2015-2017
ENVIRONMENTAL SUSTAINABILITY PLAN
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FOREWORD

Higher education has a responsible position in society – educating, researching and developing solutions to many of our environmental challenges. Our University plays a significant role in this arena, through its teaching and research activities, engagement with staff and students and the ongoing management of its buildings and bushland.

To be recognised as a global leader we have an obligation to demonstrate continual improvements in our environmental sustainability. This is the University of Newcastle’s second Environmental Sustainability Plan (ESP) and its principle aim is to provide a clear plan of action to deliver measurable improvements in the University’s environmental sustainability performance.

Our ESP does not restrict or limit the growth opportunities of the University, it is about positive change that will improve our environmental sustainability performance and result in lasting financial and social benefits. The ESP sets clear objectives for:
- future campus development, refurbishment and replacement of ageing infrastructure;
- campus engagement to increase the uptake of sustainable transport modes and development of local partnerships to support regional change; and
- student and staff engagement to reduce waste to landfill and to reduce unnecessary consumption of energy and other resources.

The University has set ambitious goals and we are working hard to achieve these through successful implementation of this action plan. We also acknowledge the importance of behavioural change in achieving our objectives and our network of sustainability champions will drive awareness and improvements through the Champions4Change program.

Our planned actions for the next three years demonstrate the breadth of our commitment to reducing the University’s environmental footprint. The University has developed a strong foundation and I am confident in our ability to meet the challenges this ESP offers.

Professor Liz Burd
Pro Vice-Chancellor
Learning and Teaching
Chair, University Committee on Environmental Sustainability
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMAG</td>
<td>Asset Management Advisory Group</td>
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<tr>
<td>CRC</td>
<td>Cooperative Research Centre</td>
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<td>ESD</td>
<td>Ecologically Sustainable Development</td>
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<td>ESP</td>
<td>Environmental Sustainability Plan</td>
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<tr>
<td>GFA</td>
<td>Gross Floor Area</td>
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<td>HMRI</td>
<td>Hunter Medical Research Institute</td>
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<td>LCG</td>
<td>Landscape Consultative Group</td>
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<tr>
<td>NGERs</td>
<td>National Greenhouse and Energy Reporting Scheme</td>
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<td>NIER</td>
<td>Newcastle Institute for Energy and Resources</td>
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<tr>
<td>NUBUG</td>
<td>Newcastle University Bike Users Group</td>
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<td>NUSEC</td>
<td>Newcastle University Student Environment Club</td>
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<tr>
<td>SAMC</td>
<td>Strategic Asset Management Committee</td>
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<tr>
<td>TEFMA</td>
<td>Tertiary Education Facilities Management Association</td>
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<tr>
<td>TFI</td>
<td>Tom Farrell Institute</td>
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<td>UCES</td>
<td>University Committee on Environmental Sustainability</td>
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<td>UON</td>
<td>University of Newcastle</td>
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<tr>
<td>WONs</td>
<td>Weeds of National Significance</td>
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</table>
The University of Newcastle is entering a critical decision-making period with ageing infrastructure, growing student population, funding uncertainty, increasing utility bills and competition for enrolments. Replacement and maintenance of assets, campus master planning, space utilisation, sustainable and innovative building design are key considerations in strategically planning the University’s future, to deliver its services as a leading educator and to achieve its environmental sustainability goals.

The University has adopted targets to make an equitable contribution to reducing greenhouse gas emissions. We have adopted corporate performance indicators for reducing energy usage and developed strategic plans to drive reduction in the University’s ecological footprint. The main sources of carbon emissions from the University are from fossil fuel combustion (gas, oil) and electricity use in both residential and non-residential buildings and from non-building related areas such as external street lighting.

Commuter transport has long been recognised as a priority issue for the University. A significant area of focus for this plan is to drive change to adopt more sustainable modes of transport within local networks. Opportunity for green travel exists both in travel to and from campus, and also around and between campuses. This will be an area of focus leading into the operation of our new city campus in 2017.

Higher education is a formative time for students and we have an ability to make a positive impression that carries through in many different facets of their future careers, families and life choices. Students are valuable partners for the University, providing human resources, skills, enthusiasm and creativity. Through the proposed actions in this plan, there is considerable opportunity for students and staff to become involved and to contribute to the environmental sustainability of our University.

1. INTRODUCTION

The overwhelming view of scientists is that unless we make deep inroads into reducing carbon emissions then the social and economic consequences will be profound. The position of universities in communities provides higher education with the potential to drive change. Our University with its diversity of campuses, research facilities and large number of international students has a considerable opportunity to contribute to this global drive for change.
1.1 Profile of Our University

The University's asset portfolio consists of 275 buildings with an asset replacement value of over $1.6 billion. The current property portfolio, including leased space and fully owned space, consists of approximately 350,000m² Gross Floor Area (GFA). Our total land holdings comprise approximately 261 hectares.

The University has campuses at Newcastle, the Central Coast and Port Macquarie. It also has a presence in Sydney, Taree, Tamworth, Orange, Moree and operations in Singapore. We also occupy space at several offsite locations such as Hunter Medical Research Institute (HMRI), the Mater Hospital, Tamworth Base Hospital, Wyong Hospital and Gosford Hospital.

The student base of the University has entered a period of rapid growth. As of 2015 the University has over 26,000 students and 2,670 full-time staff with a further 468 casual staff. Many students require efficient travel options to be able to move between the campus, part-time work and other lifestyle needs. The preference for car travel has become apparent in recent years with car parks regularly over subscribed during semester.

1.2 Our Vision and Commitment

Our vision for environmental sustainability is:

to provide leadership, innovation and inspiration to our staff, students and the broader community in environmental sustainability through our campus management, teaching and learning, research and community engagement activities.
The University has adopted a number of high-level, strategic objectives that form the priority areas for this ESP. Each of the below listed objectives is supported by reporting measures in order to provide measureable tracking of the University’s performance in these key areas of sustainability.

- to reduce our carbon footprint through energy efficiency measures and carbon offsets
- to adopt water sensitive urban design principles to minimise potable water consumption
- to identify strategic zones for landscape management, incorporating biodiversity protection, ecological function and broader campus requirements
- to implement waste management practices that adopt the principles of avoid, reduce, re-use and recycle
- to deliver sustainable travel options for everyday travel to, from and around the University
- to implement a University procurement process that considers social, ethical, environmental as well as economic factors in its decision-making
- to integrate long-term environmental sustainability into our strategic asset management
- to be recognised as an international leader in research aligned with environmental sustainability, with a particular focus on sustainable resource use and biodiversity
- to ensure students graduate with an understanding of environmental sustainability issues, both in their own disciplines and as members of society
- to promote the University of Newcastle as a campus responsibly managing its physical and natural assets
1.4 Continuing Our Journey ….

The University has developed a number of strategic plans and reports that support our sustainability commitments. These plans guide prioritisation, resourcing and implementation of actions to continually improve our environmental performance. They are periodically reviewed to ensure priorities remain current and organisational goals and targets are being met.

- Environmental Sustainability Policy commits UON to set of principles to minimise environmental impact
- Ecological Conservation Zone Report provides baseline assessment for campus fauna and flora
- 2011-2013 Environmental Sustainability Plan sets an ambitious agenda for continuing environmental improvement
- Landscape Management Implementation Plan (2012) provides a 10-year framework to manage the bushland campus at Callaghan
- Strategic Transport Management Plan provides a framework to deliver the transport needs of Callaghan Campus in a sustainable way and to support planned growth over the next 10 years
- Ourimbah Campus Development Project investigates implications and opportunities for future development
- NeW Directions Strategic Plan includes environmental sustainability as one of seven priorities over the next five years
- Strategic Asset Management Plan (SAMP 1) provides opportunity to integrate environmental improvements in ongoing estate maintenance and development
- Asset Management Gateway informs future investment in infrastructure
- Ecologically Sustainable Design (ESD) guidance prepared for integrating ESD in construction projects
- Strategic Asset Management Plan 2014 (SAMP 2) guides informed decision-making for targeted investment
- Resource Data Management System (Envizi) configured to provide tracking and reporting of resource use for the entire organisation
- Master Plan Framework identifies approaches to ensure the bushland campus operates in an environmentally sustainable way into the future
- Waste Management Audit and improvement strategy
2. CELEBRATING OUR ACHIEVEMENTS (2011–2014)

The following sections summarise results and improvements achieved by the University since implementing the previous ESP.

2.1 Energy, Water and Waste

The University continually strives to adopt management practices that result in the efficient use of resources. We reviewed renewable energy options, waste and water efficiencies to meet sustainable design criteria for new buildings. During maintenance and refurbishment projects old installations were replaced with more efficient options where suitable and processes put in place to quantify the savings. Detailed identification and quantification of our waste streams will enable more effective future waste management with the aim of reducing waste to landfill. Water audits provided the information needed during upgrades of amenities.

OUR ACHIEVEMENTS

Internal Lighting
The Science Building, Auchmuty Library, Sports and Aquatics Centre and the Hunter Building each replaced and recycled inefficient fluorescent tubes with more energy efficient and longer lasting LEDs. Motion sensors were installed in some areas on our campuses.

LED Street Lighting
5% of external street lighting has been converted to LED in an ongoing program. Installs are taking place at end of life as external lighting becomes due for replacement.

Solar Power
- 10kW of solar was installed in August 2014 at Student Accommodation in Port Macquarie
- 50kW of solar was installed in December 2014 at Tamworth Education Centre
- 10kW of solar was installed in January 2015 at Manning Education Centre, Taree
- 10kW of solar was installed in January 2015 at Student Accommodation, 50 Flett St, Taree

These systems combined should generate approximately 120,000 kWh per year of electricity and reduce carbon emissions from University activities by 100 tonnes of CO₂/yr.

Chillers
Several low efficiency chillers have been replaced with more efficient options.

Solar Hot Water
Several hot water systems have been converted from electricity to more efficient natural gas with solar pre-heat.

Passive Building Design
Some campuses now have buildings with natural ventilation controlled by a building management system to operate façade-atrium ventilation, thus reducing energy demand.

Waste Audit
A waste audit was conducted in 2014 at Callaghan, Central Coast Campus Ourimbah and the Newcastle City Campus. The audit included outdoor waste generation, university buildings, retail and entertainment precincts and accommodation areas. Recommendations were provided to deliver short-term benefits in waste reduction and recycling and to inform a principal contractor model starting in 2015.

Water Efficient Amenities
Water efficient shower heads, cisterns and tap sets were installed in student residences and during building upgrades.

Resource Data Management System
190 real-time electricity meters, 4 real-time gas meters and 27 water meters were installed at locations across the University. A Resource Data Management System (Envizi) was configured for implementation in 2015 that will receive data from the real time meters and provide improved resource monitoring and reporting capability.
2.2 Landscape and Biodiversity

The University aims to preserve the bushland character and image of the University through the protection of our native fauna and flora. We seek a practical balance between biodiversity and a safe and usable environment. We apply best practice bush regeneration and landscape maintenance techniques and actively promote the amenity benefits of the bushland campus. We strive to integrate building and landscape design to provide external meeting, teaching and learning spaces.

OUR ACHIEVEMENTS

Strategy & Planning
A Landscape Management Implementation Plan was developed and implemented in 2012 to establish a framework for an ongoing works program of bush regeneration at Callaghan Campus.

Tree Management
A Tree Management Permit was added to the contractor works permit system and must be completed for any tree works including pruning or removal.

Bush Regeneration
4,000 hours of bush regeneration and more than 3,000 native tube stock were planted as development offsets for the new student accommodation constructed at Callaghan campus.

Planning & Offsets
The University adopted a revised development application process that permitted compensatory offsets other than tree planting. Offsets for the student accommodation at Callaghan included nest boxes for micro bats, sugar gliders and possums, ongoing weed management, fauna and flora monitoring programs and planting of 6,000 natives.

Wetland Management
The University became a major stakeholder in the Newcastle Wetland Connections project managed by WetlandCare Australia with the aim of restoring urban waterways in Newcastle. Our project area includes two large wetlands and riparian corridor linkages on Callaghan Campus.

Landcare Activities
A University Student Landcare Group was established in 2014 and was actively involved in bush regeneration and awareness activities throughout the academic year. The group conducted 3 planting days and several organised bush walks.
2.3 Sustainable Transport

The University aims to facilitate sustainable travel alternatives around walking, public transport, cycling and carpooling. The University is represented on regional transport committees to promote the public transport service needs of its staff and students.

**OUR ACHIEVEMENTS**

**Car Pooling**
The University launched a carpooling program at Callaghan in 2013 with 39 dedicated carpooling spaces allocated for use by staff and students. Using the online carpooling scheme and sharing rides to work, the program was recently extended to Ourimbah campus with the addition of 8 carpooling bays.

**Strategy & Planning**
A Strategic Transport Management Plan was prepared in 2012 to reduce traffic congestion and decrease the level of dependence on private car-based travel. A survey of students and staff showed that the University had achieved the following:

- **walking**: 2.3%
- **cycling**: 1%
- **train**: 1.2%
- **bus**: 0%
- **car**: 3.3%

Whilst there is a positive trend towards the adoption of more sustainable and active modes of transport, more can still be done to reduce the dependence on car-based travel.

**Bike Hubs**
Two bike hubs each with 52 bike racks, 42 lockers, showers and toilets opened at Callaghan Campus with immediate success. The success of these hubs has been a catalyst for additional cyclist infrastructure and cycling initiatives through the University such as refurbished bike sales, cycle route mapping, cycle skills training days and cycling safety awareness.

**Planning**
Incorporated within the NeW Space design are end of trip facilities (showers and lockers) and secure parking for over 200 bikes.

**Ride to Uni Day**
This annual event promotes healthy activity and sustainable means of transport. During the most recent event over 50 students and staff cycled to work including representatives of the University Executive.
2.4 Asset Planning and Environmental Compliance

The University employs campus management practices that minimise environmental impact through the use of best practice and ensure compliance with regulatory requirements. For the first time in the University’s history, the performance of the University’s buildings has been assessed in order to focus the direction of asset management on achieving the University’s strategic priorities.

OUR ACHIEVEMENTS

Asset Planning
We were one of the first universities to prepare a Strategic Asset Management Plan (SAMP) in 2012. It provided the opportunity to drive leading and innovative environmental sustainability measures in our campus facilities and activities, in particular to reduce energy consumption. All of the University's buildings were assessed to provide a plan for building improvements and to support the University’s mission to be a global leader.

Master Plan
A Master Plan Framework was prepared to ensure that the campus continues to operate in an environmentally sustainable way into the future.

Green Star Certification
NeW Space has been designed to achieve a 5 star Green Star Certification rating. Refurbishments of existing campus assets are to achieve an equivalent 4 star Green Star rating (see www.gbca.org.au).

2.5 Research and Innovation

The University aims to enhance its reputation as a hub of research excellence by expanding its contribution to national and international research on a range of environmental sustainability issues. It fosters collaboration with external agencies, including industry, government and other research institutions, to provide collaborative solutions to global environmental sustainability challenges.

OUR ACHIEVEMENTS

NSW Energy Innovation Knowledge Hub at NIER UON (established in 2014)
The Hub was developed to build a culture for collaboration and information transfer. It held an annual energy conference involving a broad range of small to large energy providers, suppliers, buyers, users and research organisations, with the key aim to disseminate information and best practice across the industry.

The Hub has brought together a fragmented industry by building on existing networks and industry investment in energy research, leveraging the partnership between Newcastle Institute for Energy and Resources (NIER) and CSIRO. It has connected to other research institutions and energy businesses to further the collaborative innovation process.

Public Forums and Conferences
A range of public forums and conferences were held to inform the community about research and development leading to environmental sustainability.

In 2001 we held the inaugural Hunter Valley Electric Vehicle Festival. The yearly festival has continued to celebrate the move towards electric vehicles and away from non-renewables such as petrol and diesel.

Also in 2011 we launched the Ecological Rehabilitation of Mined Lands Conference. This annual conference plays a significant role in the Hunter Region, providing an important avenue for TFI to promote the use of best practice approaches in the management of rehabilitation of mined lands. This annual conference brings together key stakeholders including miners, environmental professionals, government representatives, research scientists and interested persons from the community.
2.6 Teaching and Learning

The University’s Centre for Teaching and Learning supports students and academic staff in their pursuit of learning success and teaching excellence.

OUR ACHIEVEMENTS

Newcastle University Student Environment Club (NUSEC) Lobbying
NUSEC joined the Boomerang Alliance to rally Local, State and Federal government to support National Container Deposit legislation, campaigning for refunds on bottles and cans to double recycling rates across Australia.

NUSEC Volunteers
NUSEC volunteers, in partnership with The Green Helping Hand, provided a series of interactive educational workshops to students at Charlestown Public School during World Environment Day.

Fossil Free Newcastle Campaign
Students are campaigning for Fossil Freedom, asking the UON to divest its financial portfolio from carbon-intensive stocks/investments.

Coral Rehabilitation Project
Marine Science students from Central Coast Campus at Ourimbah annually assist Vanuatu’s Coral Rehabilitation Project on an overfished and overused island off Port Villa. A coral reef replanting nursery has been built to restore parts of the reef damaged by storms and fishing. A reef health monitoring system has also been introduced.

National project to define Environment and Sustainability learning outcomes
In 2014-15 the University led a group of partner universities in a national project to define key learning outcomes for tertiary programs in Environment and Sustainability. The project was commissioned by the Australian Council of Environmental Deans and Directors and was funded by the Australian Government’s Office for Learning and Teaching. The learning outcomes will guide the design and delivery of undergraduate and postgraduate programs in Environment and Sustainability at universities in Australia.

Courses
Additional courses and elective subjects in environmental sustainability have been developed in the field of environmental sustainability. These include:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
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<tbody>
<tr>
<td>ECON3320</td>
<td>Environmental Economics</td>
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<tr>
<td>EMGT1020</td>
<td>Social Development and the Environment</td>
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<td>EMGT2020</td>
<td>The Sustainable Society</td>
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<td>EMGT3070</td>
<td>Advanced Studies in Sustainability</td>
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<td>MAR12900</td>
<td>The Marine Environment</td>
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<td>PHIL3500</td>
<td>Democracy, Economy and Global Warming</td>
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<td>SOCA3060</td>
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<td>Sustainable Resource Management: Natural Systems</td>
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<td>TOUR3000</td>
<td>Leisure, Tourism and Environmental Issues</td>
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</table>
The overarching plan for the University is the NeW Futures Strategic Plan 2016 – 2025. It sets the vision and objectives for the organisation. A key objective of this plan is to integrate environmental sustainability with:

- asset management
- teaching
- research programs
- community engagement

Our first Environmental Sustainability Plan (ESP) was prepared in 2011 in response to this need. Endorsed by the University Committee on Environmental Sustainability it identified the challenges and future actions for improvement.

The ESP is structured around three Themes and the Campus Management Theme consists of seven sub-themes:

- Campus Management
  - Energy and Carbon Emissions
  - Water
  - Landscape and Biodiversity
  - Waste
  - Sustainable Transport
  - Business and Procurement
  - Asset Planning
- Teaching and Learning
- Research and Innovation

Supplementary plans including the Strategic Transport Management Plan, the Strategic Asset Management Plan and others were prepared to support the ESP. The Strategic Asset Management Plan identifies investment strategies for individual buildings that support financial and environmental sustainability in the long-term.

The Masterplan Framework (2014) supports these supplementary plans by providing the long-term direction for future campus development, place-making and the efficient use of space. Implementation of these strategies, supports improving the environmental performance of the estate.

The number of KPIs and Report Measures has been increased since the 2011-2013 Plan and the addition of Envizi to the reporting framework will provide improved efficiency in handling data, tracking environmental performance and identifying corrective actions and cost-saving opportunities.
NeW FUTURES
STRATEGIC PLAN

- University Committee on Environmental Sustainability
- Environmental Sustainability Plan (ESP)
- Strategic Transport Management Plan
- Landscape Management Implementation Plan
- Masterplan Framework
- Strategic Asset Management Plans

- Energy and Carbon
- Water
- Landscape and Biodiversity
- Waste
- Transport
- Business and Procurement
- Asset Planning
- Teaching and Learning
- Research and Innovation
3.1 Our Key Performance Indicators

The University has expanded on its first ESP by developing additional KPIs and reporting measures to quantify and track our performance towards the Strategic Environmental Objectives shown below.

**CAMPUS MANAGEMENT THEME**

1. **Energy and Carbon Emissions** – To reduce our energy use and greenhouse gas emissions through strategic asset planning, resource efficiency measures and carbon offsets
   - 20% reduction in CO2e/m² Gross Floor Area by 2020 and 40% reduction by 2030 on a 2007 baseline

2. **Water** – To adopt water sensitive urban design practices to minimise potable water consumption
   - 5% reduction in annual potable water use per m² Gross Floor Area by 2030 on a 2015 baseline

3. **Landscape and Biodiversity** – To maintain a landscape that is rich in biodiversity, resilient to change and promotes the native bushland campus
   - Achieve the 2012 Landscape Management Implementation Plan weed reduction targets

4. **Waste** – To implement a waste strategy that reduces waste to landfill and engages the campus community in waste separation, reuse and recycling
   - Reduce waste to landfill 40% per capita by 2020 from a 2007 baseline

5. **Sustainable Transport** – To provide and promote environmentally sustainable travel options for everyday travel to, from and around the University
   - 10% reduction in number of cars on campus over the 3 years to 2017

6. **Sustainable Procurement** – To ensure social, ethical, environmental and economic responsibility is considered during the procurement process
   - Develop university-wide standards for targeted environmentally preferred products by 2017

7. **Strategic Asset Management** – To integrate environmental sustainability best practice into our asset planning processes
   - 100% of infrastructure projects deliver $ savings by incorporating measures to improve environmental performance

**RESEARCH & INNOVATION THEME**

To be renowned as a national leader in research aligned with environmental sustainability, with a particular focus on sustainable resource use and biodiversity

Increase the number of innovative solutions to sustainability challenges developed from research at UON and implemented on UON campuses 2015-2030

**TEACHING & LEARNING THEME**

To ensure students graduate with an understanding of environmental sustainability issues, both in their own disciplines and as members of society

Increase the number of graduates from programs and/or courses with substantial embedded sustainability content
4. OUR ACTION PLAN

Actions were identified from a series of workshops, risk assessments and internal stakeholder consultation meetings. The actions have been prioritised according to timeframes for implementation and these timeframes have been set based on environmental risk. Actions are delivered through the operational plans of divisions and faculties. Due to the relatively short three year implementation period, actions may refer to only a component within a longer term project.

The single biggest contributor to the University’s environmental footprint is the energy performance of its buildings and infrastructure. The Strategic Asset Management Plan and Masterplan Framework will assist the University to identify and prioritise actions leading to the improved condition and performance of our buildings. Additionally, the way in which research and education buildings are developed needs to be challenged to realise the potential that integrated design can have in the reduction of energy consumption.

We aim to plan and grow a sustainable campus to meet commitments in our Environmental Sustainability Policy and to reduce energy and carbon emissions to mitigate climate change. Through this Environmental Sustainability Plan we will:

- identify and implement cost effective measures to reduce energy and water use
- generate renewable energy on site and use energy more efficiently
- engage the campus community in improved waste management practices to increase reuse and recycling
- integrate building performance in asset management decisions.

There is an immediate need to improve the overall environmental performance of our existing buildings. This will be achieved through a program of upgrades and refurbishments as well as the disposal and decommissioning of poor performing buildings.

The benchmark in campus and building design has been raised. With carbon neutral facilities fast increasing and living buildings that generate more energy than they use, the University needs to embrace this leading best practice in future building design and operation.

Key:

- **CO₂**: Reduction in carbon emissions
- **$:** Financial savings
- **Eye:** Reporting and monitoring
- **People:** Stakeholder engagement
- **Tick:** Audits, reviews and assessments
- **Recycle:** Waste recycling
- **Water:** Water saving
- **Gear:** Policies and procedures

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4. OUR ACTION PLAN

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- **Gear**: Policies and procedures
Flagship Initiatives

- ‘Flagship initiatives’ are characterised as having whole of University engagement
- The Flagship initiatives will be communicated and celebrated across all UON campuses
- The achievements will be measured and contribute to one or more of our sustainability report measures and key performance indicators

<table>
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<th>Year</th>
<th>Initiatives</th>
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| 2015 | - Decrease car use  
    | - Develop a staff and student sustainability champions network |
| 2016 | - Reduce waste sent to landfill  
    | - Reduce energy use |
| 2017 | - Incorporate UON research innovations on campus  
    | - Purchase more sustainable goods |
4.1 CAMPUS MANAGEMENT THEME

4.1.1 Sub-theme: Energy and carbon emissions

Objective: To reduce our carbon footprint through energy efficiency measures and carbon offsets.

KPI: 20% reduction in CO₂e/m² Gross Floor Area by 2020 and 40% reduction in CO₂e/m² GFA by 2030 on a 2007 baseline.

Reporting Measures:
- Energy consumed per m²GFA
- Renewable energy generation capacity on University owned buildings
- Carbon offsets purchased to offset emissions from purchased electricity

<table>
<thead>
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<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
<th>Result/Outcome</th>
<th>Responsibility</th>
<th>Measure/ Benefit</th>
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<td>1.1</td>
<td>Reduce the amount of energy used by the university</td>
<td>2016</td>
<td>improved resource efficiency and cost saving</td>
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<td></td>
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<tr>
<td>1.2</td>
<td>Engage the UoN community in a ‘Blackout’ energy savings challenge for schools, business units and residences</td>
<td>2016</td>
<td>demonstration of potential energy and cost savings</td>
<td>IFS Campus and Asset Planning; IFS Operations; IFS Projects; Campus Services; UCES</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Conduct Level 2 energy audits for buildings with inefficient HVAC systems and develop business cases to implement energy efficient improvements</td>
<td>2015</td>
<td>audit report and business cases with costed recommendations</td>
<td>IFS Campus and Asset Planning; IFS Operations; IFS Projects; Campus Services</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Prioritise and implement energy infrastructure upgrades based on recommendations from energy audits</td>
<td>2015 -17</td>
<td>energy efficiency upgrades</td>
<td>IFS; SAMC; AMAG</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>Expand energy sub-metering coverage as required to inform asset management, energy performance monitoring and communication</td>
<td>2015</td>
<td>improved energy performance monitoring capability</td>
<td>IFS Operations; UCES</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>Review air conditioning controls and adjust settings to improve efficiency and reduce run times</td>
<td>2015</td>
<td>improved HVAC efficiency</td>
<td>IFS Operations</td>
<td></td>
</tr>
<tr>
<td>1.7</td>
<td>Establish a student/staff network of energy champions in Faculties and Divisions to promote energy efficiency initiatives and behavioural change in the workplace</td>
<td>2015</td>
<td>network of engaged staff and students with broad campus outreach</td>
<td>IFS; Champions4CHange; Campus Services; UCES</td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>Implement the Enviizi Resource Data Management System to streamline the capture, management and reporting of energy, carbon, water, waste and other resource efficiency data</td>
<td>2015</td>
<td>improved monitoring and identifying of resource efficiency actions</td>
<td>IFS Campus and Asset Planning; IFS Operations; UCES</td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>Identify and secure grant funding opportunities for sustainable infrastructure improvements and renewable energy generation opportunities</td>
<td>2015 -17</td>
<td>improved resource efficiency and cost saving</td>
<td>IFS; Finance; EC; NIER; Research and Innovation; Faculty of Engineering and Built Environment</td>
<td></td>
</tr>
<tr>
<td>1.10</td>
<td>Assess the feasibility for IT power management software on some staff and student PCs and laptops depending on user requirements</td>
<td>2016</td>
<td>identification of energy saving opportunity</td>
<td>IFS Campus and Asset Planning; IT</td>
<td></td>
</tr>
<tr>
<td>1.11</td>
<td>&quot;Renew contract to purchase minimum 10% green energy each year&quot;</td>
<td>2015 -17</td>
<td>renewable energy offsets</td>
<td>Executive, Commercial Services, IFS, UCES</td>
<td></td>
</tr>
<tr>
<td>1.12</td>
<td>Write a Carbon Management Plan that provides costed recommendations for short (5Yr), medium (15Yr) and long-term (30Yr) actions to meet UON’s GHG emission reduction target(s)</td>
<td>2016</td>
<td>implementation plan with costed recommendations</td>
<td>IFS Campus and Asset Planning; UCES; Finance; Commercial Services</td>
<td></td>
</tr>
<tr>
<td>1.13</td>
<td>Prepare an annual GHG inventory to support the Carbon Management Plan</td>
<td>2015 -17</td>
<td>transparent reporting of GHG emissions</td>
<td>IFS Campus and Asset Planning; IFS Operations; Finance</td>
<td></td>
</tr>
<tr>
<td>1.14</td>
<td>Replace external lighting with more energy efficient LEDs during scheduled asset maintenance and replacement</td>
<td>2015 -17</td>
<td>energy efficient infrastructure upgrade</td>
<td>IFS Operations</td>
<td></td>
</tr>
<tr>
<td>1.15</td>
<td>Integrate environmental sustainability requirements in the early planning stages of construction and refurbishment projects process</td>
<td>2015</td>
<td>embed sustainability in infrastructure planning process</td>
<td>IFS; Commercial Services</td>
<td></td>
</tr>
<tr>
<td>1.16</td>
<td>Identify changes in ISO14001 (2015) applicable to UON</td>
<td>2016</td>
<td>assess compliance with international management system standard</td>
<td>IFS Campus and Asset Planning</td>
<td></td>
</tr>
<tr>
<td>1.17</td>
<td>Advocate non-use of stand-alone oil and electric heaters in spaces where more energy efficient heating options are available</td>
<td>2015 -17</td>
<td>improved resource efficiency and cost saving</td>
<td>Champions4Change</td>
<td></td>
</tr>
<tr>
<td>1.18</td>
<td>Implement an Electricity Incentivisation Scheme - user pays - to encourage users to be more accountable for their energy usage</td>
<td>2015 -17</td>
<td>improved resource efficiency and cost saving</td>
<td>Commercial Services, IFS, Executive Committee</td>
<td></td>
</tr>
<tr>
<td>1.19</td>
<td>Develop metrics and methods for reporting Scope 3 emissions (waste, water, busines travel, commuting and procurement)</td>
<td>2017</td>
<td>improved monitoring and identifying of resource efficiency actions</td>
<td>IFS Campus and Asset Planning</td>
<td></td>
</tr>
<tr>
<td>1.20</td>
<td>Request seasonal maintenance actions using Maximo to ensure the passive design features of the Wollotuka Institute are utilised to maximise the buildings potential for environmental comfort and energy saving</td>
<td>2015</td>
<td>improved environmental comfort for occupants</td>
<td>Wollotuka Institute; IFS Operations</td>
<td></td>
</tr>
</tbody>
</table>
4.1.2 Sub-theme: Water

**Objective:** To adopt Water Sensitive Urban Design practices to minimise potable water consumption.

**KPI:** 5% reduction in annual potable water use per m² Gross Floor Area by 2030 on a 2015 baseline.

**Reporting Measures:**
- Mains water consumed per m² GFA
- Total potable water consumed per annum
- Potable water used in landscape and sports field irrigation
- Total water captured for reuse per annum

### CAMPUS MANAGEMENT – WATER

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
<th>Result/Outcome</th>
<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Integrate Water Sustainable Urban Design (WSUD) principles in landscape design</td>
<td>2015-17</td>
<td>improved water retention, use and reuse</td>
<td>IFS Campus and Asset Planning; IFS Operations; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Identify opportunities during the project planning and design stages for water collection and reuse to minimise the requirement for potable water</td>
<td>2015-17</td>
<td>improved resource efficiency and cost saving</td>
<td>IFS Campus and Asset Planning; IFS Operations; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Identify opportunities for installing water saving devices in University owned/operated buildings and amenities during refurbishments</td>
<td>2015-17</td>
<td>improved resource efficiency and cost saving</td>
<td>IFS Campus and Asset Planning; IFS Operations; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Install solar pumps to deliver water from retention dams to student community garden at Wollotuka and sports ovals</td>
<td>2015-17</td>
<td>improved resource efficiency and cost saving</td>
<td>TFI; Wollotuka; Campus Services</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>Develop a water footprint for the University</td>
<td>2015</td>
<td>improved monitoring and identification of resource efficiency actions</td>
<td>IFS Operations; UCES</td>
<td></td>
</tr>
</tbody>
</table>
4.1.3 Sub-theme: Landscape and biodiversity

**Objective:** To identify strategic zones for landscape management, incorporating biodiversity protection, ecological function and broader campus requirements.

**KPI:** Achieve the Landscape Management Implementation Plan (2012) weed reduction targets.

**Reporting Measures:**
- Proportion of bushland actively managed annually
- Distribution and abundance of weeds
- Percentage nest box occupancy in offset zones
- Wetlands 1 and 2 to be 80% WONS free

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**CAMPUS MANAGEMENT – LANDSCAPE AND BIODIVERSITY**

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
<th>Result/Outcome</th>
<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Implement an annual bush regeneration program guided by the Landscape Management Implementation Plan, technical reports and the UON Landscape Consultative Group</td>
<td>2015 -17</td>
<td>improved landscape, biodiversity and ecosystem resilience</td>
<td>IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Prepare an annual Ecosystem Health Scorecard to report improvements resulting from bush regeneration activities</td>
<td>2015 -17</td>
<td>transparent reporting of ecosystem health</td>
<td>IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Implement best practice landscape management to improve water retention and flow through the campus and as part of the broader Newcastle catchment</td>
<td>2015 -17</td>
<td>improved landscape, biodiversity and ecosystem resilience</td>
<td>Campus and Asset Planning; Operations</td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Assess wetlands and riparian zone hydrology and undertake restoration works as required to improve the ecological functionality, visual amenity and teaching space</td>
<td>2015 -17</td>
<td>improved landscape, biodiversity, ecosystem resilience and engagement</td>
<td>IFS Campus and Asset Planning</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Investigate ways to reduce numbers of mosquito larvae in conjunction with managing weeds and waterfowl in the wetlands on site</td>
<td>2015 -17</td>
<td>improved landscape, biodiversity and ecosystem resilience</td>
<td>IFS Campus and Asset Planning; IFS Operations</td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>Wollotuka Institute to provide an aboriginal perspective and understanding of the University landscape and biodiversity</td>
<td>2015 -17</td>
<td>engagement, learning and improved landscape management</td>
<td>Wollotuka</td>
<td></td>
</tr>
<tr>
<td>3.7</td>
<td>Implement a water quality monitoring program at Callaghan Campus</td>
<td>2015 -17</td>
<td>improved monitoring and reporting and identification of improvement actions</td>
<td>Tom Farrell Institute; UCES</td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>Develop media and communication materials to raise awareness of the campus’ unique ecology and to promote the University to prospective staff and students</td>
<td>2015 -17</td>
<td>campus engagement and increased student enrolment</td>
<td>IFS Campus and Asset Management</td>
<td></td>
</tr>
<tr>
<td>3.9</td>
<td>Develop a schedule of vegetation management activities to involve the University Student Landcare Group</td>
<td>2015 -17</td>
<td>engagement, learning and improved landscape management</td>
<td>Tom Farrell Institute; IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>3.10</td>
<td>Comply with compensatory offset requirements specified in the Callaghan Campus section of the Newcastle DCP and Urban Forest Technical Manual to offset vegetation removed under a development certificate</td>
<td>2015 -17</td>
<td>environmental compliance</td>
<td>IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>3.11</td>
<td>Implement the “Bushfire Asset Management Plan - Infrastructure and Bushland” recommendations identified during the 2014 risk assessments conducted at Callaghan and Ourimbah</td>
<td>2015 -17</td>
<td>environmental compliance</td>
<td>IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
<tr>
<td>3.12</td>
<td>Comply with the monitoring requirements of the Nest Box Management offset programs for the student accommodation and the NIER link road</td>
<td>2015 -17</td>
<td>environmental compliance</td>
<td>IFS Campus and Asset Planning; Landscape Consultative Group</td>
<td></td>
</tr>
</tbody>
</table>
4.1.4 Sub-theme: Waste

**Objective:** To implement waste management practices that adopt the principles of avoid, reduce, re-use and recycle.

**KPI:** Reduce waste per capita 40% by 2020 from a 2007 baseline.

**Reporting Measures:**
- Total waste to landfill
- Amount of food organics recovered for composting
- Recovery of waste for recycling and reuse

### CAMPUS MANAGEMENT – WASTE

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
<th>Result/Outcome</th>
<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Reduce waste to landfill by recycling and reuse of resources</td>
<td>2016</td>
<td>improved recycling performance, reduction of waste to landfill</td>
<td>UON</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Implement a stakeholder engagement and waste communication plan to promote waste separation, recycling and reuse</td>
<td>2015</td>
<td>improved recycling performance, reduction of waste to landfill</td>
<td>IFS; Marketing and Communications; Champions4Change</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Liaise with UON waste contractor to establish links between contractor operations, implementing sustainable solutions to reduce waste to landfill and stakeholder engagement initiatives</td>
<td>2015</td>
<td>audit report and business cases with costed recommendations</td>
<td>IFS</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Implement priority waste infrastructure improvements identified through the waste audit report and strategic recommendations</td>
<td>2015</td>
<td>improved recycling performance and cost saving</td>
<td>IFS Campus and Asset Planning; IFS Operations</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>Establish effective battery, mobile phone, printer cartridge and secure document recycling through a revised waste contract</td>
<td>2015</td>
<td>improved recycling performance and cost saving</td>
<td>IFS Campus and Asset Planning; IFS Operations</td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>Identify opportunities for recycling of construction and demolition waste</td>
<td>2015 -16</td>
<td>improved recycling performance and cost saving</td>
<td>IFS</td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td>Develop internal processes for monitoring and tracking waste streams and quantities</td>
<td>2015</td>
<td>improved monitoring and reporting and identification of improvement actions</td>
<td>IFS Campus and Asset Planning; IFS Operations</td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Identify University activities and service providers that generate organic waste and adopt a strategy to reduce percentage of organics going to landfill</td>
<td>2015</td>
<td>improved recycling performance and cost saving</td>
<td>IFS Campus and Asset Planning; IFS Operations; Campus Services</td>
<td></td>
</tr>
</tbody>
</table>
4.1.5 Sub-theme: Sustainable Transport

**Objective:** To deliver sustainable travel options for everyday travel to, from and around the University.

**KPI:** 10% reduction in number of cars on campus over the next 3 years.

**Reporting Measures:**
- Fleet vehicle emissions tonnes CO2e
- Percentage of fleet vehicle emissions offset
- Parking permits issued per staff and student load
- Percentage bike hub occupancy

<table>
<thead>
<tr>
<th>CAMPUS MANAGEMENT – SUSTAINABLE TRANSPORT</th>
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<tbody>
<tr>
<td>Action No.</td>
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</tbody>
</table>
4.1.6 Sub-theme: Sustainable Procurement

**Objective:** To implement a University procurement process that considers social, ethical, environmental and economic factors in its decision-making.

**KPI:** Develop university-wide standards for targeted environmentally preferred products by 2017.

**Reporting Measures:**
- Report Scope 3 GHG emissions (where available)

### CAMPUS MANAGEMENT – SUSTAINABLE PROCUREMENT

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
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<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Purchase goods that are manufactured from recycled materials, recyclable or reusable and from a sustainable and ethical supply chain</td>
<td>2017</td>
<td>reduce scope 3 emissions</td>
<td>UON</td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Raise awareness of sustainable alternatives in general areas of use (e.g. offices, food outlets, laboratories, etc.) including impacts along the whole supply chain</td>
<td>2016</td>
<td>reduce scope 3 emissions</td>
<td>IFS Campus and Asset Planning; Champions; Marketing and Communications</td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>Develop a Sustainable Procurement Policy</td>
<td>2015</td>
<td>reduce scope 3 emissions</td>
<td>IFS Campus and Asset Planning; Commercial Services; EC; Finance</td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>Review procurement purchases, identify more sustainable and cost effective alternatives over product life cycle and develop business case(S)</td>
<td>2015 -16</td>
<td>improved supply chain management</td>
<td>IFS Campus and Asset Planning; Commercial Services; Projects</td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Develop sustainable procurement clauses for construction and demolition tender specifications.</td>
<td>2015</td>
<td>reduce scope 3 emissions</td>
<td>IFS Campus and Asset Planning; Commercial Services; Projects</td>
<td></td>
</tr>
<tr>
<td>6.6</td>
<td>Expand Fair Trade and sustainable food choices for food outlets on campus</td>
<td>2016</td>
<td>engagement</td>
<td>IFS Campus and Asset Planning; NUSEC; Champions</td>
<td></td>
</tr>
<tr>
<td>6.7</td>
<td>Implement Shop Local, Buy Local Campaign</td>
<td>2016</td>
<td>improved supply chain management</td>
<td>NUSEC</td>
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</tbody>
</table>

4.1.7 Sub-theme: Asset Management

**Objective:** To integrate long-term environmental sustainability into our strategic asset management.

**KPI:** 100% of infrastructure projects deliver $ savings by incorporating measures to improve environmental performance.

**Reporting Measures:**
- $ savings for projects that integrate environmental sustainability
- GHG emission savings from projects

### CAMPUS MANAGEMENT – STRATEGIC ASSET MANAGEMENT

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
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<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Develop business case(s) to increase environmental performance through strategic campus asset planning</td>
<td>2015 -17</td>
<td>reduce carbon footprint, cost saving</td>
<td>IFS; SAMC</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>For those buildings identified and prioritised for refurbishment in the Strategic Asset Management Plan, identify and integrate environmental improvements early in the project planning and design stages</td>
<td>2015 -17</td>
<td>reduce carbon footprint, cost saving</td>
<td>IFS; SAMC</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Use space analysis results to inform improvements in efficiency of heating, cooling and lighting usage based on space utilisation and functionality</td>
<td>2015 -17</td>
<td>energy efficiency improvements, cost saving</td>
<td>IFS</td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Where appropriate, consider accommodating staff in flexible shared office workspaces to gain efficiencies in space, lighting, heating and cooling</td>
<td>2015 -17</td>
<td>energy efficiency improvements, cost saving</td>
<td>IFS</td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>Undertake Estate Efficiency and Performance reporting to inform improvements in use and efficiency of spaces</td>
<td>2015 -17</td>
<td>energy efficiency improvements, cost saving</td>
<td>IFS</td>
<td></td>
</tr>
</tbody>
</table>
4.2 RESEARCH AND INNOVATION THEME

In recent years the University has forged relationships with industry, government and other research institutions to provide collaborative solutions to global environmental sustainability challenges. The Newcastle Institute of Energy and Resources (NIER) will accelerate research within the context of global environmental sustainability challenges and make a real and substantial contribution to sustainable energy use not only in Australia, but internationally.

Tom Farrell Institute (TFI)

TFI plays a key communication and knowledge-brokering role for the University’s environmental sustainability research. It continues to host public discussion and information sessions through:
- Environmental Forums
- Electric Vehicle Festival
- Mined Lands Conference
- Research Higher Degree Seminars
- Promotion of Visiting Scientists.

TFI hosts institutional capacity building initiatives to provide leadership and coordination to promote innovative thinking in environmental sustainability.

International Research Centre for Balanced Land Use

The International Centre for Balanced Land Use is a joint initiative between the NSW Trade and Investment’s Department of Primary Industries and Division of Resources and Energy, and UON. Based at NIER, the Centre will provide independent research to develop a clear evidence-based framework to solve the complex challenges of balanced land use.

Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE)

In a move that extends the latest clean-up science to a wider range of the nation’s major industries, Australia’s leading contamination and remediation research organisation is now based at UON. The expansion of the CRC CARE positions the Centre to tackle pollution problems from some of Australia’s most important energy, manufacturing and processing industries, including those based in NSW.

CRC CARE was set up in 2005 as a research network covering all of Australia to tackle the critical areas of contamination assessment and remediation, with the goal of cutting Australia’s pollutants and improving the health of its people, cities, food, soil, air and water.

CRC CARE will capture fresh opportunities in industrial clean-up through close collaboration with NIER.
4.2.1 Theme: Research and Innovation

**Objective:** To be recognised as an international leader in research aligned with environmental sustainability, with a particular focus on sustainable resource use and biodiversity.

**KPI:** Increase the number of innovative solutions to sustainability challenges developed from research at UON and implemented on UON campuses 2015-2030.

**Reporting Measures:**
- Number of sustainability programs, projects and initiatives developed by UON researchers and implemented at UON campuses.

### CAMPUS MANAGEMENT – RESEARCH AND INNOVATION

<table>
<thead>
<tr>
<th>Action No.</th>
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<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI-1</td>
<td>Identify opportunities to incorporate UON research innovations on our own buildings and campuses</td>
<td>2017</td>
<td>reduce carbon footprint</td>
<td>UON</td>
<td></td>
</tr>
<tr>
<td>RI-2</td>
<td>Develop partnerships and provide support for linking sustainable research initiatives on campus to real world applications or applied research testing</td>
<td>2016-17</td>
<td>promotion, engagement and carbon reduction</td>
<td>IFS Campus and Asset Planning; IFS Operations; Faculties; NIER</td>
<td></td>
</tr>
<tr>
<td>RI-3</td>
<td>Provide opportunities to involve local Aboriginal groups in University environmental projects and other collaborative projects</td>
<td>2015-17</td>
<td>outreach and engagement</td>
<td>Wollotuka</td>
<td></td>
</tr>
<tr>
<td>RI-4</td>
<td>Identify and track environmental sustainability grant funding received by the University</td>
<td>2015-17</td>
<td>track levels of funding available for environmental studies</td>
<td>Newcastle Innovation</td>
<td></td>
</tr>
<tr>
<td>RI-5</td>
<td>Promote the University’s sustainability achievements through regular internal and external communications</td>
<td>2015-17</td>
<td>reporting and engagement</td>
<td>IFS Campus and Asset Planning</td>
<td></td>
</tr>
<tr>
<td>RI-6</td>
<td>Track the number of scientific articles published on environmental and sustainability issues</td>
<td>2016-17</td>
<td>reporting and engagement</td>
<td>Finance; Teaching and Learning</td>
<td></td>
</tr>
<tr>
<td>RI-7</td>
<td>Form collaborative partnerships to increase the number of environmental research grants on campus</td>
<td>2016-17</td>
<td>promotion, engagement and carbon reduction</td>
<td>Tom Farrell Institute</td>
<td></td>
</tr>
</tbody>
</table>
4.3 TEACHING AND LEARNING THEME

Higher education has a key role to play in achieving sustainability. The capacities for graduates to think critically and to innovate and implement solutions, is essential in addressing complex current and future sustainability challenges.

Sustainability learning is participatory and encourages students to contribute to and benefit from collective or social learning experiences. Learning this way is interactive and students tackle authentic issues, thus modelling situations they are likely to encounter in their roles beyond graduation.

Education for sustainability can be embedded in curricula broadly and in specific elective courses. It can also be supported through extra-curricular initiatives, and through the integration of principles of sustainability into the University’s Code of Conduct and Graduate Attributes.
4.3.1 Theme: Teaching and Learning

**Objective:** To ensure students graduate with an understanding of environmental sustainability issues and with capacity to act in accordance with sustainability principles in their roles as professionals and citizens.

**KPI:** Increase the number of graduates from programs and/or courses with substantial embedded sustainability content

**Reporting Measures:**
- Percentage of graduates from programs with substantial embedded sustainability content
- Percentage of students completing at least one course with a substantial sustainability content
- Number of workplace integrated learning arrangements with substantial embedded sustainability content
- Percentage of academic staff participating in professional development programs with a sustainability focus

### CAMPUS MANAGEMENT – TEACHING AND LEARNING

<table>
<thead>
<tr>
<th>Action No.</th>
<th>Action</th>
<th>Due Date</th>
<th>Result/Outcome</th>
<th>Responsibility</th>
<th>Measure/ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL-1</td>
<td>&quot;Develop a staff and student sustainability champions network and program - Champions4Change - and implement campus-wide resource efficiency initiatives”</td>
<td>2015</td>
<td>carbon reduction; staff and student engagement</td>
<td>UON</td>
<td></td>
</tr>
<tr>
<td>TL-2</td>
<td>Identify and promote student environmental opportunities through the iLEAD program. Develop a Champions4Change points scheme to track involvement in sustainability initiatives during a student’s time at UoN and to strengthen applications for employment and other opportunities</td>
<td>2016</td>
<td>engagement</td>
<td>IFS Campus and Asset Planning; Campus Services</td>
<td></td>
</tr>
<tr>
<td>TL-3</td>
<td>Prepare an annual, publicly available Environmental Sustainability Plan scorecard to track performance</td>
<td>2015-17</td>
<td>transparent reporting of environmental sustainability performance</td>
<td>IFS Campus and Asset Planning; UCES</td>
<td></td>
</tr>
<tr>
<td>TL-4</td>
<td>Develop web content to communicate environmental sustainability initiatives and programs.</td>
<td>2015-17</td>
<td>reporting and awareness</td>
<td>IFS Campus and Asset Planning; Marketing and Communications</td>
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</tr>
<tr>
<td>TL-5</td>
<td>Implement an annual calendar of sustainability awareness events and activities such as Earth Hour, World Wetlands Day, Green Week …</td>
<td>2015-17</td>
<td>engagement</td>
<td>IFS Campus and Asset Planning; UCES</td>
<td></td>
</tr>
<tr>
<td>TL-6</td>
<td>Wollotuka Institute to promote the ‘bush food walk’ as part of staff and student educational experience</td>
<td>2016-17</td>
<td>engagement</td>
<td>Wollotuka</td>
<td></td>
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<tr>
<td>TL-7</td>
<td>Wollotuka to deliver workshops to expose students and staff to Indigenous environmental practices</td>
<td>2015-17</td>
<td>engagement</td>
<td>Wollotuka</td>
<td></td>
</tr>
<tr>
<td>TL-8</td>
<td>Organise one high level sustainability lecture or &quot;hot house&quot; each year</td>
<td>2015</td>
<td>engagement</td>
<td>Tom Farrell Institute</td>
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<tr>
<td>TL-9</td>
<td>Develop branded communication campaigns targeting transport, energy and waste</td>
<td>2015-17</td>
<td>engagement</td>
<td>IFS Campus and Asset Planning; Campus Services; Marketing Communications</td>
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</tr>
<tr>
<td>TL-10</td>
<td>Develop a sustainability introductory courses for students and staff</td>
<td>2017</td>
<td>engagement</td>
<td>IFS Campus and Asset Planning; HR</td>
<td></td>
</tr>
</tbody>
</table>
5. REFERENCES

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2013-2015 NeW Directions Strategic Plan, University of Newcastle
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