CSU green
Sustainability
– your actions count!

2010 Environmental Scorecard

Charles Sturt University

Foreword

In 2010, the University Council endorsed Charles Sturt University's (CSU) Strategy for the period of 2011-2015. For the operating period of this strategy, a commitment has been made to complete a sustainability enabling plan for the University, which will enshrine and build on targets that were established in the previous Institutional Development Plan. CSU remains committed to financing these targets through its internal Energy Saving Loan Scheme and Sustainability Fund.

The 2010 period was one of planning and design for the University, with Masterplanning projects undertaken at both the Orange and Wagga Wagga Campus. These documents provide a comprehensive guide to both how and where CSU should be expanding its campuses. Masterplanning establishes a blueprint for future development at the University allowing informed decisions to be made that take many important factors into consideration including sustainability.

Planning and design for a number of new, significant facilities was completed throughout 2010, including the National Life Sciences Hub Precinct, Albury Early Learning + Nurture Centre and the Orange Allied Health Building. Construction commenced on these buildings in late 2010, and while sustainable design principles are a high priority (NaLSH and Albury Early Learning + Nurture Centre are registered for a Green Star – Education Design v1 rating and are targeting a 5 star Green Star rating, representing Australian Excellence in sustainable building design) they are expected to add significantly to CSU's energy and water consumption.

Overall, there has been a 14% increase in building gross floor area since 2006. A large proportion of this new building area is associated with complex and state-of-the-art facilities required for the delivery of Dentistry clinics at the Albury-Wodonga (Thurgoona), Bathurst and Dubbo campuses. Discontinued operations at the majority of the Albury-Wodonga (City) campus have managed to actually reduce the percentage increase in operation gross floor area by 2% as compared to 2009.

CSU recognises that growth and progress increases the challenge of proactively managing the University's environmental footprint. In 2010 CSU's absolute energy consumption has plateaued and water consumption significantly reduced since 2006. Anecdotally, these appear to be good results for the University. However, the impact of the cool, wet conditions that were experienced in inland NSW during late 2010 must be taken into consideration. It's likely that this weather has played a role in suppressing energy and water consumption for the period.

It will remain an ongoing challenge for CSU to achieve its goal of becoming a carbon neutral University by 2015, unless significant investment in energy efficiency is sustained. This is the cheapest and most effective means of reducing CSU's carbon footprint; however, it is not a total solution, as energy efficiency can only reduce CSU's greenhouse gas emission output; not totally eliminate it. To achieve neutrality, additional investments in carbon offsets and renewable energy will need to be made over the next four years if the 2015 target is to be realised and I look forward to CSU Green facilitating further progress in this area.

I would like to offer my thanks to those that have participated in, and provided support for CSU sustainability events and initiatives in 2010, and have made other contributions in their own Faculties or Divisions. For those who don't feel that they have played a role, I encourage to take advantage of some of the many opportunities that exist such as participation in your Campus' Environment Committee, making a submission to the CSU Sustainability Grant or taking advantage of the activities available through CSU Green's Calendar of Events (http://www.csu.edu.au/csugreen/upcoming-events).

Professor Ian Goulter
Vice Chancellor and President

Executive Summary

This report reviews the energy and water use as well as associated costs for Charles Sturt University's (CSU) major campuses for 2010 against values for 2009 and the baseline year, 2006. The major campuses are Wagga Wagga, Bathurst, Orange, Albury-Wodonga (Thurgoona), Albury-Wodonga (City), Dubbo, Canberra and Broken Hill. The purpose of this report is to provide a comparison and commentary of CSU's performance against the sustainability targets referred to within the previous University Strategic Plan.

The University's Institutional Development Plan (IDP) sets out the following sustainability targets in relation to the baseline year, 2006:

- reduction in water consumption of 25% by 2011
- reduction in energy use of 10% by 2011 & 25% by 2015
- to utilise at least 10% of CSU land for the purposes of increasing biodiversity by 2011 and 20% by 2015
- recovery of 70% of solid waste by 2014
- to be carbon neutral by 2015

The 2011 edition of the scorecard will be reporting against the same sustainability targets, however, these will no longer come under the Institutional Development Plan. Instead, these will be enshrined under the new sustainability enabling plan.

In 2010, an additional 6,637m^2 of gross floor area (GFA) was commissioned across the University's building portfolio, however, with this was offset by a loss of 9,107m^2 of gross floor removed from the University's portfolio, with a number of buildings no longer operating in 2010 at the Albury-Wodonga (City) Campus. Overall, there has been a 14% increase in operation gross floor area since 2006.

Overall, CSU consumed slightly more energy in 2010 than it did in 2009 resulting in a 4% increase in stationary energy related greenhouse gas emissions (Figure 0-1). Because of this increase in energy related greenhouse gas emissions, 2010 figures remained 7% above the 2006 baseline year.

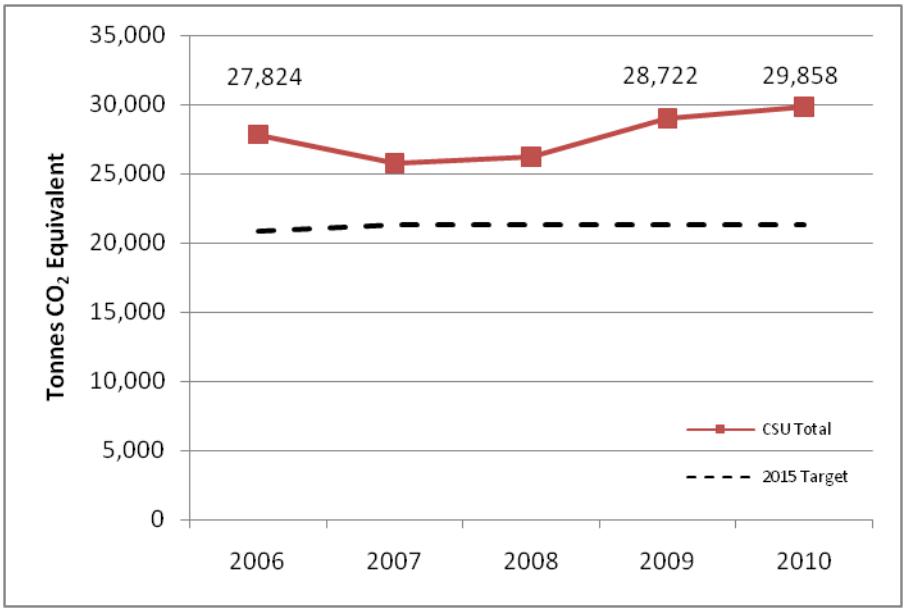


Figure 0-1 – Stationary energy related greenhouse gas emissions for all CSU campuses for the period 2006 to 2010

Greenhouse gas emissions have remained steady in 2010, Figure 0-2 illustrates that CSU has reduced the intensity of its greenhouse gas emissions by 5 kg CO_2/m^2, compared to the baseline year of 2006.

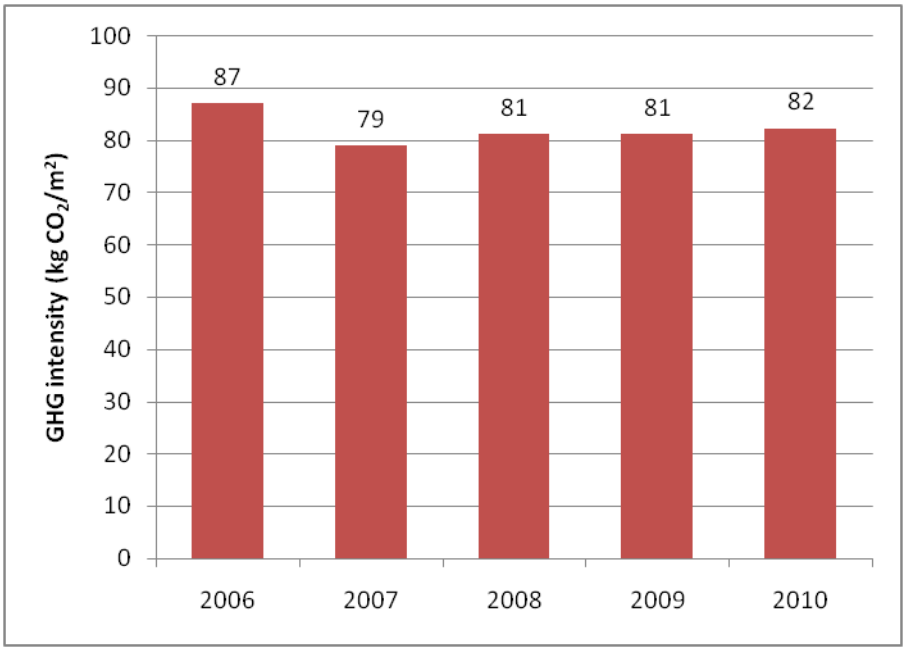


Figure 0-2 – Stationary energy related greenhouse gas emission intensity for all CSU campuses for the period 2006 to 2010

Water consumption decreased substantially from 2009 to 2010. (Figure 0-3). In 2010 water consumption was reduced by 47% compared to the 2006 baseline year. This surpasses the 25% reduction target set for 2011.

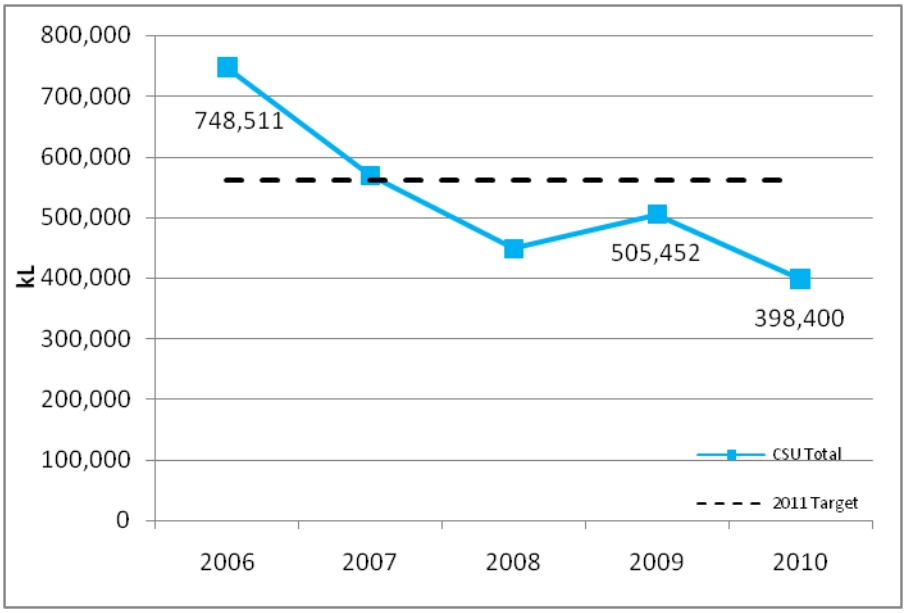


Figure 0-3 - Water consumption associated with all CSU campuses for the period 2006 to 2010

Greenhouse gas emissions produced by CSU staff travel activities (vehicle and air travel) have increased significantly since 2006 (Figure 0-4) with an increase of 93% recorded in 2010 against the 2006 baseline year. It should be noted that the 2006 baseline year has been reduced slightly on the baseline reported in the 2009 edition of the Environmental Scorecard, due to an adjustment in flight greenhouse gas emission factors.

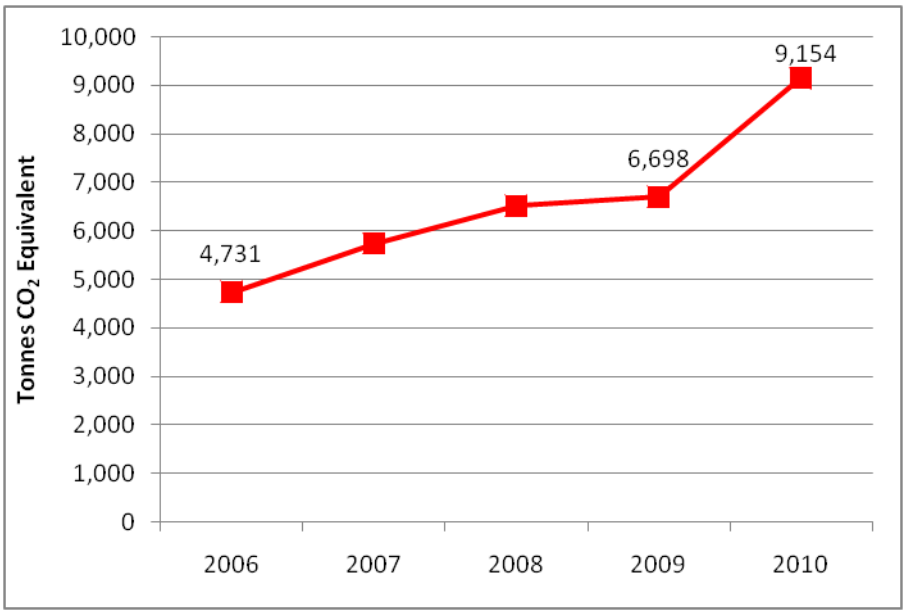


Figure 0-4 - Travel related greenhouse gas emissions associated with CSU operations for the period 2006 to 2010

Footprint ready reckoner

The following provides some everyday comparisons to the volume of resources consumed and travel undertaken by CSU in 241.

Resource	2010 Figure	Comparisons
Energy	29,858 tonnes CO_2 equivalent	• 2,315 4-person households
Water	398,400,000 litres	• 1,981 urban 4-person households • 504 Olympic-sized swimming pools
Vehicle travel	7,650,000 kilometres	• Annual distance travelled by 534 family cars
Air travel	23,460,101 kilometres	• 32,903 trips from Sydney to Melbourne

As with the 2009 edition of the Environmental Scorecard, an attempt has been made to quantify the increase in utility consumption accountable to new buildings that were commissioned during 2010. It should be noted that not all utility data for new buildings was available at the commencement of 2011. Given this, the total 2010 building loads are under-estimating the true utility consumption. New buildings that are constructed at CSU are more efficient in the way they consume water and energy (as new major buildings are typically subject to the Green Star process).

However, the targets outlined in the Institutional Development Plan are absolute targets, and will require further investment to offset the additional utility consumption from new buildings.

Table of Contents

Introduction

CSU faces a real challenge in achieving a 25% reduction in energy consumption by 2015 in light of the expansion activities that have occurred and those that are still to take place.

It is acknowledged that some reductions in energy consumption will be achieved in the short-term through the disposal of the Albury-Wodonga (City) campus; however, the scale of the planned expansion for CSU's major campuses will quickly offset this reduction.

This target will only be reached through significant investment in energy efficiency measures within existing building stock and setting stringent performance targets for all new facilities.

The first edition of CSU's Scorecard was published in 2007 and was titled Energy & Water Scorecard. The scope of the document has grown in 2009 to capture other metrics possessing sustainability targets under CSU's IDP (e.g. waste, travel-related GHG emissions). It is envisaged that future editions of the Scorecard will also include a metric for CSU's land use target for improving biodiversity as the organisation's progress in this area matures.

Data for CSU's Goulburn, Manly, Ontario and Parramatta/Homebush operations is not presented given the University's role as a tenant/sub-tenant within these facilities.

In reviewing resource use associated with the major campuses, the following indicators have been selected:

- Total electricity consumption in kilowatt hours (kWh) and intensity in (kWh/m^2 GFA)
- Total gas consumption in megajoules (MJ) and intensity in (MJ/m^2 GFA)
- Total mains supplied water consumption in kilolitres (kL) and intensity in (kL/m^2 GFA)
- Stationary energy, travel related and total greenhouse gas emissions in tonnes of CO_2 emissions (t CO_2)
- Waste production as volume(m^3)
- Travel by university vehicles for business use in kilometres (km) and associated fuel use in litres (L)
- Air travel for university business in kilometres (km)

It is important to note that the indicators chosen are those with readily available data, as recorded by Division of Facilities Management, Finance Division and external contractors.

The Environmental Scorecard will be published annually in March for the purposes of assessing CSU's performance against its sustainability targets and increasing awareness among staff, students and the general community of the measures being taken to address these targets.

1. University wide analysis

1.1. Electricity analysis

In 2010, a moderate increase in electricity consumption for CSU as an organisation was observed compared to consumption in 2009. This represents an increase of 8% on 2006 electricity consumption. Overall the University used 3% more electricity in 2010 than the previous year, 2009.

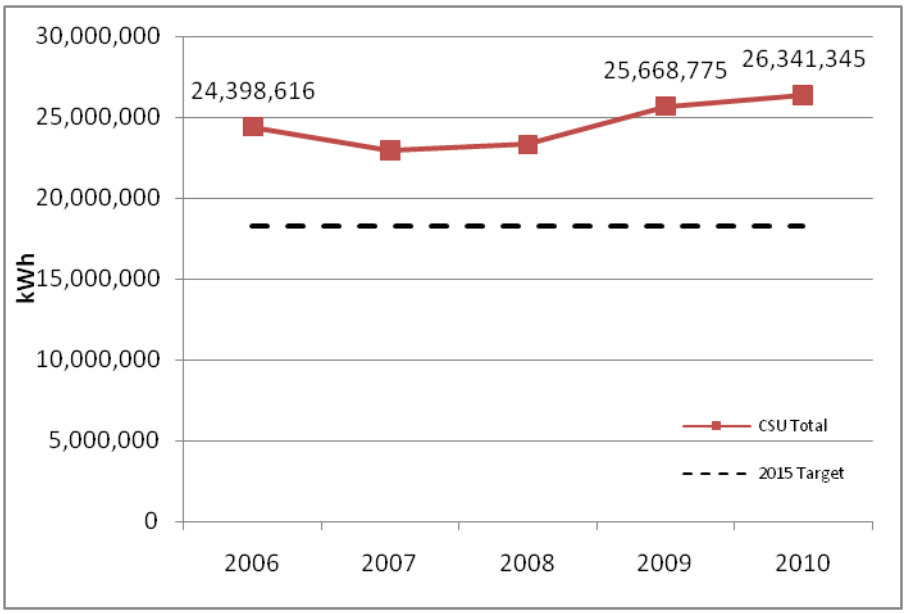


Figure 1-1 – Absolute electricity consumption across all CSU campuses

Figure 1-2 examines the proportion of CSU's to total electricity consumption that can be attributed to the commissioning of new buildings since the beginning of January 2009. Discounting the additional building load; CSU is performing reasonably well against its 2006 electricity consumption baseline, with slight drop measured in 2010.

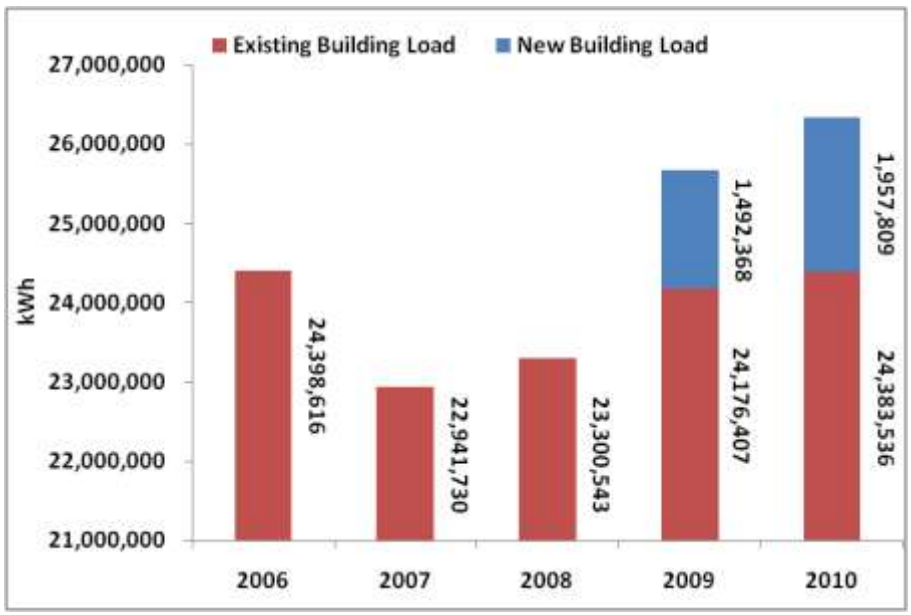


Figure 1-2 – Absolute electricity consumption across all CSU campuses with new building load

Wagga Wagga and Bathurst campuses were the largest users of electricity accounting for 50% and 29% respectively in 2010 (Figure 1-3). The remaining 21% of electricity consumption can be accounted for through the Orange, Albury-Wodonga (City), Albury-Wodonga (Thurgoona), Dubbo, Canberra and Broken Hill campuses collectively.

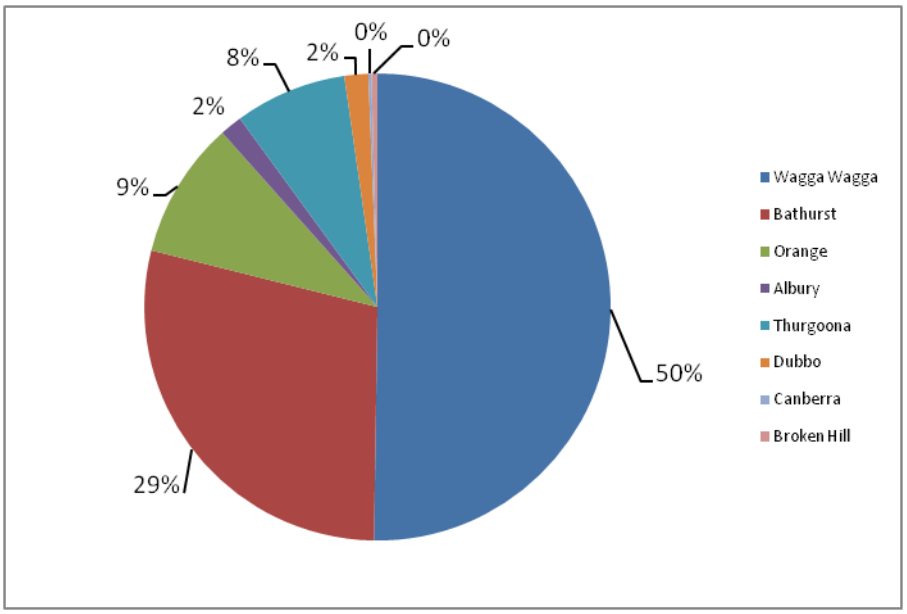


Figure 1-3 - Proportion of total electricity used by each CSU campus in 2010

Analysing electricity consumption for each campus against gross floor area provides a means of comparing the intensity of electricity use by the varied-sized campuses (Figure 1-4). In 2010, Wagga Wagga and Bathurst campuses were the most intensive users of electricity at 105 and 95 kWh/m^2 of gross floor area (GFA) respectively.

Broken Hill was the least intensive electricity user at 22 kWh/m^2.

As discussed the in 2009 edition of the scorecard, the finalisation of the transition of Albury-Wodonga (City) Campus staff to the Albury-Wodonga (Thurgoona) campus has significantly increased the energy intensity of the Albury-Wodonga (Thurgoona) campus. Conversely, the Albury-Wodonga (City) campus continued to consume significant quantities of power during 2010, despite their being a significantly reduced staff load. This has resulted in an energy intensity of 34kWh/m^2 recorded in 2010.

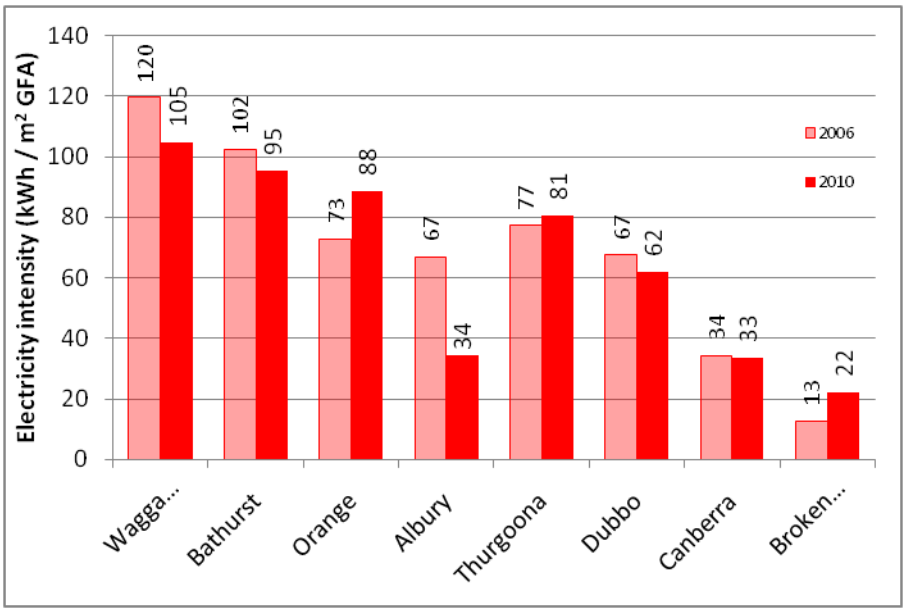


Figure 1-4 - Electricity use intensity comparison, based on gross floor area, for CSU campuses in 2010 compared to 2006

A summary of electricity related charges (summation of network and usage charges) is provided in Table 1-1.

CSU's total electricity related charges have increased by 64% from 2006 to 2010 as a result of increased prices and the 8% increase in electricity use over the same period.

The Independent Pricing and Regulatory Tribunal (IPART) estimates that electricity prices are likely to rise by an average of 32% between the years 2010 and 2013 (IPART Determination of Electricity Prices, 2010 – 2013).

The implementation of a carbon tax and/or emissions trading scheme is expected to increase electricity prices, however, it is difficult to estimate the cost to CSU until the cost of a level of carbon pricing is determined and the design of the market-based scheme is finalised (IPART, 2011)

Table 1-1 - Electricity related charges for CSU campuses in 2010

	Wagga Wagga	Bathurst	Orange	Albury-Wodonga (City)	Albury-Wodonga (Thurgoona)	Dubbo	Canberra	Broken Hill	CSU Total
2006	$1,131,187	$869,331	$176,030	$118,115	$134,121	$52,594	$2,521	$9,493	$2,493,392
2007	$1,181,730	$872,142	$160,039	$138,153	$163,858	$43,900	$4,566	$9,493	$2,573,882
2008	$1,331,488	$881,137	$214,900	$159,492	$210,979	$44,458	$7,933	$29,044	$2,879,430
2009	$1,621,518	$864,004	$344,308	$169,399	$316,149	$60,490	$10,247	$38,056	$3,434,453
2010	$2,023,435	$1,128,347	$444,755	$101,558	$434,722	$73,757	$10,154	$21,139	$4,237,867

1.2. Gas analysis

In 2009, a small decrease in natural gas consumption across all campuses was observed compared to 2006 (Figure 1-5). The decrease represented 0.1% of 2006 natural gas use. Overall the University consumed 3% more natural gas in 2010 than 2009.

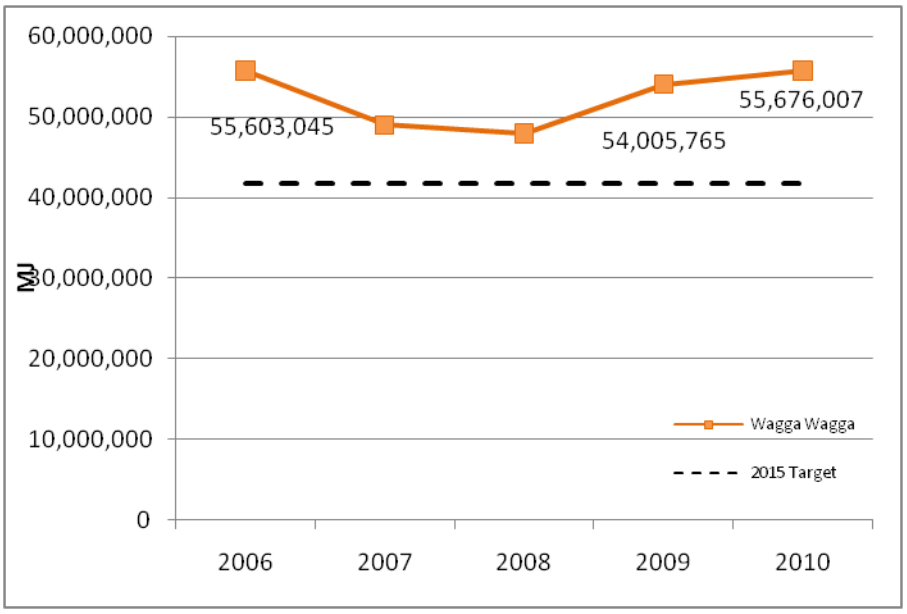


Figure 1-5 – Absolute natural gas consumption across all CSU campuses

Figure 1-6 examines the proportion of CSU's to total natural gas consumption that can be attributed to the commissioning of new buildings since the beginning of January 2009. Discounting the additional building load; CSU is performing reasonably well against its 2006 natural gas consumption baseline, with slight drop measured in 2010.

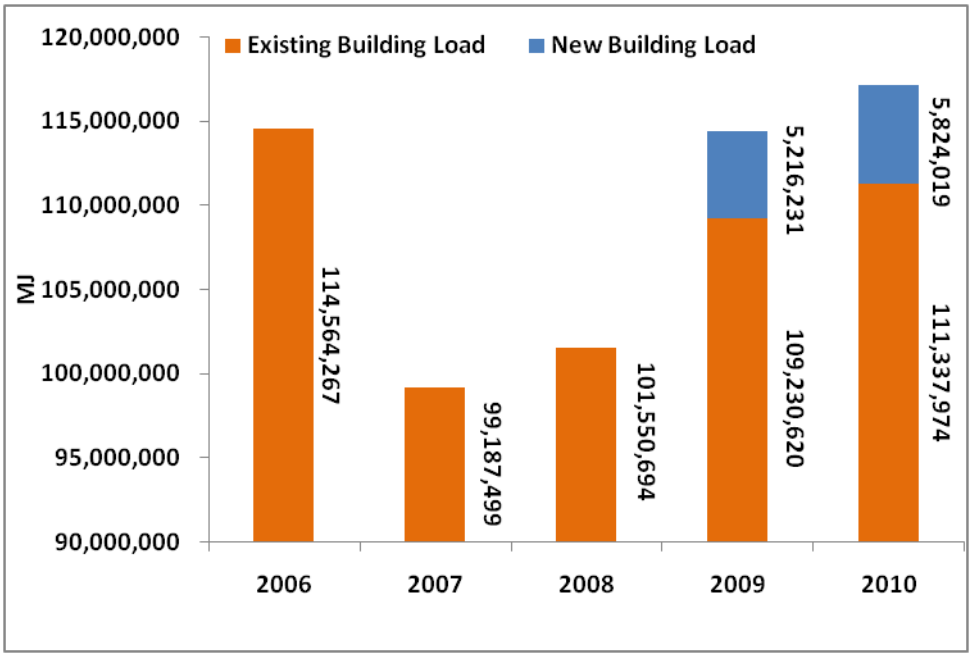


Figure 1-6 – Absolute natural gas consumption across all CSU campuses with new building load

Wagga Wagga and Bathurst campuses were the largest users of natural gas accounting for 47% and 41% respectively in 2010 (Figure 1-7). Orange, Albury-Wodonga (City), Albury-Wodonga (Thurgoona), Dubbo and Canberra collectively represented 12% of CSU's natural gas use.

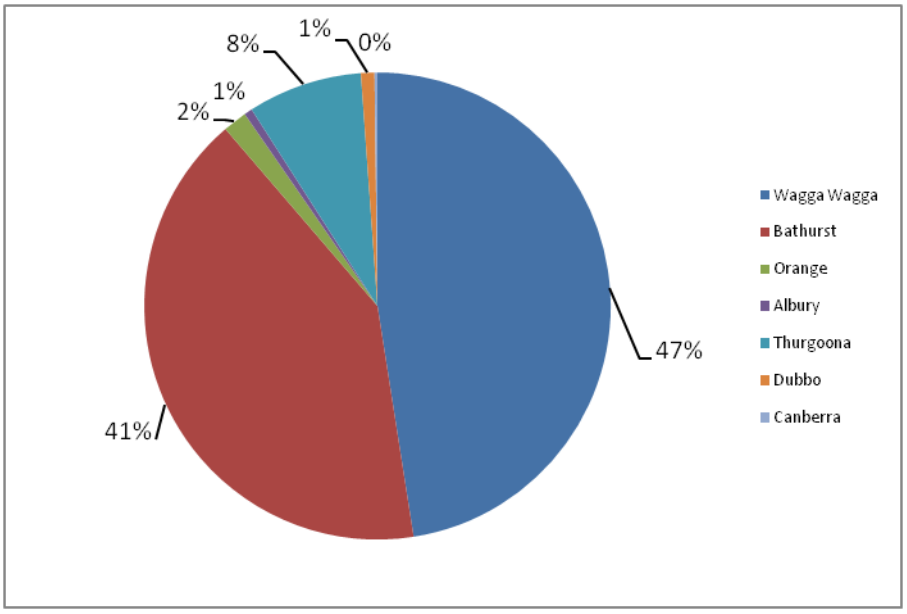


Figure 1-7 - Proportion of total natural gas used by each CSU campus in 2010

In 2010, Bathurst campus was the most intensive user of natural gas by a significant margin (Figure 1-8) at 609 MJ/m^2 of GFA followed by Wagga Wagga campus at 441 MJ/m^2. Albury-Wodonga (City) was the least intensive natural gas user at 44 MJ/m^2.

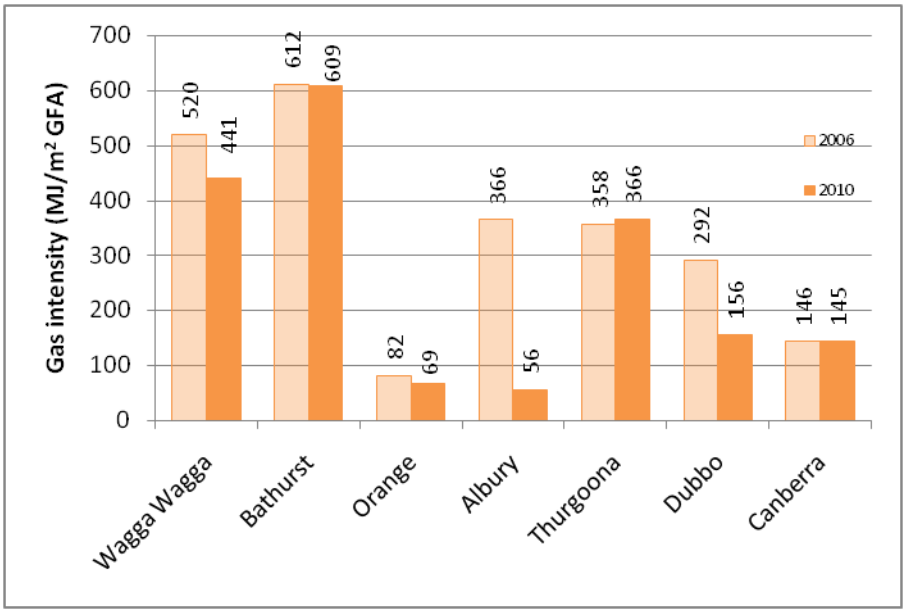


Figure 1-8 – Natural gas use intensity comparison, based on gross floor area, for CSU campuses in 2010 compared to 2006

A summary of natural gas related charges (summation of network and usage charges) is provided in Table 1-2. CSU's total natural gas related charges have increased by 12% from 2006 to 2010 as a result of the increased prices and a 0.1% increase in natural gas consumption over the same period. Natural gas supply agreements will be re-negotiated with various suppliers in mid-2011 to ensure that CSU campuses received the most competitive unit rate for natural gas.

Table 1-2 – Natural gas related charges for CSU campuses in 2010

	Wagga Wagga	Bathurst	Orange	Albury-Wodonga (City)	Albury-Wodonga (Thurgoona)	Dubbo	Canberra	CSU Total
2006	$442,589	$315,458	$26,880	$49,318	$42,761	$21,093	$1,650	$899,749
2007	$403,199	$310,794	$21,806	$43,385	$30,067	$17,723	$2,211	$829,184
2008	$407,021	$314,419	$26,396	$40,912	$33,720	$26,320	$4,263	$964,052
2009	$476,452	$388,962	$18,153	$39,194	$58,771	$20,594	$3,336	$1,005,462
2010	$409,505	$441,464	$29,034	$12,541	$84,818	$16,608	$4,785	$998,756

1.3. Water analysis

In 2010, CSU experienced a sharp decrease in the consumption of mains supplied water use compared to 2009(Figure 1-9). The decrease represents 21% of 2009's water consumption. Overall the University consumed 47% less mains supplied water in 2010 than the baseline year, 2006. This result surpasses the University's target of a 25% reduction on 2006 water use.

It is noted that this is not likely to be a sustainable saving. 2010 was a particularly wet and cool year in eastern inland Australia and it likely that this has significantly contributed to reduction in the quantity of water that was consumed by CSU.

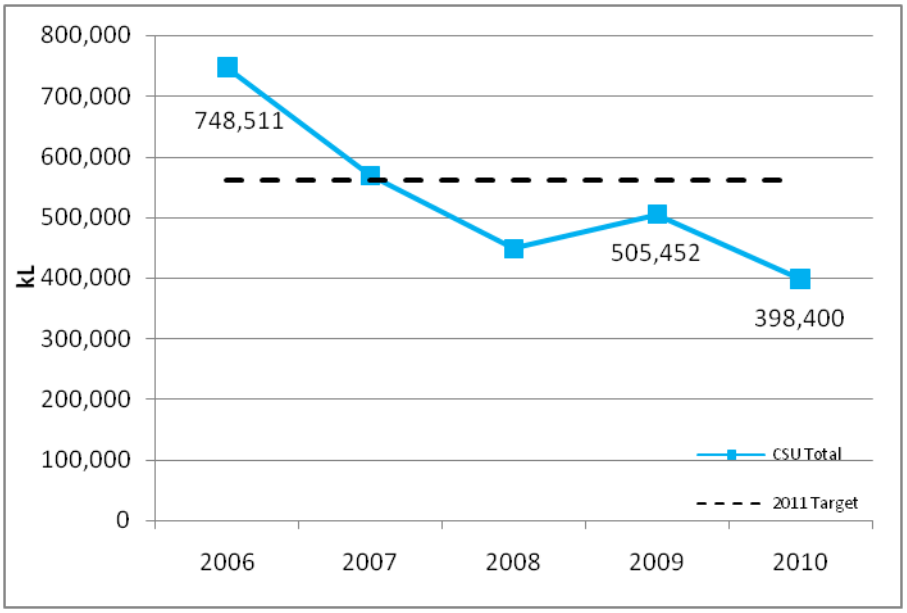


Figure 1-9 – Mains supplied water consumption across all CSU campuses for the period 2006 to 2010

Figure 1- 10 examines the proportion of CSU's to total mains water consumption that can be attributed to the commissioning of new buildings since the beginning of January 2009. Discounting the additional building load; CSU is performing reasonably well against its 2006 mains water consumption baseline, with a significant drop measured in 2010.

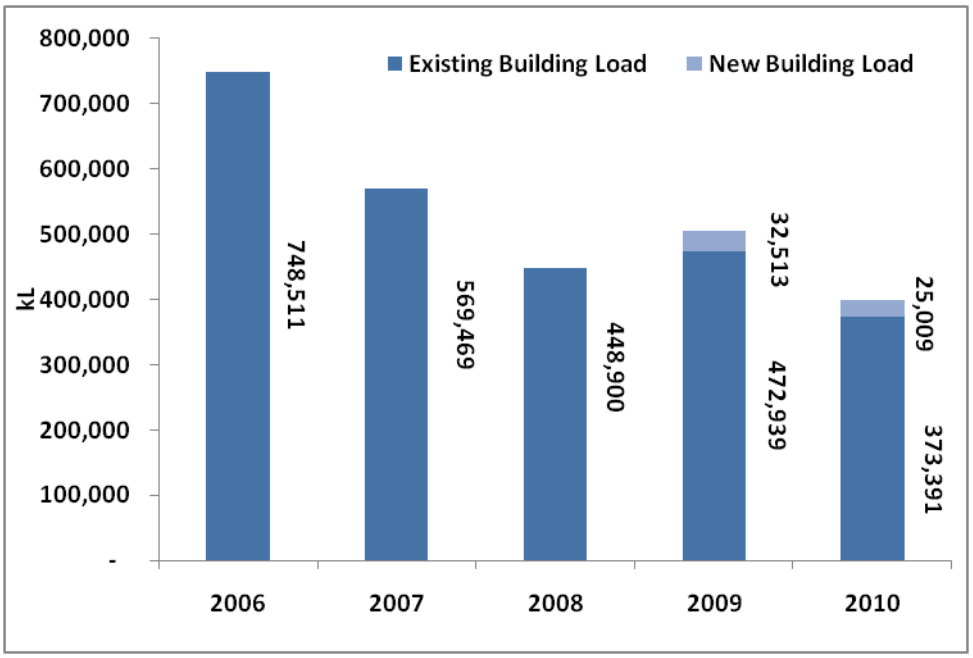


Figure 1-10 – Absolute mains water consumption across all CSU campuses minus new building load

Wagga Wagga and Bathurst campuses were the largest users of mains supplied water accounting for 56% and 26% respectively in 2010 (Figure 1-11). Orange, Albury-Wodonga (City), Albury-Wodonga (Thurgoona), Dubbo, Canberra and Broken Hill collectively represented 18% of CSU's mains supplied water consumption.

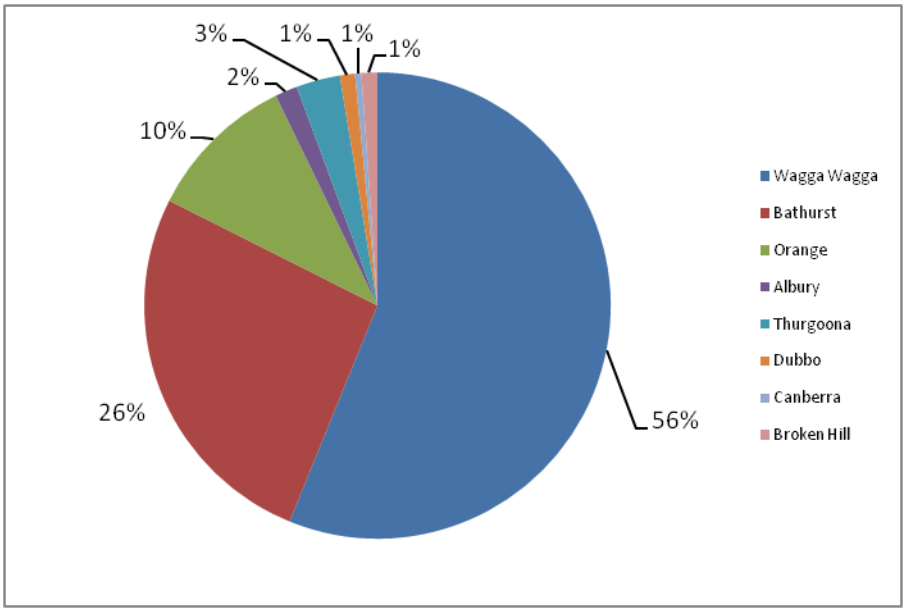


Figure 1-11 - Proportion of total mains supplied water used by each CSU campus in 2010

In 2010, Wagga Wagga was the most intensive user of mains supplied water at 1.8 kL/m^2 of GFA. Albury-Wodonga (City) and Albury-Wodonga (Thurgoona) campuses were the least intensive water user at 0.5 kL/m^2 (Figure 1-12).

Significant rainfall across inland eastern Australia in late 2010 contributed to significantly less water intensity than in 2009.

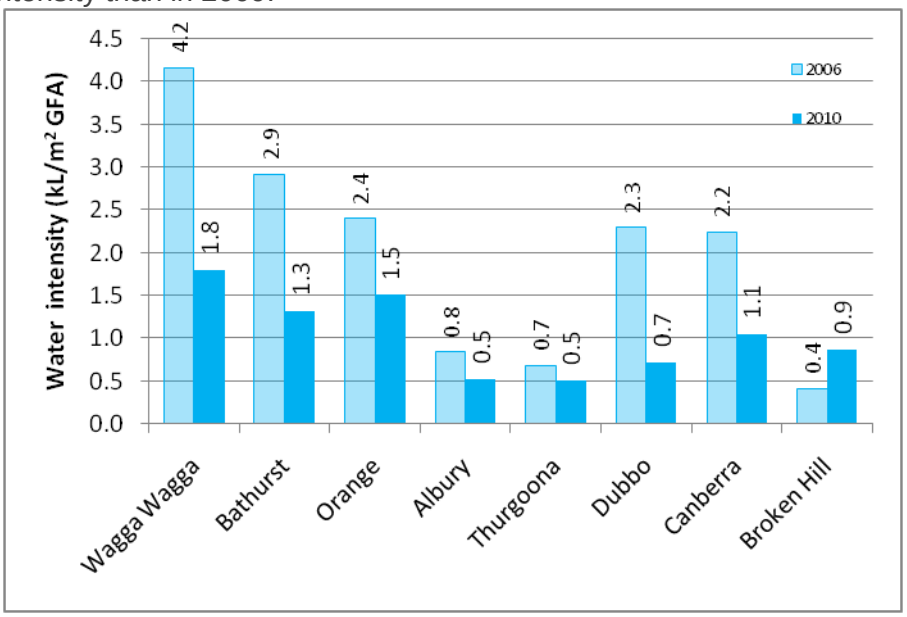


Figure 1-12 – Mains supplied water use intensity comparison, based on gross floor area, for CSU campuses in 2010 compared to 2006

A summary of water related charges (summation of network and usage charges) is provided in Table 1-3. CSU's total water related charges have decreased by 11% from 2006 to 2010 representing an annual saving of more than $63,847. Each of CSU's campuses is supplied water from a different water utility.

Table 1-3 - Water related charges for CSU campuses in 2010

	Wagga Wagga	Bathurst	Orange	Albury-Wodonga (City)	Albury-Wodonga (Thurgoona)	Dubbo	Canberra	Broken Hill	CSU Total
2006	$315,483	$153,799	$73,225	$12,676	$8,940	$20,379	$3,174	$3,025	$590,701
2007	$246,893	$134,813	$57,908	$30,521	$13,321	$30,259	$5,097	$2,340	$521,151
2008	$227,979	$88,622	$47,358	$25,989	$13,075	$36,482	$2,702	$2,230	$444,437
2009	$260,291	$109,528	$57,750	$27,547	$25,326	$36,698	$3,349	$16,034	$536,623
2010	$195.474	$148,196	$51,679	$9,362	$35,451	$29,689	$3,526	$12,184	$526,854

1.4. Waste analysis

In 2010, CSU, produced a total of 15,881m^3 of waste, 11,758m^3 (76%) of which was disposed of to landfill, while the remaining 4,124m^3 (24%) was successfully recycled (Figure 1-13). CSU still has significant room for improvement when it comes to waste management. An additional 51% of its total waste output will need to be diverted from the general waste stream, if CSU is to achieve its waste target.

As in the 2009 edition of the Environmental Scorecard; sanitary waste and liquid waste have not been included in this analysis.

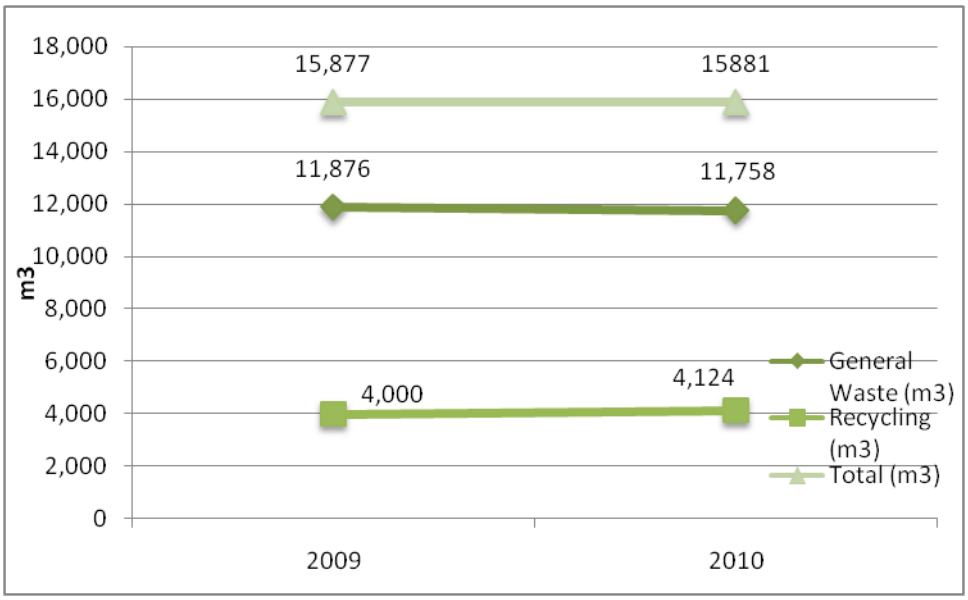


Figure 1-13 – Total waste output from CSU in 2010

Figure 1-14 shows that Wagga Wagga campus produced the most significant output of waste (67%), while Bathurst and the Albury-Wodonga (City) / Albury-Wodonga (Thurgoona) campuses produced the next greatest output (14% & 11% respectively. The remaining CSU campuses produced 8% of CSU's total waste output.

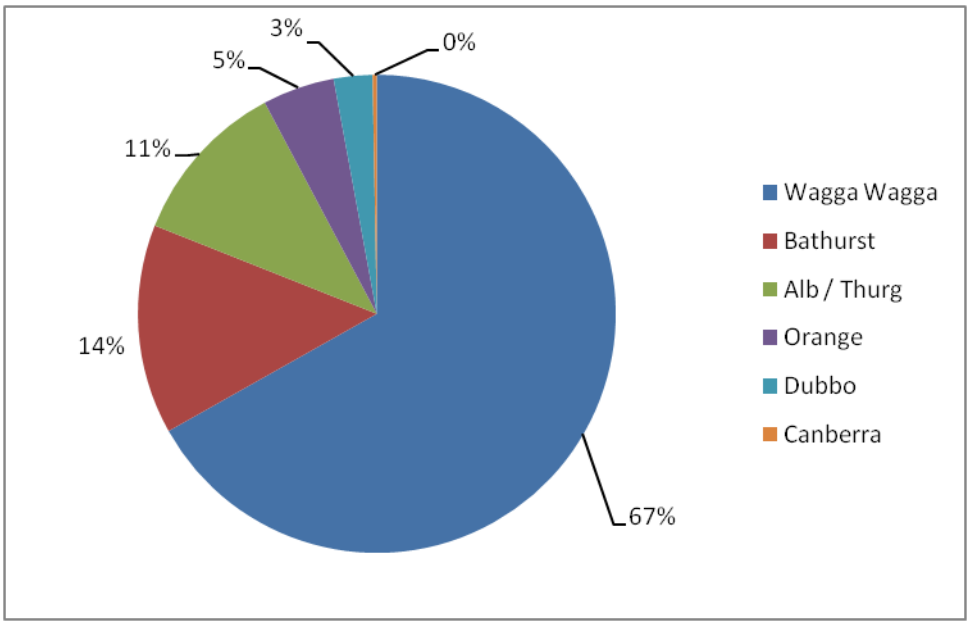


Figure 1-14 – Total waste output from each CSU campus in 2010

Figure 1-15 illustrates the average waste output per person across each of the major CSU campuses. Wagga campus recorded the highest waste output of 3.5m^3/person/year, while Canberra campuses recorded the lowest waste output of 0.3m^3/person/year. However, this waste output is comprised of both general waste AND recycling.

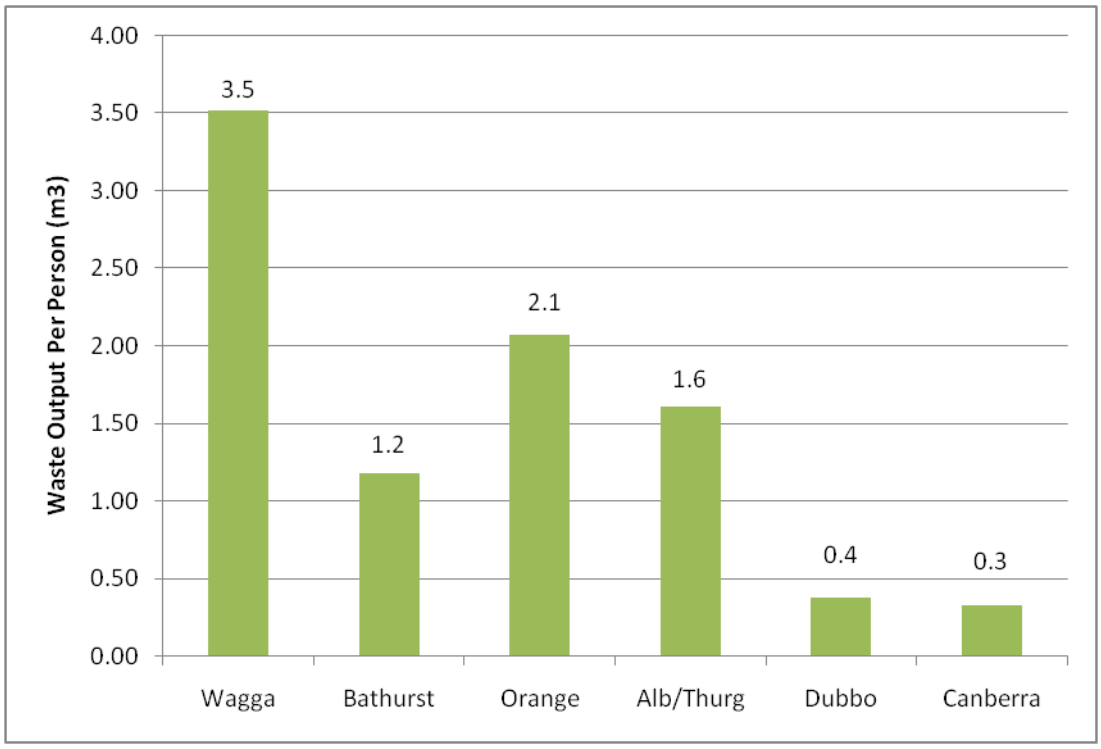


Figure 1-15 – Total waste output per person in 2009 (on-Campus students & staff)

A summary of waste related charges is provided in Table 1-4. CSU's total waste related charges have increased by 64% from 2006 to 2010 representing an increase in cost of more than $88,300. Prices for 2006 to 2008 have been changed from the prices shown in the 2008 Scorecard as they have been modified to reflect the total cost of general waste disposal and recycling only.

Table 1-4 - Waste related charges for CSU campuses in 2010

	Wagga Wagga	Bathurst	Orange	Alb/Thurg	Dubbo	Canberra	CSU Total
2006	$87,068	$13,276	$7,934	$24,129	$4,624	-	$137,033
2007	$77,466	$15,794	$11,635	$23,851	$6,031	-	$134,798
2008	$46,425	$10,640	$13,178	$37,589	$4,654	-	$112,488
2009	$144,284	$22,435	$15,064	$35,376	$6,076	$860	$224,098
2010	$140,586	$14,477	$29,718	$32,474	$7,003	$1,073	$225,333

In 2011, the Computer Shop recycled 84 CRT desktop computers, 100 PC's and 70 mobile phones. There were also a number of still-working computer (100 desktops and 20 laptops) that were successfully sold at auction.

The total profit from CSU (subtracting the cost of e-waste recycling from auction sales) was $10,800. This money is redirected by the Executive Director, DIT, back into sustainability projects across CSU.

A waste analysis conducted by GHD on Wagga Wagga campus in late 2009 revealed that approximately 55.1% of the general waste stream was food scraps, while an additional 30.2% could be recovered using existing recycling systems.

1.5. Motor vehicle travel analysis

In 2010, there was a 5% reduction in the volume of fuel consumed by CSU vehicle on business related travel compared to 2006 (Figure 1-16). This is despite a 28% increase in the number of kilometres that were travelled by University vehicles compared to 2006.

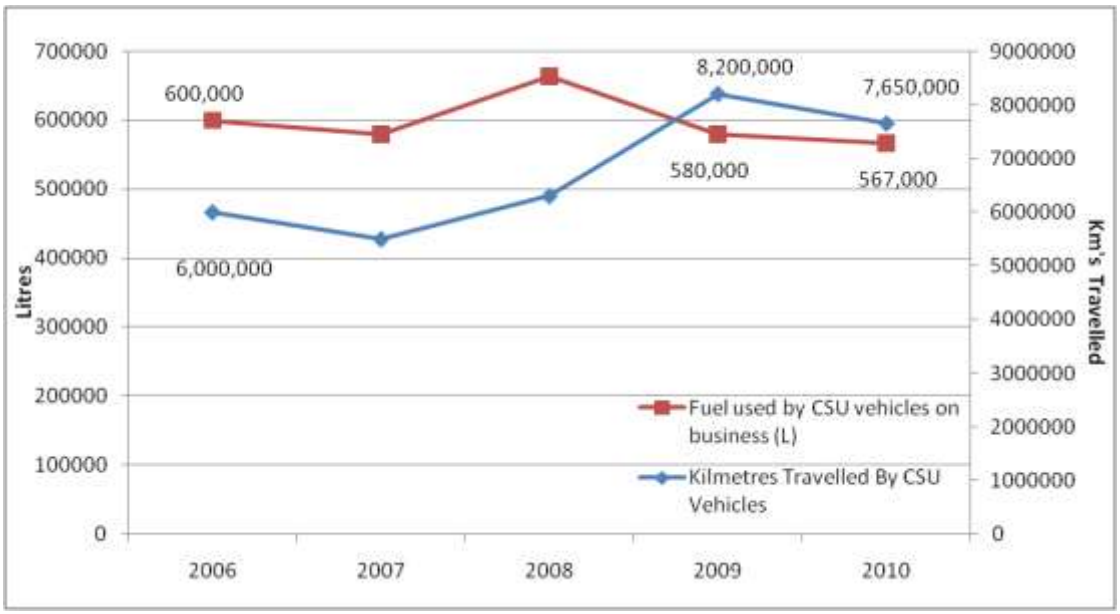


Figure 1-16 – Fuel consumption and kilometres travelled by CSU vehicles in 2010

1.6. Air travel analysis

In 2010, there was a 127% increase in the number of kilometres travelled by CSU staff on domestic flights and a 59% increase in kilometres travelled on international flights compared to 2006 (Figure 1-17). These two figures combined represent a 70% increase in total flight kilometres as compared to 2006.

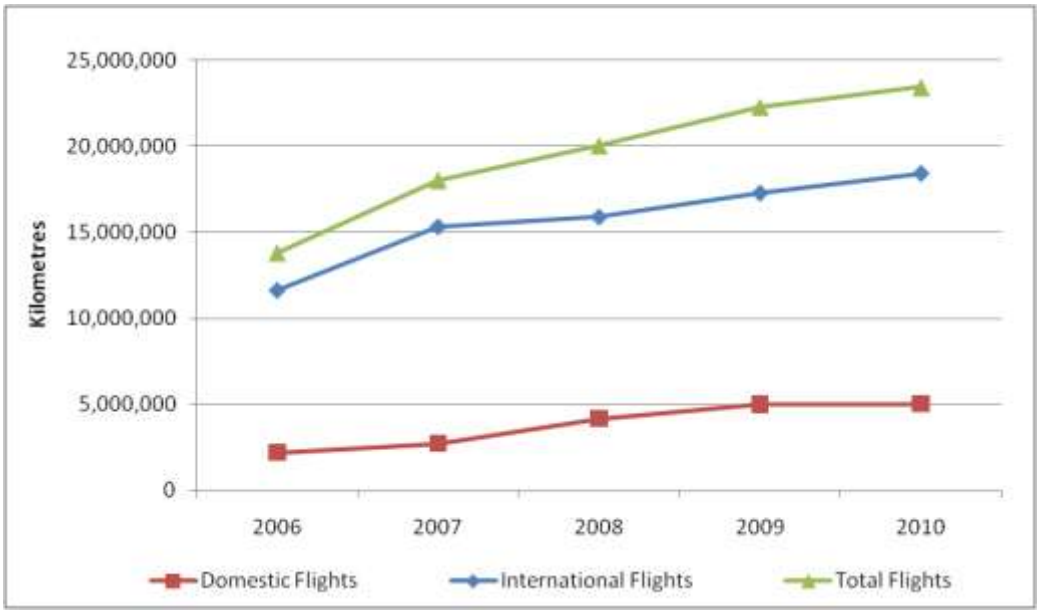


Figure 1-17 - Kilometres travelled by CSU staff on domestic and international flights for the period 2006 to 2010

1.7. Greenhouse gas emissions analysis

A summary of greenhouse gas (GHG) emissions associated with the consumption of stationary energy at all CSU campuses is provided in Table 1-5. These figures follow the trends associated with electricity and natural gas consumption. In 2010, there was a 5% increase in the amount of energy related GHG emissions compared to 2006.

A calculation error in the previous edition of the Scorecard slightly under-reported the amount of greenhouse gas emissions in 2009. This, in conjunction with the larger electricity, natural gas and LPG consumption in have accounted for the increase of greenhouse gas emissions in 2010.

Table 1-5 - Greenhouse gas emissions associated with stationary energy consumption (electricity, natural gas and LPG) for each CSU campus (shown in Tonnes CO_2 equivalent). Percentage change represents difference from the 2006 baseline year

	Wagga Wagga	Bathurst	Orange	Albury-Wodonga (City)	Albury Wodonga (Thurgoona)	Dubbo	Canberra	Broken Hill	CSU Total	% Change
2006	14,244	9,863	1,416	1,071	1,234	432	33	56	**28,350**	
2007	13,515	8,441	1,327	983	724	406	44	56	**25,497**	-10.1%
2008	13,292	8,461	1,601	918	1,025	431	50	178	**25,957**	-8.4%
2009	14,331	9,195	1,989	849	1,703	451	58	145	**28,722**	1.3%
2010	14,783	9,266	2,482	401	2,318	447	62	99	**29,858**	5.3%

In 2010, Wagga Wagga campus represented 50% of CSU's combined energy-related greenhouse gas emissions use while Bathurst a total of 31% (Figure 1-18). Combined greenhouse gas emissions at the other five campuses made up the remaining 19%.

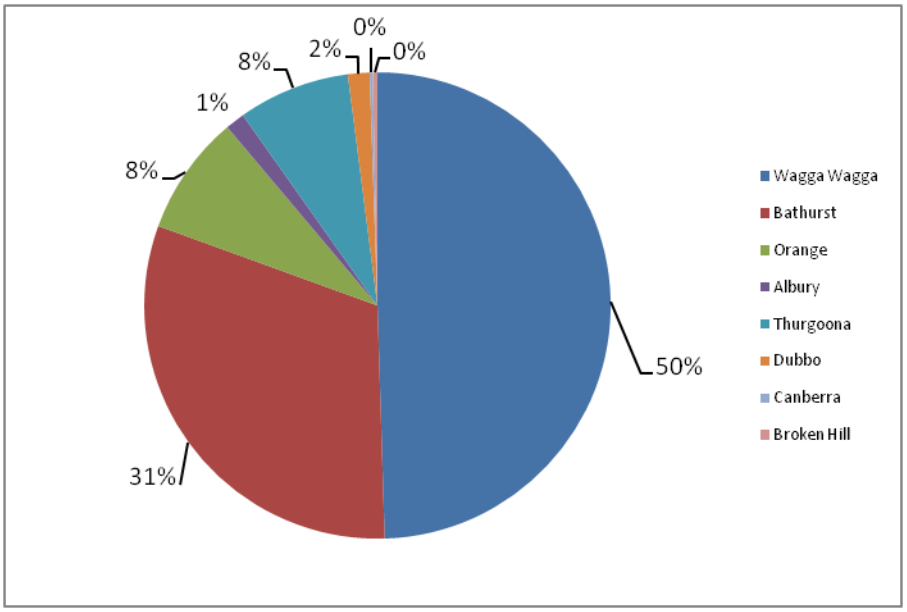


Figure 1-18 - Proportion of energy related greenhouse gas emissions for each CSU campus in 2010

In 2010, there was a 14% increase in total GHG emissions associated with energy use and travel compared to 2006 (Figure 1-19).

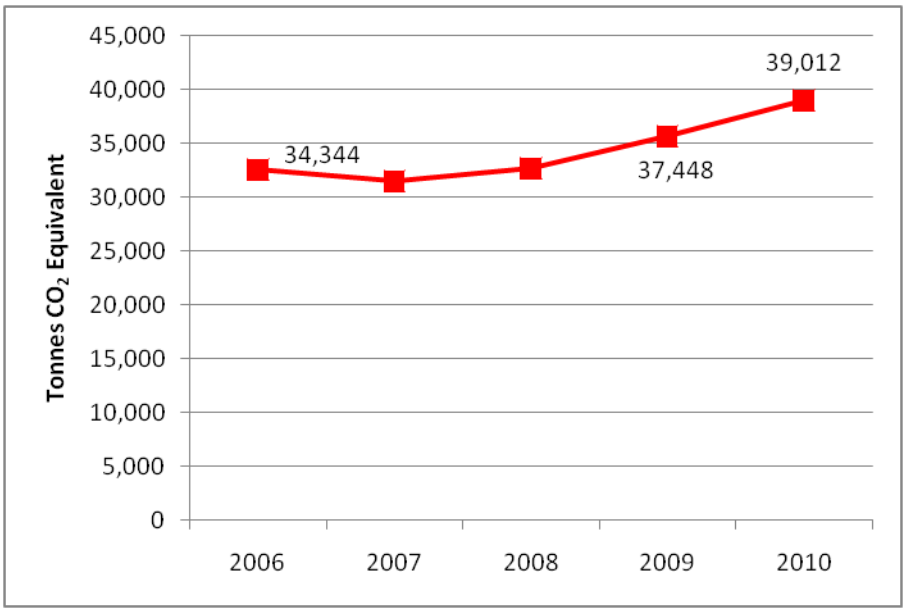


Figure 1-19 - Combined energy and travel related greenhouse gas emissions for CSU during the period 2006 to 2010

Overall it is estimated that travel related activities accounted for 23% of CSU's total GHG emissions in 2010 (Figure 1-20). GHG emissions associated with stationary energy consumption were responsible for 77% of the total. This is almost an identical breakdown to 2009.

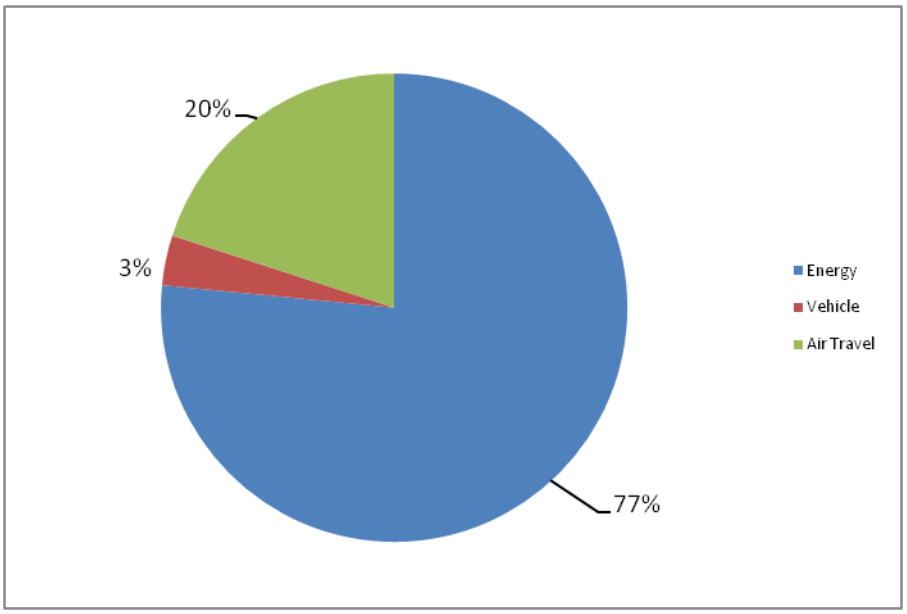


Figure 1-20 - Breakdown of CSU's GHG emissions by source type for 2010

2. CEC Summaries

Campus Environmental Committees (CECs) operate at each of CSU larger campuses. These committees are comprised of active staff and students who meet on a quarterly basis to discuss, plan and action projects and activities that relate to sustainability at each campus. These committees have a strong linkage with CSU Green.

This section of the Scorecard is intended to provide an overview of the activities that have been undertaken by the CECs in 2010.

2.1. Wagga Wagga Campus

Committee Members:	William Adlong, Alyssa Ng, Peter Bell, Stephen Butt, David Bate, Adrian Lindner, Edward Maher, Mary O'Dowd, Therese Moon, Terrence O'Meara, William Pollack, Angela Ragusa, Rodney Rumbachs & Mark Wilson
Actions:	**Outcomes:**
1. Polystyrene Cups At Catering Outlets	Catering Manager has agreed to phase out polystyrene cups over a period of time. However, these cups are substantially cheaper than the alternatives, and the cost will need to be passed on to the consumer
2. Power Boards	The Deputy Vice-Chancellor Administration approved the purchase of a number of power boards to enable staff to turn off computers at the wall overnight. These were distributed to various schools and divisions across CSU throughout the year
3. E-Waste Week	E-Waste recycling week was held in February. Event was deemed only moderately successful. Facility, location and staff were excellent, the timing was poor and it was felt that it would be better held in November before students go on leave, or at the end of each semester
4. International Year Of Biodiversity	A sub-committee was formed to organise a Biodiversity Blitz Day on the campus, which was held on the 31/07/2010. 45 people assisted in planting roughly 900 trees near the Dentistry Building and also at the Yindyamarra site. In addition, some nesting boxes were constructed and installed for squirrel gliders.
5. Wagga Wagga City Council Visitors	Staff from the Environment and Community Services Division of Wagga Wagga City Council attended the 5th of August

	Campus Environmental Committee meeting. Discussion took place on a number of possible collaborative arrangements between the Council and the University.
6. Office Waste Trial	An alternative office waste collection system was trialled in Building 26 & 28to encourage staff to use their under-desk bin for paper and cardboard only and to put all other waste in centrally located commingled recycling or general waste bin. Trial has been moderately successful, with further refinement and consultation required before it can be rolled out further.
7. Fluorescent Light Tube Disposal	Investigations currently underway into the cost of fluorescent light bulb recycling equipment, to keep the mercury contained in these tubes out of the landfill.

2.2. Bathurst Campus

Committee Members:	Jim Watt, Michael Smith, Bruce Fell, Bob Hill, Patrick Forman, Donald Alexander, Jan Page, David Scott, James Elibank-Murray
Actions:	**Outcomes:**
1.	

2.3. Orange Campus

Committee Members:	Kevin Parton, Stephen Mannix, Fiona Cochrane, Terri-Lee Duffy, Cilla Kinross, Bruce Auld, Christopher Plunkett, Mark Chapman, Scott Andrew & Chris O'Connor
Actions:	**Outcomes:**
2. Peregrine Falcon Project	Third successful breeding season for peregrine falcon parents Beau and Swift who regularly rest in the campus water tower. Supporters of the Peregrine Falcon Project are currently using funds to upgrade the recording and monitoring equipment in order to be able to supply live web-streamed footage to internet users worldwide and conduct research into the birds breeding behaviour and ecology as part of an international effort to improve understanding of iconic species.
3. Wiradjuri Garden	A 'Wiradjuri Garden' is being established within the grounds of the Orange Campus. The garden has been developed in consultation with Aboriginal leaders and will feature local species that have demonstrated utility, for example, as food or medicinal

	plants. A working bee will be held in March 2011 for the first stages of building this garden.
4. Farm and Equine Centre Water Supply	Collaboration between Steven Mannix, Ed Maher and Cheryl Gander has led to the development of a plan to remove the Orange farm from the town mains water supply and to supply it instead with dam water. A consultant has been appointed to finalise a design for this project, with implementation expected to occur in mid 2011.
5. Earth Hour	Residential students on campus supported a one hour "lights out" period for the event, participating in a cinema event in the city.
6. Ride To Work Day	Twenty CSU staff members took part in the Ride To Work Day held on the 13th October 2010.
7. Tree Planting Day	Two tree planting days were undertaken in 2010. Approximately four hundred tress grown from seeds collected by campus staff and students and then subsequently planted during these events.

2.4. Albury-Wodonga (Thurgoona) Campus

Committee Members:	Maumita Bhattacharya, Stephen Butt, Allan Curtis, William Adlong, Edward Maher, Peter Jones, Wes Ward, John Rafferty, Tricia Bowman & Kurt Neville
Actions:	**Outcomes:**
1. Green Steps Projects	Successfully submitted Sustainability Grant application to receive funding for the Green Steps program. The program involves training volunteer students in a number of sustainability skills, which is then followed-up by an internship with an organisation for a period of 12 days, in which the student works on a sustainability project for the host organisation.
2. Student Vegetable Gardens	Vegetable gardens were installed around at the both the new students residences as well as the student cottages.
3. Grants Received To Extend Wetland Trails	Sustainability grant was applied for and awarded to establish formalised walking tracks around the David Mitchell Wetlands.

	The tail would include a number of interpretative signs designed to advised and educate people on a range of issues, including information on the native flora and fauna and the functionality of the wetlands in regards to grey water treatment.
4. Grant Received To Install Information Kiosk In Learning Commons	A sustainability grant was awarded to for the development of two information kiosks for the Learning Commons, which are designed to provide information to staff, students and visitors on about on-campus biodiversity, as well as a host of other environmental issues. The kiosk will also be capable of displaying information relating the performance of the Leaning Commons building. .
5. Hosting Environmental Activities/Tours For Community Groups	The CEC continues to host community groups on campus, such as 'Science In The Bush' and 'Local Astronomers' in promoting the green buildings that have been constructed on the campus, as well as the campus wetlands.

3. Wagga Wagga campus analysis

3.1. Campus information

Total building gross floor area (m^2)	126,238
Student headcount – 2010	13,419[a] (2,191 internal; 9,834 distance & 1,394 mixed mode)
Site area (hectares)	224 (194 North Campus; 30 South Campus)
Student residences	1,280

a – Student headcount is "Academic Year to Date" figure only

For the purposes of this document, the Wagga Wagga campus of Charles Sturt University is defined as the main Boorooma St. campus, as well as South Campus, the Small Animal Clinic and the Riverina Playhouse.

An additional 760 m^2 of GFA was added to the Wagga Wagga Campus in 2010 as a result of the commissioning of the Small Animal Clinic in Wagga Wagga. An additional 1,109m^2 of gross floor area has been reported in 2010, due to improved accuracies in DFM's space data management.

Electricity and gas consumption remained reasonably consistent in 2010 when compared to 2009. This can be accounted for due to the cool and wet conditions that were experienced in late 2010.

As a result of these conditions, water consumption shows a dramatic drop of 50% against the 2006 baseline year.

Waste consumption trends remained stable in 2010, with no major changes recorded against the 2009 baseline year. Additional improvements planned for the Wagga campus waste collection infrastructure in 2011 are expected to significantly improve the segregation of recyclable from the general waste stream.

3.2. Electricity analysis

In 2010, there was a 3% increase in electricity usage at Wagga Wagga campus compared with 2006 (Figure 3-1). This is a 2% increase in consumption when compared to 2009.

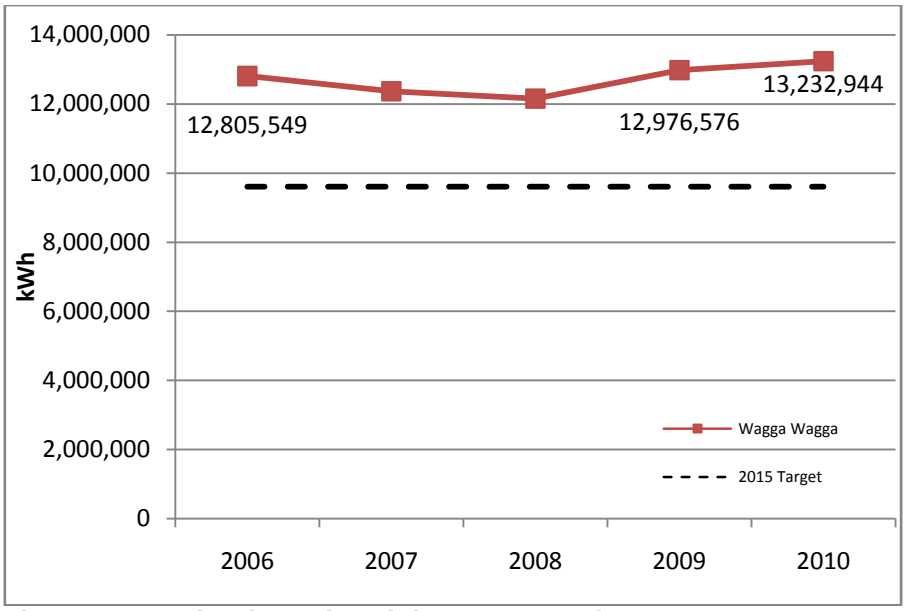


Figure 3-1 – Absolute electricity consumption at Wagga Wagga campus for the period 2006 to 2010

In 2010, Wagga campus recorded a normalised electricity intensity of 105kWh/m^2 (Figure 3-2). This is a reduction in energy intensity of 15kWh/m^2 from 2006 to 2010.

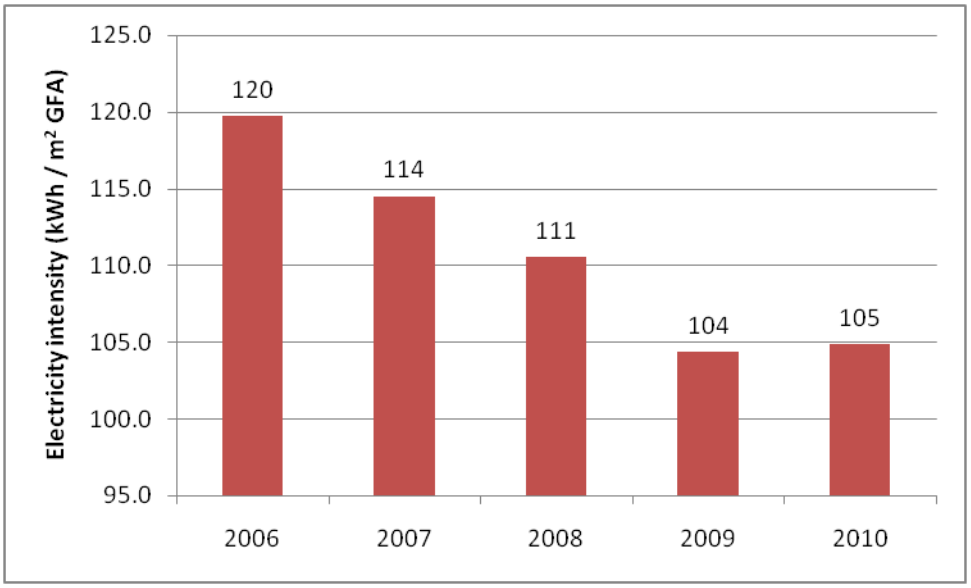


Figure 3-2 – Normalised electricity consumption at Wagga Wagga campus for the period 2006 to 2010

3.3. Gas analysis

In 2010, there was a 0.1% increase in the consumption of natural gas at Wagga Wagga campus compared to 2006 (Figure 3-3). This change represents a 3.1% increase from 2009.

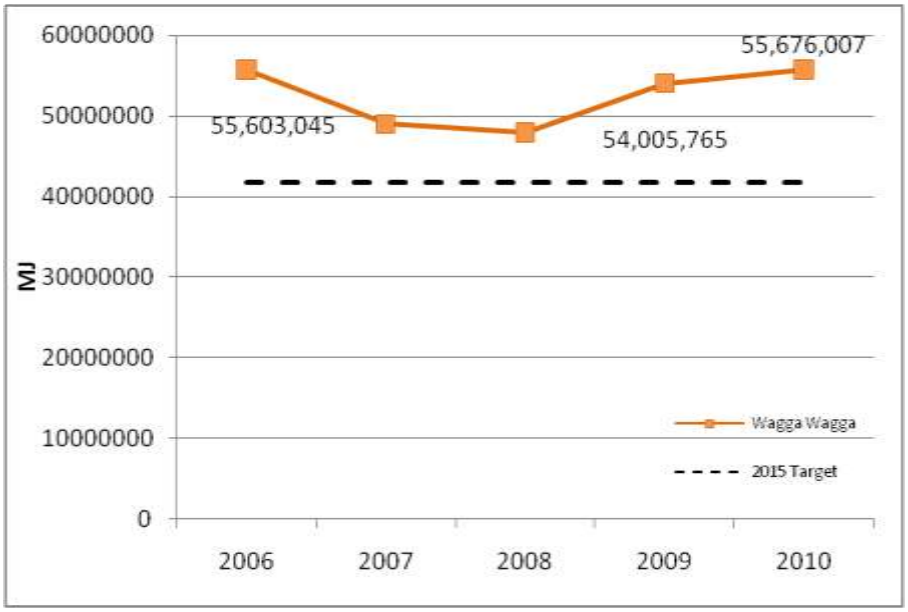


Figure 3-3 – Absolute natural gas consumption at Wagga Wagga campus for the period 2006 to 2010

Despite this absolute increase in gas consumption, Wagga campus recorded a normalised natural gas intensity of 441MJ/m^2 (Figure 3-4). This is a decrease in natural gas intensity of 79MJ/m^2 from 2006 to 2009.

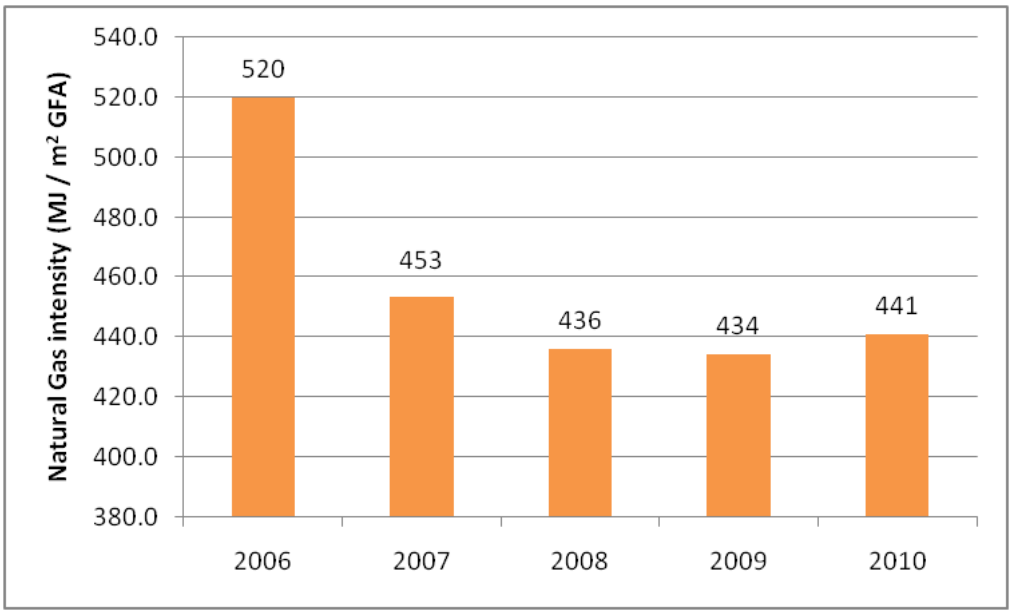


Figure 3-4 – Normalised natural gas consumption at Wagga Wagga campus for the period 2006 to 2010

The Veterinary Clinical Centre (Building 130) Wagga Wagga campus utilises LPG supplied from on-site LPG Tanks. In 2010 there was a 34% increase in LPG usage as compared to 2009 (Figure 3-5).

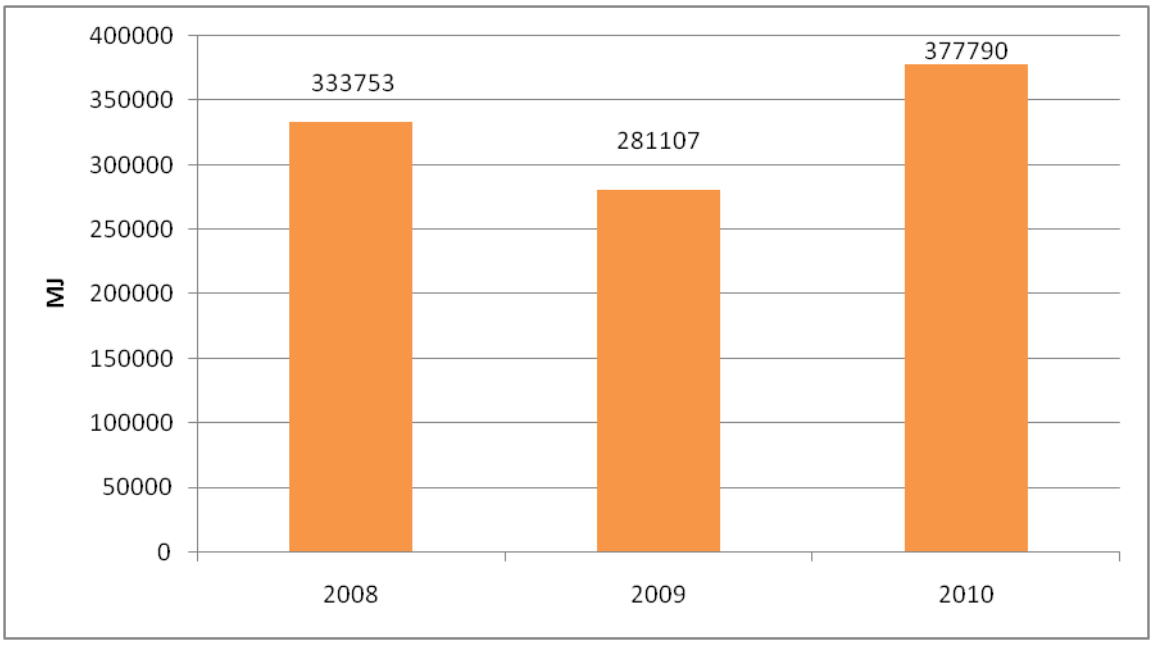


Figure 3-5 – Absolute LPG consumption at Wagga Wagga campus for the period 2008 to 2010

3.4. Water analysis

In 2010, there was 49.7% reduction in the consumption of potable water at Wagga Wagga campus compared to 2006 (Figure 3-6). This change represents a 30.4%decrease in consumption as compared to 2009. Wagga Wagga campuses water consumption has significantly surpassed the 2011 benchmark set for water consumption. However, it should be noted that 2010 was a particularly wet year (add data) and this likely contributed for the significant differences in consumption between 2009 and 2010.

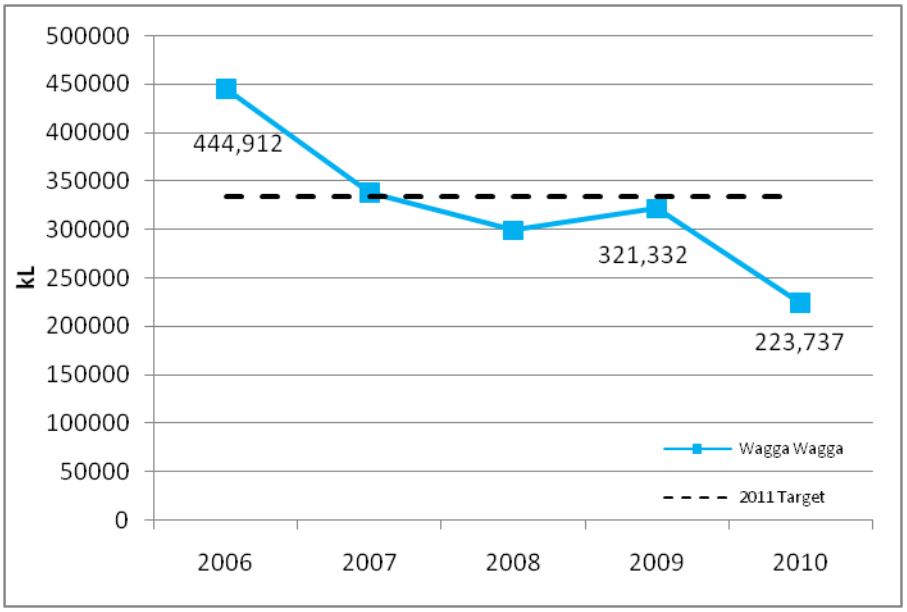


Figure 3-6 – Absolute mains supplied water consumption at Wagga Wagga campus for the period 2006 to 2010

Wagga campus recorded a normalised mains water intensity of 1.8kL/m^2 (Figure 3-7). This is a reduction in mains water intensity of 2.4kL/m^2 from 2006 to 2010.

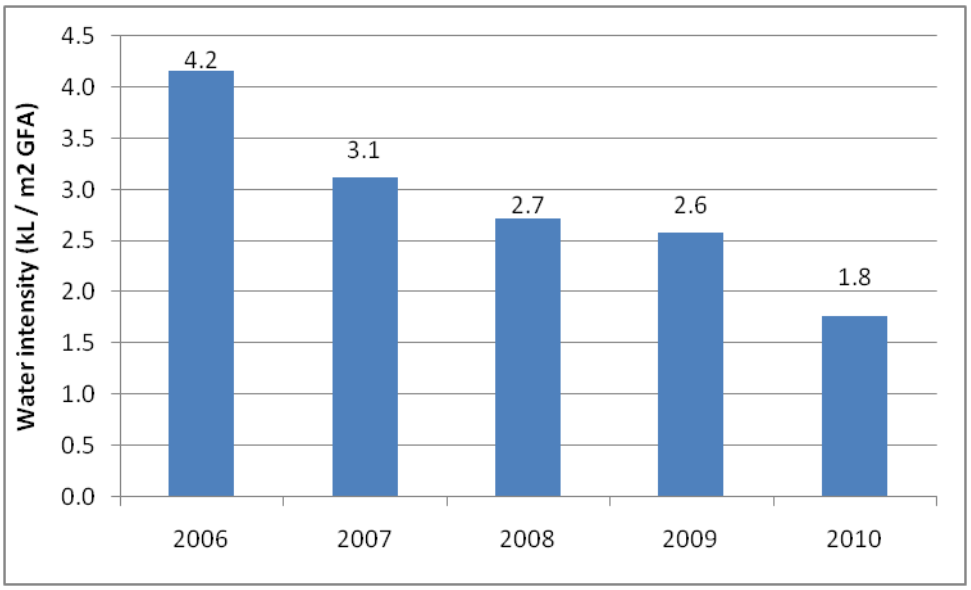


Figure 3-7 – Normalised mains supplied water consumption at Wagga Wagga campus for the period 2006 to 2010

3.5. Waste analysis

General waste comprised 70% of Wagga Wagga campuses waste output (Figure 3-8). The remaining 30% was recycled. Wagga Wagga campus will need to divert an additional 40% of material from the General Waste stream if it is to achieve its target of a 70% reduction of general waste to landfill by 2014.

General waste output went down in 2010, with a 1% reduction measured, while recycling rates increased 6% as compared to 2009.

Figure 3-8 - Waste output from Wagga Wagga campus in 2010

4. Bathurst campus analysis

4.1. Campus information

Total building gross floor area (m^2)	79,147
Student headcount - 2010	10,812[a] (1,386 internal; 7,896 distance & 1,530 mixed mode)
Site area (hectares)	74 (56 actively managed)
Student residences	1,140

a – Student headcount is "Academic Year to Date" figure only

An additional 800m^2 of GFA was added to the Bathurst Campus in 2010 as a result of the construction and commissioning of the Dental Clinic on campus.

In 2010, electricity and gas consumption remained reasonably consistent with the previous years. While there was not a major increase in gross floor area this year, cooler wet weather experienced in Bathurst during late 2010 likely contributed significantly to the similar consumptions.

This is likely also the reason for the significant drop in water consumption experienced between 2009 and 2010. Significantly improved irrigation systems were installed in late 2010 on the majority of all campus playing fields, and these are expected to yield sizeable water saving in the coming years.

Recyclable collection at Bathurst campus dropped slightly in 2010, however, the total volume of waste that was collected Bathurst campus was less than what was collected in 2009.

4.2. Electricity analysis

In 2010, there was 0.7% reduction in the consumption of electricity at Bathurst campus compared to2006 (Figure 4-1). This change represents a further 0.1% decrease from 2009.

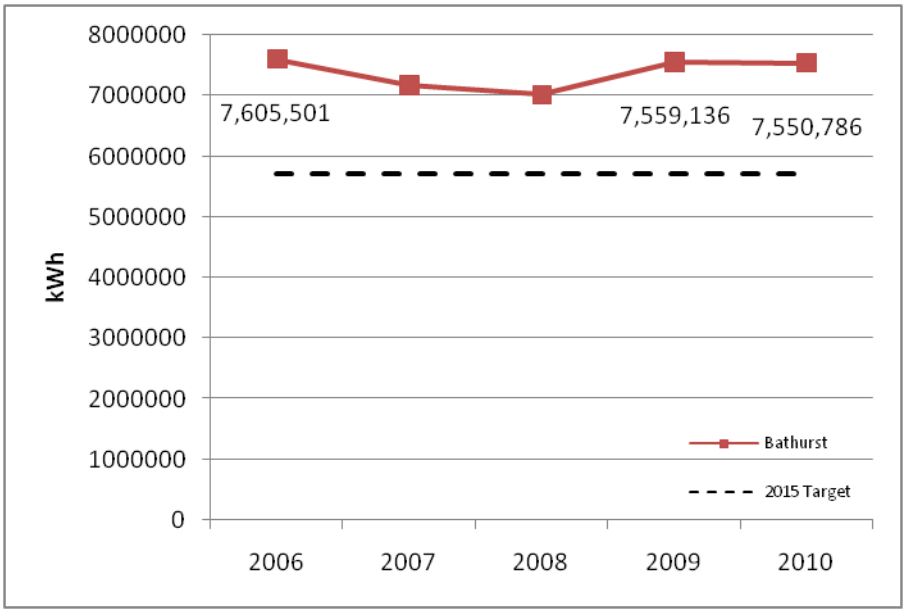


Figure 4-1 – Absolute electricity consumption at Bathurst campus for the period 2006 to 2010

Despite this absolute increase in electricity consumption, Bathurst campus has recorded a normalised electricity intensity of 95kWh/m^2 (Figure 3-2). This is a reduction in energy intensity of 7kWh/m^2 from 2006 to 2009.

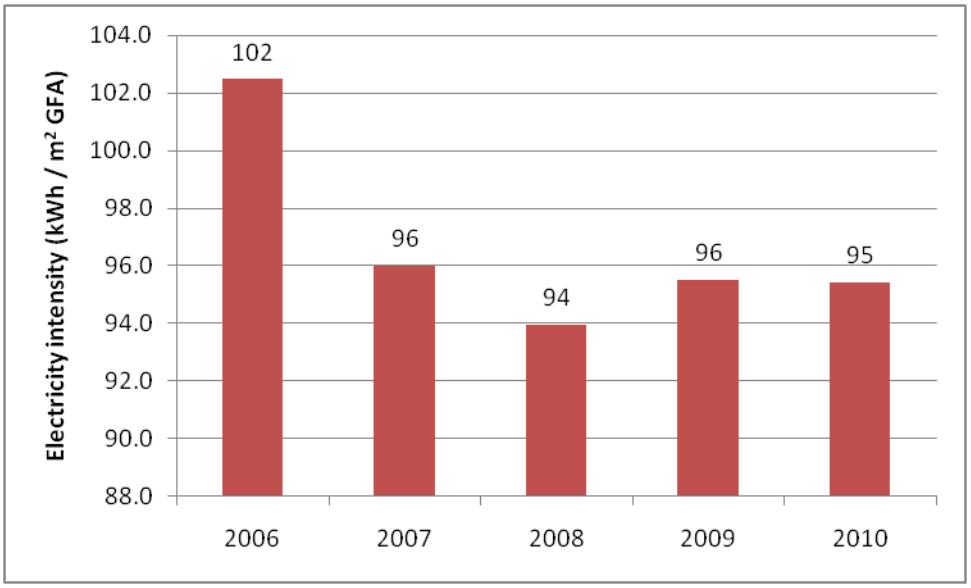


Figure 4-2 – Normalised electricity consumption at Bathurst campus for the period 2006 to 2010

4.3. Gas analysis

In 2010, there was 0.1% increase in the consumption of natural gas at Bathurst campus compared to the previous year (Figure 4-3). Due to this increase, overall natural gas use at Bathurst in 2009 was 6% higher than that used in the 2006 baseline year.

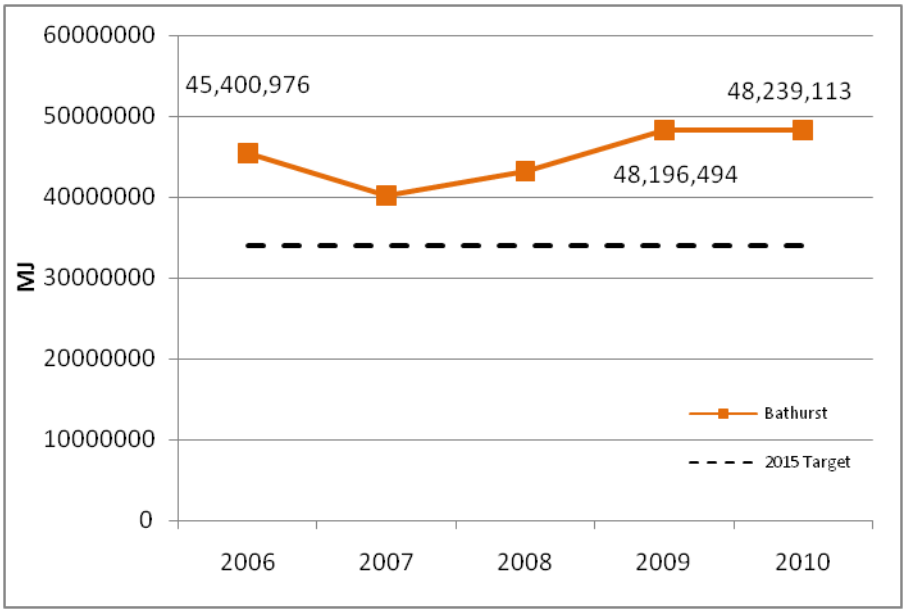


Figure 4-3 – Absolute natural gas consumption at Bathurst campus for the period 2006 to 2010

Bathurst campus has recorded a normalised natural gas intensity of 609MJ/m^2 (Figure 4-4), unchanged from the previous year. This is a reduction in natural gas intensity of 3MJ/m^2 from 2006 to 2010.

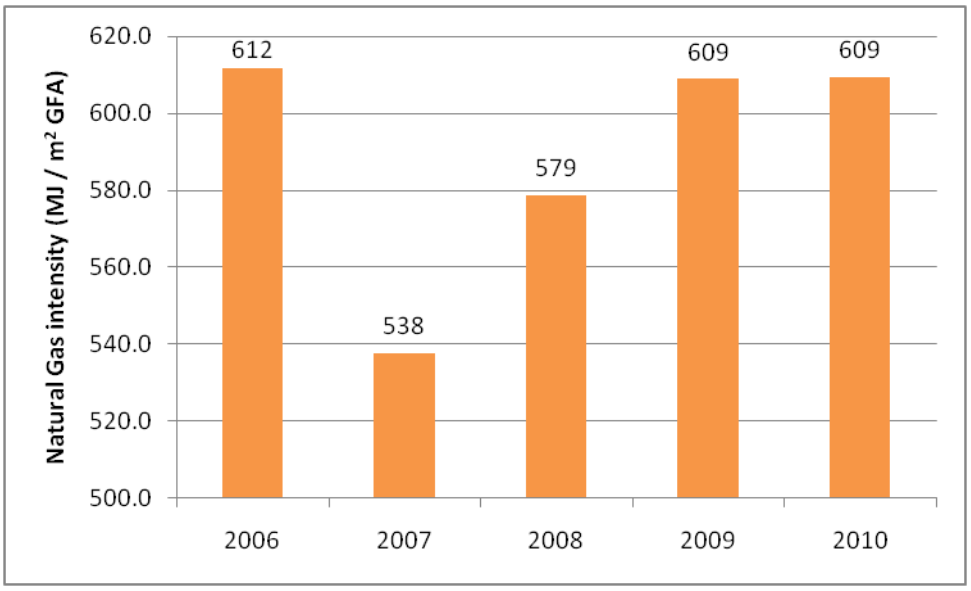


Figure 4-4 – Normalised natural gas consumption at Bathurst campus for the period 2006 to 2010

4.4. Water analysis

In 2010, there was 52% reduction in the consumption of mains supplied water at Bathurst campus compared to 2006 (Figure 4-5). This change represents an11% reduction on that which was achieved in 2009. Bathurst campus has still surpassed its 25% reduction target for mains supplied water.

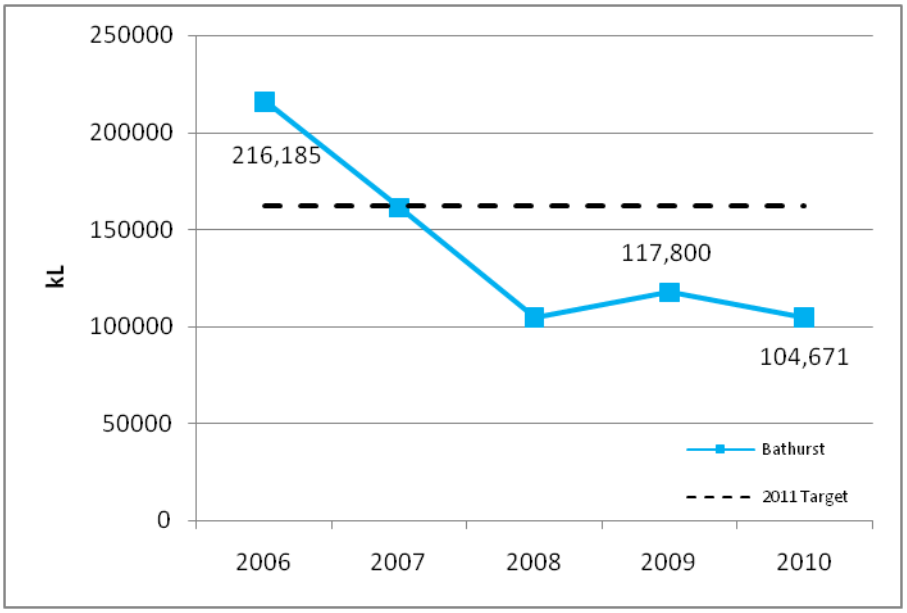


Figure 4-5 – Absolute mains water consumption at Bathurst campus for the period 2006 to 2010

Despite this absolute increase in water consumption, Bathurst campus recorded a normalised mains water intensity of 1.3kL/m^2 (Figure 4-6). This is a reduction in water intensity of 1.6kL/m^2 from 2006 to 2010.

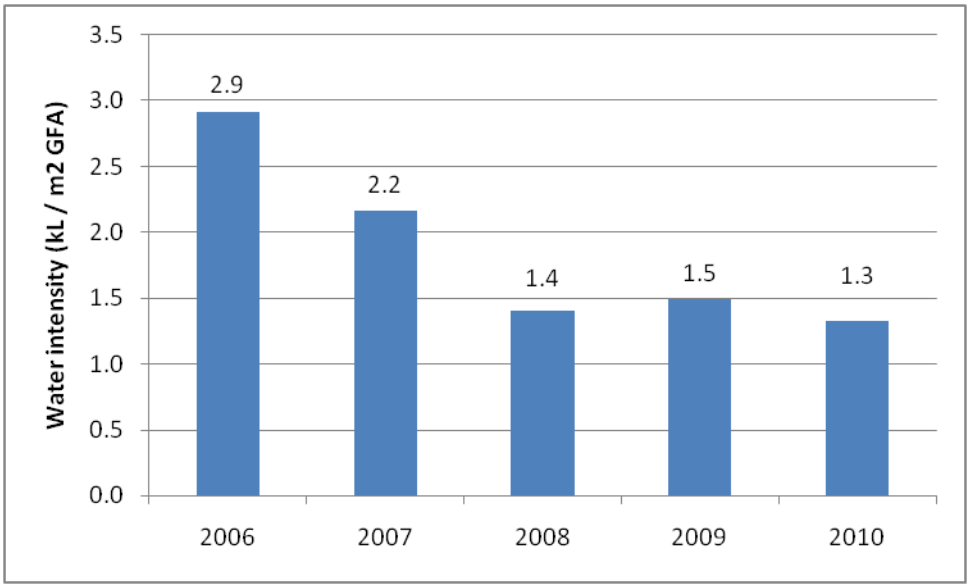


Figure 4-6 – Normalised mains water consumption at Bathurst campus for the period 2006 to 2010

4.5. Waste analysis

In 2010, general waste comprised of 97% of Bathurst campuses total waste output (Figure 4-7). The remaining 3% was recycled. This means that Bathurst campus is required to divert an additional 67% of material from the General Waste stream if it is to achieve its target of a 70% reduction of general waste to landfill by 2014.

However, it is noted that the total over quantity of waste that was disposed of at Bathurst Campus was 13% less than in 2009.General waste output reduced by 7% in 2010, while recycling rates reduced 74% as compared to 2009 figures.

Major improvements to waste infrastructure on Bathurst Campus are planned for 2011, which are designed to significantly increase the amount of recyclable material diverted from general waste.

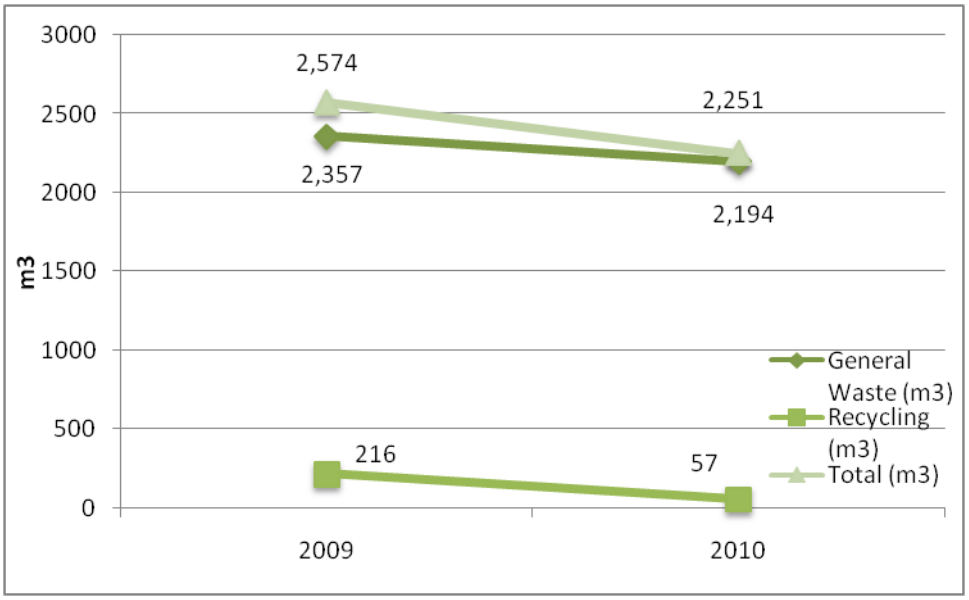


Figure 4-7 - Waste output from Bathurst campus in 2010

5. Orange campus analysis

5.1. Campus information

Total building gross floor area (m^2)	28,292
Student headcount	984[a] (288 internal; 528 distance & 168 mixed mode)
Site area (hectares)	49 actively managed
Student residences	220

a – Student headcount is "Academic Year to Date" figure only

No new buildings were constructed on the Orange Campus in 2010, however, improvements in the quality of space management data have increased the total building gross floor area that was reported in 2009 (27,426m^2) to 28,292m^2 in 2010.

Sharp increases in electricity, natural gas and water consumption that were identified at the Orange campus during 2010 can most likely be attributed to the operation of the Dentistry clinic that was began operating during late 2009.

A similar trend was also observed with waste from 2009 to 2010.

5.2. Electricity analysis

In 2010, there was a 67%% increase in the consumption of electricity at Orange campus compared to 2006 (Figure 5-1). This increase in consumption is 15% more than that experienced in 2009.

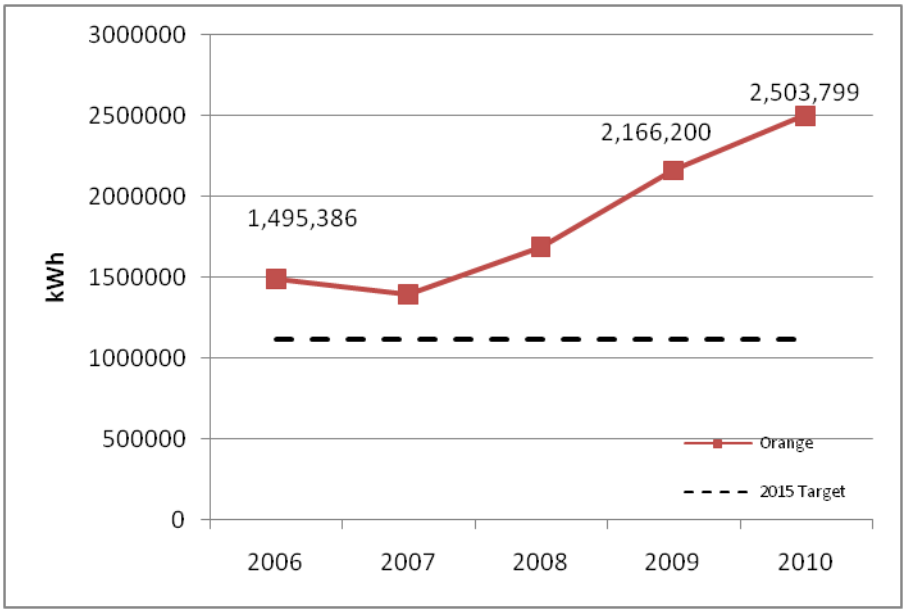


Figure 5-1 – Absolute electricity consumption at Orange campus for the period 2006 to 2010

Despite this absolute increase in electricity consumption, Orange campus has recorded a normalised electricity intensity of 88kWh/m^2 (Figure 5-2). This is an increase in energy intensity of 15kWh/m^2 from 2006 to 2010.

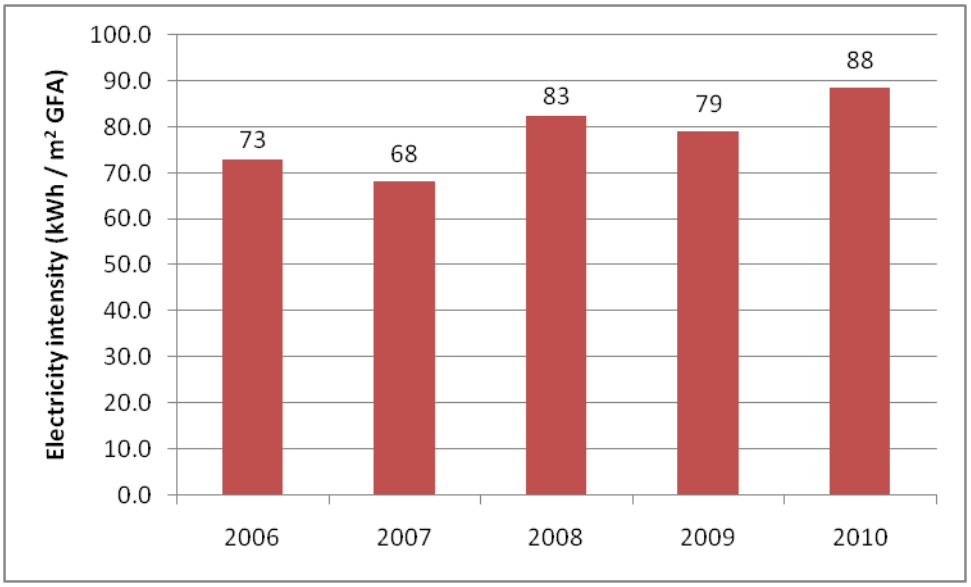


Figure 5-2 –Normalised electricity consumption at Orange campus for the period 2006 to 2010

5.3. Gas analysis

In 2010, there was a 16% increase in the consumption of natural gas at Orange campus compared to 2006 (Figure 5-3). This is a 62% increase from 2009.

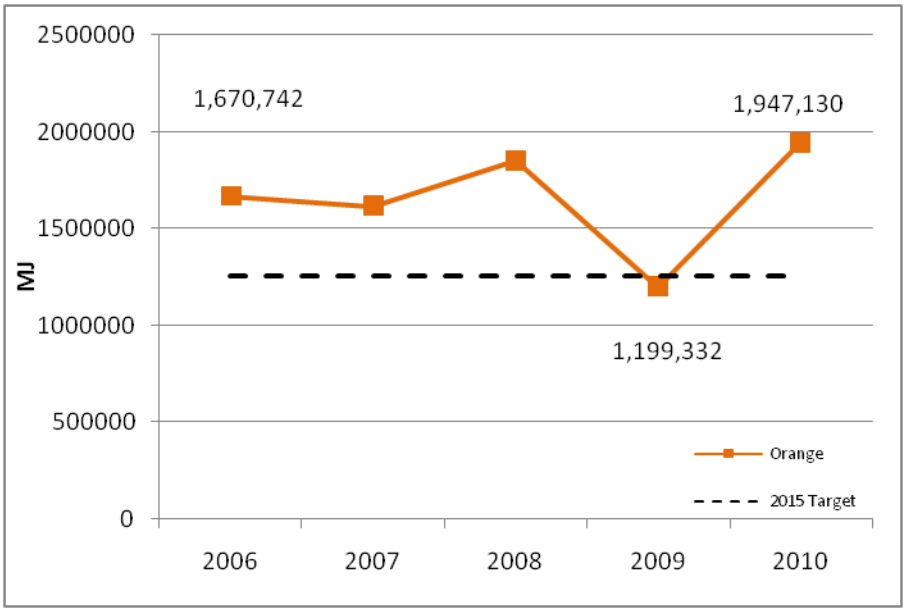


Figure 5-3 – Absolute natural gas consumption at Orange campus for the period 2006 to 2010

Despite this absolute increase in gas consumption, Orange campus has recorded a normalised natural gas consumption of 69MJ/m^2 (Figure 5-4). This is a reduction in natural gas intensity of 13MJ/m^2 from 2006 to 2010.

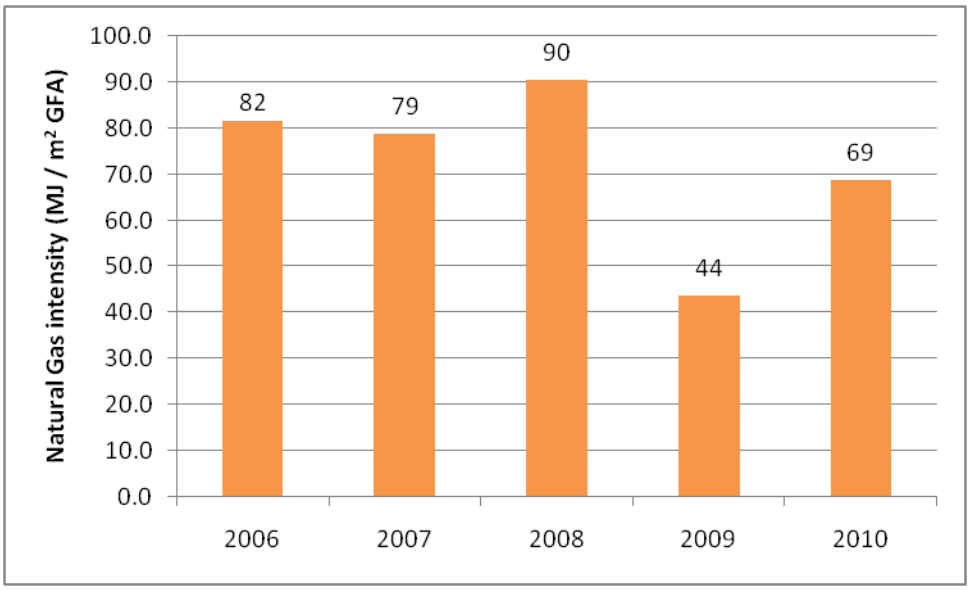


Figure 5-4 – Normalised natural gas consumption at Orange campus for the period 2006 to 2010

5.4. Water analysis

In 2010, there was 16% reduction in the consumption of potable water at Orange campus compared to 2006 (Figure 5-5). This change represents a 13%increase from that achieved in 2009.

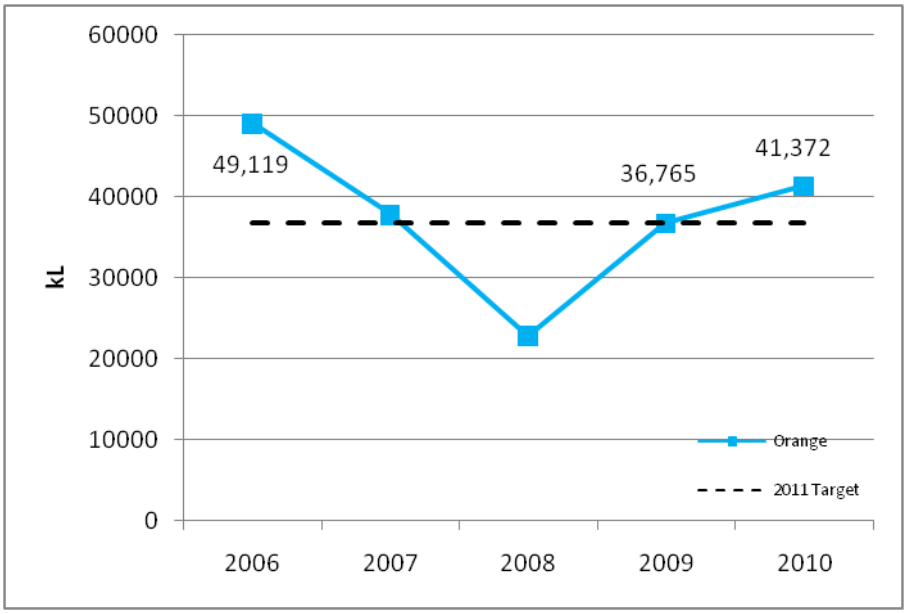


Figure 5-5 – Absolute water consumption at Orange campus for the period 2006 to 2010

Despite this absolute increase in water consumption, Orange campus recorded a normalised mains water intensity of 1.5kL/m^2 (Figure 5-6). This is a reduction in water intensity of 0.9kL/m^2 from 2006 to 2009.

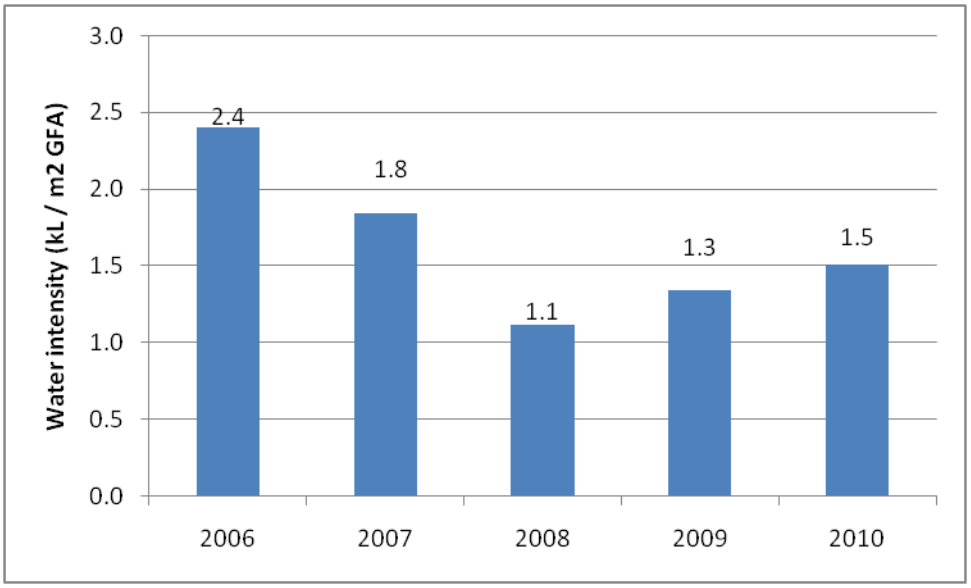


Figure 5-6 – Normalised water consumption at Orange campus for the period 2006 to 2010

5.5. Waste analysis

In 2010, general waste comprised a total of 80% of Orange campuses general waste output (Figure 5-7). The remaining 20% of the campuses waste output was paper and cardboard that was collected as recycling. A full commingled recycling collection will be implemented in 2011.

The total waste output of the campus increased by 36% between 2009 and 2010.

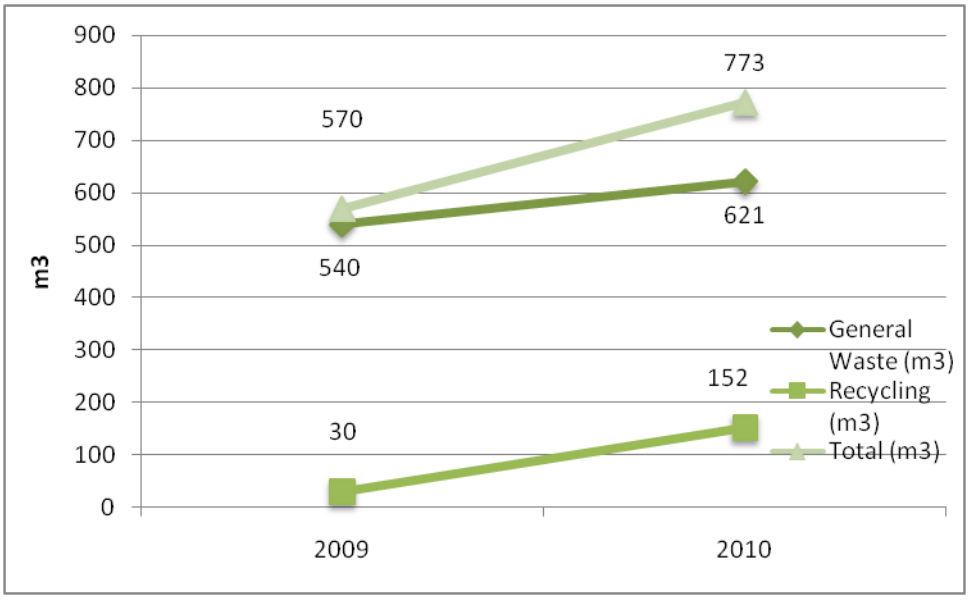


Figure 5-7 - Waste output from Orange campus in 2010

6. Albury-Wodonga (Thurgoona) campus analysis

6.1. Campus information

Total building gross floor area (m^2)	25,402
Student headcount	3,706[a] (877 internal, 1,776 distance & 1,053 mixed mode)
Site area (hectares)	90.2
Student residences	220

Albury-Wodonga (Thurgoona) campus increased its total gross floor area by 1,852m^2 in 2010. This was due to the construction of the new dental clinic. The DFM transport compound and expansion of the Gum's café also added significant floor area.

Major increases in electricity, natural gas and mains water consumption were measured in 2010. Staff re-located from the Albury-Wodonga (City) campus to the Albury-Wodonga (Thurgoona) campus in early 2010, likely played a significant part in the major increase in utility consumption.

Waste output on Albury-Wodonga (Thurgoona) campus also remained reasonably consistent between 2009 and 2010, with a slight drop in recycling rates and a slight increase in general waste output recorded for the year. Albury-Wodonga (Thurgoona) campus has recently implemented an alternative office waste collection system, which is expected to divert significantly more recyclable material from the general waste stream.

6.2. Electricity analysis

In 2010, there was an 87% increase in electricity use at Albury-Wodonga (Thurgoona) campus compared with 2006 (Figure 6-1). This is an increase on 2009 figures of 33% more electricity than was used than in 2009.

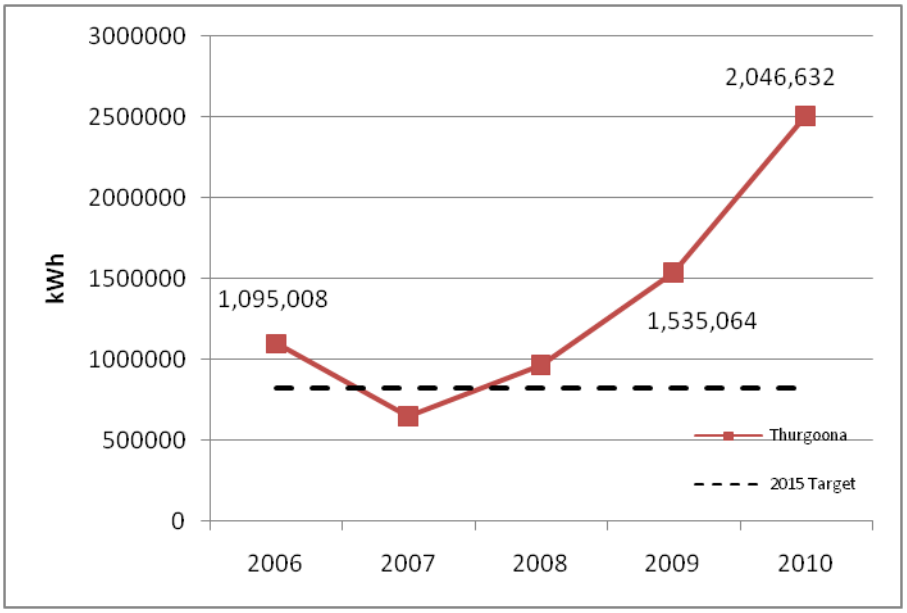


Figure 6-1 – Absolute electricity consumption at Albury-Wodonga (Thurgoona) campus for the period 2006 to 2010

Albury-Wodonga (Thurgoona) campus has recorded a normalised electricity intensity of 86kWh/m^2 (Figure 6-2). This is an increase in energy intensity of 9kWh/m^2 from 2006 to 2010.

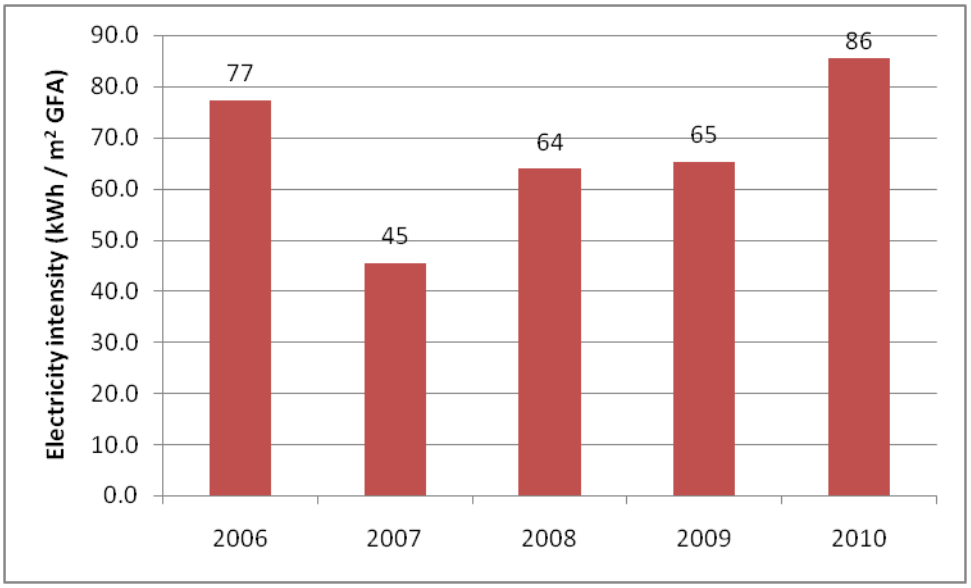


Figure 6-2 – Normalised electricity consumption at Albury-Wodonga (Thurgoona) campus for the period 2006 to 2010

6.3. Gas analysis

In 2010, there was an 83% increase in gas use at Albury-Wodonga (Thurgoona) campus compared with 2006 (Figure 6-3). This is an increase on 2009 consumption of 41%.

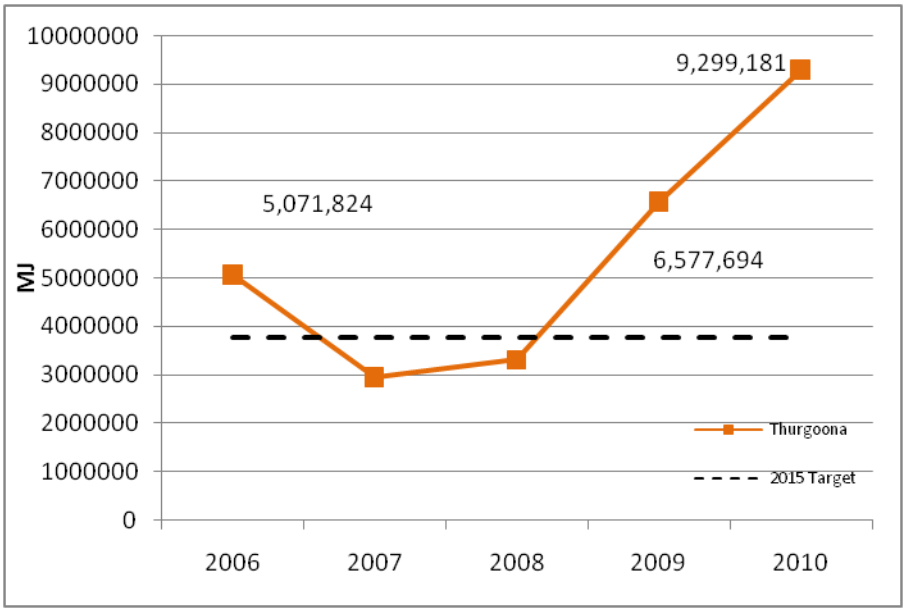


Figure 6-3 – Absolute natural gas consumption at Albury-Wodonga (Thurgoona) campus for the period 2006 to 2010

Despite this absolute increase in gas consumption, Albury-Wodonga (Thurgoona) campus has recorded a normalised natural gas intensity of 318MJ/m^2 (Figure 6-4). This is a reduction in natural gas intensity of 40MJ/m^2 from 2006 to 2010.

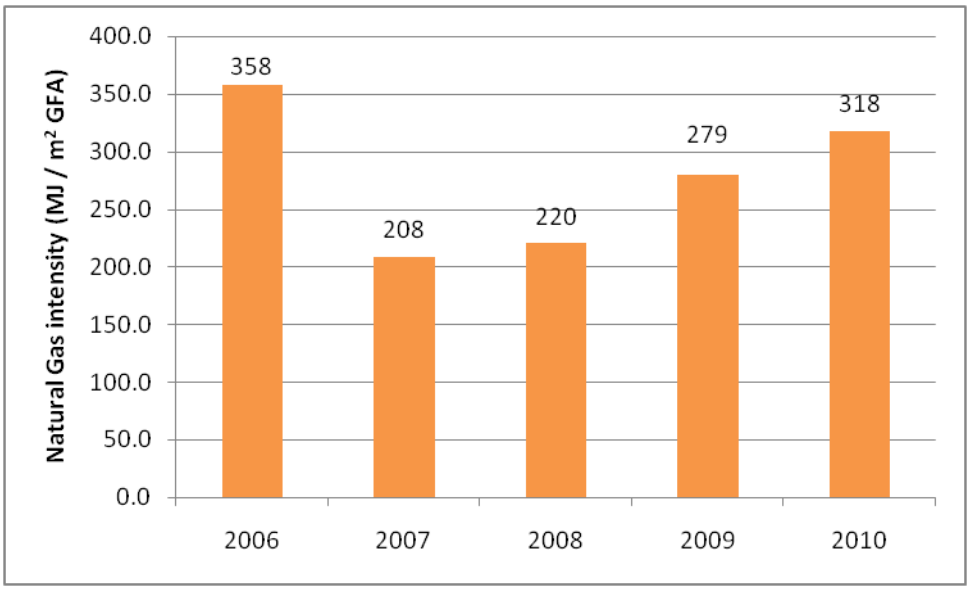


Figure 6-4 – Normalised natural gas consumption at Albury-Wodonga (Thurgoona) campus for the period 2006 to 2010

6.4. Water analysis

In 2010, there was a 26% increase in the consumption of potable water at Albury-Wodonga (Thurgoona) campus compared to 2006 (Figure 6-5). This change represents a 51% increase on the 2009 consumption.

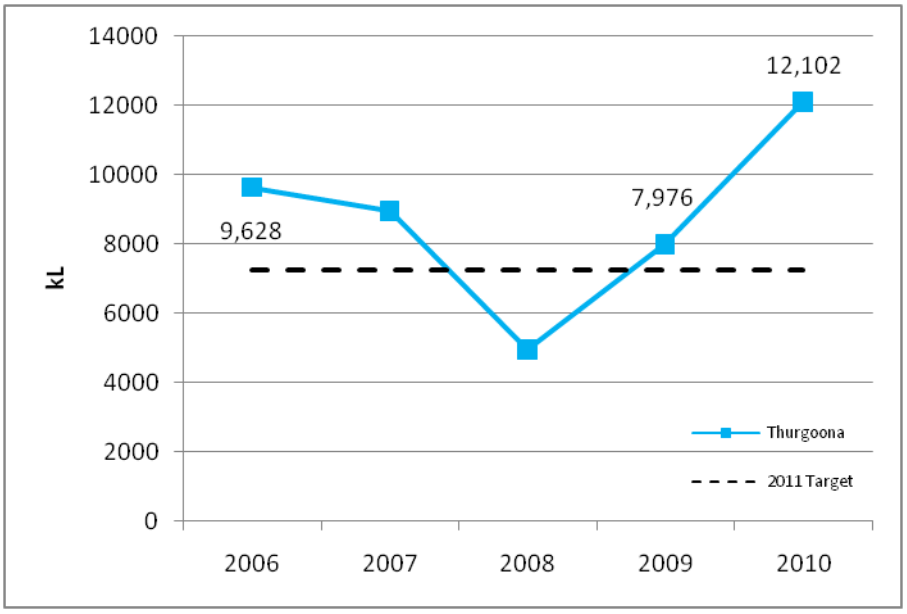


Figure 6-5 – Absolute water consumption at Albury-Wodonga Campus (Thurgoona) campus for the period 2006 to 2010

Despite this absolute increase in water consumption, Albury-Wodonga (Thurgoona) campus recorded a normalised mains water intensity of 0.5kL/m^2 (Figure 6-6). This is a decrease in water intensity of 0.2kL/m^2 from 2006 to 2010.

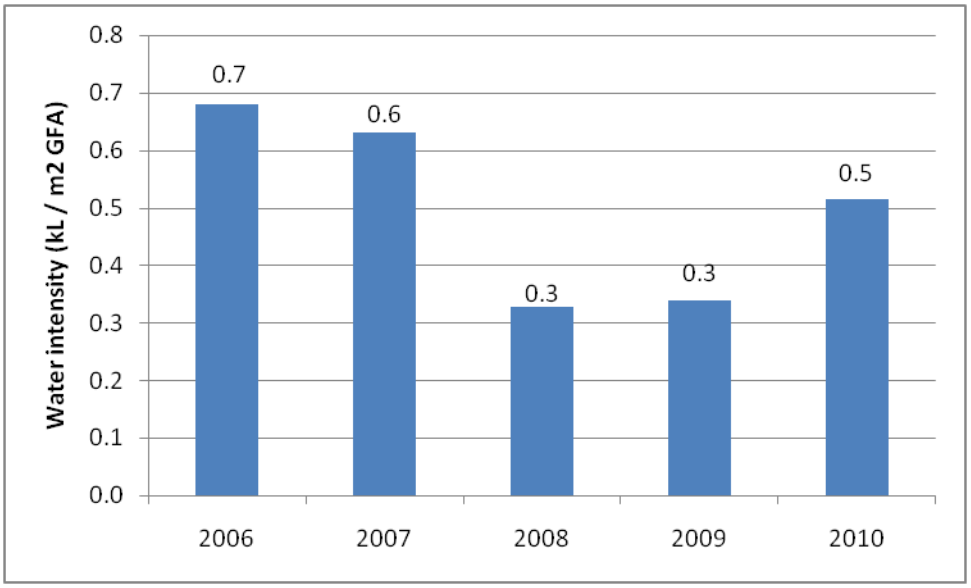


Figure 6-6 – Normalised water consumption at Albury-Wodonga (Thurgoona) campus for the period 2006 to 2010

6.5. Waste analysis

In 2010, general waste comprised of 66% of Albury-Wodonga (City) & Albury-Wodonga (Thurgoona) campuses waste output (Figure 6-7). The remaining 34% was recycled. This means that Albury-Wodonga (City) & Albury-Wodonga (Thurgoona) campuses are required to divert only an additional 36% of material from the General Waste to the recycling stream if it is to achieve its target of a 70% reduction of general waste to landfill by 2014.

General waste output remained reasonably steady, with a 5% increase in 2010 being recorded. However, recycling rates dropped 14% during this same period.

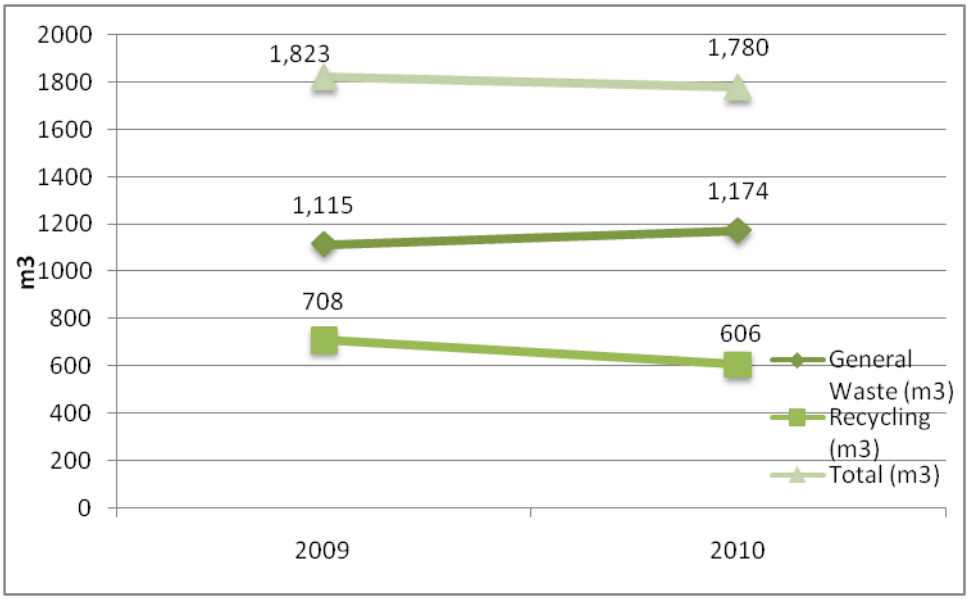


Figure 6-7 - Waste output from Albury-Wodonga (City) & Albury-Wodonga (Thurgoona) campuses in 2010

7. Albury-Wodonga (City) campus analysis

7.1. Campus information

Total building gross floor area (m^2)	2,750
Student headcount	None
Student residences	0

In 2010, the Albury-Wodonga (City) campus significantly scaled back operations, so that there was only 2,750m^2 of active gross floor area. The operational buildings in 2010 included Buildings 603 (Adams), 608 (Bolderwood), 621 (Anatomy) and 635 (Childcare Centre).

While operations were scaled back, security lighting and grounds maintenance were required to protect the integrity of the campus, hence the modest energy usage associated with the modest electricity usage associated with vacant buildings.

The campus is currently being disposed of by the University. It is likely that 2011 will be the last year that this campus will be reported upon in the Environmental Scorecard.

7.2. Electricity analysis

In 2010, there was a 55% reduction in electricity use at Albury-Wodonga (City) campus compared with 2006 (Figure 6-1). This represents a 48% decrease on 2009 figures.

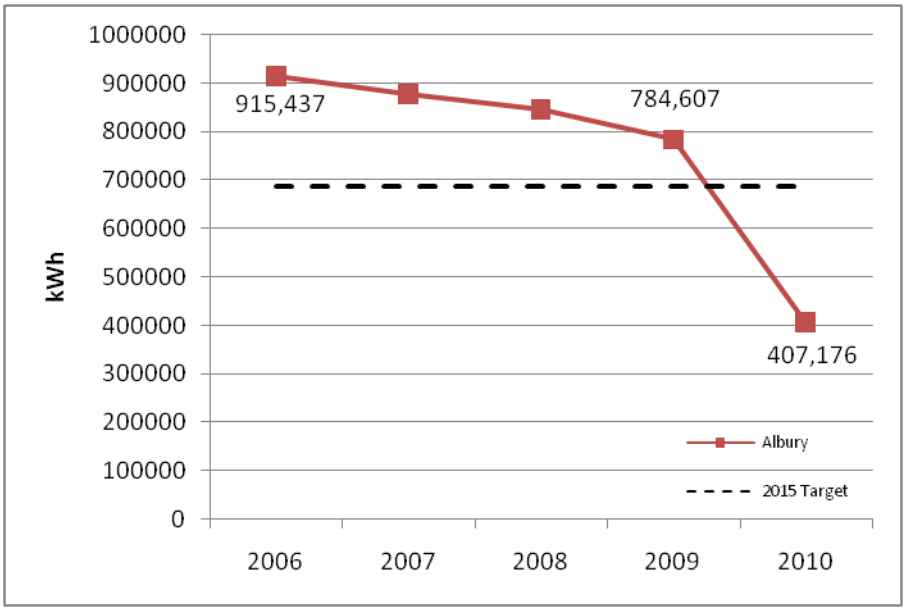


Figure 7-1 – Absolute electricity consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

Albury-Wodonga (City) campus has recorded a normalised electricity intensity of 34kWh/m^2 (Figure 7-2). This is a decrease in energy intensity of 33kWh/m^2 from 2006 to 2009.

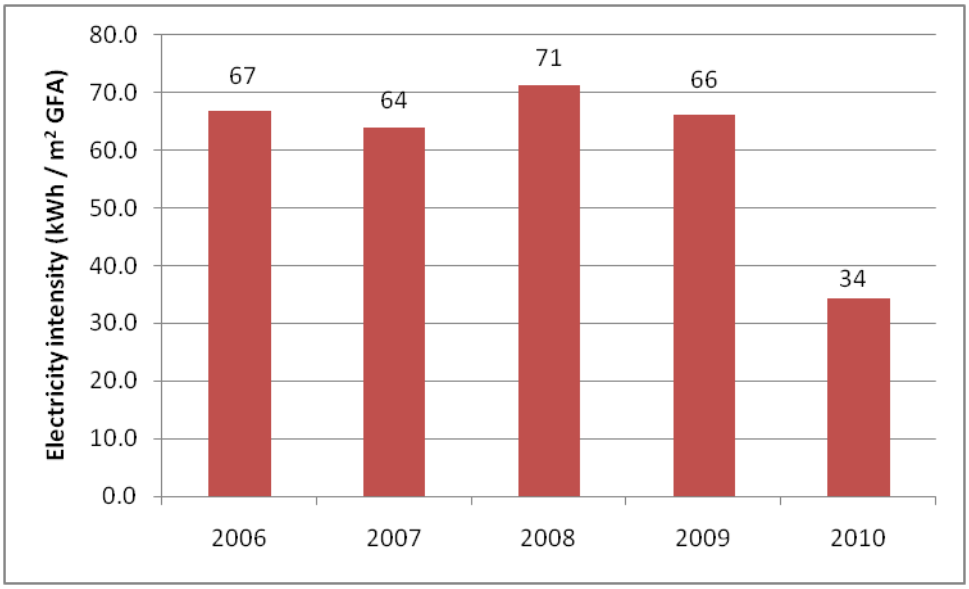


Figure 7-2 – Normalised electricity consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

7.3. Gas analysis

In 2010, there was an 87% reduction in natural gas use at Albury-Wodonga (City) campus compared with 2006 (Figure 7-3). This represents an additional 77% decrease from 2009 figures.

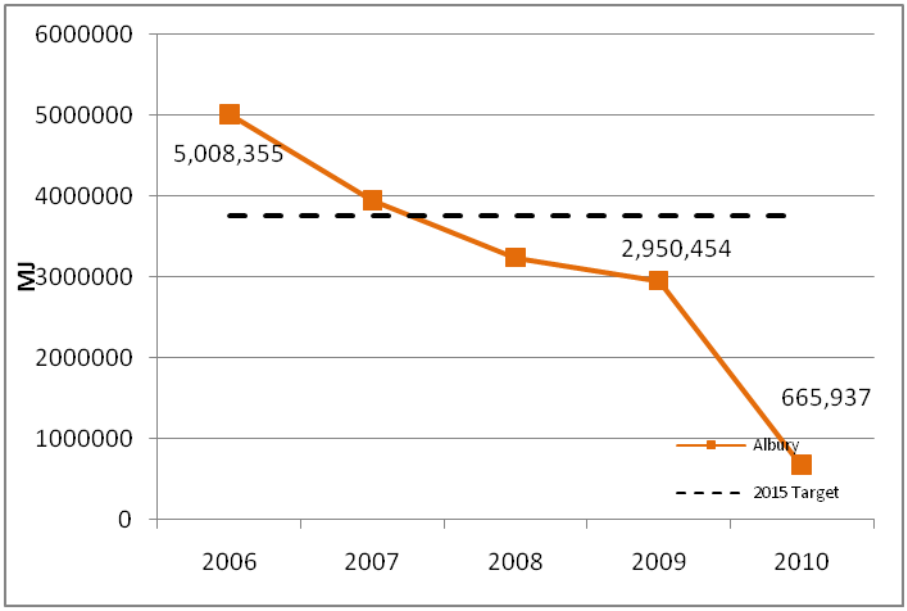


Figure 7-3 – Absolute natural gas consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

Due to the absolute decrease in natural gas consumption, Albury-Wodonga (City) campus has recorded a normalised natural gas intensity of 318MJ/m^2 (Figure 7-4). This is a reduction in natural gas intensity of 40MJ/m^2 from 2006 to 2010.

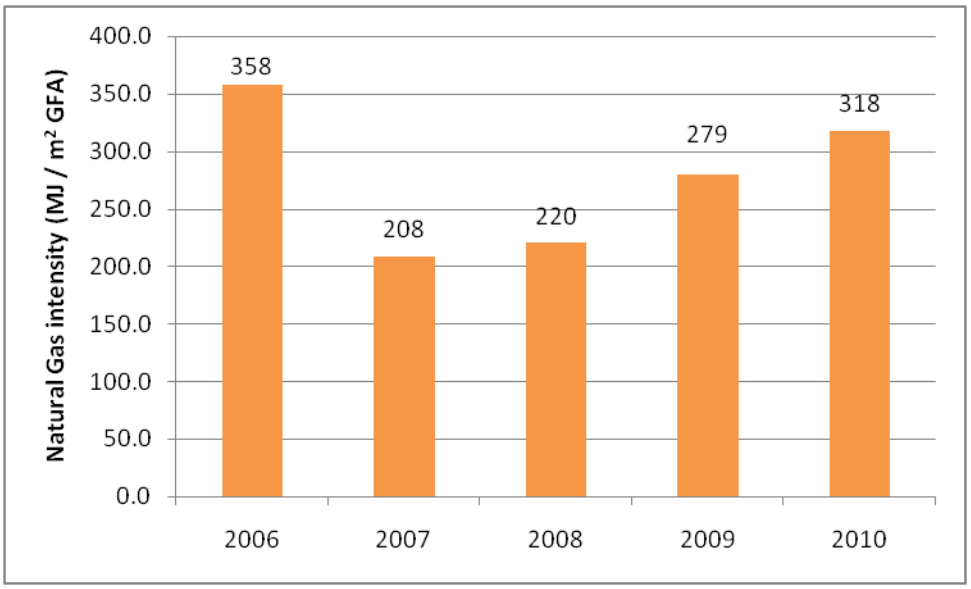


Figure 7-4 – Normalised natural gas consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

7.4. Water analysis

In 2010, there was a 46% decrease in water consumption at Albury-Wodonga (City) campus compared with 2006 (Figure 7-5). This represents a 14% decrease on 2009 figures.

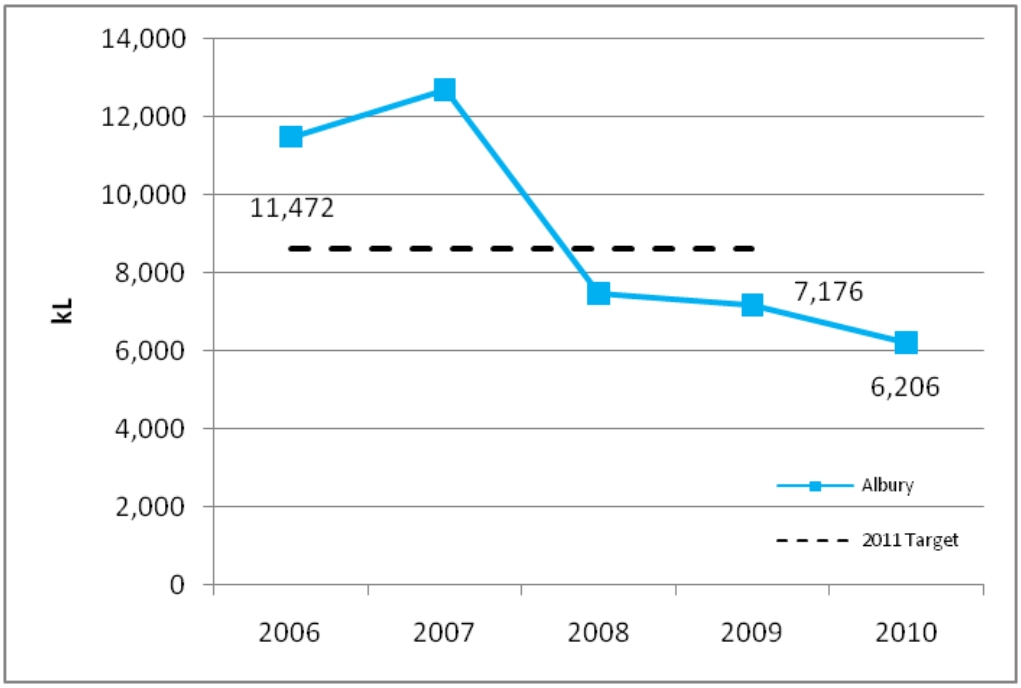


Figure 7-5 – Absolute water consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

Albury-Wodonga (City) campus recorded a normalised mains water intensity of 0.5kL/m^2 (Figure 7-6). This is a reduction in water intensity of 0.2kL/m^2 from 2006 to 2010.

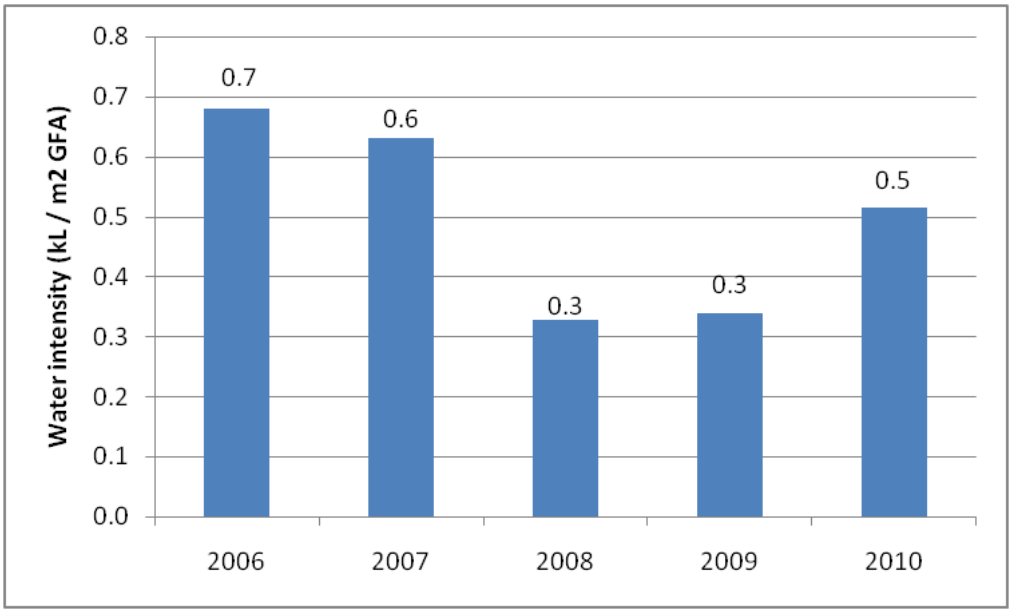


Figure 7-6 – Normalised water consumption at Albury-Wodonga (City) campus for the period 2006 to 2010

8. Dubbo campus analysis

8.1. Campus information

Total building gross floor area (m^2)	7,244
Student headcount	341[a] (107 internal; 53 distance & 181 mixed mode)
Site area (hectares)	41.4 (11 actively managed)
Student residences	18

a – Student headcount is "Academic Year to Date" figure only

An additional 1,250m^2 of gross floor area was added to the Dubbo Campus in 2010. This is the operational floor area of the new Dubbo Dentistry Clinic.

8.2. Electricity analysis

In 2010, there was a 12% increase in electricity use at Dubbo campus compared with 2006 (Figure 8-1). This represents a 2% increase over 2009 electricity consumption.

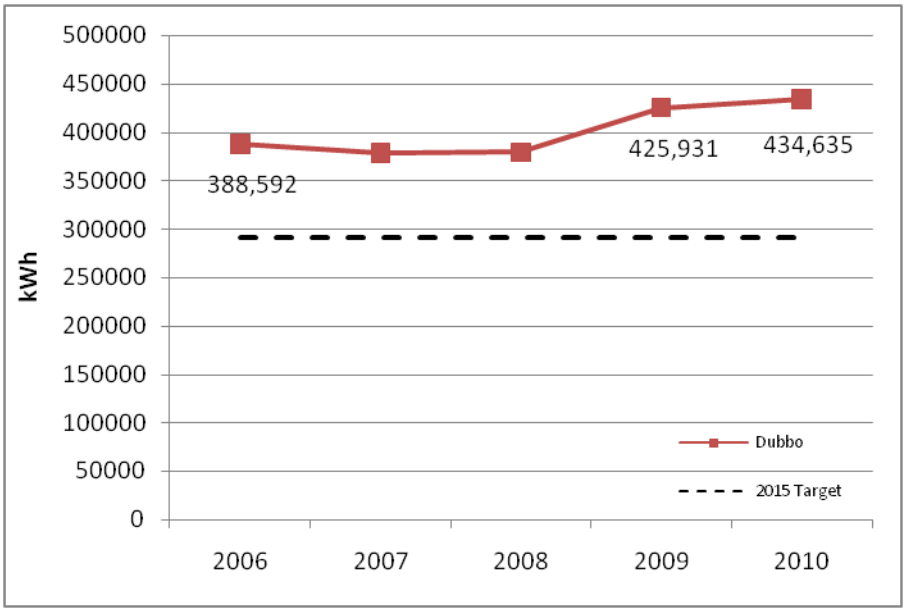


Figure 8-1 – Absolute electricity consumption at Dubbo campus for the period 2006 to 2010

Dubbo campus has recorded a normalised electricity intensity of 60kWh/m^2 (Figure 8-2). This is a decrease in energy intensity of 7kWh/m^2 from 2006 to 2010.

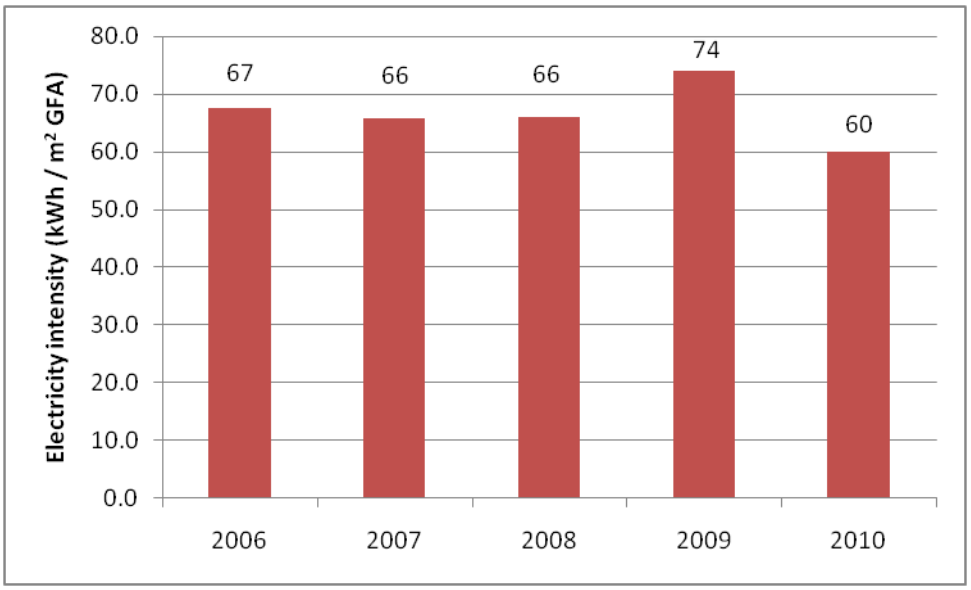


Figure 8-2 – Normalised electricity consumption at Dubbo campus for the period 2006 to 2010

8.3. Gas analysis

In 2010, there was a 35% decrease in natural gas use at Dubbo campus compared with 2006 (Figure 8-3). This follows from a decrease of 22% in 2010 compared to 2009.

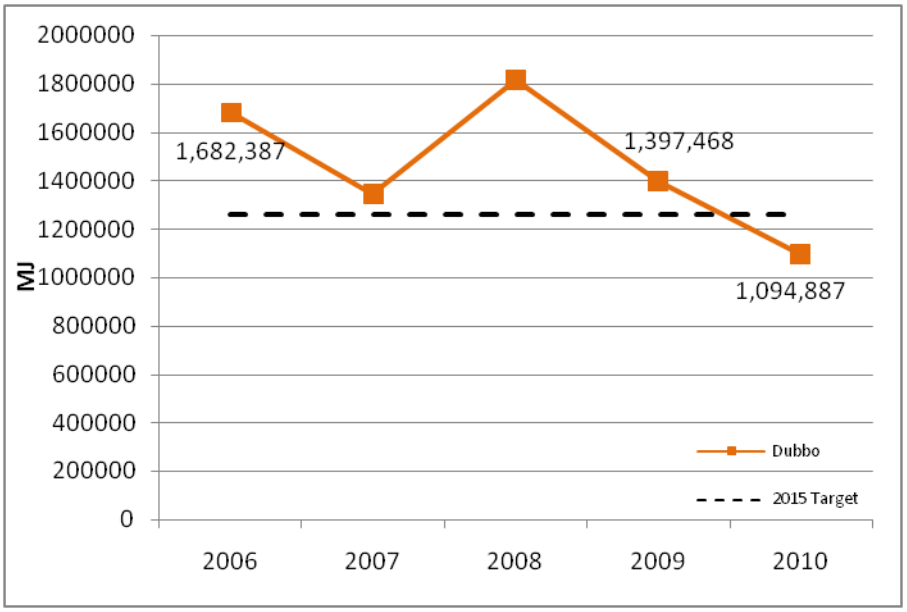


Figure 8-3 – Absolute natural gas consumption at Dubbo campus for the period 2006 to 2010

Dubbo campus has recorded a normalised natural gas consumption of 151MJ/m^2 (Figure 8-4). This is a reduction in natural gas intensity of 141MJ/m^2 from 2006 to 2010.

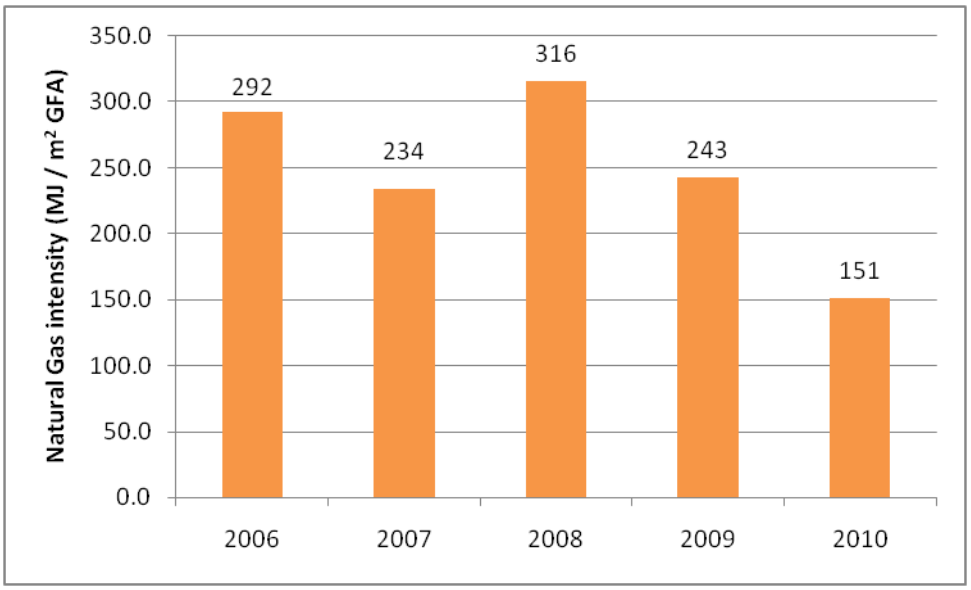


Figure 8-4 – Normalised natural gas consumption at Dubbo campus for the period 2006 to 2010

8.4. Water analysis

In 2010, there was a 68% reduction in water use at Dubbo campus compared with 2006 (Figure 8-5). This is a decrease of 33% compared to that achieved in 2008. Dubbo campus has surpassed its 25% reduction target for potable water.

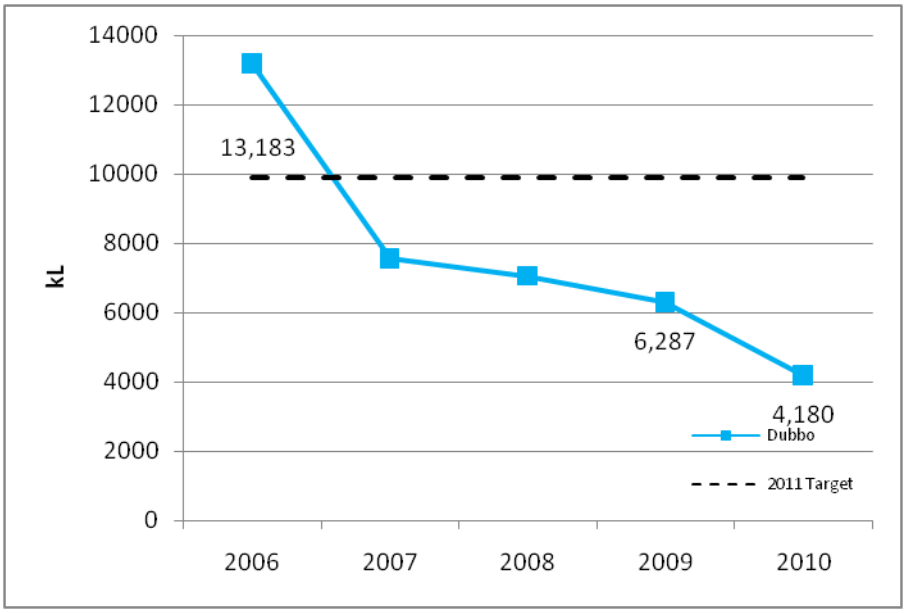


Figure 8-5 – Absolute water consumption at Dubbo campus for the period 2006 to 2010

Dubbo campus recorded a normalised mains water intensity of 0.7kL/m^2 (Figure 8-6). This is a reduction in water intensity of 1.6kL/m^2 from 2006 to 2010.

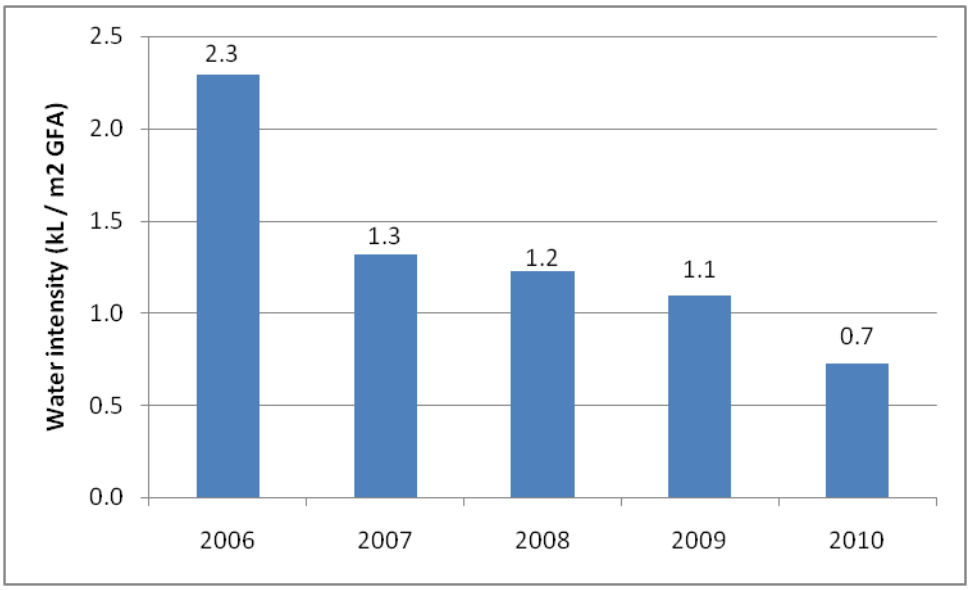


Figure 8-6 – Normalised water consumption at Dubbo campus for the period 2006 to 2010

8.5. Waste analysis

In 2009, general waste comprised of 72% of Dubbo campuses waste output (Figure 8-7). The remaining 28% was recycled. This means that Dubbo campus is required to divert an additional 42% of material from the General Waste to the recycling stream if it is to achieve its target of a 70% reduction of general waste to landfill by 2014.

General waste output remained reasonably steady in 2010, with an increase of only 1% recorded, while recycling has increased a significant 321%

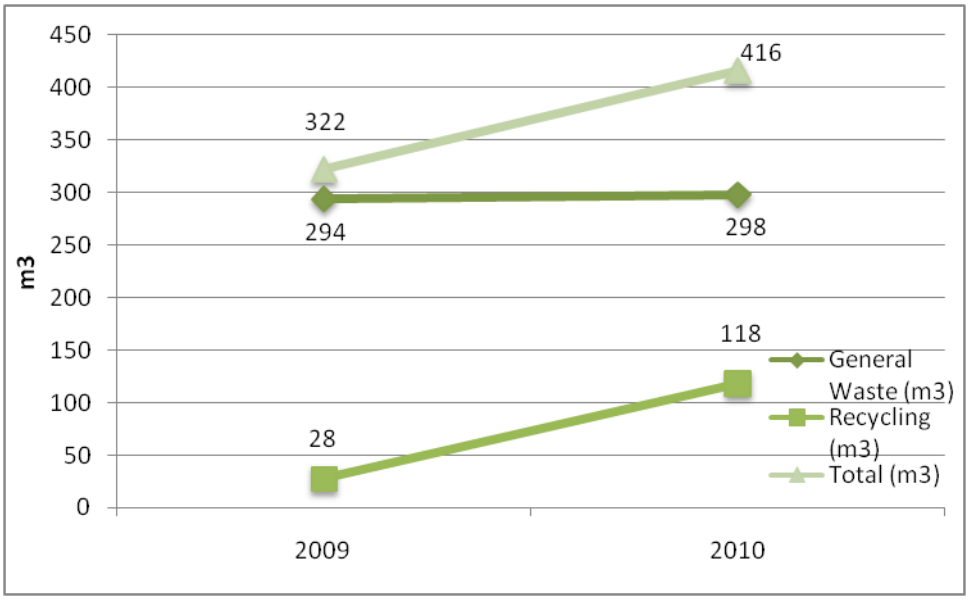


Figure 8-7 – Waste output from Dubbo campus in 2010

9. Canberra campus analysis

9.1. Campus information

Total building gross floor area (m^2)	1648
Student headcount	378 (63 internal;306 distance & 34 mixed mode)
Site area (hectares)	3.4
Student residences	None

There was no change in the campus floor area between 2009 and 2010 at the Canberra campus.

Electricity consumption dropped slightly between 2009 and 2010. This can likely be attributed to a cool period during late 2010, where typically the reverse cycle air conditioning would be operating.

Currently CSU is being charged an access fee for water but not for water consumption. A broken water meter on the Canberra campus has led to a water consumption being estimated as being almost exactly the same as in previous years.

Waste consumption remained reasonably consistent in 2010 as compared to 2009, with a slight overall increase in the amount of general waste recorded in 2010.

9.2. Electricity analysis

In 2010, there was an 84% increase in electricity use at Canberra campus compared with 2006 (Figure 9-1). This represents a 6% decrease on 2009 figures.

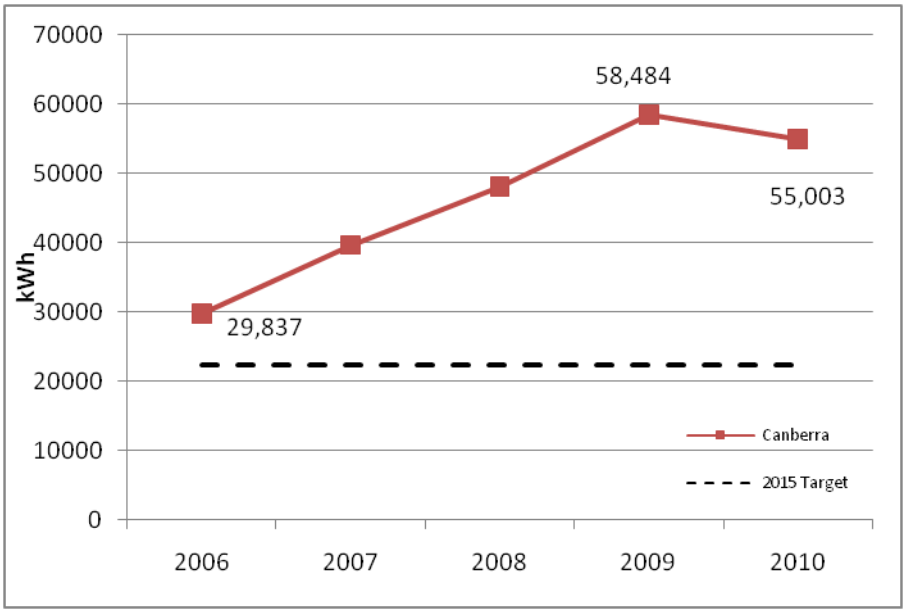


Figure 9-1 – Absolute electricity consumption at Canberra campus for the period 2006 to 2010

Canberra campus has recorded a normalised electricity intensity of 33kWh/m^2 (Figure 9-2). This is a decrease in energy intensity of 1kWh/m^2 from 2006 to 2010.

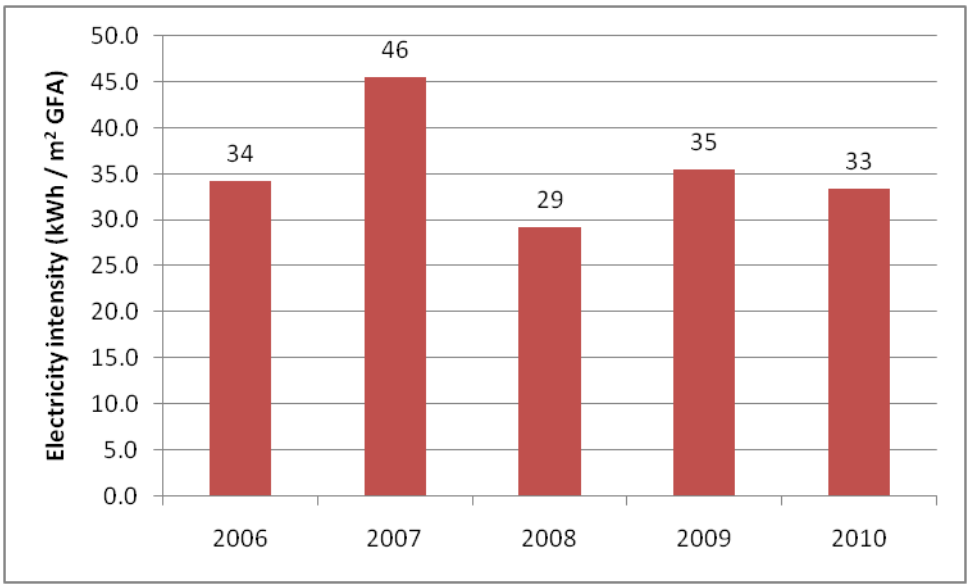


Figure 9-2 – Normalised electricity consumption at Canberra campus for the period 2006 to 2010

9.3. Gas analysis

In 2010, there was an 89% increase in natural gas consumption at Canberra campus compared with 2006 (Figure 9-3). This is a 100% increase on the previous year's consumption.

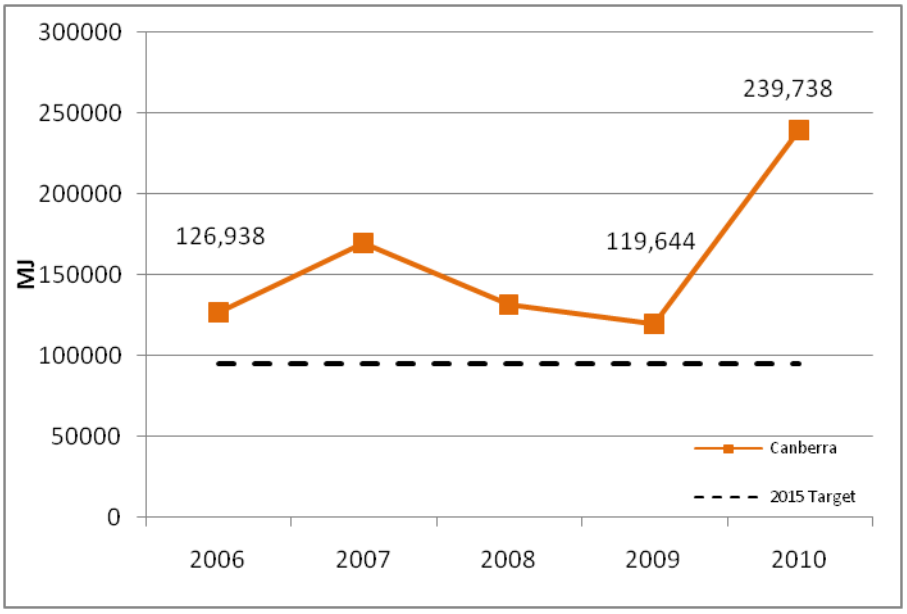


Figure 9-3 – Absolute natural gas consumption at Canberra campus for the period 2006 to 2010

Despite this absolute increase in gas consumption, Canberra campus has recorded a normalised natural gas intensity of 145MJ/m^2 (Figure 9-4). This is a decrease in natural gas intensity of 1MJ/m^2 from 2006 to 2010.

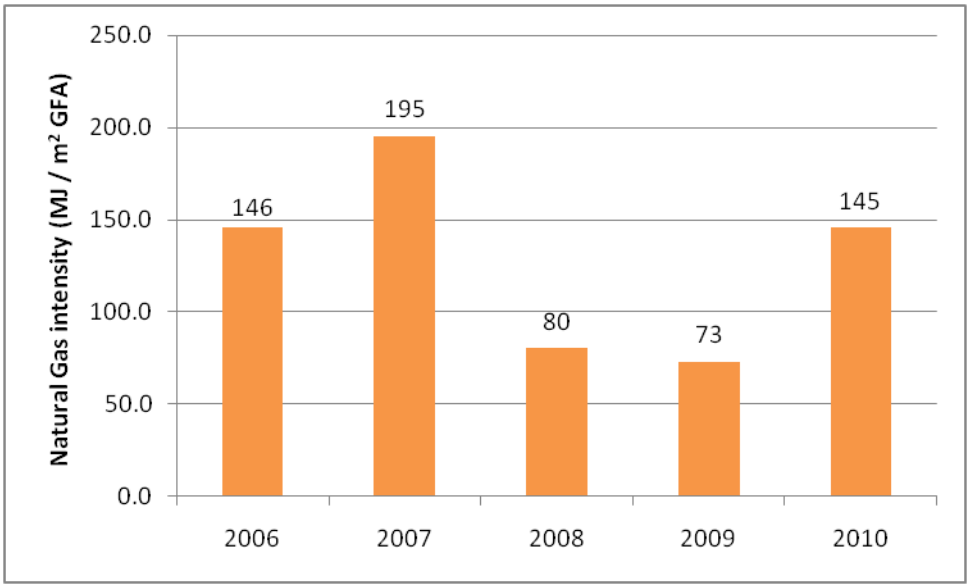


Figure 9-4 – Normalised natural gas consumption at Canberra campus for the period 2006 to 2010

9.4. Water analysis

In 2010, there was a slight reduction in the volume of water consumed by the campus, with a 6% reduction being recorded between 2010 and 2009. This equates to an 11% reduction on what was recorded in 2006, the baseline year (Figure 9-5).

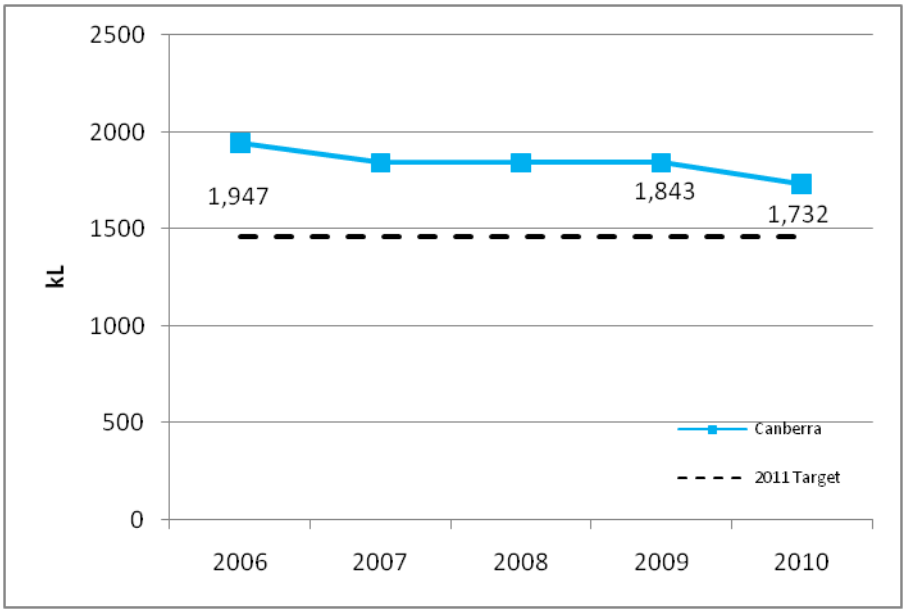


Figure 9-5 – Absolute water consumption at Canberra campus for the period 2006 to 2010

Despite the decrease in absolute water consumption, Canberra campus recorded a normalised mains water intensity of 1.1kL/m^2 (Figure 9-6).

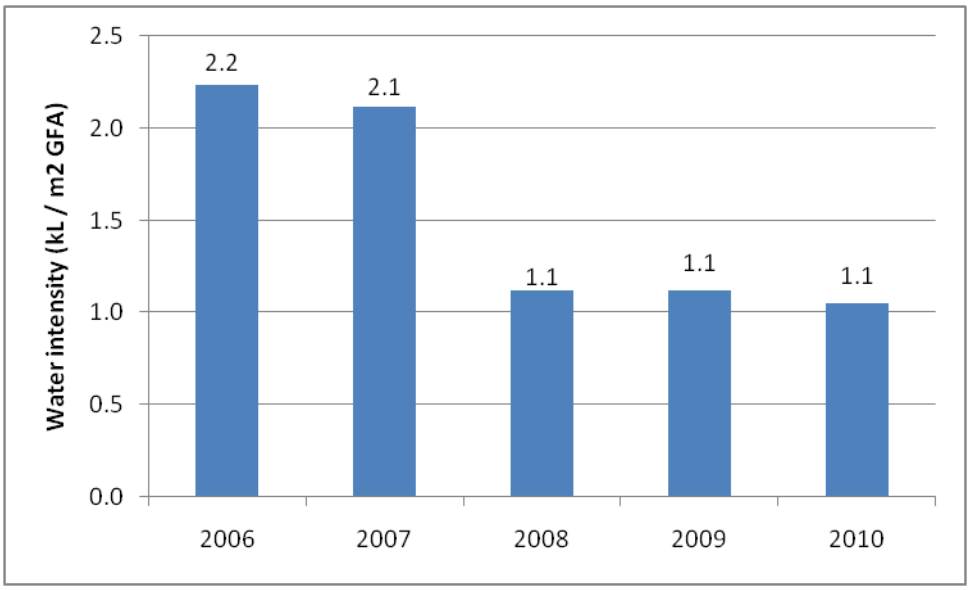


Figure 9-6 – Normalised water consumption at Canberra campus for the period 2006 to 2010

9.5. Waste analysis

In 2009, Canberra campus disposed of 28m^3 (60%) of general waste and recycled 18m^3 (40%) of waste (Figure 9-7). This means that an additional 30% of Canberra campuses total waste output needs to be diverted from general waste if it is to achieve its waste target.

Recycling at Canberra campus reduced by 10% in 2010 while general waste output increased by 22%.

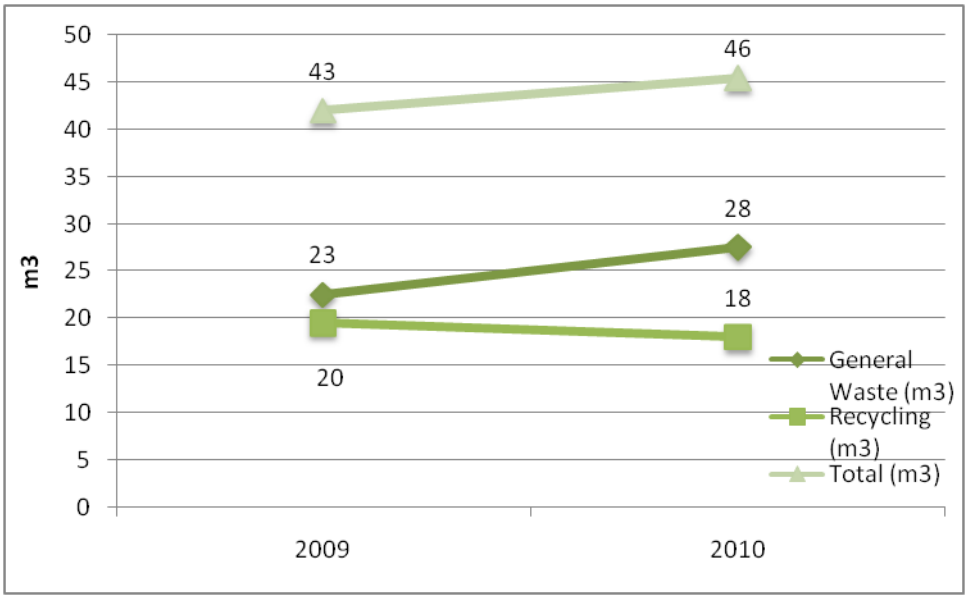


Figure 9-7 – Waste output from Canberra campus in 2010

10. Broken Hill campus analysis

10.1. Campus information

Total building gross floor area (m^2)	5,041
Site area (hectares)	1
Student residences	None

It is noted that the Broken Hill campus is not connected to a natural gas supply.

There was no change in the gross floor area of the Broken Hill campus between 2009 and 2010.

Utility consumption at Broken Hill campus was significantly reduced on 2009 figures, as the Robinson College is now paying for (and accounting for) a percentage both water and electricity consumption.

10.2. Electricity analysis

No electricity consumption data was available for Broken Hill campus in 2006. An assumption has been made that 2006 consumption was consistent with 2007. A 74% increase in electricity use was observed in 2010 compared to 2006 (Figure 10-1).

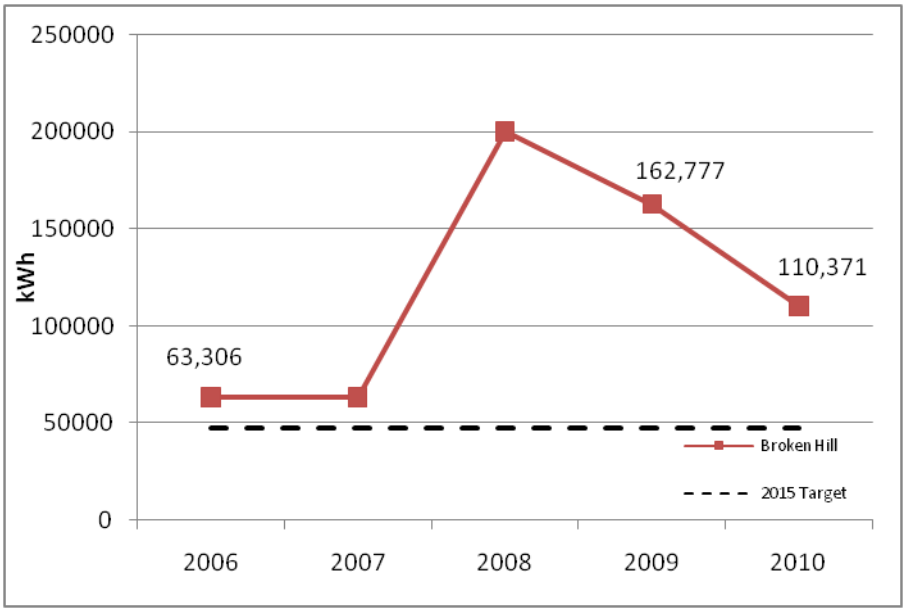


Figure 10-1 – Absolute electricity consumption at Broken Hill campus for the period 2006 to 2010

Broken Hill campus has recorded a normalised electricity intensity of 22kWh/m^2 (Figure 10-2). This is an increase in energy intensity of 9kWh/m^2 from 2006 to 2010.

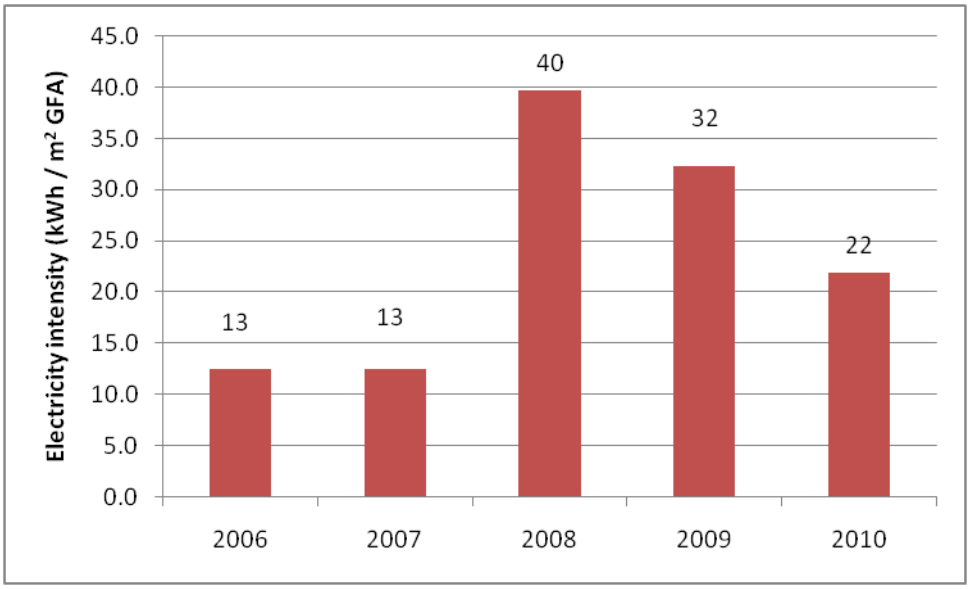


Figure 10-2 – Normalised electricity consumption at Broken Hill campus for the period 2006 to 2010

10.3. Water analysis

In 2010, there was a 113% increase in water use at the Broken Hill campus compared to 2006 (Figure 10-3).

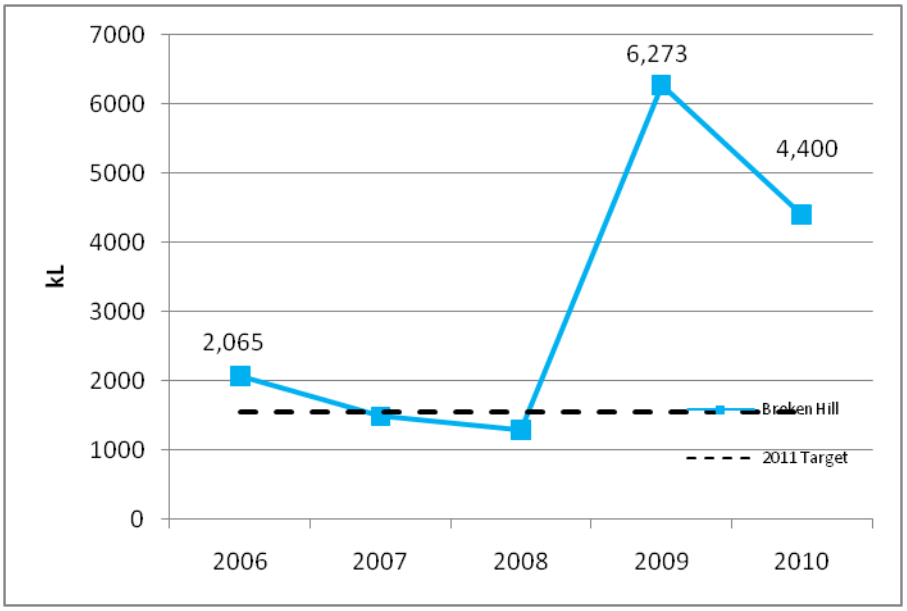


Figure 10-3 – Absolute water consumption at Broken Hill campus for the period 2006 to 2010

Broken Hill campus recorded a normalised mains water intensity of 0.9kL/m^2 (Figure 10-4). This is an increase in water intensity of 0.5kL/m^2 from 2006 to 2010.

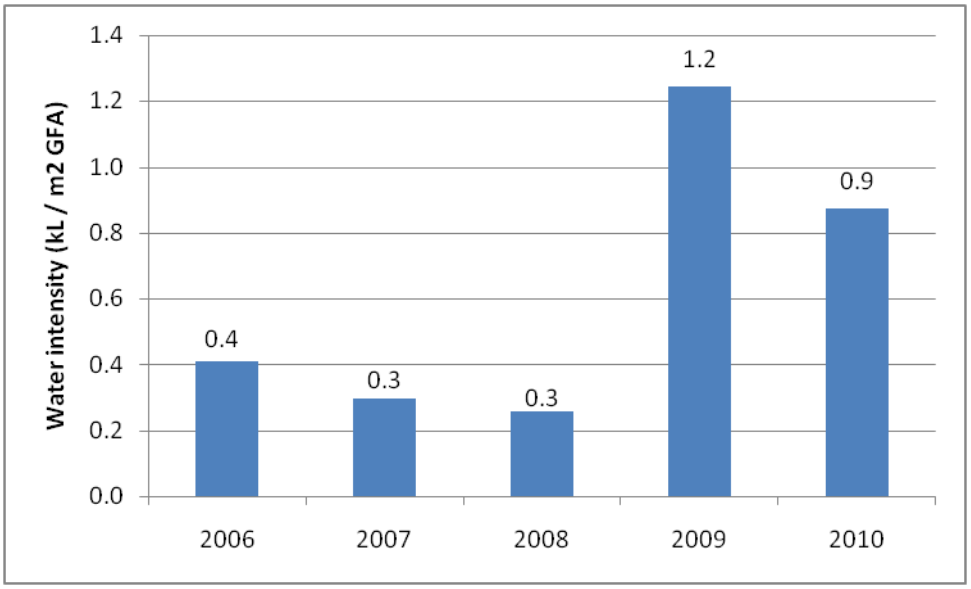


Figure 10-4 – Normalised water consumption at Broken Hill campus for the period 2006 to 2010

11. TEFMA Benchmarking

The Tertiary Education Facilities Management Association (TEFMA) each year undertakes a benchmarking exercise of University facilities. This allows CSU's performance to be tracked against all other institutions and the sector mean for a range of parameters.

Data from TEFMA's 2010 benchmarking survey was not available at the time that this Scorecard was developed, so 2009 data has been used as a substitute.

This comparison is based on the gross floor area of core university buildings and therefore excludes residences and enterprises.

Figure 11-1 shows normalised energy use (GJ/m^2), for all of CSU's core facilities against the mean value calculated for all Australian universities. CSU consistently rates above the mean figure; however, the implementation of energy efficiency improvements over the coming years is expected to reduce CSU's normalised energy consumption.

In 2009, CSU's mean energy efficiency was 0.39GJ/m^2 more than the University sector average.

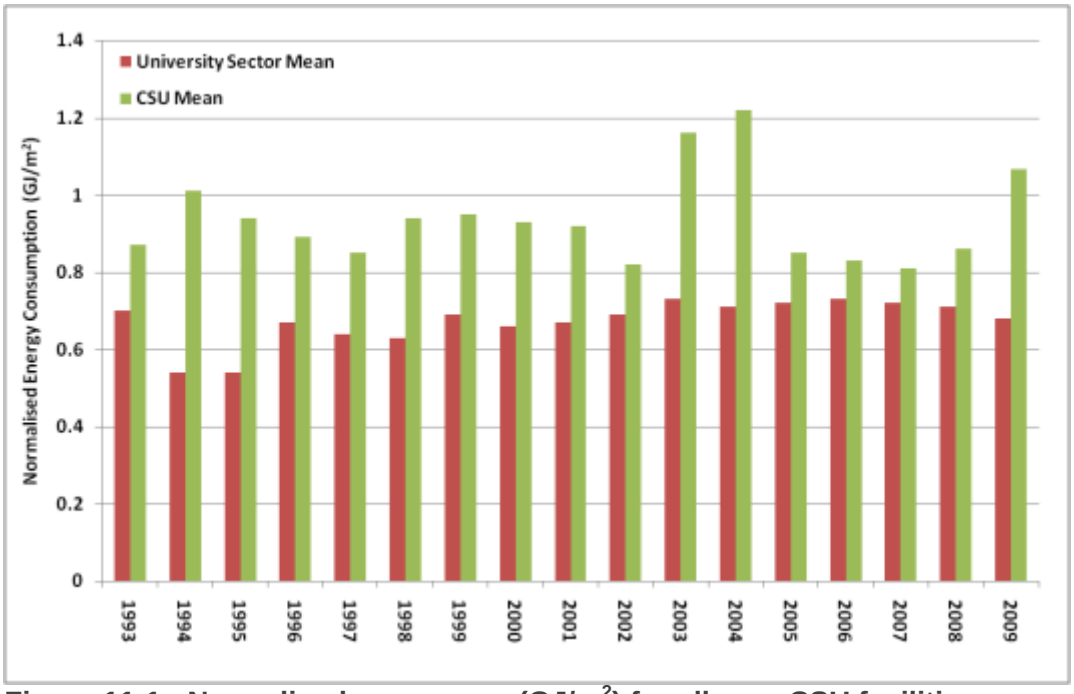


Figure 11-1 - Normalised energy use (GJ/m^2) for all core CSU facilities against the mean for all Australian universities (2009)

Figure 11-2 shows normalised water use (kL/m^2), for all of CSU's core facilities against the mean value calculated for all Australian universities. CSU consistently rates significantly above the mean figure.

CSU's normalised figure was 1.84kL/m^2 more than the University sector average.

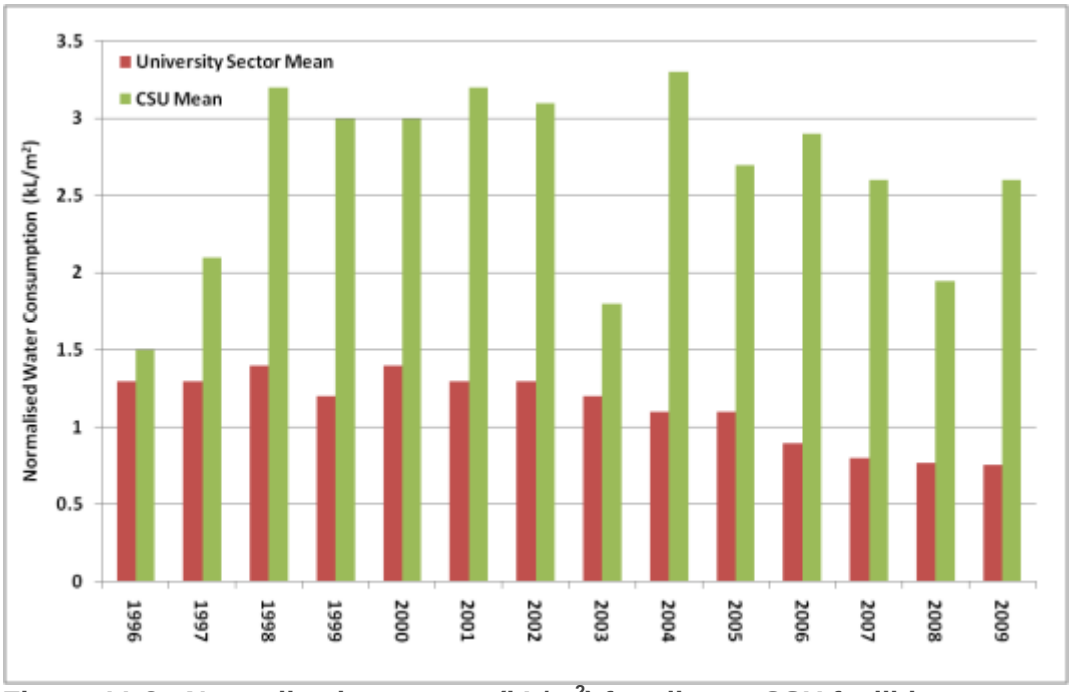


Figure 11-2 - Normalised water use (kL/m^2) for all core CSU facilities against the mean for all Australian universities (2009)

12. Referenced published documents

- National Greenhouse Gas Emission Factors (2010), viewed Sept 2010, http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx

- AEMO (2011), viewed Mar 2011, http://www.aemo.com.au/data/avg_price/averageprice_main.shtml

- IPART Determination of Electricity Prices, 2010 – 2013, viewed Mar 11, http://www.ipart.nsw.go.au/investigations.asp?industry=2&section=3

- Ross, D. (2009), viewed Feb 2011, http://www.carbonplanet.com/downloads/ghg_emission_factors_for_flights.pdf

- TEFMA (2010) 2009 Benchmark Report – Institutional Edition

13. Appendix A - Conversion factors

Fuel / Energy	Unit	kg CO_2-e	Source
Air travel – long haul	1 prsn / km	0.23	GHG Emissions resulting from aircraft travel (2011), Carbon Planet
Air travel – medium haul	1 prsn / km	0.2	GHG Emissions resulting from aircraft travel (Jan 2011), Carbon Planet
Air travel – short haul	1 prsn / km	0.36	GHG Emissions resulting from aircraft travel (2011), Carbon Planet
Diesel	1 GJ	69.2	National Greenhouse Account Factors (Jul 10), DECC
Electricity	1 kWh	0.90	National Greenhouse Account Factors (Jul 10), DECC
LPG	1 GJ	59.6	National Greenhouse Account Factors (Jul 10), DECC
Natural gas	1 GJ	51.2	National Greenhouse Account Factors (Jul 10), DECC
Unleaded fuel	1 GJ	66.7	National Greenhouse Account Factors (Jul 10), DECC

Fuel / Energy	Unit	GJ	Source
Diesel	1 kL	38.6	National Greenhouse Account Factors (Jul 10), DECC
LPG	1 m^3	25.7	National Greenhouse Account Factors (Jul 10), DECC
Unleaded fuel	1 kL	34.2	National Greenhouse Account Factors (Jul 10), DECC

Mass / Volume	Unit	kg	Source
Bathurst Waste	1m3	115	Audit of Commercial & Waste Landfill (2008), DECC

14. Appendix B – Abbreviations & units used

CO_2	carbon dioxide
DFM	Division of Facilities Management
GFA	gross floor area
GHG	greenhouse gas
GJ	gigajoules
IDP	Institutional Development Plan
kg/CO_2-e	kilograms of carbon dioxide equivalent
kJ	kilojoules
kL	kilolitres
kWh	kilowatt hours
LPG	liquid petroleum gas
m^2	square metres
MJ	megajoules

15. Appendix C– Data Sheets

Electricity Data (All consumption units shown in kWh)

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	Broken Hill	**CSU Total**	2015 Target	% Change
2006	12,805,549	7,605,501	1,495,386	915,437	1,095,008	388,592	29,837	63,306	**24,398,616**	18,253,450	
2007	12,367,344	7,173,519	1,397,463	877,775	643,906	378,713	39,704	63,306	**22,941,730**	18,253,450	-5.97%
2008	12,153,297	7,019,706	1,692,433	845,842	961,484	379,544	48,108	200,129	**23,300,543**	18,253,450	-4.50%
2009	12,976,576	7,559,136	2,166,200	784,607	1,535,064	425,931	58,484	162,777	**25,668,775**	18,253,450	5.21%
2010	13,232,944	7,550,786	2,503,799	407,176	2,046,632	434,635	55,003	110,371	**26,341,345**	18,253,450	7.96%
2006	$1,131,187	$869,331	$176,030	$118,115	$134,121	$52,594	$2,521	$9,493	**$2.493.392**		
2007	$1,181,730	$872,142	$160,039	$138,153	$163,858	$43,900	$4,566	$9,493	**$2,573,882**		3.23%
2008	$1,331,488	$881,137	$214,900	$159,492	$210,979	$44,458	$7,933	$29,044	**$2,879,430**		15.48%
2009	$1,621,518	$864,004	$344,308	$169,399	$326,431	$60,490	$10,247	$38,056	**$3,434,453**		37.74%
2010	$2,023,435	$1,128,347	$444,755	$101,558	$434,722	$73,757	$10,154	###########	**$4.237.867**		69.96%

Wagga Wagga Breakdown — **GJ Conversion**

	North Campus	South Campus	Sth Camp Caravan Prk	Sth Camp Tennis Crts	Small Animal	Minor Accounts	**Total**	2015 Target	% Change	
2006	11,753,829	889,242	110,370	4,387	-	47,721	**12,805,549**	9,604,162		42313.8
2007	11,324,936	905,671	95,390	2,318	-	39,029	**12,367,344**	9,604,162	-3.4%	40769.8
2008	11,180,229	842,298	94,860	2,780	-	33,130	**12,153,297**	9,604,162	-5.1%	40248.8
2009	11,946,004	906,644	98,670	2,788	-	22,470	**12,976,576**	9,604,162	1.3%	43005.6
2010	11,941,292	1,059,896	120,000	1,410	87,014	23,332	**13,232,944**	9,604,162	3.3%	42988.7
2006	$1,131,187	$90,586	$11,927	$468	-	$7,833	**$1,242,001**			
2007	$1,181,730	$100,409	$11,098	$559	-	$9,439	**$1,303,235**			
2008	$1,331,488	$107,884	$11,906	$705	-	$5,973	**$1,457,956**			
2009	$1,621,518	$129,875	$14,811	$832	-	$5,720	**$1,772,756**			
2010	$1,810,732	$163,612	$20,550	$690	$22,413	$5,438	**$2,023,435**			

Bathurst Breakdown

	Total	2015 Target	
2,006	**7,605,501**	5,704,126	
2,007	**7,173,519**	5,704,126	-5.7%
2,008	**7,019,706**	5,704,126	-7.7%
2,009	**7,559,136**	5,704,126	-0.6%
2,010	**7,550,786**	5,704,126	-0.7%

Note: Does not include minor accounts — 27212.8896

2006	**$869,331**
2007	**$872,142**
2008	**$881,137**
2009	**$864,004**
2010	**$1,128,347**

Albury Breakdown

	Guinea St	587 David St Mackie	591 David St Ferhurst	595 David St Visual Arts	466 Wilson St Co-op	470 Wilson St Drysdale	1/476 Wilson St Laboratory	476 Wilson St	478 Wilson St Irvington	480 Wilson St Dalrye	492 Wilson St Andrews	2/601 Olive St Rental - ABC	608 Olive St Childcare	610 Olive St Cedar	616 Olive St Student Assn	616 Olive St Wilcara	618 Olive St Mudge	624 Olive St Avon Court	626 Olive St	630 Olive St Flood Nagle	**Total**	2015 Target	% Change
2006																					**915,437**	686,578	
2007	461,738	13,887	12,922	31,107	22,499	3,609	71,980	9,330	6,350	9,553	5,627	0	6,810	67,804	27,084	12,138	33,395	22,596	16,026	43,320	**877,775**	686,578	-4.3%
2008	422,608	838	7,936	22,664	11,581	1,467	72,150	9,170	5,440	10,952	3,601	0	8,806	73,277	70,651	10,928	27,356	23,026	17,731	45,660	**845,842**	686,578	-7.9%
2009	362,501	495	447	21,531	12,795	1,548	79,210	7,900	5,610	12,250	3,434	0	8,760	67,866	79,845	10,219	25,538	23,541	16,967	44,150	**784,607**	686,578	-14.9%
2010	177,029	576	397	22,512	6,486	1,710	95,830	1,930	2,260	1,826	1,093	0	6,974	22,662	28,523	3,734	6,722	4,829	5,253	36,830	**407,176**	686,578	-57.9%
2006																					**$118,115**		
2007	$66,817	$2,522	$1,933	$5,373	$3,549	$593	$12,106	$1,404	$1,261	$1,803	$1,141	$0	$1,342	$11,316	$4,813	$2,224	$5,797	$3,942	$2,867	$7,349	**$138,153**		
2008	$75,195	$514	$1,027	$4,399	$2,661	$494	$13,379	$1,921	$1,245	$2,262	$909	$0	$1,863	$13,490	$14,642	$2,247	$5,338	$4,437	$3,483	$9,984	**$159,492**		
2009	$75,367	$376	$370	$4,785	$2,665	$635	$16,532	$1,959	$1,475	$2,915	$1,024	$0	$2,146	$14,420	$18,209	$2,446	$5,710	$5,162	$3,811	$9,391	**$169,399**		
2010	$42,750	$458	$424	$2,547	$1,658	$863	$23,432	$765	$901	$749	$582	$0	$2,457	$5,619	$7,875	$1,255	$1,973	$1,521	$1,627	$4,302	**$101,558**		

Thurgoona Breakdown

	Ellis St Pump House	St Johns Rd Teaching Complex	New Student Accomodation	1st Floor Ellis	613 Ellis Gordon Beavan	Level 4 Ellis St	Leahy Ave Ecology Lab	MSE Murray Sch of Ed	Elizabeth Mitchell Drv Academic	Thurgoona Streetlights	Forestry	Bromfield Circuit	Kerr Cottage		**Total**	2015 Target	% Change
2006															**1,095,008**	821,256	
2007	0	222,128	-	27,699	158,587	26,804	20,322	27,802	160,564	0	-	-	-		**643,906**	821,256	-41.2%
2008	0	274,490	-	75,930	372,076	18,721	18,362	42,035	159,870	0	-	-	-		**961,484**	821,256	-12.2%
2009	0	737,212	120,103	401	338,329	14,106	1,428	71,065	194,194	0	58,226	-	-		**1,535,064**	821,256	40.2%
2010	0	760,453	176,661	-	442,131	-	208,085	65,045	277,357	0	88,274	27,185	1,441		**2,046,632**	821,256	86.9%
2006															**$134,121**		
2007	$43	$37,341		$19,176	$69,387	$4,696	$3,595	$5,514	$21,152	$2,955	-	-	-		###########		
2008	$144	$50,861		$22,116	$88,751	$3,667	$3,873	$8,859	$26,727	$5,980	-	-	-		###########		
2009	$226	$142,928	$27,557	$323	$81,420	$3,213	311.06	$16,244	$37,226	$3,350	$13,632	-	-		###########		
2010	$226	$139,889	$32,328	-	$115,961	-	$40,025	$16,139	$59,154	$0	$23,445	$7,492	$63		###########		

Orange Breakdown

	Minor Accounts	Orange Dentistry Clinic	**Total**	2015 Target	% Change
2006	1,495,386		**1,495,386**	1,121,540	
2007	1,397,463		**1,397,463**	1,121,540	-6.5%
2008	1,507,216	185,217	**1,692,433**	1,121,540	13.2%
2009	1,735,161	431,039	**2,166,200**	1,121,540	44.9%
2010	1,699,542	294,538	509,719	**2,503,799**	1,121,540	67.4%
2006	$176,030			**$176,030**		
2007	$160,039			**$160,039**		
2008	$182,141	$32,760		**$214,900**		
2009	$247,946	$96,363		**$344,308**		
2010	$275,696	$ 65,901	$103,158	**$444,755**		

Dubbo Breakdown

	Total	2015 Target	% Change
2006	**388,592**	291,444	
2007	**378,713**	291,444	-2.5%
2008	**379,544**	291,444	-2.3%
2009	**425,931**	291,444	9.6%
2010	**434,635**	291,444	11.8%
2006	**$52,594**		
2007	**$43,900**		
2008	**$44,458**		
2009	**$60,490**		
2010	**$73,757**		

Canberra Breakdown

	Total	2015 Target	% Change
2006	**29,837**	22,378	
2007	**39,704**	22,378	33.1%
2008	**48,108**	22,378	61.2%
2009	**58,484**	22,378	96.0%
2010	**55,003**	22,378	84.3%
2006	**$2,521**		
2007	**$4,566**		
2008	**$7,933**		
2009	**$10,247**		
2010	**$10,154**		

Broken Hill Breakdown

	Total	2015 Target	% Change
2006	**63,306**	47,480	
2007	**63,306**	47,480	0.0%
2008	**200,129**	47,480	216.1%
2009	**162,777**	47,480	157.1%
2010	**110,371**	47,480	74.3%
2006	**$9,493.15**		
2007	**$9,493.15**		
2008	**$29,043.59**		
2009	**$38,056.02**		
2010	**$21,139.28**		

Natural Gas Data (All consumption units shown in MJ)

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	CSU Total	2015 Target	% Change
2006	55,603,045	45,400,976	1,670,742	5,008,355	5,071,824	1,682,387	126,938	**114,564,267**	85,923,200	
2007	48,983,842	40,176,486	1,618,551	3,939,147	2,954,046	1,345,427	170,000	**99,187,499**	85,923,200	-13.4%
2008	47,958,714	43,240,725	1,853,154	3,233,682	3,314,990	1,817,860	131,569	**101,550,694**	85,923,200	-11.4%
2009	54,005,765	48,196,494	1,199,332	2,950,454	6,577,694	1,397,468	119,644	**114,446,851**	85,923,200	-0.1%
2010	55,676,007	48,239,113	1,947,130	665,937	9,299,181	1,094,887	239,738	**117,161,993**	85,923,201	2.3%
2006	$442,589	$315,458	$26,880	$49,318	$42,761	$21,093	$1,650	**$899,749**		
2007	$403,199	$310,794	$21,806	$43,385	$30,067	$17,723	$2,211	**$829,184**		-7.8%
2008	$407,021	$425,419	$26,396	$40,912	$33,720	$26,320	$4,263	**$964,052**		7.1%
2009	$476,452	$388,962	$18,153	$39,194	$58,771	$20,594	$3,336	**$1,005,462**		11.7%
2010	$409,505	$441,464	$29,034	$12,541	$84,818	$16,608	$4,785	**$998,756**		11.0%

Wagga Wagga Breakdown

	North Campus	South Campus	2 College Ave	4 College Ave	22 Charleville Rd	Playhouse	Total	2015 Target	% Change
2006	50,130,090	5,242,815	0	35,449	86,665	108,027	**55,603,045**	41,702,284	
2007	43,595,692	5,087,930	0	57,555	57,430	185,236	**48,983,842**	41,702,284	-11.9%
2008	42,109,226	5,628,009	0	17,393	12,669	191,416	**47,958,714**	41,702,284	-13.7%
2009	47,519,978	6,321,762	0	5,585	28,061	130,379	**54,005,765**	41,702,284	-2.9%
2010	48,841,290	6,642,332	Closed	Closed	Closed	192,384	**55,676,007**	41,702,284	0.1%
2006	$386,349	$53,391	$0	$546	$1,085	$1,218	**$442,589**		
2007	$346,552	$53,186	$0	$822	$829	$1,810	**$403,199**		
2008	$344,042	$60,393	$0	$415	$349	$1,822	**$407,021**		
2009	$410,621	$63,536	$0	$265	$546	$1,483	**$476,452**		
2010	$341,378	$65,907	Closed	Closed	Closed	$2,220	**$409,505**		

GJ Conversion

2006	50130.09
2007	43595.69
2008	42109.23
2009	47519.98
2010	48841.29

Bathurst Breakdown

	Total	2015 Target	
2006	**45,400,976**	34,050,732	
2007	**40,176,486**	34,050,732	-11.5%
2008	**43,240,725**	34,050,732	-4.8%
2009	**48,196,494**	34,050,732	6.2%
2010	**48,239,113**	34,050,732	6.3%
2006	**$315,458**		
2007	**$310,794**		
2008	**$425,419**		
2009	**$388,962**		
2010	**$441,464**		

Albury Breakdown

	493 Guinea	587 David	591 David	470 Wilson	476 Wilson	478 Wilson	480 Wilson	492 Wilson	608 Olive	618 Olive	624 Olive	630 Olive	640 Olive	502 Dean	Total	2015 Target	
2006															**5,008,355**	3,756,266	
2007	375,211	26,441	39	24,220	2,545,076	106,548	31,449	91,245	130,428	153,148	188,627	245,745	20,970	0	**3,939,147**	3,756,266	-21.3%
2008	576,763	0	0	0	1,454,645	116,395	38,601	78,720	185,303	196,443	237,030	302,621	47,161	0	**3,233,682**	3,756,266	-35.4%
2009	519,149	0	0	6,927	1,286,671	136,075	19,623	85,093	176,561	192,391	226,910	260,014	41,040	0	**2,950,454**	3,756,266	-41.1%
2010	186,337	0	0	7,095	224,836	10,073	2,354	6,244	144,711	26,899	30,026	15,156	12,206	0	**665,937**	3,756,266	-86.7%
2006															**$49,318**		
2007	$4,557	$408	$152	$456	$24,371	$1,496	$547	$1,196	$1,655	$2,087	$2,531	$3,245	$686	$0	**$43,385**		
2008	$6,940	$129	$155	$155	$16,623	$1,880	$715	$1,146	$2,377	$2,711	$3,236	$4,076	$769	$0	**$40,912**		
2009	$6,525	$133	$160	$254	$15,743	$1,993	$482	$1,188	$2,372	$2,743	$3,218	$3,670	$713	$0	**$39,194**		
2010	$2,954	$146	$146	$265	$4,363	$307	$199	$218	$2,077	$550	$593	$375	$348	$0	**$12,541**		

Thurgoona Breakdown

	615 Leahy	Ellis St	Bromfield Crt	619 Bromfield	386 Elizabeth Mitchell Drive	Total	2015 Target	
2006				-	-	**5,071,824**	3,803,868	
2007	91,870	2,527,306	334,870	-	-	**2,954,046**	2,215,535	-41.8%
2008	107,181	3,062,798	145,011	-	-	**3,314,990**	2,486,243	-34.6%
2009	8,034	108,745	1,082	6,459,833	-	**6,577,694**	4,933,271	29.7%
2010	-	-	-	9,239,993	59,188	**9,299,181**	6,974,386	83.3%
2006						**$42,761**		
2007	$1,281	$24,684	$4,102			**$30,067**		
2008	$1,548	$30,151	$2,020			**$33,720**		
2009	$ 158.95	$ 1,933.56	$ 59.17	$ 58,771.08		**$60,923**		
2010	-	-	-	$ 83,976.00	$ 842.00	**$84,818**		

Orange Breakdown

	Total	2015 Target	
2006	**1,670,742**	1,253,057	
2007	**1,618,551**	1,253,057	-3.1%
2008	**1,853,154**	1,253,057	10.9%
2009	**1,199,332**	1,253,057	-28.2%
2010	**1,947,130**	1,253,057	16.5%
2006	**$26,880**		
2007	**$21,806**		
2008	**$26,396**		
2009	**$18,153**		
2010	**$29,034**		

Dubbo Breakdown

	Total	2015 Target	
2006	**1,682,387**	1,261,790	
2007	**1,345,427**	1,261,790	-20.0%
2008	**1,817,860**	1,261,790	8.1%
2009	**1,397,468**	1,261,790	-16.9%
2010	**1,094,887**	1,261,790	-34.9%
2006	**$21,093**		
2007	**$17,723**		
2008	**$26,320**		
2009	**$20,594**		
2010	**$16,608**		

Canberra Breakdown

	Total	2015 Target	
2006	**126,938**	95,204	
2007	**170,000**	95,204	33.9%
2008	**131,569**	95,204	3.6%
2009	**119,644**	95,204	-5.7%
2010	**239,738**	95,204	88.9%
2006	**$1,650**		
2007	**$2,211**		
2008	**$4,263**		
2009	**$3,336**		
2010	**$4,785**		

Water Data (All consumption units shown in kL)

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	Broken Hill	CSU Total	2011 Target	% Change
2006	444,912	216,185	49,119	11,472	9,628	13,183	1,947	2,065	**748,511**	561,383	
2007	337,667	161,473	37,826	12,682	8,930	7,563	1,843	1,485	**569,469**	561,383	-23.9%
2008	298,607	104,907	22,815	7,467	4,924	7,048	1,843	1,289	**448,900**	561,383	-40.0%
2009	321,332	117,800	36,765	7,176	7,976	6,287	1,843	6,273	**505,452**	561,383	-32.5%
2010	223,737	104,671	41,372	6,206	12,102	4,180	1,732	4,400	**398.400**	561.383	-46.8%
2006	$315,483	$153,799	$73,225	$12,676	$8,940	$20,379	$3,174	$3,025	**$590,701**		
2007	$246,893	$134,813	$57,908	$30,521	$13,321	$30,259	$5,097	$2,340	**$521.151**	-11.8%	
2008	$227,979	$88,622	$47,358	$25,989	$13,075	$36,482	$2,702	$2,230	**$444,437**	-24.8%	
2009	$260,291	$109,528	$57,750	$27,547	$25,326	$36,698	$3,449	$16,034	**$536,623**	-9.2%	
2010	$195,474	$148,196	$51,679	$9,362	$35,451	$29,689	$3,526	$12,184	**$485,563**	-17.8%	

Wagga Wagga Breakdown

	North Campus	South Campus	Ag Ave	Playhouse	Total	2011 Target	% Change
2006	402,304	28,495	12,676	1,437	**444,912**	333,684	
2007	311,438	15,545	9,475	1,209	**337,667**	333,684	-24.1%
2008	275,702	12,490	9,357	1,058	**298,607**	333,684	-32.9%
2009	288,438	18,048	13,124	1,722	**321,332**	333,684	-27.8%
2010	186,097	24,900	11,599	1,141	**223,737**	333,684	-49.7%
2006	$284,963	$20,274	$9,109	$1,137	**$315,483**		
2007	$227,305	$11,507	$7,075	$1,006	**$246,893**		
2008	$210,230	$9,645	$7,196	$908	**$227,979**		
2009	$233,278	$14,559	$10,783	$1,672	**$260,291**		
2010	$162,174	$22,172	$10,308	$820	**$195,474**		

Bathurst Breakdown

	Main Campus	Hargrave House	M.T.G.	Total	2011 Target	
2006	208,974	2,300	4,911	**216,185**	162,139	
2007	153,294	2,523	5,656	**161,473**	162,139	-25.3%
2008	97,275	2,137	5,495	**104,907**	162,139	-51.5%
2009	114,035	1,092	2,673	**117,800**	162,139	-45.5%
2010	98,514	1,852	4,305	**104,671**	162,139	-51.6%
2006	$147,382	$1,762	$4,656	**$153,799**		
2007	$127,924	$2,044	$4,845	**$134,813**		
2008	$81,059	$2,068	$5,495	**$88,622**		
2009	$105,198	$1,256	$3,074	**$109,528**		
2010	$119,470	$8,509	$20,217	**$148,196**		

Albury Breakdown

	492 Wilson	480 Wilson	478 Wilson	476 Wilson	472 Wilson	466 Wilson	644 Olive	640 Olive	630 Olive	626 Olive	624 Olive	614 Olive	610 Olive	608 Olive	604 Olive	595 David	591 David	587 David	Guinea St	502 Dean	Total	2011 Target	% Change
2006	225	3,792	48	15	2	156	700	11	366	53	139	67	2,270	114	0	303	23	118	2,814	256	**11,472**	8,604	
2007	238	3,615	55	14	1	255	648	14	239	62	129	36	3,342	284	0	382	43	163	2,903	259	**12,682**	8,604	10.5%
2008	65	673	45	22	0	74	799	18	166	35	195	43	2,383	313	0	270	42	42	2,122	220	**7,467**	8,604	-34.9%
2009	40	804	43	17	1	100	707	17	280	46	103	76	2,544	351	0	72	33	1	1,477	464	**7,176**	8,604	-37.4%
2010	100	801	14	10	0	195	564	198	113	56	12	19	1,962	317	0	14	0	2	1,543	286	**6,206**	8,604	-45.9%
2006																					**$12,676**		
2007	$596.15	$6,450.91	$311.87	$233.08	$140.59	$713.44	$2,080.90	$556.19	$586.69	$481.50	$889.54	$274.91	$7,622.80	$773.66	$207.23	$1,374.65	$289.50	$515.24	$5,664.60	$757.19	**$30,521**		
2008	$536.06	$2,314.41	$326.43	$279.80	$236.30	$382.90	$2,795.77	$610.79	$587.50	$320.86	$1,080.15	$321.76	$7,393.73	$883.38	$216.19	$1,194.76	$320.73	$319.15	$4,990.41	$678.17	**$25,989**		
2009	$516.02	$2,695.54	$313.16	$256.50	$223.03	$434.89	$2,842.13	$604.70	$657.86	$518.94	$909.70	$370.41	$9,505.28	$1,039.12	$221.66	$510.14	$289.52	$221.47	$4,110.40	$1,306.96	**$27,547**		
2010	$147.20	$1,594.27	$95.56	$93.40	$88.00	$140.50	$639.72	$332.44	$149.72	$118.24	$281.80	$98.26	$2,274.53	$322.18	$88.00	$95.66	$0.00	$93.15	$2,375.12	$334.34	**$9,362**		

Thurgoona Breakdown

	Lot 701 Bromfield	Lot 611 Table Top	Thurgoona Dev	Lot 613 Bromfield	386 Eliz Mitch	Lot 619 Leahy	Lot 615 Leahy	Lot 614 Bromfield	Total	2011 Target
2006	2,107	2,462	0	1,814	792	0	2,299	154	**9,628**	7,221
2007	2,545	2,643	0	2,734	582	0	217	209	**8,930**	7,221	-7.2%
2008	1,935	259	0	1,717	736	0	21	256	**4,924**	7,221	-48.9%
2009	2,523	685	38	1,842	2,653	0	84	151	**7,976**	7,221	-17.2%
2010	3,041	392	203	1,403	6,544	90	3	426	**12,102**	7,222	25.7%
2006									**$8,940**		
2007	$5,414	$1,032	$207	$5,559	$366	$207	-$475	$1,010	**$13,321**		
2008	$2,618	$1,465	$216	$5,212	$734	$216	$1,211	$1,403	**$13,075**		
2009	$4,885	$2,190	$390	$6,246	$8,850	$222	$1,329	$1,213	**$25,326**		
2010	$6,908	$2,561	$849	$6,127	$14,159	$1,298	$1,524	$2,026	**$35,451**		

Orange Breakdown

	Total	2011 Target	
2006	**49,119**	36,839	
2007	**37,826**	36,839	-23.0%
2008	**22,815**	36,839	-53.6%
2009	**36,765**	36,839	-25.2%
2010	**41,372**	36,839	-15.8%
2006	**$73,225**		
2007	**$57,908**		
2008	**$47,358**		
2009	**$57,750**		
2010	**$51,679**		

Dubbo Breakdown

	Total	2011 Target	
2006	**13,183**	9,887	
2007	**7,563**	9,887	-42.6%
2008	**7,048**	9,887	-46.5%
2009	**6,287**	9,887	-52.3%
2010	**4,180**	9,887	-68.3%
2006	**$20,379**		
2007	**$30,259**		
2008	**$36,482**		
2009	**$36,698**		
2010	**$29,689**		

Canberra Breakdown

	Total	2011 Target	% Change
2006	**1,947**	1,460	
2007	**1,843**	1,460	-5.3%
2008	**1,843**	1,460	-5.3%
2009	**1,843**	1,460	-5.3%
2010	**1,732**	1,460	-11.0%
2006	**$3,174**		
2007	**$5,097**		
2008	**$2,702**		
2009	**$3,449**		
2010	**$3,526**		

Broken Hill Breakdown

	Total	2011 Target	% Change
2006	**2,065**	1,549	
2007	**1,485**	1,549	-28.1%
2008	**1,289**	1,549	-37.6%
2009	**6,273**	1,549	203.8%
2010	**4,400**	1,549	113.1%
2006	$ **3,025**		
2007	$ **2,340**		
2008	$ **2,230**		
2009	$ **16,034**		
2010	$ **12,184**		

Waste Data (All Values are in m3 unless otherwise specified)

	Wagga Wagga	Bathurst	Orange	Alb / Thurg	Dubbo	Canberra	CSU Total
2009	10547	2574	570	1823	322	42	15877
2010	10616	2251	773	1780	416	45.5	15881

	Wagga Wagga	Bathurst	Orange	Alb / Thurg	Dubbo	Canberra	CSU Total	
2006	$ 87,069	$ 13,276	$ 7,935	$ 24,130	$ 4,624		**$ 137,034**	
2007	$ 77,466	$ 15,794	$ 11,654	$ 23,852	$ 6,032		**$ 134,798**	-1.6%
2008	$ 46,425	$ 10,641	$ 13,178	$ 37,590	$ 4,654		**$ 112,488**	-17.9%
2009	$ 144,285	$ 22,436	$ 15,065	$ 35,376	$ 6,077	$ 860	**$ 224,098**	63.5%
2010	$ 140,586	$ 14,477	$ 29,718	$ 32,474	$ 7,006	$ 1,073	**$ 225,333**	64.4%

Wagga Waste Breakdown

	General Waste (m3)	Recycling (m3)	Total (m3)
2009	7548	2998	**10547**
2010	7443	3173	**10616**

2006	$ 48,911	$ 38,157	**$ 87,069**
2007	$ 44,428	$ 33,039	**$ 77,466**
2008	$ 17,635	$ 28,791	**$ 46,425**
2009	$ 123,306	$ 20,978	**$ 144,285**
2010	$ 114,010	$ 26,575	**$ 140,586**

Bathurst Breakdown

	General Waste (m3)	Recycling (m3)	Total (m3)	
2009	2357.5	216.2	**2574**	
2010	2194.04	56.64	**2251**	
2006	$ 9,653	$ 3,624	**$ 13,276**	
2007	$ 11,717	$ 4,078	**$ 15,794**	19.0%
2008	$ 7,719	$ 2,921	**$ 10,641**	-19.9%
2009	$ 18,660	$ 3,776	**$ 22,436**	69.0%
2010	$ 12,317	$ 2,160	**$ 14,477**	9.0%

Albury/Thurgoona Breakdown

	General Waste (m3)	Recycling (m3)	Total (m3)	
2009	1114.5	708.3	**1823**	
2010	1174	606	**1780**	
2006	$ 23,802	$ 328	**$ 24,130**	
2007	$ 20,499	$ 3,353	**$ 23,852**	-1.2%
2008	$ 35,155	$ 2,435	**$ 37,590**	55.8%
2009	$ 27,318	$ 8,059	**$ 35,376**	46.6%
2010	$ 26,334	$ 6,140	**$ 32,474**	34.6%

Orange Breakdown

	General Waste (m3)	Recycling (m3)	Total (m3)	
2009	540	30	**570**	
2010	621	152	**773**	
2006	$ 7,935		**$ 7,935**	
2007	$ 11,654		**$ 11,654**	46.9%
2008	$ 13,178		**$ 13,178**	66.1%
2009	$ 14,278	$ 787	**$ 15,065**	89.9%
2010	$ 13,655.00	$ 16,062.60	**$ 29,718**	274.5%

Dubbo Breakdown

	General Waste (m3)	Recycling (m3)	Total (m3)	
2009	293.75	28	**321.75**	
2010	298	118	**416**	
2006	$ 4,624		**$ 4,624**	
2007	$ 6,032		**$ 6,032**	30.4%
2008	$ 4,654		**$ 4,654**	0.6%
2009	$ 5,668	$ 409	**$ 6,077**	31.4%
2010	$ 6,147	$ 859	**$ 7,006**	51.5%

ACCC Breakdown

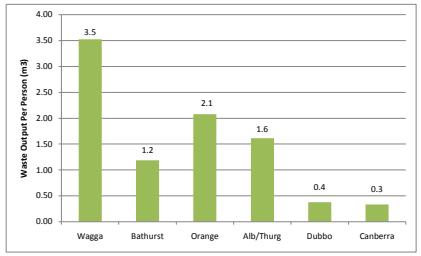
	General Waste (m3)	Recycling (m3)	Total (m3)
2009	22.5	19.5	**42**
2010	27.5	18	**45.5**
2009	$ 635	$ 225	**$ 860**
2010	$ 828	$ 245	**$ 1,073**

All Campuses Waste Breakdown (m3)

	General Waste (m3)	Recycling (m3)	Total (m3)
2009	11,876	4,000	15,877
2010	11,758	4,124	15881

All Campuses Breakdown (%)

	General Waste (m3)	Recycling (m3)
2009	74.8	25.2
2010	74	26



	EFT	Staff (2008 figures only)	Total	Waste Output (m3)	Waste Output Per Person/Year
Wagga	2191	823	**3014**	10616	3.52
Bathurst	1386	512	**1898**	2251	1.19
Orange	288	84	**372**	773	2.08
Alb/Thurg	877	228	**1105**	1780	1.61
Dubbo	107	30	**137**	416	0.38
Canberra	63	64	**127**	46	0.33

	Wagga Wagga	Bathurst	Alb / Thurg	Orange	Dubbo	Canberra	CSU Total
2,009	10,547	2,574	1,823	570	322	42	15,877
2,010	10,616	2,251	1,780	773	416	46	15,881

GHG Emissions (all figures shown as Tonnes CO_2 equivalent)

Electricity

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	Broken Hill	**CSU Total**
2006	11,525	6,845	1,346	824	986	350	27	57	**21,959**
2007	11,131	6,456	1,258	790	580	341	36	57	**20,648**
2008	10,938	6,318	1,523	761	865	342	43	180	**20,970**
2009	11,679	6,803	1,950	706	1,382	383	53	146	**23,102**
2010	11,910	6,796	2,253	366	1,842	391	50	99	**23,707**

Gas

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	**CSU Total**
2006	2,847	2,325	86	256	260	86	6	**5,866**
2007	2,508	2,057	83	202	151	69	9	**5,078**
2008	2,455	2,214	95	166	170	93	7	**5,199**
2009	2,765	2,468	61	151	337	72	6	**5,860**
2010	2,851	2,470	100	34	476	56	12	**5,999**

LPG

	Wagga Wagga	Orange
2008	20	-
2009	17	-
2010	23	129

Combined Energy

	Wagga Wagga	Bathurst	Orange	Albury	Thurgoona	Dubbo	Canberra	Broken Hill	**CSU Total**	2015 Target	% Change
2006	14,372	9,169	1,431	1,080	1,245	436	33	57	**27,824**	20,868	
2007	13,639	8,513	1,341	992	731	410	44	57	**25,726**	21,275	-7.5%
2008	13,413	8,532	1,618	927	1,035	435	50	180	**26,190**	21,275	-5.9%
2009	14,461	9,271	2,011	857	1,718	455	59	146	**28,978**	21,275	4.1%
2010	14,783	9,266	2,482	401	2,318	447	62	99	**29,858**	21,275	7.3%

Vehicle Travel

		% Change
2006	1,425	
2007	1,378	-3.3%
2008	1,577	10.7%
2009	1,378	-3.3%
2010	1,347	-5.5%

Air Travel

		% Change
2006	3,305	
2007	4,353	31.7%
2008	4,935	49.3%
2009	5,320	61.0%
2010	7,807	136.2%

CSU Travel

		% Change
2006	4,731	
2007	5,730	21.1%
2008	6,512	37.7%
2009	6,698	41.6%
2010	9,154	93.5%

CSU All

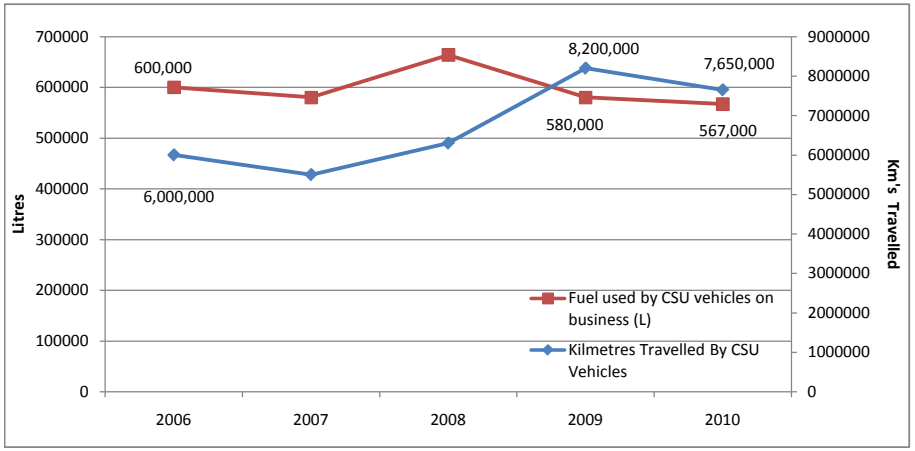
		% Change
2006	32,555	
2007	31,456	-3.4%
2008	32,702	0.5%
2009	35,676	9.6%
2010	39,012	19.8%

Breakdown

	Energy	Vehicle	Air Travel				
2008	26,190	1,577	4,935				
2009	28,978	1,378	5,320			35676	
2010	29,858	1,347	7,807		81%	4%	15%

Fuel use & vehicle travel

	Fuel used by CSU vehicles on business (L)	Total kms travelled by CSU vehicles	kms travelled by CSU vehicles on private use	kms travelled by CSU vehicles on business	Fuel % change	km % change	% break-down	Assumed ULP (L) 67%	Assumed Diesel (L) 30%	Assumed LPG (L) 3%
2006	600000	6000000	1500000	4500000				402000	180000	18000
2007	580000	5500000	1500000	4000000	-3.3%	-8.3%		388600	174000	17400
2008	664000	6300000	1360000	4940000	10.7%	5.0%		444880	199200	19920
2009	580000	8200000	1400000	6800000	-3.3%	36.7%		388600	174000	17400
2010	567000	7650000	1250000	6400000	-5.5%	27.5%		379890	170100	17010



	100's of kilometres	Litres of Petrol Used (L)
5400000	54000	580000

Air Travel (All figures shown in km)

	Domestic Flights	International Flights	Total Flights	% Change Dom	% Change Int	% Change Total	Long haul (km)	Medium haul (km)	Short haul (km)	Check!
2006	2,210,326	11,620,443	13,830,769				10547351	1892384	1391033	
2007	2,726,594	15,321,754	18,048,348	23%	32%	30%	12918375	2909455	2220518	
2008	4,176,023	15,889,600	20,065,623	89%	37%	45%	13646008	3217867	3201748	
2009	5,024,813	17,285,362	22,310,175	127%	49%	61%	18318319	2066221	1925635	
2010	5,026,392	18,433,709	23,460,101	127%	59%	70%	2244339	2168705	19047057	**23460101**