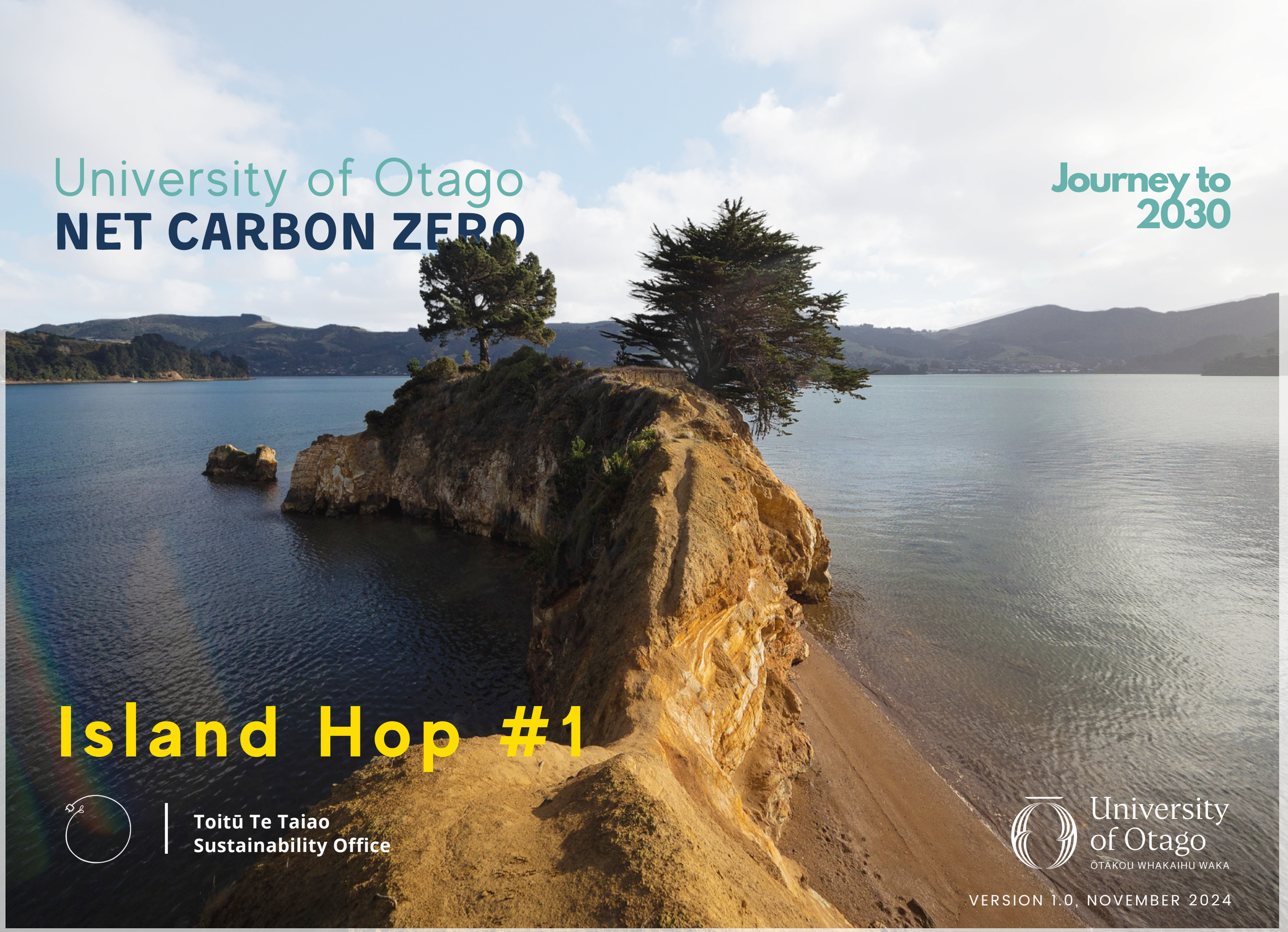
University of Otago

NET CARBON ZERO

Journey to 2030



Island Hop #1

Toitū Te Taiao
Sustainability Office

University of Otago
ŌTĀKOU WHAKAIHU WAKA

VERSION 1.0, NOVEMBER 2024

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01 Foreword

The impacts of climate change are already being felt here in Aotearoa New Zealand and across the world.

Universities have a key role to play in addressing the challenges posed by this crisis: from preparing young people for this changing world to working with vulnerable communities, local authorities and central government to research, evaluate and inform approaches.

As critic and conscience of society, universities also have a role in conveying the importance of climate action to our communities and holding to account those who are contributing to this crisis, or not acting with sufficient haste. It's critical that we also walk the walk in terms of measuring and rapidly reducing our own greenhouse gas emissions.

Here at Ōtākou Whakaihu Waka, we're proud to be Aotearoa New Zealand's first University. We are also proud of the special relationships we have with the communities in which we operate. Our Net Carbon Zero Programme is focussed on reducing the impact of our operations on the climate in a way that values these connections and plays to our strengths as a place of learning and research.

While we've made some great progress in recent years, we do not have all the answers. I encourage you to read on to understand where we stand and our next steps, and to reach out to the team if you have suggestions or want to get involved in this mahi.

Nā tō rourou, nā taku rourou ka ora ai te iwi.
With your food basket and my food basket the people will thrive.

Universities have a key role to play in addressing the challenges posed by this crisis

- Grant Robertson
Vice Chancellor

Glossary

EFTS - effective full-time students

GHG - Greenhouse gas

ISO - International Standards Organisation

Scope 1/2/3 - the Greenhouse Gas Protocol divides emissions up by scopes. Scope 1 is direct emissions (e.g. from directly burning fossil fuels yourself), Scope 2 is indirect emissions from purchased energy and Scope 3 is all other indirect emissions. ISO14064-1 talks about Categories, with Scope 3 broken up into Categories 3-6.

SLT - Senior Leadership Team

tCO2e - tonnes of carbon dioxide equivalent

UOC - University of Otago - Christchurch campus

UOW - University of Otago - Wellington campus

02 Background

What is the Net Carbon Zero Programme?

In 2019, the University of Otago committed to reaching net zero greenhouse gas emissions by 2030. Net zero means the emissions from our operations (as reported in our annual, audited emissions inventory) are equal to or less than annual removals of carbon dioxide from the atmosphere for which we are directly responsible. Reducing our gross emissions must be the first priority, with carbon removals only used to offset hard-to-abate emissions.

In 2021, the Net Carbon Zero Programme was established to drive this mahi and our leadership team and University Council agreed to the vision and principles for this programme, as well as emissions reduction targets for each emissions source out to 2032. This was summarised in our document, *Net Carbon Zero: Journey to 2030*, published online in March 2022.

What is "Island Hop #1"?

Just as Polynesian explorers used stars, clouds, ocean currents, birds and other natural phenomena to guide them across the vast Pacific, we know that a range of forces can influence our progress towards net zero. We need to continually read the signs and adjust our path accordingly. That's why we have adopted a wayfinding approach to get us to net zero and beyond.

In 2024, like a waka that has reached an island on its way to its final destination, we have taken stock of our progress to date and the journey that remains ahead of us. We engaged with staff and students (see page 7). We modelled the impact of changes and considered how to respond.

This document summarises the assessment during this first "island hop" and our approach for the next leg of this journey.

The “Voyage Overview” to the right comes from our original Journey to 2030 document (2021). As we near the end of 2024, we have completed many of our short-term actions (as well as some we didn’t foresee at the time), and we are starting to pick up what had been labelled “medium-term actions”.

This document summarises the progress we’ve made, the changes (both positive and negative, internal and external) we have observed, and what we’re planning for the next leg of our journey.

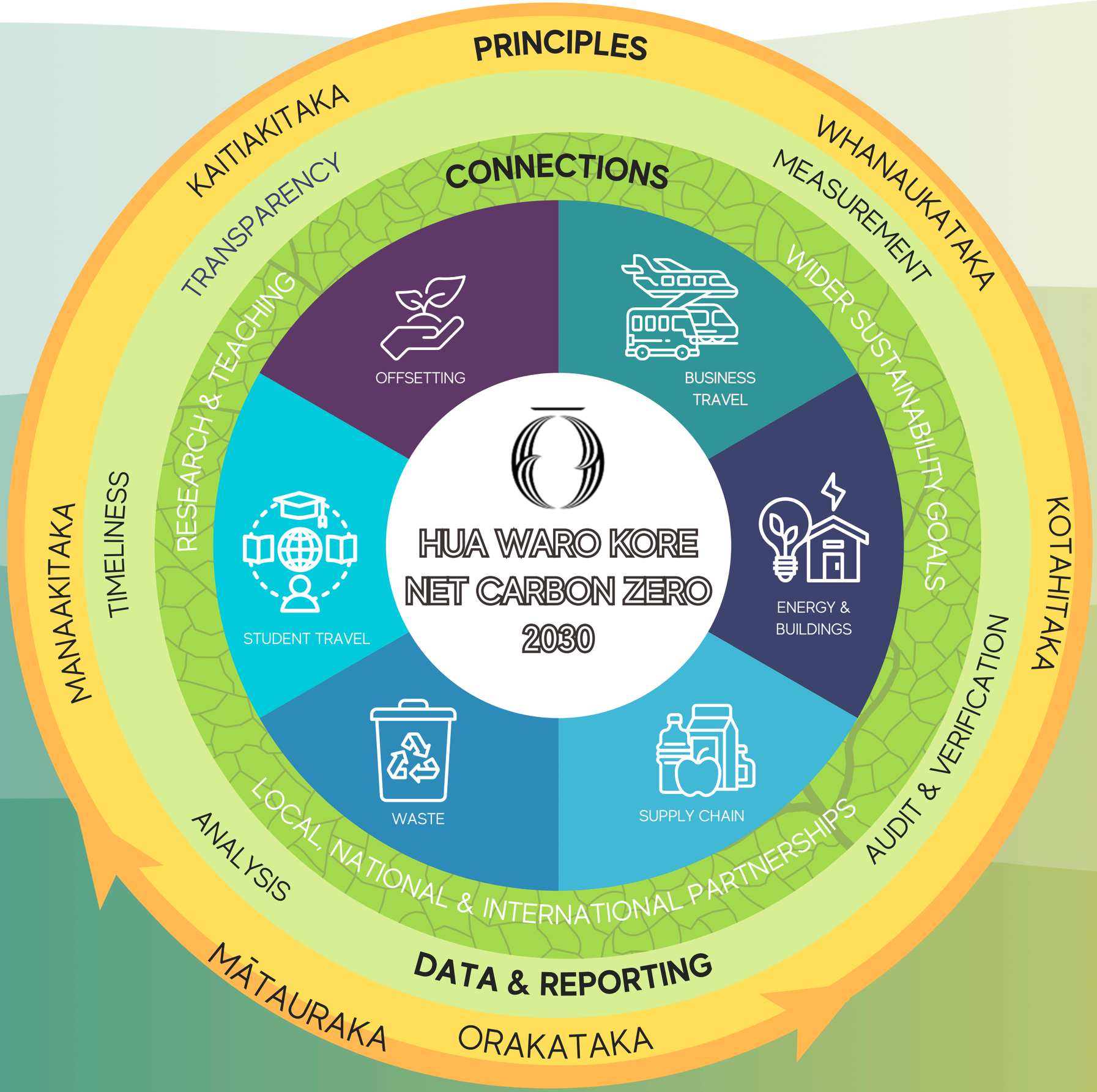
VOYAGE OVERVIEW

2030 & beyond!

Our goals by 2030

Medium-term actions

Next step & short-term actions



Programme Approach

The image to the left summarises how we have and will continue to work towards our net zero 2030 target. This starts with our **programme principles** (outer ring), with the pursuit of orakataka (health and wellbeing) for an interconnected system of life being our key driver for addressing climate change. What differentiates our climate action from most other organisations is the fact we exist for teaching and research, so another key principle is that we want to integrate mātauraka (knowledge & understanding) into what we do and share our lessons widely.

Our core activities focus on reducing our greenhouse gas emissions (the programme's #1 focus), and working towards offset those emissions that remain from 2030. The **five emissions reduction themes and offsetting** comprise the inner ring of our mahi.

Connections and **Data & Reporting** encircle our emissions reduction and offsetting mahi, as we need to be thinking about impacts beyond just emissions and be highly transparent if we are to live up to our programme principles.

An ongoing conversation

Engagement with staff, students and other stakeholders

Reaching net zero will require effort from across the University, as well as collaboration with suppliers, local authorities and central government.

It's important that staff and students in particular know what our targets are, how we plan to meet them and what they can do to help. They also need to be able to shape the programme, too.

These conversations happen regularly through events run by Toitū te Taiao, our Sustainability Office, as well as activities such as guest seminars and presentations arranged by academic and operational departments, our annual travel surveys, procurement exercises and more.

One lesson from the first three years of the programme is that people have different levels of interest and capacity, but all perspectives are important.

As part of our first island hop, we designed a range of engagement opportunities to allow as many staff and students as possible to have their say.

From quick videos and online surveys to in-person pop-ups and weaving workshops, we heard from many people in many ways.

In general, the net zero target continues to have strong support, but there are strong opinions about how best to get there. The steps outlined in the 'Next Leg' section are informed by this feedback.

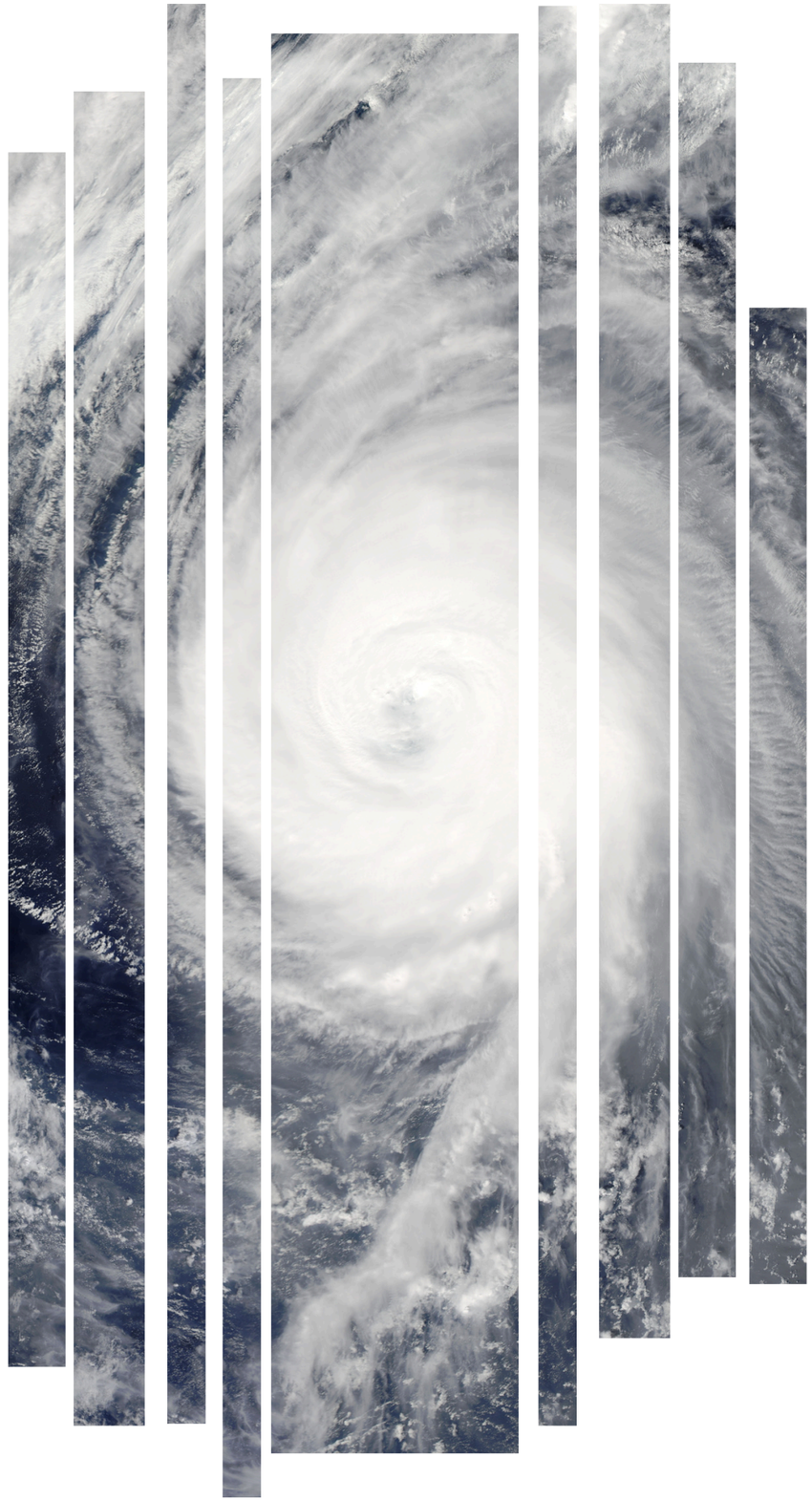
What about the risks of climate change now and in the future?

The Net Carbon Zero programme is explicitly focussed on climate change mitigation - that is, reducing greenhouse gas emissions that are causing climate change. But the University is also very aware that the amount of warming gases already put into the atmosphere by humanity has influenced the climate, resulting in impacts, such as more severe storms, which are already being experienced.

In 2023, we participated alongside representatives from Aotearoa's universities, wānanga and Te Pūkenga to develop climate scenarios for the tertiary education sector. You can find the full report here.

In 2024, we are using these scenarios with different parts of the University community to workshop what these futures look like specifically for Otago. This work, alongside the quantification of physical risks to our campuses, is feeding into our climate adaptation planning.

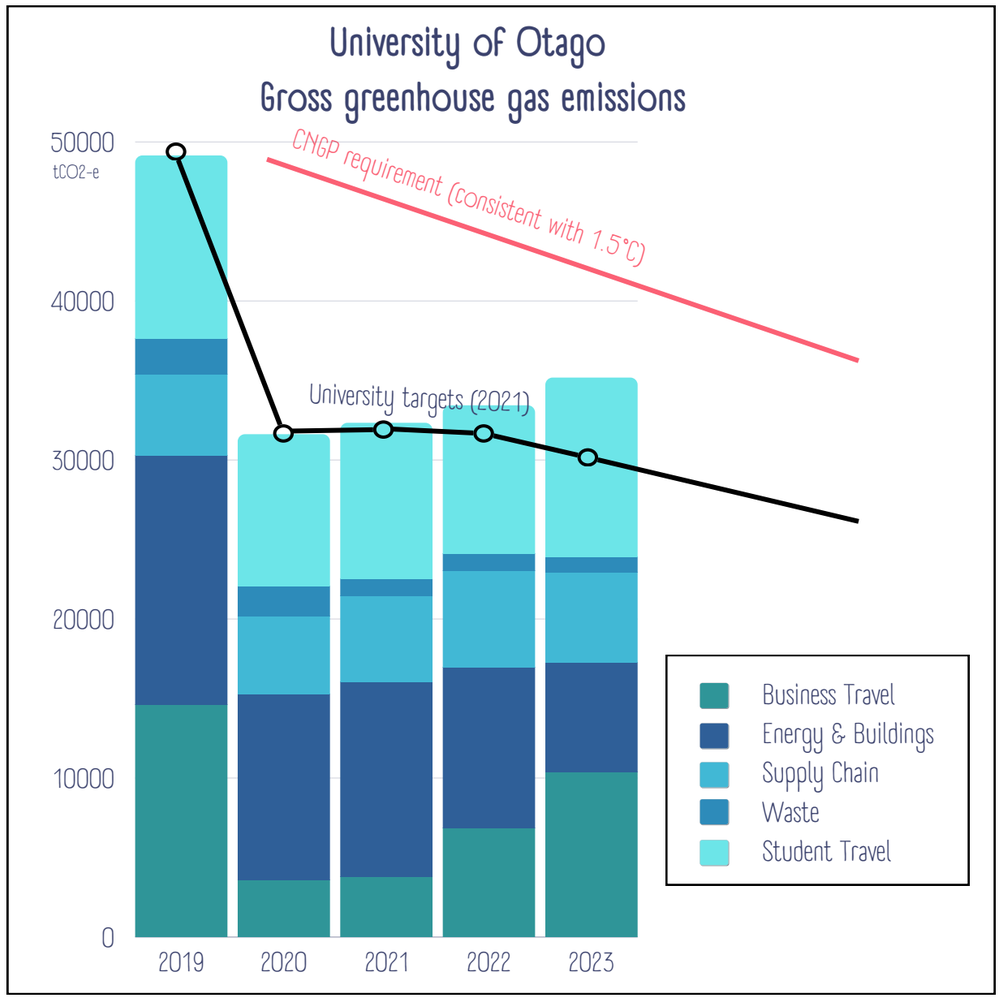
As outlined in the Programme Summary on page 6, we are seeking to connect our climate mitigation work to wider climate action and other sustainability challenges so we avoid "carbon tunnel vision".



03 Progress to date

Mixed performance against targets

As the chart below illustrates, our gross emissions from 2020 have been tracking well below the 4.2% per annum reduction target required by the Carbon Neutral Government Programme (CNGP). However, we've been less successful in recent years at hitting our more aggressive internal targets. The reasons for this become clearer when we look at our emissions by theme.



Business Travel

↓31%

COVID dramatically changed the landscape in 2020-22. We're keeping air travel below pre-pandemic levels but didn't achieve our internal target of for 2023 (contributing to overshooting our overall target for 2023).

Energy & Buildings

↓56%

Eliminating coal from our campuses has driven great reductions from our 2019 baseline. Wider energy efficiency measures and reduced emissions factors from the national grid have also contributed to this result.

Supply Chain

↑11%

Purchased food makes up more than 90% of this theme. Moving away from a cost based emissions factor to a more accurate food item measurement approach makes emissions look higher than our base year.

Waste

↓53%

Better gas capture at municipal landfills and our own progress diverting more waste from landfill has driven significant reductions thus far.

Student Travel

↓2%

As with business travel the pandemic caused student travel (led by air travel) to dip, but overall 2023 emissions were similar to the 2019 base year.

For more detail on our past emissions, you can find our **annual greenhouse gas emissions reports** on our website:
https://www.otago.ac.nz/sustainability/climate-action/net-carbon-zero-2030

04 Changes Observed

Since our initial emissions reduction targets were set in 2021, we've learnt a lot. A range of internal and external factors have also changed, making some targets easier to achieve and some more challenging.

Legend

- Lessons learned
- Creating tailwinds - makes achieving targets easier
- Creating headwinds - makes achieving targets harder

Internal

Increased GHG emissions reporting maturity
Completing 4x annual emissions inventories, adding new categories (e.g. working from home, freight) and improving calculations methods (e.g. purchased food)

New University strategic plan to 2030: Pae Tata
As part of achieving financial sustainability, this strategy aims to increase domestic and international students. See next page for more detail.

Lessons learned from decarbonisation efforts so far
We now have a dedicated decarbonisation fund, but there have been some challenges getting projects into implementation.

Dunedin Zero Carbon Alliance
ZCA has been in place since late 2022, and Dunedin City Council's Zero Carbon Plan was endorsed in 2023. Collaboration between large organisations in Ōtepoti can help drive down our emissions.

Changes to emissions factors
Improved gas capture at landfills, more renewable electricity in the national grid, and efficiency improvements for domestic aircraft have reduced some key emissions factors.

Changing levels of central government support
The change in government in 2023 has seen changed priorities for central government. On balance, this is creating more headwinds, particularly in terms of reducing emissions from staff and student commuting.

Carbon Neutral Government Programme
More clarity has emerged for CNGP reporting requirements, and collaboration between participating organisations has been helpful. But current uncertainty over the future of the programme means we can't rely on future support.

New ISO 14068-1:2023 Climate Change Management - Transition to Net Zero
Among other things, it requires entities have a "Carbon Neutrality Management Plan".

Government approval of insetting project
Our first native forest regeneration and carbon sequestration project has taken longer than expected to get external sign off, but the outcomes should be worth the wait.

External

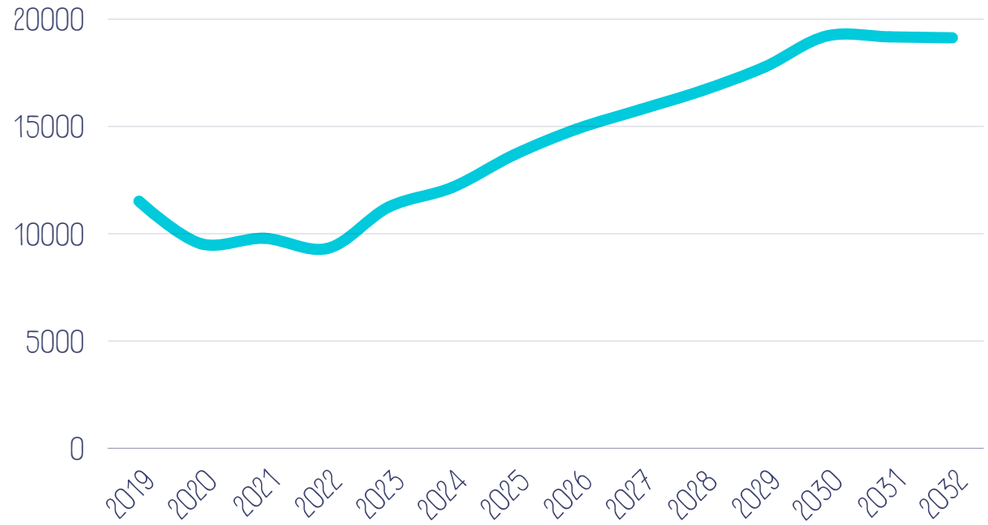
Changes to student enrolment forecasts

What has changed?

Our University's Pae Tata Strategic Plan to 2030 sets the target of growing our Effective Full-time Students (EFTS) by around 5,000 to 24,000 by 2030, including increasing the proportion of international students from 13.5% pre-pandemic to 15%-20%. All else being equal, this would result in more domestic and international student flights to get to and from their campus of study, and more student commuting emissions during the academic year.

The graph on the right shows the increase in student air travel emissions that is likely to occur if we meet our enrolment targets and these enrolments match our current mix of in-person and distance learning, and draw our students in the same proportions from different parts of New Zealand and the world.

That is, student air travel emissions could increase from 11,000 tCO2e in 2023 to 19,000 in 2030.



How could we respond?

As part of the engagement process with staff and students discussed on page 5, we covered a range of options, including:

- removing student travel emissions from our net zero target completely
- resetting targets for student travel so they are intensity-based rather than absolute, reflecting the fact we have some control over the emissions for students who enrol with us, but zero control over emissions if they enrol elsewhere
- targetting more international students for online and from the Pacific Rim to reduce distances flown
- develop a proposal for offsetting student air travel emissions
- work with councils and transport providers to enhance domestic sustainable travel options and promote these to students
- ensure sustainability is a prominent part of international students' study and wider experience in Aotearoa.

See p.18 for the package of responses we have chosen

05 Programme Response

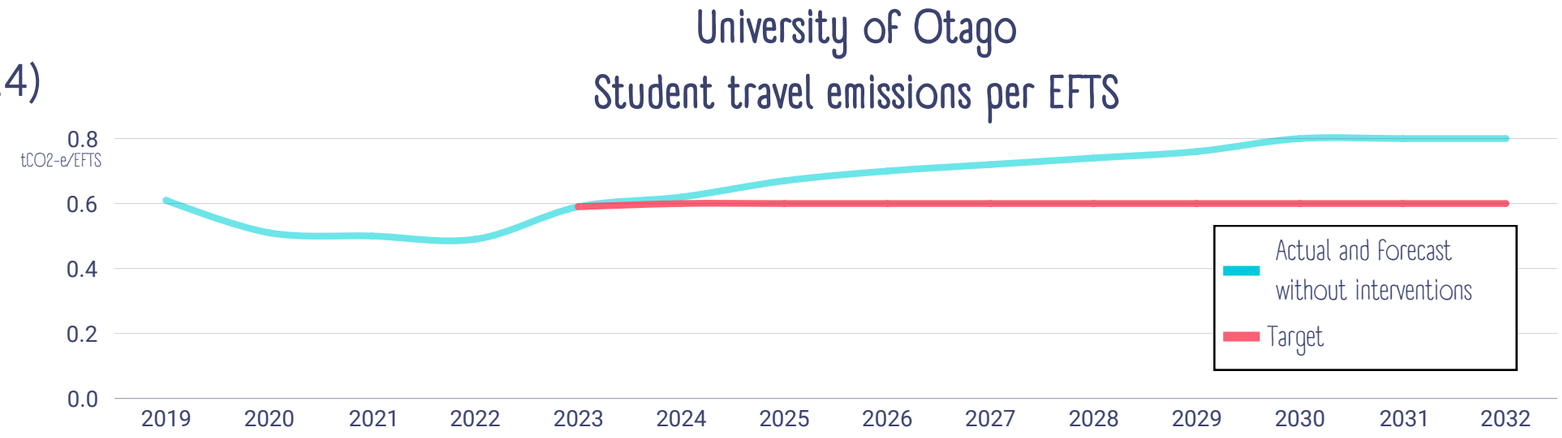
Revised Programme Business Case (2024)

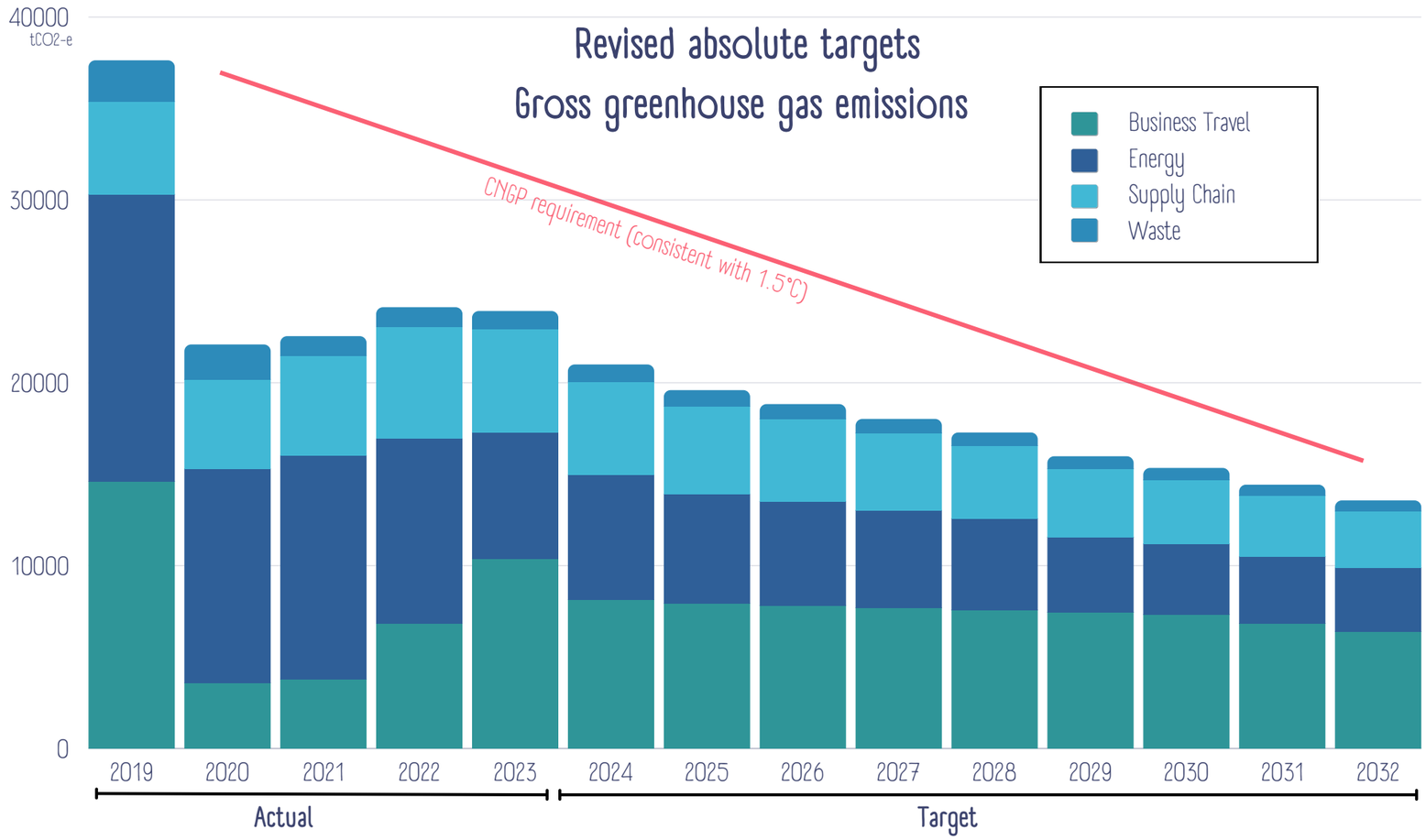
On the back of extensive engagement and modelling of the impact of different changes on our emissions, we updated our Programme Business Case, which was endorsed by our Senior Leadership Team and University Council in 2024.

The revised business case adjusts our emissions reduction targets as follows:

- student travel emissions (air travel & commuting): adopt an intensity based target of 0.60tCO2e/EFTS (this represents a 25% reduction from our baseline forecast)
- all other emissions sources: 61% reduction from 2019 base year to 2030 (further 36% reduction from 2023 levels). This is consistent with the target in the 2021 version of the business case.

Supporting these targets, SLT and Council also endorsed a Net Carbon Zero Plan which meets both the requirements of ISO 1468-1:2023 for a “Carbon Neutrality Plan” and the CNGP requirement for an “Emissions Reduction Plan”.





06 The Next Leg

This section outlines key aspects of how we will meet our emissions minimisation and offsetting targets in the coming years.

You can also find a one page summary of what we have achieved, what we plan to do next and where we are headed on the final page of this document.

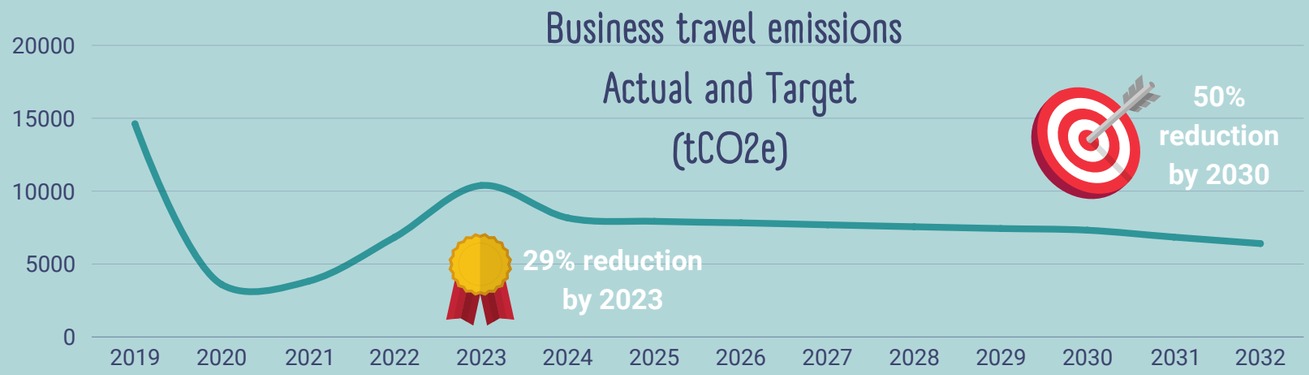
BUSINESS TRAVEL EMISSIONS

Travel can be a high emissions activity, but it can also be high impact. Think: researchers travelling to access sites, communities or resources; post-graduate students and early career academics meeting establishing networks for future collaborations (much of which can be continued online); and engaging with potential students and alumni networks. Similarly, we need vehicles to support daily life on campus, from trades services vans to the Aquinas College shuttle, and of course we all need to get to and from campus (when not working from home).

Our targets and key tasks with respect to business travel reflect that travel will continue to be valuable, and in some cases, essential, but we have tools at our disposal to keep our emissions much lower than previously.

EMISSIONS TARGETS

Emissions source	2019 base year (tCO2e)	2023 actual (tCO2e)	2030 target (tCO2e)	Change 2019-2030	Target based on
Business air travel	11,982	7,518	5,480	-54%	Annual target of 46% of 2019 emissions
Accommodation	338	780	548	+62%	Increase from base year due to increase in spend based emissions factor. Emissions reduce by 10% in 2024, plateau 2024-2026, then decreases 6% pa from 2027.
Mobile combustion	245	318	206	-16%	6% reduction from 2024
Mileage, taxis & shuttles	200	177	122	-39%	6% reduction from 2024
Employee commuting & Working from Home	1,850	1,587	971	-48%	6% reduction from 2024 levels for private vehicles, public transport EF reduces as per student commuting.



KEY TASKS

Emissions source	Key emissions minimisation tasks
Business air travel	• Ensure University policies support low and zero emissions options - COMPLETE - see our website. • Raise awareness of staff regarding ways to minimise travel emissions - ONGOING • Improve data frequency and granularity from travel agents - COMPLETE • Develop emissions reporting dashboards - with focus on air travel dashboards for travel approvers initially - DUE EARLY 2025
Accommodation	• Ensure room nights and location known for most accommodation to allow more accurate emissions reporting - ONGOING UNTIL 2026 • Investigate preferred suppliers for accommodation based on verifiable emissions that are lower than national average emissions - BY 2026
Mobile combustion Mileage, taxis & shuttles	• Shift to management and ownership model for vehicle fleet that supports more rapid decarbonisation - ONGOING UNTIL 2030 • Support the launch of a car share scheme in Dunedin. • Work with suppliers to ensure EV options are available to our staff, we get accurate data and policy/funding supports choosing low emissions options - BY END OF 2025
Employee commuting and Working from Home	• Appoint Tētekura (Student Lead) focussed on promoting sustainable transport to staff and students - COMPLETE • Ensure end of trip facilities are in place at UOW Newtown campus - 2024 • Update Workplace Travel Plan for Dunedin Campus and extend to Wellington and Christchurch campus - 2025 • Progressive roll-out of Parkable app and related car parking policy changes - ONGOING • Expand secure and covered bike parking and manage existing spaces to optimise utilisation - ONGOING

NB: Reducing business air travel from 2023 levels may also drive lower emissions in other travel-related source. However, the practice of trip-stacking whereby multiple return journeys are replace by one longer trip can drive increased accommodation emissions (though lower overall emissions than the alternative).

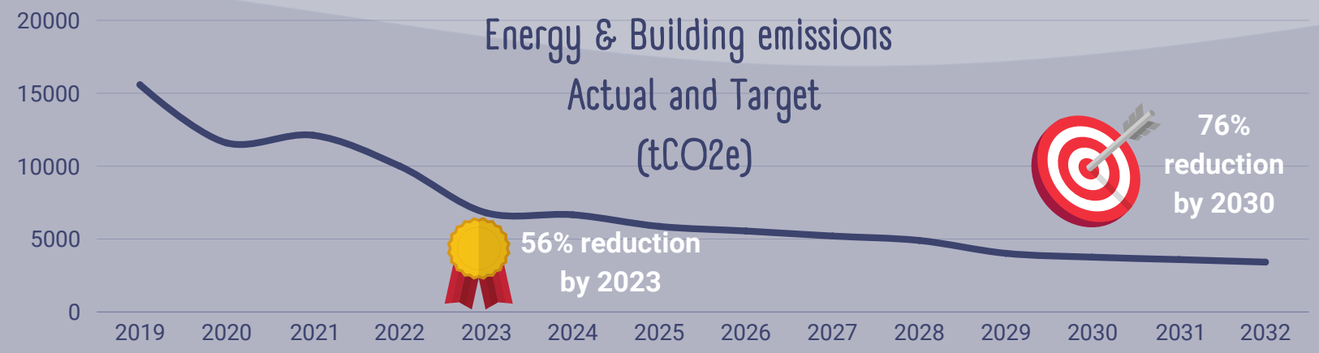
ENERGY & BUILDINGS

Our focus when it comes to operational emissions from our facilities has been eliminating coal - which had the highest emissions intensity of all fuel sources we used in 2019. As we rely more on electricity and biomass for our energy needs, we need to focus on efficiency. Our efforts to reduce our campus footprint will also help achieve our targets. While our net zero target does not currently include embodied emissions from construction and demolition, we are working towards reporting on and minimising these emissions.

Physiotherapy and Eccles Buildings, Dunedin Campus. Photo credit: RCP.

EMISSIONS TARGETS

Emissions source	2019 base year (tCO2e)	2023 actual (tCO2e)	2030 target (tCO2e)	Change 2019-2030	Target based on
Coal - Scope 1 & 2	8,044	55	0	-100%	Zero from 2024, having eliminated all coal from our campuses and district energy schemes supplying our buildings
Electricity (including distribution losses)	5,420	4,212	3,091	-43%	6% reduction from 2026 (efficiencies and improvements to grid emissions factor in 2024-25 offset by additional m2 and electrification of some buildings)
LPG & Natural Gas - Scope 1 & 2 (and distribution losses)	1,594	2,053	200	-87%	Increase from base year due to commissioning of Eccles Building with LPG boiler. Elimination of UOW Natural Gas in collaboration with Health NZ. Elimination of all LPG for primary heating by 2029.
Biomass - Scope 1 & 2 (and distribution losses)	356	462	465	+31%	Increase since 2019 reflects conversion of boilers from coal/gas to biomass. Major conversions complete so assume relatively stable emissions going forward.
Diesel - Scope 1	78	15	0	-100%	Retention of diesel for backup stationary combustion only until reaching zero at 2030.



KEY TASKS

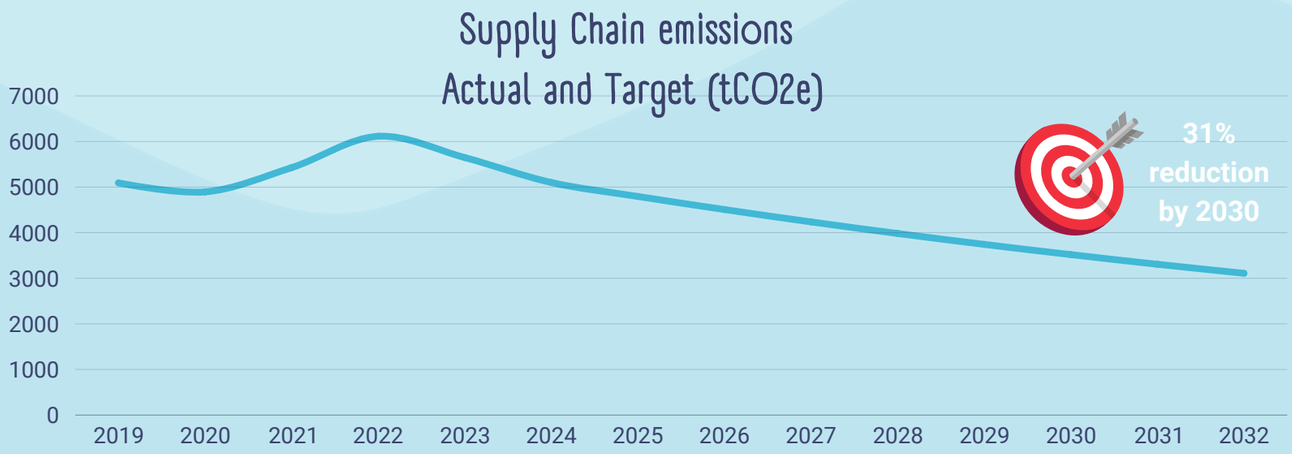
Emissions source	Key emissions minimisation tasks
Coal	• Eliminate coal from all our campuses - COMPLETE
Electricity	• Launch energy efficiency analytics platform and use it to drive reductions at large/complex facilities - COMPLETE • Investigate power purchase arrangements for onsite renewable generation and storage - 2025 • Progressive programme of LED lighting installation - ONGOING • Trial energy monitoring and controls in UniFlats - 2024-25
LPG & Natural Gas	• Electrify steam and heat in Eccles Building - 2025 • Develop programme for replacement of all remaining LPG boilers used for primary heating, incorporating lessons from Eccles Project - 2025-2028 • Determine decarbonisation solution for natural gas use at UOW
Biomass	• Determine long-term solution to replace Dunedin District Energy Scheme at end of life - by 2030
Buildings	• Pae Tata prioritises achieving greater efficiency in space utilisation. This can allow us to rationalise some facilities - with the emissions impact being part of this decision making - ONGOING • Develop a Campus Carbon Strategy and Carbon Brief for future projects covering both embodied and operational emissions - 2025.

SUPPLY CHAIN

Goods and services purchased by the University invariably produce emissions. We currently report on material Category 4/Scope 3 emissions from food, water and freight. We are working towards also including IT-related emissions as outsourcing of data storage increasingly moves energy use from our sites to our suppliers (Scope 1 to Scope 3). Reduction targets will be identified for each new source once a baseline has been established.

EMISSIONS TARGETS

Emissions source	2019 base year (tCO2e)	2023 actual (tCO2e)	2030 target (tCO2e)	Change 2019-2030	Target based on
Purchased food	4,575	5,195*	3,225	-29%	10% reduction in 2024, then 6% p.a. reduction. NB actual emissions in recent years are higher than 2019 due to moving to more accurate emissions calculation (from spend-based to ingredient-based emissions factors).
Purchased water & wastewater processing	128	147	95	-26%	6% p.a. from 2024
Freight	389	305	198	-49%	6% p.a. from 2024



KEY TASKS

Emissions source	Key emissions minimisation tasks
Purchased Food	• Develop IT solution to support emissions reporting for kitchens that can inform menu design and signage/messaging to diners - 2025 • Run awareness raising / behaviour change programme to support uptake of more low emissions food options - 2024-27 • Investigate options for sourcing ingredients with verifiable emissions lower than national average - 2025-26
Water	• Investigate options for better water use monitoring/leak detection and possible behaviour change initiatives for water use - 2025
Freight	• Work with top 4 freight providers to ensure they can all provide volume based data - 2024-25 • Develop strategy to minimise freight emissions through procurement and staff behaviour based on more accurate emissions data - 2025-26.
Other	• Work with suppliers to report on emissions from IT (cloud storage, software, devices and e-waste) - 2024-25 • Support our suppliers to report on their emissions and progressively increase our expectations in terms of what data they can provide to us - ONGOING

* Figure differs from previously reported due to error found after audit. Will be corrected in 2024 GHG report

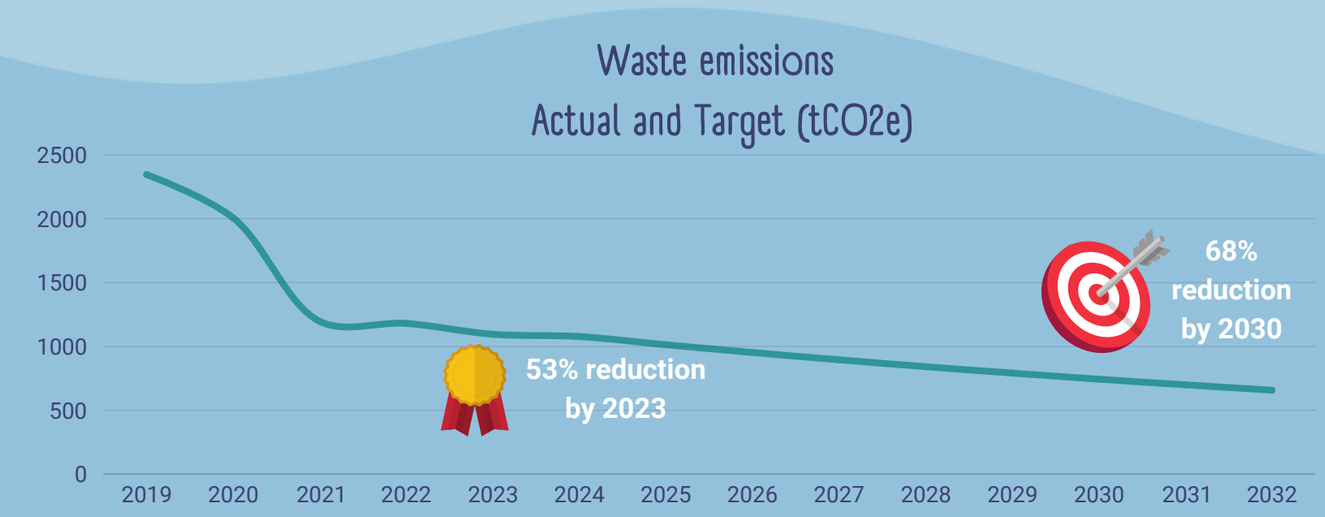
WASTE

Organic material can emit methane when it breaks down in anaerobic conditions. In New Zealand, our landfills have improved their gas-capture significantly since 2019, lowering the emissions intensity of every tonne of waste sent to landfill. Of course, emissions are only part of the story when it comes to waste. We need to try and keep resources as long as possible in circulation (or avoid using them in the first place) before resorting to recycling or disposal.

The gases uses in refrigerant systems (chiller units, air conditioning, freezers etc) can be very potent greenhouse gases if they escape. We need to ensure we are maintaining our refrigerant units well and transition to gases with lower warming potential over time.

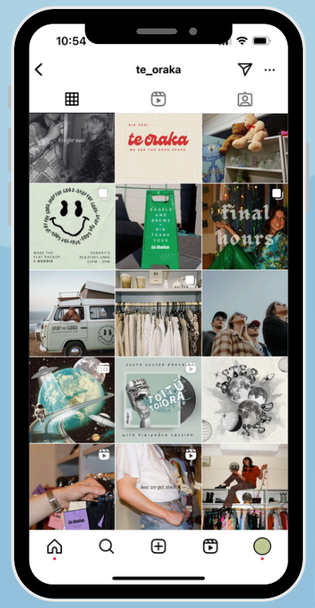
EMISSIONS TARGETS

Emissions source	2019 base year (tCO2e)	2023 actual (tCO2e)	2030 target (tCO2e)	Change 2019-2030	Target based on
Waste to landfill and recycling	2,240	987	640	-71%	6% p.a. reduction from 2024
Fugitive emissions - refrigerants	106	108	103	-2%	Expectation is emissions will be higher in 2024 as a result of more comprehensive stocktake, with 6% p.a. reductions thereafter.



KEY TASKS

Emissions source	Key emissions minimisation tasks
Waste to landfill and recylcing	• Appoint Tētēkura (student lead) dedicated to increasing waste diversion on Dunedin campus - COMPLETE • Improve data on makeup of waste to landfill to use most accurate emissions factors at relevant sites and inform waste diversion activities - 2024-25 • Increase proportion of food waste from colleges that is diverted from landfill - ONGOING
Fugitive emissions - refrigerants	• Complete more comprehensive stocktake of refrigerants - COMPLETE • Develop a programme to address refrigerant units that are the highest source of emissions / highest liability - 2025 • Ensure building projects and equipment purchases factor in refrigerant emissions when selecting plant - 2025



STUDENT TRAVEL

We draw our students from around Aotearoa and the world - for many, flying is the only convenient option to get to our campuses for their studies. Once in town, students are generally good at using sustainable transport modes such as walking, cycling and public transport - but by their sheer numbers, any use of personal vehicles creates a material emissions source as well.

While we don't have as much operational control over how students travel as some other emissions sources, we do have some ability to influence (e.g. where we target for international enrolments) and promote alternatives to high-emitting options.

EMISSIONS FORECASTS

Emissions source	2019 base year (tCO2e)	2023 actual (tCO2e)	2030 forecast (tCO2e)	Change 2019-2030	Forecast based on
Student air travel	10,373	10,166	18,400	+77%	Assumes current mix of online & in person, and current distribution of students home city/country. Activities in the table to the right aim to lower this amount.
Student commuting	1,144	1,052	823	-28%	Already a low emissions per student based on walking culture in Dunedin. A further 2% p.a. reduction achieved despite increasing student numbers through reduced private vehicle use, increase public transport use and lower emissions intensity of public transport due to electrification of fleet.
KPI	**2019**	**2023**	**2030 target**	**Change 2019-2030**	**Notes**  **0.60 tCO2e per EFTS**
Effective Full-Time Students (EFTS)	18,915	18,960	24,000	+27%	Based on Pae Tata target
Student travel emissions per EFTS	0.61	0.59	0.60	-2%	Achieving this target will require lowering student air travel emissions forecast in 2030 from 18,400 tCO2e to around 13,600t, if student commuting forecast above is achieved.

KEY TASKS

Emissions source	Key emissions minimisation tasks
Student air travel	• Move to country of origin based forecasting for international students and monitor forecast emissions against target - ONGOING • Target international students from countries closer to NZ, students who will stay for longer (e.g. full degree), and grow enrolments through distance learning wherever possible - ONGOING • Work with local and regional authorities and other transport operators to enhance interregional transport services (e.g. bus) for students and increase promotion to students, to lower reliance on domestic air travel, particularly in the South Island - 2024-25 • Enhance the on-campus experience for international students so sustainability is a prominent part of their study and wider experience in Aotearoa - 2024-27 • Develop climate literacy training with Zero Carbon Alliance partners that could be made available to students - 2025 • Develop proposal/business case for offsetting student travel emissions - 2025-26
Student commuting	• Appoint Tētekura (Student Lead) focussed on promoting sustainable transport to staff and students - COMPLETE • Update Workplace Travel Plan for Dunedin Campus and extend to Wellington and Christchurch campus - 2025 • Run weekly bike grabs during semesters at Te Oraka in collaboration with Southern Youth Development - ONGOING • Expand secure and covered bike parking and manage existing spaces to optimise utilisation - ONGOING

OFFSETTING

Offsetting refers to actions that have a positive impact on the climate, generally through removing carbon dioxide from the atmosphere. 1 tonne of CO2 removed from the atmosphere, such as by planting trees, can offset 1 tonne of CO2 emitted from an organisation's activities. This relies on these removals being permanent and not double-counted. The offsetting market is still maturing and we are conscious of the pitfalls, as reflected in the principles below.

With this being said, from 2030 we must offset all of our emissions, including student travel, to achieve our Net Carbon Zero target. We will need to continue to acquire and retire carbon credits every year thereafter, further incentivising us to reduce gross emissions.

OFFSETTING PRINCIPLES

1. Emissions reduction first – especially if financial and other resources can be better spent permanently eliminating a source of emissions.

When offsetting is required, selection of projects to support and source carbon credits from must consider:

2. Strategic fit – both the alignment of the proposed project with Vision 2040, Pae Tata, Tī Kōuka, Māori ki Ōtākou Whakaihu Waka, the Pacific Strategic Framework and wider reputational impacts.
Key questions include:
a. Does this project deliver wider environmental benefits (or disbenefits)?
b. Does this project deliver wider social benefits (or disbenefits)?
c. Does this project create additional teaching/or research opportunities for University of Otago staff or students?
d. Does this project create additional teaching/or research opportunities more generally?

3. Integrity of carbon credits – carbon sequestration must be real, additional, measurable, verifiable, permanent and unique (i.e. not double counted). The emergence of standards (e.g. ICROA and ICVCM) and carbon credit rating agencies can assist in this process when sourcing credits from the market'

4. Cost – is this investment affordable? Does it deliver value for money compared to alternatives?

POTENTIAL SCALE OF OFFSETTING REQUIRED

Emissions source	2030	2031	2032	Notes 
Total emissions (tCO2e)	34,600	33,600	32,700	Includes student travel - with forecast student air travel based on no intervention (conservative approach).

SOURCING CARBON CREDITS

We have been focussed on establishing a native forest regeneration and carbon insetting project as a core pillar of our offsetting strategy. Insetting refers to doing the work ourselves, rather than relying on others to remove carbon from the atmosphere and paying them for the results. Insetting allows us to ensure research, teaching and service aspects of the University are connected to the process of producing carbon credits, while also ensuring the project is about creating wider benefits and minimising the risk of downstream impacts. Lessons learned from this first process - which is still ongoing - are informing our approach to other opportunities.

Insetting projects take time to establish, which means that we will also need to rely on purchasing carbon credits from the market to meet our full offsetting needs, at least initially.

KEY TASKS

Aspect	Tasks
Insetting projects	• We have an in-principle agreement with leaseholder of a Crown Pastoral Lease Station & QEII National Trust to invest in the regeneration of native forest. Land Information New Zealand (LINZ) has approved planting of native trees across c.19,000ha and we are working with LINZ to ensure we can proceed to procurement for nursery, planting, weed and pest control and project management services in 2025. • We are also investigating other, smaller scale opportunities to invest in, and support, local landscape restoration and carbon sequestration projects.
Purchasing additional carbon credits	• Explore potential for carbon credit buying bloc with other Australasian tertiary institutions (noting any credits purchased must align with our principles) - 2025

CONNECTIONS

To maximise the positive impact our our climate action and achieve our own targets efficiently, we are connecting our mahi to teaching and research activities at the University, wider sustainability goals, and working with local, national and international partners.

There are examples of connections sprinkled throughout this document, and we've chosen to highlight a few of the main ones here.

Dunedin Zero Carbon Alliance
Working with DCC, ORC, Health NZ, Otago Polytech and other local players to support climate change mitigation in Ōtepoti Dunedin, and applying lessons from partners to our own mahi.

Campus connections
Working with suppliers (e.g. food & drinks, waste) and tenants to ensure we're all on the same page. Working with Health NZ on our shared and adjacent facilities in Invercargill, Dunedin, Christchurch and Wellington.

Te Oraka
Engaging with students through Te Oraka, the Sustainability Office's student-run circular economy hub, and its Social Club.

Ensure investment in offsetting has wider benefits
Projects should also support wider sustainability goals (e.g. supporting biodiversity & water quality), leverage existing partnerships, and, where possible, connect to teaching and research.

DATA & REPORTING

Data and reporting tells us how we're going on our Journey to 2030. While data in the form of audited and verified greenhouse gas emissions is important, qualitative data such as feedback from staff and students in important too.

Emissions dashboards for decision makers
Work with suppliers to get regular & consistent data streams fed into interactive dashboards to give decision makers actionable insights.

High-quality, detailed annual GHG reports
Continue to demonstrate leadership and transparency through making these available online.

You can find lots of our reporting online: https://www.otago.ac.nz/sustainability/climate-action/net-carbon-zero-2030

Meet all CNGP reporting requirements
and contribute as active member of the CNGP community.

Make data available for research
Support academics and students to use programme data for research and class projects.

Continuous improvement
Work to improve accuracy of emissions measurement across existing emissions sources.

Ensure scope is comprehensive
Ensure our reporting scope remains in line with standards and best practice. Current work is focussed on ICT-related and construction/ demolition-related (embodied carbon) emissions.

07 GETTING INVOLVED

You can get involved in a range of ways:

- find out more about the Programme and sustainability more generally at https://www.otago.ac.nz/sustainability
- staff can participate in Tī Kōuka Ora (programme to bring our sustainability strategic framework to life through practical actions) from 2025
- email netcarbonzero@otago.ac.nz with your questions or suggestions, or to address to invite us to speak to your department, team, course, club or society
- visit us at Te Oraka, 109 St David Street, Dunedin
- keep an eye out on social media (sustainability_at_otago) and in your inboxes for future opportunities, including planting days and workshops.

OUR JOURNEY

ISLAND HOP #1

BEYOND

Beyond 2030

Further reducing emissions toward true zero & continuing to support research, teaching & learning that centres climate action

2028-2030

Interim Goal

Achieving net zero status by 2030

2025-2027

Business Travel

Continue behaviour change & awareness raising re: sustainable travel + implement fleet management changes

Energy & Buildings

Convert largest user of LPG to electricity and develop programme for remaining boilers + ensure embodied and operational emissions are prioritised for all new builds and upgrades

Supply Chain

Provide data and other resources to support lower emissions catering + work with suppliers to get better data & lower emissions options

Connections

We support others on their carbon journey through research, teaching & learning and our partnerships

Waste

Continue driving down organic waste to landfill + integrate emissions into decision making for refrigerant units

Student travel

Move from only reporting on annual emissions to more real-time and team-based reporting, starting with dashboards for air travel & food

Offsetting

Further carbon sequestration projects explored + business case for student air travel offsetting

2019-2024

Island Hop #1

Business Travel

Air travel policy and financial budgets changed to reflect emissions target + fleet review completed + supporting use of active and public transport to and from our campuses

Energy & Buildings

Eliminated coal from all campuses + introduced energy analytics for largest electricity users

Supply Chain

Move to ingredient-based food emissions calculations + add freight emissions

Connections

Foundation member of Dunedin Zero Carbon Alliance + active member of CNGP & tertiary education sustainability community

Waste

Food digestor in place and diverting food waste from some colleges. Te Oraka supporting student circular economy

Student travel

Better understand student air travel challenges and opportunities

Offsetting

We have enough carbon credits that meet our standards to offset our hard-to-abate emissions

We have negotiated our first native forest regeneration and carbon insetting project & are supporting student research on-site while awaiting Govt approvals

BEYOND

2028-2030

2025-2027

2019-2024

50%

76%

31%

68%

0.60 tCO2e per EFTS

Offset all gross emissions