

WESTERN SYDNEY
UNIVERSITY



**Thoughtfully Acting
Differently**
Sustainability Report 2016

*“I am leaving with an education, not
just a piece of paper”*

Anuj Verma, SCEM Solar Car Graduate



With respect for Aboriginal cultural protocol and out of recognition that its campuses occupy their traditional lands, Western Sydney University acknowledges the Darug, Gandangarra, Tharawal (also historically referred to as D'harawal) and Wiradjuri peoples and thanks them for their support of its work in their lands (Greater Western Sydney and beyond).

THOUGHTFULLY ACTING DIFFERENTLY

Sustainability Report 2016

Western Sydney University's Securing Success 2015-2020 Strategic Plan flags the institutions' commitment to embrace and embed sustainability within the University's culture. The 2016 Sustainability Report, *Thoughtfully Acting Differently*, outlines this work and builds on the foundations laid by the first institutional Sustainability Report, *Driving Sustainability a Roadmap to Success*, 2015. In this report our dynamic research agenda and rich student learning experiences are profiled.



REGIONAL CENTRE OF EXPERTISE
ON EDUCATION FOR
SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY



UNITED NATIONS
UNIVERSITY

"Thoughtfulness is a state of heightened appreciation and responsibility. It provides a vital perspective on truth and ethical integrity in the quest for sustainable well-being that is inclusive of people and the rest of nature alike. It is therefore a critical context for the goals of sustainable development which demand mindful actions for change to make the differences that make a difference."
Emeritus Professor Richard Bawden,
Office of Sustainability



CURRICULUM

Graduates who are global citizens and future thinkers

Western Sydney University acknowledges the responsibility through teaching the next generation of leaders, innovators and thinkers to understand the global challenges facing the world and the role they can play in rising to meet these challenges.

EDUCATION FOR SUSTAINABILITY

Education for Sustainability (EfS) places an emphasis on the necessary interrelationships between theory and practice; local and global scales and present and future. The University's existing education and research strategies, as well as planned new curriculum partnerships and initiatives will support EfS institutionally.

SUSTAINABILITY SCHOLARS NETWORK

The Sustainability Scholars Network (SSN) is open to academics across all disciplines. The network currently engages with 45 academics across a range of disciplines. The network is committed to:

- Developing a scholarly community of practice
- Supporting delivery of EfS within the curriculum
- Exploring professional development opportunities
- Working on joint publications for transformative learning

TEACHING TARGETS

100%

double-sided printing of all centrally coordinated exams for 2016

95%

compliance rate of electronic submissions for 2020

LOOKING FORWARD

The Academy is a cross-disciplinary program for high achieving undergraduate students. In 2017, The Academy under its' Citizen Scholar Award co-curricular program is piloting a strand on global citizenship by engaging students in online courses covering sustainability, health, education and other related topics. The Academy is planning to establish an active Sustainable Development Solutions Network (SDSN) Youth group. Students will increase their knowledge of sustainable development by working together on innovative projects, as well as collaborating with other Universities in the network.

"We are excited to work with the Office of Sustainability to establish the SDSN Youth Network at the University. Students will have opportunities to use their initiative and develop skills that are vital to the challenges we face in the future." Caroline Allen, The Academy.

SPOTLIGHT ON: NURSING

The School of Nursing and Midwifery has taken an embedded approach to EfS. Nursing students are introduced to the concept of the Sustainable Development Goals in their first year through the core unit Primary Health Care in Action. They learn about global issues and the critical connections between health, nursing, waste, climate change and the environment. In Bugs and Drugs one of the most popular electives they further discover how climate change with rising temperatures, increases in extreme weather events and biodiversity loss can affect the spread of infectious diseases in complex ways.

Major: Peace and Development

This major is concerned with methods for promoting peace, human rights and sustainability. It involves a critical analysis of inequalities of power and opportunity that lead to international and local conflict, social dislocation and environmental degradation.

Sub-major: Social Ecology

This sub-major explores the rich diversity of relationships between the individual, society and environment, covering ecologically informed analysis, creative thinking and action, social and environmental relationships and transformative education with an emphasis on sustainability, social change and leadership.

Sub-major: Sustainable Environmental Management

Solution to environmental problems requires both a scientific 'fix', and a social implementation or management 'fix'. This sub-major covers the essentials of environmental management as an academic discipline, giving students knowledge and skills in the social, legislative and planning frameworks within which environmental practitioners must work to implement solutions to environmental problems.



CITIZEN SCHOLARS SNAPSHOT

Authentic learning experiences for students

BUSINESS: SOCIAL SUSTAINABILITY WITH VINNIES

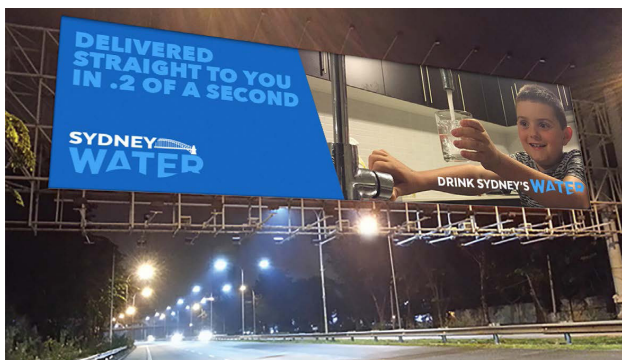
Final year marketing students in the School of Business compiled marketing plans for Vinnies Western Sydney, as part of their capstone, “Marketing Planning Project”. The focus for the marketing plans was around Vinnies’ retail operations in Western Sydney. The students investigate the overall environment, customers, competitors, Vinnies Western Sydney themselves and then devise strategies to take advantage of any opportunity or issue that they deem as critical. Students use a variety of information gathering tools including primary and secondary market research which allows insight into the marketplace. This project is a win-win for both the students and the organisation. The students write a marketing plan for an industry client learning new skills, while Vinnies Western Sydney have near to professional marketing plans presented to them for their future marketing campaigns.

EARLY CHILDHOOD EDUCATION: GREEN SPROUTS

The School of Education Early Childhood program requires students to undertake a 60 hour community internship. Hawkesbury EarthCare Centre supported two Western Sydney University students to develop programs for families in the Hawkesbury community to engage them in sustainable practices. “Greener Steps for Dads, Mums and Bubs” targeted infants and “Green & Sprout: My Place, Your Culture” targeted school aged children. The Green & Sprout project piloted their first after school program in early November at the EarthCare Centre with nine families participating. The afternoon focused on celebrating diversity and sustainability supporting social inclusion and wellbeing.

DESIGN: TURNING TO TAP WATER

Bachelor of Design (Visual Communications) students have been working with learning partner Sydney Water to explore how to support the choice of tap over bottled water with a range of key audiences, inspired by Gay Hawkins et al’s book Plastic Water (2015). In first semester, second year students worked on Project H2O, which resulted in several exciting concepts, such as Nathan Simpson’s Sydney Water rebrand (pictured below). In second semester, fourth year Rabbit Hole students took up the baton to develop visual outcomes for the School of Humanities and Communication Arts Grad Show. In addition to this, student Vinita Vishwanathan was interviewed on ABC Radio’s Saturday Extra about the project. This collaboration will continue in 2017.



ENGINEERING AND BEYOND: SOLAR CAR CHALLENGE

Integrated within the School of Engineering, Computing and Mathematics, the Western Sydney Solar Car Team brings students out from a theoretical world into a more practical environment to apply their knowledge and expand their horizons. The team is made up of undergraduate students from a variety of disciplines ranging from engineering, computing, business, media and communications. The team attends and presents at many outreach and community events, including RCE Greater Western Sydney program Schools for Sustainability (pictured below) and the Youth Eco Summit, showcasing the car and its cutting-edge sustainable engineering, demonstrating the incredible potential of electric vehicle technologies.

NATURAL SCIENCE: FIELD STUDIES PROJECTS

Final year natural science students in the School of Science and Health complete a year long research project with a client. Students have been placed across the region with RCE Greater Western Sydney partners. Some projects have included:

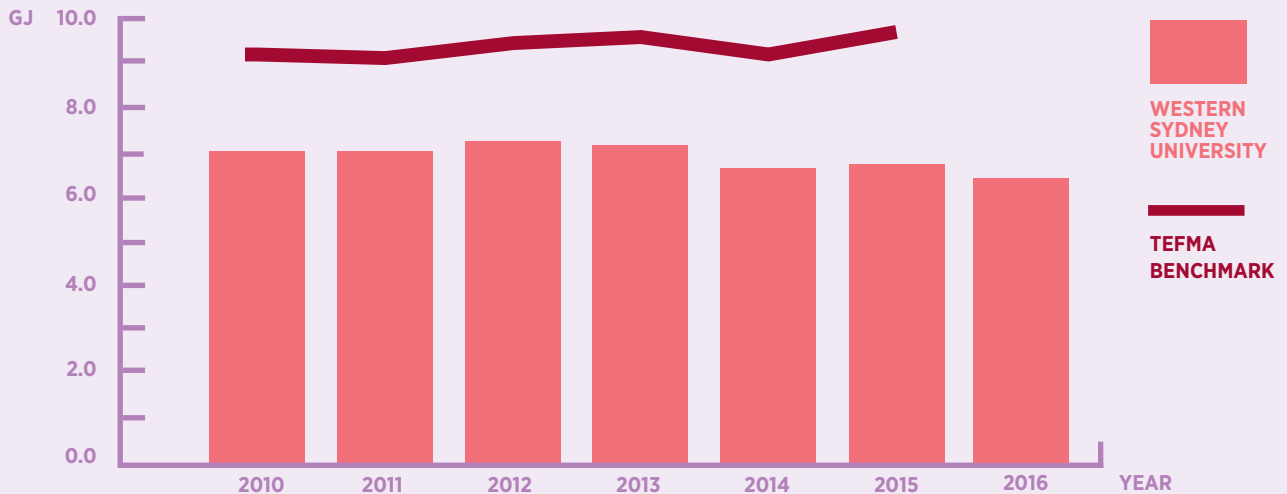
- Duck behaviour at Lake Parramatta, City of Parramatta Council
- Effects of leachate in Dundas Valley, City of Parramatta Council
- Cumberland Plain Land Snail distribution in Parramatta LGA, City of Parramatta Council
- Frog study at Baludarri Wetlands, City of Parramatta Council
- Water quality improvements in Bunbury-Curran Creek, Georges River Combined Councils’ Committee
- Habitat Preferences of the Red Fox, *Vulpes vulpes*, in Bushell’s Lagoon, Hawkesbury Environment Network (pictured below).



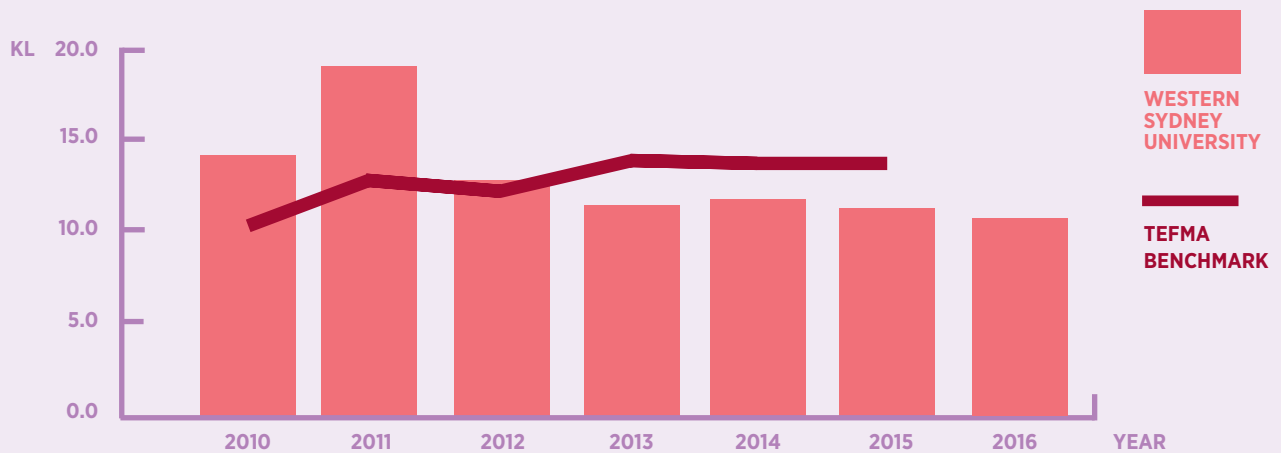
CAMPUS OPERATIONS

Our performance 2010 - 2016

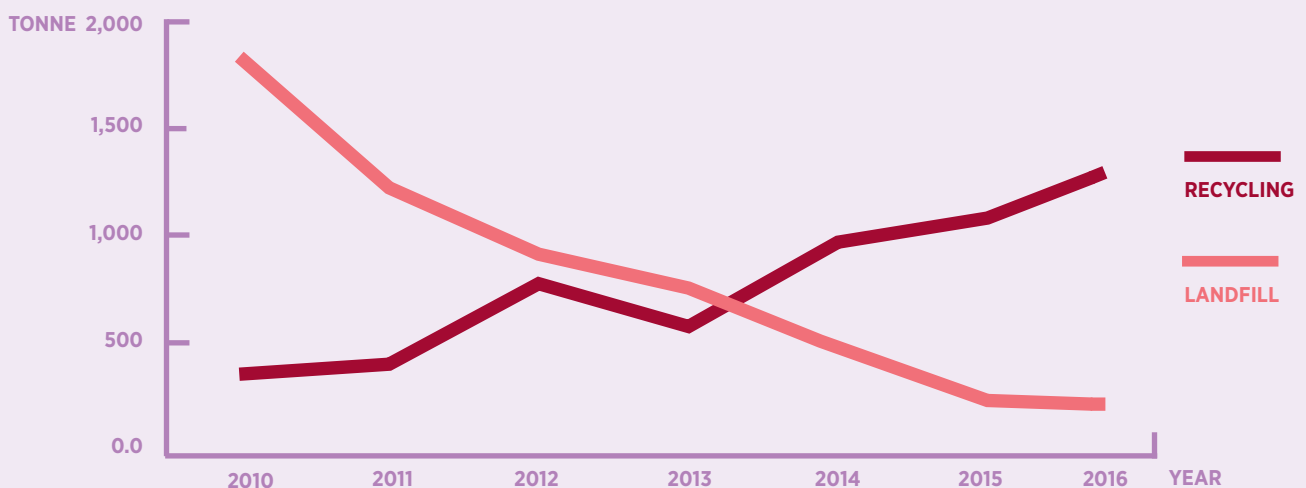
ENERGY CONSUMPTION PER EFSTL



POTABLE WATER CONSUMPTION PER EFSTL



WASTE - LANDFILL VS RECYCLING



SUSTAINABILITY SUCCESS

Our performance 2010 - 2016



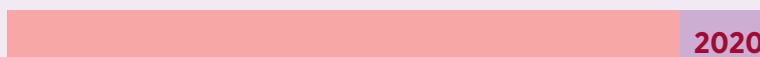
9%

**ENERGY CONSUMPTION PER PERSON
(GIGAJOULES/EFTSL)**



13%

**GREENHOUSE GAS EMISSIONS PER PERSON
(TONNES OF CARBON DIOXIDE EQUIVALENT/EFTSL)**



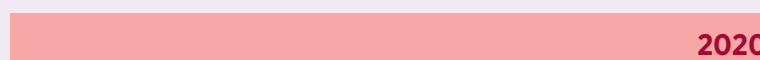
22%

**POTABLE WATER USED PER PERSON
(KILOLITRES/EFTSL)**



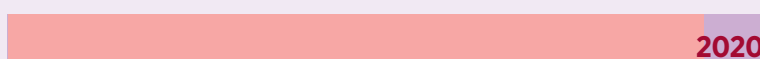
90%

**WASTE TO LANDFILL PER PERSON
(KG/EFTSL)**





84%

RECYCLING RATE AS A % OF TOTAL WASTE



KEY

 Progress towards 2020 targets as percentage  Reduction in use/outputs

These measures are against 2010 baseline data and based on past trend and emerging technologies against Equivalent Full Time Student Loads (EFTSL). The 2020 targets can be found in the 2015 Sustainability Report under "Sustainability Ambitions".

RESEARCH

A vibrant, dynamic and multidisciplinary research culture

4

multidisciplinary research themes



EDUCATION



ENVIRONMENT



HEALTH



URBAN LIVING
AND SOCIETY

7

research theme champions

17

research centres,
institutes and research
groups across the
University

“A key element of environmental sustainability is to find ways of living differently in times marked by ecological emergencies and to recognise the profound socio-environmental change taking place globally, including across Western Sydney. By connecting researchers and stakeholders in the environmental sciences to those in the environmental humanities, our hope is to give rise to new opportunities to improve human-environment interactions, particularly in urban and peri-urban ecosystems.”

Environment Research Theme Champions, Assoc. Prof. Juan Salazar, School of Humanities and Communication Arts and Assoc. Prof. Jeff Powell, Hawkesbury Institute for the Environment

The University is committed to collaboration with our regional, national and international communities to contribute to their economic, social and environmental well-being. The 4 research themes and 7 theme champions speak to the history and culture of the University and its communities, providing a shared vision for the future.

HIE: WHICH PLANT WHERE?

‘Which Plant Where, When And Why Database For Growing Urban Greenspace’ project is a program of research that will result in a new database tool to ensure that landscape plantings can account for current and future climate scenarios to grow Australian urban greenspace in coming decades. The program is funded by Horticulture Innovation Australia Limited as part of their 2020Vision program, with other co-investment funds.

ICS: COOLING THE COMMONS

Urban heat is emerging as a major livability issue for Australian cities. ‘Cooling the Commons: Engaged research to support transitions to cooler future cities’ seeks to understand what and where people are

‘commoning’ in Western Sydney and ways that communities are already keeping cool.

ARC SUCCESS 2016

Naming the world: Early years literacy and sustainability learning:

For children born in the 21st century, the enmeshing of natural and human forces in the survival of the planet requires conceptual and practical innovation. Early childhood education can be a fundamental driver in this process. This project will inform national and international policy and practice to address 21st century learning imperatives.

Led by Centre of Educational Research.
Total funding: \$278,038

Reconfiguring the enterprise: Shifting manufacturing culture in Australia:

Concerned with the wider societal and planetary impacts of conducting business-as-usual, some innovative Australian manufacturers are reorienting their business towards social and environmental sustainability. The project will develop business metrics and critical incident cases that unravel the negotiations involved in addressing social and environmental sustainability.

Led by the Institute for Culture and Society
Total funding: \$344,885

Disinfectant in Chloraminated Water-Supply Systems:

The project aims to develop an adaptive, real-time control system for managing disinfectant residuals in chloraminated water supply systems. While chloramine delivers microbiologically safe drinking water in warmer climates, it is largely unpredictable, costs water utilities millions of dollars annually, and to overcome the problems associated with sudden loss experienced in warmer months. The project will deliver microbiologically safe, cost-efficient drinking water to people in warmer climates, despite warming climate and increasing populations.

Led by School of Computing, Engineering and Mathematics

Total funding: \$1,150,000

REGIONAL AND INTERNATIONAL PARTNERSHIPS

Think global, act local

The University hosts one of five Australian Regional Centre's of Expertise on Education for Sustainable Development - RCE Greater Western Sydney (RCE-GWS). RCE's are endorsed by the United Nations University and bring together key educational institutes, community groups, NGOs, government, business and council groups in a specific region to link and leverage sustainability outcomes. RCEs are a proven international framework to deliver regional impacts. There are 154 RCEs now operating internationally which our students and academics have access to.

RCE-GWS partners work through an integrated process of collaboration to tackle these challenges:

- Transitioning to a low carbon economy
- Developing sustainable communities - health, housing and transport
- Ensuring agricultural sustainability and food
- Conserving biodiversity and river health

Throughout 2016 students continued to connect both locally and globally in real life learning opportunities provided by the RCE-GWS network.

SPOTLIGHT ON: BUSINESS OF SUSTAINABLE TOURISM

Funded by the Australian Commonwealth's New Colombo Plan (NPC) Mobility Project,

Bachelor of Tourism Management students connected with RCE Tongyeong, South Korea (pictured on page 3). These students undertook a two-week transformative study tour in June-July 2016, learning first hand about sustainable and cultural tourism, as well as participating in a Regional Tourism Planning Workshop and presenting to 50 local tourism operators and local government members around their experiences as young professionals and tourists.

"I now feel as a 'soon to be' graduate that I need to be using the skills and theory I have learnt during my time studying to help and benefit a community in the world that needs it."
Student, post-trip reflection

LOOKING FORWARD

A Global RCE Youth Network was established as part of the 10th Global RCE Conference. The network is working collaboratively to support the UN Sustainable Development Goals (SDG) 2030 to achieve change. The aim is for each RCE worldwide to have a youth coordinator engaging within their region and to share their work more broadly. RCE Greater Western Sydney has been nominated as the youth focal point for Oceania sub-region (part of the larger Asia-Pacific Region), and will continue to connect our students virtually, regionally and internationally.

RCE-GWS PARTNERS

- Blacktown City Council
- Brewongle Environmental Education Centre
- Campbelltown City Council
- City of Parramatta Council
- Conservation Volunteers Australia
- Cumberland Bird Observers Club
- Georges River Combined Councils' Committee
- Greater Sydney Local Land Services
- Greening Australia
- Hawkesbury City Council
- Hawkesbury Earthcare Centre
- Hawkesbury Environment Network
- Hawkesbury Harvest
- Longneck Lagoon Environmental Education Centre
- Macarthur Centre for Sustainable Living
- North West Disability Services
- Parramatta Climate Action Network
- Penrith City Council
- Penrith Environmental Education Centre
- Sydney Olympic Park Authority
- TAFE NSW - Western Sydney Institute
- Western Sydney Regional Organisation of Councils
- Western Sydney University (multiple stakeholders)



\$70K

collaborative regional funding for sustainability research and education



32

regional partners committed to RCE-GWS



1,900+

school students and community members have been engaged in programs



1,320

hours of student internships and placements across GWS

Data for 2016



REGIONAL CENTRE OF EXPERTISE
ON EDUCATION FOR
SUSTAINABLE DEVELOPMENT



ACKNOWLEDGED BY



UNITED NATIONS
UNIVERSITY

LOOKING FORWARD

Transforming our world

“If we realize our ambitions across the full extent of the Agenda, the lives of all will be profoundly improved and our world will be transformed for the better.”

United Nations, Sustainable Development Agenda 2030

At the United Nations Sustainable Development Summit on 25 September 2015, more than 150 countries adopted the new 2030 Agenda for Sustainable Development, including the Sustainable Development Goals (SDGs).

The 17 new SDGs replaced the Millennium Development Goals (MDG) and aim to end global poverty, hunger and inequality, take action on climate change and the environment, improve access to health and education and to build strong institutions and partnerships by 2030.

In 2017 Western Sydney University has become a signatory to the Australia/Pacific Sustainable Development Solutions Network Commitment (SDSN), joining seven other Australian Universities. As a signatory, the University is well placed to meet the educational commitments.

WE ARE COMMITTED TO:

- Supporting and promoting the principles of the SDGs
- Undertaking research that provides solutions to sustainable development challenges
- Providing the educational opportunity for our students to acquire the knowledge and skills needed to promote sustainable development
- Contributing to the achievement of the SDGs by ensuring our campuses and major programs are environmentally sustainable and socially inclusive
- Reporting on activities in support of the SDGs



We acknowledge the 2030 Agenda for Sustainable Development set by the United Nations and its mission to transform our world.

CONTACT

Office of Sustainability
Office of the Pro Vice Chancellor (Learning Transformations)

sustainability@westernsydney.edu.au

Contact information

sustainability@westernsydney.edu.au

Western Sydney University
Locked Bag 1797
Penrith NSW 2751 Australia



WESTERNSYDNEY.EDU.AU