Being particularly reliant on mobile equipment such as loaders to shift logs, it has been a wise move.

The onboard monitoring system of the new loaders showed that compared to the old loaders the fuel consumption has dropped by over 20 per cent per unit of log processed since the loaders were purchased in 2005. Training drivers

'The savings achieved at Myrtleford in the selection of efficient plant shows the value of assessing life cycle cost. The fuel saving from our loaders alone has reduced our annual greenhouse gas emissions by 350 tonnes.'

Andrew McCleery, National Energy Manager, Carter Holt Harvey

in efficient operation of the fleet also helped achieve this reduction.

"The fuel saving from our loaders provides major cost savings and has reduced our annual greenhouse gas emissions by 350 tonnes. Together with other actions listed under the EPA's Industry Greenhouse Program Carter Holt Harvey at Myrtleford has reduced its greenhouse gas emissions by more than 2,000 tonnes since 2004," claims Andrew McCleery, National Energy Manager, Carter Holt Harvey.

Carter Holt Harvey's Myrtleford site is well placed to continue to reap the benefits of a continuous improvement in the years to come.

EREP - BUILDING ON THE SUCCESS OF THE INDUSTRY GREENHOUSE PROGRAM

Industry Greenhouse Program highlights

Realising the business benefits of energy efficiency.

EPA Victoria's Industry Greenhouse Program is the first regulatory greenhouse and energy efficiency program for industry, and one of the first in the world.

Large energy using and greenhouse gas emitting sites have been required to undertake an energy audit and implement any actions with a payback period of three years or less.

The projected final outcome for the program at the end of 2007 includes:

- Reduction in GHG emissions of 1.23 Mt CO₂-e per annum, an average of 3.0% reduction in the annual GHG emissions for these sites (from a 2003 baseline)
- Annual savings of \$38.2 million in energy costs for Victorian Industry with implementation costs of just \$64.6 million.
- Average payback on implementation of just 20 months.
- A total of 1377 actions were completed under the program to the end of 2006, and this is expected to increase to 2436 actions by the end of 2007.

With growing pressure on all our environmental resources, it is increasingly important that companies use energy and water as efficiently as possible and minimise waste production and disposal.

Building on the success of the Industry Greenhouse Program, EPA Victoria is currently developing a new program, Environment and Resource Efficiency Plans (EREP) program.

Under the program, Victoria's largest industrial and commercial users of energy and water will be required to assess energy, water and waste flows and implement identified cost effective actions.

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 daylight 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) systems. Consider optimising thermostat settings depending 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.

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).

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.

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