csugreen
sustainability
- your actions count!

ENVIRONMENTAL SCORECARD 2013

Charles Sturt University

Cover image
Students engaging in an outdoor classroom (CSU Orange Campus)
Back image
Indigenous Food Plant Garden (School of Education, CSU Wagga Campus)

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OUR COMMITMENT TO SUSTAINABILITY

Professor Andrew Vann
Vice-Chancellor and President

The Australian Commonwealth Government's environmental sustainability agenda has altered with significantly less emphasis on climate change policy and action in the overall political agenda.

The previous Government's initiatives such as the Carbon Tax, the Climate Council, and the Clean Energy Fund are to be repealed or abolished.

The new agenda outlined in A Plan for a Cleaner Environment emphasises a healthy environment with the four pillars of clean air, clean land, clean water and heritage protection.

The vision of the Plan is "a great society by protecting and improving our environment for future generations".

Australia's performance on the world stage remains poor in comparison to other countries, especially in reducing greenhouse gas emissions. Australia is one of the greatest per capita emitters in the world. International organisations such as the Organisation for Economic Cooperation and Development and the United Nations Framework Convention on Climate Change Kyoto Protocol, to which Australia is a signatory, emphasise the importance of the commitment of all countries to address climate change and reduce emissions contributing to the global warming of the earth.

Other large emitters such as the United States of America and China have increased their commitments on climate change with their targets and investment in renewable energy.

For example, the United States through the Presidential Action Plan is restricting emissions from vehicles, coal fired power plants, and increasing energy efficiency measures. Australia had its hottest year in 2013 since records commenced in 1910.

With the continual warming of the earth and the continued emission of greenhouse gases through human activities it is essential that Charles Sturt University (CSU) lead by example and continue to address environmental sustainability. CSU is driving its aim to be carbon neutral by 2015 through the University Sustainability Sub-plan. Although this is an ambitious target, it is important that CSU exemplifies its commitment to 'a world worth living in'.

> "It is essential that CSU lead by example and continue to address sustainability"

Sustainability at CSU is everyone's business

A major step was taken towards this target in 2013 with the award of a contract for the construction of a cogeneration facility at CSU in Bathurst.

This project, involving the local generation of electricity and recovery of waste heat produced from the process, is set to reduce the University's greenhouse gas emissions by about seven percent whilst also offering a financial return on the investment.

Our local communities have also elected to lead the way. For example, the Central NSW Renewable Energy Co-op and the recently approved Flyers Creek Wind farm, producing up to 340,000 MWh of power (equivalent to electricity for 45,000 residential homes and saving up to 300,000 tonnes of carbon dioxide),will see the establishment of one of Australia's few community-owned generator-scale wind turbines.

The Riverina Community Solar Farms, being driven in the Riverina by Climate Rescue of Wagga, will see the establishment of medium-scale community-owned solar farms on the rooftops of several of the Riverina's larger businesses which will commit to long-term power purchase agreements for the electricity that is generated.

I am pleased to advise that CSU continues its commitments in regards to sustainability. An internationally recognised framework has been adopted under CSU's Sustainability Sub-plan which will assist us to holistically integrate sustainability into the core workings of the University.

This framework – known as the Learning in Future Environments (LiFE) Index - will form a cornerstone of how CSU assesses its performance in sustainability and indentifies opportunities for further improvement.

LiFE will also provide a mechanism for benchmarking against national and international leaders in the sector.

In the 2013 edition of the Scorecard, you can learn more about numerous valuable initiatives commenced and delivered across CSU.

These include the launch of the United Nations-designated Regional Centre of Expertise – Murray Darling, the deployment of a new waste system for increasing recycling captured from CSU's staff offices, and the introduction of a new funding stream as part of CSU's Sustainability Grant Program geared to support sustainability-focussed research.

The year ahead stands to be an exciting one with many further activities proposed that will take CSU further towards implementing its Sustainability Sub-plan under the University Strategy 2013-2015.

Sustainability at CSU is everyone's business and I encourage our students and staff to consider what role they can participate in to achieve change at CSU.

SNAPSHOT OF SUSTAINABILITY AT CSU IN 2013

2,300 ecobins deployed

All staff office waste bins converted to improved office **recycling system**

Kilometres Travelled in 2013 Via...

15,998,881 km (↓29% from 2012)

4,989,956 km (↑9% from 2012)

203TJ of **energy consumption** in **2013**

Equivalent to running **5,000** average households in NSW for a **whole year**

An overall **8% decrease** compared to **2012**

1 Sustainability Advisory Group with **15** members from across the organisation and leading the sustainability agenda

There were **19** applications for the annual **Sustainability Grant Program** in **2013**

12 for the **Stream One General** and **7** for the **Stream Two Research** programs

Of the **19** submissions, **11** were awarded funding

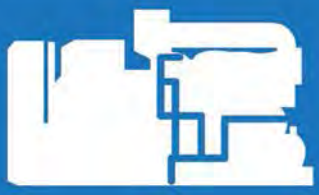
3.3 Stars

is the average **Green Vehicle Guide Rating** of CSU's fleet of **271** passenger vehicles (5 stars represents best practice)

Approximately **1800 plants** were planted across CSU campuses by **staff and volunteers** in **2013**

130 tonnes of greenhouse gas emissions

personally offset by **Vice-Chancellor**, Andy Vann, in recognition of the carbon footprint of his official University business



2,870 tonnes forecasted **Greenhouse Gas savings** that will be achieved annually through the establishment of its **Cogeneration facility** at CSU in Bathurst

This represents **7%** of CSU's Carbon Footprint in **2013**

5 Campus Environmental Committees

Campus	Committee Members	Projects
Albury - Wodonga	13	7
Bathurst	12	11
Dubbo	12	5
Orange	9	6
Wagga Wagga	10	6
Total	**56**	**35**

>195,000

Disposable coffee cups used on campus in **2013**

12 students undertook the **Green Steps @ CSU** Training & Internship program in **2013**

In the same year in excess of 50% of **2012** students completed their **CSU internships** concluding their **Green Steps @ Uni program**

529,701 kL of **water consumption** in **2013**

Enough to fill **211 Olympic-sized swimming pools**

An **increase** of **20%** compared to **2012**

80 staff enrolments for the **Sustainability in the Workplace Training** in **2013**

of which **60%** **completed assessments**, of which

26 **workplace projects** were completed

OVERVIEW

Contact Us

If you have any comments or feedback regarding this document, or any of the CSU Green projects, please do not hesitate to contact CSU Green via: **csugreen@csu.edu.au**

This Environmental Scorecard provides an overview to University students, staff and the wider community as to how CSU is progressing with its sustainability targets outlined in CSU's Sustainability Sub-plan 2013 - 2015.

The Sustainability Sub-plan targets are listed in the table on the opposite page. More detailed targets, as identified in the Sustainability Enabling Plan 2011 – 2015 are listed on the CSU Green website.

The Scorecard format reflects how the targets are categorised into the key priority areas of the Sustainability Sub-plan and against each of these, CSU Green has:

- reported on progress towards achieving the targets
- outlined some of the works or projects occurring 'on the ground' that have made a major contribution towards achieving the targets.

The University commits to ensure the responsible stewardship of physical, human and financial resources and to develop plans and procedures to implement environmental sustainability practice

Sustainability Sub-plan 2013-2015 Targets

Charles Sturt University has committed to reaching a number of objectives that are outlined in the Sustainability Sub-plan 2013 - 2015.

The University commits to ensure the responsible stewardship of physical, human and financial resources and to develop plans and procedures to implement environmental sustainability practice.

The Objectives include:

- move to carbon neutrality by 2015
- continue to aggressively pursue energy efficiency
- implement a recognised framework to manage, measure, improve and promote our sustainability performance
- celebrate our leadership in sustainability as an example to others, and
- encourage and assist organisations in our regional communities to achieve their sustainability goals.

Key performance indicators assist CSU Green in meeting the objectives in four priority areas. The priority areas and associated key performance indicators are described in the table on page 9.

In Leadership & Governance

Establish a suitable governance structure to maintain prudent oversight of the implementation of the Sustainability Sub-plan

Integrate the delivery of the Learning in Future Environments (LiFE) Index into relevant, existing University structures and committees via:
- Completion of framework baseline establishment workshops
- Development of framework action plans
- Framework follow-up evaluations demonstrating improvements across all frameworks

In Learning, Teaching & Research

Support the implementation of the Curriculum, Learning & Teaching Plan to establish literacy and awareness of sustainability among all CSU graduates via relevant Graduate Learning Outcomes

Establish appropriate professional development mechanisms for general and academic staff that will instil competence in the delivery of sustainability in curriculum and other areas relevant to their role

In Partnership & Engagement

Implement a multifaceted sustainability engagement strategy for students and staff, led by the CSU Green office

Actively support the UN University-designated Regional Centre of Expertise in Education for Sustainable Development (Murray-Darling) to maximise its success, reach and impact

In Facilities & Operations

Implement a multi-faceted strategy to improve energy efficiency and reduce energy-related carbon intensity, including:
- Commissioning of a cogeneration facility at the Bathurst campus
- Implement a large-scale Energy Performance Contract
- Establish large-scale on-campus renewable energy generation

Integrate sustainability as a key guiding principle in the establishment of the Port Macquarie Campus

Underpin investment in energy efficiency improvements via the continuation of the rolling Energy Saving Initiative

Implement a carbon reduction program for the University Fleet, including improving the average Green Vehicle Guide rating of vehicles

Develop and implement an organisational carbon offset procurement strategy

Divert 70% of solid waste from landfill

Allocate an equivalent to 20% of University campus land to biodiversity conservation and improvement

LEARNING,TEACHING AND RESEARCH

TARGETS

- Support the implementation of the Curriculum, Learning & Teaching Plan to establish literacy and awareness of sustainability amongst all CSU graduates via relevant Graduate Learning Outcomes
- Establish appropriate professional development mechanisms for general and academic staff that will instill competencies in the delivery of sustainability in curriculum and other areas relevant to their role

In 2013, advancements were made toward meeting the tasks and objectives as outlined in the University's Sustainability Sub-plan 2013-2015. The Sustainability Sub-plan ties together the priority objectives with the Learning in Future Environments (LiFE) Index.

Graduate Learning Outcomes

The University has refreshed and reinvigorated what was once known as the Degree Initiative and transformed these into Graduate Learning Outcomes (GLOs).

CSU aims to provide its students with the best possible education and knowledge, and see them graduate with the skills and expertise to be global leaders and responsible global citizens.

The GLOs establish standards that are to be used by teaching staff to design curriculum, learning experiences and assessment tasks that will ensure CSU graduates are unique, through the attainment of capabilities that exemplify CSU's values.

The GLOs encompass seven dimensions:

- Academic literacy, learning and numeracy
- Digital literacy
- Ethics
- Global citizenship
- Indigenous cultural competency
- Professional practice
- Sustainability.

The inclusion of sustainability as one of the key dimensions of the GLOs is a tremendous and exciting step towards the holistic integration of sustainability into the core business of CSU.

The ultimate goal is to produce professionals and leaders of the future who are not only literate in the concept of sustainability but also equipped with the skills and knowledge to critically assess how current world views and their own professional decisions may either reproduce or compound unsustainable practices. Conversely, for CSU students to contribute to a more sustainable global future.

The GLO implementation matrix will be tested in 2014 via eight early adopting courses that have been selected under CSU's Smart Learning project. It is anticipated that all CSU courses will transition to the Smart Learning framework, including the adoption of the Sustainability GLO, by 2018.

Course Integration

Several CSU Schools, such as the School of Agricultural and Wine Sciences, and the School of Management and Marketing, are already proactively embedding sustainability into the curriculum of various subjects (refer to Breakout Box 3).

CSU Green worked closely with Elizabeth Robinson, the subject coordinator for GRP322 Professional Graphic Design in Practice, to integrate sustainability into the major assignment for this subject (refer to Breakout Box 2).

Sustainability Grants Research Stream

The introduction of a new research stream within the University's annual Sustainability Grant program in 2013 brought together CSU Green and key research stakeholder groups to meet targets within sustainability research.

Under this Grant stream, CSU staff members can apply for funding of up to $10,000 to support sustainability-related research, from a funding pool of $40,000 (refer to Breakout Box 1).

Research and Sustainability Network

The processes involved with raising the profile of sustainability-related research at CSU have facilitated the formation of a new network between academic staff and CSU's Research Office.

The network has served to assist CSU Green to develop a better understanding of what is required to successfully meet the research targets in this priority area, and highlighted to CSU Green the need for, and optimal format of, an interface for increasing the profile of sustainability-related research at CSU.

This interface will continue to be developed throughout 2014 to further expand and publicise CSU's research across sustainability-related fields.

CSU staff members can apply for research funding of up to $10,000

BB1. Sustainability Grant Program - Stream Two (Research)

Research Stream

CSU Green introduced a new CSU Sustainability Grant funding initiative in 2013, to assist academic staff interested in pursuing sustainability-related research, whilst also helping to meet CSU targets within the Learning, Teaching and Research Priority area.

The new research stream of the Grant program was funded from a pool of $40,000, with a cap of $10,000 per project.

The application process was modified for the new stream to better reflect a research application, and the grant submissions were assessed by a panel of five academic staff members and CSU Green.

Staff members involved in the grant assessment process greatly assisted in providing feedback and ideas to improve the research application and assessment process. These improvements will be implemented in the Grant program for 2014.

The research stream funding was well received in its inaugural year with CSU Green receiving seven applications.

Of the seven applications, three of the submissions were successful in securing funding.

An overview of the successful grant submissions is provided in the table on page 12 and more information is available on the CSU Green website at:

csu.edu.au/csugreen/grants

BB1. Sustainability Grant Program - Stream Two (Research)

Project

Improving Sustainability Literacy

Lead Contact

Andrea Crampton (Sub Dean Learning & Teaching)

Funding ($)

$10,000

Overview

This project seeks to enhance sustainability literacy amongst CSU staff and students in an engaging and informative manner.

Using social science research methodology, surveys and focus groups will be conducted to identify student and staff knowledge around issues of environmental sustainability, particularly associated with water, food, energy and recycling.
Results will be published in peer reviewed journals, and also provided to CSU course and research directors, to help them address identified sustainability literacy gaps in the curriculum, and make positive changes to CSU's organisational behaviour.

Project

Improving Soil Biological Health

Lead Contact

Dennis Hodgkins (School of Agriculture & Wine Science)

Funding ($)

$2,500

Overview

This project will examine selected biological properties (i.e. terrestrial arthropods and soil properties) of the soil environment under randomly selected paddock trees on CSU Farm Orange and the surrounding pasture.

The aim is to identify any significant changes to the biological properties under the tree canopy when compared to surrounding pasture, to help identify factors which may be affecting tree health.

This information will then be used to make recommendations on soil and pasture management strategies that could improve tree health and longevity and enhance the contribution of these trees to sustaining farm production and the environment. The results will be published in a peer reviewed paper.

Project

Impact of CSU Curricula

Lead Contact

Rosy Black (School of Environmental Sciences)

Funding ($)

$7,761

Overview

This project will investigate whether the CSU core generic competency of environmental sustainability that is embedded into all CSU curricula has an impact on the understanding, knowledge and behaviour of CSU's undergraduates in relation to sustainability.

The project will aim to survey all undergraduate students on the Albury-Wodonga Campus using an online survey that has been previously used successfully.

This project will contribute to meeting the objectives in relation to promoting environmental sustainability to all students in the University Strategy, CSU Sustainability Sub-plan 2013-2015, Student Experience Plan 2011-2015 and the CSU Graduate Learning Outcomes.

BB2. CSU Green and Professional Graphic Design Practice

Design Project

In 2013, CSU Green collaborated with the School of Communications and Creative Industries graphic design subject, GRP322 Professional Graphic Design Practice. CSU Green were the client for an assessment in the subject, where students were asked to provide a creative brief for a promotion and engagement campaign on the use of active transport for commuting to / from and around CSU campuses.

Bicycle use was the targeted mode of transport reflected in the campaigns of the four student groups within the class. Students presented their projects to CSU Green and included the research they had conducted to determine the best campaign strategies and resource development.

Through this process CSU Green was able to engage students on active transport while also gaining a better understanding of the style of campaign that drives students to change their behaviour.

All groups within the class presented original ideas, posters and resources for their campaign.

Posters from one particular group's campaign were used as the basis for CSU Green's NSW Bike Week campaign in September 2013. The included image is a montage of this group's work.

Elizabeth Robinson, lecturer for GRP322 within the School of Communication and Creative Industries found that, *"Introducing CSU Green into the classroom via an assessable design brief that explored the promotion of Bike Week was a huge success! It was beneficial for the students to not only know about and understand what role CSU Green play within the university, but it also provided the students with an opportunity to participate in authentic learning with a real life client".*

Eliza Batkin, a student of the GRP322 class said, *"It was great to do a job for a real client and it was the first time an assignment had reflected a project that actually had the opportunity to be used by an organisation"*.

Eliza also commented on sustainability within design from her perspective, *"I think the environment is something that designers do not often consider when doing jobs for clients who aim to get their ideas across creatively in any way they can".* During the process Eliza also became more aware of CSU Green, the function of the office, what sustainability means, the benefits of sustainability in design and how it could translate to the graphic design industry. *"The class equipped me to think outside the box on ways to incorporate sustainability in design, application and disposal of work".*

As an offshoot of this project, CSU Green took on Eliza as a paid graphic design intern, which was a highly successful partnership for both CSU Green and Eliza. In Eliza's words, *"It's honestly the best thing I've done"*.

Poster Design
The work of Professional Graphic Design Practice students

BB3. Managing for Sustainability

Simon Wright
Lecturer (School of Management and Marketing)

> It's important we have graduates who are equipped with the knowledge and understanding to address all of these sustainability challenges facing the business sector.

From the global giants to the small operators, businesses the world over are shifting sustainability to the centre of their business model.

A number of factors are driving this transformation, including resource scarcity, environmental concerns and global accountability. Having a sustainable business is accepting a wider responsibility for the environmental and social wellbeing around us.

In 2013, the CSU School of Management and Marketing lecturer Simon Wright used his extensive knowledge and background in business sustainability to develop a specialised course for postgraduate students.

The online course, ***An Introduction to Managing for Sustainability,*** offered for the first time in 2014, defines what businesses are doing to adopt sustainable approaches and how best to use these to achieve competitive advantages.

Key areas of focus in the course include:

- Understanding the concepts of sustainability and sustainable development
- Understanding and applying frameworks for sustainability
- Explaining the concepts of ethical behavior and corporate social responsibility and how they can be applied to sustainability issues
- Analysing how sustainability can provide a source of competitive advantage to a business
- Applying the knowledge of social and environmental risks and opportunities to analyse and evaluate the sustainability strategies of businesses, and
- Evaluating the sustainability strategy of a chosen business and creating a plan for improvements in the next two years.

Simon says the time is right for CSU to start teaching whole courses in sustainability.

"Businesses are very aware of sustainability issues; there isn't a CEO of a major company in the country that isn't grappling with sustainability issues. On a regional level, local councils have issues with waste management, water, energy and environmental management. It's important we have graduates who are equipped with the knowledge and understanding to address all of these sustainability challenges facing the business sector."

PARTNERSHIP AND ENGAGEMENT

TARGETS

- Implement a multifaceted sustainability engagement strategy for students and staff, led by the CSU Green office
- Actively support the United Nations University-designated Regional Centre of Expertise in Education for Sustainable Development (Murray-Darling) to maximise its success, reach and impact.

Partnership and Engagement is a key priority area for CSU Green, to achieve behaviour change amongst CSU staff, students and the external community.

CSU Green achieves this through hosting a range of events and initiatives each year. The calendar was full again during 2013 with many traditional events and initiatives, along with a number of new activities.

Some highlights of the ongoing initiatives and events which occurred through 2013 included:

- **Campus Environmental Committees (CECs)** are working with CSU Green to increase their profile across the University. For example, the Bathurst CEC has developed a partnership with external 'green' organisations, and the Albury-Wodonga and Dubbo CECs are refreshed and active with new Presiding Officers and new members (see Breakout Box 4).
- **The annual Sustainability Grant program** was well subscribed again in 2013. The program was split into two project streams, research and general, and there was the addition of a large grant offering, taking the total funding pool of the grant program to $150,000.
- **The Green Steps @ CSU** free training and internship program for students had 12 students take on the challenge in 2013. Projects being undertaken by students as part of the program include: carbon foot-printing the CSU Winery; developing learning materials for the new Ethics, Sustainability and Cultural Heritage subject within the School of Agriculture and Wine Science; developing re-sources for teaching residential students about energy saving and waste; and determining best practices for bushfire fuel load reduction in paddocks at the Albury-Wodonga Campus. A case study by Greg Keppie, who completed his project in 2013, is included in Breakout Box 8.
- **The Wagga Wagga Cluster of the Sustainability Advantage Program**, a NSW State Government initiative which CSU is involved with, provided CSU Green with the opportunity to engage several external organisations in the Green Steps @ CSU program. CSU Green promoted the benefits of hosting a Green Steps student to the external partner organisations involved in the Wagga Cluster, and also highlighted the benefits of running a Green Steps @ Work program.

Partnership and Engagement is a key priority area for CSU Green, to achieve behaviour change amongst CSU staff, students and the external community

PARTNERSHIP AND ENGAGEMENT

Top: SSN Wagga field trip to Kurrajong Recycling facility
Middle: Bike polo in NSW Bike Week Wagga
Bottom: Tree Planting Day -'The Dustbowl' Wagga

- **The Staff Sustainability Network (SSN)** is still actively subscribed, with 44 staff members across the University committed as members.

In 2013, CSU Green introduced a new benefit for SSN members, by holding special events specifically for staff members involved with the network. Interested SSN members at the Wagga Wagga Campus were taken on a field trip to the Kurrajong Recycling Centre. All that attended thoroughly enjoyed the trip and found it extremely eye opening in relation to the amount of waste a community the size of Wagga produces, and the proportion of waste that can be recycled.

Wagga Wagga SSN members were also offered the chance to watch a special documentary film event in Albury, which was opened by CSU lecturer Dr Jonathon Howard. The documentary was called 'Chasing Ice' and captured receding glaciers over five years by the photographer James Balog.

The success of these special SSN events for Wagga Wagga staff will see this initiative continue in 2014, and also expand to staff members at CSU's other campuses.

- **NSW Bike Week** in September and **National Ride 2 Work Day** in October were well subscribed by CSU staff at several campuses. CSU Graphic Design students assisted CSU Green to develop the promotional material for NSW Bike Week (see Breakout Box 2).

Each campus held different events, ranging from 'ride to campus' events with a free breakfast provided for riders, to scavenger hunts, mountain biking and even bike polo.

These events engaged a number of staff members across the organisation who thoroughly enjoyed the activities. There was a record number of ride to campus participants in Wagga for both Bike Week and Ride2Work events:

- **National Tree Planting Day** engages the community in planting trees to increase habitat for native fauna, increase soil health and reduce soil erosion.

In 2013, National Tree Planting day campus coordinators timed the date of tree planting to suit the climate of their geographic locations.

Facilities Management staff at the Albury-Wodonga Campus worked with Crown Lands to co-facilitate an event along Six Mile Creek.

PARTNERSHIP AND ENGAGEMENT

At Wagga Wagga, CSU Green was contacted by a residential student to plant the area around cottages, commonly called 'the dustbowl'.
A large number of students participated in the planting activitity.
Tree planting days were also held at the Orange and Dubbo Campuses, with the Orange event in particular attracting a high number of students.

Engagement

To assist CSU Green in actively promoting events and initiatives on campus to engage staff and students CSU Green hired a CSU Graphic Design student as an intern.

Eliza Batkin was the successful applicant and effectively designed engaging posters, flyers and everything promotional throughout 2013. She even assisted CSU Green in coordinating NSW Bike Week events across the organisations.

Eliza Batkin
CSU Green Graphic Designer

As a new staff member, Eliza had to undertake the CSU staff induction, which now features a page dedicated to CSU Green.

The inclusion of a CSU Green page within the University induction is a demonstration of the importance of sustainability at CSU. Although not compulsory, it provides resources for interested staff members.

Professional Development

The CSU Training initiative, Introduction to Sustainability in the Workplace, was well supported by CSU Green during 2013 with 80 staff members undertaking the training.

The training, co-facilitated by Judy Doulman (CSU Training) and Nicola Smith (CSU Green), provides staff members with the opportunity for professional development.

Staff develop a greater understanding of sustainable living and the life cycle of products, whilst implementing a workplace project and becoming accredited with a certificate for the unit of competency. A number of staff received their certificates of competency at the CSU Training graduation in November 2013.

The remaining 20 places for the free training will be offered to staff at the beginning of 2014. The workplace projects which staff completed provided fantastic workplace outcomes. A selection is described in more detail in the table on page 18. The complete list of workplace projects is available on the CSU green website.

Partnerships

A new partnership for CSU Green in 2013 was formed with Oz Green, an Australian organisation that leads social change for school children, adults, corporations and communities.

CSU Green provided funding for advertising and on-campus venue hire to run the Oz Green Youth Leading the World symposium, and funded five students to attend and complete the facilitation training.

This opportunity provided the CSU students to increase their understanding of sustainability and social change. CSU students also facilitated the symposium to school-aged children.

Youth Leading the World symposia were conducted across Australia at the same time so each group could connect virtually, and share learning and experiences.

Active Transport

Another initiative CSU Green worked on during 2013 was engaging staff and students to use active transport to commute to / from and around CSU campuses.

There has been progression in this area with the introduction of a staff bikes at the Port Macquarie Campus and several areas of the Wagga Wagga Campus.

To accompany the promotion of bicycle use at the University, CSU Green has been actively installing bike parking facilities around its campuses (refer to Breakout Box 7).

2014 Initiatives

In 2014, CSU Green will continue to trial new events and initiatives to engage staff and students across all CSU campuses.

A new **'Grass Roots'** grant program will also be trialed in 2014. This program will be run biannually with a funding pool of $15,000, capped at $1,000 per project.

The aim of this program is to provide funding to staff and students to implement small workplace or campus projects that engage colleagues and peers at the local level, whilst assisting CSU to meet its Sustainability targets.

Left: Staff commuting to Orange campus by bicycle

Right: Bike parking for commuters at the Wagga Wagga Campus

Staff Workplace Projects

Project
Container Containment

Division/ Faculty/School
Charles Sturt Campus Services (CSCS)

Overview

Aim: To create a safe and appropriate method to dispose of the large amount of plastic chemical containers that CSCS use, supplied by True Blue,across all CSU campuses.

Outcome: It was identified that the plastic containers being recycled are type 2, high density polyethylene. True Blue did not have a recycling system in place that would suit the needs of CSCS, so they worked through Cleanaway, a company already contracted with waste management at CSU's Bathurst and Orange Campuses. Recycling of the containers is now taking place for the first time, which is a great outcome.

Project
Sustainability Improvements; Gordon Beavan Building

Division/ Faculty/School
Facilities Management & Student Learning

Overview

Aim: To reduce the waste and energy footprint of the Gordon Beavan building, one of the largest users of energy at the Albury-Wodonga Campus and also one of the hardest to sustain due to its large number of occupants and variety of divisional areas.

Outcome: The project has already achieved an approximate 5% reduction in energy use by implementing small changes that required only minimal funding, including information on notice boards, waste management systems and minor works on the heating and cooling systems. Larger improvements have been investigated and presented to the Division of Facilities Management for potential funding over coming years.

BB4. Campus Environmental Committees

ALBURY-WODONGA

The Albury-Wodonga Campus Environment Committee started 2014 with a positive and ambitious approach. This is the best possible outcome for the committee, which took a break during 2013.

Returning members, and some new faces, were welcomed at the Committee's first meeting for 2014 in February. The Committee is made up of staff and students, all passionate about working towards an environmentally sustainable community.

The team has great direction for the year ahead, including:

- Creating links with other CSU Campus Environment Committees
- Facilitating project work
- Establishing two-way communication between CSU campuses and CSU Green
- Creating clear strategies to embed concepts of sustainability in education
- Celebrating the successes of the Committee
- Working to embed sustainability in all aspects of the University with honest appreciation of unsustainable decisions, and
- Working out ways to balance strong environmental issues with the broader CSU community. It sure looks like the Albury-Wodonga Campus Environment Committee has a busy, yet rewarding year ahead.

BATHURST

New faces and returning members were welcomed into the Bathurst Campus Environment Committee for 2013.

Simon Wright was welcomed as the new Committee Chair, replacing James Ellibank-Murray, who farewelled the Committee in mid-2013. The Committee extends thanks to James for his hard work and commitment.

A great mix of returning and new members created a strong framework for the Committee to solider on and complete some tremendous projects throughout the year.

Growing collaborative partnerships was a key focus of the group in 2013.

An exciting journey which began after the Committee invited external stakeholders to attend the Bathurst Campus launch of the 2012 CSU Green Scorecard.

Since that initial invitation, where seven representatives from Bathurst and surrounding environmental bodies attended, the Committee has worked towards forming a Reference Group.

The Reference Group proved to be a resounding success in 2013, allowing external perspectives to help shape the Committee's focus and create community partnerships.

The Bathurst CEC worked with the Bathurst Regional Council to help remove tyres from Hawthornden Creek, which runs from Mount Panorama to CSU. The tyre removal has allowed for controlled water flow back in to the creek and was partnered with revegetation and bank strengthening work.

On the back of a busy 2013, the Bathurst Campus Environment Committee is looking forward to continuing their success in 2014.

The Committee is working towards creating an interpretive environmental walk through Bathurst Campus and will continue to build working relationships with external bodies.

BB4. Campus Environmental Committees

Bathurst CEC at Hawthornden Creek:

Members of the Bathurst Campus Environment Committee on a site visit to Hawthornden Creek, Bathurst.

DUBBO

Dubbo Mayor Mathew Dickerson rolled up his sleeves and helped the Dubbo Campus Environment Committee during the annual tree-planting event in 2013.

Councillor Dickerson was one of many who helped make the event a success, with numerous trees planted across the Dubbo Campus.

In addition, Dubbo campus took part in National Ride2Work Day, choosing to leave the car at home and pedal in to the campus. 2014 is shaping up to be a proactive year for the Committee.

There are plans to increase promotion of the Committee to students and the wider community. The group identified two key projects, water management and solar energy.

A Reconciliation and Cultural Diversity Garden has been proposed for the campus and the Committee will work hard to see this project come to fruition.

The Committee is also working with CSU Green to establish dedicated biodiversity areas on the Dubbo Campus. This is part of a CSU-wide approach driven by CSU Green.

Dubbo CEC at work: Tree planting day with Dubbo City Mayor (left). Kevin Faulkner tree planting (right).

BB4. Campus Environmental Committees

ORANGE

Orange Campus Environment Committee had a productive and rewarding 2013. The team successfully obtained two CSU Green sustainability grants, one to assess soil health, the other to work collaboratively with other campuses to establish eco-residences on site.

The committee oversaw a campus biodiversity survey. The subsequent report from this research will be a valuable resource for future planning of the campus and works towards the University's commitment to improving biodiversity across each campus.

Working in partnership with CSU Green, the committee also helped to achieve major waste recycling changes at Orange. This was part of the University-wide waste-management changes, which included installation of waste stations, the introduction of smaller office waste bins and paper recycling boxes.

Tree planting was a significant focus for the group in 2013. The tree propagation group planted suitable local species of trees and shrubs across campus and worked in association with the farm management group.

Orange staff and students, under guidance from the Campus Environment Committee, also took part in National Tree Planting Day.

Orange CEC:
Orange CEC tree planting

WAGGA WAGGA

It was a busy year for the Campus Environment Committee at Charles Sturt University in Wagga Wagga in 2013.

As usual the team was committed to bringing about positive environmental changes at CSU, and last year the wheels were set in motion for the Committee to tell the University, and the wider community, about their positive moves forward.

With a view to increase student awareness of sustainability initiatives happening on campus, the Wagga Committee turned to multimedia services for publicity.

Banners were placed on the student web portal, **student.csu.edu.au**, displaying projects such as CSU's new waste recycling system, the installation of a new water management system and the Bokashi compost.

The Committee was also instrumental in having sleep mode installed on all computers to help reduce electricity consumption and will continue this year working on having an Eco Walk created across the campus. The walk will take in significant sites on campus, with maps and signage installed along the walk.

The Eco Walk, along with other varied and environmentally friendly projects, will keep the Wagga Campus Environment Committee busy during 2014.

BB5. Sustainability Grant Program - Stream One (General)

General Stream

Jacqueline Tinkler
(School of Education)
Indigenous food garden Wagga

The annual CSU Sustainability Grant program saw in its fifth year in 2013 and diversified into a two stream grant program, with an expansion of the funding pool. The two streams, general and research, were both well subscribed in 2013.

Stream One

Stream One was divided into two categories - small and large projects. The small projects category followed the original Sustainability Grant funding model.

Submissions for funding are capped at $15,000 per project from a funding pool of $60,000.

The new large project category was for a project offering substantial University-wide engagement potential and resource savings. Only one grant of up to $50,000 was offered in this category. The process required an initial Expression of Interest (EOI) briefly detailing the project and its predicted outcomes. EOIs which were deemed to be appropriate were then asked to submit a more detailed grant application.

In 2013 eleven applications for Stream One small projects were received and out of these, seven were successful in receiving funding. Two of the successful applications were from student groups and one successful application was from the Ontario (Canada) Campus.

This was the first time a Sustainability Grant has been awarded to the Ontario Campus. There were two EOIs for the Stream One large grant and one of these was successful. The applicant, Residence Life, was awarded funding of $48,000. A selection of the successful Sustainability Grant projects are described in more detail in the table on page 22 and 23.

Stream Two

Stream Two of the CSU Sustainability Grant program, the research support stream, is covered in more detail on page 11. Details of all successfully funded grant projects from 2009 to 2013 are available on the CSU Green website at:

csu.edu.au/csugreen/grants

Project
Eco-Living at CSU

Contact
Jo McRae
(Residential Life)

Funding ($)
$48,000

Overview

This project will fund the conversion of a residence on each of the Albury-Wodonga, Bathurst, Orange and Wagga Wagga Campuses to become an 'Eco-Living Residence'. This will provide the first example of theme living at CSU. 'Eco-Living' will gather like-minded students together to promote sustainable living within the CSU Halls of Residence.

The project will increase awareness of sustainability principles and practices across all campuses, with the ability for growth and expansion in future years. Seminars linked to sustainable living will be held in all Residential Precincts, allowing Eco-Living residents to share their knowledge and experience with other residential students, to promote sustainable living across the student resident community.

BB5. Sustainability Grant Program - Stream One (General)

Project
Re-Cyclery

Contact
Gemma Hawkins (Student)

Funding ($)
$918

Overview

This project, run by the student EcoActive Club at the Wagga Wagga Campus, aims to encourage CSU staff and students to use bicycles on and off campus. It will do this by a number of means, including sourcing recycled bikes from the tip shop, to help students and staff gain ownership of a bike.

Education and assistance in bike maintenance and repair will be provided by trained staff and student volunteers, and a collection of tools will be available for use by CSU bike riders. A series of events and information sources will also help encourage the use of bikes. For more information:

contact: greenbikefarm@gmail.com

EcoActive's Green Bike Farm
Raised garden bed (left). EcoActive members at the recyclery (right).

Project
Beekeeping

Contact
Malcolm Bauer (Student)

Funding ($)
$3,696

Overview

This project aims to create a functioning apiary on the Wagga Wagga Campus for staff, students and the wider community to learn about and participate in beekeeping. The project is being run by the Beekeeping Club, a new student club established in 2013. The Grant funds will be used to purchase materials to establish the first three hives on the Wagga Wagga Campus.

This functioning set up will provide an educational tool, for those interested in beekeeping to learn how to set up their own hive systems at home to produce honey and bee-associated products. The bees will also provide a pollination service for the surrounding agricultural areas. The hives will also have the potential to act as a research resource in the future.

Grant applicant Malcolm Bauer (left) Bee Keeping club members building hives (middle) Constructed hives (right)

BB6. CSU Greeners Student Group

Ontario Campus Canada

Sustainability-minded students from CSU in Ontario have come together to start the CSU Greeners. The CSU Greeners student group is focused on introducing sustainable practices to CSU in Ontario. The initial activities of the committee are being funded through a CSU 2013 Sustainability Grant project.

Nicola Smith of CSU Green spoke to Dr. Randa Khattar, a Lecturer within the School of Teacher Education, and a member of the CSU Greeners about how and why the group started, and the plans they have for the future.

How was the CSU Greeners group formed?

I circulated an invitation to create a committee of students comprised of Bachelor of programs. Our committee is built from environmentally compassionate volunteers dedicated to transforming our campus into an environmental model comprised of respect, knowledge and responsibility.

How many people are there in the CSU Greeners? Is it solely a student based committee?

Our committee is comprised of eight BPES students and five BECS students. It is supported by two faculty members. Interest is presenting itself in the student body, as our presence is becoming more visible, and general enquiries and questions are illuminated in topics of conversation.

Do the CSU Greeners have a particular vision or a focus?

The committee's focus is to create a 'green state of mind' for CSU. We foster our ideas to create a greener space on campus. We have identified opportunities to engage prospective students. This approach enables us to maintain momentum in the initiatives we have started.

Tell us about the environmental projects CSU Greeners are working on or planning.

CSU Greeners are represented through social media and we have implemented an item-swap centre on-campus to share resources with our peers. Our environmental audit has identified a number of campus initiatives, these being: the need for a green bin to compost; a review of the use of styro-foam cups; and an assessment of paper consumption, with theconsideration of switching to recycled paper.

How will the CSU Greeners use the CSU Sustainability Grant funds?

We feel the grant money will be best allocated to the outcomes of the environmental audit, including the green bin initiative.

Tell us about sustainability and recycling practices in Canada and how CSU has adapted to them.

CSU embraces the recycling practices in Canada by recycling aluminium, plastic and paper waste. Adding a green bin composting solution to our program will take us one step closer to minimising our overall disposal of landfill waste. By striving to create a 'green state of mind' on campus, our committee is honouring the sustainability directions and attempts of Canadian practices.

Why do the CSU Greeners see it as important to drive behaviour change in sustainability?

We believe behaviour change in sustainability starts with us. We have the capability of being role models for others, and as educators we can create positive change with knowledge and dedication.

CSU Greeners Student Group

CSU Greeners
Ontario Campus Canada

BB7. Shifting Up a Gear

Pushbikes

Pushbikes were the gift of choice at the end of 2013, with CSU Green presenting nine bicycles to staff on the Wagga Wagga and Port Macquarie Campuses.

The bikes will help Wagga staff zip quickly across campus, while in Port Macquarie staff will be able to pedal between the campus and office locations – a distance of about 1.1 kilometres.

Port Macquarie received six new bikes, while in Wagga bikes were presented to the Faculty of Arts, the School of Biomedical Sciences and one special delivery to Deputy Vice-Chancellor (Administration) Professor Ken Dillon.

The staff bike program is CSU Green's way of working towards our mission of reducing University emissions, creating vibrant, healthy campus lifestyles and promoting active means of transport.

The program couldn't have been successful without the help of local businesses in each town. In Wagga, Kidsons Cycles were the successful applicant from an expression of interest process. Kidsons generously donated two of the bikes to CSU and will conduct all maintenance on the bikes for the next two years.

In Port Macquarie, the bikes were purchased from Gordon Street Cycles who will do all maintenance on the staff bikes over the next few years.

The bike initiative was a first for the University in 2013, and CSU Green looks forward to continuing the program across other campuses in the future.

New Staff Bikes

Muyesser Durur receiving staff bike at the Port Maquarie Campus (top left).

Jennifer McKinnon, DVC (Administration) Ken Dillion and School of Biomedical Sciences staff receiving staff bikes at the Wagga Wagga Campus (middle left to bottom right).

BB8. Green Steps

Greg Keppie
Bachelor of Environmental Science

Assessing the sustainability of an existing building's operation is a relatively easy task - appliances display energy-efficiency ratings, gas and energy companies display usage charges, and building systems can even issue alarms when utility usage is high. But what about the carbon footprint of a building during construction and the materials it comprises?

CSU student Greg Keppie, set about answering this question, and produced some interesting results on embodied carbon reduction along the way. Greg undertook this project as part of the Green Steps @ CSU sustainability training and internship program (see page 15).

Greg has more than 20 years' experience in the construction industry, working his way up from apprentice, to small business owner and site foreman. He believes the industry could be doing more to lower the amount of carbon used in the assembly of a building. *"In my experience, there has been no consideration of the embodied carbon in building materials in any of the construction projects I have been involved with,"* he said. *"I believe there is a need for reducing carbon. The construction of a building is an area where significant reductions can be achieved."*

A building's embodied carbon is a calculation of the total carbon emissions produced during the manufacturing, transport and assembly on site of materials, through to their maintenance, replacement, disassembly and decomposition.

Greg's Green Steps research project involved calculating the embodied carbon per square metre of floor area for three different buildings located on CSU campuses.

All of the buildings were less than 5 years old. Each building was designed for different purposes and used a mix of similar materials, or slightly modified versions of the same materials, for construction.

Greg said the project unearthed some interesting results. *"The most surprising result was finding out that embodied carbon can quite easily be reduced, at a lesser cost than using conventional materials,"* he said. *"There was a significant reduction in the embodied carbon contained within concrete when the cement content was reduced by 20 per cent and replaced with fly ash, a by-product of coal combustion. A similar result occurred when new steel reinforcement was replaced with recycled steel."*

"The results show that significantly lower amounts of carbon dioxide can be achieved by selecting alternative materials with a lower ratio of embodied carbon."

Greg said the Green Steps program was a valuable learning experience, one that allowed him to further develop his skills and knowledge in sustainability. It also helped him work towards his long-term goal of having a career related to reducing human impacts on the environment.

"The Green Steps program develops knowledge, confidence and motivation for sustainability. The main focus of the course being to enable students to become change agents.

BB8. Green Steps

For anyone passionate about the environment we live in, this course is an excellent means of becoming someone who can make a difference."

Building projects he has worked on include Taronga Zoo in Sydney, the Sydney Cricket Ground and the M5 tunnel.

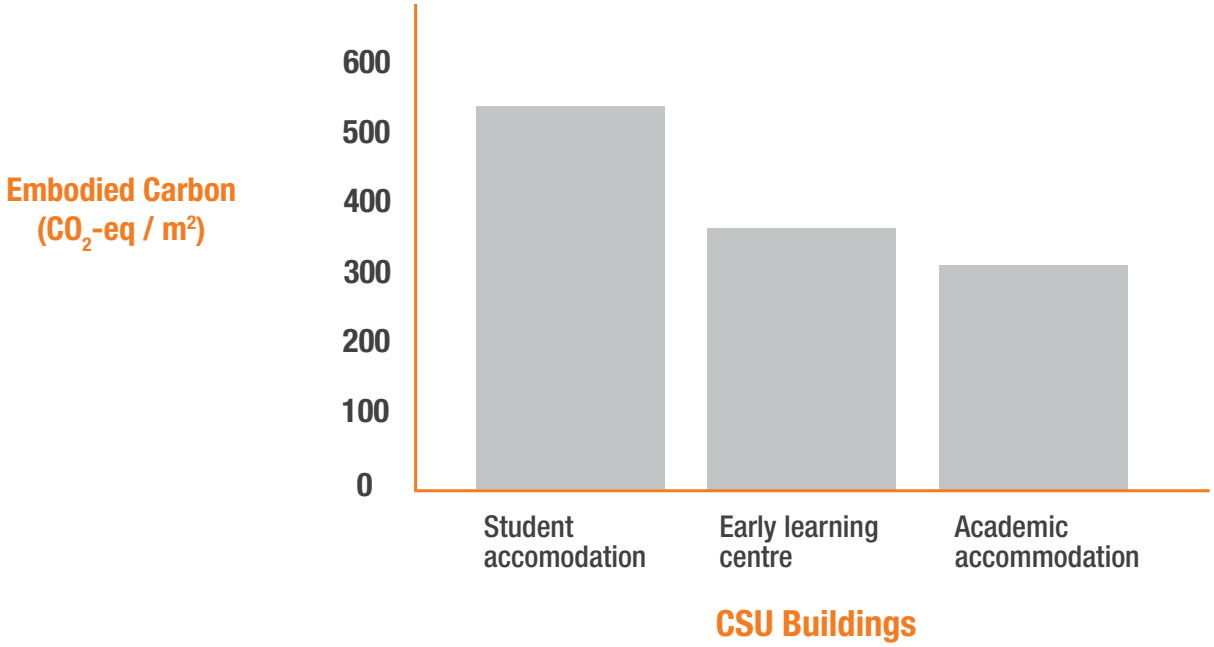
In 2010, seeking a career change, Greg enrolled in a Bachelor of Environmental Science with CSU.

Embodied Carbon Project Outcomes

Academic accommodation (Albury)

Early learning centre (Albury)

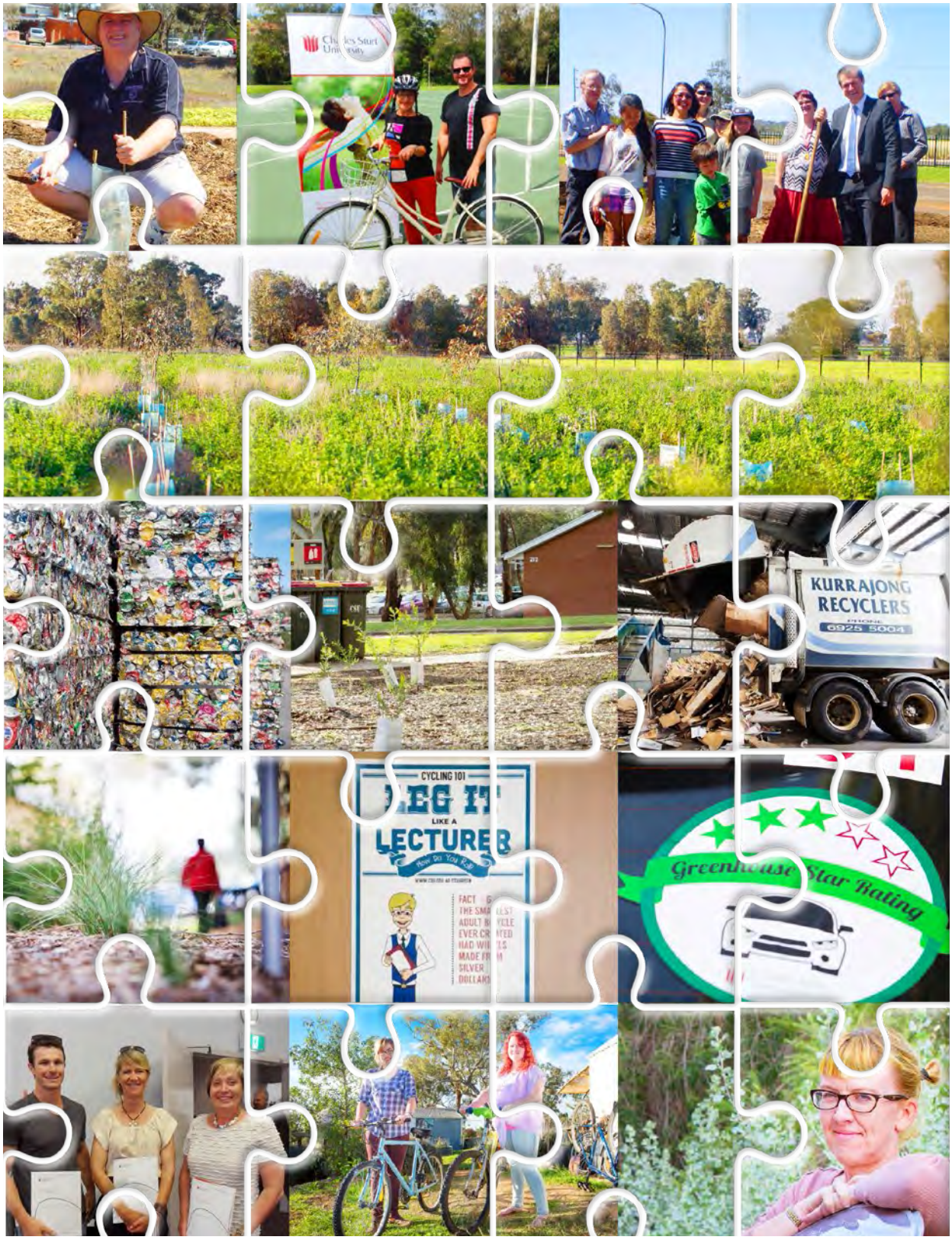
Student accommodation (Wagga)



Primary reasons for lower embodied carbon in Academic Accommodation:

- Floor slab accounts for greatest proportion of CO_2-eq
- Slabs similar for each building
- Academic building utilised recycled content in steel reinforcing and concrete (fly ash content in aggregate).

Note that lined steel frame vs pre-cast concrete walls offered lower material and CO_2-eq content.



A montage of student, staff and community engagement initiatives and events during 2013

Left to right along lines from top: Kevin Faulkner tree planting (Dubbo); Muyesser Durur receiving staff bike (Port Macquarie); Dubbo Bike Week with Mayor; Tree planting site on CSU Farm (Wagga); Compressed cans for recycling at Kurrajong Recyclers (Wagga); Tree planting and waste management station at student residences (Wagga); Cardboard delivery for recycling (Wagga); School of Education Indigenous food garden (Wagga); Leg It Like A Lecturer Bike Week poster (GRP322); University fleet star rating sticker; DFM Staff members (Ben Moore, Betty-Ann Nannes and Therese King) graduating with BSBSUS301A Sustainability in the workplace training; Student garden and recyclery (Wagga); Jacquie Tinkler grant recipient for Indigenous food garden (Wagga).

FACILITIES AND OPERATIONS

The 'Facilities and Operations' section provides a report into:

- The environmental impact of CSU's physical infrastructure and facilities
- Progress towards achieving targets designed to reduce this environmental impact
- An overview of the individual projects or initiatives which have been undertaken in the reporting year to achieve this progress.

CSU operates a significant portfolio of facilities (e.g. lecture halls, student residences and student social spaces) in order to support CSU's learning, teaching, and research activities. CSU recognises that these facilities have an environmental footprint, and as a result, organisational targets to reduce this footprint have been established.

A budget has been allocated to CSU Green to implement a range of cost-effective projects and initiatives to reduce the environmental footprints of CSU's facilities through the achievement of CSU's 'Operations and Facilities' sustainability targets. This section of the Scorecard will provide an overview of the progress that has been made in the 2013 calendar year towards achieving these targets.

For additional information regarding CSU's infrastructure and facilities, targets or the projects that are being undertaken to achieve these targets, please do not hesitate to get in touch with CSU via the CSU Green website:

csu.edu.au/csugreen

CSU facilities have an environmental footprint, and as a result, organisational targets to reduce this footprint have been established.

CSU Facilities

Aerial photographs of CSU Orange Campus (left) and CSU Dubbo Campus (right).

C1. Carbon Neutrality

TARGET

- Be greenhouse neutral by 2015

2013 saw the continued trend in the reduction of greenhouse gas emissions at Charles Sturt University (CSU), with a reduction of 1,556 tonnes of CO_2 equivalent calculated compared to the 2012 calendar year. The majority of this reduction can be accounted for within the stationary energy and flights components of CSU's carbon footprint. Areas where savings were made include:

- **Significant reduction in natural gas consumption** on two of CSU's biggest campuses - Wagga Wagga and Bathurst. Approximately 10,000 GJ and 8,000 GJ respectively were saved on these campuses. These energy savings are discussed in more detail in section C2 page 33.

- **Significant reductions in the numbers** of 'domestic' and 'international' flights taken by CSU staff and students. This will be elaborated on in section C6 page 45 of the document.

The second year of operation of CSU's facilities in Port Macquarie was responsible for the generation of 88 tonnes of CO_2 equivalent a rise on 2012 campus emissions but still less than 1% of CSU's carbon footprint.

The Environmental Scorecard will continue to monitor the impact on CSU's carbon footprint which results from the establishment of new facilities in Port Macquarie over the coming years.

2015 is the year in which CSU has targeted to achieve organisational carbon neutrality. A number of activities will need to be undertaken during the 2014 calendar year in order for this target to be achieved:

- Continuation of an aggressive energy efficiency program incorporating the establishment of cogeneration at CSU in Bathurst, and implementation of an Energy Performance Contract across CSU in Bathurst and CSU in Wagga Wagga

- Investment in onsite renewable energy generation

- Engage a carbon offset provider to provide CSU with accredited carbon offsets. While a number of energy and waste reduction projects are currently being implemented (see sections C2 & C4) there will still be a significant emissions 'gap' which will need to be 'offset' on an annual basis if CSU is to achieve the accredited 'carbon neutrality' status under the National Carbon Offset Standard (NCOS). Offsets can take a number of forms, however, CSU will work within the NCOS guidelines to ensure that are appropriately certified.

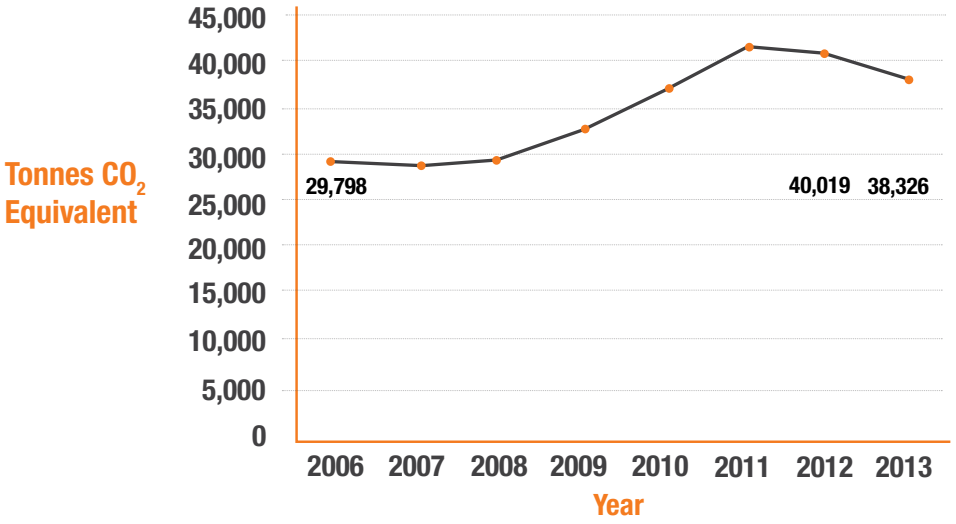
- Finalise the boundaries of CSU's 'carbon footprint to include all relevant activities identified under the National Carbon Offset Standard (NCOS). For example, under the standard, CSU may need to quantify and account for greenhouse gas emissions associated with staff and student commuting to and from campus.

This is something that CSU does not currently account for. The next edition of the Environmental Scorecard will provide an update to the University as to the outcome of the activities above.

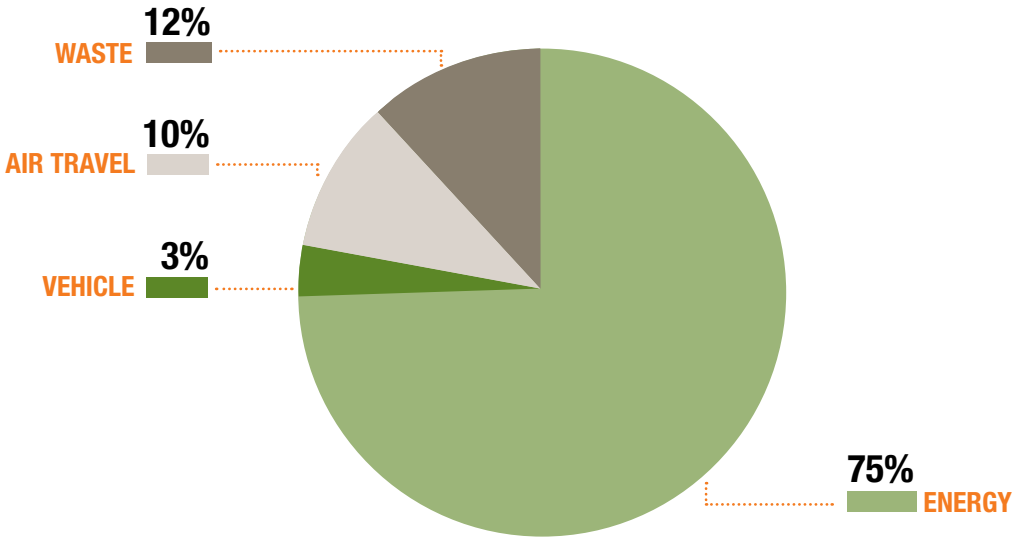
Kurrajong Waratah Material Recycling Facility (MRF)

Emissions from the disposal of waste to landfill are a significant contributor to CSU's carbon footprint. Maximising the redirection of recyclables to materials recycling facilities, such as Kurrajong Recyclers in Wagga Wagga, is one way that these emission sources can be reduced.

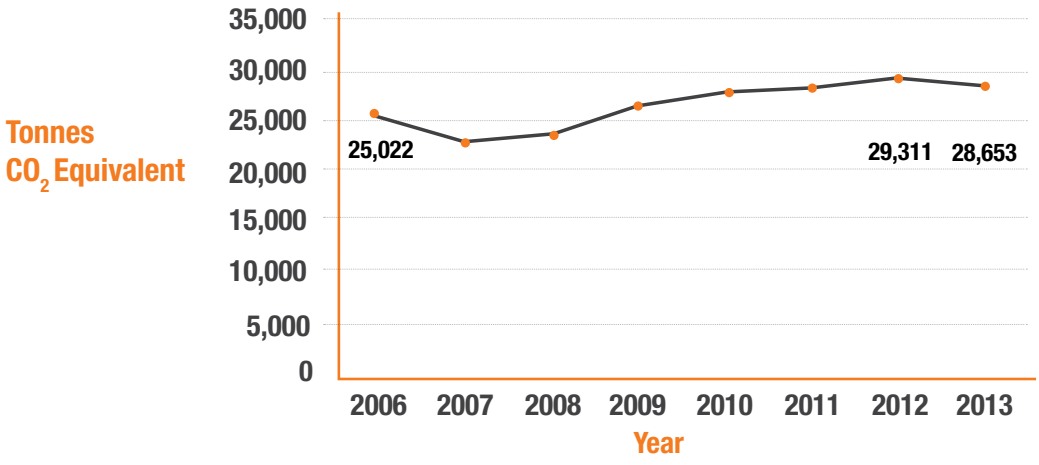
CSU's Greenhouse Gas Emissions



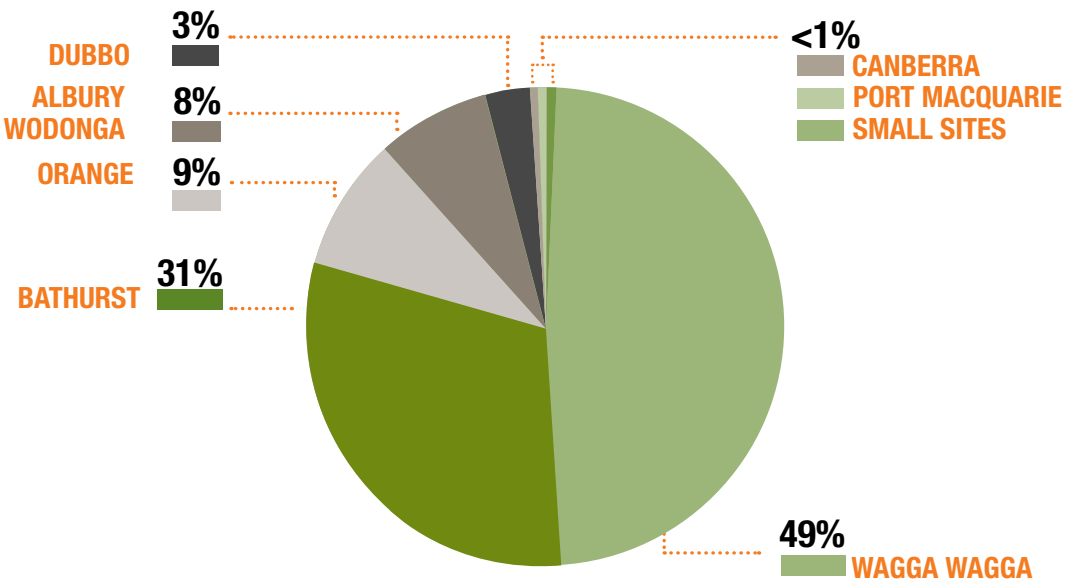
CSU's Greenhouse Gas Breakdown (CO_2 equivalent)



CSU Total Energy Related Greenhouse Gas Emissions



GHG Emissions Due to Energy Consumption By Campus (CO_2-equivalent)



BB9. Personal offsetting by CSU's Vice-Chancellor

Personal Offsetting

CSU's Vice-Chancellor, Professor Andrew Vann, is leading by example when it comes to minimising his carbon footprint. As part of his remuneration package negotiated with the University, Professor Vann has personally offset the greenhouse gas emissions generated as a result of his University-related business.

This includes vehicle travel, air flights and a proportional component of CSU's stationary energy related emissions (i.e. electricity and natural gas) calculated at 130 tonnes CO_2-eq in 2013. The offsets purchased by Professor Vann contribute to the protection of native forestry located on private land in the Central Highlands of Tasmania.

This land and the biodiversity it supports, including the iconic Tasmanian Devil and the Spotted Quoll, would have been cleared if not for the additional income generated through the creation of carbon offsets for the voluntary market.

For more information on this project, see:

climatefriendly.com/Projects/Projects/Project_Resources/Tasmania_Native_Forest_Protection_(2)_Project_Profile/

C2. Energy Reduction

TARGET

- Compared with 2006, achieve a 25% reduction in normalised energy consumption (MJ/m^2 of Gross Floor Area) by 2015.

In 2013, the University achieved a 15% reduction in normalised energy consumption compared with 2006.

This is, to date, the lowest normalised energy consumption which has been recorded by the organisation since the establishment of the 2006 target.

In 2013, the University achieved a 15% reduction in normalised energy consumption compared with 2006. This is, to date, the lowest normalised energy consumption which has been recorded by the organisation since the establishment of the 2006 target.

The biggest contributor to this reduced energy consumption was the significantly reduced natural gas consumption which was recorded at the Wagga Wagga and Bathurst Campuses. The reduction in gas consumption from 2012 to 2013 was 19,000 GJ – equivalent in dollar terms to approximately $110,000.

This decrease can be attributed to several improvements completed across CSU's campuses in recent years. In particular, an upgrade of the main gas supply line across the Wagga Wagga Campus was completed in late 2012. The new main replaces a much older main which had developed a number of leaks. While some of these leaks were major enough to have been detected and repaired, a number of smaller leaks would have been almost impossible for Division of Facilities Management (DFM) staff to identify and repair.

Additional gas metering, due to be installed in 2015, will further assist DFM staff by developing a 'mass balance' of gas consumption for all of its major campuses, which will allow leakage in the system to be identified and rectified more easily in the future.

A number of capital upgrades and improved management activities were also completed on the Bathurst Campus. These include:

- An upgrade to the heat exchangers in the satellite boiler plant room, which supply hot water to radiator heaters in the University residences and a number of office buildings across the campus
- Improvements to the balancing of the hydronic heating system in the Macquarie Village student residences
- Improvements in the control of heating and cooling systems in several office buildings.

Several major energy efficiency projects were also progressed by CSU in 2013. Two of these projects - the cogeneration facility to be installed at CSU in Bathurst, and the Energy Performance Contract - are discussed in the Breakout Box 10.

> The decrease can be attributed to several improvements completed across CSU's campuses in the 2013 calendar year.
>
> **- Chris O'Connor (Energy Manager)**

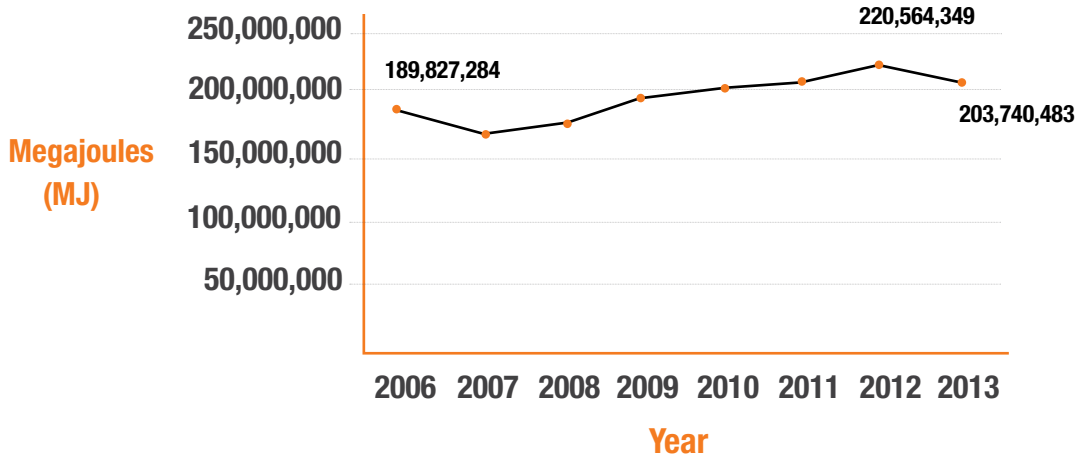
The achievements made by CSU in 2013 provide a timely reminder of the importance of investing in, and maintaining, campus infrastructure.

The challenge will be for CSU to ensure that this investment is maintained as the organisation continues to expand.

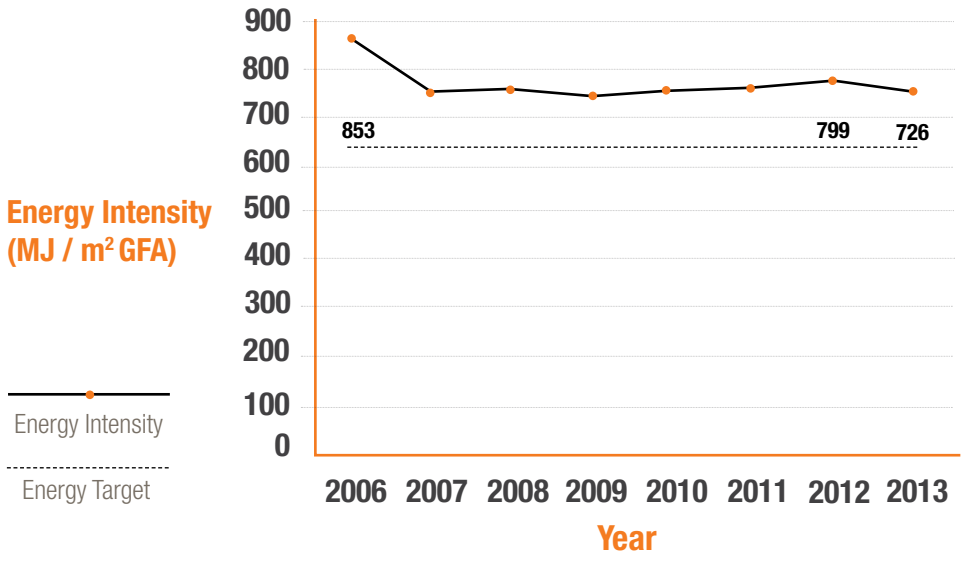
CSU proposes to implement further energy efficiency and renewable energy projects in the coming years, and will be working diligently to achieve the 25% reduction in normalised energy consumption by 2015.

This will also aid significantly in achieving the Carbon Neutrality Target (C1, see page 30).

CSU's Energy Reduction



CSU's Normalised Energy Consumption



BB10. Energy Efficiency at CSU

What does it take to develop an energy-saving project at CSU?

Investing in sustainability projects to achieve CSU's Energy Reduction target is a rigorous process designed to ensure that CSU receives value for money for the goods and services procured. As a publicly-funded organisation, CSU is obliged to tender for the provision of all large-value (greater than $50,000) goods and service utilised by the organisation – and energy savings projects are no exception. The following section provides a brief overview of the procurement process for two of CSU largest investments in carbon reduction and energy efficiency: the cogeneration facility being installed at CSU in Bathurst, and the Energy Performance Contract targeting CSU in Bathurst and Wagga Wagga.

COGENERATION

In 2011, CSU identified that the centralised hot water system at CSU in Bathurst, which supplies hot water and heating for a large proportion of the campus, was a potential site for the installation of a cogeneration system.

The proposed cogeneration system would use natural gas, a low emission fuel, to power a large reciprocating engine to generate electricity for use locally within the campus. It would also provide a source of hot water via heat recovery from the engine's cooling system and exhaust gases. The system is intended to operate 24 hours a day, 7 days per week to supply the campus' base load electricity demands and supplement hot water needs, currently sourced from conventional gas-fired boilers.

The advantages of installing and operating the cogeneration system include:

- Reducing electricity consumption at CSU in Bathurst by approximately 65%
- Achieving a 7% reduction in CSU's total carbon footprint through a more efficient process for generating electricity and hot water than predominantly coal-derived electricity from the local electricity network and hot water from a conventional boiler
- Recovering a useful waste product - heat - in order to assist in supplying hot water demands for campus buildings
- Receiving an attractive financial return on the investment.
- To ensure the benefits above would be realised, a thorough investigation of the cogeneration system needed to be undertaken.

As CSU did not have the in-house expertise to undertake this, an external consultant was engaged.

At the request of the consultant, data loggers were installed on the existing boiler plant to measure temperature and flow of the hot water that was being supplied throughout the campus.

Using 12 months of logging data, the consultant was able to develop a model of the energy demands for the campus's central hot water system. In addition, a full year's worth of 30-minute interval electricity consumption data for the campus was analysed to determine the base load demands (ie the minimum demand that occurs in a typical day – generally at night). This data was used to determine the optimum size of the cogeneration system.

The forecast energy and cost savings were modelled to aid in understanding the potential risks of the investment under a range of different scenarios, including:

- The introduction and/or possible abolition of a carbon price;
- Changes to the price of natural gas and electricity;
- Serious mechanical failure of the plant and
- Changes in on-campus demand for heating and hot water.

BB10. Energy Efficiency at CSU

With the modelling demonstrating a beneficial return on investment, the consultant was advised to prepare a technical specification so that the project could be tendered.

CSU Green worked closely with the consultant and the Division of Facilities Management's Procurement and Risk Group throughout the tender process. The final result was the award of a contract to Clarke Energy Australia to install a 637 kW cogeneration system.

Clarke Energy Australia and CSU are currently working on the installation of the cogeneration system, and it is expected to commence operation in mid-2014. CSU Green will outline the energy and carbon savings achieved as a result of implementing this system in the 2014 edition of the Environmental Scorecard.

ENERGY PERFORMANCE CONTRACT

Energy Performance Contracts (EPC's) were first implemented by the United States government in the early 1990's as a means of achieving significant energy savings in government-owned facilities, without requiring any up-front capital (US Department of Energy, 2013). This model has since been adopted and utilised throughout Australia for more than a decade.

CSU's EPC is designed to identify and implement a range of diverse energy efficiency projects at CSU in Bathurst and Wagga Wagga. The development of the EPC involves the engagement of a specialist contractor, called an Energy Savings Conservation Organisation (ESCO).

The scope of the ESCO's role is to:

- Identify cost effective energy and water saving projects across the two campuses
- Prepare a report for CSU demonstrating how these energy and water savings will be achieved
- Implement the energy and water savings initiatives which are agreed to by CSU
- Enter into a performance guarantee for all agreed to energy and water conservation initiatives. This means that if an energy or water saving project does not achieve the claimed savings, the ESCO is liable to reimburse CSU for the shortfall.

Cogeneration plant at Bathurst Campus

Cogeneration plant being lowered into position (left) Cogeneration plant approaching commissioning following the completion of the mechanical fitout (right).

BB10. Energy Efficiency at CSU

A range of initiatives could be identified and considered under the EPC model including, but not limited to:

- Hot water upgrades
- Air conditioning upgrades including smarter controls
- Lighting upgrades
- Fixture updates, such as the installation of lower flow shower heads.

CSU Green worked closely with the Division of Facilities Management Procurement and Risk Group to adapt the NSW Government's EPC procurement templates to CSU's procurement standards before releasing the tender for this project in October 2013.

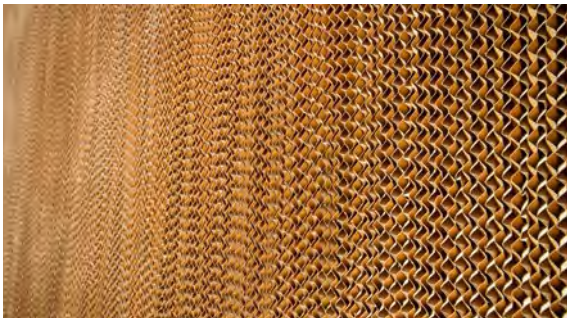
The tender process required all invited tenderers to undertake a rigorous on-site investigation of a representative sample of buildings, nominated by CSU.

The purpose of this investigation was for the tenderers to document and report back to CSU on potential energy and water savings initiatives in these buildings.

The tender closed in early 2014 and CSU Green is in the final phase of evaluating and selecting a tenderer to proceed to the next stage of the project – an investigation into energy and water savings opportunities across selected energy-intensive buildings on the Bathurst and Wagga Wagga Campuses.

CSU Green expects to enter into a formal EPC with the successful tenderer by mid-2014, with work on a range of energy and water savings initiatives to commence soon after.

While the extent of water savings is difficult to estimate at this stage, CSU Green is confident that this project can reduce energy consumption by approximately 10% on both the Bathurst and Wagga Wagga Campuses. This will have a significant impact on CSU's total energy use, and will also aid in reducing the University's greenhouse gas emissions and achieving carbon neutrality.



Air-cooled chiller units at the National Life Sciences Hub
Air-cooled chiller units were installed with evaporative pre-cooling pads. An innovative example of improving energy efficiency.

BB11. Scrolling Displays

Scrolling Displays

CSU operates a sophisticated Building Management System (BMS) across the majority of the larger buildings on its campuses. This system provides a range of building-related information to the Division of Facilities Management.

An important component of the BMS is the energy management module, which allows for remote metering and monitoring of electricity, natural gas and water meters. Given the quality of the data available through this system, CSU Green felt it would be useful to present this data to the wider CSU community in a meaningful way.

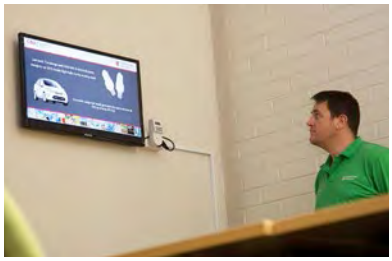
CSU Green has developed a system to display building management information in scrolling displays on digital display screens that are installed in staff rooms and public areas. The information displayed is tailored for each building, so that building occupants can quickly review and understand the impact of their activities on utility consumption within the building.

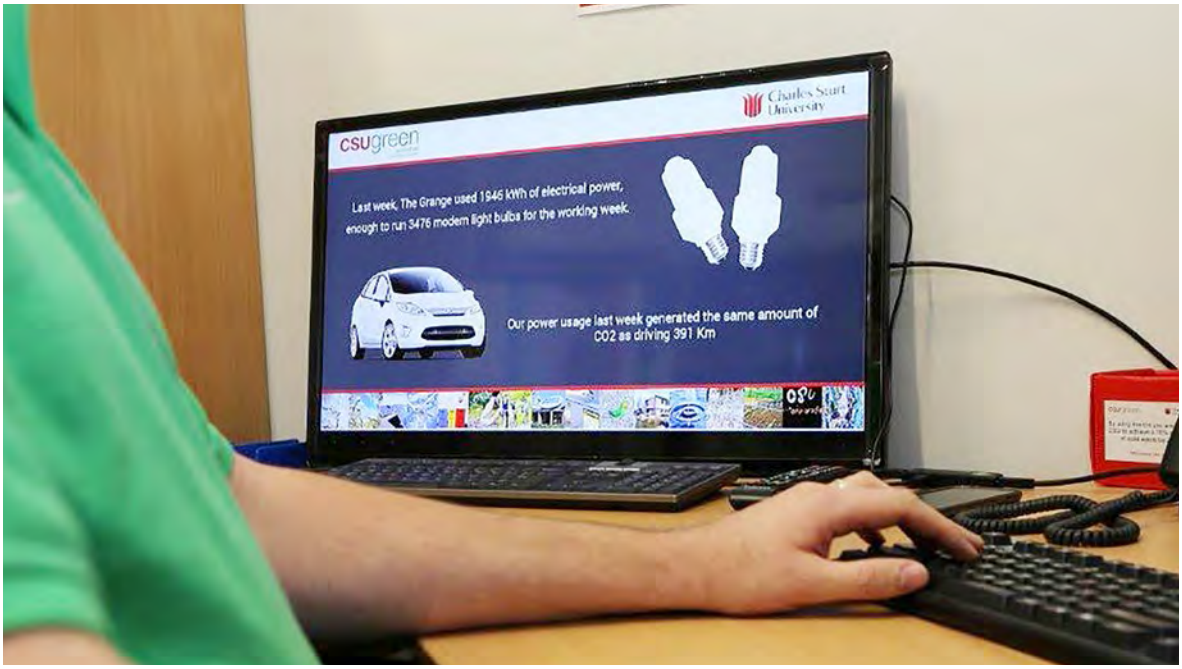
For example, CSU staff could see the impact in electricity consumption when air-conditioning in unoccupied spaces is switched off.

Equipped with visible, easy to understand data, building occupants are able to see the impact of their individual actions on the building's energy and water footprint.

These scrolling displays are proposed to be installed in several high-profile buildings across CSU's campuses, including the Vice Chancellor's building at the Bathurst Campus, and the National Life Sciences Hub building at the Wagga Wagga Campus.

Feedback on the pilot displays has been very positive, and CSU Green will continue to expand the installation of the scrolling displays across University buildings throughout 2014.





Frank Tibbitts (CSU Green) works on the information for the scrolling displays

C3. Water Reduction

TARGETS

- Compared with 2006, reduce absolute water consumption by 25% by 2011 and 40% by 2015
- Achieve a 2% annual reduction in normalised water consumption (kL/m^2 Gross Floor Area) each year after 2015

Water is a significant issue for Australia as the country faces significant challenges in terms of *'ensuring a sustainable water supply in the face of a drying climate and rise in demand for water'* (Department of Sustainability, Environment, Water, Population & Communities, 2013).

As the majority of CSU's major campuses are located in the Murray-Darling basin and in drought prone regions, this issue is particularly relevant.

CSU recognises the value of a sustainable water supply and has established some ambitious water reduction targets which aim to:

- Reduce potable water consumption
- Reduce costs associated with potable water consumption
- Demonstrate, using the campuses themselves, a number of innovative ways in which water can be more efficiently utilised.

CSU has a target to reduce the amount of potable water consumed by the organisation by 40% by 2015. While CSU achieved this target in 2010, 2011 and 2012, the University unfortunately consumed 20% more than the 2015 target water consumption figure in 2013. The major contributors to these increases were:

- A substantial increase in potable water consumption on the Wagga Wagga Campus (approximately 23% higher than 2012). This was predominantly associated with the irrigation water required to support sporting fields and lawns around high profile buildings during the particularly hot summer experienced in 2012-13
- An increase in the area of irrigated gardens and lawns on the Dubbo Campus. While only a small component of CSU's total potable water consumption, the increase in irrigation on this campus led to a water consumption that was triple that recorded on the campus in 2012.

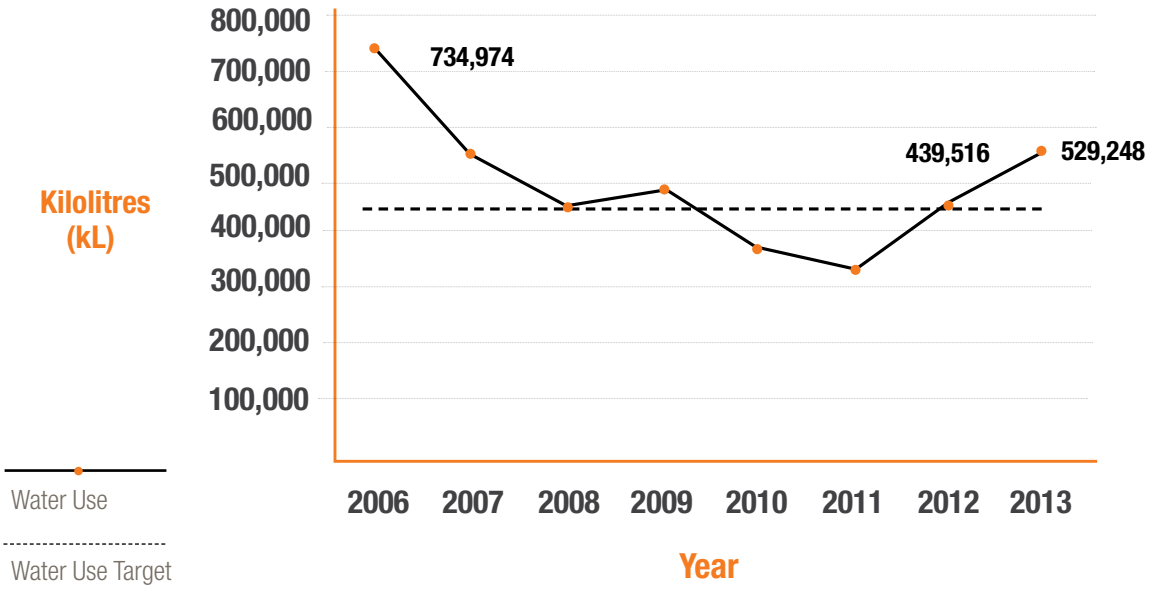
The challenge for CSU is to ensure that the University continues to pursue opportunities for being smarter with the way it consumes water, in order to achieve the 2015 water reduction target and still be able to expand as an organisation.

As noted in the Energy Reduction section (C2, page 33), the implementation of an Energy Performance Contract at CSU's largest campuses is expected to drive a significant reduction in potable water consumption, through better control of irrigation systems.

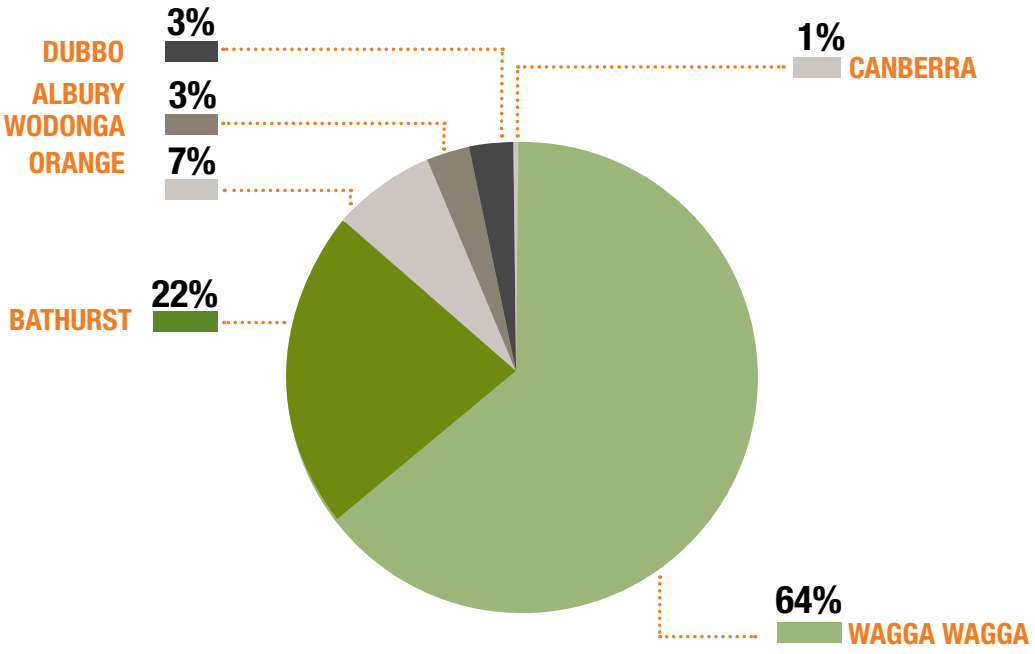
CSU Green is also reviewing opportunities for reducing potable water consumption through rainwater harvesting, grey water harvesting and black water harvesting.

As potable water prices continue to increase in all local government areas in which CSU operates, and the cost of small-scale water treatment technology continues to decrease, the business case for investing in these projects is likely to improve dramatically over the coming years.

CSU's Water Use



CSU's Water Consumption By Campus



C4. Waste Reduction

TARGETS

- Redirect 70% of solid waste from landfill by 2015
- Reduce total solid waste generation by 2% each year after 2015
- Responsible stewardship of potentially harmful waste materials

Waste is a significant environmental challenge for Australia and the world. The generation of unwanted material that needs to be disposed of, often to landfill, creates a number of legacy issues for future generations in terms of contamination of soil and groundwater. In addition, consumerism increases the generation of waste and a huge loss of valuable resources. These could be avoided, reused or reprocessed into other useful products.

CSU has committed to achieving a 70% diversion rate for solid waste from landfill by 2015. This target aligns with the NSW State Government waste recovery target of 'a 66% diversion of waste from landfill by 2014' (Office of Environment & Heritage: Recycling & Waste, 2012).

In 2013, CSU achieved a 33% diversion of waste from landfill, which is consistent with the 35% diversion achieved in 2012. Given the significant improvements in waste infrastructure which were completed across each of CSU's campuses in 2013, this result was surprising.

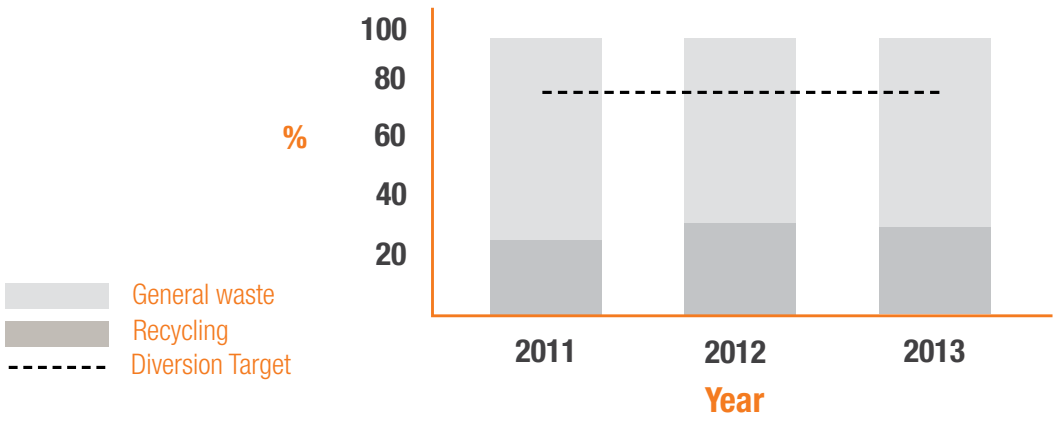
Upon further investigation, CSU Green have determined that the different ways in which CSU's waste contractors record the amount and type of wastes collected from its campuses have skewed these results.

In 2014, CSU will be engaging with its waste contractors to ensure that a consistent methodology is applied to the way in which data associated with the collection of waste from its campuses is recorded.

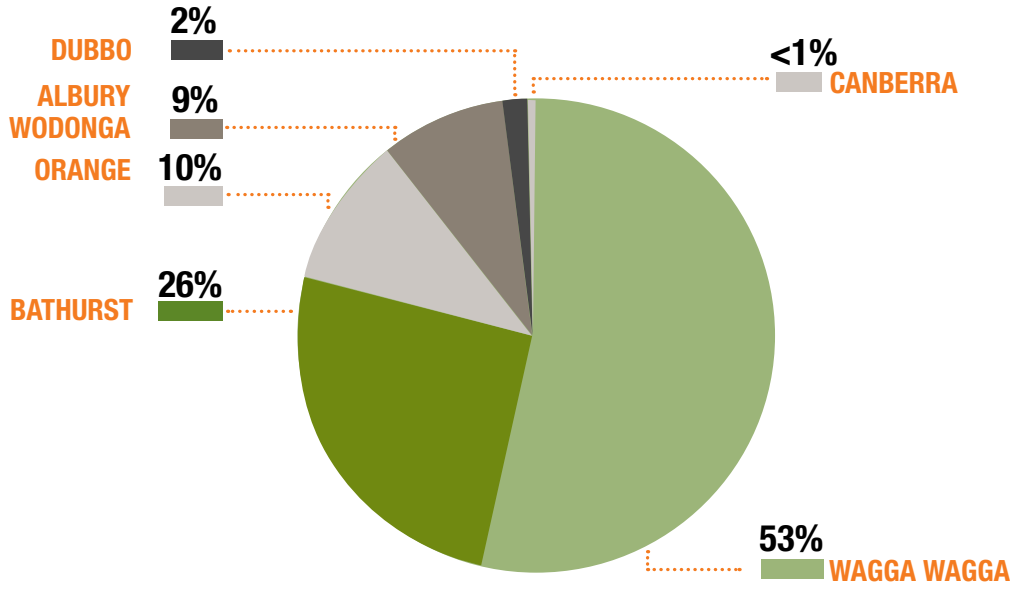
In addition to this, CSU Green will continue in 2014 to investigate opportunities to cost-effectively collect and divert organic waste from the general waste stream.

Discussions are currently underway with the local authorities and waste contractors across CSU's campuses, in order to capitalise and fully realise these opportunities. As organic waste accounts for approximately 50% of the general waste which CSU sends to landfill, significant organic waste diversion initiatives will be of great importance in achieving CSU's waste reduction target.

CSU's Waste Generation



CSU's Waste Generation By Campus (m^3)



BB12. Update on Office Waste Recycling Project

Office Waste

Most staff members of CSU have probably become acquainted with the "red cubes" and associated coloured office bins by now.

This office waste recycling system is one of the systems which have been implemented to assist CSU in achieving its target of a 70% reduction in solid waste to landfill by 2015.

As a result of an external audit, CSU Green discovered that large volumes of scrap paper were being thrown away.

This paper made up a significant portion of the landfill waste in offices, in some cases up to 60%. Providing an option to recycle the paper would result in a large reduction in the amount of solid waste going to landfill.

By providing staff members with separate bins for paper and general waste, we are able to keep the two waste steams separate from the beginning.

However, it should be noted that best practice waste management involves avoiding the production of waste in the first instance.

The greater proliferation of information and communication technologies in the work place is expected to reduce the need for paper consumption over time.

Based on feedback collected from professional/academic staff, cleaning staff and our waste contractors, CSU's general waste stream now contains significantly less paper and other recyclable products, indicating that the new office recycling system is being well utilised.

It is anticipated that this will continue to have a positive effect on achieving CSU's waste reduction targets into the future.

C5. Biodiversity Improvement

TARGET

- Allocate at least 20% of University core campus land to increase biodiversity by 2015

Biodiversity is defined as the 'variety of all life on earth – the different plants, animals and micro-organisms; and the ecosystems of which they are a part' ("Conservation of Australia's Biodiversity", 2012). Given that CSU has significant land holdings across multiple locations in regional NSW, embracing a biodiversity target can demonstrate to local communities the benefits that come from connecting, rehabilitating and maintaining healthy ecosystems.

A figure of 87 hectares of land has been calculated as being the area required to satisfy CSU's biodiversity target.

In 2013, CSU Green consolidated a series of Biodiversity Reports, prepared by an external consultant, for each of CSU's major campuses, which identify:

- Areas of significant biodiversity value; and
- Areas which currently have a marginal biodiversity value that, if suitably rehabilitated, would have the potential to act as important corridors to connect areas of significant biodiversity value across the campuses.

The results of these Reports were used to stimulate discussion amongst key campus stakeholder groups around which areas should be recommended for allocation towards CSU's biodiversity target.

In 2014, CSU will work closely with its Campus Environment Committees (CEC's), and other stakeholders, to finalise the biodiversity areas nominated for each campus. Once decided, CSU Green will present the nominated areas to CSU's Senior Executive Committee for formal endorsement.

In parallel with this process, CSU Green has worked with an external consultant to prepare a CSU-specific Biodiversity Management Plan.

The purpose of this plan is to:

- Identify a range of best practice biodiversity management activities
- Identify the ideal timing of implementing these activities
- Develop a suitable monitoring process to determine success and inform necessary adjustments to management strategies
- Identify costs associated with implementing these activities.

The report is currently being finalised, and is expected to be available for review on the CSU Green website by mid-2014. The 2014 edition of the Environmental Scorecard will contain more detail on the content of the Biodiversity Management Plan and achievement toward the target.

Climate change corridors

Corridor planted with old paddock trees and locked up from stock on the CSU Farm Wagga

BB13. Biodiversity Improvement

Tree Planting

On Saturday 28th September 2013, CSU Green led a successful tree planting event with staff and students from the School of Humanities and Social Sciences, in conjunction with students from the University of New South Wales (UNSW) Rural Clinical School.

The tree planting took place at the Wagga Wagga Campus, along the boundary of the CSU Farm. The aim was to establish six tree lanes to increase the landscape connectivity for fauna between the fenced paddocks of the CSU Farm. The site had originally been planted in early 2012 however, due to the dry summer following planting, the survival rate of the tube stock planted was only around 20%.

To reinvigorate the tree lane and its function, the site was revisited and another 340 tube stock seedlings were planted to replace those that had perished.

CSU Green organised the event, which was supported by the School of Humanities and Social Sciences. Bill Anscombe, a Senior Lecturer from the School, received a CSU Sustainability Grant in 2012 to offset the carbon emissions of international travel of a two week student study tour of India. The trees planted in this event formed part of their emission offsetting.

The other key group involved, the UNSW Rural Clinical School, have been involved with CSU tree plantings on previous occasions and were keen to participate again in 2013.

CSU's tree planting days are key events in engaging both internal and external stakeholders on the need to increase biodiversity, restore soil health, reduce erosion, and increase habitat for native fauna.

Trees planted through events such as this contribute to the improvement of biodiversity University-wide, and contribute to CSU's biodiversity target of having 20% of core University land set aside for biodiversity by 2015.

Biodiversity improvement

Tree planting on CSU Farm Wagga Wagga

C6. Sustainable Transport

TARGET

- Achieve a 4.5 star or better Green Vehicle Guide rating among 50% of the University vehicle fleet by 2015
- Improve the fuel efficiency of the CSU vehicle fleet by 5% year on year
- Promote car-pooling for inter-campus travel by CSU staff and students

In Australia, the transport sector (road, rail and aviation) is responsible for approximately 16% of the nation's total greenhouse gas emissions (Australian National Greenhouse Accounts, September 2012).

In 2013, activities associated with the transport sector at CSU represented 13% of the University's total carbon footprint – a proportion which closely aligns with the transport component of the national carbon footprint.

In 2013, CSU made significant progress towards its sustainable transport targets.

Some highlights of the achievements made include:

- Despite an increase of 400,000 kilometres travelled in CSU vehicles by staff and students, CSU's vehicle fleet was responsible for the release of 1,354 tonnes CO_2 equivalent only a very minor increase on the 2012 emissions
- Greenhouse gas emissions associated with air travel declined significantly in 2013 when compared to 2012. The total number of kilometres travelled on international and domestic flights decreased by around 4,500,000 km and 2,000,000 km respectively
- Additional bike racks were installed around the majority of CSU's major campuses, to encourage cycling as an alternative mode of transport for intra-campus travel.

It has been recognised by CSU Green that the targets for sustainable transport relate only to CSU's fleet and do not explicitly discuss issues such as:

- Air travel
- Increased uptake of public transport
- Encouraging bike utilisation and improvement of bike infrastructure
- Encouraging walking improving and pedestrian infrastructure.

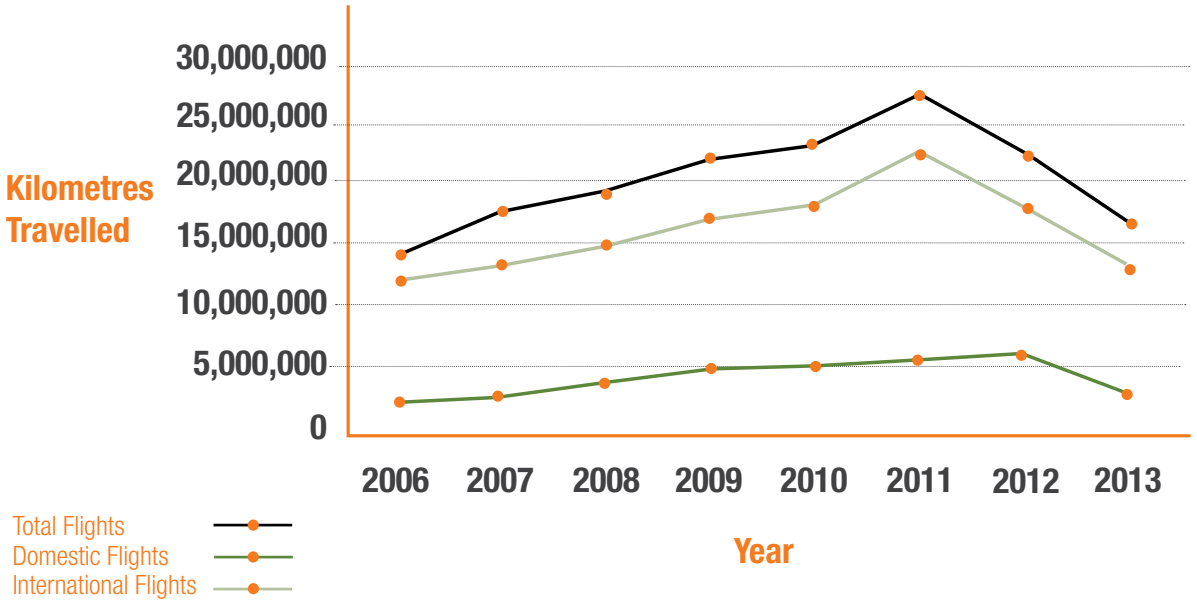
Despite this, CSU Green intends to deliver programs that address these issues and provide a more holistic solution to improving the sustainability of the University's transport-related activities.

Greenhouse gas emissions associated with air travel declined significantly in 2013 when compared to 2012.

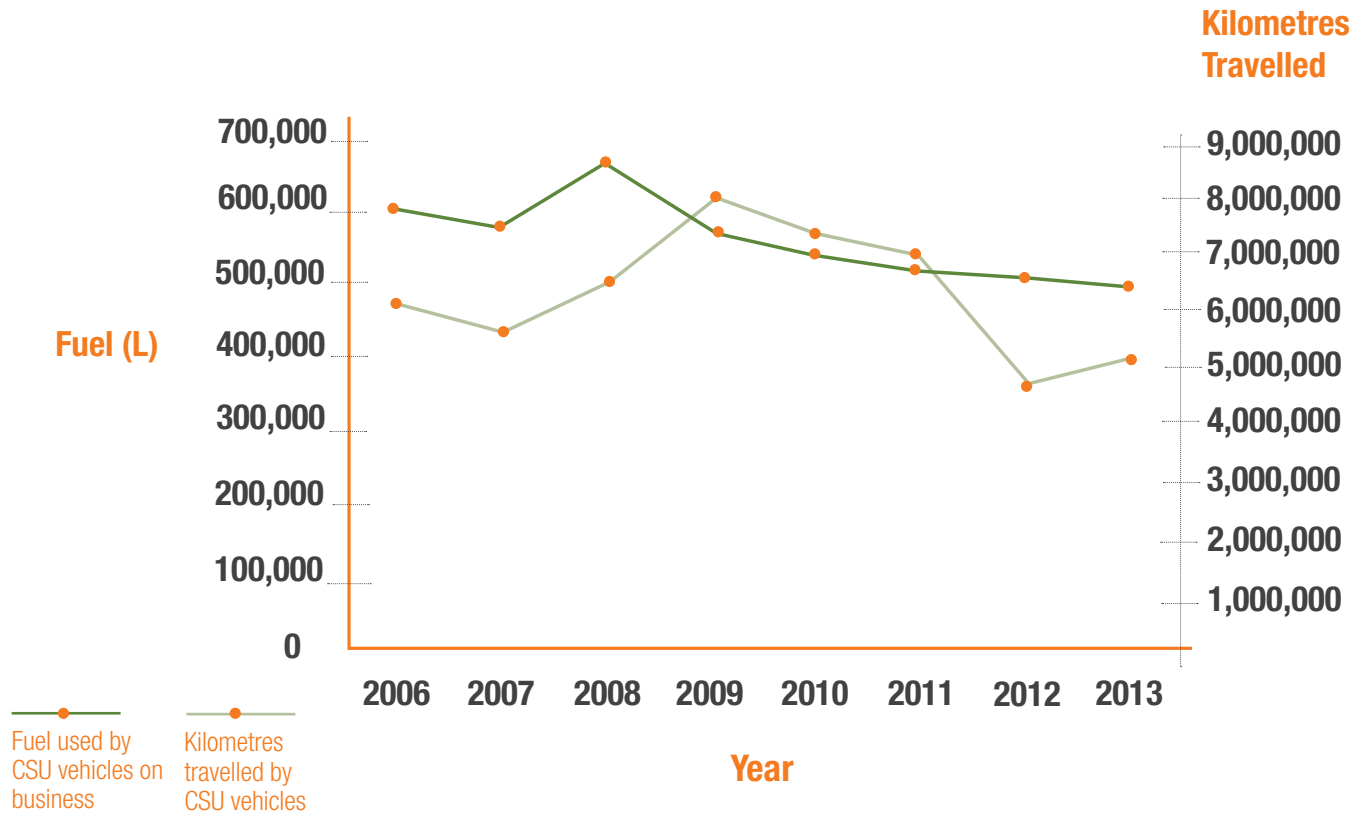
Sustainable transport

CSU is working towards establishing a vehicle fleet with at least 50% of vehicles scoring a 4.5 star Green Vehicle Guide rating or better by 2015.

Kilometres Travelled by CSU Staff - Flights



Kilometres Travelled by CSU Staff - Vehicle



BB14. Sustainable Transport

Vehicle Rating

CSU Green has partnered with CSU's Fleet Services group to develop a user friendly scheme for CSU staff to better understand the environmental performance of vehicles hired from the University fleet.

The scheme is based on the Australian Government's Green Vehicle Guide rating system.

It provides an impartial guide to a vehicle's combined greenhouse gas emission production and air pollution impact. This rating is represented through the allocation of one to five stars.

CSU Green and Fleet Services have developed a series of stickers that will be applied to all passenger vehicles within the University's fleet.

It provides users with a quick, visual reminder about the environmental performance of the vehicle they have elected to travel in. It is hoped that through this information, CSU staff will proactively request better and more sustainably performing cars at the time of making their bookings, ultimately leading to reduced carbon emissions associated with University travel.

Davin Kendall (Fleet Manager) and Eliza Batkin (Graphic Designer) standing alongside a CSU vehicle fitted with sticker.

C7. Sustainable Procurement

TARGETS

- Establish minimum sustainability performance requirements for commonly purchased goods and services
- Establish sustainability clauses and reporting processes for construction and refurbishment projects covering waste, environmental management plans and lifecycle costings

By embracing sustainable procurement processes, CSU can ensure that it is purchasing goods and services that, while continuing to achieve organisational value for money, also assist in developing the market for sustainable products.

The implementation of the Learning In Future Environment (LiFE) framework in 2014 will commence the drive towards developing and implementing University-wide sustainable procurement processes, as initial consultations are undertaken with key University stakeholders.

While no University-wide sustainable procurement policies currently exist, various groups within the University have undertaken some fantastic initiatives designed to ensure that CSU procures more sustainable goods.

Sustainable Disposal of Electronics

For example The Division of Information Technology currently makes use of the Electronic Product Environmental Assessment Tool (EPEAT) in its tendering process for new computer supply contracts. The EPEAT was developed by the Green Electronic Council, and allows users to review and compare the environmental attributes of a range of electronic products using a simple colour-coded rating system.

A number of significant brand name electronic producers are participating in the EPEAT scheme. Under the rating system, differing levels of compliance are specified against at least 51 environmental criteria. These include:

- 90% of the product, by weight, being reusable or recyclable
- Packaging being 90% reusable or recyclable by type
- Batteries being free of lead, cadmium or mercury.

When tendering for new computers, a significant weighting within the tender evaluation is allocated to the environmental attributes (EPEAT rating) of the computer models that are put forward for evaluation.

While CSU must ensure value for money when making bulk purchases for computers, the inclusion of environmental criteria in this process helps to ensure that CSU continues to purchase products from suppliers which are doing their best to minimise the environmental footprints of these products.

Sustainabilty in Catering

In 2011, CSU Catering successfully applied for a CSU Sustainability Grant to assist in funding the trial of biodegradable packaging – including coffee cups and food containers - in all CSU catering outlets. The funding was used to supplement the cost of biodegradable packaging for a period of two years across all CSU campuses.

In 2013, the CSU Catering group sold approximately 195,000 cups of coffee across all of its food and beverage outlets.

Assuming that the majority of these were purchased in single-use cups, this is a significant waste stream for the University. The purchase of biodegradable cups would allow this waste stream to be diverted into an organic waste treatment and collection process. CSU Green is currently investigating organic waste collection systems for most major campuses to assist in achieving its waste target of a 70% reduction in waste to landfill by 2015.

However, with the expiration of the Sustainability Grant funding occurring in late 2013, CSU Catering elected to return to the purchase of non-biodegradable packaging for the sale of its food and beverage offerings.

The reason for this was that the cost difference between the biodegradable and non-biodegradable products was calculated at approximately $20,000 for the Bathurst Campus alone.

As CSU Catering is run as an enterprise, the only way to cover the additional cost of this packaging would be to raise prices on the food and beverage items being sold on CSU's campuses.

An embedded organisation-wide sustainable procurement policy would help overcome this situation, by ensuring that that environmental sustainability of products is a key criterion for all Faculties and Divisions when evaluating the purchase of goods and services.

Sustainability in catering

In 2013 CSU was using BioPak BioCups, which are compostable

C8. Sustainable Design

TARGET

- Sustainable design of new buildings and major refurbishments

In the 2012 Environmental Scorecard, it was reported that CSU was working towards the adoption of the Green Building Council of Australia's Green Star suite of tools to guide the incorporation of sustainability into all major construction projects and refurbishments.

This ambition has not yet been achieved, primarily due to project budgetary constraints as well as some of the challenges associated with applying Green Star to regionally-based projects located in campus-style surroundings (where a large proportion of services and infrastructure associated with the development already exist, and are not significantly influenced by the target project).

The National Life Sciences Hub (Wagga Wagga Campus)was CSU's only formally accredited project in 2013 - awarded Five Star Green Star certification under the Education Design v1 rating, representing "*Australian Excellence*".

Seeking a more practicable approach to sustainable building design, CSU has approached its current major development at Port Macquarie Campus in a different way.

Under this approach, CSU is working with an external specialist to develop a customised sustainability framework that draws from other existing tools while also responding to unique challenges and opportunities offered to a regionally based campus development that will be delivered in stages.

Sustainable design
Sustainable features of the National Life Sciences Hub Wagga Wagga Campus

BB15. Port Macquarie Campus

Port Macquarie Campus

CSU in Port Macquarie proposes to be a full-service campus with a comprehensive course profile for up to 5,000 students by 2030. CSU has purchased a 12 hectare site located approximately 12 kilometres from the Port Macquarie town centre.

The campus is on track to open in February 2016 as a successor to the existing interim sites established in leased premises.

The vision statement for CSU in Port Macquarie states that the

"campus will draw on the strengths of the region and its people to create a sustainable learning community dedicated to the growth and prosperity of the region and its people".

BB15. Port Macquarie Campus

Specific objectives relevant to sustainability include:

- The creation of a new campus to support CSU principles of environmental, social and financial sustainability, and
- A commitment to go beyond green buildings to embed precinct-wide strategies for sustainability.

From the outset of this new campus development, lead Architects BVN Donovan Hill and their internationally-renowned ecological sustainable design consultants, Arup, have approached the development of the campus master plan and design of Stage 1 of the development with sustainability up front and centre.

Unlike CSU's other main campuses, located in inland climates, the northern NSW coastal location of Port Macquarie offers one of the mildest climates in Australia, rarely experiencing the extreme maximum and minimum temperatures that prevail at other CSU campuses.

This has been recognised as an asset that the design team intend to use to their advantage to reduce the reliance on active heating and cooling via mechanical systems – a strategy that will significantly reduce the energy and greenhouse gas intensity of the campus' operations.

Themes that are incorporated into the sustainability framework that has been developed for the campus include:

- Energy and carbon
- Water
- Sustainable materials
- User comfort and wellbeing (with sub-themes of indoor and outdoor microclimate)
- Sustainable transport
- Operations
- Social and community.

Stand-out features of the design for Stage 1 of the campus development which has reached the 75% completion stage at the time of this report incorporate:

- A building envelope that has been developed to make the best use of natural light and the local climate to minimise the requirement for artificial light and mechanical heating or cooling
- Substantial onsite renewable energy generation in the form of a solar photovoltaic array, which has been sized to match the forecast demand of the campus
- Amenities that will allow the campus to lend itself to after-hours use by the community for events such as community markets, sporting activities and walking
- Selection of building materials that incorporate recycled content and lower embodied energy
- Facilities that will reduce reliance on personal vehicles for transport, such as priority parking for car-pooling participants, cyclist's facilities and convenient access to the CBD via public transport.

CSU Port Macquarie
Stage one projected design of the new Port Macquarie campus. (Image: BVN Donovan Hill)

C9. Compliance with Environmental Regulations

TARGET

- Comply with all relevant environmental protection legislation

During 2013, CSU made some notable advances towards this target.

For example, biodiversity studies were undertaken across all major campuses, in line with the *Environmental Protection and Biodiversity Conservation Act 1999* (discussed in more detail in the Biodiversity section of this report, page 43); and CSU reported on the organisation's greenhouse gas emission output under the National Greenhouse and Energy Reporting scheme (discussed in more detail in the Carbon Neutrality section of this scorecard, page 30).

In order to ensure compliance with all relevant environmental protection legislation into the future, CSU Green plans to introduce a coordinated approach to environmental compliance in 2014.

To achieve this, CSU will:

- Compile a register of all environmental legislation potentially applicable to CSU
- Develop a prioritised improvement plan to rectify any identified gaps or weaknesses
- Develop a checklist and process to be implemented into all CSU projects, to highlight environmental protection legislation which may apply at the relevant stage(s) of all projects.

In order to ensure compliance with all relevant environmental protection legislation into the future, CSU Green plans to introduce a coordinated approach to environmental compliance in 2014.

Electrical distribution and metering equipment

This contributes to CSU better understanding and managing itsenergy use as reported under the National Greenhouse and Energy Reporting Scheme.

GLOSSARY

BMS	Building Management System
BECS & BPES	Bachelor of Early Childhood Studies & Bachelor of Primary Education Studies
CBD	Central Business District
CEO	Chief Executive Officer
CO_2-eq	Carbon Dioxide Equivalent Emissions
DFM	Division of Facilities Management
EPC	Energy Performance Contract
EPEAT	Electronic Product Environmental Assessment
ESCO	Energy Savings Conservation Organisation
GHG	Greenhouse Gas
GJ	Gigajoules
GLO	Graduate Learning Outcomes
kL	Kilolitres
kL/m^2 GFA	Kilolitres of water consumed per square metre of gross floor area
km	Kilometres
LiFE	Learning in Future Environments
m^3	Cubic Metres
MJ/m^2 GFA	Mega joules of energy consumed per square metre of gross floor area
MWh	Megawatt Hours
NCOS	National Carbon Offset Standard
TJ	Terrajoules
UNSW	University of New South Wales

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NOTES

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sustainability
- your actions count!

Charles Sturt University