2024–2025

AUSTRALIAN MUSEUM

Climate-Related Financial Disclosures

Contents

The Australian Museum acknowledges that we operate on the lands, waters and skies of many First Nations Peoples. As Australia's first museum, we share the responsibility of advocating for Country and honouring First Nations Peoples and knowledges.

Executive Summary

This voluntary, inaugural Climate-Related Financial Disclosures for FY2024-2025 demonstrates institutional leadership in climate action and transparency. It has been prepared in alignment with the NSW Government's *Reporting framework for climate-related financial disclosures* (TPG24-33). The Australian Museum (AM) was Australia's first natural history museum to achieve Climate Active carbon neutral certification in 2020, and these disclosures are another first, demonstrating how the AM continues to integrate climate considerations across its operations, research, and public engagement activities.

Material Risks and Opportunities

Through comprehensive risk assessment aligned with NSW Climate Risk Ready guidance, the AM has identified material climate-related risks and opportunities spanning physical impacts from extreme weather events, temperature and humidity changes affecting collection preservation, and transition risks including regulatory compliance and stakeholder expectations.

Key physical risks include infrastructure vulnerability to extreme weather, particularly at the William Street site and AM Lizard Island Research Station, alongside collection storage challenges from changing environmental conditions. Transition opportunities encompass climate science research and translation, First Nations knowledge application, renewable energy adoption, sustainable tourism partnerships, and the expansion of climate education programs through the Climate Solutions Centre.

Strategic Integration and Governance

Climate change occupies a central position in the AM's Corporate Strategic Plan FY25-27, reinforcing the AM's mission to transform conversations around climate change while advocating for First Nations cultures and developing world-leading science programs.

The *Sustainability and Climate Action Plan 2023-2025* (SCAP) operationalises this commitment through five (5) strategic outcomes: reducing operational impacts, future-proofing museum infrastructure, empowering staff, engaging stakeholders, and leading climate action.

The AM maintains robust governance structures with climate oversight integrated at Board of Trustees, Audit and Risk Committee, and Executive Leadership Team levels. Management has implemented substantial infrastructure upgrades including Building Management System improvements, advanced air filtration systems, and AI-powered environmental monitoring to enhance climate resilience.

Future Ambitions and Targets

In the future, the AM targets a 35% reduction in greenhouse gas emissions by 2030 against 2005 baseline levels, progressing toward carbon positive status. Strategic priorities include scaling the Climate Solutions Centre's impact, enhancing collection climate resilience, implementing circular economy principles achieving 90% waste diversion by 2030, and developing quantitative climate scenario analysis capabilities.

Through these integrated approaches, the AM demonstrates that cultural institutions can effectively balance preservation responsibilities with climate leadership, creating value for stakeholders while contributing to Australia's sustainable transition.

The Future Now touring exhibition about the benefits of living sustainably and regenerating nature. Photos by Natalia Mroz

Governance

1.1 Australian Museum Trust Oversight of Climate-Related Risks and Opportunities

The oversight of climate-related risks and opportunities are administered through longstanding and legislated structures that support effective decision-making, risk management and accountability. The AM is established under the *Australian Museum Trust Act 1975* and is governed by a Board of Trustees appointed by the Governor of New South Wales on the recommendation of the Minister, including representatives with knowledge or experience in the areas of science, education and Aboriginal and Torres Strait Islander cultures.

The AM's Trustees play a valuable role in monitoring the performance of the AM, with strategic focus placed on climate risk and opportunities. The Board of Trustees serve as the highest governing body, providing oversight of strategy, risk management and regulatory compliance.

The object of the Board of Trustees as set out in The Act, are to 'propagate knowledge about the natural environment of Australia and to increase that knowledge.' This underpins the core focus of climate change considerations as a component of the strategic and risk management responsibilities for the governance of the AM. Monitoring climate change considerations is integrated into existing governance structures and occurs as required at regular intervals, outlined in the table below.

Audit and Risk Committee

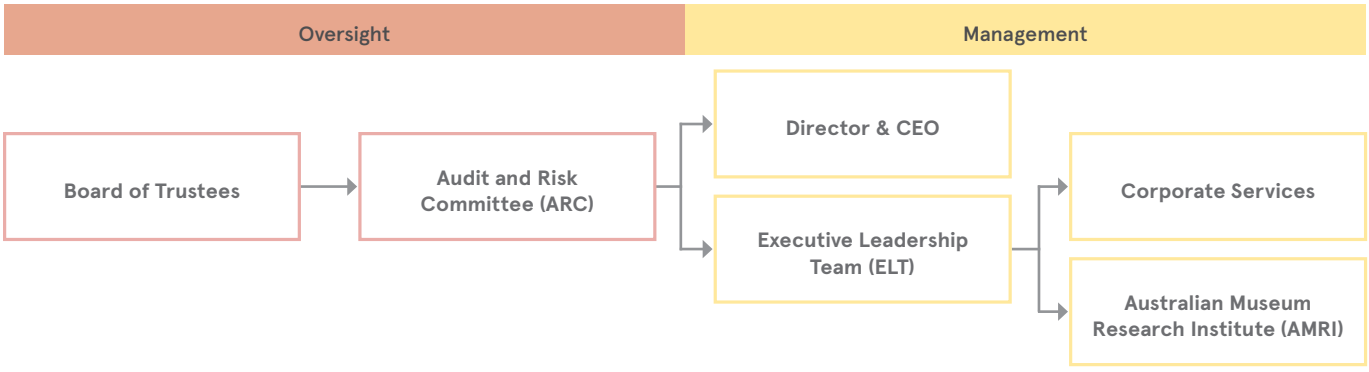
The Audit and Risk Committee (ARC) provides independent assistance to the Board of Trustees by monitoring, reviewing and providing advice about the AM's governance processes, risk management and control frameworks, and its external accountability obligations, including climate risks and opportunities.

See AM Annual Report FY2024-25 pages 78-81 for the Board of Trustees composition; page 99 for more information on the Audit and Risk Committee.

Table 1
Climate risk and opportunities oversight roles and monitoring frequency

Governance Body	Climate responsibilities	Meeting frequency	Reporting lines
Board of Trustees	Strategic oversight, target approval	Bi-monthly	Director & CEO
Audit & Risk Committee	Risk monitoring, compliance oversight	Quarterly	Board President
Executive Leadership Team	Implementation, operational management	Weekly	Board of Trustees

Figure 1
Climate risk governance structure



1.2 Management's Role in Assessing and Managing Climate-Related Risks and Opportunities

The Executive Leadership Team (ELT) is the management body responsible for embedding climate-related risks and opportunities into the strategy and management processes of the AM.

The Director and CEO, Kim McKay AO, is responsible for the strategic direction and management of the AM's climate strategy. Ms McKay, who was appointed an Officer of the Order of Australia in 2008 for distinguished service to the environment and the community, has exhibited industry leading environmental and climate leadership for the AM, leading to the establishment of the Climate Solutions Centre and the AM's first *Sustainability and Climate Action Plan*.

The ELT operationalises governance frameworks, embedding climate considerations within financial planning, investment decisions, and risk management processes. Supported by the internal climate and science expertise within the Corporate Services department and Australian Museum Research Institute (AMRI), the ELT monitors progress towards AM's climate related risks, strategies, regulations and targets. This forms an ongoing incorporation of improved climate related performance and strategy. The ELT support regular updates to governance bodies, ensuring transparent oversight of the AM's activities in relation to climate related risks and opportunities.

Corporate Services and AMRI, which include the Sustainability and Environmental Impact Officer and Climate Solutions Centre respectively, ensure:

- Execution of the *Sustainability and Climate Action Plan 2023-2025*
- Compliance with disclosure requirements and accurate reporting
- Coordination of climate risk and opportunities associated with the AM.
- Cross-functional collaboration to support integrated decision-making.
- Climate change research expertise and public knowledge of climate change
- Communication of climate issues to the public through museum exhibitions and programming, and public communications activities

See AM Annual Report FY2024-25 pages 76-77 for the AM leadership Organisational Chart; page 103 for details on the organisational structure for the Climate Solutions Centre.

1.3 Climate-Related Skills and Competencies

The Executive Leadership Team (ELT) is the management body responsible for embedding climate-related risks and opportunities into the strategy and management processes of the AM.

The AM has extensive skills and competencies within its governance bodies, internal functions and advisory committees to oversee the response to climate related risks and opportunities.

The AM confirms that the board and executive team possess appropriate collective expertise to oversee climate-related matters across all functions of the museum. The leadership expertise in organisational management, science, sustainability, education and Aboriginal and Torres Strait Islander cultures has positioned the AM to develop internal skills and resources than can respond and assess climate-related risks and opportunities across the organisation. This includes access to the advice of leading scientists within the climate and related fields concerning the natural environment.

In particular, the AM's Lizard Island Research Station (LIRS) has been a vital supplier of coral reef research and education for scientists and researchers from around the world since it was founded in 1973 by former AM Director, Professor Frank Talbot AM. It is key to the AM's commitment to transforming the conversation around climate change and an example of the extensive climate related skills available within the AM.

See AM Annual Report FY2024-25 pages 78-81 for more information on the Board of Trustees composition; page 86 for more information on the Audit and Risk Committee; pages 82-85 for more information on the Executive Leadership Team; page 86 -89 for details on AM committees and their roles; page 103 for details on the Climate Solutions Centre Advisory Panel.

Above: AM's Lizard Island Research Station (LIRS) located in the northern portion of Australia's Great Barrier Reef. Photo by Abram Powell
Below: Documenting damage to the reef at Lizard Island due to bleaching. Photo by Lyle Vail

Strategy

The AM commits to transforming the conversation around climate change, the environment and wildlife conservation; to advocate for First Nations cultures; and to continuing to develop world-leading science, collections, exhibitions and education programs. The AM's mission is to ignite wonder, inspire debate and drive change with a vision to be a leading voice for the richness of life, the Earth and culture in Australia and the Pacific.

This is why the AM is committed to lead on climate action. It will lead, firstly, through sound sustainability practice and, secondly, through scientific research, research translation, collections management, education, programming and exhibitions to improve public awareness of climate change and the solutions the community can help advance.

Climate change plays an influential role in the strategic direction of the AM, exhibited by its central role in the AM's *Corporate Strategic Plan FY25-27*.

The AM is committed to the NSW Government's *Net Zero 2020-2030 Plan* that sets out the NSW Government's plan to protect our future by growing the economy, creating jobs and reducing emissions over the next decade.

2.1 Climate-Related Risks and Opportunities Over Short, Medium and Long Term

To shape its strategic response to climate change, the AM has identified climate risks and opportunities over the short, medium and long term by identifying its greatest areas of impact and exposure.

Climate risks and opportunities are typically grouped into two broad categories, physical and transitional.

Physical risks are from direct climate impacts like increased temperatures, humidity or extreme weather events, and transition risks are from changes in policy, markets, technology and reputation as the world moves towards a low-carbon economy.

Climate related opportunities are chances to adapt and mitigate climate related impacts and seize new potentially positive impacts that arise through a societal transition to a more sustainable future. The opportunities identified below directly influenced the strategic actions outlined in the AM's *Sustainability and Climate Action Plan 2023-2025* (SCAP).

Time Horizon Definitions

- Short-term: 1-3 years (operational planning cycle)
- Medium-term: 3-10 years (strategic planning horizon)
- Long-term: 10+ years (institutional preservation mission)

Figure 2
Physical and transition risks

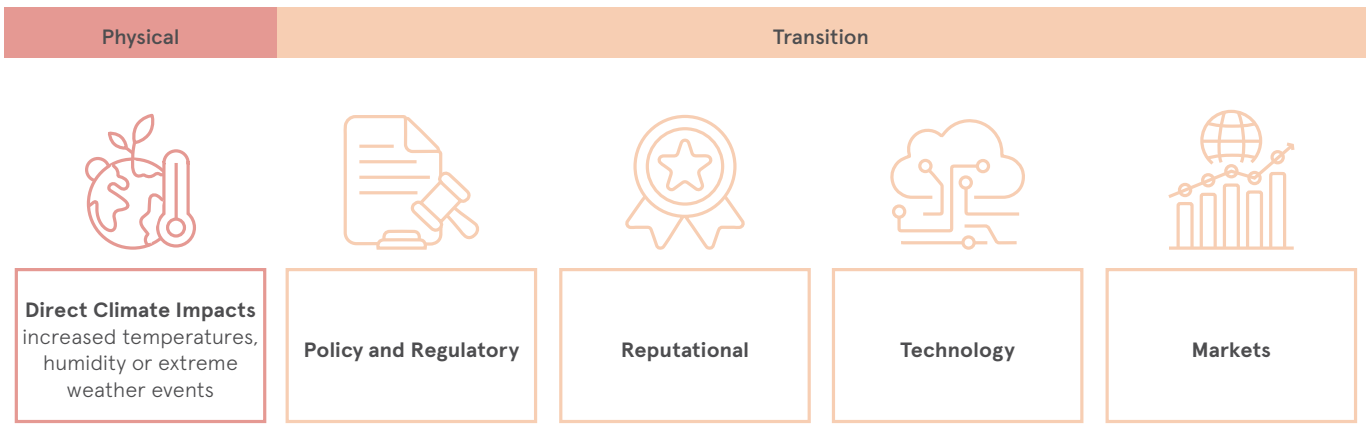


Table 2
Physical Climate Risks

Risk ID	Risk Description	Risk Category	Time Horizon	Potential Impact
Acute Physical Risks				
P.01	Infrastructure and collections vulnerable to extreme weather events (storms, cyclones, flooding, extended heatwaves, bushfire smoke)	Operations & Asset Management	Short to Medium	Damage to buildings, collections, and equipment; operational interruptions
P.02	Health and safety risks to staff and visitors during extreme weather events, particularly heatwaves and bushfires	Work Health & Safety	Short to Medium	Staff/visitor injury; liability; operational closures
P.03	Lizard Island Research Station exposure to cyclones and severe weather conditions	Remote Asset Management	Short to Medium	Staff safety risks; research disruption; facility damage
P.04	Power outages from extreme weather affecting collection preservation systems	Business Continuity	Medium to Long	Irreversible collection damage; climate control failure
P.05	Inability to execute disaster recovery plans during concurrent extreme events	Emergency Management	Medium to Long	Catastrophic collection loss; extended operational closure
Chronic Physical Risks				
P.06	Collection storage inadequacy due to increasing temperature and humidity	Collection Management	Medium to Long	Mould growth; artifact deterioration; preservation failure
P.07	Building systems insufficient for changing climate conditions	Facilities Management	Medium to Long	Increased maintenance costs; system failures; energy inefficiency

Table 3
Transition Climate Risks

Risk ID	Risk Description	Risk Category	Time Horizon	Potential Impact
Policy and Regulatory Risks				
T.01	Non-compliance with NSW Government climate policy and disclosure requirements	Governance & Compliance	Medium to Long	Regulatory penalties; reduced government funding
T.02	Insufficient resources to meet climate-related financial disclosure obligations	Governance & Compliance	Short to Medium	Compliance failures; audit issues; reputational damage
Reputational Risks				
T.03	Failure to meet stakeholder expectations for climate action leadership	Stakeholder Management	Short to Medium	Loss of social licence; reduced visitor numbers; reduced funding impacts from Government, philanthropy, partnerships and research grants
T.04	Greenwashing accusations affecting brand credibility	Brand Management	Short to Medium	Reputational damage; reduced partnerships and philanthropic funding; public backlash
T.05	Inability to fulfill role as trusted climate science advocate	Mission Delivery	Short to Medium	Reduced influence; missed educational opportunities, reduced partnership and philanthropic funding
Technology Risks				
T.06	Inadequate systems for measuring, reporting and communicating climate impact	Data Management	Short to Medium	Poor decision-making; compliance failures; missed opportunities
Market Risks				
T.07	Insufficient funding for Climate Solutions Centre scaling	Program Delivery	Short to Medium	Unmet community demand; missed revenue; reduced impact
T.08	Insufficient funding and resources for implementation of Sustainability and Climate Action Plan 2023-25	Strategic Implementation	Short to Medium	Missed opportunities; efficiency losses; competitive disadvantage
T.09	Missed partnership and funding opportunities for climate resilience	Business Development	Short to Medium	Reduced resources; slower adaptation; lost competitive advantage

Table 4
Climate Opportunities

Opp. ID	Opportunity Description	Category	Time Horizon	SCAP Actions	Potential Value
Resource Efficiency Opportunities					
O.01	Renewable energy consumption, and procurement (on-site generation, battery storage, large-scale generation)	Energy Generation – Physical and Transitional	Short to Medium	1.4, 1.11	Cost savings; energy independence; demonstration value; emissions reduction
O.02	Energy efficiency upgrades (HVAC, lighting, BMS with cognitive technology)	Resource Efficiency- Physical and Transitional	Short to Medium	1.12, 1.13, 1.14, 1.15, 1.16, 1.17	electricity demand reduction; ongoing cost savings; emissions reduction
O.03	Water efficiency improvements and rainwater harvesting systems	Resource Efficiency - Physical and Transitional	Short to Medium	1.34, 1.35, 1.36	Reduced utility costs; water security; sustainability credentials
O.04	Waste reduction and circular economy practices (90% construction waste diversion achieved)	Resource Efficiency - Physical and Transitional	Short to Medium	1.22, 1.23, 1.24, 1.25, 1.26	Cost savings; material recovery; reduced waste disposal costs, emissions reduction
O.05	Green building design and 5-6 Star Green Star certification for new developments	Asset Value Enhancement - Physical and Transitional	Short to Medium	2.2	Increased asset values; reduced operating costs; events, exhibition and customer attraction
O.06	Carbon positive status achievement	Market Leadership - Transitional	Medium	1.10	Brand differentiation; funding access; partnership opportunities
O.07	Data centre emissions reduction	Operational Efficiency - Transitional	Short	1.7	Cost reduction; operational resilience; sustainability credentials
O.08	Sustainable procurement framework implementation	Supply Chain Enhancement - Transitional	Short to Medium	1.37, 1.38, 1.39, 1.40	Cost savings; risk reduction; supplier innovation

Table 4 Continued
Climate Opportunities Continued

Opp. ID	Opportunity Description	Category	Time Horizon	SCAP Actions	Potential Value
Products and Services Opportunities					
O.09	Climate-resilient science, exhibition and collection management systems	Service Enhancement – Physical and transitional	Short	2.3	Collection preservation; reduced climate damage costs
O.10	Sustainable tourism offerings through City of Sydney's Sustainable Destination Partnership in partnership with Destination NSW and Business Events Sydney	Market Development- transitional	Short	2.4	New revenue streams; increased visitor numbers
O.11	Carbon neutral venue positioning for events and partnerships	Market Differentiation - Transitional	Short to Medium	1.9, 1.10	Premium pricing; competitive advantage; increased bookings
Market & Brand Opportunities					
O.12	Climate Solutions Centre expansion and programming	Revenue Generation - Transitional	Short to Medium	5.4, 5.0	New funding sources; increased visitor engagement; educational impact
O.13	Climate change science, exhibitions and educational resources development	Market Leadership - Transitional	Short to Medium	5.0, 5.1	Increased attendance; educational licensing; touring revenue
O.14	Corporate partnerships for sustainability initiatives	Business Development - Transitional	Short	4.8, 4.9	Funding access; technology piloting; shared value creation
O.15	Sustainable brand positioning and climate leadership recognition	Brand Value Enhancement - Transitional	Short	4.1, 4.4	Increased visitor loyalty; staff attraction; funding preference
Innovation & Technology Opportunities					
O.16	Technology partnerships for innovative science and research informed sustainability solutions	Innovation Development - Transitional	Short	4.9, 5.2	First-mover advantages; technology testing; research collaboration
O.17	Citizen science program expansion (FrogID success - 800k recordings)	Research & Engagement - Transitional	Short	4.7	Data value; research partnerships; community engagement
O.18	Digital Climate Hub development	Digital Innovation - Transitional	Short to Medium	5.1	Online revenue; global reach; educational licensing

Table 4 Continued
Climate Opportunities Continued

Opp. ID	Opportunity Description	Category	Time Horizon	SCAP Actions	Potential Value
Workforce & Skills Opportunities					
O.19	Staff sustainability skills development and engagement	Human Capital - Transitional	Short	3.6, 3.7, 3.8	Innovation capacity; retention; productivity; culture enhancement
O.20	Sustainability champion network establishment	Organizational Capacity - Transitional	Short	3.15	Enhanced implementation; innovation; employee engagement

2.2 Impact on Business Model, Strategy and Financial Planning

The AM is internationally recognised as a leading natural science and culture institution focused on Australia and the Pacific. Climate change and its impacts to species, people and the over 22 million objects and specimens in the collection are fundamentally significant to the AM's business. The AM has addressed these impacts through strategic adaptation and mitigation initiatives to manage the impacts on visitors, heritage buildings, the research conducted by AM scientists and how the collection is managed.

Strategic alignment and action on Climate Change

In response to the anticipated effects of climate related risks and opportunities on the AM business model, Climate Change has been integrated as a key priority to the *Corporate Strategic Plan FY25-27*. The AM has committed to transforming the conversation around climate change, the environment and wildlife conservation; to advocate for First Nations cultures; and to continue to develop world-leading science, collections, exhibitions and education programs.

The *Sustainability & Climate Action Plan 2023-2025* (*SCAP*) complements this work and provides a roadmap to deliver the following outcomes:

1. Reduce operational impacts including; Energy and emissions; Transport; Waste and resources; Water and procurement
2. Future-proof the Museum (Buildings & Masterplan)
3. Empower our people through roles and processes (Awareness and action / Roles and processes)
4. Engage stakeholders by telling the AM's story; Partnering for change and public outreach
5. Lead for climate action through sharing solutions and empowering action

The *SCAP* was developed through a collaborative process with internal stakeholders and subject matter experts. This plan aligns with the United Nations Sustainable Development Goals and supports global efforts to ensure peace and prosperity for people and the planet, now and into the future.

The actions and targets specified in the *SCAP* were informed by the climate risks and opportunities assessment conducted by the AM. Initial initiatives in this assessment process included implementation of the Adapt NSW Climate Risk Ready framework and the Climate Ready

Health Check tool created for NSW government agencies. An AM Sustainability Action Plan Steering Committee was established and was closely involved in developing the *SCAP*. This process established to a comprehensive and informed climate transition plan for management to consider in finalising the *SCAP*.

Resourcing for actions identified in the *SCAP* are considered as needed within departmental budgets where responsibility lies for implementation. Resourcing is influenced by annual budgets allocated to the AM by the NSW Government.

The *SCAP* is reviewed every three years. The AM will be developing the next *SCAP* for 2026–2028 in early 2026.

Mitigation and adaptation to business impacts

The AM, driven by its strategic ambition to be a leader on climate action and the pathway set out in the *SCAP*, has taken significant steps to address impacts to its business. These steps ensure the museum can deliver its core mission to be the leading voice for the richness of life, the Earth, and culture in Australia and the Pacific.

Research and Education Leadership

The Climate Solutions Centre (CSC) was established in 2021 to account for the strategic shift to provide trusted and reliable information on solutions to the climate crisis. In its fifth year, the Climate Solutions Centre has been established as a trusted source of information and continues to create innovative ways to connect to diverse audiences, broadening public understanding of the climate and biodiversity crises and empowering people to take action. It has grown its climate change community outreach by using exhibitions, education resources and public programs to advance action on climate change. This includes travelling exhibitions, permanent climate exhibitions, public orations, public programs, education resources for schools and a wide range of social media posts. It has a distinguished Advisory Panel who provide input and guidance on CSC activities.

See AM Annual Report FY2024-25 page 103 for details on the Climate Solutions Centre Advisory Panel

Collection Stewardship

The AM has a statutory obligation to care and conserve its globally significant collection of over 22 million objects and specimens. Climate related risks impact collection management and are addressed through the AM's collection conservation and management policies and practices. The AM places the highest priority on safeguarding the collections in its care through implementing and resourcing ongoing risk management strategies that identify, assess, control and report risks to the collections. This includes the consideration of the impact of climate related risks, such as temperature increase, humidity and flooding.

Infrastructure resilience

Founded in 1827, the AM is Australia's first museum. The AM's heritage buildings, dating back to 1851 and more recent additions to the portfolio of building assets are impacted by climate related risks. This has capital planning implications for the AM, as upgrades and maintenance are carefully considered to address and mitigate the impacts of climate change. Furthermore, when considering capital project partners, the AM's sustainable procurement policy ensures that climate impacts are considered and evaluated. In this past year, the AM has undertaken a range of infrastructure upgrades to address climate related risks and opportunities:

- Building Management System (BMS) and Heating, Ventilation, and Air Conditioning (HVAC) Systems were upgraded to address a range of climate related risks, such as increased humidity and building energy inefficiency.
- Indoor environmental quality initiatives included installing advanced carbon-type filters across 18 Air Handling Units and Fan Coil Units throughout the facility at 1 William Street. This proactive investment addressed critical indoor air quality concerns, particularly during bushfire events
- Improved airflow management in the Australian Museum Research Institute (AMRI) to improve climate control energy efficiency
- New AI monitoring to respond to major weather events like fires, by using outdoor weather stations to monitor and respond well before the impacts of smoke or other dips in air quality arrive.
- The Surviving Australia exhibition's redevelopment showcased circular economy principles by recycling, reusing, and rehoming materials to minimize landfill waste. New materials were selected based on sustainability criteria, including recycled content, low emissions, and verified sustainable supply chains.

Geographic Concentration of Climate Related Risks

The AM's climate related risks and opportunities are concentrated across assets within metropolitan Sydney. They include the main William Street site of the AM, and several collection storage facilities located across Sydney. These assets are projected to face increasing exposure to extreme heat, intense rainfall and high fire risk weather.

The AM has conducted qualitative scenario consideration aligned with NSW Climate Risk Ready guidance utilising NSW and Australian Regional Climate Modelling (NARCliM) models. Quantitative scenario analysis will be developed over the next 2–3 years as data systems and analytical capabilities mature. To an extent, the detail of the quantitative scenario analysis will be dependent on the availability of NSW Government funding.

By 2050 under a high emissions scenario:

- Temperatures are expected to increase on average by 1.8°C.
- Average rainfall is projected to decrease by 16.3%
- The number of severe fire weather days (FFDI over 50) per year are projected to increase by 1.2 days
- The number of hot days (35°C or over) per year are projected to increase by 9.7 days

The concentration of heat related impacts indicates focus must be given to collection conservation, building climate management and visitor related concerns. All three are areas that will be impacted by multiple physical climate related risks that demand different mitigation approaches.

In contrast, the AM's collection assets stored in Central West NSW and the AM's Lizard Island Research Station (LIRS) located in the northern portion of Australia's Great Barrier Reef, 270 km north of Cairns, face different chronic and acute climate risks. The collection assets are stored in regions that will face a higher number of increased fire days and significantly more hot days over 35°C. In addition to increased average temperatures, LIRS is exposed to increased cyclone and extreme weather risks and associated impacts of sea-level rise.

2.3 Climate-Related Financial Impacts

Detailed financial modelling of climate-related risks and opportunities, including impact quantification is currently under development. Initial assessment indicates most climate-related impacts are manageable within existing risk management frameworks and will require additional funding to properly address these impacts. There are opportunities for operational efficiencies offsetting transition costs over a medium to long term period, subject to sufficient funding being provided to implement these initiatives.

In future years climate related risks will impact the AM's operational costs, capital expenditure requirements, and revenue considerations. Additional funding will be required to enable the AM to better address these impacts. Initial analysis also indicates that the AM will benefit from long term cost savings through funding sustainability initiatives and carbon neutral operations.

Above: Solar panels on the roof of the AM. Photo by Abram Powell
Below: Native beehive in the AM garden. Photo by Abram Powell

Risk Management

3.1 Processes for Identifying and Assessing Climate-Related Risks

The AM's risk management framework provides a structured and systematic approach to identifying, assessing and managing risks. To utilise this framework for climate risks, the AM worked with Adapt NSW to implement the *Climate Risk Ready NSW Guide*. This set the process for identifying, prioritising and monitoring climate-related risks and opportunities.

Workshops with key staff were incorporated into the risk identification process and stakeholders were also engaged to identify and assess climate related risks across the AM.

The AM conducted qualitative scenario consideration aligned with NSW Climate Risk Ready guidance utilising NARCliM models to support risk quantification under low and high emissions scenarios across 2030, and 2050, time horizons. These parameters allowed for the assessment of likelihood and magnitude of impact from the identified climate risks.

The AM completed the Climate Health Check Tool to identify clear gaps and strengths within current practices. It enabled the AM to identify material climate risks and establish clear opportunities for adaptation and mitigation strategies. These opportunities were further developed with the AM's Sustainability Action Plan Steering Committee. This identification process led to the development of the climate transition plan published in the *SCAP* 23-25.

3.2 Processes for Managing Climate-Related Risks

The process for managing climate-related risks involves a cross-organisational engagement process to identify, assess and prioritise risks before incorporating them into existing risk management frameworks for ongoing monitoring.

Risk Management Framework

Climate risk management strategies are aligned with the AM's *Risk Appetite Statement and Risk Management Policy and Framework*. This is an enterprise-wide risk approach, where risks are considered and assessed at different levels within the AM, embedded in strategic and operational policies and practices and everyday business activities. The AM accepts there is a certain level of inherent risk in its activities and acknowledges that accepting a certain level of risk helps the AM develop, improve and take opportunities as they arise. Overall, the AM adopts a conservative, informed and measured risk-taking approach in managing the organisation, whilst adopting a strong risk appetite for innovation and sustainability and other activities that support the AM's vision and mission.

The AM's risk management framework, which manages all climate risks, is developed and maintained in line with TPP12-03 and AS/NZS 3100:2018 which provide guidance to the AM on the development of effective and integrated risk management frameworks and processes. The risk management process occurs at both an organisation level ("top-down") and business unit level ("bottom-up"). All AM divisions apply risk management and categorise and rate risks in line with the strategic risks register. The level of response to a risk is proportionate to the level of the risk and takes into account its effects and the cost of mitigation.

Monitoring and Review

Monitoring and review of climate risks is a continual process that confirms that risks and the effectiveness of the controls and risk treatments are monitored and reported to ensure that any changing context and priorities are managed and any emerging risks are identified. The effectiveness of the controls impacts the risk and its rating.

The ELT reviews the strategic risks register bimonthly to ensure that appropriate controls and mitigation strategies are being implemented, to assess that the target or residual risk ratings are being achieved or to take remedial action if the ratings are under threat of not being achieved.

The ARC oversees the ELT's risk assessment findings and makes recommendations to the AM's Board of Trustees. The AM's Board of Trustees has overall responsibility for the establishment and oversight of risk management and review and agree on policies for managing all risk. The assessment is also used to identify areas of focus for the internal audit program and may inform the research and evaluation program.

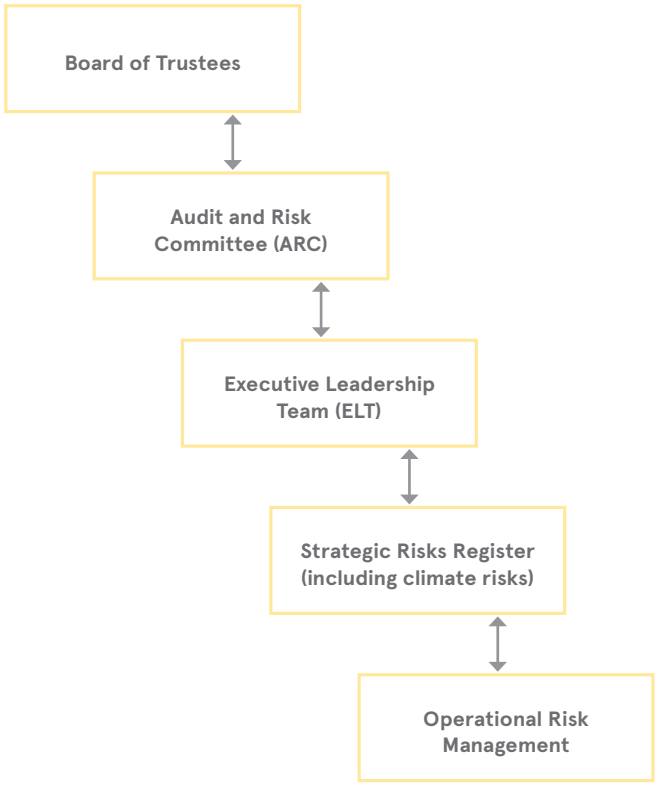
3.3 Integration with Overall Risk Management

In recognition of the significant impact climate risks can have on the museum, the AM has integrated all material risks into the Strategic Risks Register and ensured that other relevant risk management polices adopt climate risk considerations.

Material climate related risks have been integrated holistically to the Strategic Risk Register across all relevant risk categories, as well as a standalone climate change risk category. This ensures that a holistic risk management approach is adopted to prioritise climate-related risks relative to other types of risk. Following the risk management processes identified above and elsewhere in this report, climate related risks are managed from the top of the organisational structure, and from the bottom in ongoing operational risk management.

The "top-down", "bottom-up" approach to managing climate related risks ensures adequate, practical controls can be implemented. This establishes an enterprise-wide approach to realising adaptation and mitigation climate opportunities. This reflects a focus on preparing for and mitigating the impacts of physical climate risks while also identifying and capturing opportunities to be a leader in climate action.

Figure 3
Risk management framework integration for climate related risks and controls



See AM Annual Report FY2024-25 page 86 for more information on the Audit and Risk Committee; page 99 for more information on Internal audit and risk management

Metrics and Targets

4.1 Climate-Related Targets and Performance

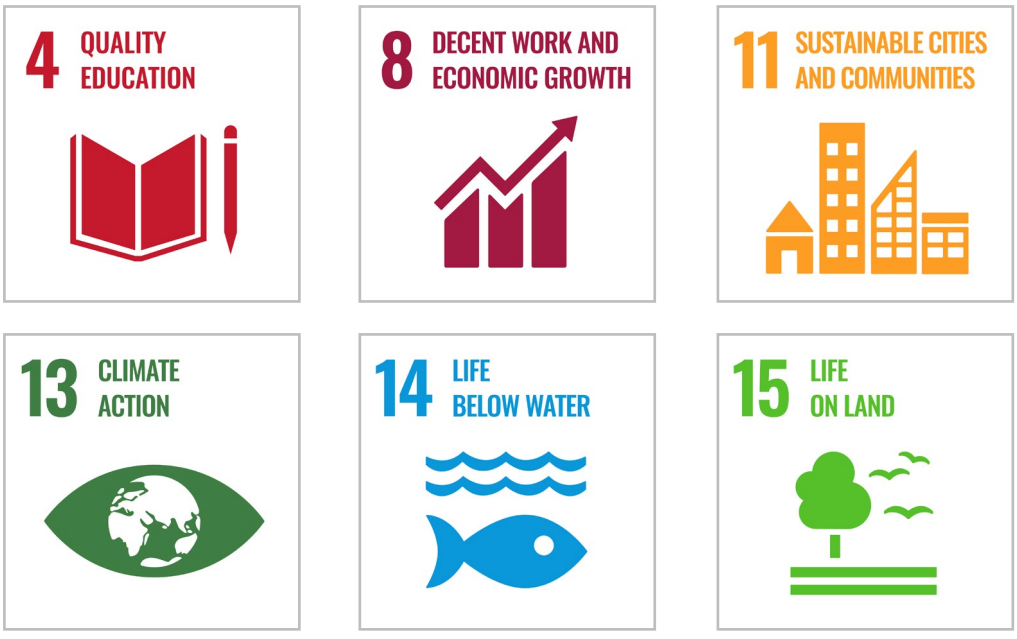
The AM has made emissions reduction a core priority in the *SCAP* 23-25. The SCAP outlines all sustainability and climate related targets and actions identified and committed to by the AM. For this report, climate related targets that address the most material climate risks are expanded upon. These targets represent the core goals that the AM is working towards currently and over the short to long term future. As the understanding of climate risks grows and changes, the AM will establish more fit-for-purpose targets and metrics to support its ongoing commitment to transparency and reporting. The AM reviews its climate related targets annually and updates the *SCAP* every three years to reflect ongoing performance.

The NSW Government endorses the United Nations' Paris Agreement on climate change ratified by the Federal Government and has committed to take action. The AM recognises the UN Sustainable Development Goals (SDG), the blueprint to achieve a better and more sustainable future for all. The AM's *SCAP* contributes to six of the SDG targets.

Strategic priority to deliver leading climate change action

The *Corporate Strategic Plan FY25-27* has put climate at the forefront of the AM's purpose as a leading natural science museum and research institute. The AM has committed to transform the conversation around climate change, the environment and wildlife conservation, to prioritise First Nations cultures, and to continue to develop world leading science, collections, exhibitions and education programs. To support this, the AM has the goal to create the premier scientific and research facility in Sydney, devoted to responding to biodiversity, climate, and environmental challenges utilising the AM's collections.

AM's SCAP contributes to six of the UN's SDG



Net Zero by 2050 and more than 35% emissions reduction by 2030.

As a NSW Government organisation, the AM is committed to the NSW Government's *Net Zero Plan*, by which Net Zero will be reached by 2050.

Stage 1 of the plan (2020-2030) aims to fast track emissions over the next decade by driving the uptake of emission reduction technologies, empowering consumers and businesses to make sustainable choices and invest in new innovative technologies.

The AM has set an interim target to reduce Scope 1, 2 and 3 emissions by >35% on 2005 levels by 2030. The AM's 2005 measurement was based solely on energy consumption, and as stated in the AM's 2004-5 *Annual Report*, the associated emissions were 4,037 t CO2-e. Progress against the AM's interim target is therefore assessed on a like-for-like basis using Scope 2 emissions. The AM's annual carbon audit since 2016 includes Scope 1 and Scope 3 value chain emissions, which were not captured in the 2005 baseline. While this expansion demonstrates the AM's commitment to transparency, it means the total emissions profile cannot be directly compared to the 2005 baseline.

The AM has identified 17 energy and emissions related actions in the *SCAP* 23-25. The implementation of these actions will aid the AM in reaching its interim emissions reduction target by 2030.

Carbon Neutral and working to become Carbon Positive

The AM is the first natural history museum in Australia to receive the Federal Government's Climate Active certification and continues to undergo the accreditation process each year to remain a Carbon Neutral organisation. The AM first announced the achievement of Climate Active (Carbon Neutral) status on 26 November 2020.

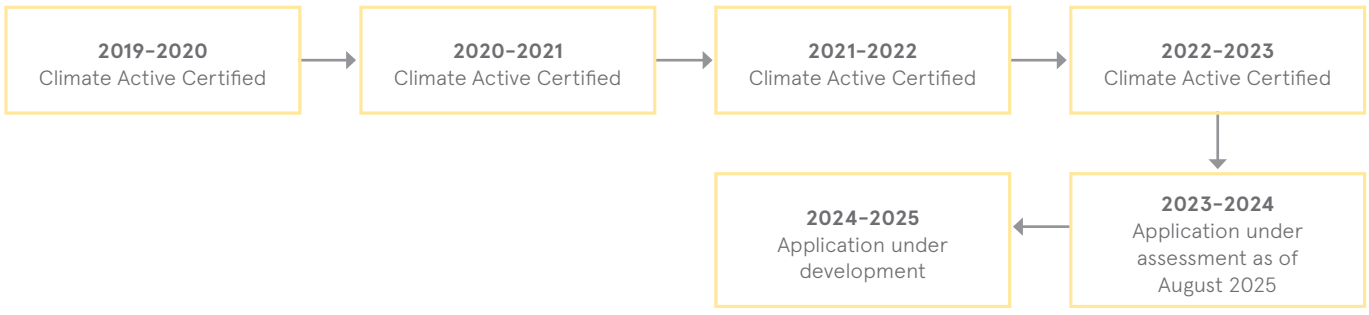
The AM has been undertaking an annual carbon audit since 2016, which helps inform which projects will be pursued to reduce emissions. The AM has offset remaining emissions by aligning with organisations that are either working on local regenerative projects that are helping to draw down CO2 from the atmosphere, or overseas renewable energy projects.

The AM will continue to reduce onsite emissions with a goal to establish a pathway to achieve a Carbon Positive status. The AM will do this by:

- Reducing energy and emissions
- Reducing waste and resource use
- Embedding sustainable procurement practices
- Managing and reporting on performance outcomes

The actions identified in the *SCAP* 23-25 will help the AM on its journey to Carbon Positive, and it will require further ongoing efforts and commitments to reach this ambitious target.

Figure 4
AM Climate Active certification



Operational efficiency to mitigate climate risks

Reducing the operational impact of the AM is a key outcome that is the goal of several targets relating to energy, waste and water. In addition to the emissions related targets, the AM has established key operational targets to guide its efficiency and sustainability actions.

As a museum open to the public, waste is an important and ongoing management issue for the AM. The AM is aligned with the *Government Waste and Sustainable Materials Strategy* and has a target of 75% waste diversion by 2025 and 90% by 2030 towards a goal of zero waste to landfill by 2030. The AM's waste system aims to reduce waste to landfill in both public and back-of-house spaces. The AM's waste streams include fluorescent lights, print cartridges, batteries, e-waste, mobile phones, soft plastics, organics, cardboard and paper, plastic/glass and aluminium as well as general waste. Compostable waste was added to the public waste streams in late 2020.

Water is a crucial resource that must be used efficiently to address climate risks. In recognition of this, the AM has committed to reduce water consumption associated with back of house areas by 30%.

Table 5
Climate related targets and progress

Target	Baseline	Current Performance	Target Date	Progress Status
Climate Active certification maintained, and 100% remaining emissions offset	2020 certification	FY23-24 Under assessment	Ongoing	On track
By 2030, achieve >35% reduction in greenhouse gas (GHG) emissions compared with 2005 levels.	2005 emissions, only Scope 2 available: 4,037 tCO_2-e	27% reduction on Scope 2 2005 levels	2030	On track
Carbon positive status achieved	NA	Carbon neutral status maintained, positive status not reached in FY24-25	2025	Behind planned target
Deliver business case to increase onsite renewable energy	NA	Business case completed	2025	Completed
Achieve 50% Hybrid, EV procurement by 2026 and 100% by 2030	Six fleet vehicles	One hybrid vehicle in fleet	2026 and 2030	On track
Achieve 75% waste diversion by 2025 and 90% by 2030 towards a goal of zero waste to landfill by 2030.	0%	17%	2025	Behind planned target

4.2 Climate-Related Metrics Used to Assess Performance

Scope 1 & 2 emissions

The AM has calculated and reported Scope 1 and 2 emissions as part of its annual carbon audit since 2016. The methods used for collating data, performing calculations and presenting the carbon account are in accordance with the following standards:

- NSW Greenhouse gas emissions accounting and reporting guidelines
- Climate Active Standards
- *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (Revised Edition)
- National Greenhouse and Energy Reporting (Measurement) Determination 2008

Where possible, the calculation methodologies and emission factors used in this inventory are derived from the National Greenhouse Accounts (NGA) Factors in accordance with "Method 1" from the National Greenhouse and Energy Reporting (Measurement) Determination 2008.

The greenhouse gases considered within the inventory are those that are commonly reported under the Kyoto Protocol; carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and synthetic gases - hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3). These have been expressed as carbon dioxide equivalents (CO2-e) using relative global warming potentials (GWPs).

The Scope 1 emissions include sources of direct emissions from both stationary and mobile fuels. For calculation of Scope 1 emissions, consumption data for natural gas, diesel, petrol, ethanol and liquid petroleum gas (LPG) is collected from invoices and emission factors are applied in accordance with the latest government-published sources, including the National Greenhouse Accounts (NGA).

The Scope 2 emissions sources include all indirect emissions from electricity consumption. There are two international best-practice methods for calculating electricity emissions – the location-based method and the market-based method. Reporting electricity emissions under both methods is called dual reporting. Dual reporting of electricity emissions is useful, as it provides different perspectives of the emissions associated with a business's electricity usage. For this report, electricity emissions have been set by using the market-based approach.

Table 6
Scope 1 emissions FY2024/2025

Emissions category	tCO_2-e
Stationary energy combustion	
Refrigerants	12.84
Gaseous fuels	442.40
Liquid fuels	1.24
Diesel	7.05
Transport	
Diesel	21.55
Petrol	9.41
Total	**494.48**

Location based method

The location-based method provides a picture of a business's electricity emissions in the context of its location, and the emissions intensity of the electricity grid it relies on. It reflects the average emissions intensity of the electricity grid in the location (state) in which energy consumption occurs. The location-based method does not allow for any claims of renewable electricity from grid-imported electricity usage.

Table 7
Location based Scope 1 and 2 emissions

Emissions category (tCO_2-e)	2023-2024	2024-2025
Scope 2 emissions	3,321.29	3,133.73
Total scope 1 + 2 emissions	3,893.51	3,628.21

Market based method

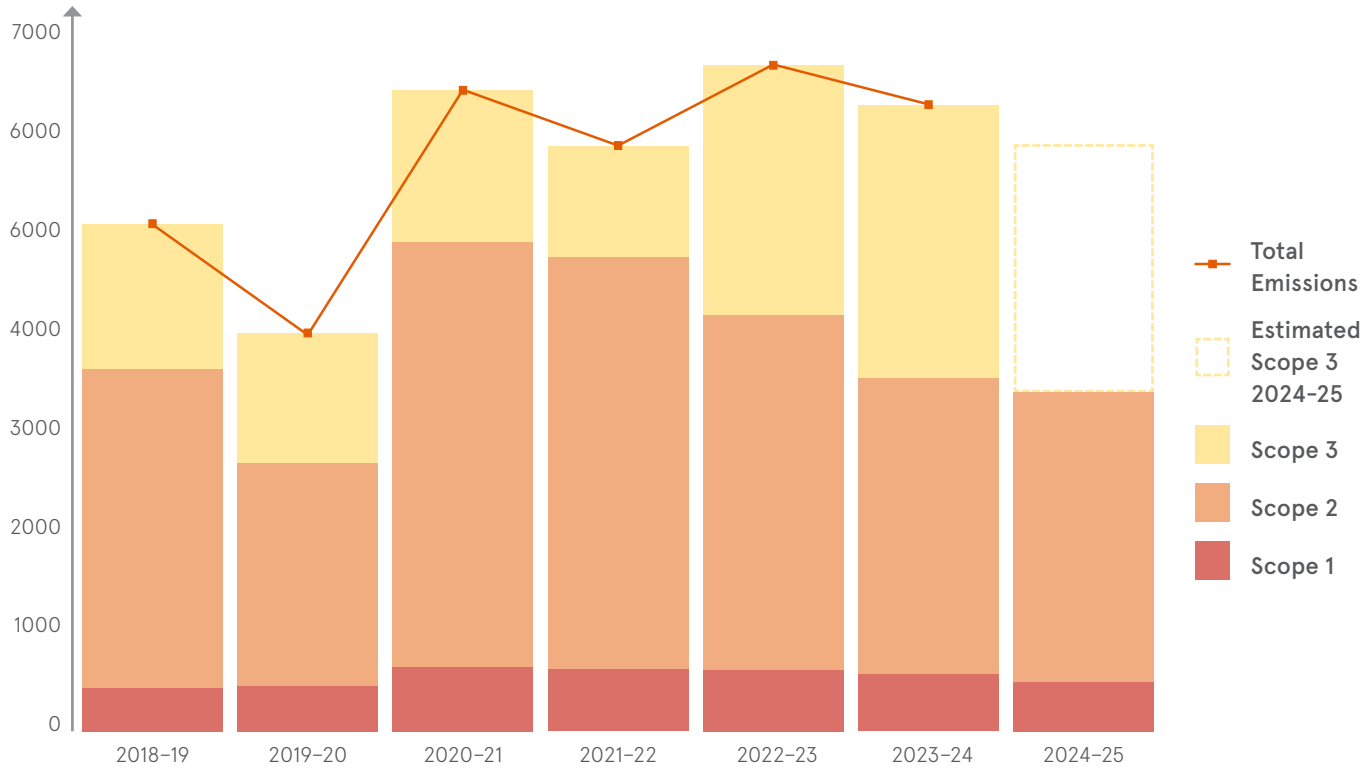
The market-based method provides a picture of a business's electricity emissions in the context of its renewable energy investments. It reflects the emissions intensity of different electricity products, markets and investments. It uses a residual mix factor (RMF) to allow for unique claims on the zero emissions attribute of renewables without double-counting.

Table 8
Market based Scope 1 and 2 emissions

Emissions category (tCO_2-e)	2023-2024	2024-2025
Scope 2 emissions	2,978.04	2,915.42
Total scope 1 + 2 emissions	3,550.26	3,409.90

The AM has conducted carbon audits since 2016 on Scope 1, 2 and 3 emissions. The FY2024-25 Scope 3 carbon emissions assessment for the AM is currently underway at the time of publishing, with completion expected following the FY2024-25 Annual Report's publication. The Scope 3 emissions will be published in the AM's *Climate Active Public Statement* for FY2024-25. The Scope 1 and 2 emissions assessments have been finalised and are included in this report, providing a comprehensive view of our direct emissions and purchased energy impacts for the reporting period.

Figure 5
Year-on-year Scope 1, 2 and 3 (Market-based) GHG emissions (tCO_2-e)



Eligible offsets retirement summary

To support the ongoing carbon neutral certification of the AM by Climate Active, credible carbon offsets have been purchased to offset all remaining emissions over the reporting year. The AM currently has 17,317 credits in store to account for future offsetting purposes. Pending the finalisation of the carbon audit for the AM's scope 3 emissions for 2024-25, a portion of these credits will be retired to account for all unavoidable Scope 1, 2 and 3 emissions for 2024-25.

Over previous years the AM has invested in local and international carbon projects. This includes the Aboriginal Carbon Foundation, a First Nations not for profit works with Indigenous carbon farmers to implement traditional land management practices that reduce greenhouse gas emissions. Another is Greenfleet, an Australian not-for-profit environmental organisation that plants native biodiverse forests capturing carbon emissions to protect our climate. The AM has also invested in overseas renewable energy and energy efficiency projects, which compliments the AM's goal to increase the use of renewable energy.

The AM will continue to reduce onsite emissions with a goal to reduce the need for carbon offsets and establish a pathway to achieve a Carbon Positive status. It will do this by reducing energy and emissions, reducing waste and resource use, embedding sustainable procurement practices and managing and reporting on performance outcomes.

Table 9
Current Carbon Credit inventory

Verified Credit Type	Carbon Credit project type	Carbon abatement type	Certificate quantity
Verified Carbon Unit	Technological	Reduction	13,817
Gold Standard	Technological	Reduction	3500
TOTAL			17,317

Inside the emissions boundary

All emission sources listed in the emissions boundary (Table 10) are part of the AM's carbon audit for 2024-25 and included in its carbon neutral application for Scope 1 and 2 emissions.

Quantified emissions have been assessed as relevant and are quantified in the carbon inventory. This may include emissions that are not identified as arising due to the operations of the certified entity and are optionally included.

Non-quantified emissions have been assessed as relevant and are captured within the emissions boundary and are not measured (quantified) in the carbon inventory. All material emissions are accounted for through an uplift factor.

Outside the emissions boundary

Excluded emissions are those that have been assessed as not relevant to an organisation's operations and are outside of its emissions boundary or are outside of the scope of the certification. These emissions are not part of the carbon neutral claim for Scope 1 and 2 emissions.

The finalisation of the Scope 3 assessment will expand the emissions boundary. The emissions boundary for Scope 1, 2 and 3 emissions will be published in the AM's *Climate Active Public Statement* for FY2024-25.

Table 10
Carbon Audit emissions boundary

Emissions boundary for Scope 1 and 2	
Inside boundary	
Quantified: · Electricity · Refrigerants · Stationary energy (gaseous fuels) · Stationary energy (liquid fuels) · Transport (land and sea) · Working from home	Non-quantified: · Staff clothing
Outside boundary	
Excluded: · Products sold in Museum Shop · Tenant electricity (Restaurant at 1 William Street, NSW) · Accommodation and facilities · Cleaning and chemicals · Food	· ICT services and equipment · Office equipment and supplies · Postage, courier and freight · Professional services · Transport (air) · Waste · Water

See AM Annual Report FY2024-25 page 104 for information on energy, gas, water and waste management information for 2024-25.


AUSTRALIAN MUSEUM