

ANU Below Zero Carbon Offsetting Strategy



ANU Below Zero Program

Tom Adams
U6514309

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1.0 Executive Summary

The Australian National University (ANU) has a commitment to reaching Below Zero greenhouse gas emissions by 2030, with an interim target of achieving carbon neutrality by 2025 (Net Zero). As of 2022, The ANU had declared it will measure, certify and validate their carbon neutral target against International best practice, namely the Greenhouse Gas Protocol. Under this certification scheme, the ANU will declare carbon neutrality for all Scope 1 and 2 GHG emissions, as well as a select

suite of Scope 3 emissions. While reducing emissions at their sources is the universities highest priority, it is still recognized that offsets will be a fundamental transition mechanism for ANU's short-term climate ambition. As such, forecasting suggests ANU will need to offset 200,000 tonnes of Co2 equivalent between 2025 and 2029 to be completely carbon neutral.

However, to date the ANU has yet to formulate a clear and structured strategy to offsetting their cumulative short-term emissions. This report investigates the viability of several short-term offsetting strategies for the ANU, using a qualitative analysis to identify and contrast potential approaches to reaching Net-zero emissions. The results recommend that ANU Below Zero pursue a carbon-purchasing agreement with NRM Regions Australia in order to offset ANU's residual greenhouse gas emissions for the short term (2025-2029). While a range of options were considered and discussed, this form of purchasing agreement guarantees ANU the greatest versatility, control and risk management of its carbon offsetting portfolio. Furthermore, this analysis discusses the implications of this partnership, noting ANU's capacity to pursue a carbon purchasing agreement of this nature.

2.0 Introduction and Background

In response to mounting global pressure to limit Climate Change, governments, organizations and individuals are increasingly determined to escalate their climate ambition. In the wake of such rapid socio-ecological change, organizations across the world have made individual, voluntary pledges to achieve carbon neutrality, in the anticipation that voluntary ambition will drive wider social and environmental change.

The Australian National University, located on Ngunnawal land in the Australian Capital Territory, is one of Australia's largest and most prestigious universities. In 2020, The ANU established its Below Zero Program; a strategic initiative to reduce and remove university-related greenhouse gas emissions to 'Net Zero' by 2025 and 'Below Zero' by 2030 (ANU, 2021). In conspiring such a mission, the ANU recognized that decarbonization would not only contribute to global environmental sustainability, but also mitigate its own organizational risk and provide strategic opportunities for future research and teaching. In 2020, ANU Below Zero pledged to achieve Net Zero greenhouse gas emissions for all direct on campus activities (Scope 1), energy related emissions (Scope 2), as well as business travel and waste emissions (partial Scope 3) (ANU, 2021). To verify and validate the universities ambition for decarbonization, this suite of emissions will be quantified and reported against the Greenhouse Gas Protocol's Corporate Standard. By adopting the GHG Protocol, the ANU can achieve carbon neutrality by offsetting its residual greenhouse gas emissions (GHG Protocol, 2001). To date, ANU Below Zero forecasts that it must offset roughly 200,000 tones of Co2 (equivalent) over 5 years between 2025 and 2029, in order to be certified climate neutral. By 2030, it is anticipated that ANU will have transitioned away from carbon offsets, instead utilizing *insetting* methods to capture and remove their own emissions.

However, despite identifying the need for carbon offsets to facilitate ANU's transition to 'Below Zero Emissions', to date the ANU has yet to deliver on a formal strategy to offset their GHG emissions in the short-term. Rather, ANU Below Zero have produced a set of guiding principles for emissions removal in 2022 (ANU, 2022; Appendix), with the intent to facilitate the formulation of this strategy. **As such, the purpose of this report will be to deliver a formal 'carbon offsetting strategy' to the ANU that aligns with its organizational goals, principles and capacity.** Furthermore, this report will discuss several carbon offsetting approaches, identifying and justifying the most suitable of these options. Finally, this report will discuss the implications of this strategy for the ANU's research and teaching.

Decarbonizing the Australian National University is an important step forward for Australia, and indeed the international community, to limit global warming to 1.5 degrees. Deciding on an appropriate and sustainable strategy for the ANU to decarbonize will therefore be fundamental to achieving its own climate ambition in a timely and effective manner. As such, delivering a carbon offsetting strategy will ensure that the ANU has the necessary guidance to meet their organizational goals and ensure a sustainable future for its staff, students and extended stakeholders.

3.0 Methods and Procedures

The overriding purpose of this project is to assist the ANU Below Zero Program in developing a corporate strategy for carbon offsetting which meets their 2025-2030 strategic Net Zero goals. Specifically, this report will discuss ANU's opportunities for offsetting their short-term emissions, justifying and supporting its proposed strategy with market research and expert advice. Finally, this report will discuss the implications of the proposed strategy

for the future of the ANU Below Zero Program, the Institute for Climate, Energy and Disaster Solutions (ICEDS) and ANU more broadly.

The following project was undertaken with the support of the Emissions Removal Manager of the ANU Below Zero Program, Caitlyn Baljak, who provided guidance for offsetting ANU's GHG emissions. Following initial consultation, it was deemed necessary to stagger the approach to this project, with initial market research to be followed by supplier communication, expert consultation, academic review and further reflection. Executing this project therefore required a preliminary stage, a primary and secondary stage, followed by a final review.

Project Stages and Timeline

During the preliminary stage of this project, I reviewed a range of carbon offsetting resources, including Australia's Carbon Market Directory, University-led research, ANU Below Zero (BZ) foundational documents and previous BZ internship projects. Reviewing said resources provided clarity on the nature, processes and alternatives for achieving carbon neutral certification. The independent research I used to develop these foundational skills was publicly available information. Specifically, the ANU Below Zero Program Management Hub, Carbon Market Institute and Emission Reduction Fund (ERF) website were accessed regularly and offered the greatest quality data and information.

In the primary stages of this project, I analyzed and reviewed the liquidity of Australia's Carbon Marketplace, investigating the range of carbon credits commercially available to the ANU. Following this research, a range of prospective carbon credit suppliers were compiled into a spreadsheet and scrutinized against ANU's Principles for Carbon Removal (Appendix 1). From this market research, I identified and selected several aggregator organizations who met ANU's principles for partnership, pending academic consultation and review.

For the secondary stage of this project, I reviewed ANU's approach to its carbon credit procurement. Consultation was held with Professor Andrew Macintosh, an ANU academic and expert in environmental law. Following this consultation, and on the basis on Professor Macintosh' advice, recommendations were made to reevaluate ANU's carbon offsetting strategy. At this stage, I conducted further market research to formulate an alternative strategy. There were several compounding issues that led to this executive decision being made.

During the final stage of this project, I outlined and recommended the most suitable and judicious alternative approach to offsetting ANU's carbon emissions in the short-term. This approach aligned itself with the ANU's Principles for Carbon Removal, the GHG Protocol, as well as the research and teachings of the Australian National University. Importantly, I executed this project through consultation and communication with university scholars and stakeholders. Workshops with ANU academics were held fortnightly to discuss my project progress, as well as to discuss the challenges & opportunities of ANU's net zero target.

4.0 Results and Outcomes

The intent of this report was to identify and discuss a formal carbon offsetting strategy for the Australian National University. Importantly, it was fundamental that said strategy aligned itself with the principles, goals and capacity of the ANU as an organization.

Initial market research into Australia's carbon marketplace identified that Australian Carbon Credit Units (ACCU's), connected to (and generated from) *Environmental and Mallee Planting Projects*, were the most commercially suitable credit for the ANU. The specifications for high-integrity credits, as outlined within the principles (specif. Permanence, Additionality) recognized that *Environmental and Mallee Plantings* were the preferred methodology under which credits should be sought. This conclusion was supported by the research and recommendations of previous Below Zero Intern, Peter Phillipa, who had investigated ERF carbon credit methodologies. My analysis of *Environmental and Mallee Planting Projects* registered on the ERF Register recognized that the volume of commercially available credits under this methodology was limited in comparison to other methodologies. Further, due to Principle 1.b of ANU's Principles for Carbon Removal, which stipulates that emissions removal must take place on domestic land (ANU, 2022), other forms of international credits (such as VCU's, VER's and CER's) were ruled out. While certain international organizations did produce credits on Australian land, these credits were almost always a 'packaged credit'; whereby the certified emissions removal had taken place internationally and not domestically. Consequently, the central project aggregators that I considered in the primary project stage were *Climate Friendly*, *Carbon Conscious*, *Co2 Australia* and *Carbon Neutral*. Despite identifying these project aggregators as suitable candidates, the liquidity of credits commercially available under *Environmental and Mallee Planting Projects* still remained unlikely to support the volume of credits ANU needed.



Following consultation with ANU Professor Andrew Macintosh, Caitlyn Baljak and I decided that ANU would reconsider its approach to offsetting its GHG emissions. While primary market research had indicated that ACCU's were the only feasible means to purchase offsets, further consultation highlighted the risks and challenges of offsetting ANU's emissions using ACCU's. Specifically, the Independent Review of Australian Carbon Credit Units (DCCEEW, 2022), which included submissions from ANU staff and students, highlighted that any direct investment into the Australian Carbon Market at the present time would be unwise until the panel had completed its review. Professor Macintosh advised ANU Below Zero that given integrity concerns with over $\frac{3}{4}$ of the liquidity within the market, even the purchase of high-integrity credits would bring organizational and reputational risk.

From our discussions, Caitlyn Baljak and I formed the view that the next best alternative to purchasing carbon credits was to partner with an organization who specializes in (some form of) carbon removal. Such a partnership would involve the university providing capital to fund carbon removal (e.g., providing funding to plant trees), and in turn receiving accredited carbon for their investment. Given the ANU's existing principles, *Environmental and Mallee Plantings* were still considered the lowest risk, highest integrity carbon investment.

As such, I considered several land-care related organizations for this partnership, including Co2 Australia, GreenFleet and Landcare. Following Professor Macintosh' advise, Climate Friendly, Carbon Conscious and Carbon Neutral were not considered further for this partnership. Consequently, several workshops with Professor Macintosh and Caitlyn Baljak discussed the relative implications of each possible partnership. As a result, I propose that ANU work directly with Natural Resource Management (NRM) Regions Australia. Specifically, the **ACT NRM Council, Riverina Local Land Services** and **Southeast Local Land Services** are to be preferred based on their regional proximity to the ANU. Supporting carbon sequestration and accreditation through NRM Regions Australia would bring a range of co-benefits, establish clear additionality, ensure carbon permanence and support research and teaching.

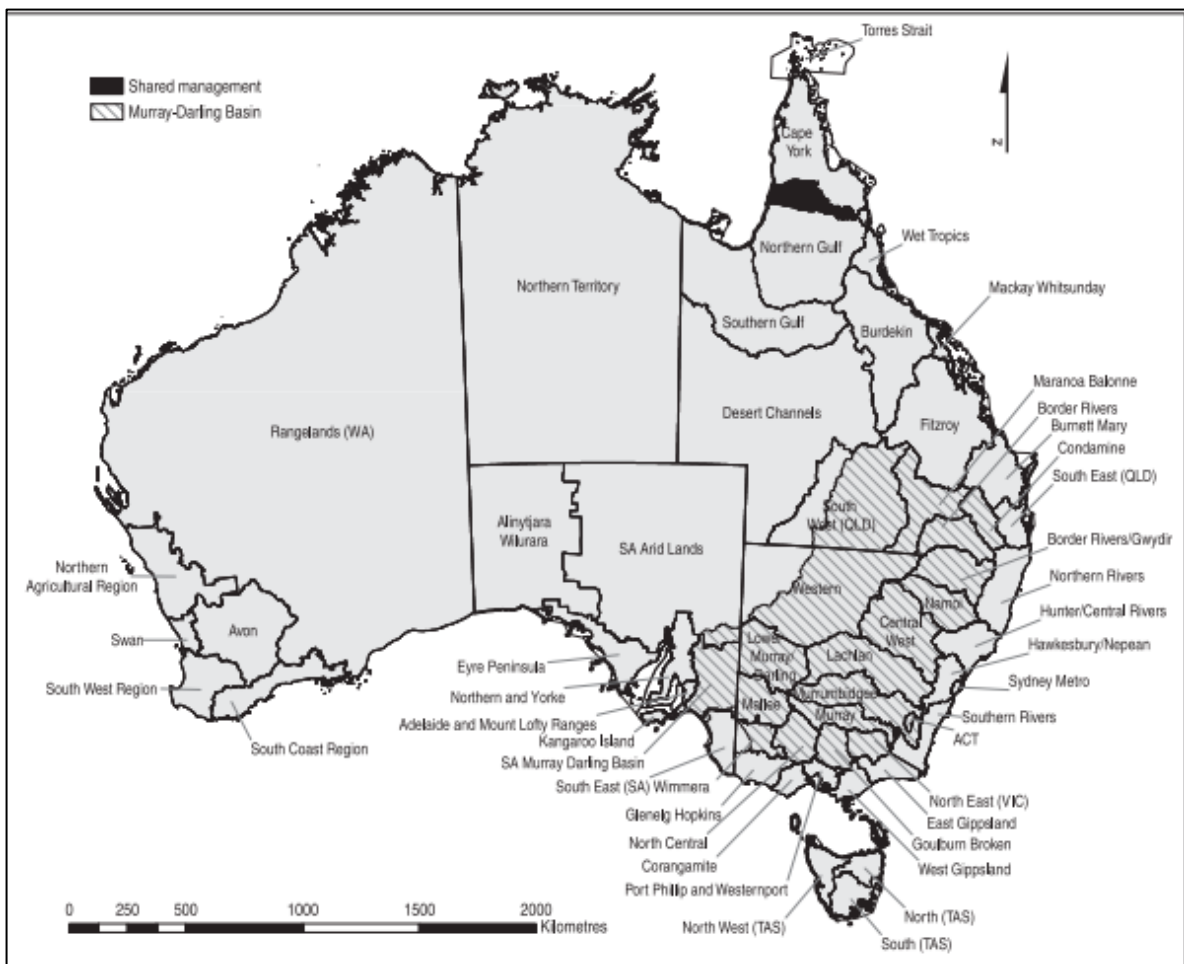


Figure 1: NRM Regions Australia, with ACT NRM Council, Riverina Local Land Services and Southeast Local Land Services highlighted (Source from Robins and Dovers, 2007)

The findings from this report recommend that ANU Below Zero partner with NRM Regions Australia to offset ANU's short-term greenhouse gas emissions. A partnership, as opposed to purchasing commercial credits from a voluntary carbon market, is a more risk averse and strategic avenue for ANU. Furthermore, this is a decision that aligns more adeptly with the

views, experience and knowledge of its stakeholders as well as the capacity of the university more broadly.

NRM Regions Australia represent over 50 land management bodies across Australia, with broad resourcing in environmental & heritage management and conservation. NRM councils play crucial roles in representing the interests of individuals and landholders within their regional council. Regional NRM Organizations are governed by elected board members, who represent the values, perspectives and priorities of their regional community (Robins, 2007). As such, local NRM Organizations are a key stakeholder in regional decarbonization and action on climate change.

To facilitate ANU's emissions removal, as well as to support NRM regions to improve regional biodiversity and soil & water health, I recommend that ANU pursue a carbon purchasing agreement with NRM regions Australia. The agreement would look as follows.

- (a.) ANU provides NRM Regions Australia with upfront capital (value to be determined)
- (b.) This capital goes towards *Environmental Planting Projects*, which are facilitated through an NRM-Landholder agreement.
- (c.) Landholders receive free environmental plantings, improving their properties biodiversity, soil & water health
- (d.) NRM Regions are supported by the ANU to promote environmental stewardship.
- (e.) ANU receives part of/or full carbon accreditation for the carbon abated by these projects.
- (d.) Carbon removed and sequestered can be retired with ANU and certified against the GHG Protocol Corporate Standard.

Project Implications

In addition to minimizing exposure to carbon market instability and guaranteeing real and additional carbon abatement, a partnership with an NRM Project Developer would benefit ANU by developing its carbon-removal expertise and experience. Principle 1.d of ANU's Principles for Carbon Removal (ANU, 2022) specifies ANU's ambition to integrate research and teaching into carbon removal. Landscape regeneration of this nature provides many opportunities for research and teaching, particularly in earth and environmental science. An ANU-NRM relationship could harness these opportunities. As such, this approach allows ANU to achieve this ambition while simultaneously realizing its climate goals and strategy. This approach, as opposed to those previously discussed, also allows ANU to establish a long-term partnership with NRM Regions Australia, which is considered a high priority under ANU's Principles (Principle 4b. ANU, 2022).

Furthermore, a partnership will also build regional capacity and knowledge of carbon removal, which is also considered a priority under ANU's Principles (Principle 1e, ANU, 2022). A partnership of this nature not only benefits the broader de-carbonization effort across Australia; it also grants ANU the opportunity to refine its expertise in carbon removal.

Given ANU's goal to be 'Below Zero' by 2030 (using its own insetting methods), this short-term strategy is complementary to the long-term ambition of the University.

In addition to capacity building, a partnership with NRM Regions Australia would be beneficial given the existing professional networks throughout ANU. ANU has strong established ties with NRM Regions Australia, principally due to Dr. Kate Andrews, an academic of the Fenner School and CEO of NRM Regions Australia. Dr. Andrews, who has extensive expertise and knowledge of NRM Regions Australia, could provide expert consultation and help facilitate this partnership, streamlining the carbon-agreement process for both ANU and NRM Regions Australia. Given the short timeline ANU is working against, such a streamlined process will be highly beneficial to both the university as well as domestic landholders looking to bolster their landscapes against climate change.

As well as this, a carbon agreement with NRM Regions Australia achieves many co-benefits associated with carbon removal. Specifically, a partnership with NRM Regions Australia can facilitate the ANU's ongoing support for traditional owners; specifically, by supporting traditional land management practices through landscape regeneration. Environmental planting projects will improve regional biodiversity, landscape and soil health, as well as adapting Australia's landscape to climate changes. Such projects also improve water and air quality, improve public health outcomes and provide socio-economic opportunities for regional stakeholders. Finally, the proposed strategy, as a form of both climate mitigation and climate adaptation, has excellent climate outcomes.

Future Project Direction

The next stages of this project would see ANU Below Zero extending an invitation (for this proposed partnership) to NRM Regions Australia. Following a mutual agreement over partnership goals and commitments, ANU Below Zero should draft an initial carbon purchasing agreement with NRM regions Australia. Future internship projects might investigate and advise on the structure and dynamics of an ANU-NRM contract. Finally, I recommend that consultation be maintained with ANU academics and other respected stakeholders into the future to ensure ANU's decarbonization strategy maintains the highest possible integrity. Regular workshops with cross-disciplinary academics from ANU can ensure this partnership is managed carefully and sustainably. Ultimately, taking this approach will deliver the greatest balance between ANU's ambition for decarbonization, its capacity and resources, as well as its professional and academic integrity.

6.0 Appendices

6.1 ANU Principles for Carbon Removal

The Principles

To ensure that the Principles continue to reflect best-practice, this document will be reviewed biennially by the ANU Below Zero Carbon Removal Principles and Projects Workstream.

Overall ANU approach to carbon removal

Principle 1a: Reducing greenhouse gas emissions at their source is preferable to drawing them down later

We must first reduce the emissions associated with our activities and only remove greenhouse gas emissions from the atmosphere as a last resort for emissions that are very difficult to abate. This is because emissions reduction is both cheaper and energetically easier than emissions removal, and releasing one tonne of carbon dioxide (CO₂) into the atmosphere can be more damaging than the positive impacts of removing one tonne of CO₂⁵.

Principle 1b: Only carbon credits and removal projects on Australian land can be counted towards ANU Below Zero targets

This is aligned with our role as Australia's national university and it allows for greater traceability of credits and mitigates the risk of double counting.

Principle 1c: The cost of carbon credits that offset the carbon emitted during business practices will be covered by the relevant ANU business unit where the emissions originated (polluter pays)

This will apply only to the University's business related activities.

Principle 1d: The University will integrate research and teaching into all ANU carbon removal projects and partnerships

All carbon removal projects on ANU owned or leased land, and any partnerships focussed on carbon removal will involve activities associated with the University's core business of research and teaching.

Principle 1e: ANU will seek to build capacity in carbon removal research in Australia and overseas

ANU will support and fund innovative research in carbon removal projects, technologies and governance. The University will help establish and/or meaningfully contribute to partnerships or coalitions with other universities, research institutions, Traditional Owners, landholders and organisations working on carbon removal. By sharing and diversifying the financial investment as well as the research and administrative workloads across institutions, a robust and collaborative system supported by sector-wide networks can be maintained.

Principle 1f: ANU will inform and strengthen standards within carbon removal markets

As per the ANU 2025 Strategic Plan, the University is committed to ensuring our research is translated and communicated to shape national and global debates. ANU will constructively engage with critical stakeholders and policymakers to ensure broad public understanding of carbon removal, as well as effective governance of carbon crediting schemes both in Australia and internationally.

⁵ [Zickfeld et al. \(2021\)](#)

Co-benefits and Safeguards

Principle 2a: ANU will assess rigorously carbon removal projects across all stages to ensure they advance the United Nations Sustainable Development Goals, do not cause harm, and are consistent with the other Principles

ANU will draw on existing global best-practice to develop an environmental, social and economic life-cycle assessment approach to apply across carbon removal projects and carbon credit procurement.

Principle 2b: ANU will develop long-term partnerships and work in collaboration with Traditional Owners, other landholders, local communities and other stakeholders across all project phases

Respectful and mutually beneficial partnerships, including First Nations representation and participation, are central to the success of the ANU Below Zero Initiative. ANU will act in accordance with appropriate guidelines, protocols and concepts from international and Australian best-practice, including Free, Prior and Informed Consent (FPIC)⁶.

Principle 2c: ANU will prioritise projects that generate co-benefits in priority areas

Priority co-benefits from ANU carbon removal projects encompass: (i) supporting First Nations' connections to Country and traditional knowledge; (ii) economic benefits to local communities; (iii) biodiversity conservation and landscape regeneration; (iv) improved water quality and supply for drinking water provision and ecosystem health; (v) sustainable agricultural and renewable energy production; (vi) improved public health and well-being outcomes under extreme weather events and disasters; (vii) increasing soil stability against erosion; and (viii) enhancing adaptation to climate change. ANU will create and use a framework/project assessment tool to identify and evaluate both co-benefits and negative externalities (if any) for each project.

Principle 2d: ANU will diversify its portfolio of carbon removal projects across sectors and geographies to demonstrate best-practice methods and support knowledge sharing across different contexts

ANU will contribute to knowledge regarding carbon removal opportunities across multiple contexts. Importantly, this means trialling new technologies and approaches, documenting both successes and failures, assessing effective governance approaches, and a commitment to work with other organisations seeking to reduce their emissions to both net zero and below zero.

Additionality

Principle 3a - ANU carbon removal projects must clearly demonstrate additionality

Carbon removal connected to ANU should be additional, meaning the activities represent emission reduction relative to a counterfactual baseline that would not have occurred in the absence of the carbon removal activity, nor without the incentive of the carbon credit payment.

Principle 3b - ANU will collect baseline data that are robust, conservative and site specific to assist in demonstrating additionality

Additionality can be difficult to determine and verify, and ultimately involves some degree of subjectivity since the counterfactual world in which the offsetting activity was not performed cannot be observed directly. To assist in this determination, ANU will collect baseline data that are robust, conservative and site specific for carbon removal activities as evidence of a comparative counterfactual. See Principle 5 for further information on Measurement, Reporting and Verification (MRV).

Permanence

Principle 4a: The biophysical permanence of removed carbon should be ~100 years or longer

Projects will model dynamic carbon stocks and flows through seasons, years and decades ensuring durability estimates of contracted carbon removal. This principle increases the quality of carbon credits by avoiding reversal risks and leakage, as well as encourages long-term life cycle carbon accounting. This principle also incentivises the future-proofing of carbon removal activities that are likely to face the physical impacts of a changing climate.

Principle 4b: ANU aims to prioritise long-term partnerships for carbon removal

To ensure both the permanence of carbon and provide certainty to landholders, project proponents and partners.

Measurement, Reporting and Verification (MRV)

Principle 5a: ANU will meet and exceed current best practices and requirements in measurement, reporting and verification of carbon removal activities

This approach will enable ANU to assess expected and actual project outcomes, identify and manage risks, evaluate returns on investment and co-benefits, and develop mitigation strategies to address potential negative impacts, including the greenhouse gas emissions generated by the project ('project emissions') and out-of-system production of greenhouse gas emissions (known as leakage).

Principle 5b: Modelling frameworks, measured results and management methods will be made publicly available (and compared with other approaches) to accelerate responsible and equitable adoption across the carbon removal sector

ANU will make all data, modelling and measurement frameworks used for carbon removal projects publicly available. Dissemination of data, modelling and measurement will take place via both academic journal publications and public communications. ANU will not just rely on making information available but also aim for active engagement.

Principle 5c: The Emissions Removal Workstream will regularly report on ANU carbon removal programs

ANU will make information on its carbon removal projects and credit purchases publicly available, with the frequency of reporting increasing over time, starting with annually, biannually, and eventually in real-time using remote sensing.

6.2 References

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