

GODFREY HIRST  
(SOUTH GEELONG)

## REWARDED BY COMMITMENT AND TECHNICAL SOPHISTICATION



### Industry Greenhouse Program Key outcomes

#### Savings (p.a.)

##### Reduction in energy costs

Savings of approx. **10%**

#### Volume reductions

##### Reduction in Greenhouse Gas emissions (2003 to 2006)

**25%**

##### Reduction in Greenhouse Gas emissions (p.a)

**3,981 tonnes of CO<sub>2</sub>-e**  
(Equivalent to taking more than  
925 cars off the road)

#### Additional reductions (outside of Industry Greenhouse Program)

**Reduction in water consumption 40%**  
(Since 2002)

**Reduction in waste generation 50%**  
(Since 2002)

#### Return on investment

Recovery of implementation costs **2.2 years**

#### Further information

##### Robert Lunardelli

Environmental Engineer

Tel: (03) 5225 0284

Email: Robert.Lunardelli@godfreyhirst.com

Web: www.godfreyhirst.com

##### Or contact EPA

Tel: (03) 9695 2722

Email: greenhouse@epa.vic.gov.au

### In pursuit of environmental excellence beyond their already impressive track record in water management Godfrey Hirst now tackles energy efficiency.

With a magnificent 1860's heritage façade, and the site of Victoria's first commercial woollen mill, you would be forgiven for expecting to find something from a bygone era at Godfrey Hirst's South Geelong carpet factory.

Long gone is the multitude of workers labouring at noisy old equipment in a dusty and smelly environment. Instead you will find a vast landscape of quietly humming state of the art equipment, with skilled operators managing and controlling modern production processes to enable carpets to be delivered to Godfrey Hirst's domestic and increasingly global carpet markets.

The EPA Industry Greenhouse Program energy audit conducted in 2002 identified a number of opportunities for Godfrey Hirst to continue their pursuit of environmental excellence beyond their already impressive track record.

The subsequent actions undertaken by Godfrey Hirst included upgrading lighting on the factory floor and the installation of skylights in the roof to reduce the need for artificial lighting as well as the installation of an energy monitoring system to enable better management of energy use. Steam lines throughout the plant were insulated and a steam trap maintenance project conducted to improve steam system efficiency.

Production line processes continue to be improved including the removal of unnecessary vacuum pumps on dye lines, modification of compressed air pressure, replacement of boiler economisers and condensate return lines installed on appropriate equipment.

Godfrey Hirst has continued its development of synthetic coloured yarn and integrated it with high tech tufting machines to develop carpet that does not require dyeing or drying therefore

reducing energy consumption required per metre of carpet produced.

Not satisfied with the impressive results achieved by these actions, Godfrey Hirst has commenced a number of capital investment initiatives resulting in substantial energy efficiency improvements including the installation of new twisting machines, high-speed tufting machines, a new fibre dyeing line, and a new boiler.

A new forklift task management system and office rationalisation are other measures that have helped Godfrey Hirst achieve a 25% reduction in greenhouse gas emissions since commencing its involvement in the EPA's Industry Greenhouse Program in 2003.

*'We are looking for more opportunities to improve our business and environmental performance. Through cleaner production processes we hope to replicate the achievements we have made at South Geelong at our other manufacturing sites.'*

**Tim Maishman,**  
Group Operations Director

In addition to greenhouse gas reductions, and associated savings on energy bills, there have been substantial other benefits through modernisation - a 40% reduction in water consumption and a 50% reduction in waste generation since 2002.

Godfrey Hirst's commitment to reducing greenhouse gas emissions continues. At the South Geelong plant Godfrey Hirst is currently investigating potential for energy recovery from exhaust emissions in its drying operation and wastewater treatment.

#### Godfrey Hirst has won the following:

- Victorian Savewater 2005 - overall winner
- Victorian Savewater Award 2005 - Manufacturing Category winner
- Victorian Savewater 2007 - commendation for excellence
- Geelong Advertiser Business Excellence Awards - Environmental winner 2006
- Australian Greenhouse Challenge Plus 2005 Awards - Small to Medium Business winner



## 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<sub>2</sub>-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](http://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](http://www.epa.vic.gov.au/outcomes)