

17

# DEAKIN UNIVERSITY

**SUSTAINABILITY REPORT  
AND OUTLOOK.**



# VISION.

Deakin will be a sector leader in sustainability.

By embedding our principles in everything we do we will minimise our environmental impact, maintain our financial viability and promote the social aspects of sustainability whilst nurturing and enabling our future leaders.

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# ABOUT THIS REPORT.

**This is Deakin University's fourth annual sustainability report. This report builds upon the award-winning\* 2015 Sustainability Report and the 2016 Sustainability Progress Report.**

Throughout 2017, Deakin focused on embedding and applying the United Nations (UN) Sustainable Development Goals (SDGs) within its operations, teaching and research.

The SDGs are a set of 17 goals and 169 targets to end poverty, protect the planet and ensure prosperity for all.

In 2015, 193 countries made a commitment to the goals and to establishing local frameworks for achieving the 2030 Agenda for Sustainable Development.

This report uses the 17 SDGs as a framework to report on Deakin's contribution to and impact on the goals throughout 2017.

As a signatory to the UN Global Compact, this report also demonstrates Deakin's commitment and contribution to the ten universal sustainability principles of the Compact.

There are no other significant changes to the scope of the report, nor any restatements of information provided in previous years.

\*Australasian Reporting Awards

## ALIGNED TO THE SDGs

The SDG wheel and icons are used throughout the report to show which SDGs are linked to stories, data and case studies.



### Sustainable campuses



### Committing to a low carbon future



### Diversity, access and social inclusion



### Shaping our future leaders



### Research and partnerships





It is vital that universities,  
including Deakin, play their part  
in addressing global challenges  
and achieving the Sustainable  
Development Goals.



# MESSAGE FROM THE VICE-CHANCELLOR.

**Sustainability is one of Deakin's four core values: We care about our shared future, integrating economic, environmental and social dimensions of sustainability in all that we do.**

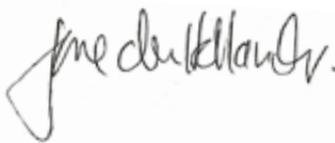
Universities have a responsibility to lead the way not only as employers, but as educators of students and members of the wider community. The societal challenge of environmental integrity and sustainability is integral to the value we create for our organisation, for our communities, and most importantly, for future generations. We should at least try to leave the world better than we found it.

Deakin recognises the social, economic and environmental challenges facing the world and is proud to be a signatory to the university commitment to the United Nations Sustainable Development Goals, and its agenda for the achievement of sustainable development by 2030. We are embedding these goals within all aspects of our operations.

We are undertaking research to provide solutions to sustainable development challenges, providing educational opportunities for our students to acquire the knowledge and skills to promote sustainable development, promoting the principles of sustainability within our communities and ensuring our campuses and programs are environmentally sustainable and inclusive.

In a complex and unpredictable world, our reporting system plays an important role in how we frame our value to the communities we serve. Deakin reports on sustainability not as a compliance burden or to 'do good', but because we know that by embedding these principles into our strategy and business planning we will drive improvements in our communities, doing our bit to contribute to making the world a better place for those who come after us.

I am delighted to introduce Deakin's fourth annual sustainability report.



**Jane den Hollander AO**  
President and Vice-Chancellor



# DEAKIN FACTS.



## Students

**57,595**

Course enrolments

**39,549**

Student load  
EFTSL

**10,864**

Course completions (2017)



## Staff

**3,830**

Full time / part time

**862** Casual

**4,692** Total

### By staff type

**2,158** **2,534**

Academic Professional



## Campuses and Land area

**27** ha Melbourne  
Burwood

**325** ha Geelong  
Waurnd Ponds

**4** ha Geelong  
Waterfront

**94** ha Warrnambool

**450** ha Total



## For every 100 domestic students, there are...

**2** who are Aboriginal or Torres Strait Islanders

**8** who have some level of disability

**17** who were born overseas

**61** females

**3** from a non-English speaking background

**13** from low socio-economic areas

**22** from a regional or remote home location

**78** who live in a major city



## Growth in international student numbers

**11,878**

students in 2017

**51%**

growth since 2013

**130**

distinct home countries

### Top 5 countries

India

China

Sri Lanka

Vietnam

Malaysia

- Represents home location for 70% of all international students



## Student enrolments by attendance mode 2017



On campus

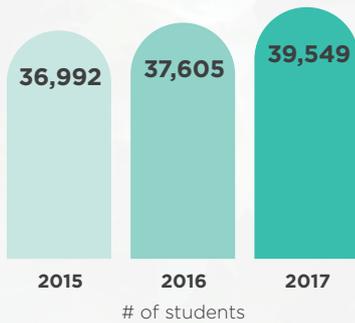


Cloud (online)

# 2017 PROGRESS SUMMARY.



## Student Load EFTSL



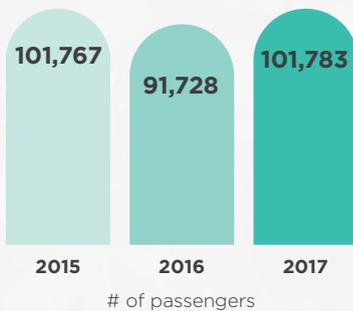
## Staff FTE



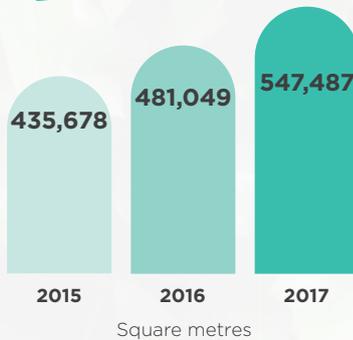
## Waste to landfill per person (Operational and Residential)



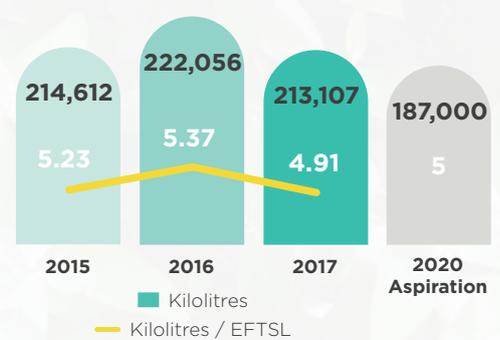
## Shuttle bus patronage



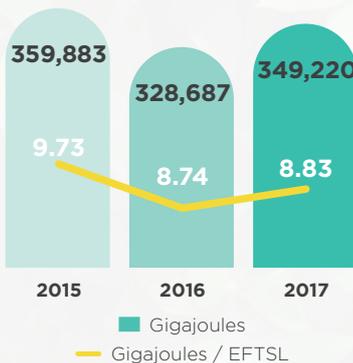
## Gross floor area (GFA)



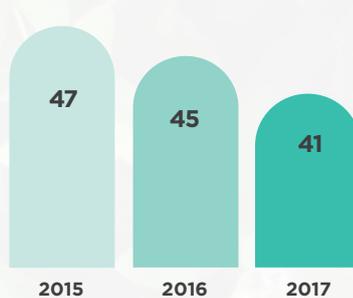
## Water consumption (2015 data updated to include bore water)



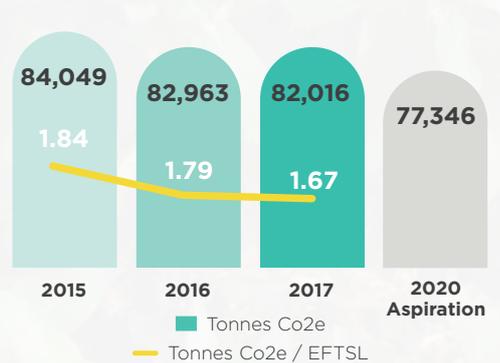
## Energy (Elec. Gas. Fuel)



## Green Spend % of Stationery Spend



## Emissions (Scope 1, 2 and 3)





# DEAKIN'S SUSTAINABILITY ASPIRATIONS.

# In 2017, Deakin launched its first suite of Sustainability Aspirations to drive positive change and join the global movement to meet the 2030 Agenda for Sustainable Development.

These aspirations plot the course and destination Deakin will follow to manage its environmental impacts and enhance the quality of life for present and future generations.

The Sustainability Aspirations provide a framework for the sustainable development of our campuses over the next twelve years (the 2030 challenge) and were developed in consultation with subject matter experts within the University and endorsed by the Sustainability Steering Committee in 2017.

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**They not only demonstrate Deakin's commitment to the 2030 challenge, but are also aligned to the Paris Agreement 2015, United Nation's Global Compact, Sustainable Development Goals and Australian targets.**

Lecture Theatre 13  
Rusden  
Lecture Theatre

# THE 2030 CHALLENGE.



## POLICY & DECISION MAKING



## COMMUNICATION & ENGAGEMENT



## PROCUREMENT & SUPPLY CHAIN



## TRAVEL & TRANSPORT

### BY 2020 >

Sustainability is embedded into Deakin's policy framework and values and a sustainability funding model is established and implemented.

Increase staff and student awareness, action and participation in sustainability at Deakin.

Increase Deakin's local (G21 region) procurement spend by 7 per cent and increase jobs from target communities by 20 per cent.

Complete a transport strategy for each campus and increase the use of sustainable transport to and between campuses.

### BY 2025 >

Sustainability is embedded into Deakin's decision making and formal governance processes.

Have sustainability ambassadors in every Faculty, Institution or Other area.

All strategic suppliers meet Deakin's sustainable procurement principles.

Electric vehicle charging stations implemented on campus, and Deakin's fleet is 100 per cent hybrid or electric.

### BY 2030 >

Deakin's operations positively contribute to the UN Sustainable Development Goals.

The Deakin community is collectively mindful about sustainability impacts, actions and opportunities.

Deakin's supply chain has measurable positive impacts on multiple UN Sustainable Development Goals.

The majority of staff and students with sustainable transport options, use these for travel to and between campus.

### SDG'S >



Baseline = refer to 2015 staff and student sustainability survey

Baseline = refer to G21 Region Opportunities for Work (GROW) initiative

Baseline = refer to 2015 staff and student sustainability survey

# SUSTAINABLE DEVELOPMENT GOALS



## ENERGY & EMISSIONS

Reduce total carbon emissions to the 2013 baseline despite growth and increase the percentage of on-campus renewable energy generation.

Reduce total carbon emissions by 40,000 tonnes from the 2013 baseline.

Achieve carbon neutrality.



2013 baseline = ~77,000 tCO<sub>2</sub>e



## WASTE AND RECYCLING

Reduce the volume of waste to landfill to 20 kg per person. (equivalent to 26 per cent waste diversion).

Further reduce waste to landfill per person to 10 kg (equivalent to 77 per cent waste diversion).

Achieve zero waste (equivalent to 90 per cent or greater waste diversion).



2016 baseline = 38.6 kg per person (Person = EFTSL + FTE staff)



## WATER

Reduce mains water consumption to 5 kilolitres or less per person.

25 per cent of the University grounds irrigated using reclaimed / captured water.

Maintain or improve on 2025 mains water consumption despite University growth.



2013 baseline = ~187,000 kl total consumption, equivalent to 5kl per person (Person = EFTSL + FTE staff)



## BUILT ENVIRONMENT

Embed the Deakin Sustainable Built Environment (SBE) Principles and complete a climate adaptation review.

All high priority climate change adaptation actions completed.

Every new Deakin building will offset its own sustainability impacts.



## NATURAL ENVIRONMENT

Complete a biodiversity management plan and embed biodiversity considerations into campus planning.

Enhance the biodiversity of the campuses' natural landscapes and waterways.

Biodiversity corridors have been established in priority locations, allowing wildlife to thrive on campus.



Deakin has a strong focus on undertaking sustainability initiatives to achieve the 2030 challenge, and is committed to measuring, monitoring and reporting on progress.



# SUSTAINABILITY HIGHLIGHTS.



## POLICY & DECISION MAKING

- Sustainability embedded as a Deakin value.
- Carbon Management Strategy finalised.
- Sustainability Aspirations launched to meet the 2030 Challenge.
- Gender Equity Plan 2017-2020 and LGBTIQ+ Plan launched.
- Disability Access and Inclusion Plan launched.



## COMMUNICATION & ENGAGEMENT

- 2017 Sustainability Survey completed with record participation.
- Real-time building performance screens installed within CADET.
- Established the world's first dedicated nanobiotechnology research centre in partnership with The Energy and Resources Institute of India (TERI).



## TRAVEL & TRANSPORT

- Cycling infrastructure reviewed and plans developed for improvement.
- Extra park and ride shuttle bus service introduced for growing Geelong campuses.
- Improved service to the Burwood Campus established with Public Transport Victoria.



## PROCUREMENT & SUPPLY CHAIN

- Social and environmental sustainability embedded into tender schedules.



## ENERGY & EMISSIONS

- 7.25 MW renewable smart energy microgrid approved.
- Rooftop solar feasibility completed.
- Carbon offsetting and blue carbon research undertaken via the Qantas Future Planet partnership.



## WASTE & RECYCLING

- Towards Zero Waste: 2017–2020 Waste Management Plan developed.
- Organic food recycling implemented at Waurm Ponds Estate.



## WATER

- Achieved 2020 aspiration to reduce water consumption to five kilolitres or less per person.
- Smart irrigation system under construction at Waurm Ponds Campus.
- World-first technology developed to print plumbing and sanitation supplies using 3D filament made from discarded plastic.
- Led the Victorian Marine Habitat Mapping (VMHM) project.



## BUILT ENVIRONMENT

- Deakin's new Sustainable Built Environment Principles adopted for all new buildings.



## NATURAL ENVIRONMENT

- Stage one completed of an extensive revegetation project around water retention wetlands at the Waurm Ponds Campus.
- Biodiversity study completed at the Waurm Ponds Campus.

# SUSTAINABLE CAMPUSES.



**Sustainability, inclusion, resilience and safety are all features of sustainable cities and communities. The development of these attributes raises many challenges particularly around transport, low-emission infrastructure and integrated planning that drives sustainable development.**

These same challenges exist at Deakin; a community that spans four campuses with more than 57,000 enrolled students, 4,500 staff and a growing Future Economy Precinct at the Waurin Ponds Campus.

**4 campuses**

**57,000**  
enrolled students

**4,500**  
staff

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



## Sustainable development

**Integrated planning and sustainable campus development is important to Deakin.**

With the implementation of the University's own SBE Principles in 2017, all new Deakin buildings are now designed and built with a balance between occupant experience and sustainable design, construction and performance.

The SBE Principles incorporate leading edge attributes of ecologically sustainable design as well as a focus on the wellness of spaces and occupants, leading to a responsible and delightful space. As a result, key design features prioritise air quality, water, nourishment, light, fitness, comfort, energy efficiency, climate adaptation and waste amongst other sustainability aspects.

**The new Deakin Law School building at the Burwood Campus, set to be completed in 2020, will be the first demonstration of the SBE Principles. It will provide a space where the comfort and performance of the occupants is paramount and will promote learning and innovation while operating efficiently and responsibly.**

## Holistic campus-level approach.

The SBE Principles encourage a broader campus-level approach to sustainability rather than a narrow focus on sustainability features contained within a building itself.

Deakin's design, construction and sustainability experience has come together to create a smarter,

Deakin-specific view of sustainability and how the University's buildings and campuses contribute to its wider environmental impact and the communities it serves.

In addition to the SBE Principles, a new Project Impact Analysis process provides a mechanism to achieve the 2030 aspiration that every new Deakin building will offset its own sustainability impacts. This presents a paradigm shift from the historical model, in which sustainability impacts of new buildings were an accepted part of growth.

The scale and utilisation of Deakin's built environment also significantly influences sustainability impacts. The Campus Infrastructure and Utilisation Plan aims to manage this through a strategy to consolidate, rationalise, re-task, improve and develop the University's existing buildings rather than build new spaces, along with a focus on improving timetabling and space allocation.

### Deakin's Sustainable Built Environment Principles.

#### Building Performance

Building performance management provides the opportunity to ensure that our buildings are operating in the sustainable way they were designed.

#### Energy and Emissions

Energy and emissions is focusing on the energy performance of our buildings and how to reduce the emissions associated with energy demand.

#### Water

Promoting water efficiency within our buildings, utilising alternative water sources fit-for-purpose and understanding how we use our water.

#### Land Use and Ecology

Reducing the impacts on the natural environment from the implementation of a new built environment.

#### User Comfort

Focus our attention on the user experience to promote performance, health and wellbeing.

#### Travel and Transport

How we actively move around our buildings and promote the use of active transport modes.

#### Materials

Driving change in the materials we use in our buildings, identifying where we can use recycled content in the base build and fit out.

#### Waste and Recycling

Working towards reducing our impact on the environment through waste avoidance, minimisation and recycling.



## Green labs

**In 2017, Deakin launched a pilot of the Green Lab program, awarding the first certificate to the Centre for Advanced Sensory Science (CASS).**

The Deakin Green Lab program works with laboratories across the University campuses with the aim of making these resource-intensive spaces more sustainable.

The Organisational Sustainability team works with researchers, laboratory managers and other staff to implement more sustainable practices that will:

- reduce energy consumption and related carbon emissions
- reduce waste
- maintain equipment to maximum efficiency
- conserve resources
- lead to more sustainable purchasing.

CASS are now working to incorporate the lessons learned throughout the Green Lab process into the curriculum for the Food Innovation major within the Bachelor of Food and Nutrition Sciences.

CASS sees the implementation of 'green teachings' as a way to reduce its impact and also create awareness in the next generation of scientists and teachers about working in an environmentally sustainable manner.



# Energy & emissions

In 2017, the energy consumed across all Deakin campuses was made up of:

- 54 per cent grid supplied electricity
- 43 per cent natural gas
- three per cent fuels used by the University vehicle fleet and generators.

Overall, this represents a rise of six per cent from the previous year and a total of 82,021 tonnes of emissions (tCO<sub>2</sub>e – scope 1, 2 and 3).

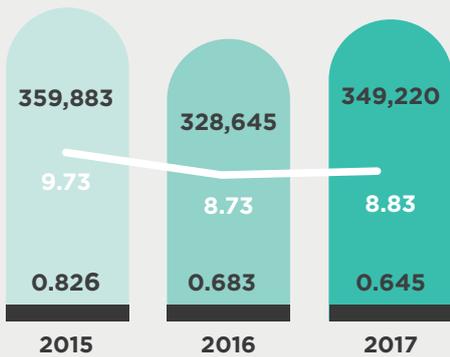
The increase in total energy consumption is largely due to a 26 per cent rise in natural gas use from the new student accommodation at the Burwood Campus, along with a three per cent rise in grid supplied electricity across the Burwood and Waurn Ponds campuses.

**Overall emissions have reduced from 2016, primarily from decreased fleet emissions and a change to the emissions factor used for grid supplied electricity.**



## Energy

Electricity, Gas, Fuel (including fleet)

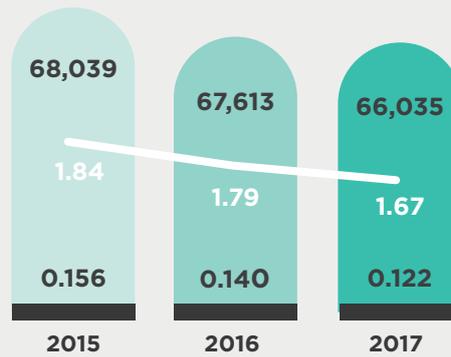


- Energy (GJ)
- Energy (GJ) / GFA
- Energy (GJ) / EFTSL



## Emissions

Scope 1 and 2 (electricity, gas, fuel, refrigerants)



- Scope 1 and 2 emissions (tCO<sub>2</sub>e)
- Emissions (tCO<sub>2</sub>e) / GFA
- Emissions (tCO<sub>2</sub>e) / EFTSL

Note: 2017 energy and emissions data includes some estimates due to a lag in billing data from utility providers.

## CASE STUDY:

In 2017, Deakin undertook a number of projects to improve the energy efficiency of its campuses. Undertaken through both corrective maintenance and refurbishment works, it is estimated that these projects have reduced electricity use by 500,000 kWh and natural gas by more than 100,000 MJ per year.

### PROJECTS INCLUDED:

- Improved Building Automation Systems (BAS) to ensure Heating Ventilation and Air-conditioning (HVAC) systems only run during operational hours.
- Replaced fluorescent lighting with energy efficient LEDs in a number of spaces.
- Installed timers on boiling water taps, linked exhaust fans with the BAS and adjusted the HVAC temperature set points in a number of spaces.

- Replacement of older HVAC systems with newer, more energy efficient systems.

In 2018, a Building Efficiency Program to identify and progress further energy efficiency opportunities will be developed as part of the University's Carbon Management Strategy.

# Water

In 2017, Deakin achieved its 2020 aspiration of reducing water consumption to five kilolitres or less per person (EFTSL plus FTE staff). This is an overall reduction of around 2.5 per cent from 2016.

Achieved through a combination of water efficiency initiatives, this success represents the same water use intensity per person as 2013, where approximately 187,000 kilolitres of water was consumed across the University.

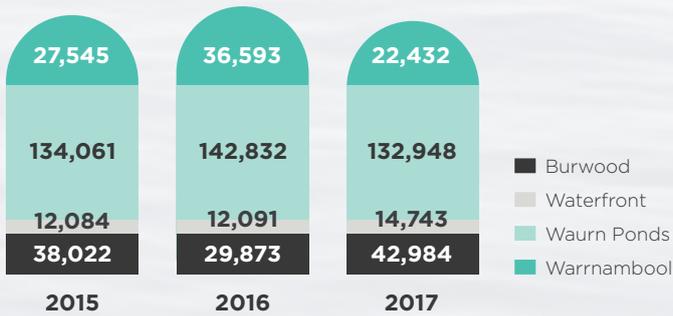
From 2018, further initiatives will be progressed to work towards the 2025 aspiration of using reclaimed/captured water to irrigate 25 per cent of the University grounds.

In 2017, a new smart irrigation system was installed at the Waurin Ponds campus. Comprised of new sensors, monitoring and control systems, it will save approximately 43,000 kilolitres of water per year.



## Water consumption

Kilolitres



## Emission reporting & profile.

The University collects and manages data from all emission sources through the data management software, CCAP Integrated by Kinesis.

Deakin's carbon emission profile comprises of scope 1, 2 and 3 emissions with scope 1 and 2 emissions annually reported under the National Greenhouse Gas and Energy Act 2007.

Emissions are also reported annually to the Tertiary Education Facility Management Association (TEFMA) for sector benchmarking. The below diagram represents Deakin's carbon emission profile for the 2017 calendar year.

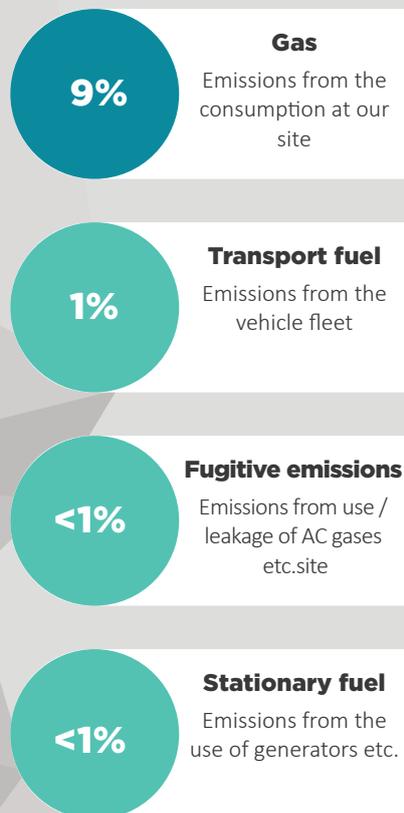
## EMISSIONS REPORTING BOUNDARY.

Deakin measures all emissions from its Australian based operations, including campuses, learning centres, student accommodation and corporate centres.

The National Greenhouse Gas and Energy Act 2007 informs the scope 1 and 2 emission sources that are deemed to be within Deakin's operational control, for reporting purposes.

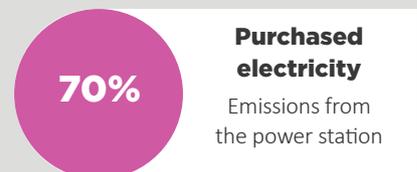
### SCOPE 1.

**Direct emissions from campuses & sites**



### SCOPE 2.

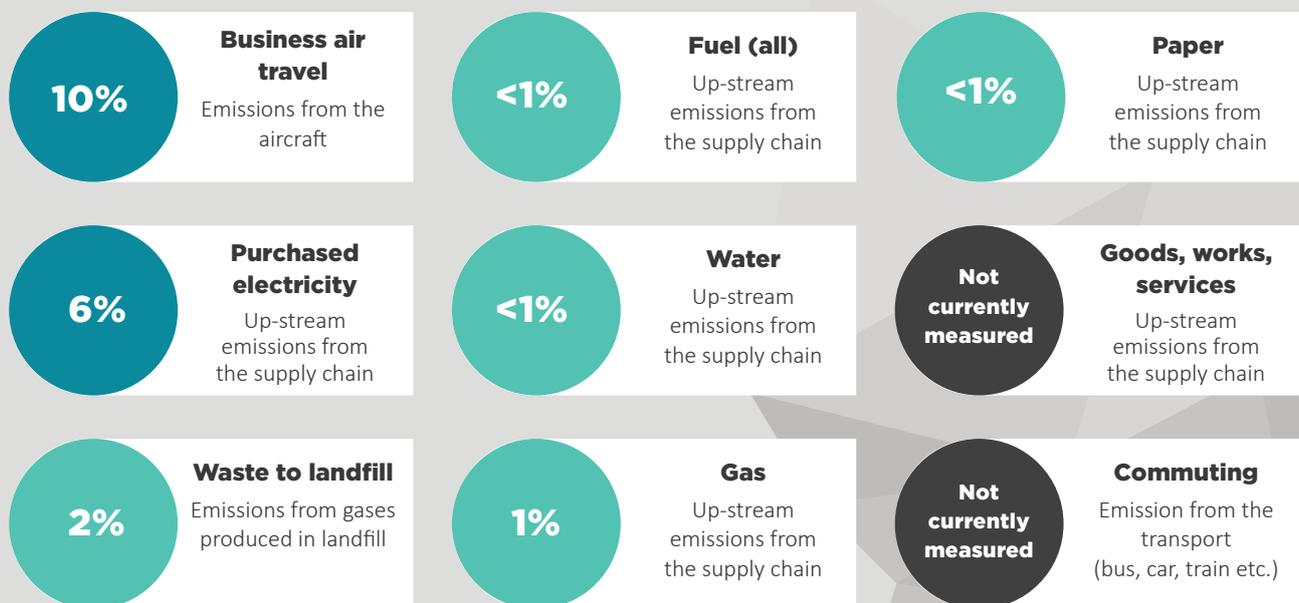
**Indirect emissions from purchased electricity**



Emissions from purchased electricity, natural gas and university related air travel are Deakin's biggest emission reduction challenges.

## SCOPE 3.

Indirect emissions produced as a consequence of University operations



# Waste

In 2017 1895 tonnes of waste was generated across Deakin campuses (including student accommodation).

Only 16 per cent of this was recycled, equivalent to 308 tonnes diverted from landfill.

This equates to 37 kg of waste per person (EFTSL plus FTE staff) going to landfill annually. Of this, up to 42 per cent is organic food waste and a further 34 per cent is potentially recyclable.

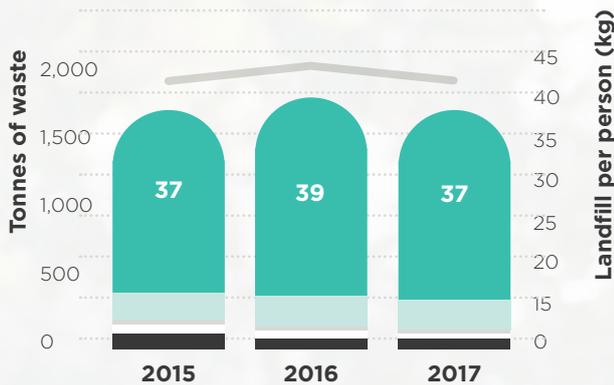
Despite more than seven per cent growth in staff and student numbers and an increase in gross floor area of 24 per cent, waste volumes have plateaued from 2015 to 2017.

The overall proportion of waste diverted from landfill (i.e. recycling) dropped from 20 per cent in 2015, to just 16 per cent in 2017, presenting an ongoing sustainability challenge.



## Waste

Tonnes of waste and landfill per person (kg)



	2015	2016	2017
Waste	1487	1590	1587
Paper Recycling	175	184	166
Other Recycling	22	18	13
Organic Recycling	77	67	36
Comingled Recycling	107	81	94
Landfill per person (kg)	37	39	37



The University is committed to reducing this impact, and in 2017 developed a new Waste Management Plan which will guide the achievement of its 2030 aspiration of zero waste (equivalent to diverting 90 per cent or more from landfill).

The first milestone is to reduce waste to landfill from the 2016 baseline of 38.6 kg per person to 20 kg per person in 2020 (equivalent to diverting 26 per cent of waste from landfill).

## Implementing food waste diversion from landfill is a priority, and will help achieve the University's 2020 waste and recycling aspiration.

### Deakin's "War on Waste"



#### Coffee cups.

In 2017, a reusable cup campaign was launched across the University.

Staff, students and visitors can purchase a reusable cup from one of the many hospitality outlets on campus and receive a discount on their coffee purchase.

This initiative has seen more than 70,000 coffee sales in a reusable cup, preventing more than 997 kg of coffee cups going to landfill.



#### Furniture waste.

To prevent used furniture going to landfill, 500 quality used chairs were donated to Rotary in 2017 to be used by schools in developing countries.



#### Food waste.

Building upon the successful implementation of a Closed Loop composter at the University's Waurin Ponds Estate, a broader food waste diversion program will be implemented in 2018 within Deakin's hospitality venues.

## Sustainable transport

Many sustainable transport initiatives have been implemented over recent years including the:

- development of end of trip facilities for active transport users
- introduction of shuttle buses
- improved public transport services
- consolidation of the University fleet through new technologies and practices that reduce unnecessary work and study-related travel.

These initiatives have not only improved the accessibility and experience at the campuses but has also reduced fleet-related carbon emissions by more than 45 per cent.

In 2017, Deakin enhanced its sustainable transport options through an extra park and ride shuttle bus service for its growing Geelong campuses, and worked with Public Transport Victoria to establish an improved service to the Burwood Campus.

## Travel and Sustainability Survey

The biannual Travel and Sustainability Survey was also undertaken in 2017.

This survey provided staff and students the opportunity to have input into Deakin's transport and sustainability strategies and have feedback on what is working and what needs to be improved. The 2017 survey results revealed that despite the various sustainable transport options available to staff and students:

- 45 per cent used a car as their primary method of travel to campus
- 17 per cent regularly walk or ride to a Deakin campus
- 30 per cent used public transport
- six per cent carpooled with others.

With student numbers expected to grow by around three per cent each year to 2030, the implementation and promotion of sustainable transport options will be an area of ongoing focus.

In 2017, a comprehensive audit of all on campus cycling infrastructure was completed, resulting in the development of new standards.





## Our natural environments

**Deakin's campuses are situated on 450 hectares of land and have been developed using ecologically sensitive landscaping principles to provide a delightful campus experience.**

Home to native plantings, wildlife and natural waterways, the University has a clear responsibility to manage and enhance these spaces.

In 2017, the University undertook stage one of an extensive revegetation project around the water retention wetlands at the Waurin Ponds Campus.

Originally built in the 1990s, these wetlands are an important part of ground water management and are home to aquatic vegetation, support the habitat of a range of common aquatic species, particularly waterbirds and frogs. While still functional, over the years both the aesthetics and environmental value of the lakes has declined.

Using locally collected seeds, indigenous plants were grown specifically for the site and planted into a specialised fabric to minimise erosion.

The project forms part of a longer-term plan to increase the biodiversity of flora around the lakes, and provide habitat for native fauna.

**In 2018, further native plantings are planned in conjunction with an event to engage students in the restoration and management of these important spaces.**



## Adapting to a changing climate

**Over recent years, Deakin's campuses have experienced the impacts of a changing climate. Heatwaves, power disruptions and significant storm events have impacted operations and tested the resilience of the campuses.**

In 2016 and 2017, water runoff from significant rainfall events caused damage to buildings, roads and landscaping at the Waurin Ponds Campus. In 2017, work began to identify priority actions to manage future water runoff risks and create a campus that is more adaptable and resilient to climate change.

For new buildings and infrastructure, Deakin's SBE Principles provide an ongoing framework to ensure climate adaptation strategies are appropriately applied. This is achieved through the development of a climate adaptation plan and risk assessment within the design phase of all new buildings, which considers climate change scenarios and associated climate change projections.





## Our workforce

Deakin employs thousands of staff and drives and supports sustainable economic growth in the communities it serves. In 2017, staff numbers continued to grow, primarily in the academic areas.

### DEAKIN STAFF 2012-2017.

Full time equivalent staff	2015	2016	2017	% (2016-17)
Full time/part time	3,461	3,662	3,830	4.40%
Casual (estimate)	757	826	862	4.12%
<b>Total</b>	<b>4218</b>	<b>4488</b>	<b>4692</b>	<b>4.35%</b>
Academic	1922	2057	2158	4.68%
Professional staff	2296	2431	2534	4.06%

### DEAKIN STAFF. (GENDER & AGE)

Full time equivalent staff	2015	2016	2017	% (2016-17)
<b>Gender</b>				
Female	2022.9	2130.48	2192.18	2.81%
Male	1437.9	1529.44	1636.2	6.52%
Unspecified	0	1.8	1.8	0.00%
<b>Total</b>	<b>3460.7</b>	<b>3661.7</b>	<b>3830.2</b>	<b>4.40%</b>
<b>Age</b>				
18 to 30 yrs	291.8	374.9	338.2	-10.85%
30 to 40 yrs	1043.96	1099.55	1215.16	9.51%
40 to 50 yrs	938.77	984.31	1059.25	7.07%
50 to 60 yrs	867.61	868.81	877.97	1.04%
Above 60 yrs	318.6	334.15	339.6	1.60%
<b>Grand Total</b>	<b>3460.74</b>	<b>3661.7</b>	<b>3830.2</b>	<b>4.40%</b>



## Staff

# 3,830

Full time / part time

# 862

Casual

# 4,692

Total

# Procurement & supply chain

Deakin purchases millions of dollars of goods, works and services on an annual basis.

In 2017, the University reviewed and updated tender documentation to include new schedules to assess the sustainability of its supply chain.

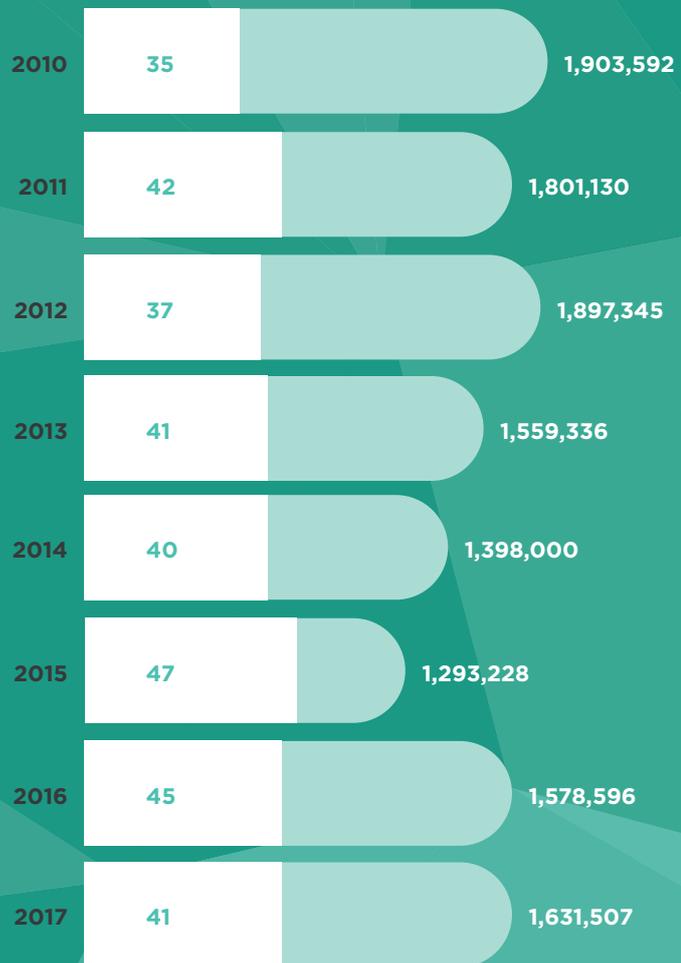
The new schedules contain specific questions that assess a supplier’s environmental and social sustainability performance, systems and commitments. This new documentation was utilised in various requests for tender throughout 2017, the most recent being for grounds maintenance and travel management.

## Paper usage

The University continues to focus on reducing paper usage across its campuses. In 2017, more than 22 million sheets of A4 paper were used, equating to approximately one ream of paper (500 sheets) per student and a reduction of eight per cent from 2016. More than 99 per cent of all paper used is certified carbon neutral, 80 per cent is made from 100 per cent post consumer recycled content and the vast majority is Australian made.

## Green Spend

% of Stationery spend



Stationery Spend \$  
Green Spend %

# COMMITTING TO A LOW CARBON FUTURE.



**There is no place on earth that isn't experiencing the impacts of climate change, and energy use is a major contributor.**

Sustainable and clean energy is a core building block for sustainable development around the world and there has never been a more important time to focus on reducing the carbon intensity of energy sources, particularly electricity production.

## The Paris Agreement

In 2015, an historic global climate agreement known as the Paris Agreement was established under the United Nations Framework Convention on Climate Change (UNFCCC) at the 21st Conference of the Parties (COP21) in Paris.

The Paris Agreement was built on existing international efforts to respond to climate change in the period up to 2020 and set in place a framework for all countries to establish mitigation targets beyond 2020.

**The aim of the Agreement is to hold the average global temperature increase to well below 2°C, pursuing efforts to keep global warming below 1.5°C above pre-industrial levels.**

## CASE STUDY:

### Supporting Geelong's Low Carbon Growth Plan

**Established in 2011, the Future Proofing Geelong partnership unites ten high profile organisations to work together toward a low carbon future in the Geelong region.**

The partnership facilitates and promotes activities which have a positive impact on society, the environment and the economy, with the aspiration that by 2030, Geelong is internationally recognised as one of the world's most sustainable cities.

Deakin is a proud member of the partnership, and in 2017 contributed to the impact statement for the Low Carbon Growth Plan for Geelong. For more information visit:

[www.geelongaustralia.com.au/fpg/default.aspx](http://www.geelongaustralia.com.au/fpg/default.aspx)

# Carbon Management Strategy

By 2020, it is projected that the University will emit over 92,000 tonnes of carbon emissions across all operations, an increase of approximately 20 per cent on 2013 figures.

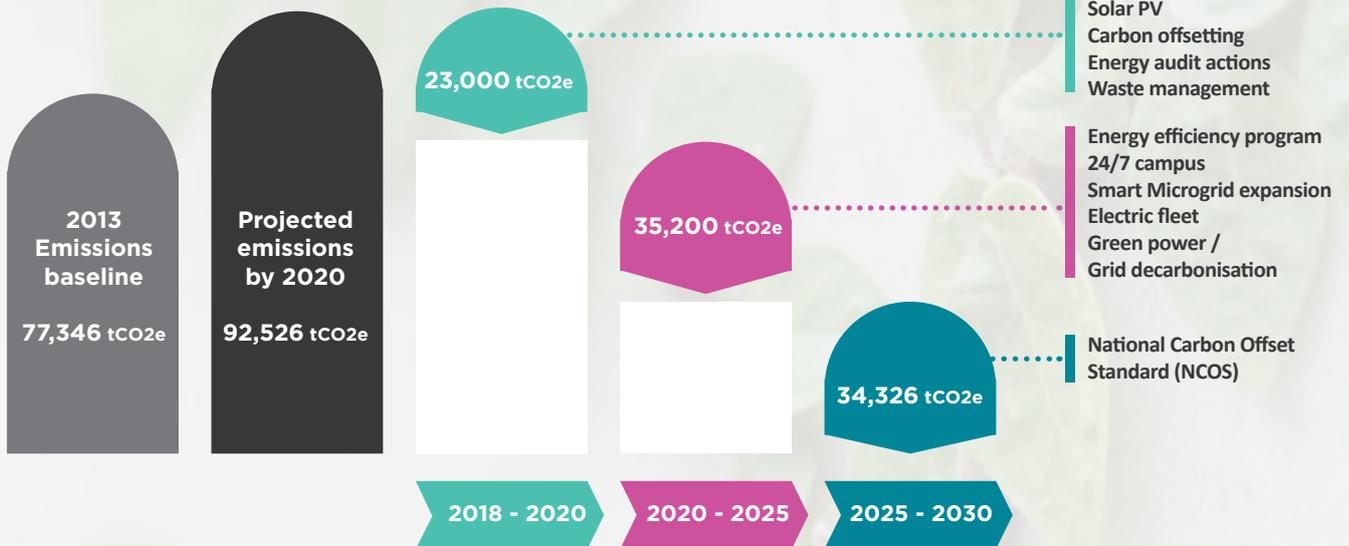
To address this growing impact, in 2017 the University finalised the Deakin Carbon Management Strategy providing the strategic framework for managing Deakin’s operational carbon emissions and achieving the aspiration of carbon neutrality by 2030.

This aspiration will be achieved through the avoidance, reduction, replacement and offsetting of emissions as shown in the below diagram.



## Emissions - Scope 1, 2 and 3

Tonnes CO2e (annual)



On-site renewable energy currently represents less than one per cent of Deakin’s electricity source, however this is set to change significantly with the implementation of initiatives within the Carbon Management Strategy. These include the development of a microgrid at the Waurn Ponds Campus and the possibility of a number of large rooftop solar photovoltaic systems at the Waterfront and Burwood campuses, generating sizeable emission reductions.

Deakin has also formed a partnership with Qantas Future Planet to offset all the University’s travel emissions (Qantas and non-Qantas flights and fleet) and provide funding towards the research undertaken by Deakin’s Blue Carbon Lab led by Dr Peter Macreadie.

**Combined, these initiatives will achieve Deakin’s 2020 aspiration to return to its 2013 emissions baseline of just over 77,000 tonnes – the first milestone in working towards carbon neutrality by 2030.**



## Smart Microgrid

In 2017, Deakin announced the development of an industrial scale, smart microgrid energy system and research platform at the Waurn Ponds Campus.

To be built in partnership with AusNet Services, the \$30 million-dollar project will provide guidance for future distributed energy development as well as support Deakin's ongoing power and sustainability requirements.

Development of this facility commenced early in 2018 with the system expected to be operational in 2019. The initial infrastructure will include:

- Solar generation capacity of 7.25 MW
- A 1MW/1MWh large scale battery storage capability as well as smaller distributed batteries
- Real time links with a new research, teaching and visualisation centre which will be instrumental in training the next generation of energy professionals.

### The platform will:

- support critical research and development to inform the rollout of sustainable microgrid systems in the community and their effective integration with existing energy networks
- provide 54 per cent of the Waurn Ponds Campus' electricity requirements
- reduce the University's carbon emissions by more than 12,000 tonnes per annum.



Deakin's smart microgrid will be the largest campus-based system in Australia and is a significant step towards the University's ambition to achieve carbon neutrality by 2030.

## How it works

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**A substantial solar installation will be positioned on approximately 14 hectares at the rear of the Waurn Ponds Campus as the primary source of energy generation.**

This consists of single-axis tracking solar panels which follow the sun's path during the day. Roof top solar installations will also be included, to support further research in relation to the integration of diverse energy sources and local behavioural modelling.

A significant battery storage capability will underpin the generation system to enable research and testing of different technologies and assist in matching load characteristics with output. Deakin's BatTRI-Hub prototyping and research centre will play a fundamental role in supporting this critical area of research.

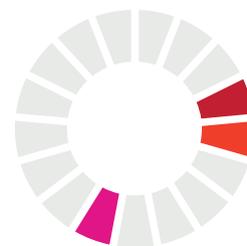
## Future focus

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**While the system is significant on its own, the clear vision and commitment for both AusNet Services and Deakin is to work with governments, industry and the community to expand on this solid foundation and grow a vital culture of innovation and sustainability across the broader community.**

The future focus is on diversifying and expanding research on renewable generation options, storage and system operation as well as creating direct links with sustainable and innovative transport system development.

# DIVERSITY, ACCESS & SOCIAL INCLUSION.



5



10



## Commitment to diversity

One of Deakin's core values is inclusion. In 2017, Deakin launched its Gender Equity Plan 2017-2020.

This plan offers an understanding of the barriers to diversity and inclusion and uses this understanding to introduce meaningful actions to address gender inequities for staff.

In 2017, Deakin also launched a new LGBTIQ+ Plan (2017 – 2020). Informed by the LGBTIQ+ Community Working Group, this plan is aimed at improving the wellbeing and inclusion of lesbian, gay, bisexual, transgender, intersex, queer/questioning (LGBTIQ+) students and staff.

Alongside this, various equal opportunity training courses were provided to staff in 2017 to ensure responsibilities and rights in the workplace were well understood and applied.

A Cultural Diversity and Inclusion Plan (2018-2020) was also developed. This plan will promote access and inclusion for students and staff of diverse cultural and linguistic backgrounds and promote cultural competence for all.

**The Cultural Diversity and Inclusion Plan will be further developed by a working group, with representation from across the University, and implemented from 2018.**

## CASE STUDY:

### SAGE Athena SWAN project

**The Science in Australia Gender Equity (SAGE) Athena SWAN project is an evaluation and accreditation program to enhance gender equity for science, technology, engineering, mathematics and medicine (STEMM). This project continued in 2017 with focus on data collection and awareness raising.**

A new Gender Equity in Research policy was also introduced containing two new funding programs for researchers who are also primary carers. The schemes aim to reduce the barriers for primary carers to maintain research continuity and networks, while balancing their family responsibilities.

At Deakin, inequality is addressed from several perspectives; from internationally recognised research to the University's implementation of diversity and inclusion strategies to benefit students, staff and the broader Deakin community.





## Accessible and inclusive campuses

The newly launched Disability Access and Inclusion Plan (2018 – 2020) focuses on improving access and support for students and staff of all abilities, including digital accessibility strategies.

The number of students registering with the Disability Resource Centre at Deakin has increased by 40 per cent, from 1627 in 2015 to 2272 in 2017.

A new automated registration form has been developed to allow students to request disability support online and enhance usability and efficiency in the registration process. This will be launched in early 2018.

## Enhancing accessibility at the Waurm Ponds Campus

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In 2017, the Waurm Ponds Access Map Project engaged qualified access consultants to audit all Waurm Ponds Campus paths and recognised pedestrian routes.

As a result, new overlays for the existing campus maps were developed, and priority areas for future modifications to improve accessibility around the campus were identified.

Over the past 40 years, the Waurm Ponds Campus has undergone substantial redevelopment and significant expansion. More than 155 buildings, a number of outdoor teaching facilities and expansive recreational facilities are linked by primary and secondary pedestrian connections across the campus.

While accessibility is always a priority when planning new projects and maintenance works, there are complexities when dealing with a university campus that has been developed over many decades and is spread over a vast amount of space.

This has resulted in some areas where accessibility, especially to external pedestrian paths, are less than ideal.

During 2014-15, a number of pedestrian paths were completed on the campus to:

- improve the pedestrian and cycling network
- reduce conflicts between pedestrian and vehicular traffic
- reduce occupational health and safety risks
- increase personal safety through lighting and improved path alignments.

## CASE STUDY:

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### Changing Places enhances accessibility and equality

In 2017, Deakin University finalised the plans for its first ever Changing Places facility on campus.

To be incorporated in the newly refurbished Central Plaza at the Waurm Ponds Campus, the Changing Places facility will provide a publicly accessible, full sized change table and hoist to meet the needs of people with severe and profound disabilities.

Deakin is committed to the continuation of this work and has further plans to incorporate Changing Places at the Burwood Campus.

#### Why is it important?

According to the Australian Institute of Health and Welfare, it is estimated that around 200,000 people with disability suffer from severe or functional incontinence and require the assistance of carers for their toileting needs. Standard disability access toilets across Australia do not contain the features needed by many people with severe or profound disabilities.

A 2016 survey undertaken by the Department of Health and Human Services identified that only nine

locations across Victoria had accredited and operational Changing Places facilities, as compared to the large number of people who needed access to these facilities.

Changing Places is a program led by the Association for Children with a Disability (ACD) that is focused on addressing this challenge by advocating for improved facilities, providing technical guidance to organisations and partnering with governments to provide project funding contributions.

# SHAPING OUR FUTURE LEADERS.



**Universities worldwide, including Deakin, are in the privileged position of equipping the next generation of leaders, innovators and thinkers to understand the global challenges facing the world.**

**Therefore, the University plays a vital role in achieving a sustainable future by inspiring solutions to these challenges that are socially, economically and environmentally responsible.**

## **4** QUALITY EDUCATION **Valuing sustainability**

**In 2017, Deakin established sustainability as one of its core values, acknowledging that sustainability shapes and impacts the experience for all people at the University.**

Regardless of the course a student studies at Deakin, sustainability is embedded within their learning experience. It may be experienced directly through their course or indirectly through the provision of campus environments that promote and support sustainable behaviours, are inclusive, and help to ensure the success and wellbeing of all students.

Deakin's achievement in this space is demonstrated by its ranking:

- first in Victoria (fifth in Australia) for learning satisfaction
- second in Australia for learning resources
- third in Australia for the employability of our graduates.

## Embedding the SDGs

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Deakin is committed to embedding the SDGs within all areas of the University. As outlined throughout this report, Deakin's operational linkages to the SDGs are well understood.

Within the curriculum, Deakin Business School leads the way and has systematically mapped the 17 SDGs within its teaching and learning activities, and embeds a minimum of eight SDGs within the portfolio of undergraduate and postgraduate courses.

In 2018, the University will undertake a detailed mapping exercise across all Faculties and research areas to:

- further identify and understand how teaching and research at Deakin aligns with the SDGs
- raise awareness of our commitment to the goals
- plan future initiatives to further enhance our contribution to them.

## SDG colloquium

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In 2017, Deakin's Centre for Sustainable and Responsible Organisations (CSaRO) sponsored an SDG colloquium.

Exploring the opportunities and challenges of integrating SDGs across research and curriculum, the colloquium provided an opportunity for 30 academics and industry representatives to share and exchange best practices in pedagogy and research to implement the SDGs. The colloquium is also linked to a special issue of Social Business Journal (ABDC B) which will further contribute towards developing, exchanging and disseminating knowledge and scholarly views on SDGs.

## CASE STUDY:

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### Value of integrating the SDGs recognised by Vice-Chancellor

In 2017, staff from the Faculty of Business and Law received a Vice-Chancellor's Award for Outstanding Contribution to Building Economic, Social and Human Capital.

This award recognised the team for integrating the SDGs within curriculum, research, engagement and operations. This integration led to an increased focus and awareness of these goals amongst staff and students, collaborative research with industry partners, government, the wider community and publicly shared sustainability initiatives.



**From left to right:** Ms Fiona Vagg, Professor Michael Polonsky, Dr Fara Azmat, Professor Kim Watty, Dr Harsh Suri.  
**Not in photo:** Mr Victor Wong

## Principles for Responsible Management Education

Deakin's Faculty of Business and Law has been a signatory to the Principles for Responsible Management Education (PRME) since 2011.

The PRME is a United Nations-supported initiative, and seeks to realise the achievement of the SDGs through responsible management education.

In 2017, the Deakin Business School hosted and led the fifth Regional PRME meeting. The meeting was attended by representatives from 14 higher education institutes across Australia and New Zealand and panellists from the ANZ bank, Global Compact Network Australia, Department of Foreign Affairs and Trade and the Institute of Public Administration Australia (IPAA).

Working with the theme 'IMEA'- *inspire, motivate, engage and act*, the aim of this meeting was to share the achievements of the PRME member institutes,

collectively discuss the challenges faced in progressing the SDG agenda and set future goals for a greater impact.

In 2017, Deakin was also recognised as a PRME champion for the 2018-2019 cycle.

**This achievement recognised the Deakin Business School as being actively involved with PRME initiatives and a thought and action leader in the responsible management community as well as an ambassador for the PRME community.**



### CASE STUDY:

**Students invited to create the next 'Big Idea'**

**In 2017, Deakin University students once again had the opportunity to participate in the Big Idea competition in association with The Big Issue, Australia's longest standing and most significant social enterprise.**

The competition invited university students from across Australia to develop a social enterprise idea that could

potentially change the lives of thousands of disadvantaged Australians.

Deakin students were encouraged to complete the program for credit towards their degree via the Work Integrated Learning programs and were given access to a series of lectures, workshops and online seminars, delivered by some of Australia's most influential leaders.

## International recognition for quality, academic and professional excellence

In 2017 the Deakin Business School gained international recognition by becoming accredited by the Association to Advance Collegiate Schools of Business (AACSB), the longest serving global accrediting body for business schools in the world.

**Five per cent of business programs worldwide are AACSB accredited and Deakin Business School is one of only three in Victoria.**

The Deakin Hallmarks initiative, an award that recognises the outstanding achievements of students against Deakin's Graduate Learning Outcomes, was also recognised by the AACSB (amongst more than 315 submissions) for driving innovation in business education and graduate employability that benefits communities.

Each of the Deakin Graduate Learning Outcomes emphasise transferable skills and capabilities necessary for advancing SDGs, in particular Global Citizenship which focuses on engaging ethically and productively in the professional context and with diverse communities and cultures in a global context.

Living Labs provide a platform for students to learn about sustainable development, supporting Deakin's contribution to the SDGs.





## Living Labs

Deakin's campuses are increasingly used as Living Labs, where the knowledge and research capacity of students and staff is applied to real world challenges that face the University.

This provides positive outcomes for learning, research and campus operations. For example tailoring the specific plant species used within the landscaping of the Burwood Campus, enables the School of Life and Environmental sciences to use on-site specimens for teaching and research.

### LEARNING

Coursework applied to real world challenges, and advancement of SDG Goal 4 - Quality Education.

### RESEARCH

Opportunity to undertake action based research and test innovations.

### OPERATIONS

Initiatives that progress Deakin's Sustainability Aspirations.

## Real-time analysis

In 2017, the Living Lab concept was expanded with the installation of digital screens within the Centre for Advanced Design in Engineering Training (CADET) building that display real-time information on building performance.

The \$55 million-dollar state-of-the-art facility houses some of the country's most advanced and future-focused simulation and visualisation systems, purpose-built interactive laboratories and learning environments. Building features such as chilled radiant cooling beams, natural ventilation, grey water systems and intelligent metering all contribute towards CADET's sustainability credentials and impacts.

Through animations, graphs and simple messages about how the building is performing against selected benchmarking data, the new screens provide a unique opportunity to understand how CADET's various ecological sustainable design features impact on the building's performance and provide real world information and data for research projects and course work.

The CADET building will also host a visualisation centre for the Deakin Smart Microgrid, enabling critical research and development to inform the rollout of sustainable microgrid systems in the community and their effective integration with existing energy networks.



## Education for all

**Quality education underpins the ability of people to attain quality jobs, stimulate economies and contribute to sustainable development practices.**

Deakin graduates surveyed through the 2017 Graduate Outcome Survey-Longitudinal (GOS-L), which measures the medium-term outcomes of graduates, revealed:

- 92 per cent of students who graduated from Deakin in 2013 were employed in 2017
- the number of those in full time work had increased from 78 to 90 per cent in the past three years.

### Deakin Engagement and Access Program (DEAP)

With pleasing graduate employment rates, there is also a focus on increasing participation in higher education.

**In 2017, DEAP provided outreach programs for approximately 10,400 students from 12 primary schools and 26 secondary schools in low socio-economic areas.**

DEAP partners' with schools in Melbourne, Geelong and the Barwon South Western region and encourages students from years 3 to 12 to see tertiary education as an achievable pathway.

Partnering with Deakin's Institute for Frontier Materials, Ardoch Youth Foundation and Headspace, DEAP also worked to support the focus on early years literacy, wellbeing and STEMM. It also provided financial scholarships to the Skyline Foundation Australia and The Smith Family, assisting young people to extend their education to university.

### Sanctuary Scholarships

**In 2017 Deakin offered two full international fee-paying Sanctuary Scholarships to asylum seekers and refugees on temporary and bridging visas and committed to providing 15 Sanctuary Scholarships from 2018-2020 (five scholarships each year).**

Each scholarship recipient will also be provided with a \$4000 living allowance each year.

Focusing on the retention and success of Deakin's Indigenous students, the Australian Indigenous Mentoring Experience (AIME) hosted nine program session days on Deakin campuses in 2017 involving 34 schools, 183 indigenous secondary school students and 78 University mentors.

### Widening Participation Network

In 2017, Deakin also led the Widening Participation Network across the higher education sector. This Network produced a state map of Higher Education Participation and Partnership Program (HEPPP) funded outreach initiatives across the 260 Victorian low socio-economic secondary schools to identify gaps.

**The Inclusive Curriculum and Capacity Building project launched an Inclusive Teaching Toolkit for Deakin staff in 2017. Developed over the last two years, this toolkit provides a significant resource for teaching staff and has received excellent feedback from users.**

Along with this, 24 past and current Inclusive Curriculum and Capacity Building projects have been evaluated and a report is being developed to highlight inclusive teaching models, exemplars and systemic barriers, with recommendations for future practices.

## Respect Now Always

Launched at the start of 2016, Respect. Now. Always. is a national initiative to address sexual harassment and sexual assault in university communities. It has long-term commitment from all 39 Australian universities.

### Our commitment is to:

1. protect and support victims
2. prevent of sexual harm and interpersonal violence
3. change attitudes and behaviours
4. raise awareness for support services
5. improve services, policies and procedures.

**For many years, Deakin has worked with staff and students to build a strong culture of safety, mutual respect and inclusion, and through the Respect. Now. Always. initiative, Deakin undertook the following:**

- Strengthened existing policies and procedures, ensuring that victim-centred support is provided to staff and students when an incident happens, regardless of where it occurred.
- Identified and briefed 350 staff who were most likely to receive sexual assault disclosures.
- Organised face-to-face training for up to 1000 staff to improve their understanding of sexual violence and responding in a victim-centred approach.
- Trained all security officers in responding to disclosure of sexual assault.
- Implemented a bystander training program for students and staff.
- Enrolled students in the online training module 'Consent Matters'.
- Implemented an online training module 'Responding to Disclosure of Sexual Harm' for all staff.
- Promoted respectful relationships and ethical sex through an education model.
- Increased the availability of counselling and support services to students.
- Committed to delivering a wide range of prevention and response initiatives through the RNA Action Plan, which embedded the nine recommendations from the AHRC's Change the Course report.

Deakin's Equity and Diversity Unit also participated in the Respect. Now. Always. Strategy Group to improve support services and the awareness, prevention and reporting of sexual assault and sexual harassment by women at Deakin in response to the Australian Human Rights Commission's report, Change the Course: Sexual Assault and Sexual Harassment at Australian Universities (2017).

# RESEARCH & PARTNERSHIPS.



Throughout 2017, Deakin made significant advances in all major international research rankings and is placed in the top two per cent of universities in the world.\*

With these credentials, the University is well positioned to contribute to the achievement of the SDGs and the 2030 Challenge.

\*ARWU, QS, Leiden and Times Higher Education

## CASE STUDY:

### Qantas Future Planet Partnership

In 2017, Deakin worked with Qantas to establish a partnership through the Future Planet Program.

To be implemented in 2018, the partnership supports the research efforts of Deakin's Blue Carbon Lab and enables the University to offset all travel emissions through projects such as fire management programs in the North Kimberley to prevent wildfires, and wind turbines to provide clean, renewable energy to communities in Southern India.

Headed by Associate Professor Peter Macreadie, the Blue Carbon Lab plans to undertake researchers into the health of Australia's Great Barrier Reef. Through a valuation and mapping process, this project will help researchers understand how each habitat might respond under different management scenarios and how we might reduce land-derived stress on the reef.

## CASE STUDY:

### Rescuing data collections about Victoria's seafloor and coastal ecosystems

A changing climate has marine ecosystems across the world under threat. This is no truer than in Australia, with our oceans being some of the fastest ocean warming areas in the world.

These changes and impacts over time can be seen through various current and historical data sets. The challenge for researchers often lies in accessing this data and obtaining a baseline data set describing how things were, or how things are now.

To help address this challenge, in 2017 researchers from Deakin's School of Life and Environmental Sciences and staff from Deakin Library and Deakin eResearch led the Victorian Marine Habitat Mapping (VMHM) project, bringing together data on Victoria's marine habitats from around the state to

make it available for current and future researchers through the Victorian Marine Data Portal.

Funded as an Australian National Data Service (ANDS) 'High Value Collection' project, the portal enables marine habitat researchers to share data and access curated data sets from Deakin, the Victorian Government and other agencies.

Importantly, the project has preserved existing data about our seafloor and coastal ecosystems, often from older technologies such as VHS tape, and made it available for researchers into the future.

One of the data sets is a complete topographic model of the sea floor from Victoria's coastline out to three nautical miles, compiled from data collected by a number of institutions including Deakin, Parks Victoria, Department of Environment, Land, Water and Planning, The Royal Australian Navy, Port of Melbourne and the CRC for Spatial Information.



## Environmental Sciences

Deakin undertakes world leading environmental and marine science research, helping to protect Australia's vulnerable flora and fauna from disease, rapid development and climate change.

### On land

In 2017, Deakin undertook a first-of-its-kind research project that explored the perceptions of 500 Victorians toward the biodiversity and conservation of different ecosystems around the state.

The study found that threatened ecosystems considered by the public to be dry or brown were at risk of being overlooked for conservation, in preference of 'greener' landscapes. This research provided important information for policy-makers into the selection of future conservation reserves.

### Below water

The importance of life below water is particularly relevant to Deakin, with two of its four campuses situated on the Victorian coast, and important natural waterways traversing the others.

The Warrnambool Campus is perfectly positioned to undertake research into fresh and marine water environments and provides a gateway to the Southern Ocean. Adjacent to one of the most productive upwelling systems on Earth, these waters are also important feeding grounds for pigmy blue whales and support productive rock lobster and abalone fisheries. The region has some of the largest waves on Earth generating interest for wave energy converters and is rich in other physical resources including offshore gas reserves.

Current research includes globally recognised seafloor mapping and animal tracking initiatives, along with

research into the physical, chemical and biological characteristics of streams,

rivers and wetlands. This research aims to ensure the sustainable management of these environments, so they can continue providing water for human consumption and agriculture under a changing climate.

### Queenscliff Centre

Over the past 25 years, Deakin has undertaken marine science research through a consortium arrangement with other universities at the Victorian Government's Queenscliff Centre.

In 2017, Deakin established a formal presence at this facility, and invested significantly in upgrades to laboratories and other research spaces, enabling a significant increase of capacity for marine research in this region.



## Water security and sanitation

According to the UN, by 2050 at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water, impacting health, agriculture and the ability to meet global food demand.

Acknowledging the role agriculture will have in responding to this challenge, Deakin's Centre for Regional and Rural Futures is working on a range of national and international research. This includes improving water and

nutrient management in the rice lowlands of Cambodia and Laos and benchmarking water use efficiency and crop productivity in the Australian cotton industry.

The Faculty of Science, Engineering and Built Environment also undertakes important research into integrated water management, catchment management and wastewater treatment to help address these global challenges.

**Students studying courses such as the Bachelor of Environmental Engineering are also armed with the skills and knowledge to effect real change.**



## Enabling sustainable agribusiness

Food insecurity is a growing challenge that has significant impact on people. This insecurity is driven by a combination of factors including:

- climate change
- population growth
- economic structural adjustments
- urbanisation
- increased pressure on ecosystems.

Deakin is addressing this challenge by educating the next generation of thought leaders and change makers through courses focusing on environmental sciences, sustainable regional development, health sciences and business.

The University recognises the key role agribusiness plays in addressing local and global food security and in 2017, partnered with The Energy and Resources Institute of India (TERI) to establish the world's first dedicated nanobiotechnology research centre.

Located within the existing TERI-Deakin Nanobiotechnology Centre in India, the new Centre undertakes research into the use of nanonutrients, nanopesticides and nanoformulations to help address food insecurity, sustainable agricultural practices and environmental sustainability.

From 2018, Deakin has also introduced a new major in food and agribusiness following consultation with industry. Hosted at the Warrnambool Campus, situated within Australia's premier dairy region, the new major will address a number of agribusiness skill gaps and respond to the strong demand for agribusiness graduates on a local and national scale.

**In 2017, Deakin announced \$1.1 million of new scholarships for 11 Indian students to support research focused on global issues including water quality, efficient farming practices, waste management and innovative, agriculture-dependent ways to treat human disease.**

## CASE STUDY:

### Turning plastic waste into clean water and sanitation

**In 2017, Deakin developed a world-first technology capable of printing plumbing and sanitation supplies using 3D filament made from discarded plastic.**

Headed by Dr Mazher Mohammed, Senior Research Fellow at Deakin's School of Engineering, the team developed the 3D printer prototype

and trialled it in the Solomon Islands with the support of Plan International Australia.

The solar powered printers and waste plastic recycling device have shown great potential to replace broken plastic seals, pipes and other devices essential for water supply or sanitation, particularly useful in areas struck by natural disaster and without reliable power. In addition, the use of plastic waste as the source material adds to the project's positive sustainability impact and demonstrates the power of innovative thinking to help solve global sustainability challenges



1

NO POVERTY



8

DECENT WORK AND ECONOMIC GROWTH



## Shaping the future of work and economic growth

**The future of work and paid employment around the world is an area of increasing uncertainty.**

Advances in technology, such as artificial intelligence and automation are changing how work is performed. There are growing challenges in relation to inter-generational wealth inequalities and poverty including hunger, limited access to basic services and a lack of participation in decision-making.

In 2017, the Alfred Deakin Institute (ADI) hosted the ADI Policy Forum – The Future of Work and Basic Income Options for Australia.

Bringing together a number of experts, these challenges were explored from an Australian perspective and provided a platform for an informed debate on these important issues.

**With the expertise of world-class researchers from diverse disciplines, the Deakin Business School also undertakes research to make a positive impact on government, business, society and individuals.**





## CASE STUDY:

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### Supporting refugee employment in Australia

**In 2017, research aimed at supporting refugees to find work and maintain their careers upon arrival in Australia, was undertaken within the Deakin Business School.**

Published in premier journals in the careers and migration fields including the Journal of Vocational Behavior and International Migration, this project looked at the factors that shape refugees' psychological capital, improve their work attitudes and wellbeing and act as barriers to refugee employment.

Deakin Business School also has a relationship with Career Seekers,

a non-profit social enterprise that creates employment opportunities for asylum seekers and refugees who aspire to gain professional employment. Through this program, Deakin Business School provides internships to refugees and accepts students from a refugee background on humanitarian scholarships.

In the future, researchers also plan to work with Career Seekers to examine the effectiveness of training and internship programs that are aimed at assisting refugees to find meaningful employment in Australia.

9 INDUSTRY INNOVATION AND INFRASTRUCTURE



## CASE STUDY:

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12 RESPONSIBLE CONSUMPTION AND PRODUCTION



### ManuFutures – Creating Opportunities for Economic Growth and Innovation

**In 2017, Deakin completed the \$13 million ManuFutures advanced manufacturing hub in partnership with the Victorian Government at the Waurin Ponds Campus.**

The new facility provides flexible leased production and administrative space for up to 15 proof of concept or multi-national enterprises during their market penetration and growth phase.

These tenants have the unique opportunity to work alongside like-minded businesses and collaborate with the University to access advanced equipment and the technical expertise of Deakin's researchers and students.

Through fostering and attracting these innovative enterprises, ManuFutures contributes to the Geelong region's transition toward high tech, smart manufacturing and helps to develop high skill and high value jobs of the future.



## Transforming health

**Prosperous societies are built upon the foundations of good health and wellbeing for all people, of all ages.**

However, inequalities in access to health care prevail with the UN estimating that only half of all women in developing areas have access to adequate health care, and more than six million children die before their fifth birthday.

In 2017, Deakin announced the establishment of the Institute for Healthcare Transformation, the University's fifth research institute.

The Institute partners with government, non-governmental organisations, industry and the community sector to further enhance the impacts of research and design innovative solutions to solve some of the most pressing global health challenges.

**Leveraging Deakin's research strengths in health, the collaborative initiative builds the scale and scope of world-class health systems research, eHealth and health innovation.**



## Food and Mood

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Deakin's Food and Mood Centre is helping to improve health and wellbeing through high quality research that focuses on how we might reduce risk, prevent, or even treat mental disorders through diet and nutrition.

Illness attributable to depression and the lack of public health prevention strategies is a current global challenge, and the development of new treatment options is pivotal to improving the health and wellbeing of people affected.

Current studies being undertaken by the Food and Mood Centre include the 'Healthy Parents, Healthy Kids study'.

**This study is focused on diet and health for women and babies during pregnancy and beyond, and the 'Human Microbiota and Health' study which, in partnership with international leaders in the field of microbiota and gut-brain axis research, examines the possible role of the human gut microbiota in depression and other mental health problems.**

## CASE STUDY:

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### New app to help carers reduce stress

**The Australian Bureau of Statistics (2015) estimates that 12 per cent of the Australian population, or 2.7 million people, are providing informal care in Australia through unpaid assistance and support to family members or friends living with a disability, a chronic or terminal medical condition, frailty, mental illness, or substance abuse.**

While many of these carers would report positive and rewarding aspects in providing this care, high levels of stress can often result. Carers also often have difficulty accessing external support for themselves, due to time constraints and the lack of alternate care arrangements. The use of technology to help provide this support provides an opportunity to help solve this challenge and improve the health and wellbeing of Australia's informal care givers.

The 'StressLess' app helps to meet this need and was developed by Deakin's Centre for Social and Early Emotional Development (SEED) and Australian Centre on Quality of Life (ACQOL) in partnership with Australian Unity.

Tested in 2017 through a clinical trial led by Deakin's School of Psychology, with the results published by the Australian Centre on Quality of Life, use of the app by participants resulted in clinically meaningful change in their stress symptoms. A pleasing 40 per cent of carers who began the study with low levels of wellbeing reported improved wellbeing after using the 'StressLess' app, compared to 20 per cent of those in a control group.

A number of exciting future avenues of research into the 'StressLess' app have also been identified, and the app is available for download on iOS from the Apple app store.

# MANAGING SUSTAINABILITY.

## Sustainability Steering Committee

**The Sustainability Steering Committee, chaired by the Chief Operating Officer, oversees sustainability in the area of services, resources and facilities.**

The Committee is responsible for:

1. Ensuring the embedment of organisational sustainability principles in the University's services, facilities and resource management practices.

2. Ensuring that Deakin's commitment to sustainability is clearly articulated in relevant policies, plans and other documents.
3. Reviewing and endorsing the Organisational Sustainability Plan.
4. Driving and tracking progress against the actions within the Organisational Sustainability Plan.
5. Building awareness of sustainability practices and initiatives within the Deakin community.

The Committee meets four times a year and consists of staff responsible for asset development, asset maintenance and renewal, capital projects, transport, contracts and grounds, procurement, equity and diversity, space management and finance. In 2017, the Committee considered the following items:

- Carbon Management Strategy
- Enterprise Sustainability Plan – 2017 Update
- Sustainability Funding Model
- University Commitment to the UNSDGs
- Smart Energy Microgrid
- Deakin's Investment Management Policy
- Sustainable Built Environment Principles
- Campus Planning
- Sustainability Targets
- Roof Top Solar Investigation
- Carbon Offsetting with Qantas Future Planet
- Building Efficiency Program
- Living Laboratory
- Project Impact Analysis Model.

## Sustainable investments

**Since 2013, Deakin has maintained part of its investment portfolio in an Environmental, Social and Governance (ESG) Pool.**

This specialises in ESG-focused active managers and other sustainable investments exclusively, in accordance with the Investment Management Policy approved by the University Council's Investment Committee.

In November 2016, the Investment Committee reviewed the University's ESG strategy. The Committee agreed to maintain its current position and ESG objectives. While the University has an appetite to grow the ESG Pool and

would welcome consideration of any ESG opportunities, any investments must meet the University's investment principles.

In 2018, the University endeavours to become a signatory of the United Nations Principles for Responsible Investment, further strengthening the commitment to transparency and the decoupling of economic growth from sustainability impacts.

## Data led decision making

The University uses specialised software called **CCAP Integrated (Kinesis)** to record all sustainability related data and metrics.

Available to all staff and students, the software provides a platform that is accurate, robust and serves as a single source of truth.

In 2017, this data was used extensively during the development of the Deakin Sustainability Aspirations, Living Lab digital screens along with the TEFMA and NGER report submissions.

### Contributing to Global Change.

<b>UN Global Compact</b>	Since May 2012, Deakin has been a signatory to the UN Global Compact, supporting the ten principles with respect to human rights, labour, environment and anti-corruption.
<b>Sustainable Development Goals</b>	In April 2017, Deakin became a signatory to the University Commitment to the Sustainable Development Goals (SDGs).
<b>Sustainable Development Solutions Network (SDSN)</b>	In July 2017, Deakin was accepted as a member of the Global Sustainable Development Solutions Network (SDSN).

### Engaging with our stakeholders.

In 2017, several channels were used to engage with staff, students and the community to promote sustainability at Deakin.

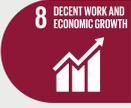
<p><b>Social Media</b></p> <p>Facebook – more than 55,000 views of videos and posts.</p> <p>Twitter – more than 355 tweets and more than 133 followers.</p>	<p><b>Print / Online articles</b></p> <p>Monthly sustainability articles in student and staff newsletters:</p> <ul style="list-style-type: none"> <li>• Student Life newsletter</li> <li>• Deakin Life blog</li> <li>• Deakin Sync feed</li> </ul>	<p><b>Internal presentations</b></p> <p>Delivered to staff across Deakin by the Sustainability team.</p>
<p><b>External presentations</b></p> <p>Presenters at key conferences with external organisations (such as Australian Campuses Towards Sustainability).</p>	<p><b>Surveys</b></p> <p>Sustainability and Travel Survey 2017</p>	<p><b>Multimedia</b></p> <p>Closed Loop and Reusable Cup videos (more than 30 students participated)</p>
<p><b>Events</b></p> <p>Ride to Work Day 2017 – held across all four campuses with staff and student participation.</p> <p>Earth Hour 2017 – activities held across all four campuses as well as:</p> <ul style="list-style-type: none"> <li>• Key buildings across Deakin switched off</li> <li>• On-campus resident 'lights out'.</li> </ul>	<p><b>Student Orientation</b></p> <p>International Students Orientation Day = 150 Commitments to the Deakin Sustainability Pledge.</p>	<p><b>Internships</b></p> <p>Delivered to staff across Deakin by the Sustainability team.</p>

# APPENDIX.

## SDG content index

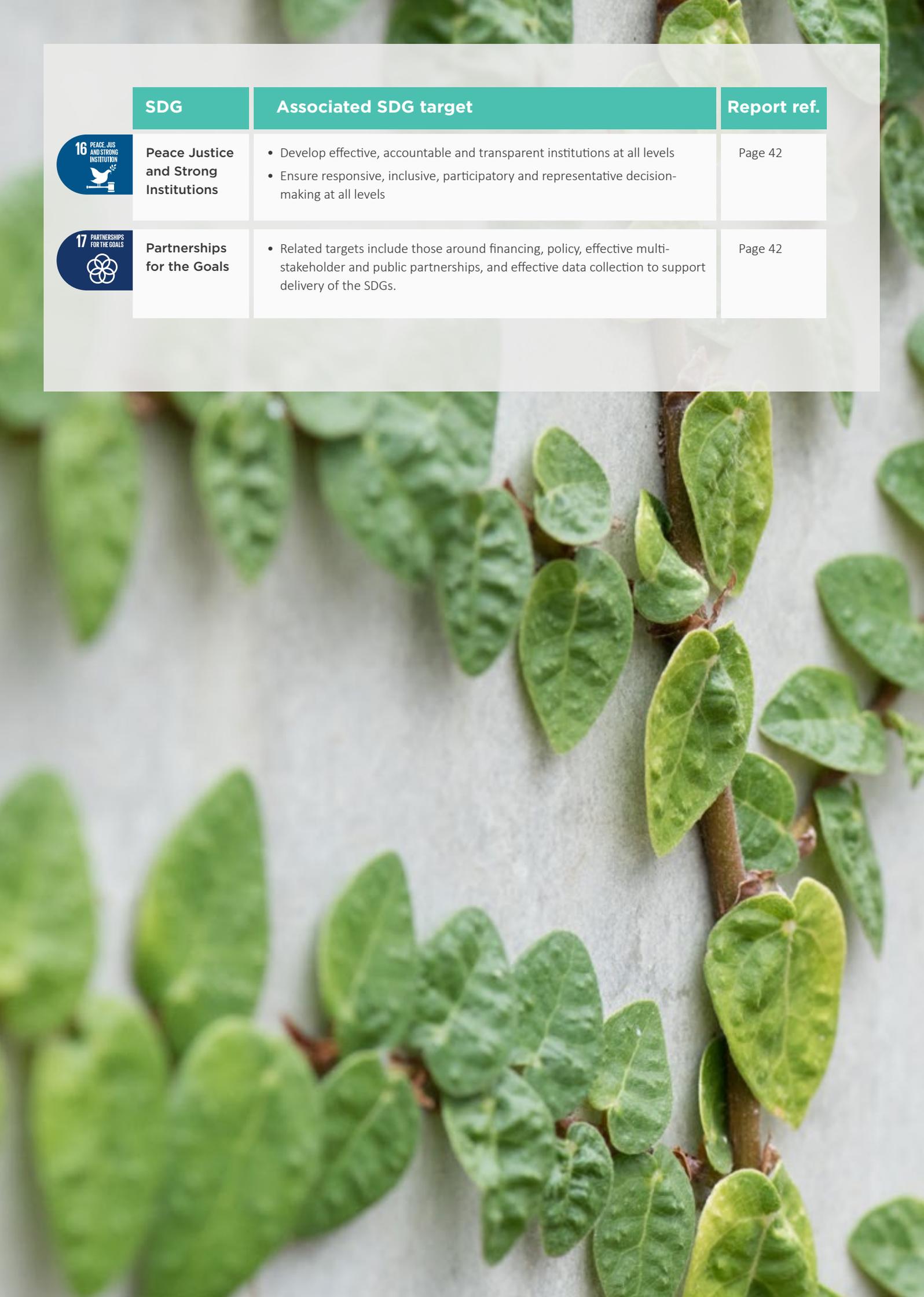
The below table outlines the SDG's and associated targets that have been referenced within this report.

SDG	Associated SDG target	Report ref.
 <b>1</b> NO POVERTY <b>No Poverty</b>	<ul style="list-style-type: none"> <li>By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions</li> <li>By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance</li> </ul>	Page 52
 <b>2</b> ZERO HUNGER <b>No Hunger</b>	<ul style="list-style-type: none"> <li>By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality</li> </ul>	Page 51
 <b>3</b> GOOD HEALTH AND WELL-BEING <b>Good Health and Wellbeing</b>	<ul style="list-style-type: none"> <li>Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks</li> </ul>	Page 54
 <b>4</b> QUALITY EDUCATION <b>Quality Education</b>	<ul style="list-style-type: none"> <li>Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all</li> <li>By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development</li> <li>By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</li> <li>By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</li> <li>By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university</li> </ul>	Pages 38, 40, 45, 46

	SDG	Associated SDG target	Report ref.
	<b>Gender Equality</b>	<ul style="list-style-type: none"> <li>• End all forms of discrimination against all women and girls everywhere</li> <li>• Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate</li> <li>• Ensure women’s full and effective participation and equal</li> </ul>	Page 36
	<b>Water Security and Sanitation</b>	<ul style="list-style-type: none"> <li>• By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies</li> </ul>	Page 50
	<b>Affordable and Clean Energy</b>	<ul style="list-style-type: none"> <li>• By 2030, ensure universal access to affordable, reliable and modern energy services</li> <li>• By 2030, increase substantially the share of renewable energy in the global energy mix</li> <li>• By 2030, double the global rate of improvement in energy efficiency</li> <li>• By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology</li> </ul>	Page 34
	<b>Decent work and Economic Growth</b>	<ul style="list-style-type: none"> <li>• Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.</li> <li>• By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.</li> </ul>	Page 30, 52
	<b>Industry, Innovation and Infrastructure</b>	<ul style="list-style-type: none"> <li>• Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets</li> </ul>	Page 53
	<b>Reduced Inequalities</b>	<ul style="list-style-type: none"> <li>• By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status</li> </ul>	Page 36

SDG	Associated SDG target	Report ref.
 <b>Sustainable Cities and Communities</b>	<ul style="list-style-type: none"> <li>• By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.</li> <li>• By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.</li> </ul>	Page 16
 <b>Responsible Consumption and Production</b>	<ul style="list-style-type: none"> <li>• By 2030, achieve the sustainable management and efficient use of natural resources.</li> <li>• By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.</li> <li>• By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.</li> <li>• By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.</li> <li>• Promote public procurement practices that are sustainable, in accordance with national policies and priorities.</li> <li>• Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</li> </ul>	Pages 19, 20, 21, 24, 31, 33, 34, 45, 50, 53
 <b>Climate Change</b>	<ul style="list-style-type: none"> <li>• Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</li> <li>• Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.</li> <li>• Integrate climate change measures into national policies, strategies and planning</li> </ul>	Pages 29, 34, 49
 <b>Life Below Water</b>	<ul style="list-style-type: none"> <li>• By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</li> <li>• Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries</li> </ul>	Page 49
 <b>Life on Land</b>	<ul style="list-style-type: none"> <li>• By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements</li> </ul>	Pages 28, 49

SDG	Associated SDG target	Report ref.
 <b>Peace Justice and Strong Institutions</b>	<ul style="list-style-type: none"> <li>• Develop effective, accountable and transparent institutions at all levels</li> <li>• Ensure responsive, inclusive, participatory and representative decision-making at all levels</li> </ul>	Page 42
 <b>Partnerships for the Goals</b>	<ul style="list-style-type: none"> <li>• Related targets include those around financing, policy, effective multi-stakeholder and public partnerships, and effective data collection to support delivery of the SDGs.</li> </ul>	Page 42





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