THE UNIVERSITY OF MELBOURNE

MOBILISING FOR ACTION

SUSTAINABILITY REPORT 2022

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AMPLIFYING ACTION

To integrate the Plan's knowledge mobilisation and operational domains in ways that amplify their contribution, means leveraging synergies between institutional activities, and embedding innovation and learning into how we operate and engage.

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ACKNOWLEDGEMENT OF COUNTRY

The University of Melbourne acknowledges the Traditional Owners of the unceded land on which we work, learn and live: the Wurundjeri Woi-wurrung and Bunurong peoples (Burnley, Fishermans Bend, Parkville, Southbank and Werribee campuses), the Yorta Yorta Nation (Dookie and Shepparton campuses), and the Dja Dja Wurrung people (Creswick campus).

The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.

MESSAGE FROM THE VICE-CHANCELLOR

In May 2022, we launched the University of Melbourne Sustainability Plan 2030, our institution-wide statement of approach to achieving the University's sustainability objectives over the next few years. The Plan is ambitious and strategic in equal measure, leveraging the University of Melbourne's core attributes as an internationally recognised research, learning and teaching institution, and recognising the unique position we occupy in our local and global communities.

As staff members and students returned to campus after the lockdowns of the COVID-19 years, the University collectively worked to mobilise knowledge about sustainability in many fields to create greater impact. In doing so we achieved net zero emissions from electricity for the second year running, and invested $6 million in efficiency upgrades on our campuses.

Our flagship climate research institute, Melbourne Climate Futures, had a successful second year. Our academics contributed to sustainability research across a broad spectrum of knowledge domains. Our work included hosting events at the United Nations Climate Conference, COP27, contributing to the latest reports from the Intergovernmental Panel on Climate Change (IPCC) and testing new sustainability solutions on our campuses.

Over the past decade, the University has pioneered a number of innovative approaches to on-campus sustainability. Waste reduction initiatives like the Choose to Reuse Plate program now provide a model for other universities to follow.

As this Report indicates in detail, we have innovated further within the past year, and look forward to advancing towards the University's goal of being a global institutional leader in sustainability during the remaining years of this decade.

Duncan Maskell

Vice-Chancellor, University of Melbourne

2022 AT A GLANCE

Amplifying action through campus and communities

- Launched the Sustainability Plan 2030
- Ranked 51st globally in the inaugural Quacquarelli Symonds (QS) world university sustainability rankings
- Net zero emissions from electricity for the second year
- Expanded indirect (Scope 3) emissions to include our entire procurement expenditure of over $1 billion
- Hosted 139 sustainability or climate-themed events, and ran the Green Impact program for a successful sixth year

Mobilising knowledge for action

- Founded the Biodiversity Council, to be incubated at the University
- Embedded sustainability as a key touchstone in the University's new *Advancing Students and Education* strategy
- Developed sustainability-focused curriculum content in 4 new subjects and courses
- Joined the Reach Alliance, a global partnership to mobilise sustainability knowledge for action
- Our flagship research initiative Melbourne Climate Futures hosted the inaugural Climate Futures Summit

Walking the talk in our operations

- Founding member of the Nature Positive Universities Alliance
- Shared in a national procurement award for developing a sector-wide response to Modern Slavery
- Issued our inaugural Green Bond under our new Sustainable Financing Framework
- Supported affected communities, including University staff and students, during the October 2022 Goulburn Valley floods
- Opened the Student Precinct Project– working towards being a single use plastic free hub

INTRODUCTION

This is the University of Melbourne's first report under our new *Sustainability Plan 2030*, launched in May 2022. The report sets the tone for our ambitious, collaborative approach to advancing sustainability, and tells the story of how our University community mobilised for sustainability action in 2022. As we implement the *Sustainability Plan 2030* over the next eight years, our reports will track progress towards achieving each of the targets set out in the plan.

We aim to provide our community with clear, honest and transparent commentary on the University's sustainability performance. This report is informed by Reporting Principles from the Global Reporting Initiative (GRI), and draws upon the draft standards on sustainability-related financial disclosures and climate-related disclosures developed by the International Sustainability Standards Board (ISSB). We will continue to evolve our approach to reporting to ensure that future reports accurately capture progress towards sustainability targets.

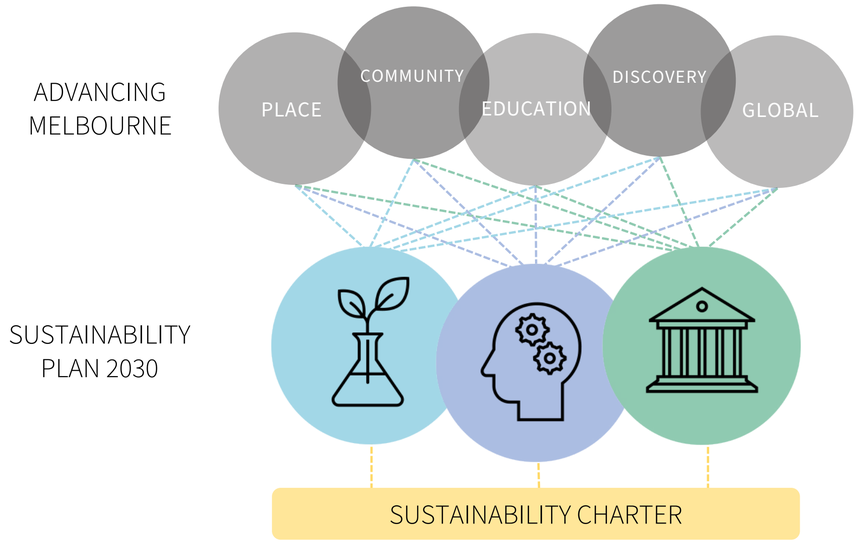
OUR SUSTAINABILITY PLAN

In 2022, the *Sustainability Plan 2030* (SP2030) was launched, providing a roadmap for how the University will demonstrate climate leadership and embed sustainability in everything we do.

The plan defines our sustainability ambitions over three intersecting domains, reflecting the University's core purpose and commitment to our people, our partners, and our place in the world.

In implementing SP2030, we will deliver on the commitments of the University's Sustainability Charter, while ensuring a sustainable path towards achieving the overarching goals set out in the University's institutional strategy, Advancing Melbourne.

In the second half of 2022, we started work on action planning to reach our sustainability targets. In the coming years we will build on these foundations, identifying opportunities to embed sustainability in business processes and strategies, and implementing initiatives that reflect the ambitions of SP2030.



Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) are a global framework designed to accelerate sustainability and climate action by 2030, encouraging unified action by governments, corporations and civil society towards a more socially just and sustainable future. We are currently exploring our impact in relation to the SDGs to understand and leverage our contribution to the Global Goals. This report highlights links between the SDGs and work under way across the University. In 2023, we will mature our reporting approach to more closely align with this framework.

Report scope

Sustainability must be deeply embedded in everything we do at the University. Environmental, Social and Governance (ESG) reporting frameworks and definitions of sustainability cover a broad scope of environmental, financial and social sustainability themes, including diversity, inclusion, employee wellbeing, gender equality, and health and safety. This report focuses on environmental sustainability and does not address these other areas of sustainability in detail as they are embedded in other institutional strategies and reports, including the University of Melbourne Annual Report

Several strategies addressing the broader spectrum of sustainability are in place or currently under development. Together with SP2030, these strategies guide and enhance the University's overall social, economic and environmental sustainability:

- *Diversity and Inclusion Strategy 2030*
- *Disability Inclusion Action Plan 2023 - 2026*
- *LGBTIQA+ Inclusion Action Plan 2023 - 2026*
- *Indigenous Strategy 2023–27* (under development)
- *Advancing Students and Education Strategy*
- *Research Strategy 2010 –2025*
- *Sustainable Investment Framework* (to be updated in 2023)
- *Modern Slavery Statement 2021* (2022 statement to be published in June 2023)

OUR OPERATING ENVIRONMENT

We live in an era of ever-increasing complexity. Climate change is intensifying social and ecological crises across the world, making urgent action to address a range of sustainability issues more critical than ever. As a University we are committed to sustainability, not just through emissions reduction goals, but in everyday operations, research, and through teaching and learning.

International climate and biodiversity action

Unprecedented natural disasters in some of the world's poorest nations made climate justice a key issue at the UN COP27 climate summit in November 2022. Our flagship climate research institute, Melbourne Climate Futures (MCF), connects and amplifies the depth and breadth of University of Melbourne research to address such issues (read more on p. 22). MCF's work is complemented by the University's Melbourne Energy Institute, which is developing pathways for Australia to achieve net zero emissions.

The COP15 UN Biodiversity Conference, held in December 2022, delivered a landmark agreement between 188 countries to halt and reverse biodiversity loss. The University is spearheading a range of biodiversity initiatives, positioning us as global leaders in the race to save threatened wildlife and plant species (read more on p. 27).

A change in government

The newly elected Federal Government strengthened Australia's climate and sustainability commitments, passing the Climate Change Bill 2022 which sets emissions reduction targets at 43 per cent below 2005 levels by 2030 and net zero by 2050.[a] Australian universities have a vital role to play in developing the workforce, research and technologies that will deliver a zero-carbon economy.[b]

Climate risks and our response

Climate change has increased the risk of bushfire, flooding, drought, rising sea levels and extreme heat across the country, including the devastating floods which affected University communities in regional Victoria in 2022. These risks increasingly threaten the operations, assets and infrastructure of our campuses and the safety of the University community. We are taking several steps to ensure we are prepared and protected (read more on p. 26).

In 2022, we commenced work to embed climate change risk into centralised risk management processes, such as our organisational risk register. We also developed a formal Environmental Management System (EMS) that outlines strategies to address pollution and other environmental risks. The EMS is compliant with requirements of the international standard for Environmental Management – ISO 14001:2015.

Material sustainability issues for the University community

As governments, businesses and the broader community accelerate climate action, sustainability is rapidly becoming one of the defining priorities of our era. Young Australians aged 15–30 identified action to limit global warming as the most important priority for our country.[c] In a 2022 Times Higher Education survey, 87 per cent of prospective international students agreed that universities have an important role to play in enhancing the sustainable citizenship of their students.[d] This was reflected in the release of the inaugural Quacquarelli Symonds (QS) world university sustainability rankings, in which the University of Melbourne received an overall ranking of 51.

Every two years, staff and students share their views and feedback regarding sustainability-related issues and initiatives on campus in the Sustainability Survey. In 2022, 1136 staff and students took part in the survey, which is designed to gauge participants' awareness of sustainability-related issues, priority areas for action, and satisfaction with initiatives in place. Based on this survey, the University community's top five priorities for sustainability action are:

- Reducing the University's carbon footprint – read about our work in this area under *Climate leadership*
- Improving waste reduction, reuse and recycling – read about our work in this area under *Just and circular economy*
- Increasing ethical purchasing and addressing modern slavery in supply chains – read more about our work in this area under *Just and circular economy*
- Raising awareness of sustainability issues within the University community – read more about our work in this area under *Community of Sustainability Learners and Practitioners*
- Using the campus as a testing ground for sustainability activities – read more about our work in this area under *Campuses as living laboratories*

These results will be used; to evaluate existing sustainability programs, develop future initiatives, and track our progress towards targets in SP2030. Read more in the 2022 Sustainability Survey Report

SUSTAINABILITY GOVERNANCE

The University's sustainability governance structure supports coordinated implementation of our strategy, providing accountability and keeping us on track towards achieving our sustainability goals.

Sustainability Advisory Group

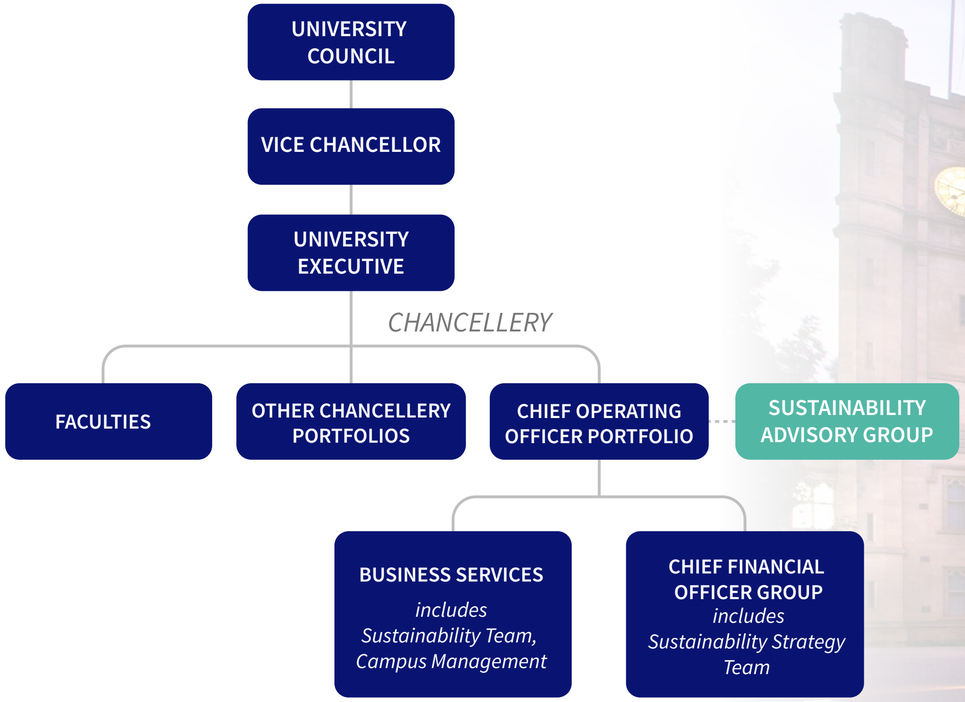
The Sustainability Advisory Group (SAG) was convened in 2022 to guide development and implementation of the University's Sustainability Framework. SAG builds on the work of the previous Sustainability Executive, which provided leadership to deliver the University's sustainability agenda under the *Sustainability Plan 2017–2020*. SAG membership includes senior University executives, academic and professional staff, and student representatives. The group meets quarterly and provides recommendations on emerging sustainability risks, issues and opportunities to the Chief Operating Officer, Paul Axup.

We gratefully acknowledge the University's former Chief Operating Officer, Allan Tait, for his leadership in progressing our sustainability agenda and actions over a number of years, culminating in the release of the ambitious SP2030.

Our sustainability teams

We have two dedicated sustainability teams at the University, responsible for strategy and operations respectively:

- The Sustainability Strategy Team, established and led by Katie Mee, coordinates implementation of SP2030, including reporting and governance
- The Sustainability Team, Campus Management, led by Sue Hopkins, leads campus operational sustainability and internal engagement and communications, including waste, water, energy, biodiversity, transport and sustainable event management.



SUSTAINABILITY GOVERNANCE

Embedding sustainability across the University

Four faculties have established leadership roles to embed sustainability into their strategies and business planning:

- In 2021, Faculty of Science appointed Associate Professor Robyn Schofield as Associate Dean, Environment and Sustainability
- In 2022, Faculty of Medicine, Dentistry and Health Sciences appointed Dr Forbes McGain as Associate Dean, Healthcare Sustainability and Dr Eugenie Kayak as Enterprise Professor in Sustainable Healthcare in the Department of Critical Care, Melbourne Medical School
- The role of Assistant Dean, Sustainability was established in the Faculty of Architecture, Building and Planning, with Dr James Helal appointed early in 2023
- The role of Associate Dean, Sustainability was established in Melbourne Graduate School of Education, with recruitment commencing in early 2023.

The University's Sustainability in Curriculum Fellows, established in 2019, continued in their roles in the Faculties of Arts, Faculty of Engineering and Information Technology, Faculty of Business and Economics, and the Melbourne Graduate School of Education.

Our flagship research institutes also continued to advance sustainability and climate-focused research in 2022. These include Melbourne Climate Futures (MCF), the Melbourne Energy Institute (MEI), the Indigenous Knowledges Institute (IKI), the Melbourne Social Equity Institute (MSEI), and the Melbourne Centre for Cities (MCC). These institutes have been included as priority areas for philanthropic giving to further support the embedding of sustainability in our research programs. Read more about sustainability and climate-focused research institutes and initiatives on p. 21 - *Discovery*.

Associate Professor Robyn Schofield

Associate Dean, Environment and Sustainability

Faculty of Science

Dr Forbes McGain

Associate Dean, Healthcare Sustainability

Faculty of Medicine, Dentistry and Health Sciences

Dr Eugenie Kayak

Enterprise Professor in Sustainable Healthcare

Department of Critical Care, Melbourne Medical School - Faculty of Medicine, Dentistry and Health Sciences

Dr James Helal

Assistant Dean, Sustainability

Faculty of Architecture, Building and Planning

TARGETS AND METRICS

SP2030 does not outline a detailed list of actions for achieving our targets and aspirations. When it comes to sustainability, setting specific actions when a strategy is introduced risks missing opportunities to raise ambition in response to emerging trends and technologies. Work is ongoing to determine the most appropriate indicators to report progress against each target, which we will outline in detail in the 2023 Sustainability Annual Report, to be published in May 2024. In this respect, the structure of SP2030 enables greater responsiveness to new ideas, initiatives and innovation over the course of its delivery, and supports transparent and rigorous reporting.

OUR IMPACT

Multi-faceted sustainability innovation

Student Precinct Project

The Student Precinct Project encompassed seven new or refurbished buildings and extensive landscaping. The first co-created major project in the University's history, the project placed student experience at its centre, with students actively informing the design, governance, and operations of the site. As a result, sustainability initiatives are integrated into the architectural and landscape response, construction, and activation of the site.

The Arts and Culture building opened in 2022 as part of the Student Precinct Project. The building, featured on the cover of this report, incorporated sustainability infrastructure and circular economy principles in its design and construction. Now completed, the building is a cultural hub for the University community.

Read more on our website →

Creativity and Community Resilience Studio

Dookie campus

The Creativity and Community Resilience Studio, launched in 2022, is a research collaboration between the University's Centre of Visual Art (Faculty of Fine Arts and Music and Faculty of Arts) and the Victoria Drought Resilience Adoption and Innovation Hub. The studio team, comprising University researchers and local communities in the Shepparton region, held four workshops in 2022 using creative practice, imagination, and playfulness to spark discussions about resilience in the face of climate change. Drawing on the food and agricultural focus of the Drought Hub, the workshops uncovered shared concerns about food security and climate change among a broad range of stakeholders.

Read more on our website →

Theatrum Botanicum, The Theatre of Plants

Undergraduate subject

In 2022, Bachelor of Fine Arts Dance and Production Students from the Victorian College of the Arts created Theatrum Botanicum, a large-scale dance work exploring botany, soil ecology and gardening. Over 12 weeks, dance students worked with urban farmer, dancer and photographer Gregory Lorenzutti to create a garden on the grounds of the Southbank campus, culminating in a public performance over five nights in June.

(Photo by Gregory Lorenzutti)

Read more on our website →

Sustainability – Hope for the Earth?

Undergraduate subject

This interdisciplinary undergraduate breadth subject in the Faculty of Science introduces students to holistic models of sustainability. The subject fosters critical thinking about the systems that progress sustainability, as well as those that uphold unsustainable practices. Academics and students discuss the realities of intensifying environmental and social crises, acknowledging the emotional distress that many feel in the face of these challenges and exploring opportunities to develop a sense of 'active hope' through individual and collective action.

Read more on our website →

Melbourne Connect Living Laboratory

Parkville campus

Launched in 2021, Melbourne Connect is a hub of climate and sustainability activity at the University. The precinct is used by the Faculty of Engineering and Information Technology (FEIT) and the Faculty of Architecture, Building and Planning (ABP) as a 'living laboratory' – a test-bed for innovative sustainability monitoring technologies and processes. In 2022, ABP-based Sustainable and Healthy Environments Lab led a pilot study for FEIT to understand how the faculty's workplaces in Melbourne Connect are used and experienced by occupants post-pandemic. The living lab provides students and researchers with hands-on experience in conducting diagnostic and performance evaluation of buildings and indoor environments.

Read more on our website →

International Climate Collaboration

COP27, Egypt

The University engages with local and international partners and collaborators to highlight the various ways climate change will affect Australia and its neighbours, and potential solutions. In December 2022, University researchers participated in a range of events at the UN climate conference COP27, playing a leading role at a forum focused on creating more positive climate outcomes. Led by Melbourne Climate Futures (MCF), the University hosted an official side event exploring key adaptation needs, priorities and options in Africa and the Indo-Pacific region. MCF Academy Fellow, Dr Kate Dooley, presented the Land Gap Report, which looked at how governments are using land in climate pledges.

(Photo by IISD/ENB)

Read more on our website →

DOMAIN

Amplifying action through campus and communities

OUR COMMITMENT

This is the critical decade for climate action. If we are to successfully limit climate change and build a more sustainable world, it is essential to effectively mobilise our communities and resources to accelerate this process.

At the University, this means integrating our sustainability efforts across campus operations, research, teaching and learning, and engagement with partners to accelerate progress.

We are committed to amplifying our collective sustainability impact and demonstrating leadership in climate action. We have expanded our carbon inventory to include more indirect (Scope 3) emissions to better address the full impact of our activities, and are on track to achieve carbon neutrality by 2025.

Through our living laboratories, we are fostering collaboration between students and staff to co-create solutions and experiential learning opportunities that engage with the social, environmental and economic dimensions of sustainability. We are supporting the University community to enhance our collective sustainability knowledge and practices.

Integrating these efforts enables us to maximise our overall impact.

1. Climate leadership

ASPIRATION TO 2030

Through demonstration of its operations, the University has catalysed ambitious climate action by others.

UN SDGS

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University is certified carbon neutral by 2025.[1]	• A comprehensive greenhouse gas inventory (GHGI) for 2022 has set the baseline for carbon emission reduction actions to achieve this target
The University has achieved climate positive status by 2030.	• This will follow achievement of 2025 carbon neutral target (above)

1 *Climate Active carbon neutral certification*

GREENHOUSE GAS EMISSIONS

We are committed to understanding and addressing the full scale of our carbon emissions. In 2022, the University commissioned carbon and energy management specialists, Pangolin Associates, to provide a comprehensive, Climate Active compliant greenhouse gas inventory (GHGI) covering our direct and indirect emissions.[2] For the first time, this encompassed a review of our entire procurement expenditure of over $1 billion across all purchasing categories.

As a result, our reported indirect (or scope 3) emissions include categories previously unreported, such as professional services; and products, materials and equipment. Emissions from these categories have been estimated based on the amount of money spent in each category.

Emissions from construction and capital works have also been included in the GHGI. Using the material life cycle analyses (LCAs) undertaken for the Student Precinct Project's Student Pavilion and Arts and Cultural Building on Parkville campus, we piloted an approach for accounting for the upfront carbon of construction projects. The balance of our construction emissions was then estimated using procurement expenditure data.

This comprehensive process has enabled us to understand our baseline emissions across all categories, as we work towards the goal of carbon neutrality by 2025.

Scope 1 (or direct) emissions are primarily generated from use of natural gas for heating and hot water. To reduce these emissions, we are developing a program to replace gas infrastructure with equipment that uses electricity. Building on an audit of our Parkville natural gas infrastructure, conducted by consultants in 2021, a prioritisation matrix was created to help plan the replacement of the extensive gas assets owned by the University. Due to the complexity of many of these projects, including a number of 'heating precincts' where a gas boiler services several buildings across a large area, this program is expected to be rolled out over the next decade, with high-impact projects prioritised. In 2022, the University undertook a number of pilot projects, including the replacement of 13 gas-fired domestic hot water units across 10 buildings with electric heat pumps, and scoping a project to fully electrify the Burnley campus. We will continue to develop and roll out our long-term electrification program in 2023.

We achieved zero net emissions from electricity for the second year in 2022. By voluntarily retiring 49,575 renewable energy certificates (LGCs), sourced primarily from our wind farm Power Purchase Agreements (PPAs), we ensured that 64 per cent of our total electricity consumption was from renewable sources.[3]

2 ***Greenhouse Gas emissions scopes: Scope 1*** *emissions are direct greenhouse gas emissions that occur from sources owned or controlled by the organisation, for example natural gas consumption.* ***Scope 2*** *emissions are greenhouse gas emissions generated from purchased energy consumed by the organisation, for example electricity 3.* ***Scope 3*** *emissions are indirect greenhouse gas emissions and are the consequence of an organisation's activities but emitted outside the organisation's direct control, for example purchased goods and services, and business travel.*

3 *Includes voluntary and mandatory LGC retirement*

GREENHOUSE GAS EMISSIONS BY CATEGORY 2022

Category	Direct scope 1 emissions (tCO_2-e)	Indirect scope 2 emissions (tCO_2-e)	Indirect scope 3 emissions (tCO_2-e)	2022 total emissions (tCO_2-e)
Stationary fuels (gas, LPG)	15,098	-	1,202	16,300
Synthetic greenhouse gases (refrigerants)	1,501	-	-	1,501
Transport fuels (fleet vehicles)	253	-	63	315
Electricity	-	34,444	4,559	39,003
Professional services	-	-	40,413	40,413
Construction and repair services	-	-	39,293	39,293
Products, materials and equipment	-	-	22,839	22,839
Business air travel (flights)	-	-	15,581	15,581
ICT services	-	-	11,339	11,339
Office supplies and services	-	-	8,159	8,159
Employees (commuting, work from home, etc)	-	-	7,345	7,345
Advertising and marketing Services	-	-	5,826	5,826
ICT equipment	-	-	3,594	3,594
Food and beverage	-	-	2,597	2,597
Business travel (other)	-	-	2,272	2,272
Postage, courier and logistics	-	-	1,087	1,087
Waste	-	-	1,077	1,077
Water and wastewater	-	-	946	946
Gross Total Emissions	**16,852**	**34,444**	**168,192**	**219,488**
Carbon offsets for electricity				-39,003
Carbon offsets for flights				-15,581
Net Total Emissions				**164,904**
Carbon offsets for fleet emissions (GreenFleet: not Climate Active compliant, FY21/22)				-754

1. Climate leadership (continued)

Residual emissions from electricity for 2022 totalled approximately 39,000 tCO_2-e, which were offset by purchasing a portfolio of carbon offsets (see Table on pg. 13).

Carbon emissions from business flights increased from less than 1,000 tCO_2-e in 2021 to 15,581 tCO_2-e in 2022. While this is still over 40 per cent lower than pre-pandemic levels in 2019, we expect flights to increase further in 2023 as travel continues to rebound. Carbon emissions from flights were fully offset.

Our vehicle fleet generated carbon emissions of 315 tCO_2-e, which was more than was offset by the purchase of 754 tCO_2-e of carbon offsets from Greenfleet. These offsets directly fund native reforestation projects around Australia. Greenfleet offsets are not Climate Active certified, hence they are not included in our GHGI.

ENERGY

With COVID-19 lockdowns coming to an end, our students and staff returned to campus in 2022, resulting in a 6 per cent increase in energy consumption.[4] Despite this, our energy use remained below 2019 levels. We purchased 67 GWh of electricity through our Power Purchase Agreements with the Murra Warra and Crowlands wind farms.

Across the University, 44 buildings have solar systems installed, equating to over 11,000 PV panels. These panels generate over 3 GWh[5] of clean energy for our campuses each year. This is equivalent to powering 650 houses for a year, and prevents around 3000 tonnes of carbon from being released into the atmosphere.

Our Smart Campus Energy Upgrades program continued in 2022. We invested approximately $6 million in LED lighting and chiller upgrades, on-site solar PV installations, and heating, ventilation and air conditioning optimisation. These projects are expected to result in a saving of approximately 3.8 GWh per annum of electricity, enough to power around 820 homes for a year.

4 *Includes purchased electricity, on-site electricity generation, natural gas and LPG consumption*

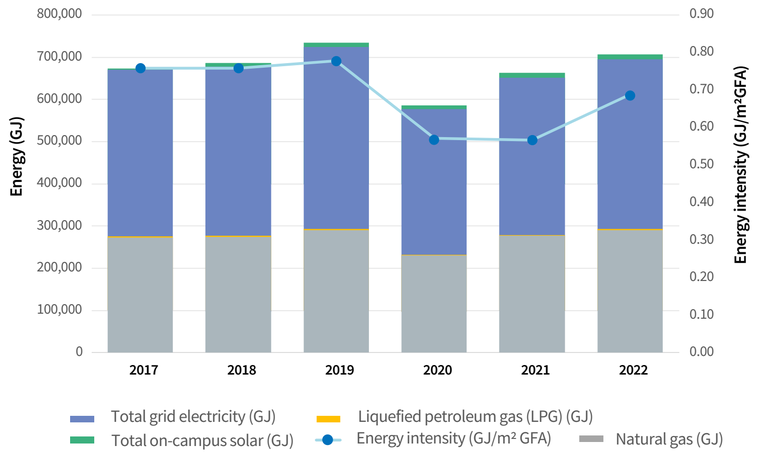
5 *MWh = megawatt hour; kWh – kilowatt hour; 1MWh = 1000 kWh*

PURCHASED CARBON OFFSETS AND ALLOCATION

Description	Type/ Standard	Project	Location	Offsetting electricity (tCO_2-e)	Offsetting flights (tCO_2-e)	Offsetting fleet (tCO_2-e)
Victorian biogas to energy projects (various projects)	ACCU	Various projects	Victoria	19,683		
Hydropower Indonesia	Verra/VCS	Musi run-of-river hydropower project	Indonesia	12,395		
Biomass Power Generation	Verra/VCS	Liucheng Biomass Power Generation Project	China	2,975		
Eco Australia - Australian forest conservation units & Chinese hydropower units	ABU + Gold Standard	Mount Sandy Conservation Project & Hexhou Micro Hydro	South Australia (ABU) & China (GS)	2,479		
Wollert Landfill Gas Project	ACCU	Wollert Landfill Gas Project to capture and convert landfill gas to electricity	Victoria	991		
Nullawarra Station #2 Native Forest Protection Project	ACCU	Nullawarra Staion #2 Project	NSW	317		
CECIC HKE Zhangbei Lvnaobao Wind Power Project	Verra/VCS	CECIC HKE Zhangbei Lynaobao Wind Power Project	China	163	15,581	
Greenfleet (FY 21/22)						754
Total				**39,003**	**15,581**	

For more detail on these carbon offsets and projects, please visit our website.

Energy consumption by source



1. Climate leadership (continued)

STAFF COMMUTING PATTERNS

We conducted a staff survey on commuting and working from home (WFH) habits in 2022, to enable us to estimate emissions from these activities, determine the sustainability of current commuting practices, and direct our efforts to encourage more sustainable modes of transport. Over 1900 staff members participated in the survey, providing 644 suggestions to support active transport on campus.

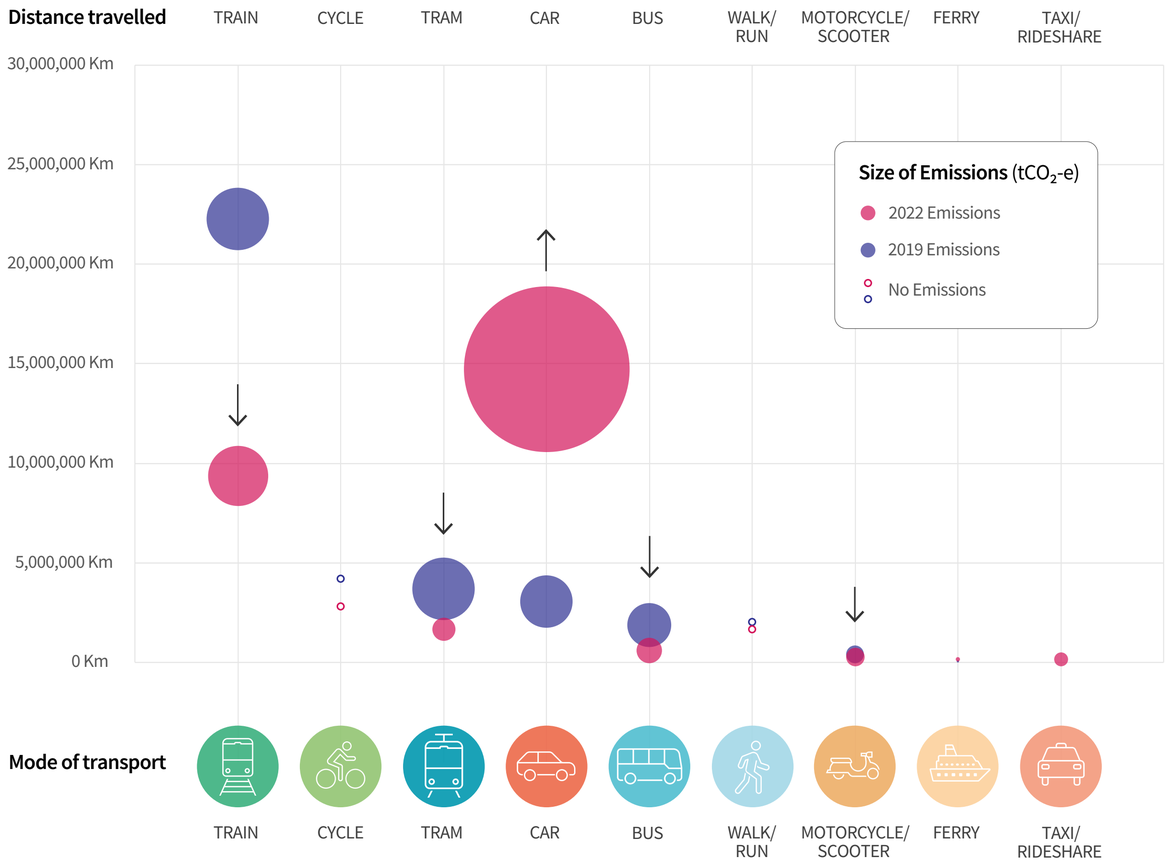
This was the first time that staff WFH patterns were included in the survey, reflecting how the pandemic has changed our ways of working. The emissions associated with WFH were estimated at 2313 tCO_2-e for 2022.

The survey revealed that the overall volume of greenhouse gas emissions from staff commuting has increased since the last survey in 2019. This is the result of significantly more staff commuting by car than before the pandemic. Other more sustainable modes of commuting, such as public transport, have declined correspondingly. We anticipate emissions from commuting by car to reduce somewhat in 2023, as we return to normal travel patterns. As part of our efforts to support sustainable transport, we have initiated development of an electric vehicle (EV) fleet strategy and EV infrastructure strategy in 2023.

UPGRADING CYCLING INFRASTRUCTURE ON OUR CAMPUSES

With an increase in ownership of e-bikes and e-scooters, we are making more secure bike parking spaces available across our campuses. In 2022, we retrofitted a disused space on Grattan Street on the Parkville campus to create a new e-bike and scooter parking and charging station for staff and students. This new facility provides secure parking and charging for up to 10 e-bikes and 10 e-scooters. We also installed three new bike repair stations and 12 bike hoops on the Werribee, Creswick and Dookie campuses to provide more facilities for active transport users at our regional campuses.

Staff commuting CO_2 emissions and distance by transport mode 2019 and 2022



2. Campuses as living laboratories

ASPIRATION TO 2030

The University's campuses and operations enable real-world opportunities to develop, test and apply sustainability skills and solutions.

UN SDGS

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University has curated living labs covering the priority areas of this Plan.	• Professional and academic staff collaborated on sustainability-focused research and teaching and learning that addressed sustainability issues on our campuses

CONTRIBUTING TO TEACHING AND LEARNING

Academics have used the SP2030 as a focal point for guiding teaching and learning activities in 2022. Additionally, professional staff delivered guest lectures, were 'clients' for assignments, and hosted internships to give students practical experience and insights into how the University responds to sustainability issues. Professional sustainability staff collaborated on at least 14 different subjects in 2022, and supported 13 students from five faculties to intern with Campus Management and work on Sustainability-related projects.

Examples include:

- Integration of Environmental Management System into a new graduate coursework subject focused on the international standard for environmental management – ISO 14001
- Providing Master of Architecture students with an overview of the University's sustainable buildings
- Sharing insights on coordinating implementation of SP2030 with Management and Breadth students
- Offering 13 student internships focused on biodiversity, transport, energy, engagement and asset management.

CONTRIBUTING TO RESEARCH

Our campuses and operations present opportunities for researchers to collaborate with professional staff and explore real-world sustainability challenges. In 2022:

- Selected staff completed a survey by Dr. Mehrdokht Pournader and her collaborators on whether procurement managers become 'morally disengaged' from acts of modern slavery happening in their extended supply chain
- Planning continued for development of the new Fishermans Bend campus to feature several living labs, with progress made in the areas of energy, water and construction technology
- Staff and students from the Sustainable and Healthy Environments Lab installed sensors and undertook post-occupancy surveys in Faculty of Engineering and Information Technology spaces in Melbourne Connect
- Selected staff were interviewed by PhD candidate Stella Peng, who is researching how IT can enable sustainable innovations.

What are living laboratories?

In the University of Melbourne context, living laboratories are teaching and research initiatives that leverage the environments of our campuses and precincts, both physical and virtual, as sites that enable sustainability research and applied learning in real-world settings by staff, students and partners. Potential sites include campus landscapes, buildings and infrastructure, data, systems and processes.

ASPIRATION TO 2030

The University is a thriving community that shares, co-creates and practices sustainability knowledge and action.

UN SDGS

3. Community of sustainability learners and practitioners

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University's faculties and portfolios support and learn from each other to embed sustainability in practice and in learning – formal, nonformal and informal	• Increase in number of sustainability-focused staff appointed in 2022, including Associate Deans, Sustainability in Faculty of Science and Faculty of Medicine, Dentistry and Health Sciences
The University community shows increased uptake of positive sustainability skills, knowledge and behaviours through non-formal and informal learning	• Members of our community participated extensively in sustainability activities and volunteered in campus operations, faculties and University-managed student accommodation
The University offers a suite of student-centered, formal and non-formal applied sustainability learning opportunities, informed by inter and trans-disciplinary approaches	• We launched the Melbourne Plus program, with 29 students earning Sustainability Advocacy credentials • The Wattle Fellowship continued for a successful second year, welcoming a new cohort of student sustainability leaders
Academic and professional staff have increased their participation in and contribution to formal and non-formal learning to develop their general and role-specific sustainability skills	• Staff across our nine faculties and Chancellery organised a range of sustainability-focused events, training and collaborative activities, including 112 on-campus sustainability events and presentations
The University has increased its engagement with alumni regarding sustainability	• We held 27 climate, energy and sustainability-focused events, attended by 2064 alumni, donors and friends, and made graduation ceremonies more sustainable

FACULTIES EXPLORE THEIR UNIQUE CONTRIBUTIONS TO SUSTAINABILITY

Across our faculties, academic and professional staff are working together to understand how faculties and individuals can contribute to the University's sustainability initiatives. In 2022:

- The first in a series of interprofessional education workshops, presented by the Faculty of Medicine, Dentistry and Health Sciences, explored past, present and future approaches to sustainability and planetary health education
- A sustainability roundtable event, presented by the Faculty of Engineering and Information Technology, explored the faculty's response to SP2030 and was attended by over 100 staff and students
- An Action on Environment and Sustainability Science Conference for graduate students was held by the Faculty of Science.

OUR ACADEMICS ADVANCE SUSTAINABILITY IN THEIR OWN FIELDS

As we work towards advancing sustainability globally, its specific role and function in every discipline must be explored. In 2022, faculties collaborated to explore innovative approaches to sustainability in research and professional practice.

- The Melbourne School of Population and Global Health and the Department of Critical Care, Melbourne Medical School, sponsored the Doctors for the Environment Annual Conference at Parkville campus. Over 100 doctors and medical students from across Australia attended the event to discuss the convergence of climate action and health.

Student climate podcast wins national award

The Yarn is a student podcast which won the Climate Award at the Australian Podcast Awards for environment coverage, which the judges described as bringing "*the freshest voices and brightest ideas to the climate conversation, using clever journalism and heart to convey powerful ideas.*" It drew on events the Centre for Advancing Journalism organized for the Being Human festival, including a climate panel with Guardian journalists and Stella prize winner poet Evelyn Araluen, and interviews with people taking action on the climate from ten-year old Spencer who is campaigning to save the glossy black cockatoo to a 67-year old Extinction Rebellion activist.

Photo: The team behind the podcast accepted the Climate Award (L-R - Jordyn Beazley, Angus Thomson, Louisa Lim and Thomas Phillips)

3. Community of sustainability learners and practitioners (continued)

- Climate, Art, and Digital Activisms Festival of Ideas, hosted by academic staff from Melbourne Graduate School of Education, brought together community members, interdisciplinary artists, scientists, activists and educators to explore their role in creating a just and sustainable future.
- Within the Melbourne Law School, sustainability-focused staff across several research hubs actively contributed to the faculty's research impact, including environmental law scholars and teachers in the Centre for Resources, Energy and Environmental Law.

SUSTAINABILITY ENGAGEMENT ON CAMPUS

We hosted 112 on-campus sustainability events and presentations for students and staff with 3,648 attendees. This included the first 'Ride2Uni' event in three years – a zero-waste breakfast to encourage more students and staff to commute by bike, attended by 139 people.

Now in its sixth year, our Green Impact program saw 350 registered teams and individuals across five campuses complete 1,241 sustainability actions. Forty-two student auditors reviewed and collated the achievements of each team, developing their leadership skills and helping to keep Green Impact participants honest. We celebrated the achievements of Green Impact participants at the 2022 Sustainability Awards, an event attended by over 60 staff and students.

Throughout the year, 205 staff and student volunteers contributed 1,062 hours of their time to on-campus sustainability projects, planting almost 2,000 trees, shrubs and grasses across three campuses, providing waste education at events, and helping to facilitate the Green Impact program.

Students living in University-managed accommodation participated in several sustainability events, including planting days and beach cleanups. Several residences also provided recycling bins for household items that are difficult to recycle, such as blankets, pillows, and toothbrushes.

PROACTIVE LEARNING OUTSIDE THE CLASSROOM

The new Melbourne Plus program, launched in September 2022, offered students opportunities for co-curricular learning in Sustainability Advocacy, Community Engagement, People Leadership and Innovation. In 2022, 29 students earned Melbourne Plus credentials across six activities under the Sustainability Advocacy stream , including the Wattle Fellowship and Green Impact programs. Sustainability was also embedded in activities under the People Leadership and Community Engagement streams, giving students opportunities to develop skills in leadership and collaboration while working directly on environmental and social issues.

The Wattle Fellowship is a year-long development program for student sustainability leaders. Our 2022 Wattle Fellows represent the full breadth of academic disciplines at the University. Read more about the 2022 Wattle Fellowship cohort and their sustainability projects.

ALUMNI ENGAGEMENT ON SUSTAINABILITY

Alumni, donors and friends engaged in 27 climate, energy and sustainability-focused events in 2022, with 2064 attendees recorded. These events explored a broad range of topics, including climate change impacts in the Pacific, environmental politics on the global stage, energy futures, bushfire resilience, and better global health outcomes.

"I didn't even realise there were so many different ways of contributing to sustainability. It really inspired me to reflect on my sustainability practices."

— Melbourne Plus student participant

DOMAIN

Mobilising knowledge for action

OUR COMMITMENT

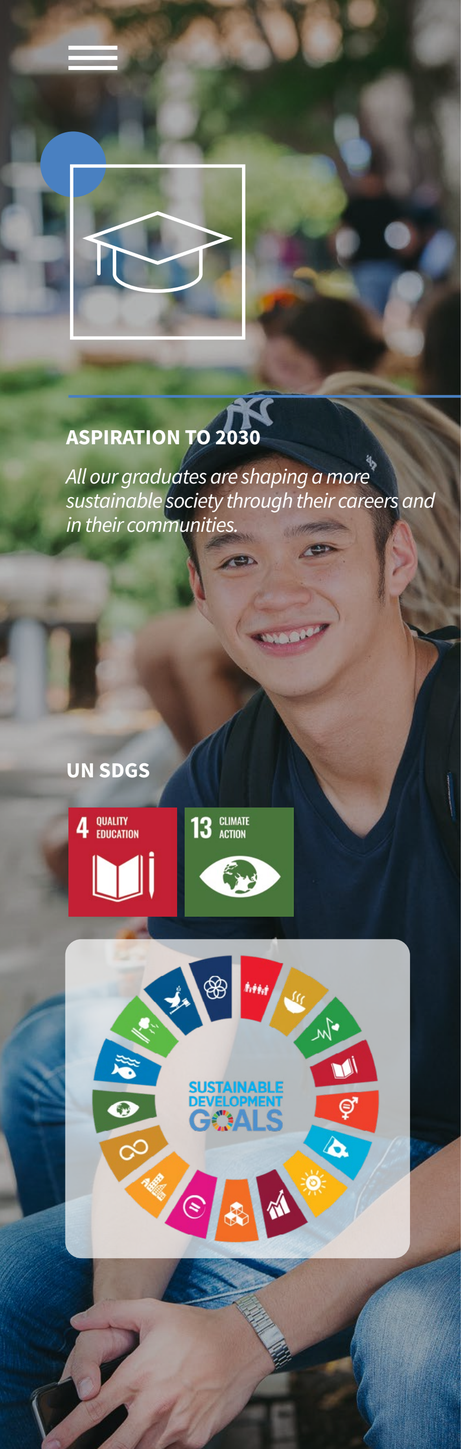
The University is committed to advancing and developing expertise across the breadth and depth of disciplines. We recognise the unique role we play in bringing people together to understand and solve sustainability challenges, and seek to do this across all activity areas.

We are committed to advancing recognition of Indigenous knowledge systems, and to further strengthening our relationships with Indigenous peoples and partners.

Our students will develop deep disciplinary and interdisciplinary perspectives on the complex social and ecological challenges of our era, and will learn how to support sustainability throughout their careers.

Sustainability research conducted at the University informs climate action globally, including through contributions from our researchers to the Intergovernmental Panel on Climate Change, and through the work of our research institutes. We are working to ensure that all University research activities are undertaken in a sustainable manner.

Furthermore, our commitment to sustainability is embedded in all new and existing community partnerships, in Melbourne, across Australia and internationally.



4. Graduates for a sustainable future

ASPIRATION TO 2030

All our graduates are shaping a more sustainable society through their careers and in their communities.

UN SDGS

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
Sustainability is integrated into curriculum to an extent that conscientiously extends, beyond a base threshold, each discipline's (and associated professions/industries') knowledge of the helpful and harmful impacts it has for the environmental and human systems we depend on	• Sustainability-focused learning has increased across our faculties, with four new courses and subjects launched in 2022 • Sustainability-focused staff appointments also increased, including Associate Deans, Sustainability in Faculty of Science and Faculty of Medicine, Dentistry and Health Sciences
Graduates have increased capabilities to shape, lead and succeed in the careers, communities and industries of sustainable societies (year-on-year)	• Faculties are mapping sustainability in the curriculum, launching and developing new sustainability-focused subjects and programs • Sustainability has been identified as a touchstone in the new *Advancing Students and Education* Strategy

MAPPING SUSTAINABILITY IN THE CURRICULUM

Across the University, academics and teaching staff are actively exploring how best to embed sustainability in the curriculum based on the knowledge and practices of each discipline, for example:

- **Melbourne Law School** offered five sustainability-focused subjects in the Juris Doctor and 11 in the Master of Environmental Law program. Within the Sustainability Business Clinic, students provided legal research support to the Coalition for Community Energy.
- **Faculty of Architecture, Building and Planning** mapped sustainability across their curriculum based on criteria from the Green Building Council of Australia, and commenced the process of significantly reorienting the Master of Architecture studio program around sustainability in response to new accreditation criteria.
- **Melbourne Graduate School of Education** embedded sustainability throughout its Master of Teaching and found that all students had some level of exposure to sustainability in their course content.
- **Faculty of Engineering and Information Technology** mapped course content from 1254 subjects across six schools in relation to the UN Sustainable Development Goals (SDGs).
- **Faculty of Science's** Office for Environmental Programs mapped over 200 sustainability-related postgraduate subjects from across the University to form a flexible and holistic Master of Environment program.

EXPANDING OUR SUSTAINABILITY CURRICULUM

Several new subjects and courses with sustainability as a focus or strong component launched in 2022, including:

- 'Today's Science, Tomorrow's World', a Discovery subject for all first year Bachelor of Science students
- Sustainable Commerce subject for all first-year students in the Bachelor of Commerce
- Graduate Certificate in Climate Change and Health in the Faculty of Medicine, Dentistry and Health Sciences, with the first cohort of students commencing in 2023
- First-year Discovery subject in the Faculty of Arts which encourages students to consider the real-world impact of their collaborative research projects

University alum leading social change for sustainability

Ariadne Gorring: *GCert Education 2019; M Social Change Leadership 2012*

Ariadne Gorring is co-CEO of Pollination Foundation, the not-for-profit arm of Pollination that supports community to design and deliver nature and climate solutions.

The University of Melbourne alum graduated from the Atlantic Fellowship Program in 2018. Through the program, Ariadne completed studies in social change leadership in her foundational year before joining a community of change-makers from across the globe.

Ariadne is now focused on co-designing initiatives through Pollination Foundation to strengthen the capability of Indigenous Peoples and local community organisations to access and participate in environmental market enterprises.

Learn more about Ariadne's experience as an Atlantic Fellow.

5. Discovery

ASPIRATION TO 2030

We aspire to be justifiably regarded as a place where students and academics do the highest-quality sustainability research that addresses difficult questions and major challenges.

UN SDGS

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
Sustainability research is integrated with campus operations and planning, to be an international exemplar of a sustainable community	• Professional and academic staff collaborated on sustainability research, teaching and learning that addressed sustainability issues on our campuses • Our flagship sustainability and climate research institutes have been identified as priority areas for philanthropic giving, to support the embedding of sustainability in research programs
The highest-quality research is conducted that contributes to knowledge, action, and impact across the disciplinary and interdisciplinary dimensions of sustainability	• Our researchers contributed to advancing knowledge across a broad spectrum of sustainability and climate issues, including as contributors to the Intergovernmental Panel on Climate Change (IPCC) and in sustainability-focused research institutes • We are exploring tools to profile the breadth of our research activities and impact in relation to the UN Sustainable Development Goals
Researchers make considered decisions on the sustainability impact of their research practices and activities	• We are developing processes to encourage sustainable research practices, including engaging the University community on the issue of air travel and requiring applicants to the MCF grants project to calculate the carbon footprint of their projects

INFORMING POLICY AND PUBLIC KNOWLEDGE

University researchers played an important role in informing public policy and debate in 2022, including contributing to the Intergovernmental Panel on Climate Change (IPCC) Assessment Report 6 (AR6); and the World Meteorological Organisation (WMO) and United Nations Environment Programme (UNEP) Scientific Assessment of Ozone Depletion.

One way to understand impact on public knowledge is via Altmetric (see 2022 example on far right), which tracks the attention that research outputs receive online from blogs, reference managers, and traditional and social media.

PROFILING THE UNIVERSITY'S ACTIVITY AND IMPACT RELATED TO THE SUSTAINABLE DEVELOPMENT GOALS

We are mapping research outputs to SDGs, using research publication databases and their partner analytical tools including SciVal (Scopus), Incites (Web of Science) and Almetric. The findings from SciVal, which are used in the THE and QS rankings, are shown here as an illustration in relation to the number of citations of the University's scholarly outputs. Note that SciVal does not currently map publications to SDG 17.[e]

In terms of impact, SciVal's field-weighted citation indices indicate that the University is performing approximately 1.5–2.3 times better in terms of citations than similar publications from other research organisations.

We are continually developing our analytical processes, to account for the positive bias of tools which identify research related to achieving the SDGs but do not identify research which may hinder progress towards achieving the goals.

Contribution to global climate reports

IPCC – Climate Change 2021: The Physical Science Basis

Prof Malte Meinshausen – Lead author, 'Chapter 1: Framing, context, methods'

Dr Ebru Kirezci (Honorary), Mr Jared Lewis, Dr Zebedee Nicholls, Prof Malte Meinshausen – Contributors

IPCC – Climate Change 2022: Impacts, Adaptation and Vulnerability

Prof Kathryn Bowen – Lead author, 'Chapter 7: Health, wellbeing and the changing structure of communities'

Dr James Camac, A/Prof Celia McMichael – Contributors

IPCC – Climate Change 2022: Mitigation of Climate Change

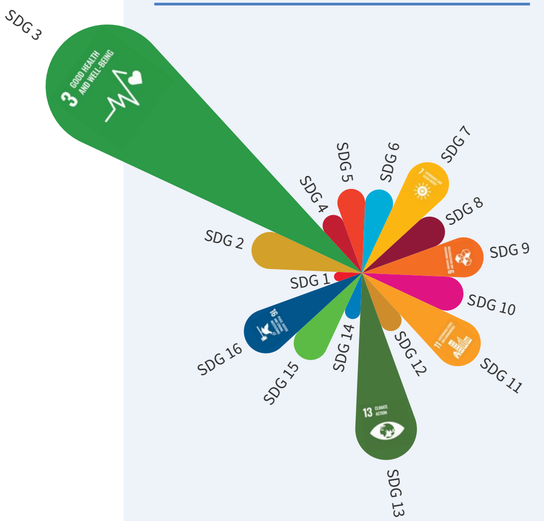
Prof Jacqueline Peel - Lead Author, 'Chapter 14: International Cooperation'

Dr Zebedee Nicholls, Prof Malte Meinshausen, Prof Jacqueline Peel – contributors

WMO/UNEP – Scientific Assessment of Ozone Depletion: 2022

A/Prof Robyn Schofield – Co-author, 'Chapter 7 Scenarios and Information for Policymakers'

SciVal SDG Mapping



Altmetric Explorer: 2022 research output examples

University-affiliated researchers contributed to research outputs which received high levels of engagement from traditional and social media in 2022. For example:

[The impact of coffee subtypes on incident cardiovascular disease, arrhythmias, and mortality: long-term outcomes from the UK Biobank](#) **(SDG 3)**

UoM Contributors: Jonathan Kalman, Geoffrey Lee, Peter Kistler, Joseph (Joe) Morton, and Liang-Han (Han) Ling

[Realization of Paris Agreement pledges may limit warming just below 2 °C](#) **(SDG 13)**

UoM Contributors: Zebedee Nicholls and Malte Meinshausen

[The minimum land area requiring conservation attention to safeguard biodiversity](#) **(SDG 15)**

UoM Contributors: Brendan Wintle

5. Discovery (continued)

ADVANCING SUSTAINABILITY AND CLIMATE RESEARCH

The University's sustainability and climate-related interdisciplinary research institutes include:

- **Melbourne Climate Futures**
  Connects and amplifies the depth and breadth of University of Melbourne research, creates a portal to share ideas and collaborate on real action, and empowers the next generation of climate activists
- **Melbourne Energy Institute**
  Delivers influential, interdisciplinary research on the transition to a clean energy system, working with community, industry and government on some of the world's most pressing energy challenges
- **Indigenous Knowledge Institute**
  Aims to advance research and education in Indigenous knowledge systems, building on activities already under way at the University to become a global leader in Indigenous knowledge research and education
- **Melbourne Social Equity Institute**
  Conducts and facilitates interdisciplinary research that addresses the causes and consequences of social inequities and advances knowledge about effective ways to respond.
- **Melbourne Centre for Cities**
  Fosters responsible and cosmopolitan city leadership, and the information it needs, in an interconnected and increasingly urbanised planet

A CROWD-BASED DIGITAL DISCUSSION ABOUT THE ENVIRONMENTAL IMPACTS OF STAFF AIR TRAVEL

In September 2022, all students and staff were invited to have their say in an online discussion about how, collectively, we should navigate the issue of staff air travel emissions.

Using an innovative crowdsourcing platform, Polis, 173 people contributed 326 statements and voted almost 23,000 times, as two opinion groups on the topic emerged in real time. Both groups supported emissions reduction and agreed on some key principles and promising avenues for reducing staff air travel, although they disagreed on some matters relating to mechanisms, priorities, choice and responsibility. Results of the discussion were compiled in an interactive report, and further analysis is underway to guide next steps on this issue in 2023.

TRAINING FARMERS TO REDUCE GREENHOUSE GAS EMISSIONS

Professor Richard Eckard from the School of Agricultural and Food Sciences and Professor Rodney Keenan from the School of Ecosystem and Forest Sciences have been involved in an extensive training program for farmers and finance managers across Australia, focused on assessing their greenhouse gas emissions in agriculture and options for emissions reduction. To date, approximately 1,000 industry professionals and farmers have been trained, with additional training planned for a further 2,000 farmers in 2023.

BUILDING ON BUSINESS-AS-USUAL CONSIDERATIONS FOR SUSTAINABLE RESEARCH PRACTICES

For many years, the University has provided training and support to researchers on topics such as animal welfare and ethics, and managing chemicals and hazardous wastes. We have trialled new initiatives such as requiring researchers applying to MCF's Climate Research Accelerator to estimate emissions associated with their project using a prototype carbon calculator. Alongside our work on staff air travel, we are looking to expand the range of impacts that researchers consider in relation to their research practices.

2022 Melbourne Climate Futures Summit

The University brings together the full breadth of its sustainability and climate research so that alumni, policy makers and industry leaders can engage with this knowledge to learn and co-create sustainable solutions.

Melbourne Climate Futures (MCF), our interdisciplinary climate change research initiative, hosted the inaugural Climate Futures Summit in October 2022.

The free, one-day event featured 23 speakers. It was designed to holding space for robust, critical discussion of the path forward to a positive climate future, providing a forum in which our alumni and student community could hear from and interact with policy, industry and research leaders. In addition to keynote addresses by economist Professor Ross Garnaut and Pacific Islands Forum Secretary General Mr Henry Puna, panel topics included:

- What does the latest climate science tell us?
- Current sustainability trends in business and investment
- First Nations' leadership on climate solutions
- Youth perspectives for innovative climate solutions

6. Indigenous knowledges

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University has an increased understanding of sustainability from an Indigenous perspective through co-created or Indigenous-led reciprocal learning	• The University community integrated Indigenous knowledges in approaches to sustainability, informing curriculum development and international partnerships • The University's Indigenous Strategy 2023–27 is currently under development, and future work to achieve this target will be aligned to the new strategy

ASPIRATION TO 2030

The University has respectfully integrated Indigenous knowledges and participation into our approach to sustainability.

UN SDGS

YARNING ABOUT HEALTHY COUNTRY

To recognise the International Day of the World's Indigenous Peoples, the Indigenous Knowledge Institute hosted a symposium to showcase and celebrate a variety of Indigenous knowledges from across the University and the community. Among many insightful discussions held over the two-day symposium, one panel session focused on 'Using Indigenous Knowledge to Manage Healthy Country'.

Panellists included Professor Michael-Shawn Fletcher, Maddison Miller, Dr Jack Pascoe, and Matt Shanks, who explored what constitutes 'Healthy Country', and how Healthy Country management plans can empower Indigenous communities and the broader Australian community. The panel emphasised the importance of deep listening and respect when building partnerships to restore healthy Country, based on Indigenous methodologies for collaboration.

INDIGENISATION OF THE CURRICULUM IN MELBOURNE LAW SCHOOL AND THE FACULTY OF ARCHITECTURE, BUILDING AND PLANNING

In 2022, the Melbourne Law school, led by its Indigenous Law and Justice Hub, entered the middle phase of the Indigenisation of its core law program, the Juris Doctor. Through this program, teachers are supported to integrate First Nations legal knowledge and systems into subject curriculum, including the relationship between the law, land and sea, highlighting the way colonial laws separate governance from place, 'natural' processes, and the environment.

The Faculty of Architecture, Building and Planning commenced the process of significantly reorienting the Master of Architecture studio program in response to new accreditation criteria. The process was led by an 'Indigenising the Curriculum' agenda, ensuring a holistic approach to integrating sustainability and Indigenous knowledge systems in new studio approaches.

Global collaboration in Indigenous knowledges

The University led formation of the Indigenous Knowledges Network within the Association of Pacific Rim Universities (APRU), established in 2022. The inaugural meeting of the network took place in Chiapas, Mexico.

Co-hosted by the University of Melbourne in partnership with Tecnológico de Monterrey, the meeting focused on promoting Indigenous heritage in the Pacific Rim. Representatives from Australia, Canada, Ecuador, Hawaii, Malaysia, Mexico, New Zealand/Aotearoa and the United States came together to share knowledge, build connections between researchers, and enhance teaching programs in Indigenous and First Nations studies. The network will reconvene in November 2023 in Melbourne and will be hosted by the University.

7. Engagement and partnerships

ASPIRATION TO 2030

Our partners, collaborators and associated stakeholders have increased their sustainability performance through meaningful engagement and partnerships with the University

UN SDGS

17 PARTNERSHIPS FOR THE GOALS

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University's community partnerships demonstrate localised and co-created approaches to sustainability	• We continued to collaborate with the City of Melbourne, helping to drive local uptake of renewable energy • We co-created several sustainability-oriented projects with partners in the Goulburn Valley and North East Arnhem Land
The University has led or influenced discussions with precinct partners to further precinct-specific approaches to sustainability	• We have engaged with Development Victoria on precinct sustainability planning for Fishermans Bend
The University plays a leading and convening role on sustainability challenges and opportunities internationally, with particular focus on vulnerable and disadvantaged people in Asia and the Pacific	• We joined the Reach Alliance, a global partnership to mobilise sustainability knowledge for action

SCALING UP RENEWABLE ENERGY IN MELBOURNE

In 2021, the University formalised its long-standing partnership with the City of Melbourne to deliver impactful sustainability outcomes into the future. The partnership has already made considerable progress in a range of areas, including climate, renewable energy security, the Indigenisation of Melbourne, and urban recovery and resilience.

The Power Melbourne project is a partnership with the City of Melbourne and RMIT, coordinated by City of Melbourne. Our collective vision is to create innovative commercial models for batteries as shared energy storage, and drive greater uptake of renewable energy by residents and small and medium businesses. The partnership also supports urban innovation and job creation, and is accelerating transformation of the energy system to 100 per cent renewable sources. As a significant land and asset holder in the city, the University is exploring energy storage options and opportunities to integrate more renewable energy into the grid, including potential battery sites, in collaboration with the City of Melbourne. The University brought extensive expertise as a research partner to the first phase of the project, with Professor Pierluigi Mancarella and his team in the Faculty of Engineering and Information Technology conducting extensive techno-economic and commercial feasibility modelling.

REACH ALLIANCE: GLOBAL PARTNERSHIP TO MOBILISE KNOWLEDGE FOR ACTION

In 2022, the University became a partner in the Reach Alliance global initiative. Founded by the University of Toronto, the Alliance brings together researchers and practitioners from across disciplines and around the world to accelerate achievement of the United Nations SDGs. The program engages student leaders to explore inventive, local solutions to pressing global challenges. Its focus is on how critical interventions and innovations reach those who are the 'hardest to reach', and partners with cross-sectoral organisations to translate research into impact.

ENHANCING SUSTAINABLE DESIGN AT FISHERMANS BEND

Planning for the new campus at Fishermans Bend continued throughout 2022, as did the University's collaboration with Development Victoria, who are developing the former Holden car manufacturing site in the wider precinct. We provided input into studies by Development Victoria on energy, water sensitive urban design, and open space network planning. Through the precinct planning process, the University advocated for integration of parking and waste management between the Fishermans Bend campus and the Development Victoria site.

Architecture students collaborate with Indigenous communities

The Cummeragunja Bough Shed was built by students in 2022, with guidance from Yorta Yorta Elders and community. It is the first of several cultural structures that the Cummeragunja Elders intend to construct as part of the ongoing partnership with Bower Studio, a group of Master of Architecture projects at the Melbourne School of Design. The Cummeragunja On Country Learning Initiative is a collaboration between the Cummeragunja community, the Faculty of Architecture, Building and Planning, and the Academy of Sport, Health and Education. Launched in 2022, the program is a co-designed on Country at the Cummeragunja Reserve, located on the Dungala (Murray) River in New South Wales.

DOMAIN

Walking the talk in our operations

OUR COMMITMENT

The current effects of global climate, biodiversity and waste crises are unprecedented in human history, requiring us to develop new practices and technologies to prevent escalating damage to human and ecological systems.

The University is uniquely placed to demonstrate innovative sustainability solutions in our operations, providing an example for others to follow. We are embedding sustainability across the breadth of campus operations, pioneering novel approaches to waste reduction and management, procurement, biodiversity, water and transport.

We are committed to effectively managing climate risk, ensuring business continuity and supporting our staff, students, and the communities in which our campuses are located, to cope with the impacts of climate change.

8. Climate resilience

ASPIRATION TO 2030

Our campuses and operations enable the University community, and the broader communities we are part of, to become more resilient to the impacts of climate change.

UN SDGS

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University reaches and maintains a 'high' climate change preparedness level.	• We initiated business continuity planning, emergency response training, and other initiatives to strengthen our climate change preparedness and climate risk management • We supported affected communities, including University staff and students, during the October 2022 Goulburn Valley floods

BUILDING FOUNDATIONS FOR PREPAREDNESS

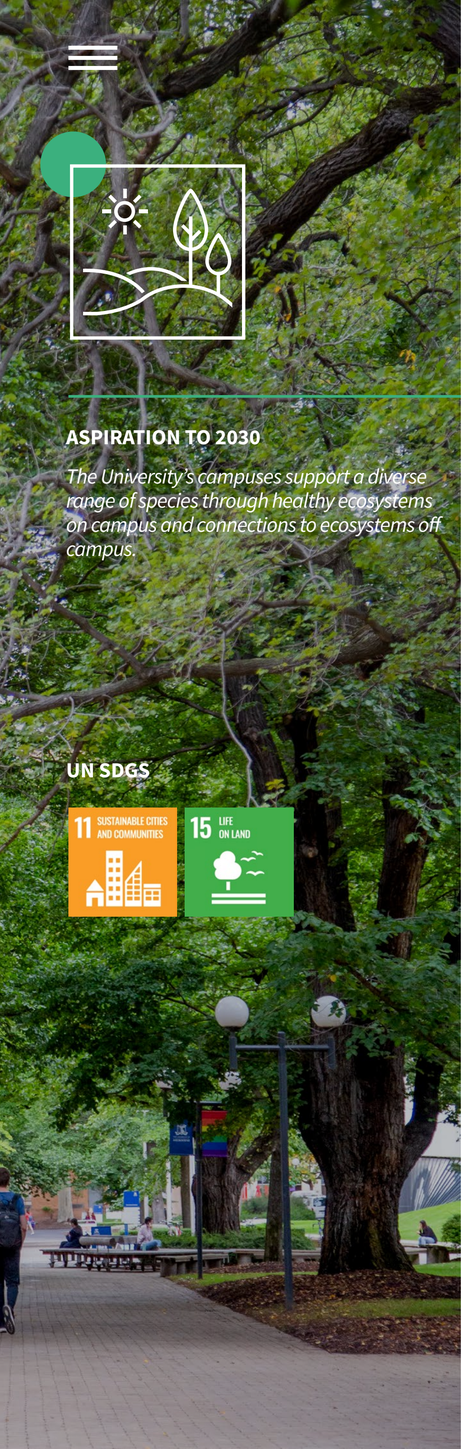
In 2022, we started work on embedding climate change risk into centralised processes, such as an organisational risk register. This will give visibility and co-ordination to a range of risk management activities that were already occurring, including climate adaptation plans prepared as part of major building projects, and highlight areas where further work is needed. As part of our Business Continuity Management program, we began developing Business Continuity Plans for all Chancellery portfolios, faculties, schools and campuses. This work aims to ensure all areas of the organisation have the capacity to recover critical business functions in the face of a range of disruptive impacts, including natural disasters.

EMERGENCY MANAGEMENT

The University's approach to emergency management is based on the requirements of Australian Standard 3745: Planning for Emergencies in Facilities. Throughout 2022, we maintained, updated, and tested our suite of emergency preparedness, response and recovery procedures across all campuses and in particular at many of our high-risk buildings. We delivered several campus and site-specific sessions to uplift the skills, knowledge, confidence and capability of emergency response volunteers. An evacuation exercise was held on the Dookie Campus in October 2022, in partnership with Fire Rescue Victoria and the Country Fire Authority. The exercise involved a whole-campus evacuation and shelter-in-place in response to a simulated grassfire emergency.

SUPPORTING STUDENTS, STAFF AND COMMUNITIES IMPACTED BY FLOODS

In October 2022, many parts of Victoria were impacted by major flooding, including in the Goulburn Valley region where the University's Dookie and Shepparton campuses are located. While University facilities were not severely affected, many students and staff were impacted, with some becoming isolated and others being forced to evacuate. We supported these members of our community, providing leave allowances for staff and financial assistance to students. To support the wider community, we worked with the Academy of Sport, Health and Education facility to provide emergency accommodation, and the Dookie campus management team collaborated with local councils to support their incident response. In December 2022, we co-hosted the EMERGE Block Party and flood recovery initiative, in collaboration with GOTAFE and La Trobe University.



9. Healthy ecosystems

ASPIRATION TO 2030

The University's campuses support a diverse range of species through healthy ecosystems on campus and connections to ecosystems off campus.

UN SDGS

11 SUSTAINABLE CITIES AND COMMUNITIES

15 LIFE ON LAND

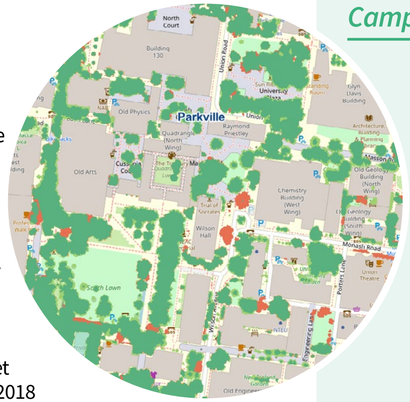
PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
Each campus achieves no net loss of biodiversity relative to defined baseline years by 2025	• Our Biodiversity Baseline Data Project is nearing completion, with Burnley campus complete, Parkville campus 94 per cent complete across all metrics, and all other campuses 100 per cent complete for five out of seven metrics • We founded the new Biodiversity Council, and undertook consultation for a new Melbourne Biodiversity Institute • We signed up to ambitious biodiversity targets under the Nature Positive Universities Alliance
Each campus achieves an increase of biodiversity relative to defined baseline years by 2030	• Ready to commence once the Biodiversity Baseline Data Project has been completed

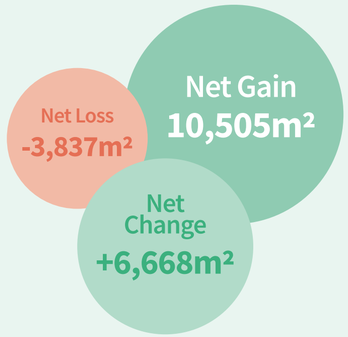
BIODIVERSITY BASELINE DATA PROJECT

The Biodiversity Baseline Data Project neared completion across all campuses in 2022. Once data collection is finalised, this will provide the baseline data for seven biodiversity metrics, which can then be used to identify priority projects to achieve our target of no net loss of biodiversity by 2025.

We have begun our analysis of current canopy cover relative to baselines for Metric 6. All campuses have seen a small increase in tree canopy cover to 2022 from the stated baseline year. For example, on the Parkville campus, net canopy cover increased by two per cent from 2018 to 2022. This was largely due to tree growth, with tree loss also occurring as a result of on-campus development projects. To meet our 2025 target, we will prioritise tree planting to offset the calculated losses (view the dataset via the online dashboard).



Tree Canopy Cover Parkville Campus 2018-2022



CAMPUS	Baseline year *(earliest data date)*	Baseline tree canopy cover *(% of total campus area)*	Net loss/gain *(in 2022, relative to baseline year)*
Parkville	2018	20%	+2%
Southbank	2018	14%	+2%
Burnley	2019	31%	+4%
Werribee	2018	17%	+2%
Creswick	2010	45%	+5%
Dookie	2010	12%	+2%
Shepparton	2019	14%	+3%

BIODIVERSITY COUNCIL TO SPEARHEAD SOLUTIONS FOR OUR BIODIVERSITY CRISIS

Leading experts including Indigenous knowledge holders from 11 Australian universities have united with philanthropists to form a new council to advocate for biodiversity. The Biodiversity Council, which will be incubated at the University of Melbourne, will foster public, policy and industry recognition of the biodiversity crisis, the importance of biodiversity for wellbeing and prosperity, and positive opportunities and solutions needed to address these challenges.

UNIVERSITY SIGNS INTERNATIONAL SUSTAINABILITY AND BIODIVERSITY PLEDGE

In December 2022, the University became a founding member of the Nature Positive Universities Alliance, further reinforcing our commitment to preserving biodiversity and championing sustainability.

By taking the pledge, we have committed to bold action to reduce biodiversity impacts and protect and restore species and ecosystems, while influencing others to do the same. As members of the Alliance, we will work with a network of over 400 universities to promote nature on campuses, and in our supply chains, cities and communities.

USING CITIZEN SCIENCE TO QUANTIFY ON-CAMPUS BIODIVERSITY

Over 70 students, staff and local residents competed in UniBioQuest in 2022, submitting 1,404 sightings of insects, animals and fungi across six of our campuses using the QuestaGame mobile app. UniBioQuest is a global citizen science competition where universities compete to collect the most sightings of biodiversity, providing much needed species data to researchers and practitioners. The data collected feeds into our Biodiversity Baseline Data Project, and was uploaded to biodiversity repositories such as Atlas of Living Australia and Global Biodiversity Information Facility.

10. Healthy water cycles

ASPIRATION TO 2030

The University has used water efficiently and contributed to healthy water cycles.

UN SDGS

6 CLEAN WATER AND SANITATION

14 LIFE BELOW WATER

PROGRESS AGAINST TARGETS

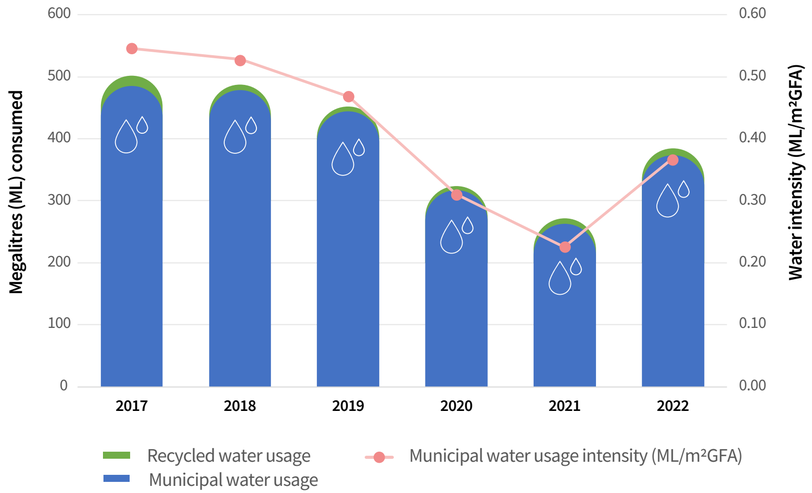
TARGET	PROGRESS IN 2022
The University has reduced total water consumption by 10% relative to a 2019 baseline.	• Total water usage for 2022 was approximately 15 % below 2019 levels
The University has significantly increased the proportion of water consumption from non-potable sources compared to a 2019 baseline.	• Not commenced

REDUCING OUR WATER USE

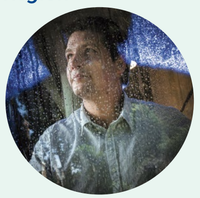
As staff and students returned to our campuses, our overall water usage increased in 2022, but remains below 2019 pre-pandemic levels. We are working on a range of targeted initiatives to continue reducing our usage:

- We replaced outdated mains potable water pipes on the Parkville campus, which is expected to reduce the water wasted from leaks and burst pipes.
- On the Burnley campus, we installed Hydrawise, a smart WIFI irrigation control system which reviews weather patterns and adjusts accordingly, optimizing water usage for irrigation. We will trial Hydrawise controllers in Parkville in 2023.
- The new Student Precinct includes three water tanks, adding 100 megalitres of rainwater storage capacity to the Parkville Campus. These tanks will be connected to the purple pipe (recycled water) network, so water can be used around the campus when needed.

Total water use from 2017 to 2022



University alum developing sustainable water supply and renewable hydrogen in the Goulburn Valley Region



Sam Skinner: *BSc 2010; ME 2014; GCert Adv Learning and Leadership 2016; PhD Engineering 2018*

A PhD in Wastewater Treatment Processes, Dr Skinner is active in the development of plans to reduce the emissions from Victoria's water corporations to net zero by 2035.

The impact of a four-month teaching trip to Tanzania following his initial Science degree spurred Sam into wastewater management research, resulting in an already impressive career developing pathways for water sustainability in Victoria.

Sam's leadership on the Future Ready Goulburn Valley Region Renewable Hydrogen Ecosystem (part of the Victorian Government's Business Ready Fund Initiative) has laid the groundwork for feasibility of a renewable hydrogen ecosystem within the region, determining the local demand across a diverse and broad range of industry sectors.

11. Just and circular economy

ASPIRATION TO 2030

The University's approach to the procurement and use of products, services and materials has stimulated a more just and circular economy and catalysed change in our campus communities.

UN SDGS

1 NO POVERTY
8 DECENT WORK AND ECONOMIC GROWTH
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

PROGRESS AGAINST TARGETS

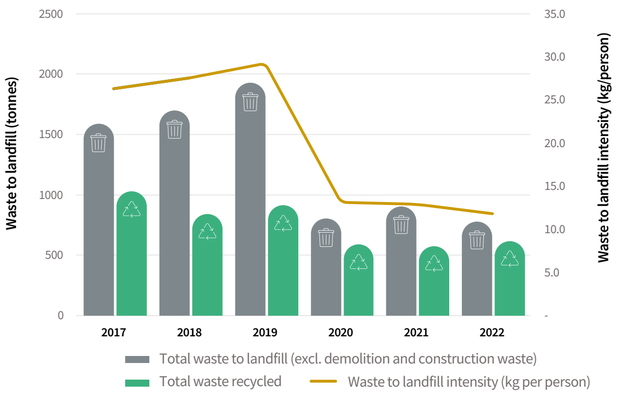
TARGET	PROGRESS IN 2022
The University has reduced waste to landfill to 10kg per person	• Waste to landfill reduced to 11.8kg per person, down by 59 per cent from 2019 levels • 84 per cent of waste materials were recycled and reused during the demolition and remediation works at the Fishermans Bend site • 96 per cent of waste was diverted from landfill during construction of the Student Precinct Project
The University has reduced flow and improved circularity of materials passing through the University	• Data collection process to set a baseline for circularity commenced, to be completed in 2023 • The Student Precinct Project site is working towards being a single-use plastic free hub, with a mandatory crockery reuse service for all retailers
The University has principles for ethical and sustainable consumption and service provision embedded into operations and procurement practices	• We led the development of a sector-wide response to modern slavery, sharing in a national sustainability award • Sustainability clauses and performance indicators have been embedded in recent large tenders, including fleet, grounds, waste and cleaning tenders • Suppliers are required to adhere to our Supplier Code of Conduct
The University tracks spend with social and Indigenous suppliers, setting targets from 2024	• We spent $3.65 million with social and Indigenous suppliers. This included almost $900,000 on professional services and over $700,000 on grants

OUR WASTE PERFORMANCE

Waste to landfill in 2022 was 11.8kg per person, which remains significantly lower than the 2019 pre-pandemic level of 29.9kg per person. Our recycled waste also remained below 2019 levels. We aim to sustain this reduction through a range of programs and changes to our processes. In 2022, the University:

- Commenced a sustainability review of office product suppliers to reduce waste generated in our offices
- Completed an indoor bin infrastructure upgrade to ensure consistent waste collection methods and signage across the University
- Made contractual changes to retail leasing and vending machine contracts to reduce single-use packaging and utensils
- Implemented a single-use plastic free hub across parts of the Student Precinct Project to help ensure a sustained reduction in these waste streams.

Total waste from 2017 to 2022



Sector-wide Modern Slavery project wins sustainability award

The University of Melbourne played a key role in the Australian Universities Procurement Network (AUPN) Modern Slavery project, which won the inaugural Sustainability Project of the Year Award at The Faculty Awards of Excellence in June 2022. The project was led and sponsored by former University of Melbourne Director of Commercial Services, Paul Holland, and Rhiannon Jones from Swinburne University.

The three-year program developed and designed a sector-wide response to the issue of modern slavery. Thirty-five universities joined and agreed to finance the program, which will deploy technological solutions and act as a point of reference for modern slavery mitigation across the university sector. The network represents over 140,000 suppliers and $25 billion of supplier spend.

11. Just and circular economy (continued)

REUSE PROGRAMS GO FROM STRENGTH TO STRENGTH

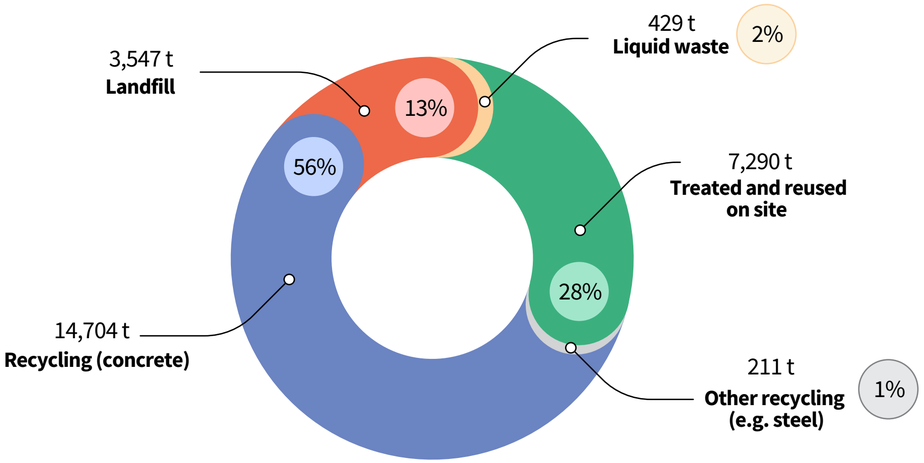
Our long-running reuse programs continued in 2022, expanding its reach with the opening of the Student Precinct Project site on Parkville campus.

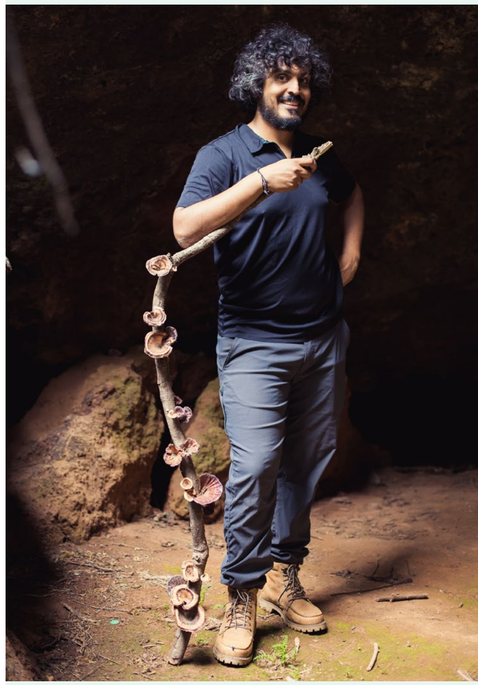
- The Sustainability Team ran a Sustainability Victoria reuse masterclass, with over 100 attendees across the Victorian community. Other universities have also reached out to learn more about how they can set up a similar service, and visited the Parkville campus to see it in action.
- 3916 items were diverted from landfill through the Furniture and Equipment Reuse Centre, equating to 95 tonnes and a value of $1.6 million
- Choose to Reuse plate program washed 139,714 items, reducing waste to landfill and improving the circularity of catering goods. This crockery service is mandatory for retailers in the Student Precinct Project site, and additional dishwashing services were provided to facilitate the reuse of crockery
- Choose to Reuse Events Service provided reusable crockery and cutlery to staff and student groups running events
- We introduced Green Caffeen, a free and flexible reusable cup swap scheme available at several cafes on the Parkville, Southbank and Burnley campuses, helping to reduce use of takeaway coffee cups

UNDERSTANDING DEMOLITION AND CONSTRUCTION WASTE

We are starting to more purposefully report on the waste and recycling associated with demolition and construction projects. Two major projects in 2022 were the remediation of Fishermans Bend and completion of the Student Precinct Project. At Fishermans Bend, 84 per cent of the 25,627 tonnes of waste materials were recovered, including 56 per cent concrete and steel that was recycled, and 28 per cent other materials which were treated and reused on site. For the Student Precinct Project, 96 per cent of 3520 tonnes of waste material was diverted from landfill.

Fishermans Bend remediation and demolition waste 2022





University alum leading Melbourne's transformation to a circular economy

Kunal Khanna: *BCom 2007; Master of Environment 2016*

Kunal credits the collaborative experiences he received as part of his Master of Environment for developing his understanding of sustainability on a global scale. A Circular Economy consultant at Aurecon Group, Kunal recently created and delivered the Circular Economy Framework for the City of Melbourne. Once implemented, Melbourne will become one of the biggest cities in the world to adopt circularity.

Kunal plans to continue to push the agenda for circularity throughout his professional career, making it "*the only way we consume, grow and build as a species. This will transform our interaction with the planet and hopefully reach a place of true sustainability.*"

11. Just and circular economy (continued)

SOCIAL PROCUREMENT IN THE REFURBISHED ATLANTIC FELLOWS FOR SOCIAL EQUITY HUB

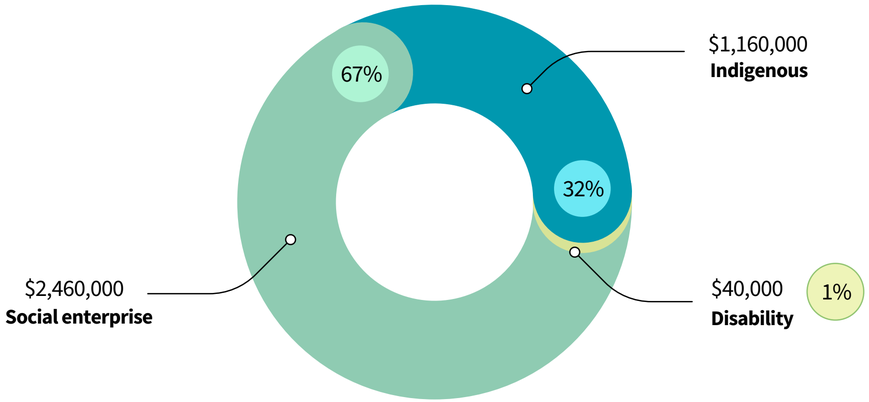
The Student Precinct Project included an interior fit-out of the new Atlantic Fellows for Social Equity (AFSE) Hub, providing a meaningful opportunity for enhanced social procurement outcomes. The project delivered significant social value to the community beyond the cost of construction works, and far exceeded the social procurement targets. Major social procurement outcomes included:

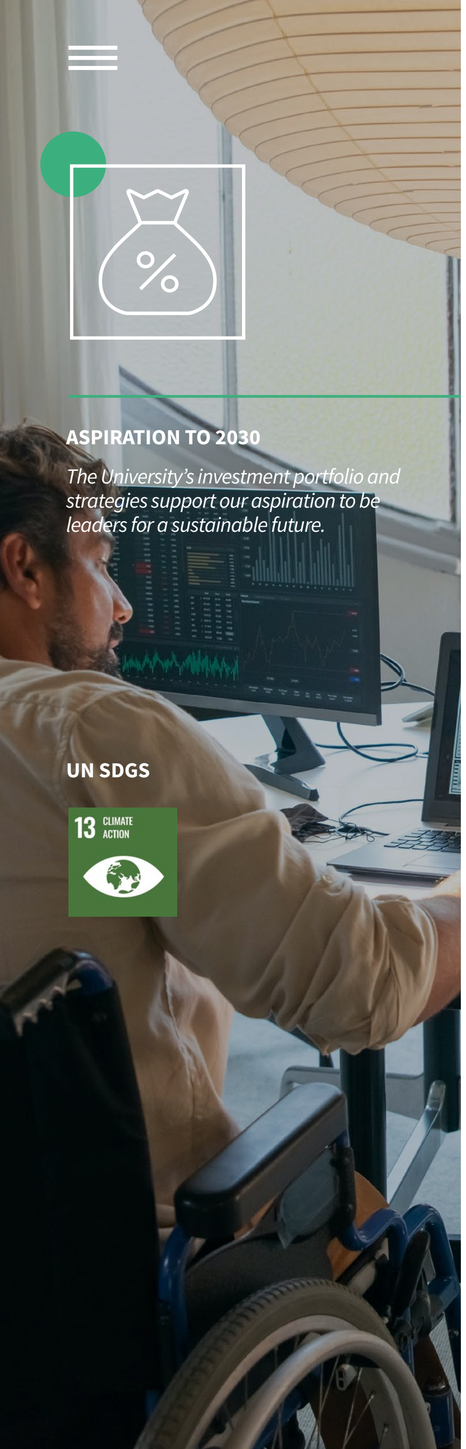
- 18 per cent of total spend with Indigenous suppliers and labour (target = 3 per cent)
- 90 per cent of furniture supplied by Indigenous-owned company
- 50 per cent of furniture installed by women
- 100 per cent of flooring supplied by Indigenous-owned company.

The project is a finalist in the Faculty Awards of Excellence for Indigenous Project of the Year.

AFSE is a life-changing fellowship program for the promotion of Indigenous social equity in Australia, Aotearoa and the Pacific region. Read more about 2018 AFSE Fellow Ariadne Gorring

Social procurement expenditure 2022





12. Responsible investments

ASPIRATION TO 2030

The University's investment portfolio and strategies support our aspiration to be leaders for a sustainable future.

UN SDGS

13 CLIMATE ACTION

PROGRESS AGAINST TARGETS

TARGET	PROGRESS IN 2022
The University's Investment Portfolio[6] will be included in our commitment to be climate positive by 2030	• Estimated carbon emissions from the Australian Equities and International Equities components of the University's Investment Portfolio are reported below. • This information will help the University to plan towards achieving its 2030 commitment to be climate positive

Enhanced transparent reporting of the University's investment portfolio	• For the Australian Equities and International Equities components of the University's Investment Portfolio, we are reporting:
	  • Estimated carbon emissions
	  • Carbon intensity relative to benchmark
	  • Top 20 holdings by size
	  • Holdings by sector, and sector-level carbon emissions
	  • Compliance with related obligations, eg. UNPRI, SIF
	• The University is exploring ways to estimate the carbon emissions of the balance of the Investment Portfolio

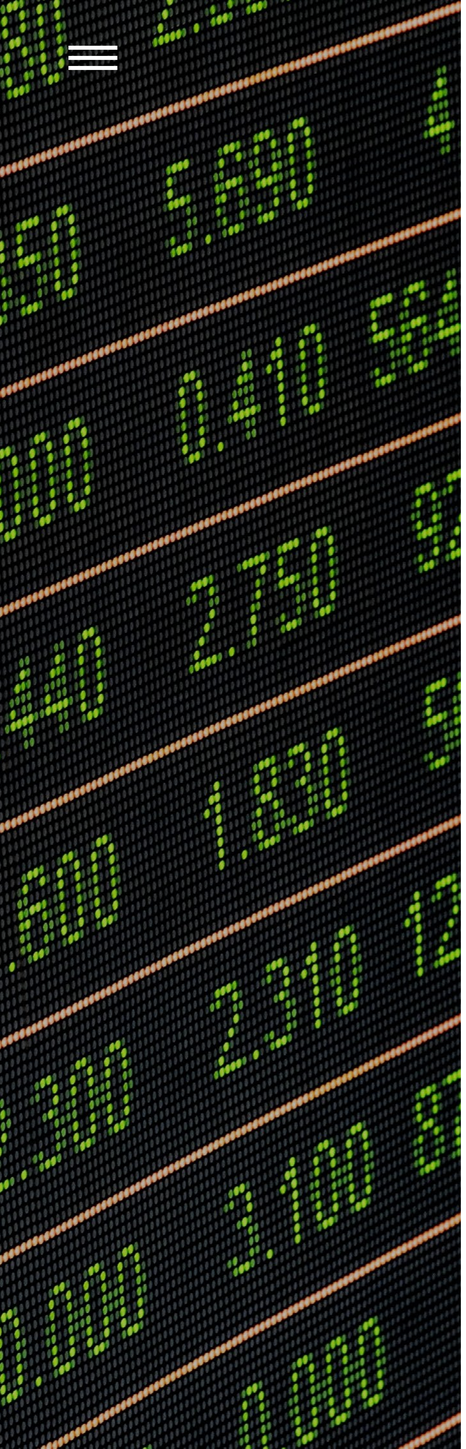
6 *This will include investments in the University's portfolio for which the carbon footprint can be reasonably be measured or estimated*

INVESTMENT PORTFOLIO TRANSITION

The University's Investment Portfolio is separate to its operational balance sheet and teaching/learning and research activities. The portfolio is managed externally by third party fund managers and is primarily invested via units in pooled investment trusts, hence the University does not make individual investment decisions on whether to buy or sell specific company holdings. Following a detailed review of the management of the Investment Portfolio, in 2022 the University appointed JANA Investment Advisers to be its primary funds manager. The University worked with JANA and the previous provider, the Victorian Funds Management Corporation (VFMC), to transition the portfolio in 2022.

JANA has a long history of successfully providing investment consulting and management services in Australia. Their approach is highly consultative and client-centred, and they will deliver tailored and integrated total portfolio management for the University's funds. JANA supports action to drive systems-level sustainability considerations into their investment decisions. The company was one of 12 inaugural signatories to the Net Zero Investment Consultants Initiative (NZICI), a pledge by global investment consultancy firms to support the goal of net zero greenhouse gas emissions by 2050. JANA is also a Climate Active carbon neutral certified organisation.

The University is committed to including its Investment Portfolio in its scope 3 emissions reporting and climate positive commitments by 2030. This commitment is far-reaching and impactful, as it addresses carbon emissions across the Investment Portfolio as part of its overall commitment to being carbon neutral, then climate positive. The timeline of this target reflects the ambition and complexity of the University's climate leadership commitments, and the need to manage their implementation.



12. Responsible investments (continued)

RESPONSIBLE INVESTMENT METRICS

Summary

The University's responsible investment metrics for 2022 cover Australian Equities and International Equities for which reasonable data is available. Australian Equities and International Equities represent around half of the University's longer-term investments. In addition, the University invests in other asset classes such as fixed interest, infrastructure, property and private equity. The data for these asset classes is improving but is not currently robust enough to report. The University is working with JANA, the underlying fund managers and data providers to expand the coverage of the investments reporting.

Metrics

With JANA, the University has explored which metrics will be most relevant going forward. For this analysis, JANA (with their data provider Sustainalytics) estimated the University's emissions from investments using the 'Enterprise Value Including Cash' (EVIC)[7] method, which measures the University's share of a company's emissions proportional to the University's investment in the company's total value. This method aligns with the guidance from the Paris Aligned Net Zero Investment Framework and the Task Force on Climate-related Financial Disclosures (TCFD), enabling us to assess the implications of investment decisions over time.

7 *Emissions from investments are measured using 'Enterprise Value Including Cash' (EVIC) allowing measurement of an investor's share of emissions proportional to its exposure to the investee's total value. EVIC is defined as the sum of the market capitalisation of ordinary shares at fiscal year end, the market capitalisation of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values.*

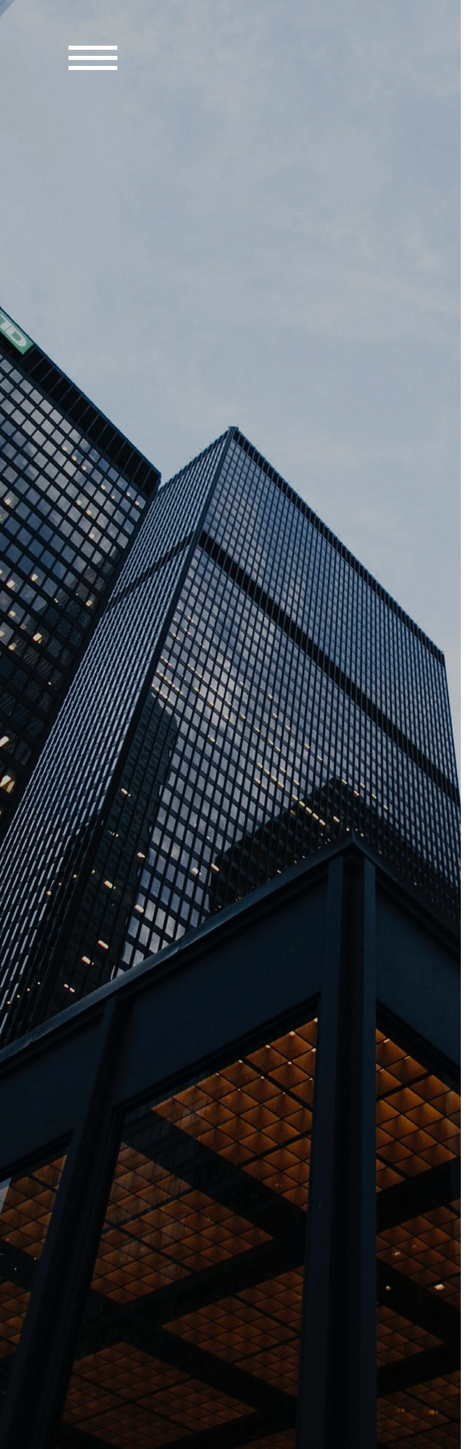
ESTIMATED CARBON EMISSIONS AND CARBON INTENSITY OF THE UNIVERSITY'S EQUITY INVESTMENTS[8]

Equities investments as at 31 Dec 2022	UoM carbon emissions from investments	Benchmark carbon emissions from investments	UoM weighted carbon intensity	Benchmark weighted carbon intensity
Measurement units	*tCO_2-e*	*tCO_2-e*	*tCO_2-e / US$m invested*	*tCO_2-e / US$m invested*
Australian Equities	77,502	62,322	83.6	67.2
International Equities	18,146	46,744	17.4	44.9
Total (Australian and International Equities)	**95,649**	**109,066**	**48.6**	**55.4**

8 **Notes:**

- *The emissions data is limited to what is reported by the underlying companies and what is estimated by JANA's data provider, Sustainalytics and covers Scope 1 and Scope 2 emissions only.*
- *The benchmark for the Australian Equities asset class is the S&P/ASX 300 Index and the MSCI All Country World Index for the International Equities asset class. The benchmark carbon emissions from investments figures assume you have invested the equivalent $ amount in the index.*
- *Carbon emissions are in metric tonnes of CO_2 equivalent (tCO_2e).*
- *'Mil tCO_2e' refers to million tonnes of CO_2 equivalent.*

This 2022 data sets a baseline, enabling us to better understand the carbon impact of the University's Investment Portfolio. Overall, the analysis shows that total combined carbon emissions from investments are below the total benchmark. Australian Equities have higher carbon emissions and carbon intensity than the Australian Equities benchmark (ASX 300 Index) due to the selection choices of underlying fund managers to preference the Australian Materials, Industrials and Energy sectors at this time. International Equities have lower carbon emissions and carbon intensity than the International Equities benchmark (MSCI ACWI Index) due to the selection choices of underlying fund managers to hold less of the International Energy sector at this time.



12. Responsible investments (continued)

Investments carbon emission levels are important for understanding the scale of the problem and prioritising actions to reduce emissions over time. However used in isolation, they are a blunt tool that does not take into account whether the underlying business have committed to getting to zero emissions and reduce emissions in line with feasible sector decarbonisation pathways. The data can also be volatile so focus should be on the overall trend rather than any one year's data.

JANA has assessed the University's underlying fund managers on their ability to incorporate ESG considerations into their investment analysis, and in turn each manager is held to account to consistently meet a high standard and continuously improve on their processes. In addition, JANA is currently undertaking a research project to assess the net zero credentials of underlying fund managers, and their action towards supporting the economy wide transition to net zero emissions. The combination of these data points will allow us to determine where the University should focus engagement efforts and actions to support the Sustainability Plan goals in 2023 and beyond.

Reporting from JANA shows that the University's equity investments are distributed across a wide range of sectors. Some of these sectors are traditionally relatively low carbon emissions, for example the financials, health care and IT sectors. Others, such as the materials, energy and utilities sectors, are more carbon intensive.

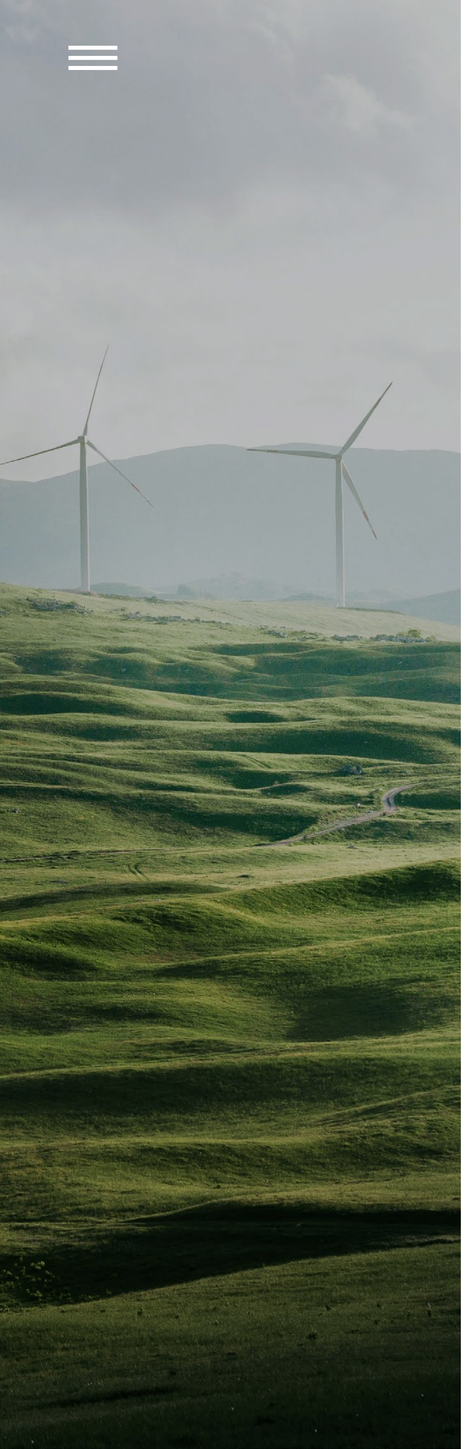
TOP 20 HOLDINGS BY VALUE AS AT 31 DECEMBER 2022

Stock name	Sector	% of total equities portfolio *(based on $ invested)*
BHP Group Ltd	Materials	4.4%
CSL Limited	Health Care	3.3%
Commonwealth Bank of Australia	Financials	2.7%
National Australia Bank Limited	Financials	2.1%
Microsoft Corporation	Communication Services	1.5%
Santos Limited	Energy	1.4%
Macquarie Group, Ltd.	Financials	1.4%
HDFC Bank Limited Sponsored ADR	Financials	1.3%
Australia & New Zealand Banking Group Ltd TEMP	Financials	1.2%
Telstra Group Limited	Communication Services	1.1%
Absa Group Limited	Financials	1.1%
Thermo Fisher Scientific Inc.	Health Care	1.1%
QBE Insurance Group Limited	Financials	1.0%
Woolworths Group Ltd	Consumer Staples	1.0%
Novo Nordisk A/S Class B	Health Care	1.0%
Newcrest Mining Limited	Materials	1.0%
Westpac Banking Corporation	Financials	0.8%
Alphabet Inc. Class C	Communication Services	0.8%
Ramsay Health Care Limited	Health Care	0.8%
Qantas Airways Limited	Industrials	0.8%
Top 20		29.7%

SECTOR EXPOSURES AND ESTIMATED CARBON EMISSIONS

Sector[9]	% of total equities portfolio *($ invested)*	Estimated UoM carbon exposure *(tCO_2-e)*
Financials	20.4%	186
Health Care	14.3%	1,034
Materials	13.8%	48,617
Information Technology	12.3%	936
Consumer Discretionary	9.1%	1,669
Industrials	8.7%	6,587
Consumer Staples	6.5%	2,726
Communication Services	6.3%	872
Energy	4.0%	17,031
Real Estate	2.5%	627
Utilities	1.6%	15,368

9 *Sectors are as categorised by the ASX*



12. Responsible investments (continued)

SUPPORTING THE TRANSITION TO CLEAN ENERGY

To date, economic growth and development has been heavily reliant on fossil fuels, and materials such as steel and cement. A low-emissions economy differs immensely from one fuelled by traditional fossil fuel resources. The clean energy transitions requires a strong focus on a just transition for employees and communities built around the traditional supply of fossil fuels, as well as the supply of the critical minerals, materials and manufacturing capacity needed to deliver clean energy technologies.

A net zero emissions economy has a high dependence on critical minerals and will require large increases in the global manufacturing capacity of clean energy technologies and supply of related inputs. Meeting this industrial challenge is essential to reduce emissions in line with climate goals, and it will create new jobs in the companies and countries that are positioned to take advantage of the market opportunities, supporting the transition away from traditional fossil fuel industries (IEA 2022).

New technology must be developed and deployed urgently to reduce the carbon emissions associated with the energy transition. The University believes that it has a role to play in assisting the transition to net zero emissions through, for example, undertaking research and teaching, producing the highly skilled graduates required for transition, and partnering with companies to develop innovative solutions to these real problems.

The University believes that companies which effectively manage their ESG responsibilities should deliver better risk-adjusted returns over the long term. This means that, for example, companies that effectively manage climate change-related risks and lean into the opportunities of the transition to a low-carbon economy, will be better positioned than companies that do not. The University is committed to supporting research into the technologies that help mitigate climate change, and the fostering of open, evidence-based debate on societal challenges, as well as providing teaching and learning opportunities to equip graduates to maximise their contribution to global sustainability. Hence, it values the abiity to engage with or influence investee companies (via Fund and Portfolio Managers) in discussions around climate change risk management, disclosures and net zero ambition.

COMPLIANCE WITH ADDITIONAL OBLIGATIONS

The Sustainable Investment Framework (SIF), developed in 2017, outlines key criteria for integrating global climate change risk into the University's investment decision making. During 2022, the focus was on the successful transition of the University's investments to JANA. In 2023, the University will review and update the SIF to ensure alignment with the Sustainability Plan 2030.

The SIF outlines the University's commitment to responsible investment stewardship and active ownership, which extends to appointed investment managers. In 2022, relevant active ownership activities undertaken by JANA included:

- Assigning Environmental Social and Governance (ESG) assessment ratings to all invested and active strategies in each asset class.
- Examining how each of the investment managers to which they have outsourced their investment activities is demonstrating active ownership. These underlying fund managers undertake activities including proxy analysis, use of proxy voting research services and direct engagement with companies to ensure that they demonstrate best practice.
- Developing a net zero assessment framework to determine the credentials of all active fund manager strategies in each asset class, and their action towards supporting the economy wide transition to net zero emissions. This is a key facet that will support us in the active ownership of our carbon exposuresFormalising their in-house Proxy Voting Policy to vote on material[10] and contentious[11] resolutions included in annual and extraordinary meetings for Australian listed companies.
- Questioning investment managers on how they factor Modern Slavery risk into their operations and investment processes.
- Membership of several groups, including United Nations Principles for Responsible Investment (UNPRI), Responsible Investment Association of Australasia (RIAA), Australian Sustainable Finance Institute (ASFI) and Investor Group on Climate Change (IGCC).

The University became a signatory to the Principles for Responsible Investment (PRI) in 2020 and reports its responsible investment activities annually to the PRI.

GREEN BOND

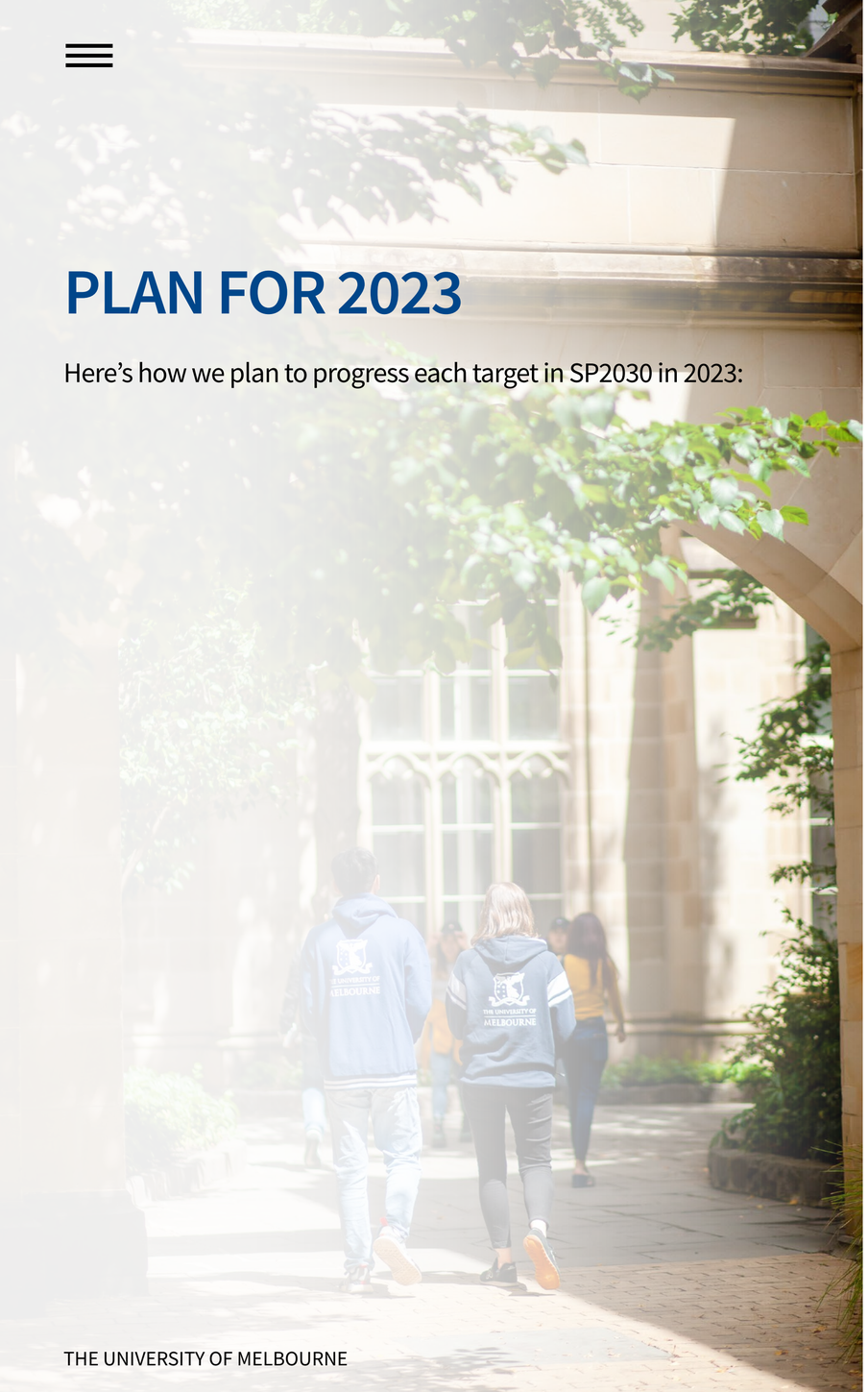
During 2022 the University developed its Sustainability Financing Framework, to support its entry into Green, Social or Sustainability (GSS) transactions. Proceeds were earmarked to finance, or refinance, projects, assets and expenditures that will deliver positive environmental and/or social outcomes.

In August 2022, the University issued its inaugural Green Bond under the Sustainability Financing Framework, to refinance important initiatives that meet a minimum 5 Star Green Building Council of Australia ("GBCA") Green Star rating including the new Student Pavilion, a 6 Star rated building fully powered by renewables and net-zero in operation. This Green Bond contributed to the University's recognition as the Best Issuer – Corporate for Australia in FinanceAsia's 2022 Achievement Awards.

This green bond was audited for the period ending 31 December 2022 and the auditor found the bond meets the criteria established in the UoM Protocol and is aligned with Green Bond Principles.

10 A material holding is where the holding is 5% or more in value of a single JANA Investment Trust.

11 A meeting may be considered contentious for various reasons, for example: the re-election of a director subject to recent scandal/media interest; or major shareholders publicly announcing protest votes.



PLAN FOR 2023

Here's how we plan to progress each target in SP2030 in 2023:

SP2030 PRIORITY AREA	PLANS FOR 2023
1. CLIMATE LEADERSHIP	We will develop a carbon offsets procurement strategy informed by current research and taking into account the recent local and global carbon offset reviews and standards. The Smart Campus Energy Upgrades program will continue in 2023. Plans include building optimisation and chiller plant upgrade works across 10 buildings, delivering approximately 3,300 MWh savings per annum, and solar rooftop arrays for at least five buildings. We are also assessing the feasibility of energy storage options at our Dookie and Parkville campuses.
2. CAMPUSES AS LIVING LABORATORIES	We are developing guidelines and processes to support the development and curation of living labs that make meaningful contributions to the priority areas of SP2030.
3. COMMUNITY OF SUSTAINABILITY LEARNERS AND PRACTITIONERS	We will reinstate the Sustainability Advocates Forum, update staff training modules for sustainability on campus, and pursue a range of faculty-led sustainability initiatives.
4. GRADUATES FOR A SUSTAINABLE FUTURE	We will explore opportunities to embed sustainability in the curriculum in line with the new *Advancing Students and Education Strategy*; faculties will develop a range of sustainability-focused subjects; we will develop metrics to track our progress and enhance reporting in this area.
5. DISCOVERY	We will investigate data sources and metrics to understand and report on our Discovery targets.
6. INDIGENOUS KNOWLEDGES	We will align our actions and commitments with the *Indigenous Strategy 2023–27,* currently under development.
7. ENGAGEMENT AND PARTNERSHIPS	We will capitalise on opportunities to increase our influence and engagement with precinct partners on the sustainability impacts of capital projects and other initiatives.
8. CLIMATE RESILIENCE	Preliminary work to recognise climate and sustainability risk in the University's Risk Register will be cascaded across the institution in 2023, enhancing climate change preparedness.
9. HEALTHY ECOSYSTEMS	We will develop targets for reducing biodiversity loss and promoting net gain on our campuses.
10. HEALTHY WATER CYCLES	We will progress action planning to reduce water consumption and increase percentage of non-potable water consumption, and install smart irrigation. We will upgrade our metering systems for non-potable rainwater and stormwater on-campus to enable more accurate reporting.
11. JUST AND CIRCULAR ECONOMY	We will introduce new waste processing services, including diverting organics from landfill at the Student Precinct Project site on Parkville campus, supported by a new education campaign across the University.
12. RESPONSIBLE INVESTMENT	We will update the Sustainable Investment Framework to reflect the Sustainability Plan 2030.

GET IN TOUCH

How you can learn more and get involved in sustainability at the University of Melbourne:

Staff and students

Visit our Sustainable Campus website for more information about campus sustainability, including volunteering opportunities, the Green Impact program and student internships.

Alumni and the broader community

Attend one of the many fascinating sustainability-focused lectures and events held by our faculties throughout the year.

Businesses, organisations and government

Contact the Business Development team to discuss potential sustainability research partnerships with the University.

Donors

Consider supporting our sustainability and climate-focused research institutes, which connect and amplify the depth and breadth of University of Melbourne research in these areas. Please contact our Alumni and Giving team for more information.

Please get in touch with our sustainability teams with any questions and feedback about this report, and any other sustainability related enquiries.

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Endnotes

a. Parliament of Australia (27 Jul 2022) Climate Change Bill 2022.

b. Symons, W (19 Jul 2022) Our universities are key to tackling the climate challenge.

c. Foundations for Tomorrow (1 Sep 2021) Awareness to Action report.

d. Times Higher Education (May 2022) Students, Sustainability and Study Choices report.

e. https://service.elsevier.com/app/answers/detail/a_id/29398/supporthub/scival/#panel8b