



Australian  
National  
University



ENVIRONMENTAL MANAGEMENT AT  
THE AUSTRALIAN NATIONAL UNIVERSITY  
2013 ANNUAL REPORT

# Table of Contents

<b>INTRODUCTION .....</b>	<b>2</b>
<b>ENERGY AND GREENHOUSE MANAGEMENT .....</b>	<b>3</b>
<b>WATER .....</b>	<b>10</b>
<b>WASTE AND RECYCLING.....</b>	<b>11</b>
<b>POLLUTION PREVENTION AND ENVIRONMENTAL RISK .....</b>	<b>14</b>
<b>SUSTAINABLE TRANSPORT.....</b>	<b>17</b>
<b>COMMUNITY ENGAGEMENT .....</b>	<b>19</b>
<b>BUILT ENVIRONMENT .....</b>	<b>23</b>
<b>AWARDS AND RECOGNITION .....</b>	<b>24</b>

# INTRODUCTION

At ANU, we are constantly seeking to both reduce the environmental footprint of our operations through best practice sustainability initiatives and to foster a culture of sustainability on campus. Sustainability initiatives at ANU are guided by our [Environmental Management Plan](#) (EMP) which sets ambitious targets in relation to energy, emissions, water, waste and recycling, transport, biodiversity, pollution, heritage, green buildings and community engagement.

Targets include a 35 per cent reduction in energy use and greenhouse gas emissions by 2020; a 50 per cent reduction in potable water use by 2020, including removing all potable water use from the landscape by 2015; and maximising sustainable transport by significantly increasing green commuting and minimising single-occupant vehicle trips. In addition, strategies have been implemented to continually reduce pollution risk, protect and enhance biodiversity values, establish sustainable procurement procedures and design environmentally-efficient buildings and mechanical plants and equipment.

The structure of the EMP promotes a strategic approach to best-practice sustainability management through initiatives focussed on four themes: *People* (community), *Place* (campus), *Performance* (management) and *Integration* (of operational and academic activities). The projects emerging from the EMP aim to progressively reduce environmental impact through the introduction of better engineered solutions and more environmentally-conscious behaviour.

At an overall level, the EMP promotes a comprehensive and integrated program for improving campus sustainability, with underlying aims to establish international best practice, mainstream environmental management into the University's decision-making processes and develop an organisational culture that fosters sustainable behaviour within the campus and broader community.

In 2013, ANU continued to implement initiatives to improve its environmental performance, including:

- The launch of the **Campaign to Reduce Energy and Water** (CREW)
- Developed and Implemented strategies which will significantly improve our **Metering, Monitoring and Management** of electricity, gas, water and waste including:
  - Upgrade to our Building Management System
  - Rollout of the Metering strategy which includes significant enhancement of metering and sub metering to our buildings and infrastructure; and
  - Rollout of the Sustainability Dashboard system which includes foyer monitor displays.
- Identification, analysis and a roadmap of **energy efficiency opportunities** in line with reporting to the Energy Efficiency Opportunities Program.
- Development of a **Biodiversity Management Plan**
- Development of a **Sustainable Transport Plan**
- Other sustainability achievements including:
  - Installation of **water refill stations**;
  - **Green Star certification**,
  - Developed a **Green Leaders program** for staff,
  - Launch of the **Green Key iPhone app**; and
  - Implemented a suite of outreach and community engagement initiatives.

These projects are outlined in more detail below.

# ENERGY & GREENHOUSE MANAGEMENT



Energy efficiency was a key focus for ANU in 2013. In addition to being an environmental imperative, reducing energy consumption was a critical component of the University's *Budget Solutions Package*, which was released to address the University's financial crisis.

2015 Targets	Progress at December 2013
Reduce energy use by 20%	Total energy 21% higher than 2006
	Energy use per person 5% lower than 2006
Neutralise greenhouse gas emissions by 20%	Total emissions 17% higher than 2006
	Emissions per person 8% lower than 2006

## Rising Energy Demand

The demand for energy has grown considerably since 2006 as the campus population has grown and a number of new buildings have been constructed. This has resulted in a significant increase in spaces which require comfortable temperatures, adequate lighting and computers. Most of these new buildings are energy-intensive research facilities with labs and technical equipment requiring significant amounts of energy to operate. For example, the University's new high performance supercomputer, the National Computational Infrastructure facility, consumes approximately 1 million kWh of electricity per month, the equivalent to 10 Chifley Libraries. However, without the commitment to efficient design and operation, the increase in energy consumption resulting from new facilities would have been considerably more.

## Initiatives

### Energy Efficiency Opportunities Program

The University conducted an extensive assessment of energy consumption and efficiency opportunities across the campus and listed the viable opportunities in a report to the Federal Government under the Federal *Energy Efficiency Opportunities Program (EEOP)*. The opportunities ranged from infrastructure upgrades, such as lighting conversions, improved building insulation and technology upgrades to policy (Thermal Comfort Policy) and operational changes, such as adjusting the temperature set points in buildings and reducing the operating hours of heating/cooling systems. A consultation process sought input from key stakeholders in all teaching, research and administrative areas of the University.

### Campaign to Reduce Energy and Water (CREW)

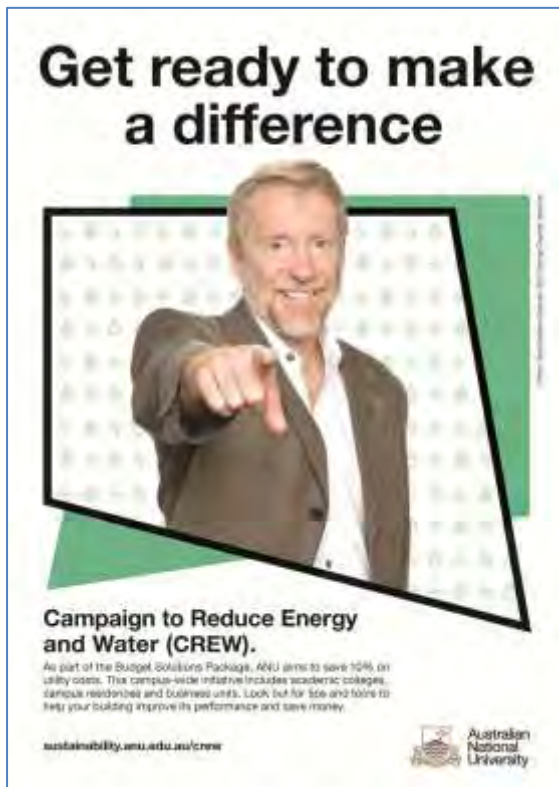
A new initiative developed in 2013, CREW provides the framework for a two year scheme to reduce energy and water costs by 10% in 2014 and again in 2015 (on the previous year's baselines). The annual cost of utilities at ANU is approximately \$17.5 million and growing and the cost savings will be realised through efficiency measures and infrastructural upgrades.

The 2013 phase of CREW concentrated on a cross-campus assessment of energy and water savings opportunities and the development of an action plan. The plan applies a multi-faceted strategy involving:

- A Sustainability Dashboard monitoring real time consumption of gas, electricity and water.
- Improved monitoring of energy and water usage through additional metering and connection of existing meters to the sustainability dashboard system.

- A program of efficiency upgrades and building tune-ups across campus. Efficiency measures which deliver savings resulting in a four year payback or less will be prioritised.
- A community engagement campaign to inform staff and students of the new targets and how they can contribute to achieving them.

A campus-wide initiative, CREW includes academic colleges, campus residences and business units. Early in the process, general managers were invited to submit ideas for potential cost saving opportunities in their local area. This input was used to generate action plans for priority projects across campus. Staff from Engineering and Technical Services and the Sustainability Office are collaborating in review and implementation of identified projects.



Posters announcing the 2014 launch of CREW.

### Metering and monitoring

Improving the metering and monitoring of energy consumption across campus real-time was a key focus for the University's sustainability program in 2013. A sustainability dashboard system was procured and a project to connect all existing electricity meters was implemented. This project laid the groundwork for the connection of gas meters in 2014 and the installation of additional electricity smart meters which will enhance the ability to assess how energy is used across campus and identify opportunities for efficiency measures to be implemented.

### Sustainability Dashboard

The new Sustainability Dashboard system will allow facility managers and the campus community to view real time consumption data for gas, electricity and water. Facility managers were provided with access to the back-end of the dashboard where they can select from a range of reports and tools to analyse consumption data over selected timeframes in order to identify energy wastage and opportunities for savings.





Graph of real-time electricity consumption from the Sustainability Dashboard



Graph of real-time electricity consumption from the Sustainability Dashboard

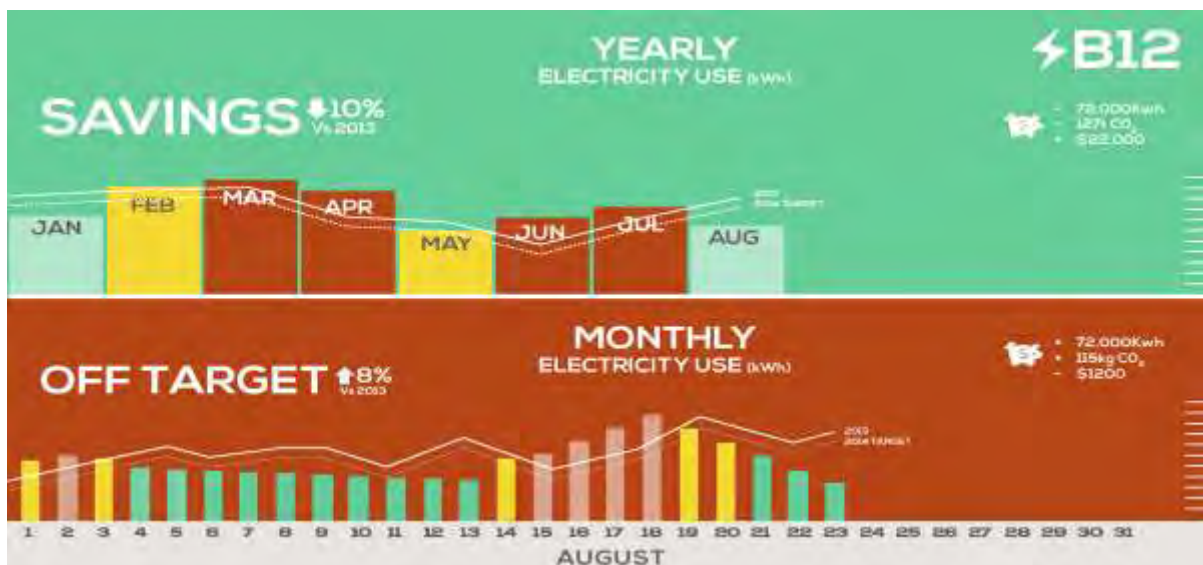
Phase one of the dashboard rollout includes the installation of monitor displays in the foyers of sixteen buildings across campus. This will enable staff and students to easily view how their building is performing and will provide information and encouragement to assist in reaching energy reduction targets. These buildings were selected based on the user's ability to respond to the information provided in the displays such as student residences, high traffic areas such as libraries and one iconic building for each academic college.

# The Sustainability Dashboard

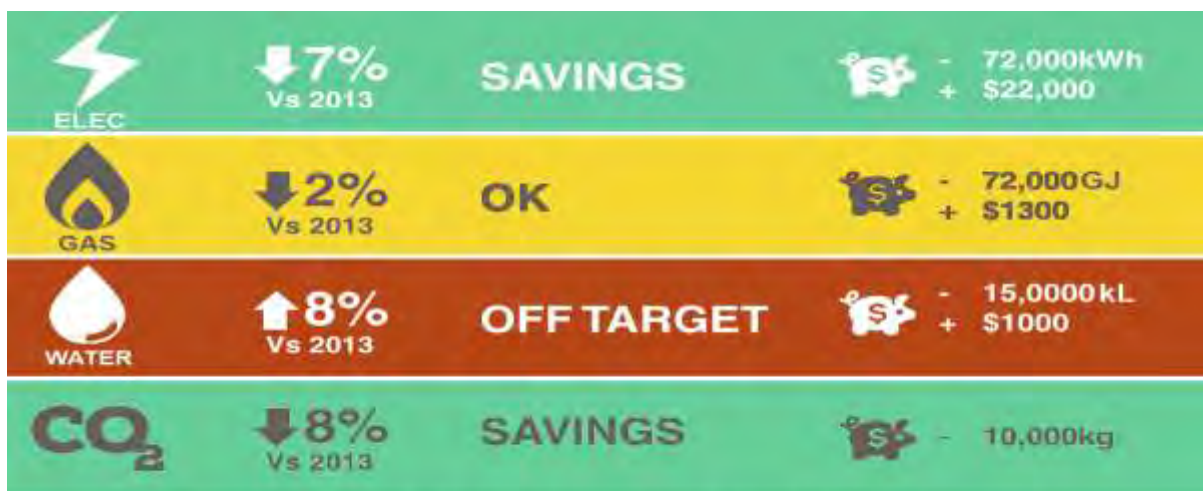


Real time consumption data for  
 🔥 gas, ⚡ electricity & 💧 water.

Proposed screen on the Sustainability Dashboard foyer monitors



Proposed screen on the Sustainability Dashboard foyer monitors



## INNOVATIONS BLD #124 - JANUARY 2014 SUMMARY

Proposed screen on the Sustainability Dashboard foyer monitor

**If you see water waste**



**please notify your building manager.**

*Proposed tip screen on the Sustainability Dashboard foyer monitor*

#### **Thermal Comfort Policy**

The University developed a new policy which sets indoor temperature settings for ANU buildings. The policy aims to ensure that indoor comfort is maintained while the energy required to heat and cool work and study environments is reduced. A key component of the new policy is widening the temperature range settings in buildings and applying winter/summer bandwidths so the heating and cooling systems don't have to work as hard to maintain a constant temperature all year round. Pending final approval, the policy will be implemented in early 2014. This will involve consultation with facility managers to identify spaces which will be exempt, such as laboratories and other research facilities with specific climate control requirements.

#### **Carbon Reduction Fund**

Established in 2011, the Carbon Reduction Fund (CRF) provides strategic investments in projects that directly reduce the University's greenhouse emission profile. In 2013 ANU committed close to \$440,000 of funding from the CRF towards energy efficiency projects. Combined, the projects are expected to deliver cost savings of more than \$1,200,000 over the next 10 years and reduce carbon emissions by 7,400 tonnes over that period.

#### **Lighting efficiency upgrades**

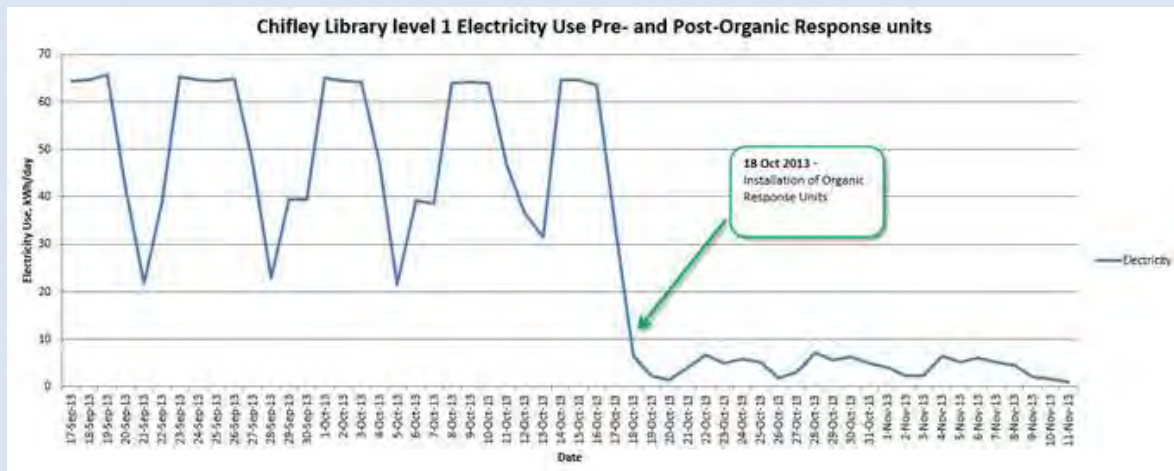
Lighting can account for a significant proportion of a building's energy use, ranging anywhere from 10-30 per cent of overall energy use. The two primary measures used to improve lighting efficiency in most buildings are: 1) swapping the existing old style fluorescent tubes (T8s) with LEDs; and 2) installing lighting sensors. By automatically switching lights off when spaces are unoccupied or when there are sufficient levels of natural lighting, motion and light sensors can reduce the energy used for lighting by up to 45 per cent.



### Feature Project: Chifley Library lighting upgrade

Electricity consumption from the lights in the compactus area of Level 1, Chifley Library has dropped considerably following the installation of new LED lights with in-built sensors. Electricity meters indicate that the installation of the *Organic Response* lights has resulted in a 90 per cent reduction in lighting power use on Level 1. The lights were designed and developed by Alumni of ANU.

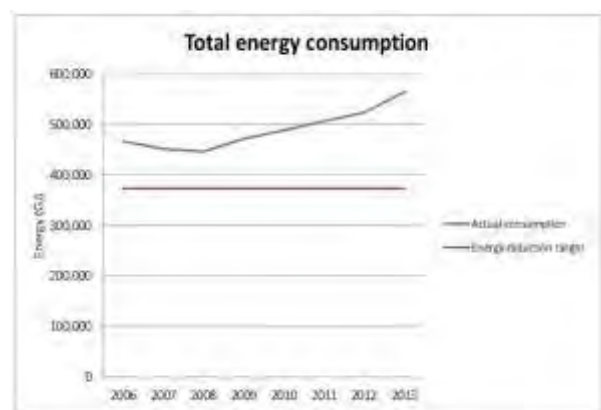
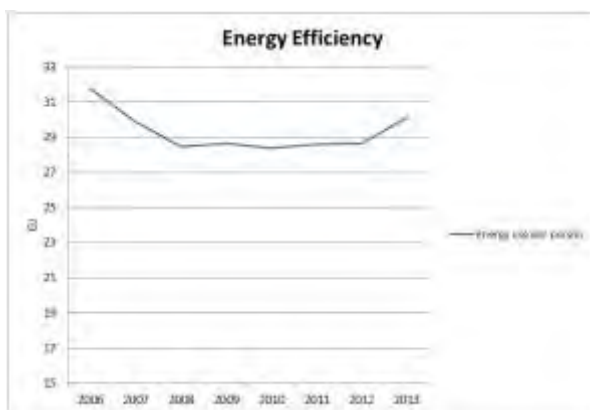
The in-built sensors adjust the light output according to where users are located within the room and automatically switch off lights when the space is unoccupied. The 90 per cent savings was achieved because the space is frequently unoccupied and the lights are no longer on continuously. While a 90 per cent savings may not be achievable across the whole campus, significant savings can be made by installing similar units in toilets, lecture theatres, meeting rooms and other intermittently used spaces.



## Progress & Achievements

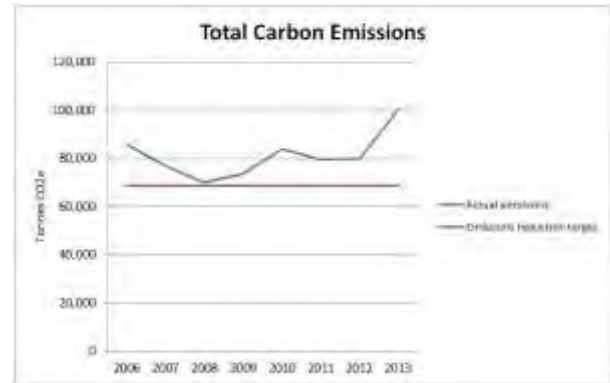
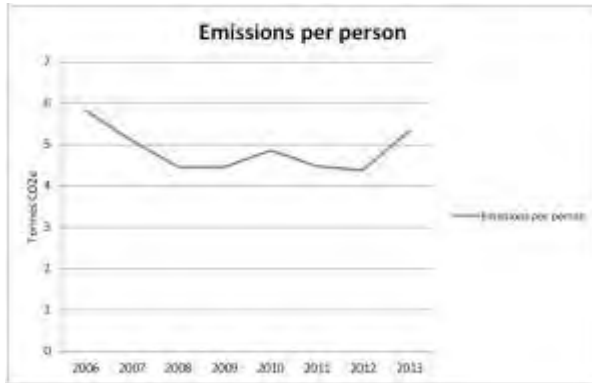
### Improved Efficiency

Despite growth in both the building footprint and population size the University has improved the overall energy efficiency of the Acton Campus. Through improvements to building efficiency and greater levels of energy-conscious behaviour, energy consumption per capita has decreased by approximately 5% since 2006.



## Carbon Emissions

The purchase of external carbon offsets was postponed in 2013 in order to direct a greater proportion of available funds towards internal efficiency measures. This should serve to decrease long-term energy consumption and emissions. In the short-term however, the impact is that emissions are not curbed as significantly for 2013 as they would have been with the purchase of external offsets.



# WATER



2015 Targets	Progress at December 2013
Reduce total water use 30%	Total water use 29% lower than 2006
	Water use per person 44.5% lower than 2006
Eliminate potable water from landscape irrigation	Potable water use for irrigation 55% lower than 2006

## Initiatives

### Water Efficiency Management Plan

The first iteration of a plan for reducing water consumption was completed in 2013. The plan sets timeframes for the connection of additional metering and a series of infrastructure audits which will enhance the understanding of how water is used across the campus and where the most cost-effective savings can be made. The plan also identifies priorities for the implementation of water-saving measures based on predicted costs, benefits and feasibility.

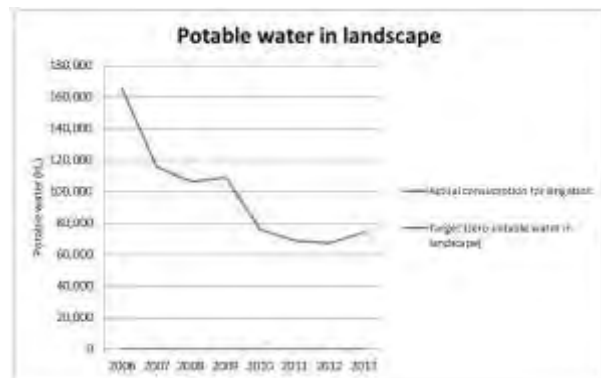
### South Oval turf conversion

Replacement of the existing grass with couch grass commenced in late 2013. Sporting grounds generally require large volumes of water to maintain. South Oval is the only ANU sport ground which is still irrigated with potable water and prior to the conversion it was irrigated with an average of 15 million litres annually. Once established, the couch grass will require 30% less water to maintain and will withstand more frequent usage by sporting groups. This project builds on progress in preceding years to reduce the water demand from the campus landscape through establishing drought-tolerant gardens, without irrigation systems and using recycled stormwater and effluent on grassed areas.

## Progress & Achievements

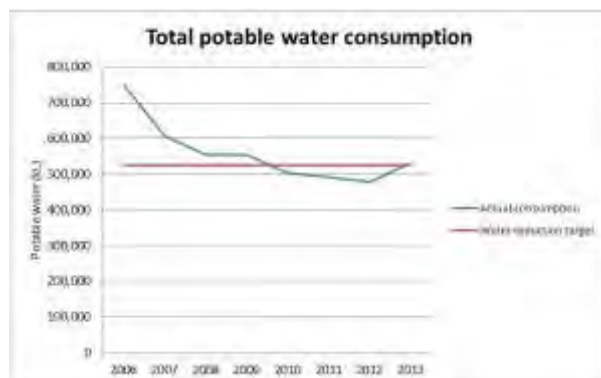
### Irrigation demand

The total consumption of potable increased in 2013 compared with the preceding year. Because of lower levels of summer rainfall and higher temperatures, more water was required to irrigate the campus landscape. However, the level of water consumption remained below the 2015 target level.



### Rainwater harvesting and storage

The University has been progressively installing new rainwater storage tanks to capture water for reuse in toilets and landscape irrigation. The Acton campus now has more than 1.75 million litres of rainwater storage capacity.



# WASTE and RECYCLING



2015 Target	Progress at December 2013
Reduce waste to landfill by 40%	Total landfill waste 34% higher than 2006
	Landfill waste per person 5% higher than 2006

## Initiatives

### Trial of high speed hand driers

High speed hand driers (HSHDs) were trialled in a number of campus toilets as an alternative to conventional hand driers and paper towel. The trial allowed a number of alternative models to be tested and assessed, with feedback from users incorporated. The trial has assisted in the development of a business case for the rollout of the driers across campus. The driers use approximately 80% less energy than conventional driers and installing them as an alternative to hand towels will result in significant waste and carbon emission reductions.



*High speed hand drier trial model*

The production and distribution of a sheet of paper towel, for instance, is estimated to generate 7.75g of carbon emissions, whereas average drying time with the HSHDs generates approximately 3.9g.

The assessment of the driers indicates that installing them in all of the suitable toilets across the campus will generate the following savings:

- Energy – electricity savings of 203,035 kWh per year
- Carbon emissions – 263 tonnes CO<sub>2</sub>e avoided per year
- Physical waste – 18.75 tonnes of paper towel waste avoided each year

Funding options for the installation of HSHDs in 300 toilets across campus are being reviewed and it is hoped that installation will begin in 2014.

### Filtered water refill stations

A number of filtered water refill stations have been installed across campus. The stations are located on North, Willows, Fellows and South Ovals, as well as in Union Court and the Colleges of Science precinct. They eliminate the need for staff and students to buy bottled water, thus reducing waste to landfill and energy and emissions from transport and storage of bottled water.



*The new water stations allow students and staff to refill their drink bottles instead of purchasing thruway bottled water*



### Move Out Recycling

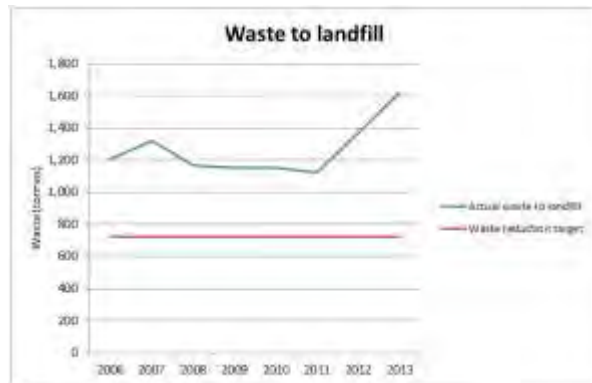
Every year thousands of students move out of the campus residences at the end of the year, leaving behind tonnes of unwanted clothing and personal belongings. The Move Out Recycling Program was established to prevent these unwanted goods from being sent to landfill. Instead they are collected at the end of second semester and stored until the start of first semester the following year and resold at a campus garage sale. In 2013 the garage sale attracted more than 570 customers and diverted 1.16 tonnes of second-hand goods from landfill. The funds raised were directed to student sustainability programs.



Students peruse tables of second-hand clothes at the Move-out Recycling Garage Sale

### Progress & Achievements

The level of recorded waste generated by the ANU community has increased significantly in recent years. While the increase can be partially explained by growth in the campus population, the construction of several large new teaching and research facilities and the suspension of the organic waste program have also contributed to the increase. Construction of new facilities generates significant quantities of construction waste. A thorough review is required to identify the reasons for the apparent increase in waste figures.



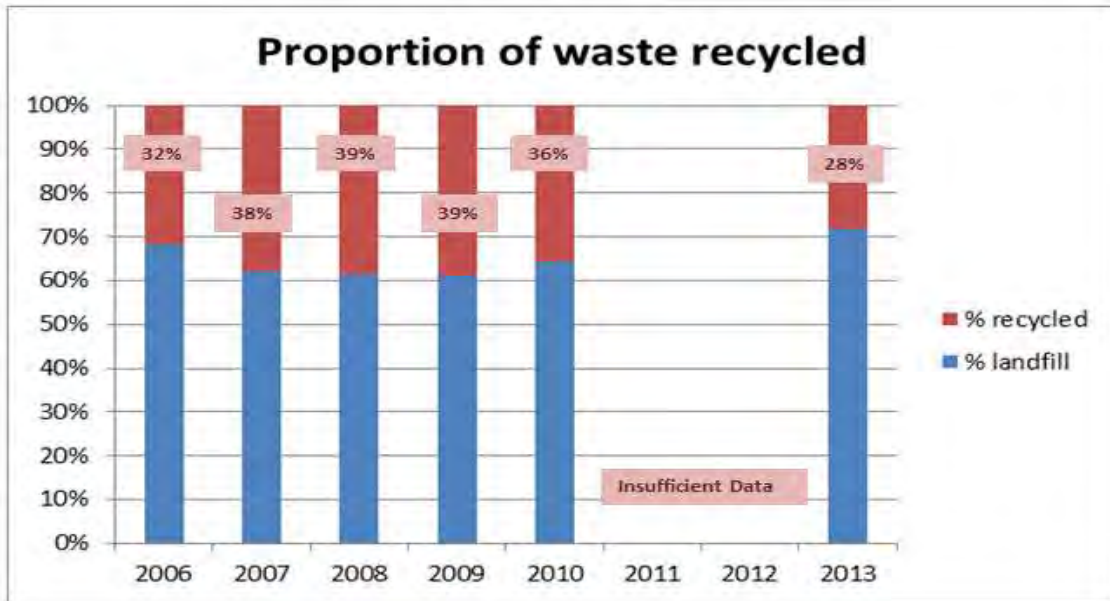
\*Note: 2012 data not available

### Recycling

The University recycled approximately 641 tonnes of waste, almost a third of the total weight of waste generated on campus over the course of the year. ANU recycles a range of waste streams, including construction waste, plastic, electronic waste and batteries. Despite the interruption to the organic waste recycling program (see below), the University maintained a high level of recycling from the waste stream.

Waste Stream	Tonnes Recycled
Co-mingled – plastic, glass & aluminium	336.03
Office Paper	129.20
Cardboard	122.43
Computers and IT waste	25.42
Steel	16.84
Wooden pallets	4.20
Cooking oil	2.72
Fluorescent lighting	2.43
Printer cartridges, mobile phones & batteries	1.62
Furniture	0.67
<b>Total</b>	<b>641.57</b>

The range and weights of waste materials which were recycled in 2013



Unfortunately insufficient reliable data was collected in 2011 and 2012 on recycling levels. This is partly due to errors and changes to contractors

### Organic Waste Program

The organic waste recycling program, established as a trial in 2007, contributed significantly to landfill waste reductions in previous years. Unfortunately, in 2012 a series of faults rendered the industrial composting unit unusable and irreparable. A business case for the procurement of a replacement was developed in 2013 and funding was secured via the ANU Green Loan Fund. The new unit will be manufactured in early 2014 and is expected to be operating early in the third quarter. It is estimated that when fully operational, more than 200 tonnes of waste could be diverted from landfill per year and converted into high grade compost for use in the campus landscape.

# POLLUTION PREVENTION AND ENVIRONMENTAL RISK



2015 Targets	Progress at December 2013
Reduce residual pollution risk below 20%	To be estimated: 23% in 2011

## Initiatives

### Risk assessment and management

The methodology for assessing and quantifying the level of residual environmental risk is under review and, as such, no rating has been estimated since 2011. However, the robust pollution prevention and mitigation measures which were established under the risk reduction strategies of the EMP remain in place. Management of risk prevention has been devolved to facility managers across the campus, however a coordinated approach and reporting structure is maintained through the University's Hazardous Waste & Safety Committee.

### Enhanced emergency spill response

In 2013 a centralised emergency spill response centre was set up in the Innovations Building, providing quicker and easier access to ANU Security personnel. Spill response kits can now be immediately deployed in an emergency to prevent contamination of Sullivan's Creek and storm water systems.



*Chemical spill control kits are now located in an emergency spill response centre*



2015 Target	Progress at December 2013
Develop and implement a Biodiversity Management Plan to assist future development planning, ongoing maintenance of landscapes and enrichment of campus ecology	Submitted to Department of Environment for comment.

## Initiatives

### Weed eradication program

A number of significant weeds were targeted across campus throughout 2013 and funding was secured for additional weed control in conservation areas such as the Acton grassy woodlands.

### Ecosystem rehabilitation

Conservation initiatives included replanting of native species, weed eradication and extension and reconnection of remnant patches of grassland in significant campus landscapes such as the remnant Old Canberra House Grassy Woodlands.

### Identification, assessment and monitoring

Monitoring the prevalence and distribution of native species on campus has been a key component to the University's commitment to conserving biodiversity. In 2013, monitoring and assessment activities included regular quality assessments of water from Sullivans Creek, *Frog Watch*, *Bird Watch* and biota surveys and assessments. Many of these activities were supported by student and staff volunteers and the local community, adding to the community understanding of local biodiversity values and threats.

### Community Engagement

Interpretative signage was installed at key campus landscapes to promote community awareness of their ecological significance. The University also ran a series of information sessions on campus biodiversity and practical training workshops for community members interested in assisting with bird surveys and other monitoring activities.



*A volunteer samples water from Sullivans Creek*



*Volunteers identify aquatic invertebrates during a 'Bugwatch' survey*



## **Progress & Achievements**

Significant progress was made in the area biodiversity conservation in 2013 in line with the obligations of the Environment Protection and Biodiversity Conservation Act 1999 Commonwealth (EPBC Act). ANU aims to conserve and enhance the biodiversity on all its campuses, in particular several rare and endangered species of flora and fauna and remnant indigenous ecosystems, such as the Old Canberra House grassy woodlands.

### **ANU Biodiversity Management Plan**

In 2013, the ANU Biodiversity Management Plan, which was developed over the course of several years, was sent out to external and internal stakeholders for consultation. It was then submitted to the Department of Environment for comment. The Plan, which aims to meet the University's obligations under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999, identifies, assesses and provides rigorous management requirements for campus biodiversity and proposes future opportunities for enhancing biodiversity across campus.

---

# SUSTAINABLE TRANSPORT



Targets	Progress at December 2013
Increase green commuting to 80%	66% of total population were green commuters*
Reduce fleet vehicle emissions by 20%	Emissions 37% lower than 2006
Offset 100% of fleet vehicle emissions	100% offset in 2013
Offset 100% of air travel	0% offset in 2013

*\*In the EMP 'green commuters' have been defined as staff and students who commute to campus via bike, bus, walking and carpooling. Students who reside on campus are also included because they do not drive to their daily study activities on campus.*

## Initiatives

### Bike storage

The University increased campus bike storage capacity, with more than 200 additional bike storage spaces installed in 2013. Planning and approvals were also completed for two new bike storage facilities, with a combined capacity of more than 150 bikes, which will be constructed at John XXIII College in 2014.

### Pool vehicle fleet rationalisation plan

While the fuel consumption and carbon emissions from the University's vehicle fleet have decreased significantly since 2006, the overall size of the fleet has remained fairly consistent over this period. In an effort to reduce the operational cost and embodied emissions of the fleet, a review was conducted into how the fleet could be managed with fewer vehicles. A subsequent feasibility study explored the viability of substituting the fleet with a carshare scheme. A carshare scheme could support greater uptake of green commuting modes because it will allow commuters to leave their cars at home and still have access to vehicles for private trips during the day. A proposal has been developed for a campus carshare trial which, if approved, could be implemented as early as mid-2014.

### New ANU busway opened

A new bus route and terminal was established at the northeast corner of the campus. The new ANU busway traverses the student accommodation area along Kingsley and Hutton Streets in the ANU Exchange. This allows students to exit intertown express bus services right on the doorstep of the Unilodge buildings. The University collaborated with the ACT Government in the planning for the new busway.

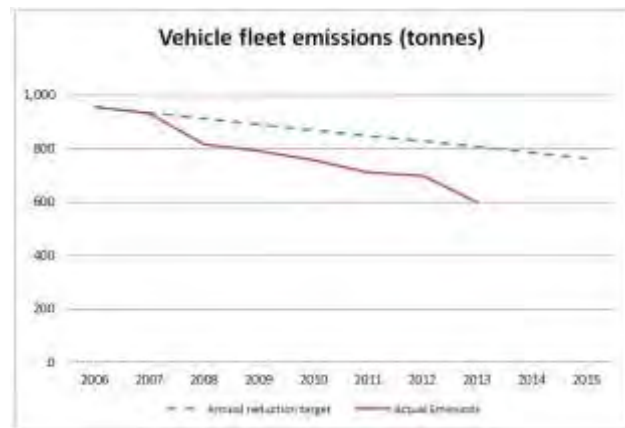
## Progress & Achievements

### Sustainable Transport Plan

A comprehensive transport plan was developed to provide strategic direction for ANU to reduce the environmental impact of transport. The plan provides an overview of past sustainable transport initiatives, progress to date towards the University's targets and a summary of the major challenges to be overcome, such as the entrenched car culture in Canberra and long commuting distances of many staff and students. It also outlines an implementation strategy with a range of initiatives aimed at enhancing the attractiveness and feasibility of sustainable transport modes for campus commuters.

### Vehicle fleet emissions

Carbon emissions from the University's vehicle fleet dropped by approximately 14% on 2012 levels, following the trend of consistent annual emission reductions since 2006. Analysis of fuel consumption and vehicle mileage data indicates that, while there has been a slight improvement in average vehicle efficiency across the fleet, the primary driver of the emission reductions has been an overall reduction in mileage, suggesting that staff and research students are more frequently choosing alternatives to driving.



This also indicates that there is significant scope to further reduce vehicle emissions through the procurement of more efficient, lower-emission vehicles when cars are replaced.

### Air Travel Offsets

The air travel offsetting scheme was suspended because of internal financial reviews and restructuring. However, in 2013 the University commenced planning for the establishment of an online travel management system which will make it easier to record air mileage and contribute to the offsetting fund.

# COMMUNITY ENGAGEMENT



Community engagement and collaboration remained a key element of the University's environmental program in 2013 with a number of initiatives aimed at informing, empowering and harnessing the knowledge and energy of staff and students towards campus sustainability.

Indicators	Progress at December 2013
Sustainability Learning Community membership	2838
Points of contact at events	5643

## Initiatives

### Green Leaders

The [Green Leaders](#) program aims to empower facility managers and other key stakeholders from across the University to play a role in delivering measurable sustainability outcomes by identifying opportunities to improve the efficiency of their facilities and operations. The Green Leaders program provides training and support in project scoping, planning and delivery with the aim of achieving cost savings, efficiency gains and reduced maintenance.

The pilot, launched in 2013, consists of ten key buildings across campus. The selected buildings represent a cross-section of different building types (e.g. lab research, student residences, libraries, office and teaching spaces). This ensures knowledge sharing to achieve a higher level of synergy. If successful, the program will be expanded campus-wide. The Pilot will run until mid-2014, at which time it will be evaluated and refined for a broader roll-out to campus Facilities Officers.

### Green Key iPhone app

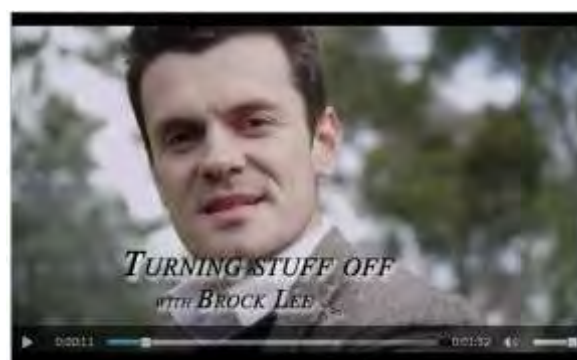
2013 saw the launch of the much anticipated [Green Key](#) iPhone app. The app is designed to assist residents of ANU halls and colleges to self-evaluate energy and water consumption in their rooms. In a simple and user friendly format, the app collects data about lighting, electricity, heating and water use and then generates a mark (high distinction, etc.) to reflect the student's monthly energy and water usage score. The app was designed, developed and implemented by student interns.

### ANUgreen sustainability video series

Completed in early 2013, these informative, yet tongue-in-cheek videos offer an overview of ANU campus sustainability initiatives and provide tips on how to reduce energy and water consumption while working or studying at ANU. Edgy and fun, they convey sustainability messages in a highly memorable way.

To view the videos visit:

<http://sustainability.anu.edu.au/student-life/sustainability-videos>



Screenshot of one of the new ANUgreen sustainability videos

### Green Steps training

Fourteen students participated in the Green Steps sustainability leadership training program at ANU. Students received training in energy and water auditing skills, communication strategies and behaviour change theory. Student feedback demonstrates the valuable and practical nature of the program.



“The ANU *Green Steps* program was brilliant, innovative and well-designed. I want to thank all the ANU Green Steps Sustainability Team who were involved, each member provided that something extra that provided a well-rounded, interactive program that made me feel empowered to become an effective change agent. Additionally, the program gave me the extra passion to work towards building a career in sustainability. I found the internship challenging and it allowed me to stretch my combined passion and gained skills from the program in a work environment.”

### **International Alliance of Research Universities (IARU) Collaboration**

In 2013, ANU contributed significantly to a series of collaborative projects with partner institutions of the IARU.

### **IARU CO2 Benchmarking Report**

A joint initiative of the member universities, the report provides a comparative study of the respective members’ greenhouse gas emissions and the various mitigation strategies that are being implemented to reduce those emissions. The study will pave the way for the establishment of a standard methodology for benchmarking the respective emissions profiles and mitigation strategies of IARU universities. It also aims to identify successful practices and initiatives that could be adopted by all members and share information that would contribute to improvements in overall campus sustainability. ANU led the development of this report in 2013 and a 2014 release is anticipated.

### **IARU Green Universities Guide to Campus Sustainability**

A collaboration between all ten IARU partners, this guide to campus sustainability will offer practical steps for other universities to draw from in establishing or furthering their own campus sustainability initiatives. The guide will contain best practice case studies on a range of sustainability themes. ANU has played a lead role in the development of the guide which will be launched at the IARU international conference in October 2014.

### **Making Universities Sustainable Conference**

To be held in Copenhagen in October 2014, ANU has been active in the development of the conference themes and materials. The conference will be based on the chapters developed in the *Green Universities Guide to Campus Sustainability* and participants will have the chance to explore the themes in greater detail and return to their institutions with a toolkit of strategies for implementing sustainability initiatives.

### **2013 IARU Sustainability Fellowships**

In 2013, ANU hosted a student from Oxford University who assisted with developing the format and templates to be used in the development of the *IARU Green Universities Guide*. ANU sent two students abroad, one to Copenhagen and one to Beijing. The ANU students worked on strategies to improve videoconferencing facilities and to monitor energy use, respectively. This program continues to be a successful exchange and has provided significant benefits to both students and hosts every year since its inception in 2007.

## Events

The ANU Sustainability Office hosted a number of annual events designed to engage the campus community in sustainability initiatives. Many of the major events noted below are in their six year and have become notable events on the ANU calendar. The events help draw attention to the environmental implications of energy consumption, transport choices and highlight how staff and student choices can contribute to sustainability objectives.

### Celebrate Sustainability Day

A day-long festival in Union Court introduces staff and students to the range of sustainability programs and achievements of the University and local community groups. [Celebrate Sustainability Day](#) features live music, free food, prizes and a range of market style stalls featuring local environmental groups and initiatives. Staff and students collected stamps in an event passport for each stall they visited for a chance to win prizes.

### Earth Hour

[Earth Hour](#) is a family-friendly ANU event that includes live music, cultural performances, star gazing, multicultural food stalls and a BBQ in Chifley Meadow. In 2013, more than 1,200 people attended and WWF Australia, the national coordinators stated, “of all the Australian unis, ANU has consistently run the best Earth Hour events since the initiative spread across the country and the world in 2008!”



More than 1,200 people attended the campus Earth Hour event in March 2013

### Great Green Debate

Every year Bruce Hall and the [Sustainability Learning Community](#) organise a public discussion panel on a current environmental topic. In 2013, a panel of experts and public figures, including former Federal Opposition Leader John Hewson, debated how the global community can ensure that 80% of the world’s remaining fossil fuels are left in the ground. [The Great Green Debate](#) aims to engage students and the general public in critical discussions about the challenges and potential pathways towards sustainability.

### Charity bike wash

Staff and students had the opportunity to get their bikes cleaned and tyres pumped in exchange for a gold coin donation. All proceeds were donated to the Australian Youth Climate Coalition (AYCC).

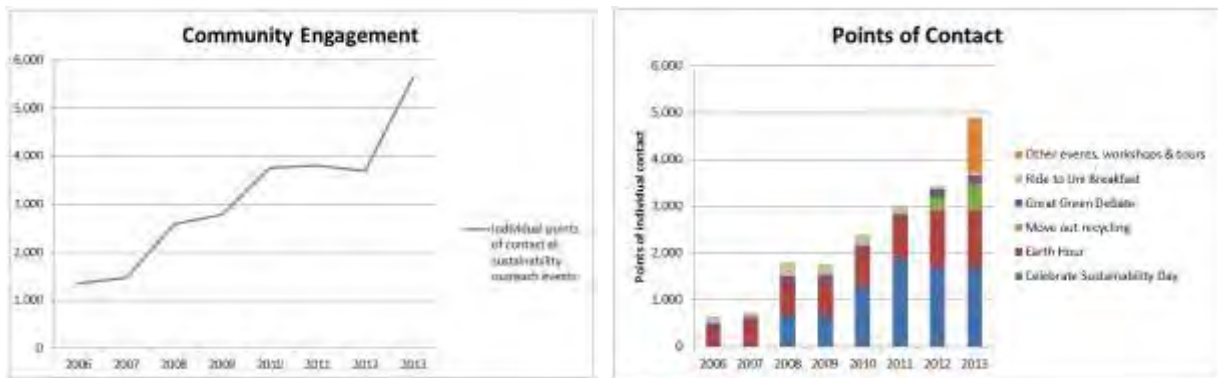
### Ride to Work Day

A free breakfast was hosted for staff and student cycle commuters on National Ride to Work Day.

## Progress and achievements

### Increased community participation

There has been a significant increase in the number of people recorded engaging with sustainability through public events and campus environmental programs. Each participant in an ANUgreen or ANU Heritage event is recorded as a 'point of contact'. Each point of contact represents a rich discussion on sustainability initiatives and serves to foster a sense of community at ANU. The increased involvement of the campus population suggests a growing concern about the environmental costs of the University's activities and a desire to contribute to sustainability initiatives.



# BUILT ENVIRONMENT



## Initiatives

### Green Star certification

The Frank Fenner Building was awarded a 6 Star Green Star rating for *Design* and in 2013 was awarded a 6 Star Green Star rating for *As Built* under *Green Star - Education*, which is commensurate with “World Leader” in sustainability. The Frank Fenner building is now one of only two buildings in Australia to have achieved this dual six star rating. The building achieves impressive energy and water reductions through a range of initiatives including:

- A solar photovoltaic array
- A hybrid active chilled beam air-conditioning system
- Rainwater collection tanks
- Connection to the University’s black water treatment system
- Connection to the University’s central plant for all heating and cooling requirements
- A wetland designed to support biodiversity and filter storm-water run-off



The ‘bioswale’ wetland at the Frank Fenner Building contributed to the building’s achievement of 6 Star *Green Star* ratings for both *design* and *as-built*

### Building sustainability audits

A new sustainability auditing tool was developed and trialled at the School of Music and the Chifley Library. The tool will allow campus building custodians to determine what proportion of the energy and water used by their building is consumed by lighting, heating/cooling, showers, labs, toilets, etc. The audits will give an indication of how campus buildings are performing against benchmarks and identify opportunities to reduce wasteful consumption and improve efficiency.

### Outdoor teaching spaces

Installation of an outdoor learning space at Fellows Oval incorporated amphitheatre style seating for 50 people, LED lighting, disabled path access, power outlets, Wi-Fi connectivity, BBQ facilities and picnic table/chair seating. The amphitheatre is intended to be used for a range of purposes including tutorials, lectures, outdoor functions, performances and informal gatherings. The location was chosen to take advantage of the Sullivans Creek and Fellows Oval environments. Facilities such as this can reduce the University’s energy use by decreasing the heating/cooling and lighting requirements of buildings.



## AWARDS & RECOGNITION

At the 2013 ACT Sustainable Cities Awards the University's commitment to sustainability was recognised with the following awards:

- **Winner** - Sustainable Buildings: Commercial category for Lena Karmel Lodge student accommodation
- **Winner** - Wildcard category for Digital Sustainability Outreach at ANU
- **Highly commended** - Community Action, Partnerships and Culture category for the ANU Green Precincts Project



*ANU staff accept the ACT Sustainable Cities 2013 'Wildcard' award for the digital sustainability outreach program*

Architecture and Design Magazine awarded the Lena Karmel Lodge student accommodation a BPN sustainability award in the National Multi-Density Residential category. Established in 2006, the BPN Sustainability Awards were created to 'encourage and reward Australia's best practice in sustainable building and architecture design'.



### **BPN Jury citation:**

*"The holistic and thorough approach to sustainability, where many initiatives are integrated in the design, is commendable. We were particularly impressed with the green roof and edible garden, as well as the sustainability data dashboards that promote user awareness, education and participation. As an on-campus location, this building puts forward a sustainable proposition, and acts as an exemplar to the occupants of other buildings."*