Green Gown Awards Australasia

2030 Climate Action

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2020 Case Study

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Sustainability Reimagined

We know that human civilisations flourish within a relatively stable climate. A shift in these stable weather patterns will affect all aspects of our lives and that is why we are tackling the issue of climate change on multiple fronts. Our Environmental Sustainability Plan 2019-2025, guided by the UN Sustainability Development Goals, was endorsed in May 2019. This sector leading plan pushes us to be innovative and implement leading sustainability initiatives that are scalable and result in real change across the broad gamete of priority action areas.

Key IFS initiatives delivered include:

1. An equal first Australian University to procure a 100% renewable electricity supply agreement, and a commitment to achieve carbon neutrality by 2025. We achieved this at a rate 10% cheaper than the University has paid per kWh of electricity historically and slashing our total carbon emissions by 70% taking then down from 52,000 tonnes to approximately 12,000 tonnes. This initiative has now been replicated by other large institutions in our region, and across NSW and Australia. The seven-year deal has also delivered cost efficiencies for the university including a 10% reduction in the per kWh rate.

2. Completing the progressive installation of 1.1 megawatt of on-site photovoltaic solar (over 3500 panels) which will generate our own electricity across multiple buildings.

3. Continued our site wide LED lighting upgrade across over 50,000 light fittings to drive our overall energy consumption down by 20%. This would result in an estimated annual reduction of CO2-e of 7,000 tonnes – if our electricity was not sourced from 100% renewable sources. In 2019, we installed 1,960 LED's in addition to the 4,168 installed in 2018. With an ageing campus infrastructure, we successfully achieved a commendable 12% conversion to LED with a commitment to continue the LED lighting upgrade over the coming years.

4. Implementing recycling programs to assist us in diverting 70% waste to recycling. Through innovative solutions such as disposable coffee cup recycling (5,000 cups recycled) and soft plastic recycling (2 tonnes diverted) programs, we are now between 40 to 60% of our general solid waste from landfill.

5. Commenced the installation of four dual electric vehicle (EV) charging stations with the inground infrastructure to support a further 20 dual charging stations. We purchased three EV fleet vehicles for staff to use and implemented an electric first approach to the procurement of vehicles used by staff across the university that came into effect in 2020.

6. We are pleased to have a unique bushland campus and value being responsible for the care of the land our campuses now reside on. We are investing in biodiversity conservation and bushland regeneration through setting aside 30ha for bushland zones and planting of over 2500 native endemic seedlings annually. This is actively sequestering our CO2-e emissions with an estimated 230 tonnes being abated across Callaghan and Ourimbah.

7. The planning and budget approval for a project that will deliver 2 x 1.1million litre rainwater tanks in mid 2020. These tanks will irrigate our sporting fields and reduce our demand for potable water in one of the worst droughts Australia has had on record. This comes in addition to the historical construction of 2million litres of stormwater retention ponds to irrigate our ovals, as well as installing over 500,000 litres of rainwater tanks across our Campuses. Through various initiatives we have reduced the 2019 total water consumption by 5% or 13.8million litres when compared to 2018. These initiatives are actively reducing the University's CO2-e emissions resulting from our water consumption.

8. Working with our partners we are the first transport service to have a hybrid electric shuttle bus that operates between our Callaghan and Newcastle City campuses. This exclusive student and staff service sees an average of 734 users per day and significantly reduces the need for individual motor vehicles thus actively reducing our CO2-e emissions.

9. A commitment to achieve world leadership in the sustainable construction of our new buildings, including our new Science, Technology, Engineering and Mathematics Building and potentiality the Honeysuckle Stage 1A building. This commitment will be achieved through the Green Building Council of Australia's 6 Star Greenstar Design and 'As Built' rating across all our new buildings. A first for regional Australia.

All these initiatives directly link back to our Environmental Sustainability Plan and it is this plan that is our roadmap to tackling climate change locally, regionally, nationally and internationally.

FIND OUT MORE

Environmental & Social Benefits

We use approximately 40GWh of electricity per year, which equates to approximately 90% of our on-site energy needs. This is equivalent to the electricity use of 5,000 households per year and as per the federal government's Climate Active standard, our annual CO2-e emissions profile is 52,000 tonnes (Scope 1, 2 and 3).

This leading initiative has resulted in a 70% decrease in CO2-e emissions from 52,000 tonnes to approximately 17,000 tonnes. This is a material decrease in our CO2-e emissions and our contribution to mitigating the impacts of climate change.

The initiative is also supporting the development of new large-scale utility development in solar and wind farms and as such influencing market development opportunities in renewable energy. Red Energy is investing in the development of 880MW of utility scale wind and solar farms and we are the first organisation to be supplied with 100% renewable electricity under this agreement.

This initiative has now been replicated by other large institutions in our region, and across NSW and Australia.

Leadership & Engagement

By reimaging sustainability, we are taking a leadership role in mitigating the effects of climate change. The process we undertook in procuring our renewable electricity contract is an outstanding example of best practice which has now been replicated throughout the sector, and by others at a regional and national level. We are one of the first Universities nationally, and internationally, to achieve 100% renewable electricity in a complicated and fast evolving energy market. It has also shown that a University with relatively limited resources in environmental sustainability can achieve a position of sector leadership in renewable energy.

Our focus on reimagining sustainability is a direct example of where the University has responded to a clear mandate from our students, staff and community to tackle a complex environmental issue with far-reaching consequences. 62% of staff responded during consultation on the development of the strategic plan that sustainability was fundamental to our university. Our community told us they expected the university to lead the region on the issue of sustainability and our students want us to do more. We have and are answering that call through suite of initiatives delivered in 2019 and the forward planning to take us to 2025.

Wider Societal Impact

Communities look to Universities to be innovative and drive change for global issues. We are proud that our regional university is a driving force in the national climate change action agenda. This project is a first for the Hunter Region. It is traditionally a mining stalwart and is now leading the transition to renewable energy across a number of organisations locally and nationally.

Since last year, the University has assumed a key role in the Hunter's transition to a clean energy economy, which builds from the work of multidisciplinary teams conducting world-leading research into energy productivity and sustainability. We have demonstrated a genuine commitment to measures that will help us achieve carbon-neutrality and have been guided in our decision-making by practices that are aimed at clean energy and low-carbon energy use. These are achievements on which we will continue to improve in the areas of Affordable and Clean Energy and Climate Action.

This partnership has shown that organisations can move from the traditional reliance on coal fired power supply and make the change to 100% renewables. Through this successful partnership and our support of other organisations making the change, we have reduced the reliance on traditional electricity supply. This agreement has contributed to mitigating the impacts of climate change and as such leading a better future for all.

By looking at the problem holistically and ensuring we combat this issue from multiple fronts, we feel we can set the example that small steps in the right direction have a cumulative impact.

Top 3 Learnings

Climate action requires a whole of institution commitment to drive tangible and quantifiable actions that deliver material reductions in CO2-e emissions, cost savings and innovation

Ambitious targets are attainable with a collaborative approach and the right leadership and investment decisions

100% renewable electricity is achievable – it is feasible, financially viable, and socially expected