



Australian  
National  
University

# Below Zero Program

Progress report: July – December 2022

Below Zero

+61 2 6125 6611

[belowzero@anu.edu.au](mailto:belowzero@anu.edu.au)

The Australian National University

Canberra ACT 2600 Australia

[www.anu.edu.au](http://www.anu.edu.au)

CRICOS Provider No. 00120C

# Contents

Background and context .....	4
Progress report July – December 2022 .....	6
1. Structure, planning and early implementation .....	6
2. Data, systems and processes for reporting and accountability .....	7
3. Strategic planning and immediate action on emissions reduction.....	8
4. Implementing ANU principles for carbon removal.....	9
5. Community and external engagement.....	10
Looking to 2023.....	11

## Background and context

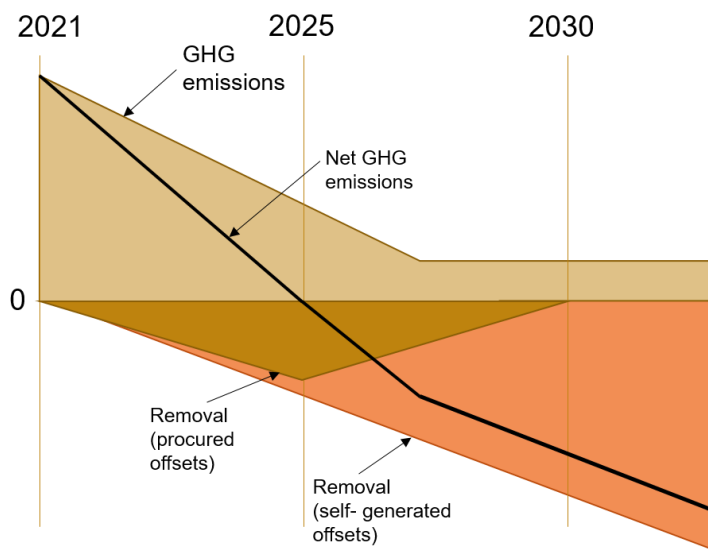
Calls for climate action continue to form a significant part of public discourse, with increasing expectations on governments, corporations and institutions to take action. ANU has committed to providing visible leadership, research-led solutions and capability for driving climate action. ANU seeks to achieve this through reducing our greenhouse gas (GHG) emissions, drawing down and sequestering existing CO<sub>2</sub> from the atmosphere, and building capability and capacity in those spaces by integrating these actions closely with ANU research and teaching.

The ANU Council endorsed the Below Zero strategy and targets in February 2021.

**For direct emissions (scope 1<sup>1</sup>), energy related emissions (scope 2<sup>2</sup>), business travel and waste (partial scope 3<sup>3</sup>), ANU to achieve:**

- Net zero emissions by 2025
- Below zero emissions by 2030
- A leadership position on climate action

**For all other indirect emissions, including those arising from the procurement of goods and services and commuter travel: ANU to reduce emissions as rapidly as possible, following and contributing to global best practice.**



**Figure 1:** Below Zero Targets for scope 1, scope 2 and partial scope 3

The trends and events of interest to Below Zero over the second half of 2022 were:

1. In July, the Federal Government launched the Independent Review of Australian Carbon Credit Units under the Emissions Reduction Fund (ERF) - the “Chubb Review”<sup>4</sup>. This launch follows ANU academics raising concerns and outlining systemic flaws in the ERF (see Below Zero progress report: January-June 2022).
2. In August, the Australian Capital Territory government launched its plan to electrify the Territory and transition away from the use of fossil-fuel gas by 2045 at the latest. Regulation to prevent new gas connections is planned to commence in 2023 and forecasts an acceleration in the rise of gas prices as the number of gas consumers reduces.

<sup>1</sup> Scope 1: direct GHG emissions that occur from sources that are controlled or owned by ANU

<sup>2</sup> Scope 2: Indirect GHG emissions associated with the purchase of electricity, steam, heat or cooling

<sup>3</sup> Scope 3: GHG emissions resulting from activities from assets not owned or controlled by ANU, but that the University indirectly impacts in its value chain

<sup>4</sup> Department of Climate Change, Energy, Environment and Water website:

<https://www.dcceew.gov.au/climate-change/emissions-reduction/independent-review-accus>

3. In September, the Australian Jobs and Skills Summit identified the need<sup>5</sup> to increase commitments to cleaner and cheaper energy, rebuilding and modernising the grid, establishing a First Nations Clean Energy Strategy and delivering a National Energy Workforce Strategy.
4. In October, the Australian Competition and Consumer Commission (ACCC) announced a crackdown on “greenwashing” by Australian companies<sup>6</sup>. The ACCC recognises that “increasingly large proportions of consumers” are making decisions based on products’ sustainability credentials. However, a global investigation found as many as 40% of these claims may be fraudulent.
5. In October, Quacquarelli Symonds (QS) launched its inaugural “World University Rankings: Sustainability”<sup>7</sup>, which provides prospective students with a ranking of world universities’ commitment to a more sustainable existence, via assessing their performance against two broad categories of Social Impacts and Environmental Impacts. ANU ranked 72th out of 700 Universities worldwide, and 8<sup>th</sup> in Australia.
6. In October, the United Nations Environment Program published its “Emissions Gap Report 2022”<sup>8</sup>. This report finds global progress on climate action since COP26 in Glasgow to be “woefully inadequate” and calls for an urgent system-wide transformation to avoid climate disaster.
7. In November, the UN Secretary-General called for “zero tolerance for greenwashing [by non-State actors]”, as the UN Expert Group on the Net-Zero Emissions Commitments of Non-State Entities delivers its first report at the 27<sup>th</sup> Conference of the Parties of UNFCCC (COP27)<sup>9</sup>. The report makes four recommendations around non-State actors (i) aligning pledges to the IPCC scenarios limiting warming to 1.5 degrees, (ii) providing detailed and concrete plans, (iii) making accountable and transparent promises. It also calls for (iv) voluntary initiatives becoming a new normal.

The global context outlines the emergent nature of many areas of activity for climate action, and the gap between commitments and concrete implementation. Transitioning from commitments and planning to funding rapid and at-scale implementation is now critical. The Australian context shows alignment with global trends. Voluntary action and mechanisms are increasingly impacted by regulatory action to ensure the integrity of climate action. The emergence of a new major sustainability ranking and local regulations on phasing out fossil-fuel gas are directly impacting ANU operational context and profile.

Conversely, there is a continuing growth in the signals that consumers seek to engage with, and purchase from, climate conscious organisations. The opportunity to leverage ambitious climate action for business success (see Below Zero progress report: January – June 2022) is increasingly being prioritised, sometimes in a predatory manner, by investment-minded organisations. ANU positioning as a trusted resource for the nation and region, and its investment in ambitious climate action, have the potential to help shape, demonstrate and democratise the systemic transitions required to drive least-cost climate transitions in a just and transparent manner.

---

<sup>5</sup> Australian Treasury website: <https://treasury.gov.au/sites/default/files/inline-files/Jobs-and-Skills-Summit-Outcomes-Document.pdf>

<sup>6</sup> Australian Competition and Consumer Commission: <https://www.accc.gov.au/media-release/accc-internet-sweeps-target-greenwashing-fake-online-reviews>

<sup>7</sup> QS World University Rankings: Sustainability 2023: <https://www.topuniversities.com/university-rankings/sustainability-rankings/2023>

<sup>8</sup> Published 27 October 2022: <https://www.unep.org/resources/emissions-gap-report-2022>

<sup>9</sup> United Nations website: <https://news.un.org/en/story/2022/11/1130317>

However, the ANU financial position continues to prove difficult, with operational losses expected to continue to 2026 in the aftermath of the COVID-19 pandemic. In this context, ANU is at an inflection point in terms of its commitment and ability to achieve Below Zero. Throughout 2022, learnings from Below Zero pilots and analysis have provided an initial encapsulation of the requirements and opportunities that can be seized by ANU as part of the program. These require a systemic program of investments and actions to shape a just and effective transition. The window of opportunity to implement complex, transformational change ahead of the first major Below Zero stage gate (net zero emissions in 2025) is rapidly dwindling.

## Progress report July – December 2022

### 1. Structure, planning and early implementation

Below Zero has progressed on integrating analysis, learnings and progress to-date into a program-wide strategic portfolio. The portfolio incorporates a Strategic Plan to 2031, a Delivery Program and Operational Plan to 2026, and a Community Engagement Strategy and Action Plan. The Strategic Plan refines the previously established Below Zero vision and elucidates six interconnected outcomes necessary for the success of the program, detailed in Table 1 below.

**Table 1** - The six interconnected outcomes to be delivered by the Below Zero Program

<b>People</b>	A climate-literate and climate-capable culture throughout the University, where transparency and achieving climate and sustainability goals are drivers of success across the organisation and for individuals.
<b>Environment</b>	An interconnected natural, built and digital environment that demonstrates, enables and encourages climate-positive decisions and behaviours.
<b>Leadership</b>	Demonstrated leadership through establishing and identifying, catalysing and role-modelling best practice and a systemic approach to ambitious climate action.
<b>Net Zero</b>	Achieve net zero for the emissions boundary for 1 Jan-31 Dec 2025 and sustain net zero year on year from 2026-2029 (inclusive).
<b>Below Zero</b>	Achieve below zero emissions for the emissions boundary for 1 Jan-31 Dec 2030 using ANU-connected carbon removal activities.
<b>Historical Emissions</b>	From 2031 onward, sustain below zero emissions for the emissions boundary and draw down on historical emissions using ANU-connected carbon removal activities.

The Delivery Program to 2026 maps more detailed outputs, timeframes and implementation considerations to prosecute Below Zero in the short term. These considerations include cross-campus engagement models to drive coordinated action at the institutional, local area and

individual level as a pathway to build the necessary climate-literate and climate-capable culture through ANU. Next steps in this space include adapting the program governance structure to facilitate the shift from planning to implementation.

This planning work concludes the “Pilot and Plan” phase of Below Zero outlined in the program roadmap to 2030, provided again for reference in Figure 3 below. As this work progresses, so has the context and position of the ANU. As noted in previous sections of this report, ANU is currently at an inflection point, at which its capacity and appetite to scale up preferred solutions under the “Accelerate and Prepare” must be revisited.

Year	Phase
2022	<b>PILOT AND PLAN</b> – Run systemic pilots in emissions reduction, emissions removal and engagement. Sense-make and incorporate learnings into long-term, large-scale plans. Enlist early adopters within our community and generate short term wins.
2023-2024	<b>ACCELERATE AND PREPARE</b> – Invest into upscaling preferred solutions for emissions reductions and into our capacity to procure high-quality carbon credits and generate ANU-connected emissions removal; support, incentivise and celebrate engagement by our community. Run a Net Zero “dry run” in 2024.
2025	<b>DELIVER NET ZERO AND RECOMMIT</b> – Integrate across ANU to meet our 2025 Net Zero commitment. Celebrate the halfway point to Below Zero and re-commit to sustaining and accelerating towards Below Zero. Consolidate and share our learnings to date.
2026-2027	<b>SUSTAIN AND PIVOT</b> – Sustain our Net Zero commitment and future-proof it against possible shocks and growth. Continue to drive emissions reduction and accelerate ANU-connected emissions removal. Support engagement and transition from late adopters. Target “peak procured carbon credits” in no later than 2027.
2028-2029	<b>CONSOLIDATE AND LEAD</b> – Commit to a “Maximum absolute annual emissions” value from 2029 onwards. Normalise ANU-connected emissions removal as a part of ANU operations. Support other organisations towards Net Zero, building on 3+ years of successful ANU Net Zero operations.
2030	<b>DELIVER BELOW ZERO AND INSTITUTIONALISE</b> – Integrate across ANU again to meet our 2030 Below Zero commitment. Celebrate the end of the journey to Below Zero and institutionalise sustaining ANU as a GHG-negative organisation. Re-commit to a timeframe for removing historical emissions and to our role in supporting other Net and Below Zero commitments.

**Figure 3:** Below Zero roadmap to 2030.

## 2. Data, systems and processes for reporting and accountability

Below Zero has established the framework for emissions accounting and reporting at ANU, adopting the position that ANU will account and report emissions against international best practice, namely the Greenhouse Gas Protocol, backed by third-party verification. This choice provides structure and accountability for the ANU climate action while aligning best with Below Zero contributions to principles-led offsetting and emissions removal activities. The next steps in this area involve adequately resourcing, piloting and setting up data systems to professionalise greenhouse gas accounting and reporting at ANU ahead of the 2025 Net Zero commitment.

Below Zero has continued to engage closely with planned initiatives in travel management policies, processes and systems, to improve the availability and quality of data for greenhouse gas emissions relating to University travel. The absence of accurate and exhaustive data

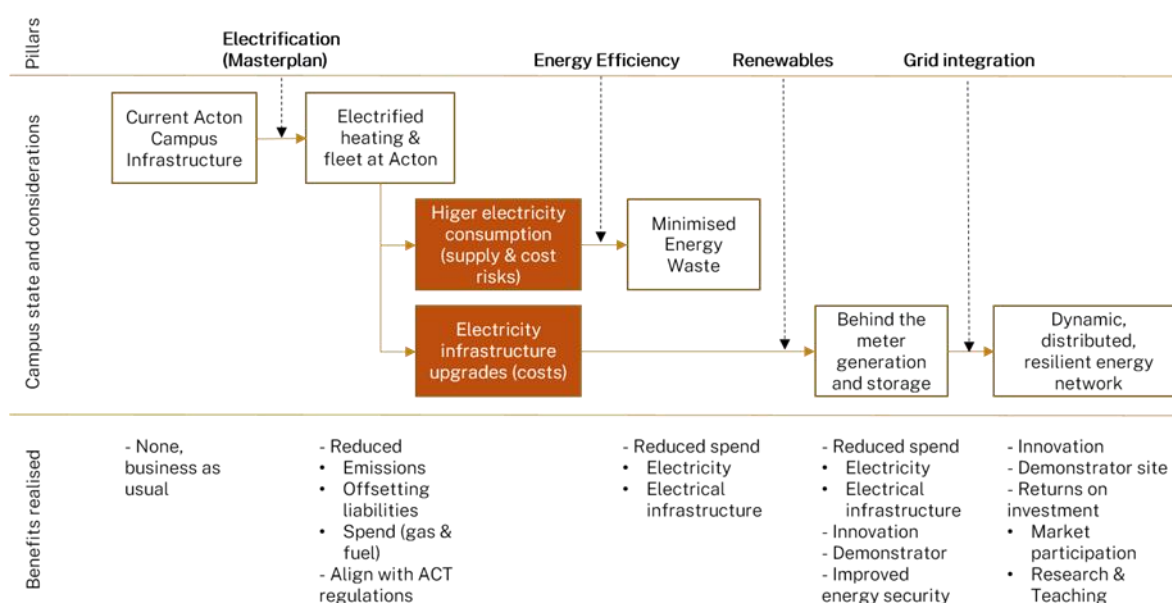
relating to the University’s main source of greenhouse gas emissions<sup>10</sup> is an ongoing challenge for the progression of Below Zero. Below Zero participation in the overhaul of the ANU Travel Management System in 2022-23 aims to develop this capacity at ANU.

The development of an ANU Energy Dashboard, for improved data visualisation of utility consumption across all ANU sites is due for soft launch in January 2023. The dashboard will provide ANU corporate and local area decision-makers, as well as individuals, with the ability to compare site performance through customisable visualisations. The next steps in this area involve publicly launching the dashboard to raise awareness of consumption patterns and progress against the “People” and “Environment” Outcomes of the Below Zero Strategic Plan.

Lastly, Below Zero is progressing on the pilot report against the Taskforce on Climate-Related Financial Disclosures (TCFD) Framework, for inclusion in the ANU 2022 Annual Report. ANU can role-model transparency and leadership in the university sector by embedding a clear-eyed disclosure of its climate-related governance, strategy, risk management and metrics and targets.

### 3. Strategic planning and immediate action on emissions reduction

Below Zero has progressed on the Acton Infrastructure Decarbonisation Masterplan throughout the second half of 2022. The plan proposes ANU takes a centralised approach to electrifying the Acton campus, which will phase out over 80% of the Acton and Mount Stromlo Campuses gas consumption and eliminate over 20% of the total ANU greenhouse gas emissions within the Below Zero emissions boundaries. Ongoing integration between identified pillars of activity will increase the opportunity for ANU to capture benefits for itself, connect intimately with our core business and values, and demonstrate and de-risk ambitious climate action, as outlined in Figure 4 below.



**Figure 4** – Schematic overview of connections between the four identified pillars of action to reduce energy-related greenhouse gas emissions.

<sup>10</sup> University travel (which excludes commuter travel to and from ANU sites represents ~51% of total emissions within the emissions boundary in the 2019 baseline



Within this framework, Below Zero continues to scope and plan new pilot and foundational projects to reduce energy-related emissions. New projects include reinstating and optimising rooftop solar capacity on the Acton campus as part of hail remediation activities; setting foundational infrastructure to capture waste heat from the National Computational Infrastructure building; and deploying electric vehicles charging stations on the Mount Stromlo campus. Electrification of the School of Music / Peter Karmel building and N block is planned to take place throughout 2023. Electrification of M block is planned to be completed by the end of quarter 2, 2023. Electrification of the Drill Hall Gallery is in design.

In parallel, Below Zero is progressing on an evidence-based travel change program aiming to reduce greenhouse gas emissions related to University travel. The program framework builds on principles that have underpinned other successful organisational change initiatives. It integrates information from scientific literature, benchmarking, community consultation and pilot activities to establish a proposed vision and underlying outcomes for transforming travel at ANU. This approach provides a unique opportunity for the University to become a living laboratory and demonstrate close integration of research, teaching and operations to drive equitable and effective climate action.

#### 4. Implementing ANU principles for carbon removal

Below Zero welcomed the announcement of the Independent Review of Australian Carbon Credit Units (ACCU), which is currently investigating the integrity of the methods and mechanism of the Australian carbon credit market. The announcement of the review was timely, with the University's own *ANU Principles for Carbon Removal* seeing endorsement by Council within weeks of the announcement of the review and feeding into the consultation process. Below Zero are preparing financial modelling to explore the cost implications of implementing the Principles, to be presented to Council in February 2023.

In parallel, Below Zero is progressing an analysis of the voluntary carbon credit market. Results and consultation with ANU experts show significant liquidity shortfalls in high-quality credits on Australian land. An alternative is for ANU to pursue a direct carbon purchasing agreement with Natural Resource Management organisations. Ongoing scoping is taking place on the feasibility and contractual dimensions of a potential purchasing agreement.

Lastly, building relationships was a key aspect of Below Zero carbon removal in the second half of 2022, engaging with federal government to explore partnerships for carbon removal within the APS Net Zero team and Department of Defence, drawing on the expertise of ANU alumni in the carbon market space (CO<sub>2</sub> Australia and Market Advisory Group) and engaging with other educational institutions, such as the Australian Agricultural Centre, to assist in setting up their "Questacon for agriculture" demonstration at their Crookwell site, of which, carbon is a key component.

Key emerging pilot projects in the carbon removal space include:

- Working with Warumungu Traditional Owners at Warramunga Station to develop a healthy Country plan and pilot desert carbon crediting methods at the site
- Engaging the Kioloa Campus Management Committee to demonstrate the emissions reduction and removal synergy at the site – an opportunity to provide new teaching and research opportunities at the campus while meeting the University's Below Zero goals
- Funding an interdisciplinary team exploring a direct air capture technology via a process known as solar-thermal diffusion – tapping into existing ANU experimental infrastructure to pivot to the carbon removal space

## 5. Community and external engagement

Noteworthy engagements in the second half of 2022 include Below Zero engaging with the Global Alliance of University on Climate (GAUC)<sup>11</sup> annual workshop organised by the ANU Institute for Climate, Energy and Disaster Solutions. This workshop saw member universities share approaches and learnings on their initiatives in campus decarbonisation and reducing travel-related emissions. Below Zero also provided input into the International Alliance of Research Universities (IARU) Campus Sustainability Initiative's survey of members on travel-related emissions reductions. Lastly, Below Zero took a leading role in coordinating internal perspectives to produce an ANU submission into the Group of Eight Sustainability Capability Statement following the Jobs and Skills Summit.

Internally, Below Zero continued to engage closely with the development of the ANU 2022-25 Environmental Management Plan (EMP), ensuring synergies are elucidated and implemented once the EMP is adopted by ANU. Below Zero also provided data for the University's trial submission to the Times Higher Education Impact ranking against Sustainable Development Goal 13 (Climate Action). The launch of the QS World University Ranking: Sustainability outlined above reinforces the need for ANU to access and publish clear data on the environmental and social initiatives and impacts of the University.

As of writing, the pilot implementation of the Green Impact community sustainability program is coming to an end. The pilot implementation received good engagement and an iterated implementation is planned for 2023, with toolkits of activity under development to further engage staff and broaden participation to student residences. The Below Zero strategic portfolio will drive additional community engagement activities from 2023 onwards, including the launch of the "Sustainability Network" community building program, the launch of an improved Below Zero online presence, and amplified communications as the program moves into the Accelerate and Prepare phase of the roadmap.

Encouragingly, there are multiple examples of College / Portfolio led emissions reduction across campus. These include Facilities and Services Operations portfolio replacing an end-of-life security vehicle with electric buggy alternatives; the College of Engineering, Computing and Cybernetics, and College of Arts and Social Sciences reducing event-related emissions through switching to vegetarian catering; and College of Health and Medicine embedding greenhouse gas footprint considerations into equipment procurement decisions. These demonstrations of alignment can be encouraged and further leveraged to amplify a positive feedback loop between ANU institutional and community action.

---

<sup>11</sup> Global Alliance of Universities on Climate website: <https://gauc.net/>

## Looking to 2023

Global reports have shown that climate action becomes increasingly harder the more it is delayed. The level of priority that ANU sets for Below Zero over the next years will determine the University's capacity to deliver on its ambition and public commitment. The major, twinned benefits of realising the ambitious ANU Below Zero commitment are to

- i. elucidate and demonstrate rapid climate action *early enough* that other organisations may follow and become part of the solution to limiting global warming to safe levels;
- ii. secure reputational, operational and financial benefits from ANU being, and being recognised as, a pioneer in this space.

Within this context, ANU must now decide whether it has the appetite and capacity to deliver on point (i) with enough speed and excellence to make a difference and capture the long-term benefits outlined in (ii) *OR* pare down its ambition in the face of financial difficulties and re-set itself as a (fast) follower in climate action.

As of today, Below Zero has completed its draft strategy portfolio, constituted of a strategic plan to 2031, delivery program and operational plan to 2026, and community engagement and communications plans. This integration of works and learnings to-date provides an overarching view of the breadth and depth of action necessary to achieve the Below Zero targets. Assuming adequate funding, the program is focussing on driving the following actions in 2023:

1. Build new ANU capacity, and bolster existing ones, to support systemic transformational change in ANU data, energy infrastructure, organisational processes and community behaviours.
2. Leverage improvements in ANU capacity to capture greenhouse gas data, and growing community engagement with the program, to make our position, strategies and actions more transparent and legible to our stakeholders, and more attractive to partners.
3. Integrate the relationships and trade-offs between Below Zero initiatives in emission reductions (across all sources of emissions) and emissions removal (across purchasing offsets and standing up ANU-connected carbon removal) to chart a path to optimal benefit realisation for ANU.
4. Transition from pilot-scale initiatives in emissions reduction to campus-scale, via the rapid implementation of the Acton Infrastructure Decarbonisation Masterplan and Travel Change Program once they are adopted.
5. Future-proof the ANU Net and Below Zero commitments by initiating the procurement of high-quality carbon credits to cover ANU offsetting needs for 2025-2029, and by breaking ground on ANU-connected emission removal projects that will cover ANU needs from 2030 onwards.
6. Continue to provide distinctive and attractive opportunities for ANU staff and students to engage with the Below Zero program. Scale up the ANU contribution to building local, regional and global capacity for climate action.

### Attachments:

None