ALPINE MDF INDUSTRIES PTY LTD
WANGARATTA PLANT

SIMPLE CHANGES LEAD TO BIG SAVINGS

Industry Greenhouse Program Key outcomes

Savings (p.a.)

Reduction in energy costs

Savings of approx. **$250,000**

Volume reductions (p.a)

Reduction in Greenhouse Gas emissions

9,471 tonnes of CO_2-e
(Equivalent to taking 2,202 cars off the road)

Return on investment

Implementation costs	**$67,000**
Recovery of implementation costs	**3 months**

Additional project planned for 2008 (Wastewater treatment)

Savings (p.a.)

Reduction in energy costs

Savings of approx. **$20,000**

Volume reductions (p.a.)

Reduction in Greenhouse Gas emissions

7,335 tonnes of CO_2-e
(Equivalent to taking 1,746 cars off the road)

Return on investment

Implementation costs (estimated)	**$120,000**
Recovery of implementation costs	**6 years**

Further information

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Thinking outside the square enabled Alpine MDF to reduce the company's annual energy costs by 12 per cent on average, saving $250,000 per annum with a payback period of less than three months.

With up to 40 per cent of its product exported, Alpine MDF's medium density fibreboard can be found in floors, walls, doors and furniture throughout Australia, Asia and the USA.

The production process, including stripping the bark from the sustainable plantation radiata pine thinnings and clear fell chip logs occurs at Alpine's Wangaratta plant. The debarked logs are then chipped and ground into fibre, which is then compressed into board. The process of making fibreboard is energy intensive and operates 24/7. To reduce its energy requirements Alpine MDF uses the unwanted bark mixed with sawdust, sander dust and discarded logs to generate much of the heat and steam used in its processes.

The energy audit, undertaken as part of the EPA Industry Greenhouse Program, identified a number of opportunities to reduce energy use. Fixing compressed air leaks and the reduction of air pressure by just 0.5 bar cost approximately $1,200 and resulted in savings of 250 tonnes of CO_2-e. In addition to this, 4 variable speed drives were installed on fans providing significant savings of 1,886 tonnes CO_2-e, and almost $50,000.

The audit identified that significant reductions could be realised by upgrading the seven year old, energy intensive refiner (which grinds wood chips into fibre) with a more efficient model.

With a new equipment price tag of $120,000 plus downtime costs, the payback on this initiative was more than three years. This presented the company with a tough decision and initially placed the project outside of the Industry Greenhouse Program implementation requirements.

Alpine MDF's parent company, located in Japan is a strong advocate for energy and resource efficiency. Graham Church, CEO, Australia has fostered a team environment where departments regularly discuss approaches to achieve the company's annual environmental continuous improvement targets and challenges.

This focus resulted in Alpine's Technical and Engineering Departments collaborating to propose a new, equally effective solution. Rather than fully replacing the refiner, the refiner plates could be replaced at a capital cost of $17,000 with minimum down time and an annual energy saving of $250,000. This also resulted in enormous greenhouse gas reduction of 7,335 tonnes CO_2-e per annum. Even though this initiative required some additional resources to monitor the fibre production it had a payback time of less than 3 months and was shown to save on average 12% of the company's annual energy costs.

In addition to this project, the team at Alpine MDF have identified an opportunity to improve their wastewater treatment and are currently exploring their options to maximise their use of this scarce resource.

'By taking a team approach you can tap into considerable knowledge and experience to come up with smart very cost effective ideas. They not only have environmental benefits - they help the company's bottom line and often have OH&S and other benefits... To stay profitable you have to keep looking for opportunities to improve.'

Graham Church, CEO,
Alpine MDF

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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 CO_2-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 efficiency 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 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