



La Trobe Net Zero

La Trobe University (LTU) has made a bold commitment to achieve carbon neutrality by 2029. The La Trobe NZP has focused on achieving net zero emissions by generating renewable energy and reducing consumption on La Trobe's various campuses – not by purchasing carbon offset credits. Since that time, significant Net Zero projects have been delivered on La Trobe's metropolitan and regional campuses, and a number of pipeline projects are underway.

In the short-medium term the program focuses on minimising La Trobe's scope 1 and 2 emissions through energy conservation and efficiency initiatives that maximise our internal resources, addressing both infrastructure and personnel. Initiatives currently being implemented include:

- **La Trobe Energy Analytics Platform (LEAP):** LTNZP funded the creation of LEAP – a data analytics platform developed by six La Trobe PhD students and four academic staff led by Professor Daminda Alahakoon from our Centre for Data Analytics and Cognition within the Business School with support from our industry partners Siemens and Microsoft. LEAP captures all of La Trobe's existing submeter and building management system data and uses cutting edge machine learning and artificial intelligence to analyse, benchmark and predict energy consumption enabling building benchmarking to establish best-in-class

performance. Development is continuing and LEAP is used by professional staff in La Trobe's Infrastructure and Operations division in their efforts to optimise facility performance.

- **LED Lighting Upgrade:** 24,000 LED lights across 100 buildings have been installed at all campuses, providing significant energy and financial savings. 16,000 of these were installed at the Melbourne Campus.
- **Thermatile Prototype Trials:** Trials currently underway on a new type of ceiling tile to be used in suspended grid ceilings that incorporates a phase change material. This product can control the internal space temperature by using the release of energy from a heating and cooling process as a result of the melting and freezing properties of the phase change material. The aim is to use this product to reduce the requirement for mechanical heating and cooling.
- **Rooftop solar:** 7,500 solar panels have been installed across 25 buildings at the Melbourne Campus. The new system generates 2.5 MW of renewable power to meet 50% of the campus' energy needs when performing at its peak and will reduce CO2 emissions by 4,000 tonnes annually. Solar irradiance data captured from weather stations installed on all

of our campuses is being used in LEAP to track actual system performance against modelled performance which has allowed La Trobe to better automate performance monitoring and related troubleshooting and maintenance.

- **Ground mounted solar:** Installation of 800 Kilowatts of ground mounted solar in the form of solar carports at our Bendigo and Albury-Wodonga campuses in 2020.

In the medium-long term the program will focus on fuel switching to transition away from all fossil fuel consumption, particularly natural gas use through electrification. Initiatives currently being implemented include:

- **Procurement of grid sourced renewable electricity:** We are currently working with our industry partners Energetics to procure zero emissions electricity from the grid that also encourages further renewables development in the national electricity market while also providing industry experience opportunities for our students.

- **Electrification during asset renewal:** Electric alternatives such as heat pumps are currently being assessed on a number of gas boiler replacement projects with the aim to arrive at a standard solution.

Emissions data is collated in LEAP which is also used to measure and validate the effectiveness of energy saving initiatives to the International Performance Measurement and Validation Protocol standard.

La Trobe is also focussed on the need to adapt its operations to a changing climate and finalised a Climate Adaptation Plan (CAP) for its main Melbourne Campus in 2019. Risks and proposed adaptation measures have been integrated into our environmental management system and prioritised short-term initiatives have been fed into relevant operational plans. Learnings from the Melbourne CAP will be applied to our other large campuses in Bendigo and Albury-Wodonga over the coming years.

FIND OUT MORE



Environmental & Social Benefits

Projects delivered to date have seen LTU reduce emissions by over 15% in the first full year of the program. These emissions reductions are purely from Net Zero initiatives and do not include the considerable impact on emissions as a result of COVID-19.

The program's engagement with academics, establishment of the La Trobe Climate Network, and the Net Zero Fund have raised the visibility, commitment and activity around climate action within the University's academic colleges and schools.

A planned extension of the fund in 2021 to support undergraduate projects focused on climate change and on Campus sustainability will provide further benefits.

Wider Societal Impact

The impacts of our Net Zero program outside of our institution, staff and students is far reaching.

Through the Net Zero Fund alone, La Trobe is supporting research projects that have the ability to provide energy efficiency, sustainability or lighting solutions at a national and potentially global level.

For example, PhD student Alicia Dimovski is one of five students to receive a scholarship as part of the Fund. Her project, “Understanding the impact of LED lighting on animals and test ‘wildlife-friendly’ LED lighting”, aims to gain a greater understanding of how direct and indirect light pollution affects the ecology of Australian animals.

Most old technology streetlighting is now past its 25-30-year lifespan, so in conjunction with lighting engineers, Alicia and our researchers hope to develop “wildlife-friendly” LED lighting that can be included in lighting design guidelines, and more specifically, assist with the formation of much needed “wildlife lighting” guidelines in Australia as well as the implementation of a certification program.



Leadership & Engagement

We are committed to demonstrating leadership on climate change in our research, teaching and operations.

Our bold emissions reduction commitment, focus on practical on-campus actions and internal investments while leveraging industry partnerships is creating internal momentum and a shared vision across our staff, students and stakeholders supporting us on our net zero journey.

Top 3 Learnings

Engagement with students, academics & researchers has led to outstanding results with the La Trobe Energy Analytics Platform (LEAP)

Building strong partner relationships has created the Net Zero Fund providing \$500,000 of support to students, researchers & academics furthering sustainability, lighting & efficiency research

All stakeholders want to contribute in their own way. By providing real life support, actions & information we have engaged the entire university across all 6 campuses