Universities New Zealand

Sustainability Report 2023

Maria Baldoni
Associate Director, Sustainable Estate and Operations

Matt Morris
Sustainability Manager

Lynda Johnston
Associate Vice Chancellor Sustainability

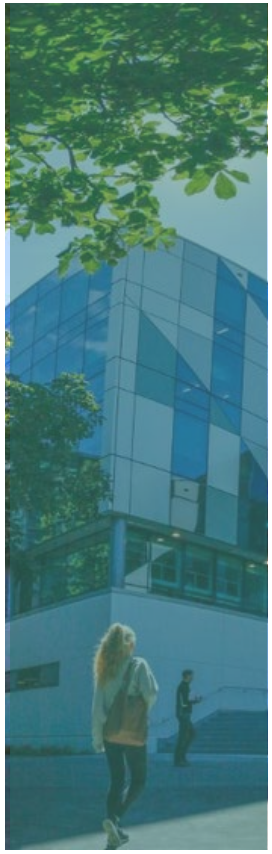
Ray O'Brien
Head of Sustainability

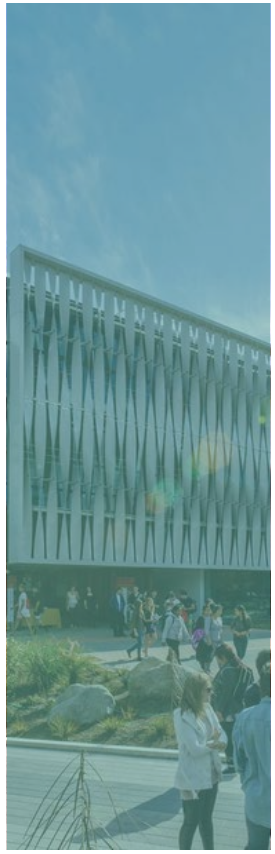
Lucy McKenzie
Head of Sustainability

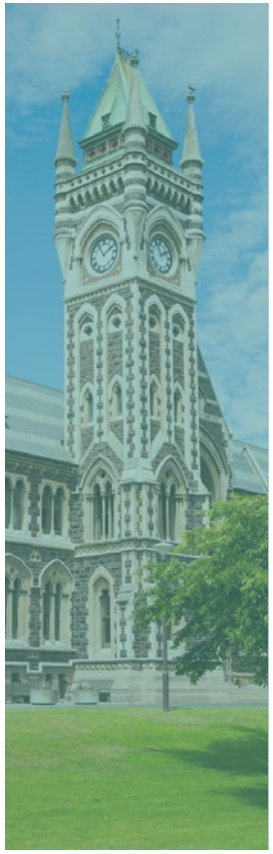
Patryk Szczerba
Sustainability Officer

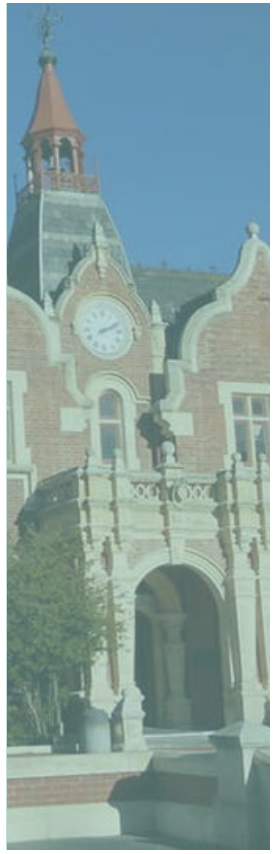
Andrew Wilks
Director, Sustainability

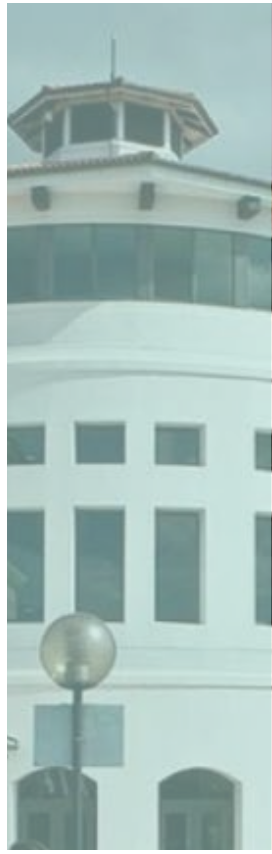
Allanah Ryan
Associate Director – Sustainability, Policy & Communications











THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

AUT UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

LINCOLN UNIVERSITY
TE WHARE WĀNAKA O AORAKI

VICTORIA UNIVERSITY OF WELLINGTON
TE HERENGA WAKA

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Contents

Overview

This report is a snapshot of sustainability activity taking place across New Zealand Universities. It is not intended to be a comprehensive account of all activity, but rather an indication of progress, challenges, and main areas of work.

The report has been compiled collaboratively by the members of the Universities New Zealand Expert Working Group for the United Nations Sustainable Development Goals (SDGs). This group was established in 2018 to deliver a series of summits and engagement with the UNSDGS, and is currently chaired by Matt Morris, University of Canterbury.

The report provides a sector wide update on progress on climate action, our global positioning in relation international universities, sustainability research, learning and teaching for sustainability, and on the series of SDG summits.

Universities New Zealand

Climate Action

Understanding Climate Action

This section of the report provides aggregated sector wide information on our emissions as reported and externally verified by each university.

The first pages show the extent of our emissions across different scopes and categories in alignment with reference to greenhouse gas reporting protocols. This shows where as a sector we must direct our effort to make the most material difference to climate change.

Due to historical variations in reporting, and varied operational activity between universities heat maps have been provided to show in more detailed where the emissions are coming from and how many universities are reporting on them.

The final section outlines our position withing the Carbon Neutral Government Programme and the extent of emission reduction expected from their modelling.

This is the first time sector wide aggregated data has been compiled. As such, we expect our reporting to continue to mature in coming years.

Emissions by Category

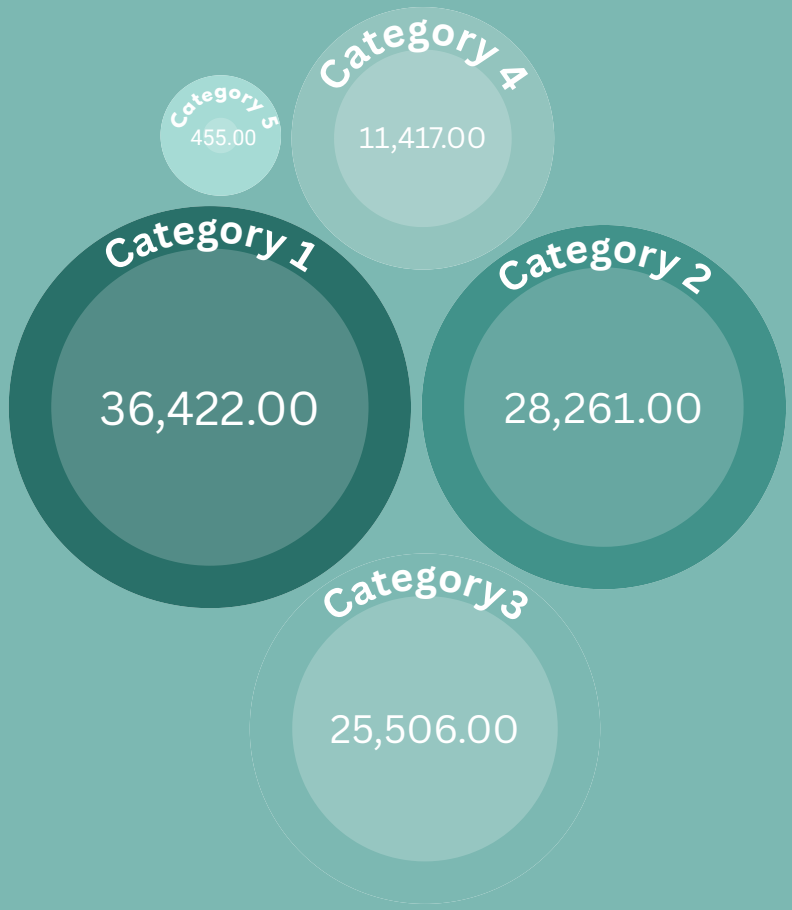
Detailed emissions from the sectors 2021 emissions reports were collected to provide a snapshot of the Universities NZ largest emission categories.

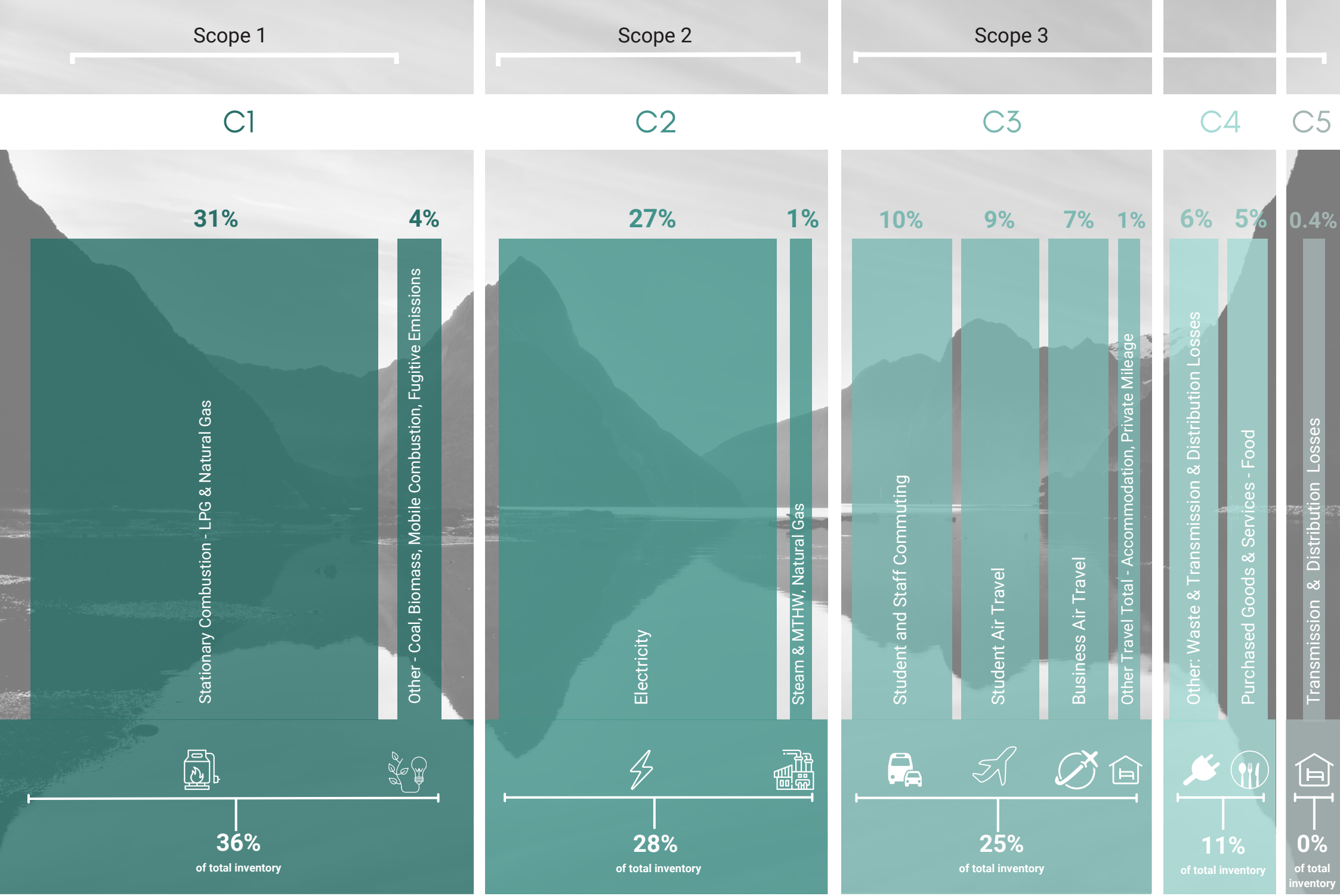
The terminology of ‘Categories’ is now used in ISO 14064-1:2018, replacing the use of ‘Scopes’. Category 1 represents Scope 1 (direct emissions), Category 2 represents Scope 2 (indirect emissions from imported energy), and Categories 3, 4 and 5 represents Scope 3 emission sources (indirect emissions from: transportation, products used by the organisation, emissions associated with use of products from the organisation, and any other sources).

Category 1 represents the largest portion of emissions, with 36,422 tonnes of tCO2-e, followed by Category 2 at 28,261 tCO2-e, 25,506 tCO2-e for Category 3, 11,417 tCO2-e for Category 4, and 455 tCO2-e for Category 5.

With Category 1 being the largest emission category in 2021, this means that a large portion of the total emissions are within the universities direct control and influence, which can be a positive when trying to generate change.

The next page shows the split of emissions sources within these categories at a sector level.





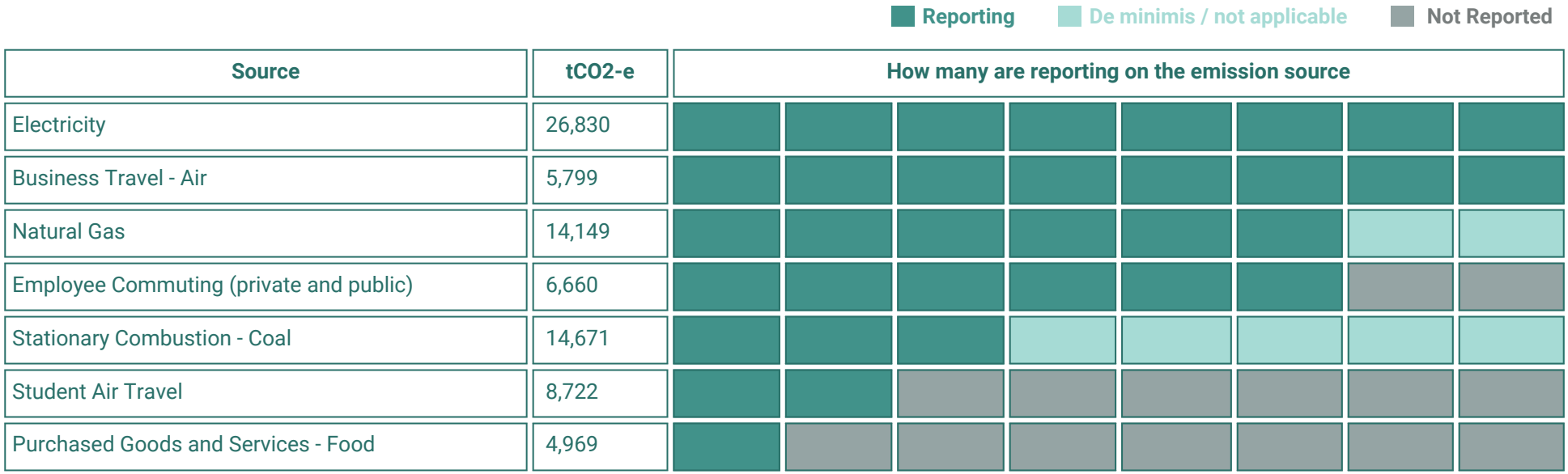
NB: Due to rounding, there may be slight disagreement between sum for emissions sources and categories.

Top 80 percent of emissions

Heatmap of reporting

The top 80% of emissions from Universities of New Zealand inventories are shown below in the form of a heatmap. The purpose of this heatmap is demonstrate how many institutions are reporting on each of the most material emission sources.

Certain emission sources draw attention as they are reported by only 1-3 institutions. Despite their limited representation, these sources still contribute significantly to the top 80% of the emission inventory. Notable is the low number of universities reporting on coal, as we successfully remove coal as an source of energy. The low number of universities reporting of *student air travel and Food related emissions* highlights the diversity of operations across the sector, but also the potentially significant quantity of emissions that are currently exclusions to reporting.



Source	tCO2-e	How many are reporting on the emission source
Electricity	26,830	
Business Travel - Air	5,799	
Natural Gas	14,149	
Employee Commuting (private and public)	6,660	
Stationary Combustion - Coal	14,671	
Student Air Travel	8,722	
Purchased Goods and Services - Food	4,969	

CNGP Targets

Universities in Aotearoa New Zealand are in Tranche 3 of the Carbon Neutral Government Programme (CNGP), and are encouraged to report by 2023. The programme was announced in December of 2020, with the aim to accelerate the reduction of greenhouse gas emissions (GHGs) within the public sector. The CNGP targets are consistent with a 1.5°C pathway, and state that on average, the scenario to get there requires a 4.2% reduction/year between 2020 and 2035. The programme suggests reducing gross emissions by 21% by 2025 and 42% by 2030 regardless of base year.

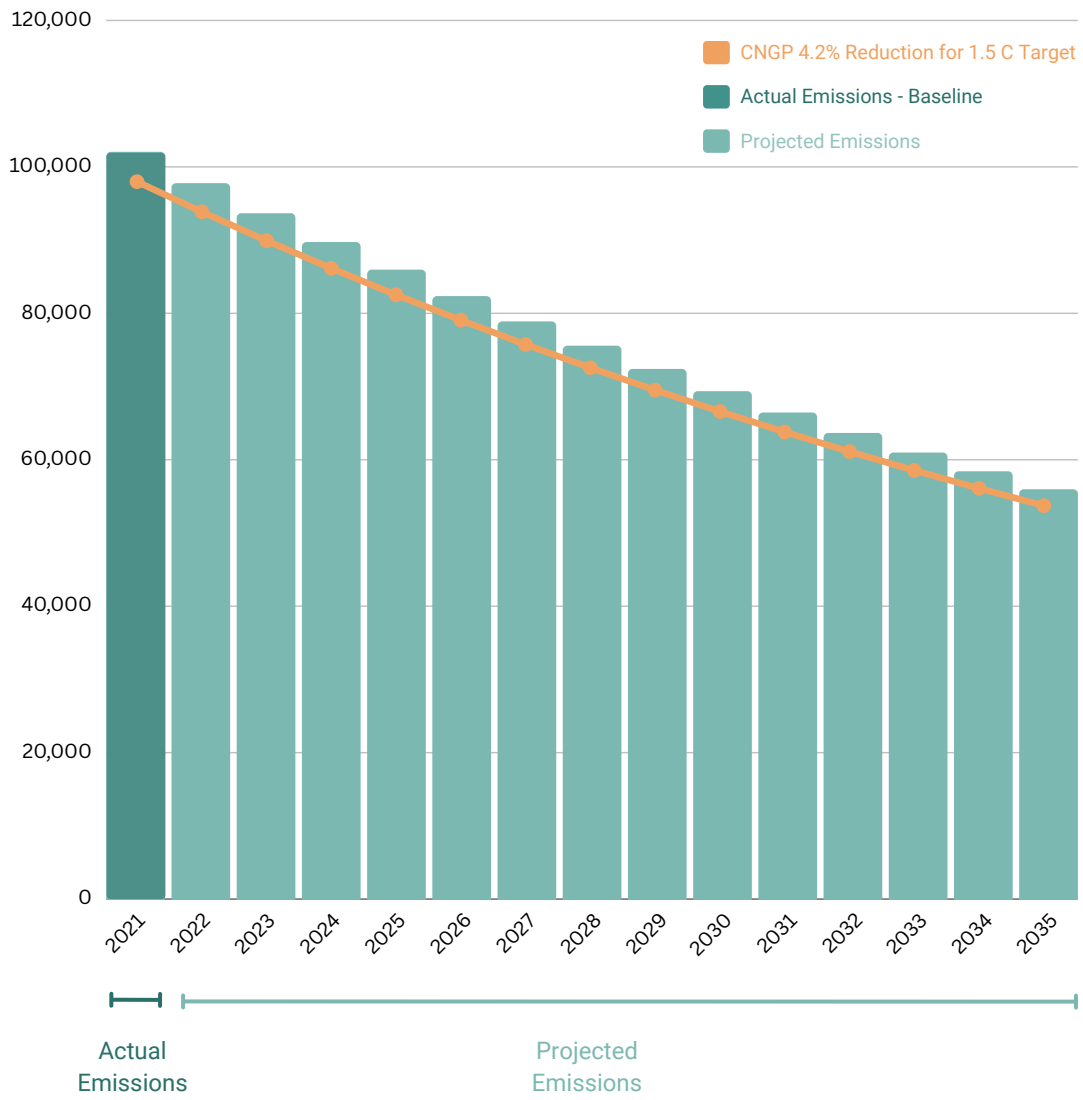
With each institution at different stages in their emission reporting and target setting, and limited resources to collect sector wide emission data from 2020, it was decided that 2021 would be the best base year to collect and use.

It is important to note that COVID19 had a big impact on University institutions across Aotearoa, with different cities in different alert levels across 2021, and much of teaching moving online. The had a significant impact on operations, and contributed to the reductions of emissions across many sources. However, this is currently the best data available to us, and we must start somewhere. With each year that we conduct this report, and the more data that becomes available as emission reporting matures across the institutions, this graph is likely to adapt accordingly.

Emission Reductions | CNGP Targets

As all the institutions have set different targets, the 4.2% reduction was applied as a placeholder. The graph to the right shows what applying the 4.2% reduction from 2021 to 2023 looks like. With no current way to know what the sector wide emissions were for 2020, it is impossible to know whether the sector would meet the 2025 target of 21% reduction, or 42% by 2030. However, this pathway using 2021 as the base year tells us that by following the 4.2% reduction from 2021, that emissions would hypothetically be reduced by 16% in 2025, and 32% in 2030.

This pathway assumes gradual reductions and is not likely to be an accurate representation of the sectors true projected pathway, and in all likelihood, more aggressive reductions would be made.



Aotearoa University Ranking

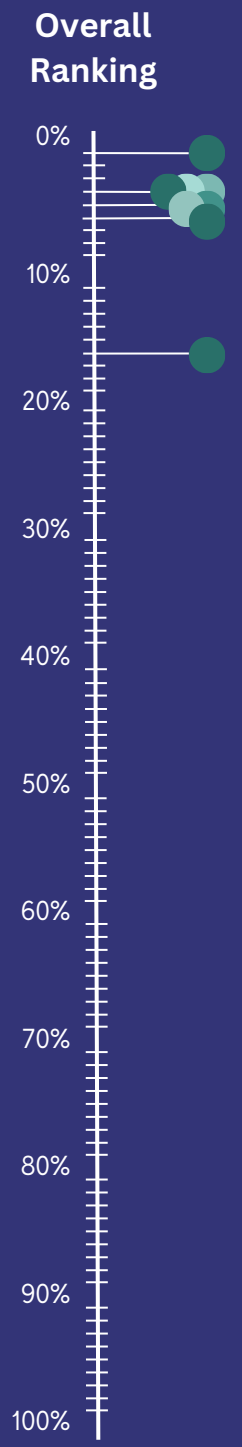
Impact & QS

T.H.E. Impact Ranking 2023

The 2023 Impact Rankings is the fifth edition, and the overall ranking includes 1,591 universities from 112 countries/regions.

A range of indicators are used in this assessment to provide a comprehensive and balanced comparison across four key areas: **research**, **stewardship**, **outreach** and **teaching,** with a focus on the **Sustainable Development Goals.**

The universities of Aotearoa scored highly amongst the 1,591 universities assessed, with 7 institutions within the top 10%, and 1 within the top 20%.

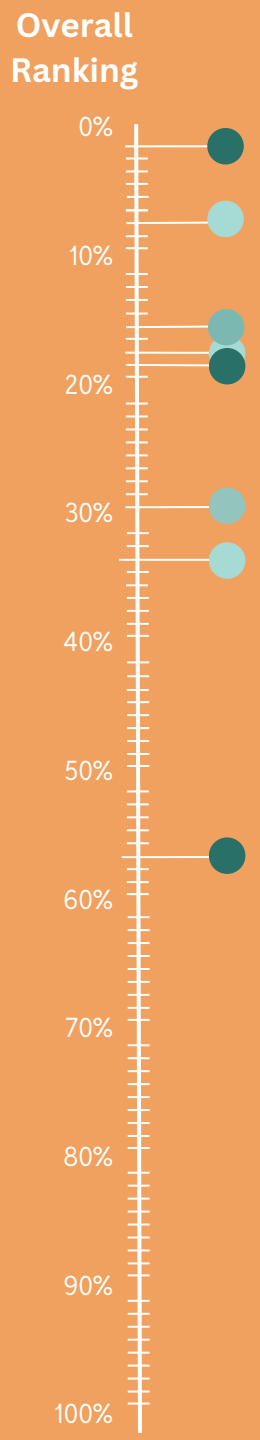


QS Sustainability Ranking 2023

The 2023 QS Ranking features 700 universities, which aims to measure an institution's ability to tackle the worlds most wicked environmental, governance and social challenges.

The indicators that are measured are split into environmental sustainability measures which include **sustainable institutions**, **sustainable education** and **sustainable research** – and social impact measures, which includes **equality**, **knowledge exchange**, **educational impact**, **employability** and **opportunities**, and **quality of life**.

As per the line graph to the right, 3 of 8 institutions are in the top 10% for the QS Sustainability Overall Ranking, whilst 3 sit in the 10-20% bracket, 1 in the 30-40% bracket, and 1 in the 40-50% bracket



Research

Mohio - ora

Ōhanga ora – Circular economy

Āmiomio Aotearoa is a transdisciplinary, multi partner research project that is cyclical in nature and regenerative by design. Bringing together Mātauranga Māori and western science, the concept aims to move beyond linear extract-produce-use-dispose material and energy flow models in order to optimise the value and use of products, components and materials over time.

The research will address fundamental knowledge gaps through a programme that builds on existing, and creates new, areas of research excellence in materials science, economics, kaupapa Māori, business, law and regulation, and public policy. The project is led by the University of Waikato and involves collaboration with researchers from six of the eight NZ universities.

Photo credit: University of Waikato

Hihiri ora - Carbon

The University of Canterbury and University of the South Pacific, with support from the Ministry of Foreign Affairs and Trade, have partnered on a unique research project to help Pacific countries and the global community understand how climate change will impact the Pacific, and how indigenous knowledge can help Pacific communities to adapt. The project addresses a lack of research into community resilience and response mechanisms, and the ways indigenous knowledge can work with social sciences and natural sciences to inform a range of responses, from government policies to community plans. The research will capture community-based approaches and innovations in responding to the climate crisis and how these responses impact on national, regional and global trends and policies. The research will also contribute to the United Nations Framework Convention on Climate Change Global Stocktake in 2023.

Lincoln University and Ravensdown have together researched and developed an additive – Ecopond- that when added to an effluent treatment system, reduces the methane emissions from farm dairy effluent ponds by up to 99%. The new treatment system also reduces the amount of E.coli in the treated effluent, reduces ammonia emissions, mitigates odour and cuts phosphate leaching losses from effluent areas into waterways by up to 90%. Most dairy farms use effluent ponds and they are generally the second largest source of on farm methane emissions. Ecopond can be easily incorporated into a farm system and has been proven to nullify the methane-creating process (within effluent ponds).

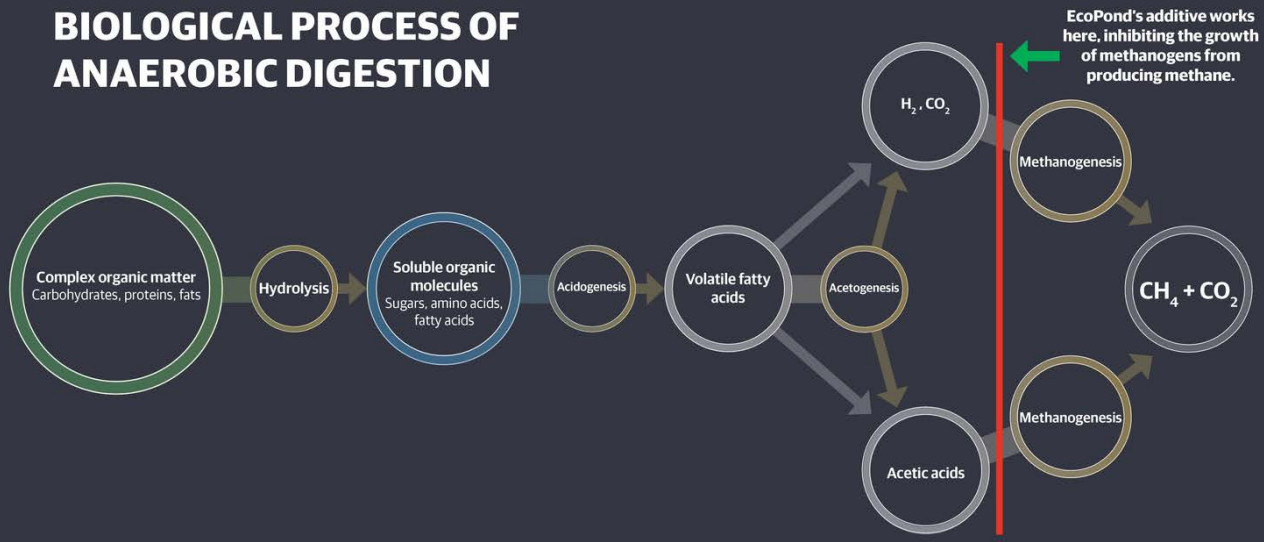


Photo credit: Ravensdown | Biological Process of Anaerobic Digestion

Whenua ora, Wai ora Ecological Regeneration

The AUT University Living Laboratories is a research project to restore native forest throughout New Zealand by improving understanding of the unique characteristics of our native species, and best practice for partnering with Māori landowners. For the first site, AUT has partnered with Ngāti Whātua Ōrākei and research is progressing on an experimental site at Pourewa Creek, Ōrākei which integrates ecological science and mātauranga Māori. In experimental planting blocks, late successional trees have been planted every six metres amongst the pioneer plants. The team will monitor individual tree size, soil microbe and animal biodiversity and ecosystem functions (such as reducing erosion, and soil decomposition). The two focus areas of the research are optimal planting regimes for speeding up the establishment of old-growth forest trees and the most productive partnership models for landowners, especially with Māori landowners.

Coastal People: Southern Skies (CPSS) is a national Centre of Research Excellence that connects communities across Aotearoa New Zealand and the South Pacific with world-leading, cross-disciplinary research to support transformative change to rebuild our fragile coastal ecosystems. CPSS is led by researchers at the University of Otago and supports local communities by providing information and tools that allow local scale responses to globally driven change in the marine environment, including ocean warming and acidification and sea-level rise. Six other New Zealand universities are involved as well as government partners and the Wānanga.

Learning & Teaching

Universities of New Zealand

Overview of Sustainability programmes and courses

The table below provides example of the sustainability focused programmes (or in lieu of a programme, the courses) offered by the eight New Zealand universities.

University	Sustainability programmes and courses
Auckland	Bachelor of Global Studies
AUT	88 sustainability focused courses offered at AUT and seven sustainability majors or minors.
Canterbury	Bachelor of Social and Environmental Sustainability
Lincoln	Bachelor of Commerce (Sustainability).
Massey	Master of Sustainable Development Goals
Otago	Master of Sustainable Business
Waikato	Bachelor of Climate Change
Victoria	Master of Climate Change Science and Policy

Climate change key focus

More and more climate change focused programmes and courses are being offered by New Zealand's universities. In 2021, Waikato University launched the world's first Bachelor of Climate Change. The programme reflects the need for a shared language between economists, social scientists and environmentalists. It combines scientific knowledge of the biophysical world with understanding of economic and political systems and the impacts on Māori, Pacific and Indigenous communities. Victoria University offers the Master of Climate Change Science and Policy that, like the Bachelor of Climate Change at Waikato, offers a cross discilinary approach to learning that involves insight into the economics, politics, behavioural science, and public engagement associated with mitigating and adapting to climate change.

Student enrolments in sustainability

Through offering new sustainability programmes there is an obvious increase in the number of students studying an aspect of sustainability. Currently there is a lack of comparable data across the universities to identify change across the sustainability courses offered by New Zealand universities. However, at AUT an increasing number of students are enrolling in sustainability focused courses. In 2022, about 14% (or 4,000) AUT students were enrolled in one of the sustainability focused courses offered. Since 2020 there has been an increase in student enrolments of about 1,000 students or 4 percentage points at AUT.

SDG Summit History

In 2018, Victoria University of Wellington hosted the first of a series of SDG Summits. In 2023 Waikato University, Waikato Tainui, Te Pūkenga, and Waikato Wellbeing Project co-hosted the fourth SDG Summit. The aim of these summits is to bring together people from multiple sectors in order to build momentum towards Aotearoa New Zealand achieving the SDGs.

Participation has grown from around 250 attendees in 2018, to almost 1000 attendees at the 2021 and 2023 summits. The summit series has been led by the Universities New Zealand Expert Working Group. Each event has been supported by both an organising group and an advisory group of stakeholders who include, tertiary education staff, students, iwi, business and local government.

When Covid-19 impacted the planning for the third summit, it evolved into an online summit series spread across several events in 2020 and 2021. These were co-hosted by the University of Canterbury and Lincoln University. As 950 people attended the series of events, with 83 speakers involved. Amongst other things, the Summit Series assisted in the development of the Aotearoa SDG Alliance (ASDGA). A similar format was used for the fourth summit, with similarly successful participation and the difference of culminating in a face to face event at the of the series of online events.

A fifth Summit is now in the planning stages, being led by Massey University, for delivery 2024-2025. Again, this is guided in part by the Summit National Stakeholder Group, along with input from the ASDGA.

Year	Host	Attendees	Speakers
2018	Victoria University of Wellington	250	22
2019	Auckland University and AUT	440	22
2020-21	University of Canterbury and Lincoln University	950	83
2023	Waikato University, Te Pūkenga, Waikato Wellbeing Project	960	40
2024/25	Massey University		

4th SDG Summit Waikato 2023

The University of Waikato, Waikato Tainui, Waikato Wellbeing, Te Pūkenga and Waikato Tainui co-hosted and sponsored the 4th Aotearoa SDG Summit, 2022 – 2023. Further support was received from sponsors Waste Management NZ, Mercury Energy, and the Waikato Regional Council. The theme for the 4th SDG Summit was Māori, Indigenous and Community Perspectives. We showcased initiatives from the Waikato and Bay of Plenty regions.

The Summit Series consisted of three online events in 2022 and one in-person event 9th and 10th of February 2023 (also with zoom links for virtual attendees). The February Summit was held in the Gallagher Academy of Performing Arts, Hamilton Campus. The webinars were hosted by the University of Waikato.

The Summit delivered on the University's Sustainability Plan Objective 6: 'Join with others outside the University in dialogue and action on the SDGs the aim of helping us meet our goals'. It also delivered on Objective 1: 'Embed Māori and Pacific principles and values of sustainability in the University's values'; and, Objective 3: 'Prioritise research that promotes the UN SDGs, climate action, and the creation of sustainable environments and fair futures'.

Further information and recordings of the fourth and earlier summits is available on the SDG Summit Series Website.