



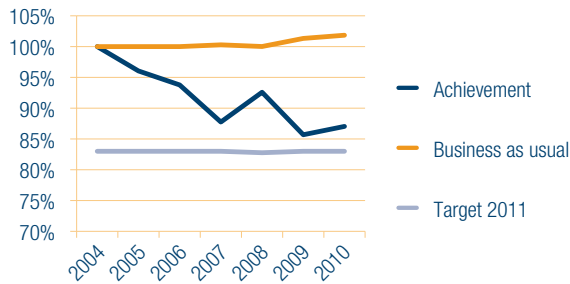
University of Ballarat Emissions Report 2010

Overall, the University's net greenhouse gas emissions have decreased by 1,429 tonnes (8%) to 16,700 tonnes in 2010 compared to 2009. The main contributing factors to this decrease include reductions in: air travel (49%), electricity (6%), paper consumption (28%) and vehicle fuel (10%).

Emissions source	Consumption units	Consumption	CO2-e (tonnes) 2010	CO2-e (tonnes) 2009	Portion of total inventory %	Change from 2009 %
Direct emissions (Scope 1)						
Natural Gas	GJ	59,321	3,045	2,853	17.8%	7% ▲
Petrol for vehicles	kL	181	414	444	2.4%	7% ▼
Diesel for vehicles	kL	19	51	50	0.3%	2% ▼
Petrol for hire vehicles	kL	15	34	58	0.2%	41% ▼
Total Scope 1			3,544	3,405	20.8%	
Indirect emissions (Scope 2)						
Electricity	kWh	8,543,042	10,508	11,152	61.6%	6% ▼
Optional Emissions (Scope 3)						
Electricity – transmission & distribution losses	kWh	8,543,042	1,196	1,269	7.0%	6% ▼
Flights	km	3,153,575	923	1,807	5.4%	49% ▼
Waste – landfill	tonnes	357	357	342	2.1%	4% ▲
Extraction of natural gas	GJ	59,321	237	222	1.4%	7% ▲
Water consumption	kL	64,992	130	128	0.8%	2% ▲
Paper consumption	reams	19,287	93	129	0.5%	28% ▼
Train travel	\$	23,655	34	43	0.2%	21% ▼
Emissions from fuel extraction for petrol	kL	181	35	40	0.2%	11% ▼
Taxi travel	\$	34,303	7	7	0.0%	0%
Emissions from fuel extraction for diesel	kL	19	4	4	0.0%	0%
Total scope 3			3,017	3,991	17.7%	
Scope 1 + 2 + 3			17,069	18,548	100.0%	
Reduction measures						
Offset Flights			0	-38		
AGL Green power	kWh	269,166	-369	-381		
Net Emissions			16,700	18,129		8% ▼

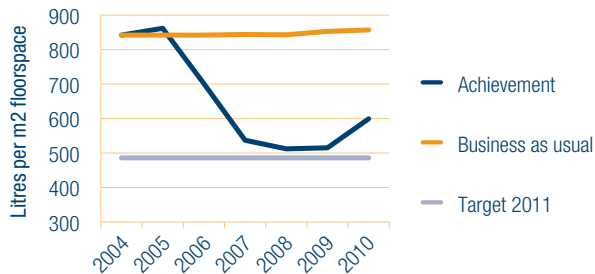
Targeted sustainability actions and achievements

ENERGY CONSUMPTION PER M² OF FLOOR SPACE



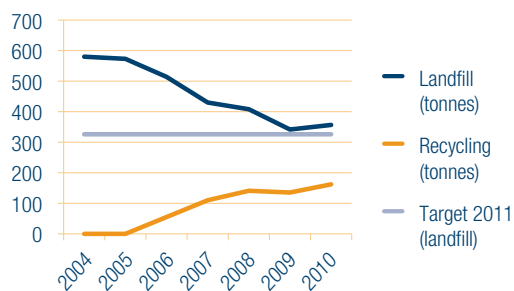
- In 2010, electricity consumption decreased by 6%
- Natural gas rose by 7% over the same period
- Natural gas increased due to the cooler winter and the banning of portable electric heaters
- A target has been set to reduce energy consumption by 10% per m² of floor space by 2011 (2008 baseline)

POTABLE WATER CONSUMPTION PER M² OF FLOOR SPACE



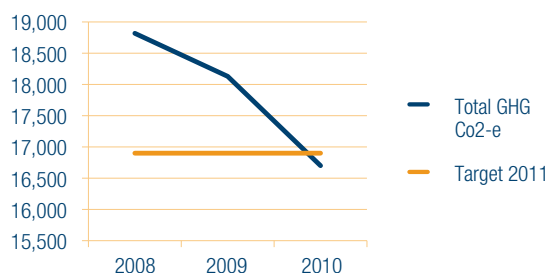
- Potable water rose by 17% in 2010
- A major leak at SMB campus was responsible for the majority of the increase
- In 2010 water tanks were installed at Primary Industries Centre, Equine Centre and SMB Brewery car park
- 2011 target is to reduce potable water consumption to 486 litres per m² of floor space (currently 599 litres)

WASTE AND RECYCLING (TONNES)



- Recycling rates continue to improve with 31% of total waste now recycled
- 2011 target is to reduce total landfill waste to 326 tonnes per year (currently 357 tonnes) and to increase recycling rate to 35% of total waste

TOTAL GREENHOUSE GAS EMISSIONS (CO₂-E) ALL ACTIVITIES



- Total greenhouse gas emission have fallen by 10% since 2008
- Air travel, paper consumption and electricity consumption showed the greatest reduction in 2010
- The sustainability strategy has outlined further improvements for 2011

Sustainability projects and programs

2010



UB's Primary Industries Training Centre is leading the way in sustainability

Primary Industries Centre – Leader in Sustainable Design

The newly opened Primary Industries Training Centre (PITC) in Gillies Street is now UB's most sustainable building. Several key design features have made PITC efficiently consume electricity, natural gas and water and is now the most efficient campus building per m² floorspace. The PITC reduces energy by utilising fresh air vents at the top and bottom of every room to flush out hot air and cool occupants in summer. Efficient lighting linked to movement and light sensors, shading to allow winter sun in and summer sun out and a solar hot water system. A 100,000 litre tank has been installed to capture rainwater off the nearby outbuildings. Staff are committed to maximising recycling of waste by constructing a compost facility for food scraps and installing recycling bins in all classrooms.

Herbal Education for Prospects Restaurant

Hospitality students will soon be using fresh herbs grown from a nearby herb garden at SMB campus. The site has historical significance as the Ballarat Gaol used the same area to grow vegetables in the late 1800s. The garden has 45,000 litres of water storage and automatic dripper irrigation will ensure herbs are grown all year round.

A collaborative project, Horticulture and Hospitality students will design and maintain the garden and learn the benefits of local food production.

Generating Clean Electricity

Since their installation in 2007, the solar panels in SMB's Building and Construction Training Centre and nearby pedestrian bridge have generated over 35,000 kilowatt hours of electricity. The panels are unique in their design as they are incorporated into the window. This display is the largest of its type in Australia.

Nanya Field Station, Soaking up CO²

Nanya Field Station is a 28,960 hectare research property north of Wentworth NSW. Independent studies in 2010 have reported the property is currently storing 2,075,752 tonnes of CO².



TOP: The herb garden at SMB

ABOVE: The Building and Construction Training Centre at SMB