

# Energy and Greenhouse Program

## 2007/08 results

Hydro Tasmania's Energy and Greenhouse Program (EGP) was established in 2005/06 to facilitate improving energy efficiency and reducing greenhouse gas emissions from operations and assets.

Targets for energy reduction were set through to 2010/11 and are now incorporated into the Climate Change Response Strategy as part of our aim to become carbon neutral by 2012. This will be complemented by purchasing credible offsets for various activities.

**Table 1: Annual energy reduction targets (based on 2005/06 baseline)**

	2006/07	2007/08	2008/09	2009/10	2010/11
King Island	0%	15%	20%	40%	40%
Flinders Island	0%	0%	25%	25%	25%
Buildings & facilities	3%	5%	10%	15%	20%
Vehicle fleet	0%	4%	4%	7%	7%
<b>Hydro Tasmania's target</b>	<b>0%</b>	<b>12%</b>	<b>22%</b>	<b>35%</b>	<b>36%</b>

These projections exclude the emissions from Bell Bay Power Station operation which currently comprises over 97% of Hydro Tasmania's emissions. The station is expected to close during 2009.

### **Performance for 2007/08**

Hydro Tasmania achieved a 7.1% energy reduction during 2007/08, short of the target of 12% for the period.

Over 97% or 12,325,189 gigajoules (GJ) of Hydro Tasmania's energy consumption continued to come from Bell Bay Power Station which was run continually during the 2007/08 period due to low inflow.

The remaining 3% or 203,798.1 GJ of energy consumed represents a total energy use reduction of 7.1% for 2007/08 compared to the target of 12%.

Hydro Tasmania committed to offsetting the emissions from business air travel for 2007/08. Preparations and evaluation of offsets are currently underway and are expected to be finalised in early 2009.

The EGP supports a range of initiatives throughout the business to pursue these targets. Significant progress has been made in improving measures and monitoring energy consumption and energy efficiency. An evaluation is being undertaken to identify where structural and cultural barriers are impeding progress towards the targets so that action can be taken to overcome these.

Some initiatives planned for 2007/08 for reducing energy use were either not completed or not implemented due to various reasons, some of which were beyond our control, such as reduced resources due to the low inflows, and some which will continue to be pursued, such as resolving measuring methods and lines of responsibility.

**Table 2. Annual energy reductions for 2007/08.**

Target activity		2005/06 actual (GJ) energy consumed	2007/08 actuals		2007/08 target
			energy consumed (GJ)	percentage reduction (%)	
<b>Bass Strait islands</b>	King Island	114 730.5	104 463.8	8.9%	15%
	Flinders Island	47 312.6	44 603.8	5.7%	0%
<b>Buildings &amp; facilities</b>		26 176.3	25 304.5	3.3%	5%
<b>Vehicle fleet</b>		31 149.0	29 426.0	5.5%	4%
<b>Total</b>		<b>219 368.4</b>	<b>203 798.1</b>	<b>7.1%</b>	<b>12%</b>

### **Bass Strait islands**

Two initiatives were to provide the reduction target on the Bass Strait islands:

- upgrading King Island Power Station by replacing two old with two new, more efficient diesel units
- installing resistor banks that reduce diesel use and support more efficient use of wind energy.

The power station diesel units were replaced which provided the expected reduction for that project.

The resistor banks project was implemented and commissioning will be completed during 2008/09 and is expected to deliver up to 12% in energy savings.

### **Fleet**

Reductions for the reporting period was assessed through fuel use, vehicle type and kilometres travelled.

Over the past four years the vehicle fleet has replaced approximately 80 six-cylinder vehicles with four-cylinder vehicles estimated to have achieved fuel and efficiency reductions per vehicle of:

- annual fuel consumption reduced by 1365 litres
- average fuel costs reduced by \$2407 per annum
- average capital cost reduced by approximately \$1500

Total greenhouse gas emissions reduced by 986 t CO<sub>2</sub>-e over four years since the policy was implemented.

## **Building and facilities**

An energy audit of the Hobart office was undertaken in 2007 providing a detailed breakdown of energy usage and identifying 27 energy savings opportunities with the potential to save approximately \$70,000 p.a. in energy consumption. The audit will be reviewed to prioritise further cost saving opportunities and energy use reductions.

A number of these initiatives have been implemented, including:

- air conditions switched off one hour earlier each day, estimated to save between \$13 000 and \$22 000 annually with negligible implementation costs
- out of hours lighting reduced
- energy efficient lighting installed in the foyer at a cost of around \$20 000.

Relocating Hydro Tasmania Consulting to Cambridge, accommodated in a 5-Star Green Star building, has reduced overall energy consumption and consolidated the infrastructure managed by facilities.

## **2008/09 and beyond**

A range of identified improvements for energy use reductions and efficiencies will be implemented throughout 2008/09 and we will continue to explore further options.

### ***Plans for target activities***

#### **Bass Strait islands**

The following projects are planned for implementation potentially throughout and beyond the 2008/09 financial year:

- commission and operate of King Island resistor bank project - planned for February 2009 - will allow increased wind penetration while maintaining security of supply
- replace Flinders Island diesel with a more efficient unit, preferably capable of linking with wind energy for greater efficiencies\*.

Further projects are delayed due to reductions in the capital program.

\* The wind farm on Flinders Island is owned by a company independent of Hydro Tasmania.

#### **Fleet**

Improvements to fleet efficiency will be progressed in the future through actions such as:

- purchase more efficient vehicles – linking to the State Government fleet contract
- investigate an appropriate reduction in the number of vehicles in the operational fleet
- manage travel demand through trip sharing, carpooling options and improved use of video conferencing
- improve driver behaviour for fuel efficiency through training courses
- encourage a greener commute through carpooling and advocating alternatives to the car
- raise awareness of personal contributions to reducing fuel use and energy efficiency.

Quantifying these actions will be made possible as information becomes available and project implementation occurs.

## **Building and facilities**

The Hobart office energy audit will be reviewed to prioritise further cost saving opportunities and energy use reductions.

## ***Future improvements***

While the targets focus on specific business activities Hydro Tasmania is looking for other areas to improve our carbon footprint. Some other activities being pursued include:

- a “green procurement’ schedule for inclusion in tenders and contracts to encourage principles of sustainability including energy efficiency and greenhouse goals
- upgrading power station pumps to achieve greater efficiencies for output and energy use
- progressively conducting energy audits of power stations – in 2008/09 the Poatina Power Station will prioritise identified opportunities according to business value and capability.