



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

Sustainable Development Goals University of Newcastle

Progress Report 2020



SUSTAINABLE DEVELOPMENT GOALS



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Introduction

In September 2015, Australia was one of 193 countries, to commit to the [United Nations Sustainable Development Goals](#) (SDGs). These goals were developed as a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet.

Newcastle is a United Nations City, with the Newcastle City Council adopting the SDGs as a cornerstone for planning. The University of Newcastle is home to Australia’s only United Nations Institute for Training and Research (UNITAR) and accredited International Training Centre for Authorities and Leaders (CIFAL Institute).

The University of Newcastle is committed to aligning our strategic priorities to the United Nations Sustainable Development Goals (SDGs). Our University’s values (Excellence, Equity, Engagement and Sustainability) reflect these SDGs and set the standards that we expect, encourage and nurture in our staff and students. They guide our decision making and position us to achieve our purpose.

Further information on our commitment to aligning our strategic priorities to the United Nations Sustainable Development Goals is outlined in the [Looking Ahead Strategic Plan](#).

Our Goals

Our university has been building upon our Environmental Sustainability Plan and are working toward carbon neutrality by 2025, zero waste, are leading water recycling strategies, and seeking to optimise travel solutions.

We are working with government and industry partners to explore opportunities to further connect our campuses with our region and we are focussed on well-being and creating vibrant, connected communities. We are committed to being a leading advocate and driving force for excellence and equity in higher education.

Our campuses will be digitally enabled, environmentally responsible, safe, vibrant, and accessible, adding a new dimension of engagement and collaboration beyond our physical boundaries for students, researchers and the world.





End Poverty in all its forms

This SDG seeks to explore how our university is helping to reduce poverty in our community, and how we remove intergenerational poverty and provide opportunities for quality education to those from poorer backgrounds.

At the University of Newcastle we believe in providing a world of opportunity for all people, regardless of their background and experiences. 24% of the University of Newcastle student population come from a Low SES background. As such, the University provides support for both staff and students via a Financial Wellbeing and Hardship fund and health and well-being crisis support. Scholarship opportunities are also made available to students in need. In 2019, through the support of our generous philanthropic supporters, we increased the number of Shaping Futures Scholarships available to a record number of 58. In nine years these donor-funded scholarships have provided crucial financial support to more than 212 students from disadvantaged backgrounds.

Our education and research programs across the university engage and address the goal of No Poverty, highlighting current day issues, and providing the knowledge and understanding of ethical, economic, regulatory, social and global perspectives.

Reports and Programs

A sample of University of Newcastle courses directly addressing "No Poverty" include:

[Principles For Responsible Management Education](#)

- Newcastle Business School

Progress report - issued June 2019. This report provides a description of practical actions that we have taken to implement the six PRME Principles and demonstrates our achievements.

[ECON1001 Microeconomics for Business Decisions](#)

The microeconomic principles covered apply to both the individual and the firm, as students are introduced to economic analysis and its applications in topics such as: Consumer-Choice, Competition, International Trade and Finance, Market Forces, Market Failures, Public Policy, Poverty and Welfare.

[GEOG1030 Global Poverty and Development](#)

The distribution of wealth in today's world is the most unequal in history. While the economies of developed countries continue to grow, the size of the world's poor

continues to increase with resulting social crises and instability. Global Poverty and Development explores this and other issues through an introduction to development studies, with a broad discussion of social, economic, political, cultural and environmental issues.

Research Centres and Groups

The university has a number of Research Centres either directly and indirectly working towards achieving the goal of "No Poverty". Examples include:

[Psychology Social and Organizational Psychology Research Group \(SOPRG\)](#)

Employs a variety of quantitative and qualitative methods in the field and in the laboratory to investigate complex psychological relationships between individuals, groups, and cultures (e.g. family and group members, organisational units and broader organisations, social and cultural contexts).

[The Centre for Water Security and Environmental Sustainability \(CWSES\)](#)

Water controls Australia's well-being, environmental health and economy. The Centres objectives address key issues involving increasing pressure on water and the environment, from climate change and its impact through to increasing populations and uncertain future pathways..

[Newcastle Youth Studies Network](#)

The Network is an international network of research collaboration in the sociology of youth. The network is focused on creating new horizons in youth research driven by five key concerns: Young People and the New Economy, Youth Gender and the body, Class and Culture, Intergenerational dynamics and the future, and young people in the Global South.



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

This SDG seeks to explore how our university demonstrates and contributes to end hunger, achieve food security and improve nutrition and promote sustainable agriculture.

At the University of Newcastle, through our Engagement Priority of Better, healthier living we are working on delivering better health outcomes and contributing to the wellbeing of our communities. We have dedicated research centres addressing sustainability for food and agriculture systems, climate change and landscapes, and health programs, all of which have a direct impact on food security and/or the goal of zero hunger.

Reports and Programs

A sample of University of Newcastle courses directly addressing "Zero Hunger" include:

[International Political Economy and Global Development](#) - POLI2203

Students study international political economy (IPE) and global development. This course discusses, global hunger and food sovereignty; poverty and gender; inequality and the state; precarity and post-work utopias, and ecological crisis and climate change.

[Bachelor of Food Science and Human Nutrition](#)

Food is an essential part of everyone's lives. This program provides up-to-date knowledge in food science and human nutrition, from food processing and preservation, to food regulation, quality assurance, food safety and research.

[Essential Nutrition](#) - FSHN 2010

The micronutrients (vitamins, minerals, and trace elements) and macronutrients (fat, protein, carbohydrate and alcohol) are the essential nutrients in our foods. Students discuss dietary intake and how suboptimal nutrition may affect human health (malnutrition and global hunger).

News:

[Healthy Eating Options on the Table for Young Australians](#) - 18 July 2019

With 98 per cent of 18-24 year olds in Australia failing to meet daily fruit and vegetable requirements, the No Money, No Time (NMNT) site provides cheap and easy meal ideas, along with quality online resources, to help set long-term healthy eating behaviours.



Research Centres and Groups

The university has a number of Research Centres either directly and indirectly working towards achieving the goal of "Zero Hunger". Examples include:

[PRC for Physical Activity and Nutrition](#)

The Priority Research Centre for Physical Activity and Nutrition investigates physical activity and nutrition for population health, with particular emphasis on education and health promotion strategies for chronic disease prevention, treatment and wellbeing.

[The Centre for Water Security and Environmental Sustainability \(CWSES\)](#)

The research focus is on securing the environmental sustainability of water and landscape resources in the face of increasing climate and human stresses.

[Clinical Nutrition Research Centre](#)

The Clinical Nutrition Research Centre (CNRC) is a unique multi-institutional collaboration in preventive health research. Its primary goal is to generate evidence underpinning healthy diet and lifestyle choices which can optimise physical and mental fitness and counteract chronic non-communicable diseases. The Centre research focus is on securing the environmental sustainability of water and landscape resources in the face of increasing climate and human stresses.





Ensure healthy lives and promote well-being for all at all ages

This SDG seeks to explore how our university deals with specific conditions and diseases, and how we support our community.

Our university is committed to addressing the challenges of our community by improving health and wellbeing of people here in our regions and around the world. Our engagement priority is to deliver better health outcomes and contribute to improving the wellbeing of our communities; we have been doing this through our major centre – Hunter Medical Research Institute (HMRI); and our university [Priority Research Centres](#) that are focused on health and medical research.

We are also engaging with our community through a wide variety of [clinics](#) and programs to support the health and wellbeing of the people in our region. Two examples of university centres that have direct impact on the health and wellbeing of some of the most vulnerable people in our community include: the Family Action Centre (FAC) which is a research, teaching and practice centre focused on families and their communities, with a 30-year track record of innovative, dynamic and enduring work that aims to strengthen family and community wellbeing. The FAC is committed to addressing the factors that affect the health, wellbeing, social and educational paths of families, particularly for those challenged by increasingly complex vulnerabilities; and our [Centre for Rural and Remote Mental Health](#) (CRRMH) aims to improve the provision of mental health services through the identification of and response to the needs of rural

and remote communities. In particular, this includes the development of appropriate service models for rural mental health care, providing professional development opportunities for clinical staff and offering education and training.

Academic Programs (Examples)

[Masters of Family Studies](#)

Designed to enhance your theoretical and practical knowledge in core areas of family practice including family processes, working with risk and trauma in families and family diversity.

[Bachelor of Medical Science and Doctor of Medicine](#)

These programs are designed for a rapidly changing health care environment.

The University of Newcastle, through its [Aboriginal and Torres Strait Islander Medical Entry Pathway](#), is providing excellent support to medical students from Aboriginal and Torres Strait Islander communities and has graduated almost half of Australia's Aboriginal and Torres Strait Islander doctors.

[Bachelor of Nursing](#)

This program provides students with the skills to work in a diverse and fast-paced medical environment and provide quality health care and support to individuals, families and communities.

News:

Recent work being undertaken at our university is directly relevant to the goal of health and wellbeing and is highlighted through some of our key programs:

[Family and friends online support program expands to cover all addictions](#) - 25th November 2020

An online intervention and e-health program to help families and friends supporting loved ones who use crystal methamphetamine ('ice') has expanded to cover any type of substance addiction, including alcohol.

[Pre-schoolers, teens and Indigenous women the focus for heart health research funding](#) - 30 October 2019

Three Hunter researchers are helping Australians have better heart health by investigating the causes, treatment and prevention of heart disease, having secured more than \$385,000 in funding from the Heart Foundation.

[Strong partnerships and a shared vision for the future of integrated healthcare is set to improve the wellbeing of our Central Coast community](#)

- 4 September 2019

The future of healthcare delivery on the Central Coast is taking shape, with work starting on a new education and research facility located at Gosford Hospital. This facility has brought strong investment from the Australian and NSW Governments, as well as our university and will champion integrated healthcare to improve the overall wellbeing of people on the Coast.

Research Centres and Groups

In 2019/20 a number of our Priority Research Centres and research groups have been focused on Health and Wellbeing, examples include:

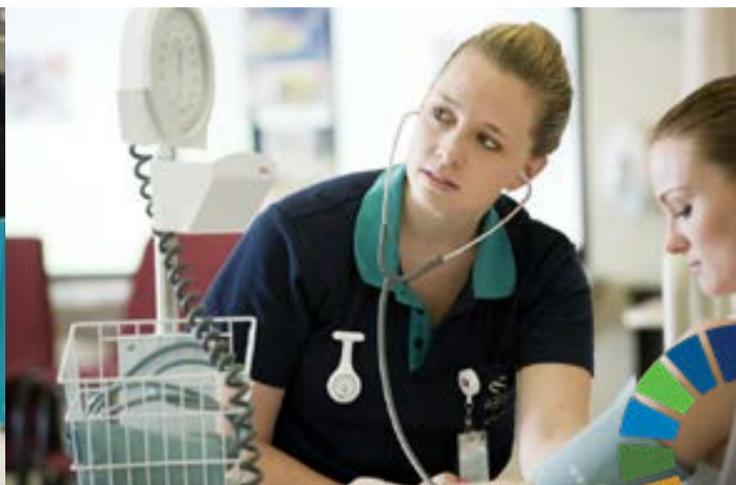
[Centre for Brain and Mental Health Research](#) has been focused on increasing our understanding of the brain and mind across the lifespan, in the absence and presence of disease.

[Centre for Cancer Research, Innovation and Translation](#) has created a collaborative environment to support scientists and clinicians in their quest to deliver integrated and world-class research, clinical service and patient care, reducing the burden of cancer on the patients, families and communities.

[Clinical Centre for Cardiovascular Health](#) utilises a comprehensive approach to investigate the underlying mechanisms of cardiovascular diseases. Centre research spans basic science, clinical and translational studies to identify therapeutic targets and enhance clinical outcomes for cardiovascular health across the Hunter region.

[Centre for Digestive Health and Neurogastroenterology](#) brings together a multi-disciplinary team to effectively diagnose and treat common functional gut disorders (dyspepsia and IBS), neuromuscular diseases of the gut and eosinophil-driven chronic inflammatory gastrointestinal conditions through technologically advanced research which has identified novel pathophysiological mechanisms.

[PRC for Physical Activity and Nutrition](#) investigates physical activity and nutrition for population health, with particular emphasis on education and health promotion strategies.





Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

This SDG seeks to explore how our university supports early years, lifelong learning, and our nation through ensuring equality of access to our facilities.



As an organisation, we are committed to engaging with our community to encourage a more inclusive society and to build local capacity, social connectedness and a sense of belonging for all.

Our [Looking Ahead Lecture Series](#) provides keynote lectures and panel discussions for our local and regional community that open the doors to the great thinking and innovation that goes on at our university. We also have a range of open and free [online courses](#) for our local, regional and global community in a variety of discipline areas, including [courses for leaders and executives](#).

The [I2N Integrated Innovation Network](#) seeks to drive business growth through innovation and entrepreneurship by offering a range of opportunities designed to build networks and develop enterprise skills for local and regional individuals and businesses.

We have a wide variety of school and community outreach programs to ensure equitable access to and success in lifelong learning through our university: our [Centre of Excellence for Equity in Higher Education](#) through practice, research, and support programs aims to address persistent inequalities and is grounded in a unique 'praxis-based' social justice framework. While we are situated within the university, our work extends through connection and collaboration with

local, national and international networks committed to social justice. The [Family Action Centre – Community Outreach Projects](#) provide family support and outreach services, parenting programs, family inclusive practice programs and health evaluation initiatives. The Centre hosts a range of health disciplines in an inter-professional placement unit, with approximately 60 student volunteers participating in these outreach projects, liaising with human service workers in education, health, and family and community services.

[Family Action Centre - Uni4You](#) is designed to support educational equity by fostering engagement in higher education and strengthening family and community wellbeing. The Uni4You project offers a suite of FREE activities and workshops to support students who have a lived experience of educational disadvantage to foster their engagement and enrolment in the [University's pathways programs - Open Foundation, Newstep and Yapug](#).

[Hunterwise](#) is a 10-week school outreach program targeting female high school students in year 8 for STEM-related projects to encourage access and successful participation in STEM-related study.

[Teach Outreach](#) is a student volunteer placement program delivered by the School of Education to schools, early childhood centres and community-

based organisations. It is a successful collaboration between the university and our community to strengthen links, build student skills, knowledge and confidence and implement partner projects and activities to meet their individual needs. The Faculty of Engineering schools and community outreach programs provide a range of community activities throughout the year for school students and other community members to have the opportunity to engage with exciting technology through different activities and learn about the importance of engineering in our everyday lives.

Academic Programs

A sample of University of Newcastle programs and courses directly addressing "Quality Education" include:

Open Online Courses

The University offers open online courses across a range of subject areas. Courses are free to study, however students have the option of purchasing a certificate to verify their participation. At time of publication approximately 30 open online courses were available for study.

School of Education

A great teacher can change lives and truly impact the communities in which they live. The School of Education at the University of Newcastle is one of the top 100 schools of education in the world, we are also among the largest providers of initial teacher education in Australia. The School of Education has over 300 education units available for study.

Pathways and Academic Learning Support Centre

Since 1974, thousands of people have entered University through one of our enabling or international programs, making our Centre the largest of its kind in Australia. The Centre delivers flexible and supportive pathways for motivated and talented students - not just to gain entry, but to thrive in their field of study. Since 1974 (as at June 2020) approximately

- 64,000 people have enrolled in the Centre's programs
- 61% of students were first in family to enter university
- 10.9% of students had a disability
- 36.8% of students identified as being from Low Socio-Economic Status areas
- 7.9% of students identified as being of Aboriginal or Torres Strait Islander background
- 4.4% of students listed English as their second language.

Research Centres and Groups

[PRC for Teachers and Teaching](#) to drive improvement in the quality of teaching and student outcomes in all educational contexts particularly where inequities exist. Researchers in this centre aim to increase access to higher education through understanding and nurturing students' educational and occupational aspirations.

The Quality Teaching Academy translates the Centre's research to provide teachers across Australia with access to high-quality professional development and a suite of evidence-based resources through the Academy's core program, Quality Teaching Rounds.

PRC for Physical Activity and Nutrition

The Priority Research Centre for Physical Activity and Nutrition investigates physical activity and nutrition for population health, with particular emphasis on education and health promotion strategies for chronic disease prevention, treatment and wellbeing.

School of Education - University Centres and Groups

The School of Education's collaborative and interdisciplinary research efforts are having impact locally, nationally, and internationally.



SDG 4 PUBLICATIONS (2015 - 2019)	
Number	% of Australian
47	2.33



Achieve gender equality and empower all women and girls

This SDG seeks to explore how our university provides access and then supports the academic progression of women.



The University of Newcastle is a driving force and advocate for equity in higher education.

Workplace Gender Equity and Leadership Pledge

At the University of Newcastle, we have been committed to [gender equality](#) for many years and are committed to increasing the rate of progress. We are proud to be among the first 15 Australian research institutions to receive the Bronze Award under the [Athena SWAN Charter](#). We have more than 80 actions in our four-year [Progress to Equity](#) plan, such as the establishment of key leadership roles, including the inaugural [Women in STEMM Chair](#) and five new Assistant Deans Equity and Diversity roles.

Other initiatives include the setting of KPIs for STEMM faculties where greatest under-representation of women exists; ongoing funding for Women in Research Fellowships; and the engagement of leaders and staff through promotion of the [Gender Equality Leadership Pledge](#). The [Pledge](#) is a commitment to do three things: make gender equality a priority; lead by example; and take the Panel Pledge.

The university has a wide range of [mentoring](#), [scholarships](#) and [support programs](#) for our female staff and students. [HunterWiSE](#) is an initiative that provides mentorship for women in STEM throughout the Hunter region; promoting positive collaboration and sharing experiences. This project builds on a partnership

between our university, government and regional businesses. As part of this initiative, year 8 girls from schools in our region can be part of a [10-week outreach mentorship program](#) focused on STEM-related projects.

The [Science and Engineering Challenge](#) is a nationwide STEM outreach program presented by the University of Newcastle in partnership with communities, Rotary clubs, universities and sponsors. Through the SEC, students experience aspects of science and engineering which they would not usually see in their school environment. It seeks to inspire students in schools to consider a future career in science and engineering.

We are one of the first Australian universities to help redress some of the systemic biases female students face by awarding a number of scholarships to women:

- the [Women in STEMM](#) PhD scholarship provides full funding for six female Early Career Researchers in the STEMM disciplines;
- the [CSIRO Women in Energy Industry Placement Scholarship](#) offers financial support for 4 years to female undergraduate students commencing in the Industry Placement Stream of an Engineering program. The sponsor will also provide opportunity for the student to undertake industry placements to meet the requirements of the Industry Placement Stream; and

- the [Women in Master of Business Administration \(WiMBA\) Scholarship](#) for postgraduate female Business students which aims to redress the gender equity imbalance of women in Business by offering scholarships in partnership with leading organisations, to develop leadership skills and strategic perspective to move female employees into senior management and executive positions.

Academic Programs

The University has a wide range of individual courses that discuss or address gender equality. Examples include:

[Gender and Social Change](#) - SOCA6190

The course begins with an introduction to contemporary theories which inform social change, then moves to consider a number of case studies of gender and social change in a variety of settings. Themes include: women and education, labour force restructuring, comparison of female and male engagements in the workforce, and changes to family structures.

[Managing Diversity](#) - IRHR3035

This course aims to introduce you to a range of theoretical and applied approaches from various disciplines, so you can analyse workforce diversity in modern organisations and then design, evaluate and implement strategies to manage workforce diversity

[Screening Sex and Gender](#) - FMCS3900

This course examines how gender and sexuality are defined, represented and constructed by television and film, and how film and television may influence individual and societal understandings and expectations of gender and sexuality.

News:

[University recognised for ongoing efforts to achieve gender equality](#) - 25 February 2020

The University of Newcastle has again been named an Employer of Choice for Gender Equality. This is the sixth consecutive year the University has been recognised by the Workplace for Gender Equality Agency (WGEA) for progress in areas such as leadership, flexible working, preventing harassment and discrimination and targets for improving gender equality outcomes.

[Gender Balance in Awards](#) - 29 April 2019

There is a stark gender imbalance in awards and industry recognitions. What are the causes and how can we fix it?

Research Centres and Groups

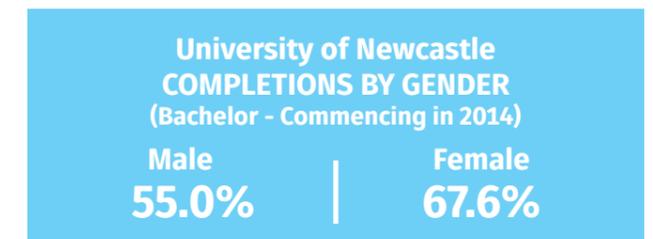
[Gender, Leadership and Social Sustainability](#) is a research group that is dedicated to research and reform on gender issues across the globe.

[Centre of Excellence for Equity in Higher Education](#)

CEEHE is a site of innovative research and practice, brought together in critical thought to generate transformative impact for equity in and beyond higher education. Our work—in practice, research, facilitation and support—aims to address persistent inequalities and is grounded in a unique ‘praxis-based’ social justice framework.

[International Network on Gender, Social Justice and Praxis](#)

The Network aims to develop research and innovative pedagogical resources on issues of gender and social justice. The Network is focused on promoting more equitable access to and participation in lifelong learning and higher education around the world, particularly for women.





Ensure availability and sustainable management of water and sanitation for all

Without water we can't live. Water supports out agriculture and aquaculture. Clean water is vital. However, due to bad economics or poor infrastructure, millions of people including children die every year from diseases associated with inadequate water supply, sanitation and hygiene.

This SDG seeks to explore how our university ensures access to water and sanitation for all.



Our [Environmental Sustainability Plan 2019-2025](#) includes a plan for water security and sustainability, acknowledging that our university is a significant water consumer, and in 2018 this totalled approximately 280,000 kilolitres of mains water. In the face of a warming global climate, we have committed to using and monitoring natural irrigation for our extensive native bushland campuses to reduce demand for potable water.

Our focus will be integrating best-practice water-efficiency measures across infrastructure and aim for Green Star ratings in new builds.

Priority Actions:

- Increase the natural irrigation of the extensive native bushland campus to reduce the demand for potable water
- Integrate Water Sustainable Urban Design (WSUD) principles into landscape management
- Integrate water efficiency as a key project design component as part of the new Environmental Sustainable Design (ESD) Guideline Tool

Measures of Success:

- A 15% reduction in mains water usage per square metre across our Gross Floor Area by 2025 (on a 2015 baseline)

Academic Programs and Reports

Our School of Environmental and Life Sciences leads a multidisciplinary approach to address water security issues, with our Earth scientists, Environmental Sciences and Geographers working individually and collectively to find solutions to protecting our water sources.

Area of Study

- [Hydrology and water resource management](#)
The study of hydrology and water resource management in the School of Environmental and Life Sciences is an essential discipline as there is no future on our planet without water. Water security, hydrology (the study of the movement, distribution and quality of water) and water resource management are at the heart of the preservation of life on Earth.

[Advanced Water Science and Resource Management](#)

- ENVS3009: This course looks at the pressures of global population growth and climate change, and the sustainable management of resources, as public water supply is one of modern society's most critical and complex challenges. Central to the problem is the issue of water quality and the safety, operational and environmental implications of increasing contamination of natural water resources and aquatic systems. Building on foundation

knowledge acquired in ENVS2009, ENVS3009 explores the key concepts, issues and latest science associated with modern management of water supply resources, including integrated supply strategies, key regulatory issues, emerging contaminants, advanced analytical techniques and key interrelationships between ecosystem function and water quality.

Research Centres and Groups

[The Centre for Water Security and Environmental Sustainability](#) focus is on research activities aimed at securing the environmental sustainability of water and landscape resources in the face of increasing climate and human stresses. This research is highly complex and interdisciplinary, requiring expertise in a broad range of areas.

Climate change and human impacts on landscapes and water resources: our track record on different aspects of complex problems from climate and human impacts allows us to tackle in a holistic interdisciplinary approach its effects on landscapes (accounting for spatial and temporal dynamics of vegetation, water redistribution, soil carbon) and on water resources (particularly related to future extreme climate events).

[The Centre for Water, Climate and Land](#) (CWCL) focuses on understanding and dealing with the impacts of climate variability and change in the Asia-Pacific region. Of particular interest are hydroclimatic extremes and how these may change in the future - hydroclimatic extremes includes things like droughts, floods, bushfires, tropical cyclones, and East Coast Lows. Other areas of expertise include characterising impacts of climate variability and change, seasonal/interannual hydroclimate forecasting, extreme event risk analysis, hydrological modelling, stochastic modelling, water resources management and climate-smart agriculture.

CWCL is also involved in a wide range of consulting projects where insights into the impacts of climate variability and change are used to enable stakeholders from a range of public and private sector organisations to better assess their climate related risks. This information is then used to develop more informed climate adaptation and mitigation strategies.

[The CRC for Contamination Assessment and Remediation of the Environment](#) (CARE)

develops technologies and policies that improve the way we prevent, assess and clean up contamination of soil, water and air.



[Water Resources Engineering - Research Group](#)
The Water Resources Engineering Research Group are developing innovative computer models to provide methods of assessment of environmental impacts and management of disturbed ecosystems

Research Roadmaps

[Newcastle Institute for Energy and Resources Research Roadmaps](#) identify and define capabilities and essential actions necessary to position the University as a major enabler of innovation by delivering scientific and technological advances to benefit key industry sectors.

Each Research Roadmap offers:

- Strategic direction on how to lead and guide capacity building initiatives that will support industry as well as regional communities
- A framework from which researchers and businesses can align and coordinate their efforts to increase and realise impact
- A process to identify workforce needs and priorities to enhance career pathways for graduates and postgraduates

The [Water Research Roadmap](#) identifies the guiding principles and priority actions necessary to support a quality, sustainable water supply into the future and how the sector can adapt and respond to current and future uncertainties; in order to meet current and future water needs, sustain healthy communities, support the regional economic prosperity and protect and restore ecosystems and biodiversity values.



SDG 6 PUBLICATIONS (2015 - 2019)	
Number	% of Australian
63	2.50





Ensure access to affordable, reliable, sustainable and modern energy for all

This SDG seeks to explore how our university promotes and supports clean energy, both through research, outreach, and in our own behaviour and usage.



Newcastle Institute for Energy and Resources (NIER)

NIER research centres are finding solutions for the mineral, gas and water industries as well as developing optimised energy technologies while also examining the social impacts of the energy and resources sectors for our local, regional, national and global communities. NIER facilitates activities that enable our research community to drive impact and deliver next generation resources to support resilient and sustainable regions. NIER partners with 148 industry groups and bodies, has 21 research centres and groups, and supports almost 280 PhD students.

NIER News provides an up-to-date overview of some of the key [environmental sustainability research projects and initiatives](#) being currently undertaken by NIER, such as: the development of a [system](#) that combines solar energy with water harvested from air has been used to manufacture low-cost green hydrogen – a zero-emissions fuel; [scientists](#) have used tiny structures found in clay as a ‘template’ to create a remarkable new material capable of capturing carbon dioxide emissions or decontaminating water.

[International Collaborative Centre for Carbon Futures](#) is an international research collaboration network developing innovative technologies for a sustainable carbon economy. Led by NIER, this collaborative research centre aids the development of innovative technologies to boost research into clean energy and contribute to the transition of the carbon economy.

I2N Integrated Innovation Network

[I2N](#) seeks to drive business growth through innovation and entrepreneurship by fuelling the success of innovators and entrepreneurs, connecting them to community, customers, coaching and capital. No matter your connection to the University, I2N helps people develop their enterprise skills and impact potential, validate ideas and accelerate to market.

I2N has helped more than 70 start-up businesses, has a community of 4400 entrepreneurs and has raised over \$6m in funding. The network seeks to support start-ups focused on sustainability, such as the University of Newcastle-born start-up, [Diffuse Energy](#), which has secured more than \$920,000 in funding contributions, including \$341,990 from the Australian Renewable Energy Agency (ARENA) to deploy its small wind turbine technology in remote locations across Australia.

Energy and Carbon Target

Deliver 100% renewable electricity across our Newcastle and Central Coast campuses from 1 January 2020. Achieve carbon neutrality by 2025.

More information on our energy and carbon targets can be found in our [Environmental Sustainability Plan \(2019-2025\)](#).

Other Research Centres and Collaborations

[The International Collaborative Centre for Carbon Futures \(ICCCF\)](#) is an [international research collaboration network](#) developing innovative technologies for a sustainable carbon economy. Carbon-based energy and resources such as coal, oil, gas, biomass, shale oil, and combustible ice, play a critical role in the world’s energy security with more than 80% of the global energy supply derived from carbon-based resources. While many countries have achieved a diverse energy mix, there is a need for new and innovative solutions to reduce carbon emissions on a large-scale and to minimise the environmental impacts that are a consequence of carbon-based energy production.

Frontier Energy Technologies and Utilisation

The PRC for Frontier Energy Technologies and Utilisation conducts cutting edge research on emerging energy technologies, with particular focus on the abatement of greenhouse gases and clean and sustainable energy production.

PRC for Organic Electronics

The Priority Research Centre for Organic Electronics (COE) is a global leader in the exciting emerging field of ‘functional printing’, which uses conventional printing technologies to manufacture clever, high performing, low cost materials to help solve some of the world’s greatest challenges.

The Centre for Organic Electronics (COE) is marrying the creation of clever electronic inks with well-established printing technologies to address global challenges spanning renewable energy, health & medicine, and mining safety

Global Innovative Centre for Advanced Nanomaterials

(GICAN) - Innovation in materials science and research to develop advanced technologies and solutions for the global energy, environment and health sectors..

The Global Innovation Centre for Advanced Nanomaterials (GICAN) is driven to be a creative, diverse and responsible world leader in transformational materials science and engineering. The Centre is dedicated to developing groundbreaking technologies and providing solutions to critical global issues through interdisciplinary collaboration and engagement with national and international academic and industry partners.

Hydrogen Technology and Materials - Research Group

The Hydrogen Technology and Materials Group unites applied and theoretical expertise alike of several academics from the School of Engineering at the University of Newcastle. More specifically, our expertise comprises photocatalytic hydrogen generation, design of next-generation fuel cell stacks, infrastructure durability, advanced materials science, and manufacturing.

Academic Programs and Courses

[Graduate Certificate in Environmental Management and Sustainability](#)

This course equips students with new, sustainable skills that will improve their ‘green’ credentials and prepare them for the strong forecasted growth of jobs in high environmental impact areas over the next decade.

Designed to engage with the broad issues that contemporary societies face in today’s climate, the focus of the program is to integrate theory and practice with interdisciplinary grounding in sustainable policy development and policy implementation, environmental management and impact assessment.

Our School of Environmental and Life Sciences offers various [Masters and PhD programs](#), covering areas such as Biological Sciences, Earth Sciences, Environmental Science, and Sustainable Resource Management, amongst others.

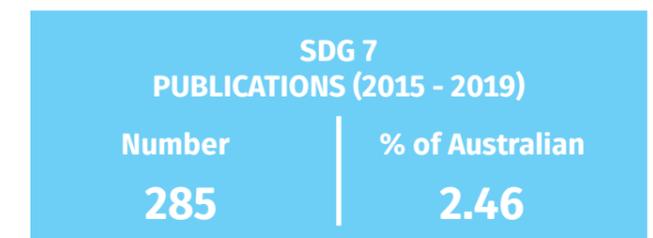
[Masters of Environmental Management and Sustainability](#)

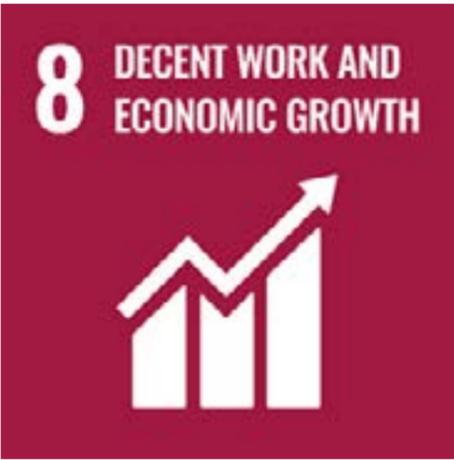
Designed to engage with the broad issues that contemporary societies face in today’s climate, the focus of the program is to integrate theory and practice with interdisciplinary grounding in sustainable policy development and policy implementation, environmental management and impact assessment.

[Bachelor of Renewable Energy Engineering](#)

One of the biggest challenges humankind faces is the transition to a renewable energy economy. The success of this evolution depends on the creative solutions of a new generation of renewable energy engineers with specialised skills.

Spanning the disciplines of chemical, electrical and mechanical engineering, this degree equips students to work across the whole spectrum of technologies for renewable energy capture, conversion, storage, delivery and management. Courses in related areas of climate change policy, law and economics and environmental sciences may all be chosen.





Promote sustained, inclusive and sustainable economic, growth, full and productive employment and decent work for all

Decent work in safe and stable conditions is a vital component of helping people out of poverty, with the related aspects of reducing hunger and increasing health. The rise of precarious employment, modern slavery, and uneven growth has created threats to a sustainable future. Universities as employers can lead the way, as teachers can educate for the future, and as innovators can develop new and fairer ways of working. This SDG explores how universities live up to these expectations.

Work Benefits and Conditions

[Our university](#) is a great place to work. Not only are staff working as part of a modern and growing region that is forging a bright new future, staff are part of a university that is on the move breaking boundaries, discovering new ways of thinking and cementing a place as a global leader.

To ensure we meet our goals, we need to make sure our staff are supported and happy at work. We offer a range of benefits and employment conditions that help you balance your commitments, stay healthy and work effectively.

Workplace Equity and Diversity Plans

Our university is committed to building a rewarding, stimulating and supportive place to work for each and every one of our staff members. Equity and social justice are an integral part of our “DNA” - with these principles embedded in our institution’s [values](#).

We provide opportunities for people with ability, regardless of their background and experience, and this philosophy is reflected across all that we do including our employment and promotion practices. We will continue to invest in our individual and institutional health by building the capacity and capability of our staff through the goals highlighted in our Strategic Plan. This Plan is supported by clear policies, procedures, guidelines and training. Our targeted equity action plans outline the “real-world” actions that we are taking to ensure that we continually build upon and celebrate a diverse and healthy workforce and student population.

The University has various plans in place to meet our equity and diversity goals.

- [Workplace gender equity](#)
- [Accessibility Action Plan](#) (PDF)
- [Multicultural Action Plan](#) (PDF)
- [Aboriginal and Torres Strait Islander People](#)

Workplace Health and Safety

[The wellbeing, health and safety](#) of everyone on our campuses and facilities is a major priority, and we do all we can to make sure our university is somewhere staff, students and visitors feel safe and protected at all times.

Our university [Wellbeing, Health and Safety Strategy 2020-2025](#) supports the journey to a fully mature safety culture. Our Health, Safety and Wellbeing Strategy 2019-2021 was a foundation strategy with the aim of applying best practice, meeting legislative requirements and driving a positive safety culture. The [Looking Ahead 2020- 2025 Strategic Plan](#) provides the opportunity to further develop and align our WHS approach with our Looking Ahead strategic priorities and goals.

[HealthyUON](#) is a University of Newcastle program that boosts the physical, social and psychological health and wellbeing of our community by promoting healthy learning, working and living environments.

This program creates a platform to coordinate and to consolidate our health, safety and wellbeing initiatives and helps identify areas where we can improve. Healthy UoN initiatives are guided by a steering group and informed by the World Health Organisation [Healthy Universities Framework](#).



Working parties have been established to focus on the priority areas of: organisational health, psychological health, health promotion, research and evaluation.

University of Newcastle Compliance Report - Modern Slavery Act 2018 (NSW)

In our university [Compliance Report](#), we outline our commitment and compliance with the [MODERN SLAVERY ACT 2018 \(NSW\)](#). The Modern Slavery Act 2018 (NSW) is new legislation which requires entities above a consolidated revenue threshold of \$100 million to report on modern slavery risks in their global supply chains. This includes The University of Newcastle. The Act targets modern slavery and human trafficking in supply chains with the aim of increasing transparency around these issues for consumers and investors and improving workplace anti-slavery practices by holding business to account. Under the legislation the University will be publishing an annual modern slavery statement, reporting on all potential modern slavery risks and practises in its operations and supply chains.

Research Centres and Groups

[Workshop in Institutions and Socio-Economic Development](#) (WISED)- Research Group Focusing on Institutional Design, Change, and Diversity and Socio-Economic Development, The Workshop on Institutions and Socio-economic Development (WISED) is an interdisciplinary research forum designed to contribute to a better understanding of socio-economic development and factors that impede the latter.



Academic Programs

[Bachelor of Development Studies](#)

Development, poverty, inequality and environmental sustainability are some of the most important issues in the world today. Studying and understanding these issues is the key to creating a better world for future generations.

The University of Newcastle’s Bachelor of Development Studies deals with these key issues in a current and global context. You will focus on key global issues in a local, national or international context. You could find yourself employed for the Federal Department of Foreign Affairs and Trade, helping developing countries address their internal constraints to trade, or more locally you could work with an Indigenous community to interpret cultural messages on environmental sustainability.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries. This SDG seeks to explore how our university drives innovation through links to industry.



[Newcastle Institute For Energy and Resources \(NIER\)](#) research centres are finding solutions for the mineral, gas and water industries as well as developing optimised energy technologies while also examining the social impacts of the energy and resources sectors for our local, regional, national and global communities. NIER facilitates activities that enable our research community to drive impact and deliver next generation resources to support resilient and sustainable regions. NIER partners with 148 industry groups and bodies, has 21 research centres and groups, and supports almost 280 PhD students.

We are renowned for our commitment to collaborative research, multidisciplinary innovation and the transformation of new knowledge to improve social, economic and environmental outcomes.

Through our affiliated initiatives, we have expanded our research agenda to include a Pacific Node located in Samoa and the [NSW Energy and Resources Knowledge Hub](#) along with other key initiatives to tackle critical challenges beyond energy and resources, to food, agribusiness and water.

The NSW Energy and Resources Knowledge Hub is supporting strong links between industry, research organisations and government to drive innovation and growth for Australia's energy and resources sector.

Meaningful collaboration with strong partnerships are the basis of a thriving, resilient and innovative economy, and the NSW Energy and Resources Knowledge Hub is facilitating connections and sharing knowledge to solve problems, support business and create jobs for NSW.

Knowledge Exchange and Enterprise (KEE)

Connecting industry and researchers, [Knowledge Exchange and Enterprise \(KEE\)](#) provides services to researchers from our university to connect with industry and access funding information; as well as connecting industry with our renowned university researchers, students and technologies. KEE's services can leverage a competitive edge in the global market by providing access to new technology developed by our university researchers, to solve problems in our world.

Fostering Innovation

Our [Integrated Innovation Network \(I2N\)](#) seeks to drive business growth through innovation and entrepreneurship by fuelling the success of innovators and entrepreneurs, connecting them to community, customers, coaching and capital. No matter your connection to the University, I2N helps people develop their enterprise skills and impact potential, validate ideas and accelerate to market.

I2N has helped more than 70 start-up businesses, has a community of 4400 entrepreneurs and has raised over \$6m in funding. The network seeks to support start-ups focused on sustainability, such as the University of Newcastle-born start-up, Diffuse Energy, which has secured more than \$920,000 in funding contributions, including \$341,990 from the Australian Renewable Energy Agency (ARENA) to deploy its small wind turbine technology in remote locations across Australia.

I2N - [Diffuse Energy](#)

Ten small wind turbines will be installed on a variety of remote telecommunications sites with a focus on securing 10 years of wind turbine operational data and validation of Diffuse Energy's technology in the Australian market. A Diffuse Energy turbine is lightweight, spans less than a metre, and is engineered to plug into existing telecommunications infrastructure, converting the setup from diesel power generation to renewable-hybrid.

The project will support four full time jobs in regional NSW along with additional employment in domestic hardware manufacturing and electrical controller design. Diffuse Energy is based at the University of Newcastle's Integrated Innovation Network (I2N) Williamstown Hub.

I2N - [Compeat Nutrition](#)

Daniel and Alicia Edge are cofounders of Compeat Nutrition startup, an online sports nutrition platform, aiming to take professionals out of the clinic and deliver the best performance nutrition advice anywhere, anytime. They are new to the startup world but are experts in their field, and are finding they have everything it takes to empower active people everywhere, helping them improve their life as well as their sport performance.

With technology, they are creating a new discipline which uses nutrition support as a means to empower psychology change. Athletes join Compeat's online membership where they share preferences, activity and training programs and goals. Compeat's expert team of performance dieticians get to know users' eating habits and behaviours, make recommendations and support the individual when it's suitable for them.

SDG 9 PUBLICATIONS (2015 - 2019)	
Number	% of Australian
40	2.95





Reduce inequality within and among countries

This SDG seeks to explore how our university tackles inequalities: economic, health based and international inequalities.



School and Community and Outreach Programs

The University of Newcastle has a proud tradition of working together with its community including our local and regional schools and community groups. [School and community programs](#) and [community clinics](#) emerge from our core business of research and teaching and learning. We believe we are stronger when we work together; therefore the development of mutually beneficial partnerships helping to build strong regional communities is an essential goal of the University's community engagement mission.

Family Action Centre

The [Family Action Centre](#) has a long history of community outreach, working with the local community and schools to provide family support through parenting programs, family inclusive practice programs and health evaluation initiatives. The Centre hosts a range of health disciplines in an inter-professional placement unit, with approximately 60 student volunteers participating in these outreach projects, liaising with human service workers in education, health, and family and community services.

The [UnizYou](#) project offers a suite of free activities and workshops that foster engagement and encourage enrolment in the University's pathway programs - Open Foundation, Newstep and Yapug.

Community Connect

[Community Connect](#) is a new program within the Family Action Centre which builds and strengthens connections between the university and community. One of its main goals is to promote greater access and equity for groups that are currently underrepresented at the University.

The Community Connect program is based in four communities within the Hunter and Central Coast regions. Community Connect supports and encourages learning and education, and strives to raise the awareness of careers and career pathways for young people and their families by:

- Working collaboratively with service providers and other community partners
- Coordinating a comprehensive university student placement and volunteer program
- Building on community assets and strengths related to learning and education
- Promoting positive Community-University-School engagement for mutual benefit



Aboriginal Students

The [Deadly Streaming Project](#) is a structured cultural program consisting of one hour weekly group sessions in each school over 16 weeks with the aim of Aboriginal students having positive self-regard leading to an increased awareness that they belong in the educational setting. Deadly Streaming encourages students' understanding and respect of their identity and culture, and aims to improve their attendance and behaviour at school by improving their self-confidence and feelings of belonging. This increases their educational excellence and employability.

Centre of Excellence for Equity in Higher Education

Our [Centre of Excellence for Equity in Higher Education](#) is a site of innovative research and practice, brought together in critical thought to generate transformative impact for equity in and beyond higher education. Our work—in practice, research, facilitation and support—aims to address persistent inequalities and is grounded in a unique 'praxis-based' social justice framework. While we are situated within the University of Newcastle, our work extends through connection and collaboration with local, national and international networks committed to social justice.

Pathways and Academic Learning Support Centre

The [Pathways and Academic Learning Support Centre](#) (PALS) provides excellence in teaching and learning through enabling programs that give students a pathway into university undergraduate study. Our [Enabling Pathway Programs](#) are a major pillar of our commitment to equity and excellence through widening participation, access, retention and success in Higher Education, particularly for students from low SES and first in family backgrounds who often suffer from social inequities and challenges.

We offer three Enabling Pathway Programs – [Open Foundation](#), [Newstep](#) and [Yapug](#) - and are committed to teaching excellence, making our courses some of the most highly rated by students in the University. They provide students with a means to access and succeed in a degree of their choice.

Yapug is a pathway program designed to help Aboriginal and Torres Strait Islander people gain skills for entry into undergraduate degrees at the University of Newcastle. Yapug is a specialty pathway program specifically for Aboriginal and Torres Strait Islander students and will help students develop the academic skills and self-discipline required for success in undergraduate study. Aboriginal and Torres Strait Islander students will benefit from the support services offered by [The Wollotuka Institute](#).

Excellence through Equity Pathway to Medicine

In 2021, up to six places in the University's Medical Program will be earmarked for students who apply through the [Excellence through Equity Pathway to Medicine](#) pilot. This is a ground-breaking opportunity for students who have overcome major life challenges to study Medicine is being offered by our university.

The ALLY Network



The [ALLY Network](#) aims to create a more inclusive culture at the university by promoting greater visibility and awareness of those who are diverse in their sex characteristic, gender and/or sexuality.

This includes: lesbian, gay, bisexual, transgender, intersex, queer, asexual, agender, aromantic; + other diverse sexual orientations and gender identities.

The Network offers professional development and training to staff and student leaders who are prepared to advocate on behalf of members of the university who are diverse in their sex characteristics, gender and/or sexuality (LGBTIQ+).



SDG 10 PUBLICATIONS (2015 - 2019)			
Number	% of Australian		
48	1.96		
ADMISSIONS PROPORTIONS by LOW SES			
2018	2019	2020	
25.5%	24.9%	24.4%	
ADMISSIONS PROPORTIONS by Aboriginal and Torres Strait Islander Status			
2018	2019	2020	
3.23%	3.55%	3.64%	





Make cities and human settlements inclusive, safe, resilient and sustainable

This SDG seeks to explore how our university acts as custodian of heritage and environment in our communities; a sustainable community must have access to its history and culture in order to thrive.

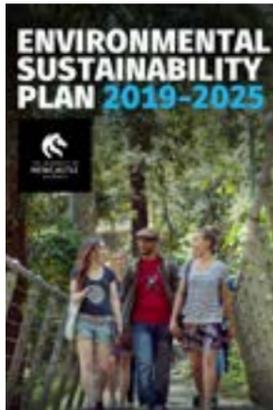
Preserving heritage and welcoming communities onto campuses

The University of Newcastle occupies several campuses, each with its particular heritage values and [community spaces](#). The main campus at Callaghan in Newcastle is set in 140 hectares of bushland and contains various walking tracks and access to the Hunter Wetland Area. We also invite the community in with open access to our [libraries](#), sporting fields, a community garden and free entry to our [museums and galleries](#). A number of [venues](#) are available for community hire.

Collaborative planning for sustainability

Our university partners with Planning Authorities and has made many contributions to regional plans. The Honeysuckle master plan demonstrates our contribution to public amenity planning and [local housing strategy](#), including the provision of student accommodation.

Our [Environmental Sustainability Plan 2019-2025](#) includes priority actions to embed Environmentally Sustainable Design (ESD) principals through all capital projects and implement an ESD tool across all refurbishment projects to achieve a five-star [Green Star](#) or equivalent rating from 2019, increasing to a minimum six-star Green Star 'Design and as built' across all new buildings by 2025.



The University prioritises building on brownfield sites with recent examples including the [NuSpace](#) building in the Newcastle CBD, the Central Coast Clinical School and Research Institute at Gosford Hospital building and a new [STEMM facility](#) at our Callaghan Campus. We have also recently acquired a [brownfield site in the Newcastle CBD](#) which we intend to develop over the next decade for a range of uses including academic facilities and student accommodation.

Respecting and empowering Indigenous culture

[The Wollotuka Institute](#) leads Indigenous activities at our university and facilitates collaboration with community on Indigenous cultural preservation projects, including language programs in primary schools, research on traditional water use, facilitation of cultural burns and culture walks on campus. Through our [Elders in Residence](#) program, Nguraki (Awabakal word meaning Elder, Wise Person, Cultural Mentor) guide the teaching of LORE passed down through the Dreaming & play a role in governance structures and leadership in Indigenous education.

Sustainable transport

Our [Environmental Sustainability Plan 2019-2025](#) includes a University-wide Strategic Transport Management Plan which has seen the implementation of a free [shuttle service](#) between our Newcastle campuses; on campus shuttles at Callaghan and Ourimbah campuses; [Electric Vehicle charging stations](#) on campus and cycle infrastructure at every university location.

Working flexibly to reduce the burden of travel

Our university also has a [flexible work arrangement](#) supported with IT infrastructure that staff can manage their work and life commitments and reduce unnecessary travel. This is to encourage video conferencing.

Student housing

We offer on-campus accommodation across nine residences, with various fee structures, room types and inclusions to enable students to select options within their affordability range. Our [Homestay program](#) for international students, provides safe, affordable and family-oriented accommodation.

SDG 11 PUBLICATIONS (2015 - 2019)	
Number	% of Australian
96	1.61

Academic Programs

The university has many programs of study directly related to SDG 11. Examples include:

[Sustainable Development](#) - ARBE66312

Develop the students understanding of the concept of sustainable development with an approach to the planning, design, construction and management of buildings and cities within minimum environmental impact

[Performance and Sustainability of the Built Environment](#) - ARBE3101

This course explores the modern and future built environment through the impact of construction and design decision-making at a global, national and local level. The United Nations SDGs provides the lens through which these issues are investigated.

[Politics of Education: Creating Sustainable Communities](#) - EDUC4801

This course looks at the political dimensions of education, at the macro- and micro-levels, and the inherently political role of education in creating sustainable communities for the present and future.

Research Centres and Groups

[Centre for Urban and Regional Studies](#)

Researchers in the Centre work collaboratively with Indigenous peoples, social movements, non-governmental organisations, industry and policy-makers locally and in the Asia-Pacific region, to address the spacial dimensions of human and environmental change and to help build spaces of possibility. We explore the challenges confronting urban and regional governance and the prospects for creating just and sustainable urban and regional communities, economies and environments.

[Newcastle Institute for Energy and Resources](#)

At the Newcastle Institute for Energy and Resources (NIER), multidisciplinary teams are driving productivity and sustainability gains through applied research focused on innovation that is delivering transformational solutions in sectors of national significance

[Centre of Excellence for Enabling Eco-Efficient Beneficiation of Mineral](#)

This Centre will transform the minerals industry, establishing a new generation of research leaders to support the innovation needed in creating a green economy for future generations.





Ensure sustainable consumption and production patterns

This SDG seeks to explore how our university promotes resource and energy efficiency, focuses on sustainable infrastructure, and provides access to basic services for all. Our University is working towards an efficient use of resources and the minimisation of waste.

Responsible procurement

The University has a responsibility to ensure that its procurement activities consider relevant social, community and environmental issues. Our [procurement policy](#) states that provided goods and services are fit for purpose and offer best value for money according to the evaluation criteria, consideration will be given to:

- products containing materials that are produced or distributed in a sustainable manner;
- purchasing local products and services where possible;
- products that are more energy-efficient and minimise their adverse environmental impact;
- suppliers that minimise their energy consumption and adverse environmental impact;
- suppliers that offer product stewardship by assisting the University in responsible disposal of products and minimisation of waste;
- business practices that support the global fair trade movement aimed at tackling poverty and empowering producers through trade; and
- the overall track record and reputation of the supplier in terms of environmental issues.

We are currently developing a Supplier Code of Conduct with a recognition scheme so as to extend our sustainability requirements to suppliers to the University.

In our university [Compliance Report](#), we outline our commitment and compliance with the [MODERN SLAVERY ACT 2018](#) (NSW). The Modern Slavery Act 2018 (NSW) is new legislation which requires entities above a consolidated revenue threshold of \$100 million to report on modern slavery risks in their global supply chains. This includes The University of Newcastle. The Act targets modern slavery and human trafficking in supply chains with the aim of increasing transparency around these issues for consumers and investors and improving workplace anti-slavery practices by holding business to account. Under the legislation the University will be publishing an annual modern slavery statement, reporting on all potential modern slavery risks and practises in its operations and supply chains.

Waste disposal and recycling

In line with the [University's Environmental Sustainability Policy](#), we have set a target for a 70 per cent recycling rate for general solid waste generated across the University by 2021.

Significant improvements to our waste management practices mean we increased diversion of general waste away from landfill. We remain actively committed to strengthening our waste management practices and principles.

Our partnership with [Plastic Police](#), the largest soft plastic recycling program in the Hunter region, is turning plastic bags and wrappers into outdoor seating across the Callaghan campus. During 2018 and 2019 we collected 1.4 tonnes of soft plastics; we purchased 50 per cent of this back to make innovative furniture. We also installed coffee cup recycling stations across our campuses. These Simply Cups can then be turned into new, reusable coffee cups, as well as a range of other products.



Saving water

The [Environmental Sustainability Plan 2019-2025](#) states that the University aims to achieve a 15% reduction in mains water usage per square metre across our Gross Floor Area by 2025 (on a 2015 baseline).

We acknowledge we are a significant water consumer and in 2018 this totalled approximately 280,000 kilolitres of mains water. In the face of a warming global climate, we have committed to using and monitoring natural irrigation for our extensive native bushland campuses to reduce demand for potable water. Our focus is on integrating best-practice water-efficiency measures across infrastructure and aim for Green Star ratings in new builds.

[Priority sustainability actions](#) include integrating Water Sustainable Urban Design (WSUD) principles into landscape management and integrating water efficiency as a key project design component as part of the new Environmental Sustainable Design (ESD) Guideline Tool.

Love Food On-Campus

The University's ['Love Food On-Campus'](#) was a yearlong project designed and delivered by the University in partnership with the Hunter Joint Organisation of Councils. The project researched food-waste habits of resident students with the aim of teaching skills and providing tools and resources to positively improve behaviour.

A lack of cooking skills was identified in residents transitioning to living out of home for the first time. Activities to address this included an educational film, focus groups, cooking demonstrations, waste audits and the dissemination of a tailor-made [food waste avoidance toolkit](#), resulting in a 30% reduction of food waste in red-lid bins and increased recycling in yellow-lid bins.

The project was the winner of Behaviour Change in Waste category at the recent Local Government NSW Excellence in Environment Awards.

Central Coast food basin

In partnership with the Central Coast Food Alliance (CCFA) the University's School of Environmental and Life Science is using federal funding to develop the local region as a thriving food basin.



[The program](#) is funding innovation, supporting food start-ups and facilitating training and best-practice knowledge sharing.

Programs and Resources

A number of our programs across our university directly address responsible consumption and production:

[Sustainable Development and the 2030 Development Agenda](#) - ARBE6609

This course introduces students to the guiding principles of the United Nations' Sustainable Development Goals (SDGs) and their application within organisations - public, private and not-for-profit. Students are able to document an organisational strategic plan that addresses specific targets and formulates appropriate metrics to verify the impact of the goals.

[Consumption and Everyday Life](#) - SOCA3666

This course will engage with key ideas and theories of consumption and consumer culture. Drawing on contemporary theories of culture and everyday life, the course will cover the diverse ways in which consumerism is analysed in contemporary social sciences.

[Food Packaging](#) - FSHN3420

Provides knowledge and skills in the handling and packaging of foods, and to develop values about the safety and environmental impact of packaging.

Research Centres and Groups

[PRC for Advanced Particle Processing and Transport](#)

The Centre find solutions to problems in the mineral industry to maximise the separation of products from waste material, reduce water and energy usage.

[Sustainability Operations](#)

We know that environmental and social responsibility is extremely important to our staff, students and communities. We also recognise that prioritising environmental sustainability isn't just a nice thing to do, it's fundamental to our future. With more than 37,000 students and 2,600 staff across 14 campuses and affiliated centres, it is the University's responsibility to lead by example and develop and maintain our operations as sustainable communities.

[Global Centre for Environmental Remediation \(GGER\)](#)

GGER aims to safeguard people's social, economic and physical health and wellbeing by developing innovative, cost-effective and sustainable technologies and solutions that reduce the impact of pollutants on the environment.

SDG 12 PUBLICATIONS (2015 - 2019)	
Number	% of Australian
92	2.65



Takes urgent action to combat climate change and its impacts

This SDG captures how our university is acting to address climate issues through research, low carbon use and education.



The [University of Newcastle](#) stands tall on the international, national and regional stage as an institution leading the way in climate action.

We know that environmental and social responsibility is extremely important to our staff, students and communities. We also recognise that prioritising environmental sustainability isn't just a nice thing to do, it's fundamental to our future.

In our University [Environmental and Sustainability Plan 2019-2025](#), the Vice Chancellor states "It has never been more vital for the University of Newcastle to embed its principles of environmental and social sustainability into a strategic plan that will position us well and truly within the global efforts to tackle the effects of climate change."

The [School of Environmental and Life Sciences](#) is committed to developing research and teaching skills that encourage critical thinking and problem-solving strategies. From animal conservation work to human reproduction research, we are focused on developing solutions to the issues our planet, flora and fauna, and humankind face.

Area of Study - [Environmental Management](#)

Students can study Environmental Management through several programs, and will be empowered with the knowledge required to play a role in solving environmental problems. Students will develop specialised management skills and the ability to determine environmental impact assessments against legislation and policy.

Area of Study - [Climate Science](#)

Climate scientists address the impact of and response to climate change. As a transdisciplinary problem, expertise and knowledge from many different fields are being applied to solve the climate challenges we are facing. By studying Climate Science, you will use critical and lateral thinking to examine data, find creative ideas for mitigating impact, and explore how human perspectives can influence the progress made combating this crisis.

Academic Programs and Courses

[Bachelor of Environmental Science and Management](#). Students who choose to study a [major in sustainability](#) will focus on how to achieve a balance between using and conserving natural resources. Within the scope of the sustainability major you will learn about human geography, ecology, social research, globalisation, tourism and much more.

[Master of Environmental and Business Management](#)

Our Master of Environmental and Business Management program provided students with a unique combination of environmentally focused courses with management and business skills that can be applied in the corporate arena, focusing on environmental professional development in the areas of sustainability and environmental management.

The [Master of Environmental Law](#) is designed to equip legal and non-legal professionals with a deeper knowledge of Environmental Law, through a unique, professionally-focused and interdisciplinary program.

Research Centres and Institutes

At the [Newcastle Institute for Energy and Resources](#) (NIER), multidisciplinary teams are driving productivity and sustainability gains through applied research that is delivering transformational solutions in sectors of national significance. NIER partners with 148 industry groups and bodies, has 21 research centres and groups, and supports almost 280 PhD students.

[International Collaborative Centre for Carbon Futures](#)

The ICCCF is an [international research collaboration network](#) developing innovative technologies for a sustainable carbon economy. Carbon-based energy and resources such as coal, oil, gas, biomass, shale oil, and combustible ice, play a critical role in the world's energy security with more than 80% of the global energy supply derived from carbon-based resources. While many countries have achieved a diverse energy mix, there is a need for new and innovative solutions to reduce carbon emissions on a large-scale and to minimise the environmental impacts that are a consequence of carbon-based energy production.

[Centre for Water Climate and Land](#)

The Centre for Water, Climate and Land focuses on understanding and dealing with the impacts of climate variability and change in the Asia-Pacific region. Of particular interest are hydrological extremes and how these may change in the future.



News

[Standing for Climate Action](#) - 17 September 2019

A message from the Vice-Chancellor:

On Friday 20 September, Newcastle will be one of many cities to stage a Climate Strike and large numbers are expected to attend. The grassroots movement of young people across the globe demanding immediate climate action is both sobering and inspiring.

Our communities share their concerns. Our recent rounds of community and student engagement delivered us an unequivocal message – environmental sustainability matters above all else and, as a University, we have an important role to play.

Our University stands in full support of climate action.

Our Targets:

100% Renewable Energy in 2020

Carbon Neutral by 2025

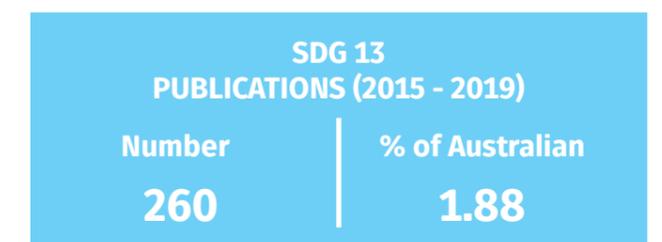
[International recognition for the University's Green Initiatives](#) - 30 November 2020

The University of Newcastle has been awarded three of the eight 2020 Australasian 'Green Gown Awards' in the categories of Climate Action, Benefiting Society and Student Engagement.

Climate Action Awards

In 2020 The University of Newcastle was the winner of the Green Gown Australasia Award - 2020 Climate Action for "Sustainability Reimagined".

In 2020, our researcher Dr Andrew Magee was the first candidate from the Asia-Pacific region to be announced as a Finalist for the Allianz climate Risk Research Award. This is the first time a candidate from Asia-Pacific region has been a finalist.





Conserve and sustainably use the oceans, seas and marine resources for sustainable development

This SDG seeks to explore how our university is protecting and enhancing aquatic ecosystems like lakes, ponds, streams, wetlands, rivers, estuaries and the open ocean.



Campuses to support Biodiversity

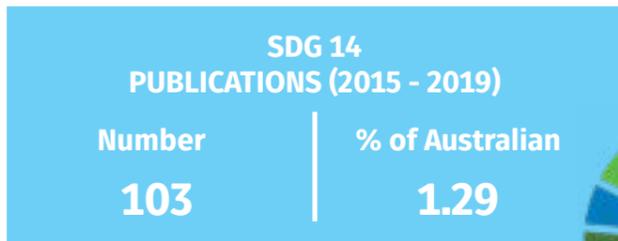
The University's Callaghan Campus covers an area of approximately 140 ha of which approximately 25 ha retains remnant native bushland and wetlands that have been identified as having high local conservation value and have thus been deemed dedicated ecological conservation zones and freshwater wetland areas. The university commissioned a landscape management implementation plan in 2012 which continues to guide the management of campus land, water and its biodiversity.



Research groups dedicated to Marine and Environmental water science

[The Coastal and Marine Science Research Group](#) undertakes research to support the sustainable use and conservation of the living resources and environments of coasts, catchments and marine environments. Our research incorporates not only the physical and biological processes that occur in these ecosystems but also their related social values and management strategies with a particular emphasis on sustainable use, conservation and protection of our natural resources.

[Environmental Water Science Research Group](#) The academics in this group study the importance of water to ecosystems and humans, its use and management as a resource, and its modification through contamination and pollution. The research occurs in collaboration with government departments, local councils and the Hunter Water Corporation.



Studying Coastal and Marine Science

In studying a [Bachelor of Coastal and Marine Science](#) students learn from experts in marine, coastal and ecological fields – giving them practical skills to make a difference to our world. Students will learn to understand the ecological, physical, conservation, societal and management issues they face – such as climate change, pollution, urbanisation and conflicting users – and can contribute to finding solutions to these problems.

[Coral Reef Biology, Ecology and Sustainability](#) - MARI3410

This course examines the biological, ecological and sustainability aspects of coral reefs in order to gain a better understanding of this complex and unique environment.

[Coastal and Marine Ecosystem Services](#) - MARI2500 Focuses on the interaction between the 'Blue economy' and the environment by looking at services that are important in a range of habitats and coastal communities. These include fisheries production, biodiversity, habitat structure and function, tourism and cultural use.

[Marine Ecology and Management](#) - MARI6001 Provides students with an understanding of the principles of marine ecology and contemporary issues for the Australian marine environment (e.g. climate change, elasmobranch fisheries, over-fishing, invasive species, pollution, whaling, threats to coral reefs).

News

[Research Warns of Wetland Wipeout](#)

A study led by the University of Newcastle's Dr Jose Rodriguez and Associate Professor Patricia Saco, published in prestigious Nature Communications has found that the world's coastal wetlands, which have existed for thousands of years, may now have the same average life expectancy of a human being - approximately 80 years. The study factors in for the first time, the role of attenuation (the ability of man-made structures to restrict the flow of water), predicting a decay far quicker than previously expected of coastal wetlands as sea levels rise.



Research leaders in coastal science and Environmental Remediation

Global Innovation Chair and Director of the Global Centre for Environmental Remediation at the University of Newcastle, [Laureate Professor Ravi Naidu](#) is a world leader in contamination studies, studying agricultural and industrial impacts on the environment. His investigations over more than three decades have focused on the presence of contaminants in the environment, how they interact in the environment, and the route or path they take to receptors (human and environmental). In 2019 Ravi was named a Highly Cited Researcher by Clarivate Analytics' Web of Science Group for his exceptional influence as reflected by the publication of multiple papers which have been frequently cited by his peers over the last decade.



Coastal morphologist and geologist [Dr Hannah Power](#) has been announced as one of Australia's newest 'Superstars of STEM'. This program aims to smash society's gender assumptions about scientists and increase the public visibility of women in STEM. Hannah is translating her research by collaborating with governments and councils so they can better manage coastal environments. In May 2020, Hannah was appointed to the NSW Coastal Council, where she is working alongside experts in local government, economics and local history to provide advice to the NSW Minister for Local Government on the development and implementation of coastal management programs by local councils.

[Student fights to keep the oceans plastic free](#)

Emilee Deel is studying a Bachelor of Science in Sustainable Resource Management and her passion is to "inspire people to create change through simple actions." In her [video](#) Emilee talks about why it is so important to protect our marine environment and how we can all help.



Protects, restores and promotes sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

This SDG seeks to explore how our university contributes to sustainably managing forests, combatting desertification, halting and reversing land degradation, and halting biodiversity loss.

Through our research centres: [The Global Centre for Environmental Remediation](#) we organise the [CleanUp Conference](#) which is a global forum for all aspects of contaminated site assessment, management and remediation, including the latest on PFAS; and the [Centre for Social Research and Regional Futures](#), we provide the Land Use in Rural Zones Report which is a partnership between our university and government to explore: farmers' connections to the land; land use practices and productivity; the role of lot size, dwelling entitlements and planning; changing contexts and land use practices; the implications of changing social landscapes within rural zones; and, farmers' concerns and reflections about the future.

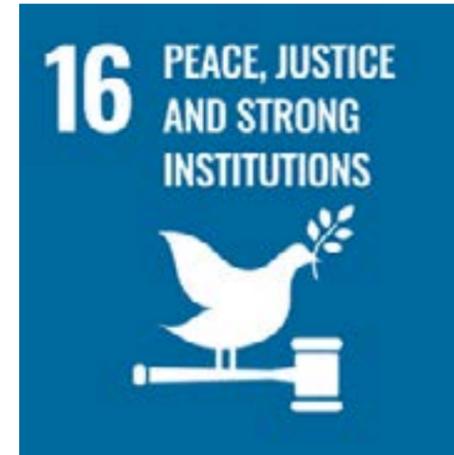
To meet the changing expectations of key stakeholders, we are committed, as stated in our [Environmental Sustainability Policy](#), to understanding and managing social, ethical and environmental issues along the supply chain in a responsible manner. [Procuring](#) food products and vegetables from local suppliers is an effective option for supporting local agriculture and production which, if managed sustainably, can increase the resilience of ecosystems.

Our main campus at Callaghan, is a strategic bushland zone of about approximately 140 hectares. Twenty-five of these are dedicated ecological conservation zones and freshwater wetland areas. It is our responsibility to ensure its ecological sustainability and safeguard the ecosystems within it as well as the greater system of which it is a part. To do this, we are committed to actively managing our campus to restore, improve and maintain this unique biodiversity. Our "Environmental and Sustainability" policy makes a reference to the [Environmental Sustainability Plan \(2019-2025\)](#) which includes a section on [Biodiversity and Landscaping](#). We are committed to minimising our footprint on the natural environment and regenerating land with native species where it has previously been disturbed.

The University of Newcastle offers a range of educational programs on [conservation science](#) and ecosystems which includes study of flora and fauna. We offer the [Green Impact program](#) for free which is designed to address key environmental issues and defines commitments, targets and activities across six focus areas including: climate action and energy reduction, waste and recycling, transport, biodiversity, water and engagement. We also offer formal programs on study of [environmental science and management](#) as well as embedding principles of conservation across a range of disciplines and courses. A group of architecture students have recently turned their talents to developing structural support for the [regeneration of koala populations](#).

The University works closely with local communities to promote the importance of biodiversity and provide guidance on maintaining shared land ecosystems. The three key activities that we implemented in collaboration with local council and community in 2019/2020 include partnering with farmers to develop sustainable land use practices and unexpected challenges they encounter as they navigate modern life on the land.

- Sediment from Australia's most important river basin, the Murray Darling Basin which revealed crucial information on climate change and sea level rise.
- Benefits for the residents around Williamtown who would receive the potential benefits of remediating per-and poly- fluoroalkyl substances (PFAS) contamination with hemp seed proteins.



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

This SDG seeks to explore how universities can support, and be, strong institutions in their countries and promote peace and justice. It explores universities' research on law and international relations, their participation as advisers for government and their policies on academic freedom.

Our values set the standards that we expect, encourage and nurture in our staff and students. They guide our decision making and position us to achieve our purpose. Our four core values are excellence, engagement, equity and sustainability. Our value of Equity states that we are committed to widening participation, promoting diversity and fairness, overcoming injustice and increasing success for all.

[Equity of access to higher education](#) is a fundamental part of the University of Newcastle's "DNA". This is reflected in our institutional values and demonstrated in our successful history of supporting students from a range of backgrounds to achieve a university education.

[The Centre of Excellence for Equity in Higher Education](#), with [The Wollotuka Institute](#), will further develop our reputation as a global leader in the evidence-based development of pathways to enhance access to university and academic success for students from diverse backgrounds. By building on our success as a leader in enabling education and equitable access to higher education, the Centre serves as a national and international hub for collaborative action-oriented research, strengthening practice and building partnerships for success.

[Our commitment](#) to Indigenous Higher Education, Innovation and Engagement - To help improve life outcomes for Indigenous peoples we will build new partnerships while strengthening existing partnerships with local Aboriginal organisations. With our strengths in medicine, health and education, we are well-placed to help improve life expectancy, child mortality, and early childhood outcomes. The University has a leading role to play in achieving better outcomes in education attainment and employment for our Aboriginal communities.



The [Newcastle Law School](#) is Australia's leading clinical law school; and has some of the highest rates of graduate law employment in the country, excellent teaching staff, and a world-class legal research program. We run our own community legal centre and our students can receive extensive experience assisting real people to solve real legal problems.

Our staff and graduates develop legal and regulatory solutions to some of the most pressing social, commercial and environmental challenges facing our community, region and world. Our graduates are ethically responsible global citizens, who have a strong sense of social justice, understand how technology is reshaping the justice system, uphold the rule of law and are committed to the highest professional standards.

The [University of Newcastle Legal Centre](#) (UNLC) is the centrepiece of the Newcastle Law School's clinical program. Students engage with the community and legal professionals at a number of free legal clinics to develop practical skills in the application of the law, underpinned by the value of social justice.

[Law on the Beach](#) is a free legal advice clinic held in the relaxed setting of Merewether Surf Club each January and February. Staffed by Newcastle law students and Legal Centre lawyers, the clinics run on a 'drop-in' basis and make seeking legal advice more accessible, particularly for young people.

[The Older Persons Legal Clinic](#) offers free legal advice and assistance to people aged 60 years and over and to Indigenous people aged 50 years and over. It is a community legal service staffed by lawyers and law students.

[Pop-up Clinic for Students](#) - All students at the University of Newcastle have the opportunity to seek free legal services from the Legal Centre. In addition to the sessions held at the Legal Centre at NUspace, lawyers and law students hold pop-up clinics at the Callaghan and Ourimbah campuses.





Partnerships for the Goals

This SDG seeks to explore how our university strengthens the means of implementation and revitalizes the global partnership for sustainable development. SDG 17 explicitly relates to all other SDGs: everyone needs to come together, governments, civil society, scientists, academia and the private sector, to achieve the sustainable development goals.

Through unique local, regional, national and global collaborations and partnerships, our university supports the SDGs and promotes best practices and the publication of data and evidence to strengthen the implementation of the SDGs.

Our University Strategic Plan 2020-2025 has engagement as a key priority, which involves partnerships with our community, industry and governments. Our strategy states: By leveraging our unique heritage – and our academic and research excellence – we will create the ultimate test bed for innovation. We will establish four Engagement Priorities that build on the significant track record of success and the strengths of our University, and that reflect the issues and opportunities relevant to the future of our regions and our world. These interconnected priorities will guide our research, education and engagement efforts and will shape our collaboration with industry and community stakeholders.

The four priorities reflect the mission-driven issues we have the capacity, expertise and civic responsibility to address. We will use our capabilities, experience and collaboration to deliver outcomes that matter for our partners.

The priorities address the challenges our partners are committed to, such as tackling climate change, transforming industries, building a culture of regional entrepreneurship that sparks new industries, creating and educating future workforces, finding practical ways to build stronger and more inclusive communities, and improving the health and wellbeing of people here in our regions and around the world.

Hunter Region SDG Taskforce

Our university is a key part of the network that has formed the [Hunter Region SDG Task Force](#) which is a group of motivated organisations, businesses, not-for-profits and local and State government bodies who are focused on collaborating to achieve the United Nations Sustainable Development Goals (SDGs) in the Hunter Region. The Task Force is essentially a collaboration of 17 action groups which have come together to set targets and take action on each of the 17 SDGs.

CIFAL Newcastle

[CIFAL Newcastle](#) was established by and is located at our university. CIFAL Newcastle is the first CIFAL centre to be established within a university (from its inception), and the first to be established in Australia and the Asia-Pacific region. The University was selected by UNITAR to host CIFAL Newcastle, due to its leadership in innovative training on disaster management and emergency response. CIFAL Newcastle is a global collaboration that offers training activities on disaster management and risk reduction, and the implementation of the Sustainable Development Goals at the local level.

Pacific Node

Through the [Pacific Node](#) our university is working with Pacific partners to deliver collaborative solutions to environmental, social and economic challenges, and to build equitable prosperity, social cohesion and healthy communities guided by our [Pacific Research Roadmap](#). Through our [‘Looking Ahead’ Strategic Plan 2020-2025](#) and its [Asia Pacific focus](#), we are committed to ensuring that our nearest neighbours are supported in the face of significant challenges.

In partnership with the [Secretariat of the Pacific Regional Environment Programme](#) (SPREP), we have established the Pacific Node in Apia, Samoa to provide a flexible research framework for collaborative engagement between academia, industry, government and communities to deliver impact in national priority areas including:

- climate resilience
- ecosystem and biodiversity protection
- waste management and pollution control
- environmental governance



Appendix: Key websites and University Plans - related to SDGs

[The University of Newcastle](#)

- [The University of Newcastle Strategic Plan \(2020-2025\)](#)
- [Implementation / Mapping our SDGs](#)
- [Annual Report 2019](#)
- [University Policy Library](#)
The University of Newcastle Policy Library is the authoritative source for the University's policy documents including: Rules, Policies, Guidelines and Schedules, Procedures, Associated Information (codes of practice, legislation, website links, forms and other documents). Search keyword "SDG" for a list of relevant sustainability policies.
- [Looking Ahead Lecture Series](#)
- [Academic Excellence - Sustainable Development Goals](#)
Visit this page for more information on our University SDG reporting for all 17 SDGs. This website contains links to relevant open data reports and Reports on Equitable Access to Education.
- [University Sustainability](#)
- [Environmental Sustainability Plan 2019-2025](#)
- [The Wollotuka Institute](#)
- [Family Action Centre](#)
- [Centre for Excellence for Equity in Higher Education](#) (CEEHE)
- [Research Centres, Institutes and Groups](#)
- [CIFAL Newcastle](#)
A United Nations International Training Centre for Authorities and Leaders. CIFAL Newcastle is affiliated to the United Nations through its parent body UNITAR. CIFAL Newcastle's purpose is to equip and empower communities and organisations with skills and resources to action Sustainable Development Goals.





Report prepared by
Academic Excellence, Vice Chancellor's Division
The University of Newcastle