

Macquarie Asset Management

2021

Sustainability report



About this report

Macquarie Asset Management's (**MAM**) Sustainability Report is for the year ended 31 December 2021.

The report has been prepared by the MAM Sustainability team with the support of other parts of Macquarie Group and companies across our portfolio. Unless stated otherwise, this report focuses on MAM's environmental, social and governance (**ESG**) information and performance over the course of 2021.

MAM is a full-service asset manager with \$US534 billion in assets under management (**AUM**).¹ Our clients include pension and superannuation funds, governments and sovereign wealth funds, institutional investors, insurance companies and high net worth investors.

This report spans all of MAM's offering, both Private Markets (including infrastructure, renewables, natural assets, real estate, private credit and asset finance) and Public Investments (including equities, fixed income and multi-asset solutions).

The application of our sustainability efforts, policies and frameworks varies across our Private Markets and Public Investments activities, reflecting the different ownership interests and levels of influence in those asset classes.

As this report covers the 2021 calendar year, it does not reflect the integration of the Green Investment Group (**GIG**) into MAM on 1 April 2022. Detailed reporting on GIG is provided annually in the GIG Progress Report. The 2021 Progress Report can be viewed [here](#), and the 2022 report will be published in November.

Given the sectoral and geographical breadth of MAM, this report provides examples of ESG-related challenges, opportunities and performance across our portfolio. We welcome your feedback and look forward to hearing your views on how we can improve our reporting in future.

1. As at 30 June 2022. AUM is calculated as the proportional ownership interest in the underlying assets of funds and mandated assets that Macquarie actively manages or advises for the purpose of wealth creation, adjusted to exclude cross-holdings in funds and reflect Macquarie's proportional ownership interest of the fund manager. AUM excludes uninvested equity in Private Markets.

Macquarie Group reporting

MAM is part of Macquarie Group Limited (**Macquarie**), a global diversified financial group listed on the Australian Securities Exchange (MQG:ASX).

This report is complementary to Macquarie's ESG reporting. Macquarie reports annually on its sustainability progress, including MAM's activities, within the [Macquarie Group ESG Report](#). Macquarie also reports annually under the Sustainability Accounting Standards Board (**SASB**), the Global Reporting Initiative (**GRI**) and the Task Force on Climate-related Financial Disclosures (**TCFD**). More information on Macquarie's reporting can be found [here](#).

For more information on our sustainability activities, please visit our [website](#).

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Introduction

Our ambition



At this time last year, global political, business and community leaders were preparing to meet in Glasgow for COP26, united by the prospect of helping shape a better post-pandemic future for our society and environment. They shared a sense of optimism as we began to look beyond COVID-19 and prepared to tackle our next greatest challenge – creating a more sustainable world.

This ambition was right, but today we face a crisis of confidence.

Russia's invasion of Ukraine has sparked a new wave of geopolitical tension, social dislocation and economic uncertainty. At the same time, the effects of climate change have become increasingly acute, with more frequent and extreme weather events impacting our daily lives and the environment around us.

These emerging headwinds have made many question whether the world can meet the ambitious targets set less than one year ago. But the stakes are too high for us not to.

“

We must remain determined in our efforts, as the decisions we make this decade will be felt by generations to come.”

We cannot afford to hit pause on reducing greenhouse gas emissions, strengthening our ecosystems or improving diversity, equity and inclusion in our communities. We must remain determined in our efforts, as the decisions we make this decade will be felt by generations to come.

In uncertain times like these, we need bold and courageous leadership – capable of taking a long-term perspective and recognising the opportunities that are possible when ambition is converted into action. This leadership is not the act of an individual, but the power of galvanising collective action through collaboration.

That is why over the past year we have continued to work with our clients, portfolio companies, communities and peers to deliver on our sustainability priorities. We reflect on some of these

efforts in this report, including the complex roadmap we will navigate to invest and manage our portfolio in line with net zero emissions by 2040. We also explore the levers available to asset managers seeking to drive positive change across private and public markets, in which varying levels of influence can present both opportunities and challenges.

Although this report looks back on our progress in 2021, we remain firmly focused on what is next, maintaining our flexibility in a continually evolving world so we can invest to deliver positive impact for everyone.

Our teams are exploring how the integration of the Green Investment Group and our capability in nature-based solutions can help amplify our contribution to the low-carbon transition. We are finding new ways to ensure an inclusive

transition, better integrating safety, social impact and the consideration of culture in our investment and asset management frameworks. We also remain focused on deepening the trust of our stakeholders by strengthening governance and enhancing transparency across our portfolio.

Taking this work forward is core to our purpose – to innovate and invest for a better future. It is a responsibility that we embrace and which drives us forward each day.

Ben Way
Group Head,
Macquarie Asset Management

2021 Sustainability highlights

Environment



Committed to invest and manage our portfolio in line with **global net zero emissions by 2040** with 95% of real assets now reporting greenhouse gas (GHG) emissions data²



3,000+ ha of natural landscapes protected and **234,000t of carbon sequestered** in our agriculture and natural assets in 2021⁴



Announced integration of **Green Investment Group** into MAM from 1 April 2022: combining over **50GW** of green energy projects under development, construction or in operation³



130+ properties with green certifications in our directly managed real estate portfolio



UK Climate Investments full commitment of funds supporting around 2.3GW of **clean energy in Africa and India** using innovative green financing instruments and platforms

Social



Launch of impact investing platform focused on **specialist disability accommodation** for vulnerable tenants



90%+ positive engagement among MAM staff in 2021, with an 85% participation rate⁵



MAM workforce is **41% female**, with **improved female representation** at senior levels globally



64% of Private Markets assets have implemented **diversity, equity and inclusion (DEI) strategies**, up from 38% in prior year. Committed to **further improvement in 2022**



More than \$A520 million donated by Macquarie (including MAM) staff and the Macquarie Group Foundation since inception in 1985

\$A44 million contributed to 2,300 community organisations in the 12 months to 31 March 2022⁶

Governance



~\$US8 billion managed in Article 8 or 9 funds in 2021, expected to increase to at least \$US53 billion by the end of 2022⁷



Launch of **proprietary United Nations' Sustainable Development Goals (UN SDGs) tools** to measure UN SDGs alignment/contribution across multiple MAM funds and products using defined frameworks⁸



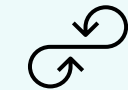
GRESB assessments completed across all 28 funds and 85 assets in 2021, up 37% on prior year. Participation further increased in 2022



ESG engagement tracker implemented across Public Investments teams: improved cross-team collaboration on ESG-related issues



Proactive proxy alert system implemented across MAM to directly alert investment teams of ESG-identified proxy voting issues



Advanced industry collaborations in 2021 including IIGCC, CA100+ and WBA; became a **signatory to the UK Stewardship Code**

2. As at 31 March 2022, calculated as a percentage of the number of MAM-managed real asset portfolio companies that are in-scope for greenhouse gas (GHG) emissions reporting to MAM. Assets not in scope may include recent acquisitions, pending divestments, concessions where GHG are attributable to operator and assets under construction. 3. As at 31 March 2022. GW of green energy assets reflect 100% generating capacity of each asset, not the proportion owned or managed by MAM or GIG. 4. Across MAM's Agriculture and Natural Asset businesses. 5. Macquarie 2021 "Voice Survey". 6. Contribution figures comprise Macquarie employees' donations and fundraising; Foundation matching support for employees' donations and fundraising; Foundation donations to commemorate employees attaining 10-year and 25-year anniversaries at Macquarie; Foundation grants to non-profit organisations to recognise 12 months of board service by a Macquarie employee; and Macquarie and Foundation grants to community organisations in the 12 months to 31 March 2022 (being Macquarie Group's reporting year). 7. Calculated using AUM as at 31 December 2021 and 30 June 2022 respectively across MAM's Public Investments and Private Markets platforms. Article 8 and 9 funds are defined under the [EU's Sustainable Finance Disclosure Regulation](#). The increase is largely due to updated regulatory guidance which results in additional funds and products meeting the Article 8 or 9 definition. 8. MAM's UN SDG alignment frameworks are used across public and private funds and products to demonstrate actual or potential outcomes driven by intentional investment or manager strategies.

02

MAM at a glance

About us

Macquarie Asset Management is a global asset manager that aims to deliver positive impact for everyone.

Trusted by institutions, pension funds, governments and individuals to manage more than \$US534 billion in assets globally,⁹ we provide access to specialist investment expertise across a range of capabilities including fixed income, equities, multi-asset solutions, private credit, infrastructure, renewables, natural assets, real estate and asset finance.

MAM is one of four operating groups within Macquarie, a global diversified financial group providing clients with asset management, finance, banking, advisory and risk and capital solutions across debt, equity and commodities.

With a global MAM team of over 2,200 people operating in 32 markets, we leverage our experience, diversity and culture of innovation to identify opportunities, mitigate risks, generate long-term client value and drive positive outcomes in the communities in which we operate.

9. As at 30 June 2022. 10. Ownership includes properties owned via platform investments in which MAM may hold a minority interest or otherwise have limited governance rights.

MAM's business⁹

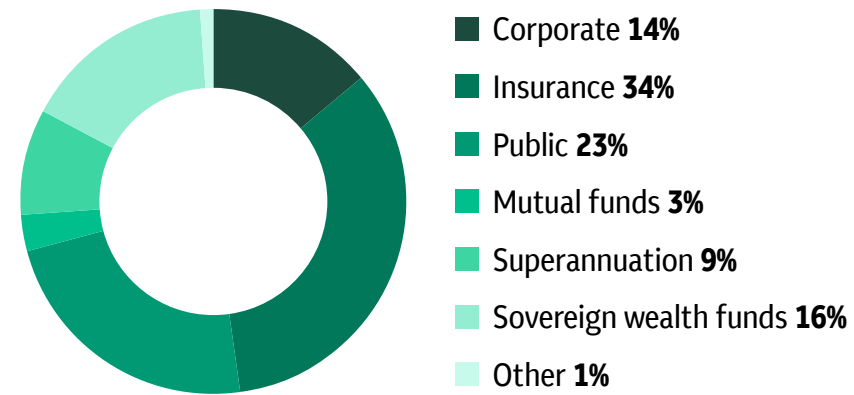
Macquarie Asset Management					
Private Markets: \$US176.8b AUM			Public Investments: \$US357.5b AUM		
Real Assets	Real Estate	Private Credit and Asset Finance	Equities	Fixed Income	Multi-asset and Alternatives
<p>Infrastructure</p> <p>165+ portfolio assets across:</p> <ul style="list-style-type: none"> • Transportation • Utilities • Renewable energy • Communications digital • Social infrastructure • Waste management 	<p>Real Estate</p> <p>559 properties¹⁰</p> <p>~17.5m m² floor space managed globally</p>	<p>Private Credit</p> <p>164 borrowers</p> <p>Asset Finance</p> <p>357 assets</p>	<p>Multi-boutique business model</p> <p>Investing across key developed and developing markets</p>	<p>Four key investment hubs: New York, Philadelphia, London and Sydney</p>	<p>Managing multi-asset strategies since 1998</p>
<p>Agriculture and Natural Assets</p> <p>4.68m ha of diversified farmland producing a range of food and fibre</p>					
<p>Green Investments (from 1 April 2022)</p> <p>More than 30GW global renewable energy development pipeline</p>					



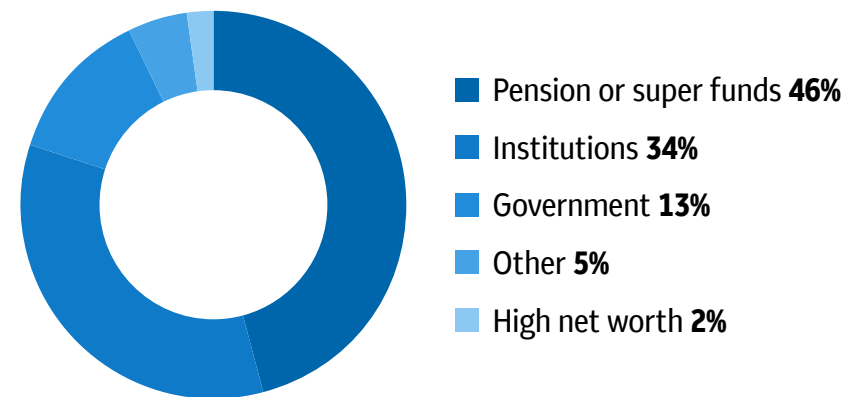
Our portfolio¹¹

MAM clients

Public Investments¹²



Private Markets¹³



11. All figures as at 30 June 2022 unless otherwise stated and subject to rounding.
 12. Institutional investors, as at 31 March 2022. 13. As at 31 December 2021.
 14. Reflects 100% generating capacity of each asset, not the proportion owned/
 managed by Macquarie.

2,200+
MAM people operating across

32
markets globally

Americas

873
staff

46%
AUM

35
portfolio businesses

EMEA

591
staff

19%
AUM

47
portfolio businesses

Asia-Pacific

826
staff

35%
AUM

92
portfolio businesses

Essential services
used daily by

100 million+
people



AIRPORTS
18 million
passengers per annum



SEA PORTS
7 million
standard container units
handled per annum



WATER
6 billion
litres of water treated
per day



ROADS
1 million+
vehicles per day



COMMUNICATIONS
168 million+
people reached



GAS AND ELECTRICITY
16 million
households served



RAIL
56 million
passengers per annum



RENEWABLE ENERGY
16GW
of operating capacity¹⁴



OUR ASSETS EMPLOY
218,000+
employees and contractors



03

MAM's approach to sustainability

From our Chief Sustainability Officer

📷 Lawson Grains (Australia)



“

We are passionate about the role we can play in helping to create a more sustainable and equitable society but we do not underestimate the challenges we face in delivering on our objectives.

To effect the change we want to see, we know that we will need to be bold, willing to make difficult decisions, and focused on delivering solutions at a scale and pace that inspires the trust of our stakeholders. We also understand that we must work in partnership with our clients and peers, sharing both our successes and learnings, so we can continue to enhance our approach and have a meaningful impact.

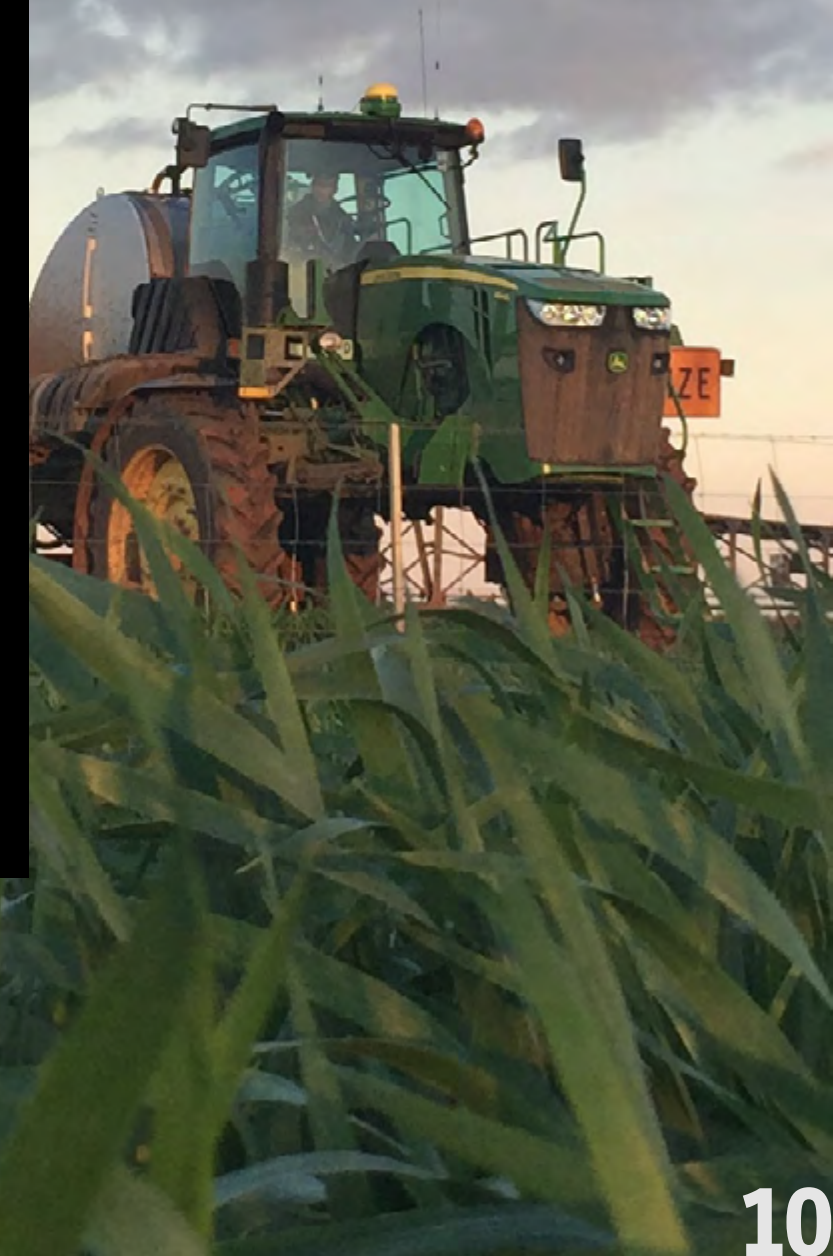
As we reflect on our journey so far, we are pleased with the progress we have made in helping to mitigate climate change, protect the health of ecosystems, strengthen oversight of health and safety, and be more responsive to societal needs. The changes we have made to our ESG frameworks and policies in 2021 are aimed at further strengthening our performance and transparency in these key areas, but there is more to be done.

We are working hard to deliver on our commitments while identifying new opportunities to drive positive environmental and social outcomes across our platform. We will continue to innovate – evolving our investment and asset management frameworks, strategies, and culture – to take us where we need to go.

Our people share this purpose and sense of urgency. They know we must act now if we are to be successful in meeting our long-term goals and ambition to invest to deliver positive impact for everyone.”

Kristina Kloberdanz

Chief Sustainability Officer,
Macquarie Asset Management



Our purpose

Our vision

Investing to deliver positive impact for everyone

Macquarie's purpose is to empower people to innovate and invest for a better future. At MAM, we do this by investing to deliver positive impact for everyone.

We seek to invest responsibly not just because it's the right thing to do, but because we believe it creates better outcomes for our clients, portfolio companies and their communities over the long term. As custodians of vital businesses touching people's daily lives, we have both a responsibility and an opportunity to ensure we are driving positive change.

Investing to deliver positive impact for everyone is an ambitious vision. Our ESG practices seek to go above and beyond simply preserving the economic value of our funds' portfolio companies. We actively work to identify and deliver positive impact for our stakeholders through a range of environmental and social initiatives. Some initiatives, such as our active decarbonisation programme, will benefit not only our stakeholders, but also the broader population.

Our ambition

To be a global leader in sustainable asset management

We are ambitious. We want to be a leader in sustainable asset management across the globe.

We also recognise that the scale of the issues at hand require shared progress. We are therefore working to manage our portfolios in line with best practice for driving global environmental and social goals, while also working in close collaboration with others to seek to enhance outcomes across our industry and for all stakeholders.

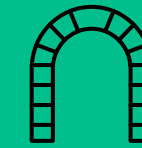
We are continuously finding ways to improve our approach across our business, such as formalising and systemising sustainability across MAM, developing tools, targets and investment performance standards, enhancing culture, resources and governance, and improving our systems for measurement and reporting.

Our culture

Macquarie's culture is driven by our purpose. We recruit talented individuals and support them to realise their potential in an environment that values excellence, inclusion and integrity. Fostering their development and supporting their wellbeing enables us to meet the highest standards in our activities and serve the evolving needs of our clients and stakeholders.

Our purpose, principles and what we expect of our people are set out in our [Code of Conduct](#).

To fulfil our purpose, we apply three long-held principles that are central to our culture and determine how we conduct business, guiding what we do every day: Opportunity, Accountability and Integrity.



Opportunity

We seek to identify opportunity and realise it for our clients, communities and people. We start with real knowledge and skill. We support our people to achieve and succeed and believe an inclusive workplace enables us to deliver more innovative and sustainable solutions for our stakeholders.



Accountability

With opportunity comes accountability. We are accountable for all our actions to our clients, our community, our shareholders and each other. We do not compromise our standards. We take responsibility for our actions and everything we say and do is on record. We analyse and manage risk, and we make decisions we can be proud of.



Integrity

We act honestly and fairly. We honour our promises. We earn the trust of our clients, colleagues, communities and shareholders through the quality of our work and our high ethical standards. We value a culture that embraces diversity, equity and inclusion.

Our approach

Responsible investing

How do we define and measure our sustainable outcomes?

To us, sustainable investment management means not only protecting but enhancing stakeholder value through managing ESG performance. As fiduciaries we seek to deliver superior returns to our clients without compromising the ability of future generations to meet their own needs.

A disciplined and rigorous approach is important. Our sustainable actions must be underpinned by robust ESG practices with measurable outcomes.

We consider a broad range of ESG factors when assessing the sustainability of our activities. As presented here under the three pillars of Environment, Social and Governance, we recognise the interconnectedness of many of these considerations.



Environment

- Climate change exposure
- Greenhouse gas emissions
- Biodiversity and ecosystems
- Resource efficiency
- Water usage
- Land use
- Waste and pollution



Social

- Our people
- Workplace health and safety (WHS)
- Community engagement
- Diversity, equity and inclusion (DEI)
- Just transition
- Cultural heritage
- Supply chain



Governance

- Business ethics and conflicts of interest
- Regulation and government relations
- Cyber security, data protection and privacy
- Human and labour rights, modern slavery
- Anti-bribery, corruption and fraud
- Sanctions
- Executive remuneration

MAM's investment spectrum

Our diverse range of products and asset classes covers the spectrum of responsible and ethical investments, from traditional through to impact investing.

ESG considerations are able to be taken into account in all of MAM's active investment strategies, with an increasing portion invested in thematic and impact funds. By the end of 2022, we expect at least \$US53 billion¹⁵ of our AUM to constitute funds with sustainable characteristics or objectives.

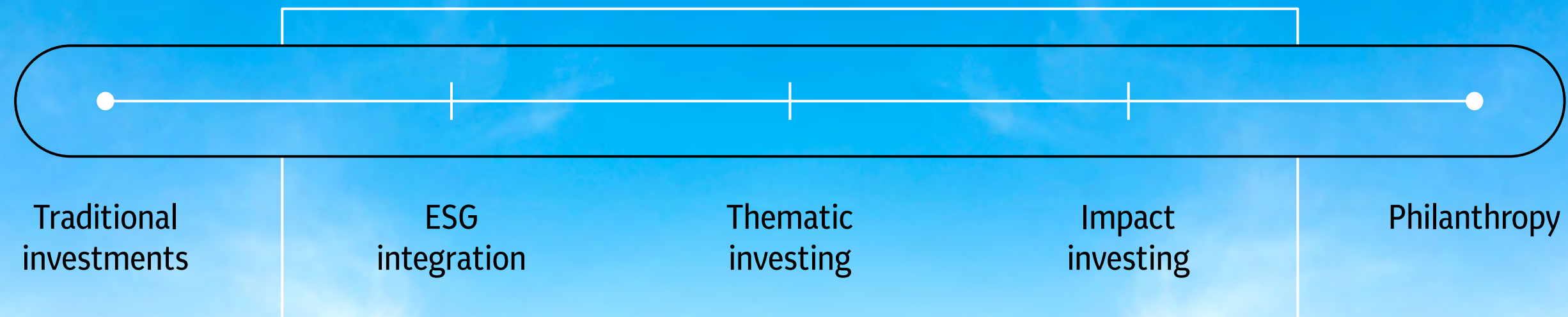
In line with our ambition to be a leader in sustainability, and as a signatory to the Net Zero Asset Managers initiative (**NZAM**), we are committed to increasing the amount of AUM invested in climate solutions over time. We also continue to seek new opportunities that intentionally drive positive ESG outcomes through our capital deployment activities.

Our corporate giving and philanthropy are undertaken at the Macquarie Group level through the Macquarie Group Foundation, with a mission to support the communities within which we live and work. During the year, the Foundation has matched MAM staff donations and supported MAM staff volunteering time and expertise to non-profit organisations around the world.

15. Based on AUM as at 30 June 2022 across MAM's Public Investments and Private Markets platform of funds expected to be subject to Articles 8 or 9 of the EU's Sustainable Finance Disclosure Regulation by the end of 2022.

16. This spectrum is provided for illustrative purposes only and has been adapted from industry sources, including RIAA's responsible and ethical investment spectrum at: <https://responsibleinvestment.org/what-is-ri/ri-explained/>.

Responsible investing spectrum¹⁶



MAM's strategies in Public Investments

Macquarie Group Foundation

MAM's Private Markets funds

ESG integration

Effective ESG integration and management is core to MAM's strategy, decision-making and investment processes.

We believe positive ESG performance is an indicator of management quality. ESG integration improves operational performance and has the potential to create long-term value. We also recognise the growing regulatory attention given to ESG matters around the world, which means we must be prepared to meet all legislative requirements in the jurisdictions in which we operate.

Our dedicated sustainability and risk management teams are responsible for setting and implementing our ESG integration strategy and framework.

We manage a diverse suite of products and asset classes on behalf of our clients, with different levels of ownership in, and influence over, the businesses in which we invest.

As a result of this, the way we exercise our rights and responsibilities as stewards varies between our public and private businesses (and within each business) and, accordingly, so does the way we integrate sustainability. When managing sustainability risks and opportunities, our approach is materiality-based.

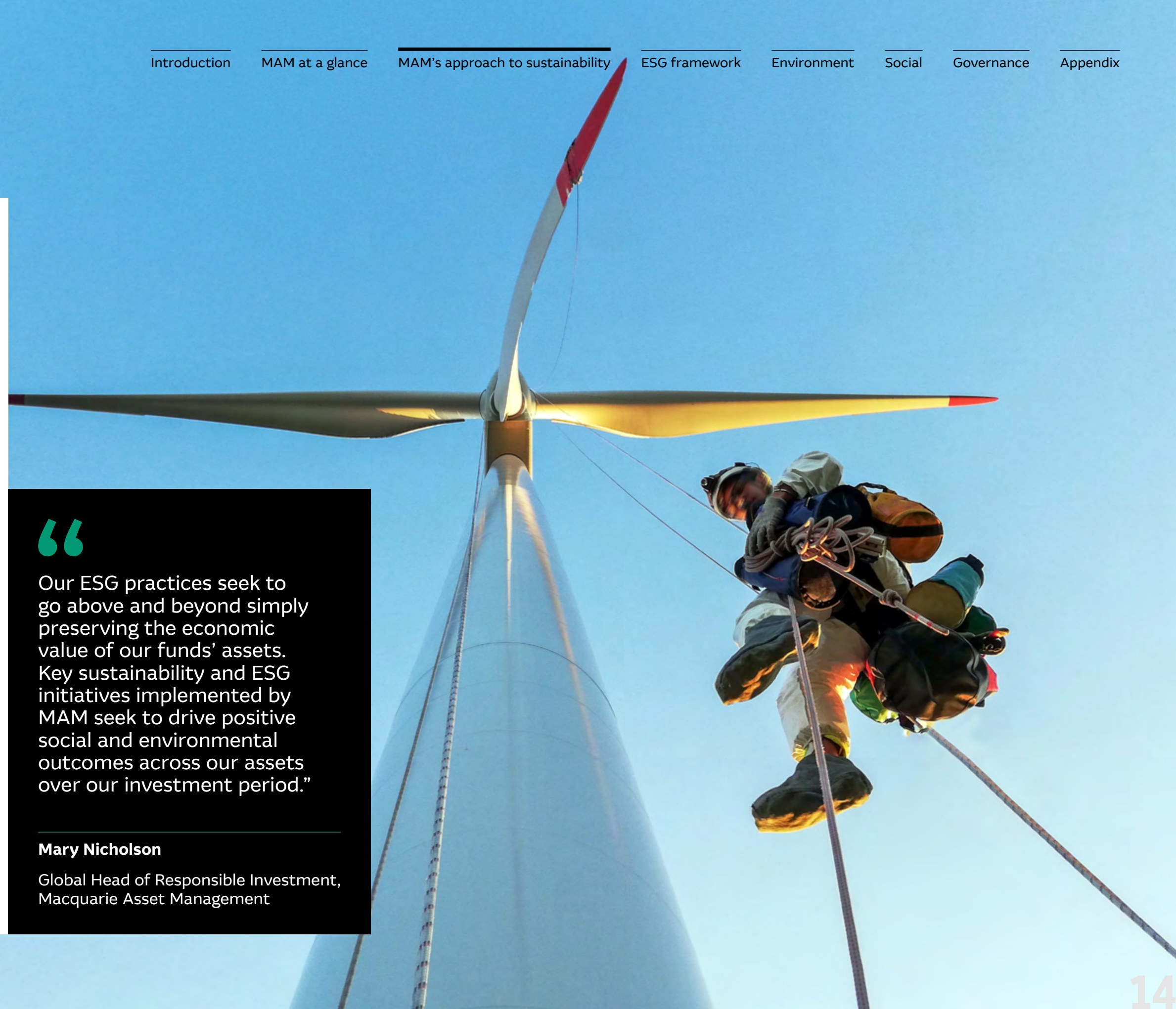
An overview of our ESG integration framework and ESG tools applied across our Public Investments and Private Markets businesses is detailed in the following section of this report.

“

Our ESG practices seek to go above and beyond simply preserving the economic value of our funds' assets. Key sustainability and ESG initiatives implemented by MAM seek to drive positive social and environmental outcomes across our assets over our investment period.”

Mary Nicholson

Global Head of Responsible Investment,
Macquarie Asset Management



📷 Long Beach Container Terminal (US)

Approach to materiality

As a part of Macquarie Group, as a fiduciary investor in and manager of real assets, and as a steward of investments on behalf of our clients, we consider materiality through a variety of lenses.

In our **Public Investments** business, we place emphasis on those ESG risks considered most important and meaningful to each investee company and/or issuer, its employees and the industry, jurisdiction and community in which it operates. Each investment team has access to ESG-related tools and resources, including SASB standards, to assist them in identifying and integrating material ESG factors into their investment decisions. These decisions are governed by our Public Investments ESG policy and monitored through our oversight framework.

Within our **Private Markets** portfolio, across agricultural farmland, real estate properties and infrastructure companies, we recognise that each business will have its own set of material ESG issues and opportunities. We apply processes that assess the areas most important to each business and its community, taking into account the industry, type of operations, physical location, legal jurisdiction and stage in the asset cycle, as well as asset-specific risks and opportunities identified through due diligence.

Across MAM, we also take into consideration the **recommendations and research of organisations** working globally to determine materiality and in setting benchmarks and standards for risk assessment management and reporting. These include the UN-supported Principles for Responsible Investment (**PRI**), SASB, the International Finance Corporation's Environmental and Social Performance Standards and Environmental, Health and Safety Guidelines, and GRESB Standards for real assets.

Macquarie Group also identifies and aligns with the eight focus areas considered material to the Group and its stakeholders as reported in [Macquarie Group's ESG Report](#).

In this report, we consider MAM's sustainability areas of focus through all these materiality lenses under the pillars of Environment, Social and Governance. We also recognise the interconnectedness of many ESG areas: some topics can be considered under two or even all three pillars, depending on the vantage point.

Macquarie Group ESG focus areas:



Environmental and social risk management



Climate change



Environmental and social financing



Sustainability in direct operations



Client experience



People and workplace



Business conduct and ethics



Community

Partnerships, collaboration and advocacy

By working with others, we believe we can harness the power of collective action to better drive outcomes.

In partnership with some of the leading organisations and regulatory frameworks around the world, we work continuously to advance our understanding of ESG issues and opportunities and to improve our own sustainability approach across MAM.

In areas where we believe we can meaningfully contribute to the understanding and development of industry best practice, our people take leading roles in industry body working groups and advisory committees. In doing so, we seek to promote guidance, tools and standards which support effective management of ESG risks and to support opportunities to drive solutions at speed and scale across the industries in which we operate.



We have a responsibility to ensure our investments are resilient and adapted to the risks of climate change, as well as continuing to channel the fiduciary capital entrusted to us to sustainable infrastructure to mitigate climate impacts.

As the custodians of critical transport links, utilities and communications infrastructure, we understand the priority attached to adapting to the impacts of existing climate change. Private sector investment in adaptation and resilience happens through good stewardship and planning, with teams on the ground in each location working with local communities.”

Shemara Wikramanayake

CEO and Managing Director,
Macquarie Group

Macquarie Group affiliations



Signatory since 2010



Founding member 2018



Member since 2019



Founding member 2019



Supporter since 2019



Member since 2020



Founding member 2021



Member since 2022

MAM affiliations



Founding member 2009



Member since 2010



Signatory since 2015



Member since 2016



Member since 2017



Signatory since 2020



Member since 2020



Supporter since 2020



Member since 2020



Signatory since 2021



Founding member 2021



Ally since 2021



Signatory since 2021



Signatory since 2021



Member since 2021



Member since 2022



The Net Zero Asset Managers initiative



We have been signatories to the **Principles for Responsible Investment (PRI)** since 2015 and MAM is represented on the PRI's Infrastructure Advisory Committee.

The PRI is the world's leading proponent of responsible investment. MAM receives an annual assessment report from the PRI which we use as a measure of the effectiveness of our policies and processes and as a guide for further improvement. Results from MAM's most recent Transparency Report are available on the [PRI website](#).

We have been members of **GRESB Infrastructure** since it launched in 2016, **GRESB Real Estate** since 2019 and are represented on both the GRESB Foundation Board and the Infrastructure Standards Committee.

GRESB is an investor-led organisation which provides a framework to measure the ESG performance of infrastructure and real estate assets and portfolios. GRESB annual assessments, available on its [website](#), provide us with valuable insights as we develop sustainability strategies for our assets and opportunities for best practices within our portfolio to be shared across industry sectors.

In 2021, 28 funds and 85 assets completed GRESB assessments, a 37% increase from 2020, and in doing so we achieved the goal of having 100% participation for in-scope assets across our Americas and EMEA regions. For the first time, we also saw the participation of two of our infrastructure debt funds. Twenty of our infrastructure assets were awarded five-star scores, with three named as leaders within their sectors.

Our GRESB participation continued to grow in 2022, with 37 funds and 99 assets completing assessments.

We joined the **Net Zero Asset Managers initiative (NZAM)** in 2021, reinforcing our existing commitment to invest and manage our portfolio in line with net zero emissions by 2040.

Our participation is enabling us to partner with other leading investors to learn how we can enhance the implementation of our net zero strategy, share best practices and drive more coordinated action to deliver the goals of the Paris Agreement.

We are also a member of the IIGCC-led Paris Aligned Investment Initiative working group developing NZAM's methodology for net zero alignment in infrastructure portfolios.

See pages 33-35 for more detail on our net zero commitment.

In 2021, our Head of Agriculture and Natural Assets, Elizabeth O'Leary, joined the **Taskforce on Nature-related Financial Disclosures (TNFD)** as one of 35 global founding members.

The TNFD was established in 2021 to develop a risk management and disclosure framework by 2023 for organisations to report and act on evolving nature-related risks. The ultimate aim is to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.

By sharing our expertise in the management of large-scale agriculture and natural asset portfolios, we hope to make a positive contribution to the development of the TNFD framework, while also improving the way we manage and report on nature-related risks and opportunities within our own portfolio.

We joined the **World Benchmarking Alliance (WBA)** in 2021, working to shape the private sector's contribution to achieving the UN SDGs through the use of benchmarks and cross-sector partnerships.

In 2021, we engaged with several of the most influential global companies in the food and agricultural sector to urge them to work with the WBA and the G7 on their Sustainable Supply Chain Initiative. We incorporated the WBA's research and findings into our own proprietary UN SDGs Database, which we use to measure our portfolios' alignment with the UN SDGs. See the [Food and Agriculture Benchmark Insights Report](#) for further details on the initiative.



MAM is an influential investor and strong driver of systemic sustainable change. MAM's support of the G7 Sustainable Supply Chain Initiative largely contributed to leading companies signing up to the initiative and agreeing to improve their performance as measured by WBA's Food and Agriculture Benchmark, embedding accountability into the pledge, which is an industry first."

Viktoria de Bourbon de Parme

World Benchmarking Alliance

Stakeholder engagement

Delivering a positive experience for our stakeholders is central to our purpose and our ability to create sustainable long-term value.

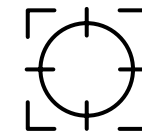
We understand the importance of stakeholder collaboration and engage with investors, asset management teams, industry groups and other stakeholders on ESG matters on an ongoing basis. Their feedback guides the refinement of our own approach and provides depth to knowledge sharing and collaboration on global ESG challenges.

Our stakeholder engagement principles



1. Identify

Identify our key stakeholders and implement an ongoing programme of active engagement - with both internal and external stakeholders



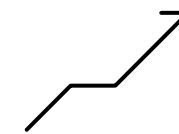
2. Focus

Focus on developing and maintaining constructive and enduring relationships



3. Embed

Embed stakeholder engagement activities in our asset management framework



4. Improve

Improve and enhance understanding of how we can add broader value to our stakeholders



Key MAM stakeholders

Our clients

Our teams engage with clients on our sustainability activities through a variety of channels, including:

1. Dedicated client relationship managers for all MAM financial products
2. Regular updates on fund or investment activity and performance through quarterly reporting
3. A range of client marketing communications, including knowledge-based events and webinars, sharing important announcements and thought leadership, including our ['Pathways'](#) series.
4. Encouraging continuous client feedback through client surveys, workshops and meetings.

We also engage with potential investors and consultants, via education sessions, pitches

and a range of client marketing communications, to help them understand our business. We provide upfront disclosure of MAM's approach to sustainability and reporting to ensure it satisfies the needs of each client.

Our people

Our people are fundamental to what we do and we engage and communicate with our teams through a broad range of online and offline channels, including regular leadership communications and Town Halls presenting key business updates and initiatives. Staff surveys, feedback loops and two-way bi-annual reviews ensure we engage and listen to our people.

We also provide a comprehensive learning and development programme on ESG, sustainability and risk management, as well as a broad range of wellbeing and DEI

initiatives. In addition to setting DEI objectives as part of regular performance appraisals, we celebrate individual and team contribution to our MAM values, including our ESG goals, through our MAM-Awards process twice-yearly.

Our assets and their employees

Our people are in daily contact with our asset management teams to support the asset's operations and engagement with the communities in which they operate. In some regions, our specialist teams gather with the C-suite from our portfolio companies at Annual Asset Leadership Forums. We also conduct regular training and education webinars on key areas such as health and safety, DEI and other sustainability initiatives in addition to regular asset specific engagement.

Regulators and governments

In MAM, as across all of Macquarie, we seek to be engaged in and understand the evolving policy, political and regulatory environments in the jurisdictions in which we operate and invest. We do this in a number of ways, including directly engaging with the relevant regulators and local governments and through effectively monitoring and complying with regulatory developments and policies which could impact our assets' or funds' operations.

Industry bodies

We work with industry groups in relevant sectors around the world through membership of, and active participation in, industry bodies and organisations applicable to our activities. See pages 16-17 for further detail.

Communities

We engage with the communities in which our Private Markets businesses operate, including by ensuring our portfolio companies have appropriate ESG policies and frameworks in place to support these communities, including with respect to a green and just transition and the protection of biodiversity and ecosystems affected by their businesses.

We also support our local MAM communities through giving and volunteering via the Macquarie Group Foundation.

Supply chain

We are committed to ensuring high standards of ESG performance across our service providers and other suppliers, as they are important contributors to the success of our business and to our wider economic, environmental and social

impact. Macquarie's [Principles for Suppliers](#) are in place to help uphold our core values. They cover expectations of suppliers in relation to governance, ethics, risk management, environmental risks, human rights, labour and workplace practices, community commitment and diversity.

Macquarie Group stakeholders

As a part of Macquarie Group, we maintain contact with Macquarie Leadership through board reporting and updates, management presentations and ad hoc briefings on specific emerging issues.

MAM supports Macquarie Group's ESG communications to shareholders, participating in key events of the corporate calendar, including Group reporting, Annual General Meetings and Operational Briefings. MAM also provides input into all of Macquarie Group's sustainability reporting and strategic planning.

Key messages from MAM's 2021 ESG survey

In 2019, we undertook our first ESG survey to better understand how our clients approach ESG: what motivates them; how they are addressing ESG integration; and how their asset allocation mix is changing in response.

We conducted our second [ESG survey](#) in 2021 to update these insights, including themes about clients' preferences on stewardship and investment, among other topics. More than 180 clients took part, revealing a growing focus on ESG, greater resources dedicated to ESG and a robust belief that a strong sustainability strategy was positive for returns. It also found, among other things, that climate is a major focus for clients, but that many find it challenging to adequately address it in their investment processes.

Engaging our clients in this way helps us better understand their sustainability needs, enabling us to continually adapt and improve our product offering, reporting and communications and provide them with a better service.

ESG is rising up the investment agenda

ESG integration and sustainable investing have moved from the edges of the investment community into the mainstream. Our clients told us:

85%

have a greater focus on ESG compared with two years ago

61%

have increased allocations to investment strategies or investment managers that target specific ESG outcomes

59%

have a dedicated ESG function

ESG on an upward curve

Demand for ESG analysis, integration and investment products is set for continued strong growth even as the investor community continues to face challenges incorporating ESG factors into their investment decision making.

82%

expect to increase allocations to investment strategies that integrate sustainability practices over the next two years

77%

expect to increase commitments to products or managers that target specific ESG outcomes over the coming two years





04

ESG framework

Public Investments Framework

Our Public Investments ESG policy details our approach to the integration of ESG factors into our listed investment processes, proxy voting and engagement with companies.

ESG risk analysis is a fundamental component of our investment process and is the responsibility of the investment teams when making investment decisions. Each specialist, independent investment team has access to a variety of ESG-related analytical tools and resources to assist them to identify, measure and track material ESG factors associated

with investee companies or issuers and to integrate these considerations into their investment decisions.

Through direct engagement and proxy voting, we also encourage investee companies and issuers to enhance disclosure and take action on their sustainability issues and opportunities.

While the integration of sustainability initiatives in the investment process varies by team, ESG risks and opportunities are taken into account throughout the investment process in

accordance with our Public Investments ESG framework as illustrated here.

In addition to the integration of ESG risk factors into each investment strategy, we develop frameworks to enable specific products across our Public Investments platforms to intentionally seek to promote and drive environmental and social goals framed by the UN SDGs.

Further detail is provided in MAM's [2021 Stewardship Report](#).

ESG training and knowledge sharing

Investment teams have access to internal and external ESG training opportunities. The ESG Working Group is a forum for teams to share best ESG practices and to discuss market developments

Analysis and research

Investment teams assess sustainability risks according to their own investment process, taking a materiality-based approach. Teams are supported in this analysis by access to external ESG research

Ongoing monitoring

Investment teams continue to monitor material sustainability risks of the investments

Risk mitigation

Investment teams can mitigate sustainability risks by engagement with investee companies and/or issuers and by exercising voting rights, in line with MAM's internal policies, with support from the Sustainability team

Divestment

Investment teams may choose to divest from holdings in companies and/or issuers with severe sustainability risks as a measure of last resort



Oversight committee framework

Within the Public Investments business, a number of committees provide our ESG governance framework:

Public Investments Executive Committee

Investment Governance Committee

Ultimate responsibility for the oversight of investment corporate governance and ESG-related activities. Reports to the Executive Committee.

Global Proxy Voting Committee

Responsible for overseeing the proxy voting process across our Public Investments activities.

ESG Working Group

Responsible for supporting investment teams in their integration of ESG and monitoring ESG practices, allowing investment teams to share best practice in incorporating ESG factors into their investment processes and discuss market developments with respect to ESG.

Global ESG Oversight Committee

Responsible for MAM's global ESG oversight, covering our global ESG principles, policies and procedures, as well as the selection of ESG data/service providers and affiliations.

Chaired by MAM's Chief Sustainability Officer with membership across Sustainability, Investments, Legal, Compliance, Risk, Client Solutions Group and Product.



Good governance policy

Under the EU's Sustainable Finance Disclosure Regulation (**SFDR**), investment products that pursue sustainable characteristics or objectives and are subject to Articles 8 or 9 of SFDR are required to invest in companies with good governance practices.

In response, the Public Investments business adopted a policy to ensure that such products are assessed in a robust manner for compliance with the good governance requirements under SFDR.

For funds that fall under our Good Governance policy, quarterly reports based on third-party governance data are produced. If poor governance practices are identified with respect to a specific investment, this will be flagged to the Investment Risk team and investment teams, who then work with the Sustainability team to pursue remediation actions. These may include direct engagement with the investee company, exercising

proxy votes against company management and/or in support of changing specific practices, and/or divestment of the relevant security.

During 2021, our Good Governance monitoring identified 101 poor governance companies, with 15 requiring remediation plans after meeting with our relevant investment teams.

Case study: Good Governance oversight

A company in one of our funds was identified as facing allegations of systematic employee underpayment and wage fraud via our quarterly Good Governance review of the fund's portfolio.

The Sustainability team raised the issue with the investment team and a remediation plan was put in place. Direct engagement

with the company was positive - it had taken significant steps to address and improve control practices related to the issue. The company provided direct, thoughtful answers sufficient for us to agree that our remediation plan had been satisfied.

In our engagement, the Sustainability team had reference to Sustainability controversy reports, which indicated minimal risks to the company, and the WBA Food & Agriculture Benchmark ranking of the company, which was #56 out of 350 companies on Governance.

Proxy voting

A key element of the effective stewardship of publicly listed companies is the investor's right to vote on company and shareholder resolutions, often through a proxy.

Our Global Proxy Voting Committee is responsible for overseeing MAM's proxy voting process. When voting, we act as owners and seek to ensure that proxies are voted in the best interests of our clients and that our proxy voting activities adhere to all applicable rules and general fiduciary principles. Our Proxy Voting Guidelines summarise our positions on various issues and give a general indication as to how we will vote shares on each issue where we are an active investor and have been delegated the responsibility

to vote or provide advice on proxies.

We also retain third-party proxy advisors, including ISS, Glass Lewis & Co. and Ownership Matters to provide research and opinions on proxy voting issues and to facilitate the actual process of voting proxies. Clients may also request that MAM use the client's preferred proxy advisory firm.

The recommendations of proxy advisors are made available to the applicable portfolio management teams to review and evaluate before the corresponding shareholder meeting. There will be times when a portfolio management team believes that the best interests of the

client will be better served if MAM votes a proxy counter to the proxy advisor's research recommendation. In these cases, the portfolio management team will document the rationale for its votes and provide its rationale to the Committee or its delegates. The Committee and its delegates are responsible for reviewing the rationale for these votes to assure that it provides a reasonable basis for any vote.

Where voting has not yielded the desired result, we have the means to escalate by engaging with the company's senior management and/or by reducing exposure to the company or entirely divesting.

Public Investments

ESG tools

In addition to active proxy voting and engagement as tools to influence corporate behaviour, MAM has implemented a number of initiatives to support our sustainability practices.

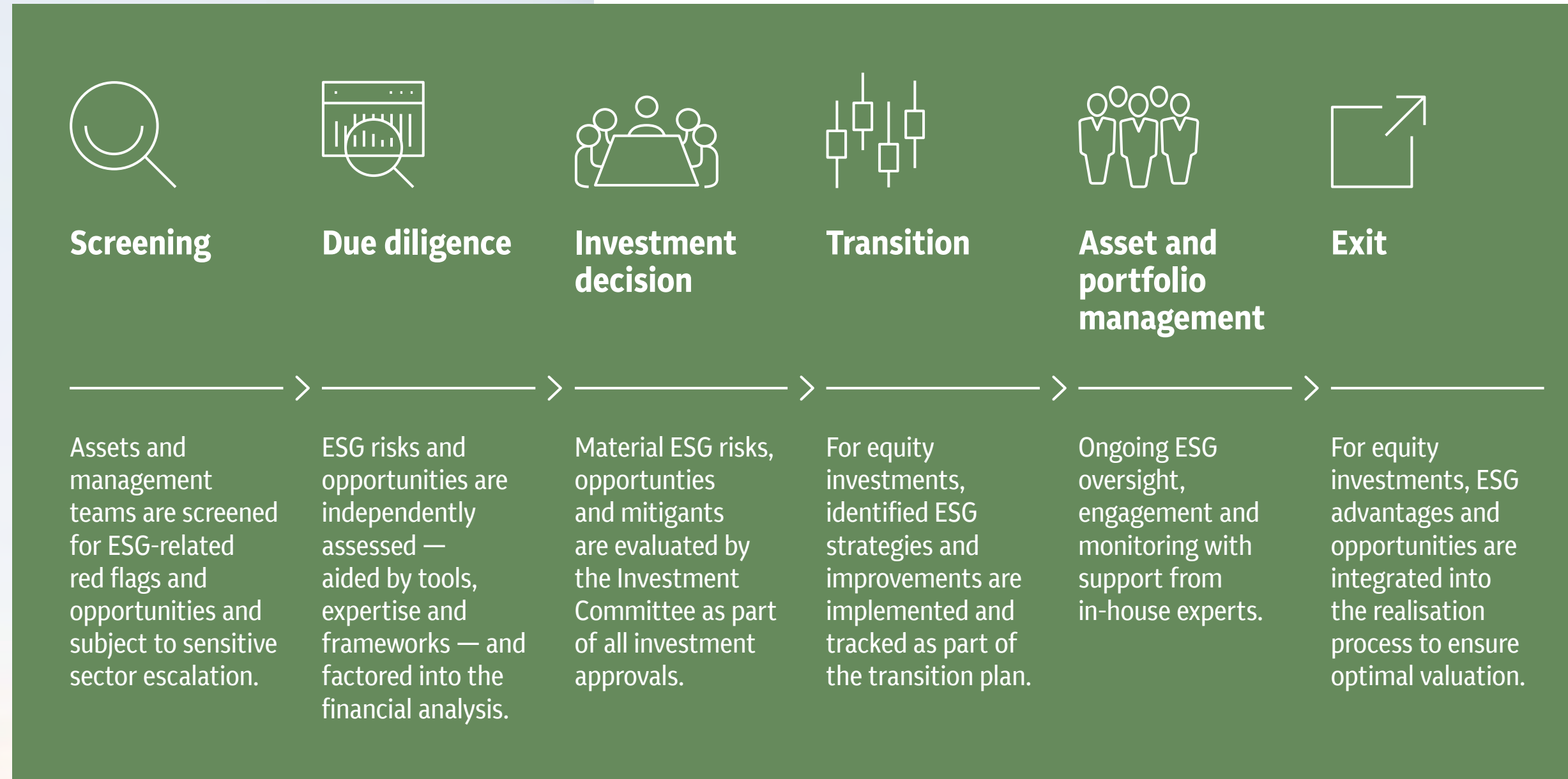
UN SDGs database	<p>MAM has developed a proprietary UN SDGs database and scoring system, which holds over 150 data points for more than 10,000 companies. Each data point serves to identify the degree to which a company's products, services and/or actions are aligned with one of the 17 UN SDGs. The database also contains harm metrics, which indicate a negative impact on the UN SDGs.</p> <p>Data points are assigned a score based on the perceived relative importance of the metric, with every company in the database receiving a cumulative score.</p> <p>Scoring also allows companies to be rewarded for specific actions such as charitable donations, environmental footprint reductions and collaborative initiatives. The process and scoring system are overseen by a committee comprised of internal and external ESG experts.</p>	ESG proxy alert notifications system	<p>To enhance our ESG proxy voting processes, we implemented a proactive proxy alert system across Public Investments in 2021, assisted by Institutional Shareholder Services (ISS). This system alerts investment teams when an ESG-identified issue comes up for a proxy vote for a company they hold. We have received positive feedback from investment teams about this new system, which has prompted investment teams to vote against management on several occasions to deliver a more positive ESG-related outcome.</p> <p>Issues raised under the system include climate change action, GHG emissions, renewable energy, biodiversity (such as deforestation and water scarcity), human rights risk assessment, DEI issues (such as the gender pay gap), labour rights, anti-social proposals and executive compensation.</p>
ESG engagement tracker	<p>MAM has established a proprietary central tracker of ESG-related engagements with Public Investments portfolio companies and prospective investments. It collates the ESG issues discussed during investment and Sustainability team engagements as well as the outcome of the discussions and whether follow-up is needed. The tracker serves as an effective communication tool to allow investment teams to glean insights from other engagement efforts and to foster collaborations among investment teams focusing on similar issues.</p> <p>We tracked over 200 engagements during 2021. We anticipate that this number will increase in coming years due to increasing focus on direct company engagements in addition to greater participation from the investment teams in logging their engagement activity. These include collaborative engagements MAM undertakes with other investors.</p>	Fixed Income scorecards	<p>Our Emerging Markets Debt team has developed a proprietary macro scorecard to rank countries based on their attractiveness for investment. The scorecard considers 20 variables, including ESG-related matters.</p> <p>Our Fixed Income teams utilise these ESG risk scores when assessing issuers. The scoring is driven by the company's ability to manage and respond to existing or possible ESG risk events. By using our own ESG ratings we can evaluate ESG issues purely from the perspective of a bondholder and ensure our portfolios reflect the most recent information available, rather than solely relying on external ESG ratings.</p>
ESG data portal	<p>In 2021 MAM initiated an extensive project to implement a Public Investments-wide ESG data portal, through collaboration between our Sustainability and our Global In-sights and Analytics teams. This centralised hub will improve the ability of our teams to assess the effectiveness of stewardship activities, as well as to report more efficiently and consistently on portfolio-level ESG metrics to clients. The ESG data portal is expected to be introduced in the coming year.</p>	External ESG resources	<p>In addition to our internal ESG tools, we engage a number of external service providers to assist with ESG-specific data, opinions, ratings and research. These include: SASB Standards, Aladdin by Blackrock, Sustainalytics, FactSet, MSCI, Bloomberg and RepRisk. MAM also retains proxy advisory firms to help with the process of voting proxies, including research and opinions on proxy voting issues.</p>

Private Markets Framework

Our Private Markets ESG Policy and supporting guidance set out a framework for systematic due diligence, management and reporting of material ESG risks and opportunities associated with the operations of our Private Markets portfolio.

They define ESG-related escalation requirements, related policies, processes and minimum sustainability standards for the businesses in which we invest and allow us to monitor sustainability and ESG outcomes.

Through this framework, ESG considerations are embedded in our investment decision-making process and integrated throughout the investment lifecycle.



📷 Cruzeiro do Sul Grãos (Brazil)

Ability to influence

Engaging with the management teams of the assets and portfolio companies we invest in is a core part of our sustainability practices.

Dialogue with management on ESG issues enables us to reduce risk and increase economic, environmental and social benefits on behalf of our clients.

In our role as fund or investment manager, we may nominate senior MAM employees for appointment as non-executive directors (**NEDs**) to serve on the boards of our portfolio companies. These NEDs, along with other directors and officeholders of the board and management team, are responsible for overseeing portfolio company operations, including ensuring portfolio company management has appropriate ESG systems, procedures and practices in

place. When we nominate representatives to the boards of portfolio companies, we seek to ensure both sectoral and geographical experience, together with any skillsets important for each particular business.

Where we exercise control or significant influence, we work closely with our portfolio companies and assets to build sustainable, adaptable and resilient businesses. This may include ensuring that they: report and verify key ESG data including DEI, WHS and emissions; set emissions reduction and other targets; and implement business plans

that will contribute to a net zero economy by 2040 or sooner.

Further, where we invest directly into Real Estate, asset management teams focus on building asset-specific ESG action plans, taking into consideration portfolio-level targets and MAM requirements outlined above.

For Private Credit investments, our goal is to understand our borrowers' GHG footprints by establishing an ongoing dialogue to collect and monitor this data, and to understand their plans to address climate risk. We seek to engage with borrowers to encourage both action and transparency in relation to climate risk.



Our approach across asset classes

MAM's System 7 Asset Management Framework:



Real Assets: Infrastructure

Utilising MAM's proprietary [System 7 Asset Management Framework](#), we work closely with the management of our infrastructure portfolio companies to drive ESG and sustainability performance.

We apply minimum sustainability standards across our infrastructure assets. These are initially established during the transition of the asset to MAM management and are enhanced over the asset management lifecycle to ensure assets integrate appropriately high ESG and sustainability standards and objectives.

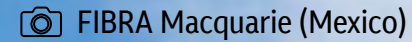
We also ask that our infrastructure portfolio companies complete annual GRESB assessments.

Real Assets: Agriculture and Natural Assets

Our funds' wholly-owned portfolio companies each adopt a tailored set of ESG policies that set out a statement of intent for the operation of each portfolio company and cover topics such as biodiversity, local community engagement and animal welfare together with MAM's broader ESG policy requirements.

We track and measure sustainability performance against the MAM Impact Principles, UN SDGs and MAM Agriculture and Natural Assets' Sustainability Indicators with the aim of incrementally growing our inventory over time to better demonstrate positive impact.





Real Estate

Our Real Estate investment and asset management teams leverage sustainability best practice guidance and tools including minimum standard expectations. When we invest into specialist operators, we partner with them to establish management standards including data collection and ESG reporting processes, design or operational standards, and net zero pathways. To assess progress, MAM conducts a semi-annual ESG maturity assessment of our specialist operators. We use these assessment findings in our reporting and work through the results with our investments to determine evolving ESG objectives and priorities. We also encourage our specialist operators and partners to complete annual GRESB assessments.

Private Credit

In Private Credit we integrate both financial and non-financial factors into the investment decision process. We believe both need to be considered to assess the expected long-term performance of a counterparty and its ability to meet contractual obligations (e.g. debt repayments or lease payments).

As a long-term investor, we consider both short- and long-term risks as part of our credit assessment. ESG risks, including in relation to both the physical and transition risks from climate change, are identified and monitored throughout the investment lifecycle. As debt investments do not give us the same level of influence as equity investments, our considerations at the investment decision stage are key. These include the decarbonisation plans and commitments of each asset. Our investment and portfolio management teams actively engage in direct dialogue with borrowers and source ESG key performance indicators (**KPIs**) where available.



Private Markets

ESG tools

We use a variety of tools to support our sustainability practices.

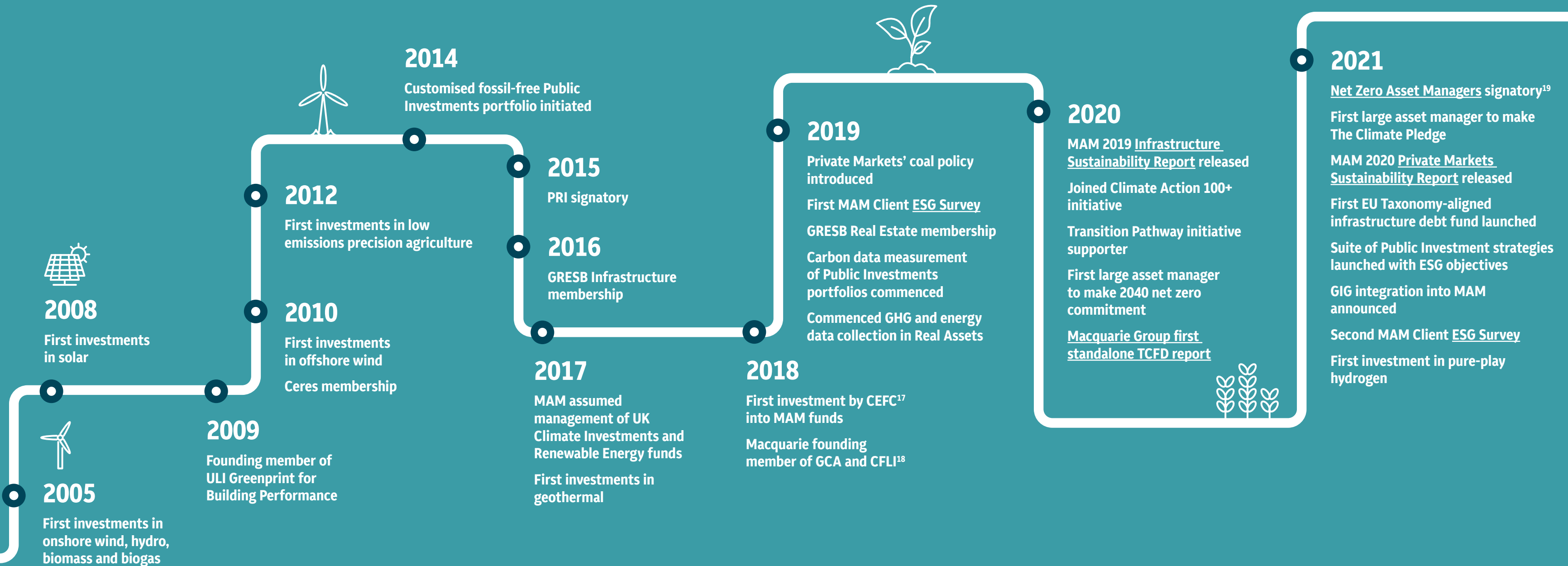
GRESB	<p>We use GRESB assessments across our infrastructure and real estate businesses to engage with assets and identify opportunities for improvement. Assessments cover a range of ESG issues including WHS, diversity and inclusion, climate change and human rights matters such as modern slavery risk.</p> <p>GRESB's scores also allow us to benchmark ESG performance year on year and against peers. Participating assets are demonstrating improved performance, underlining the progress in ESG management across our portfolio and increasing the quantity and quality of ESG information made available to our clients.</p>	Training and guidance	<p>We provide training on a wide range of ESG issues including climate change, net zero and DEI. MAM hosts offsite conferences for Real Assets portfolio companies' management teams, which include training, shared learning and discussion of sustainability topics. We engage external consultants to provide additional ESG training, support and guidance to our assets in establishing baseline inventories, developing targets and identifying reduction projects for GHG emissions.</p> <p>We also provide a range of specific tools to support our assets in delivering on our net zero commitment. See page 35 for further detail.</p> <p>MAM actively participates on panels, working groups and in other industry and cross-sector leadership forums to share ESG outcomes, learnings and new initiatives.</p>
Quarterly ESG reporting	<p>We are actively engaged with asset management teams in monitoring their performance against relevant ESG metrics. Our infrastructure and agricultural investments are required to report ESG information to us on a quarterly basis, including WHS performance, scope 1 and 2 GHG emissions, energy consumption and other ESG-related updates. These metrics are audited annually. Where the availability of ESG metrics is limited, we aim to leverage the annual review of the asset to engage and understand plans regarding the provision of ESG data.</p> <p>Key sustainability indicators and initiatives are reported to clients quarterly, providing transparency as to how our management practices generate positive sustainability outcomes.</p>	UN SDGs Alignment Framework	<p>During 2021, we developed MAM's UN SDGs Alignment Framework. It seeks to demonstrate and ensure the alignment of our strategic ESG initiatives with positive social and environmental goals framed by the UN SDGs. The framework uses a logic model to define MAM's potential contribution at the outset and link initiatives to expected effects and potential longer-term outcomes. To enable transparent monitoring and reporting, progress KPIs are selected with reference to common metric standards including the GHG Protocol, GRESB assessment results and the Global Impact Investing Network's IRIS+ catalogue of impact metrics.</p> <p>The framework is being rolled out across MAM's flagship infrastructure funds, with the intent to extend it to other applicable funds, subject to data availability.</p>
Asset 'deep dives'	<p>We undertake periodic 'deep dives' on each asset during which the asset management and relevant specialist teams convene to discuss its performance and make recommendations for future initiatives and other ESG uplifts. The scope of these reviews includes assessments of ESG management and performance, alignment with minimum standards and progress on key initiatives.</p>	MAM Impact Principles	<p>MAM has developed a set of four principles (Essential, Inclusive, Scalable and Quality) to articulate and report on 'how' we seek to contribute and deliver impact and sustainability outcomes. MAM's Impact Principles are aligned to the Impact Management Project's 5 Dimensions of Impact (What, Who, How Much, Risk and Contribution). They are currently used by specific Real Assets strategies.</p>



05

Environment

MAM climate journey



17. The Clean Energy Finance Corporation (CEFC). 18. Global Commission on Adaptation and Climate Finance Leadership Initiative. 19. 2021 signatory with MAM's initial net zero target disclosure under NZAM released in May 2022.

Climate change

Climate change presents significant and pressing challenges for society. Global asset managers have a critical role to play in supporting the transition to a low-carbon and climate-resilient economy.

We recognise the need for action is urgent. As long-term investors in assets that underpin economies and communities, we take our responsibility to address climate change seriously. In 2021, we took significant steps to map our path to global net zero by 2040 and to accelerate the green energy transition.

Net zero commitment

In December 2020, we announced our commitment to invest and manage MAM's portfolio in line with global net zero emissions by 2040, 10 years ahead of the deadline to achieve the goals of the Paris Agreement.

In 2021 we joined NZAM, reinforcing our existing commitment to invest and manage our portfolio in line with this target.

In May 2022, [NZAM's Initial Target Disclosure Report](#) disclosed our commitment to manage 43% of our assets in line with NZAM's criteria. In our Private Markets business, this includes implementing decarbonisation programmes across 100% of our infrastructure, renewables and agriculture portfolio, and more than 80% of our activities in the real estate sector. In our Public Investments portfolio, it includes funds where we have established measurement and reporting mechanisms that are accompanied by proxy voting and company engagement.

Assets which are yet to be covered by NZAM's criteria are those where it is currently difficult for us to effect change. These are primarily asset classes where there is limited

data available or means for us to influence outcomes. Where possible, we are incorporating aspects of our net zero framework and continue to collaborate with peers and industry bodies to improve methodologies and data availability.

Our progress to date

Across MAM's Private Markets portfolio companies where we exercise control or significant influence, we are working closely with over 165 portfolio companies and assets to implement net zero plans - to report and verify emissions, set reduction targets, and develop business plans that aim to meet their reduction pathways by 2030.

For those assets in our portfolio at the time of our commitment we are targeting completion of these steps by 31 December 2022. For newly acquired assets, we are seeking to complete these steps within 24 months of acquisition.

Within MAM's Equity, Fixed Income and Multi-Asset Investment teams where we do not have significant influence, we are endeavouring to support our net zero goals in alignment with our client-guided fiduciary and regulatory responsibilities. Our ESG analytical tools provide insight into the carbon footprints of individual investments and portfolios and enable targeted engagement and proxy voting efforts. See page 25 for further details in relation to these tools.

We have committed to report annually on our progress - this will be undertaken through multiple channels including this Sustainability Report.

MAM's efforts are complemented by Macquarie's commitment to reach net zero operational emissions by 2025 and to further align its financing activities with the global goal of net zero emissions by 2050.²⁰

Real Assets

95%

assets reporting GHG data²¹

61%

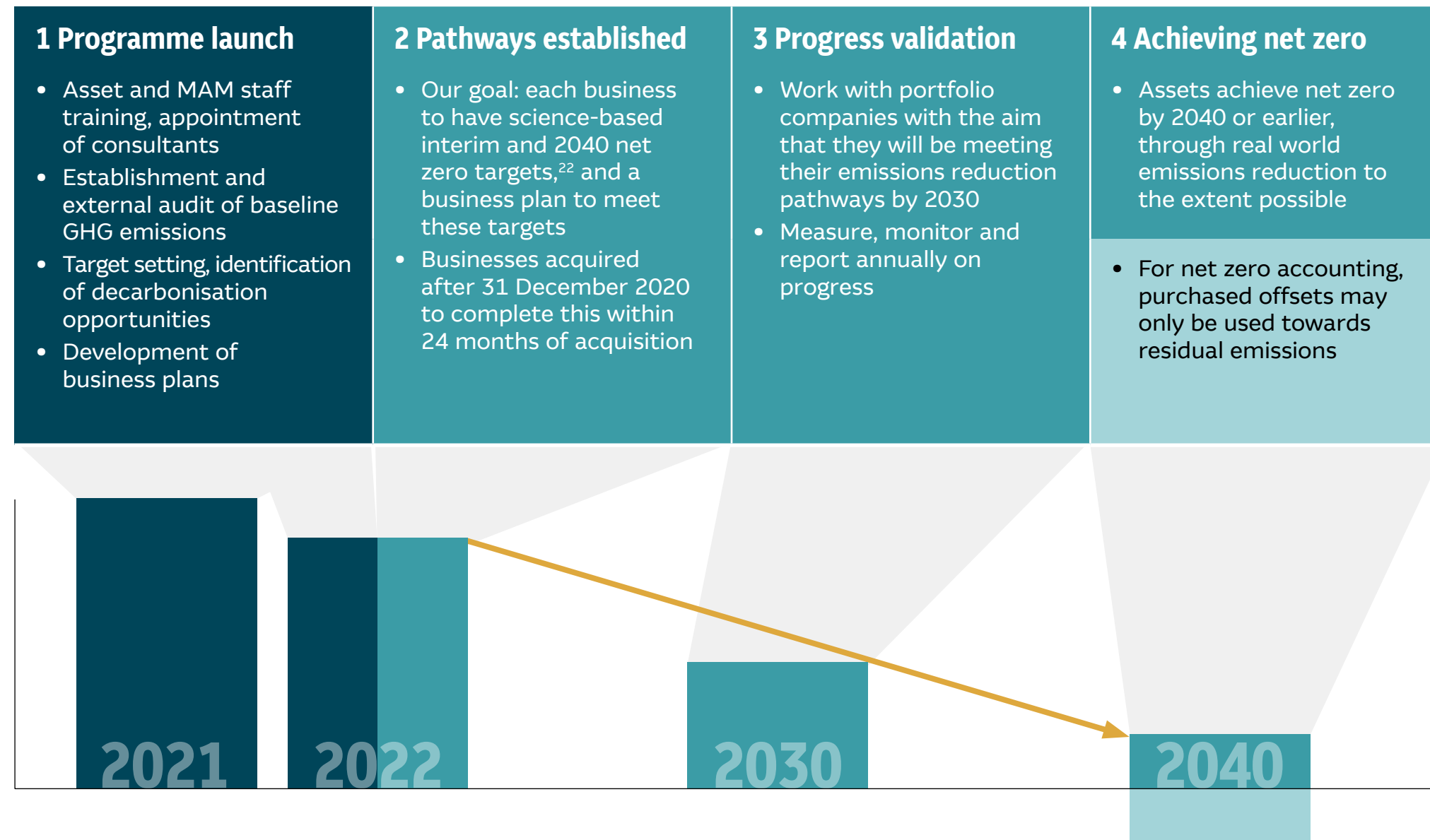
assets with their GHG data audited by a third party²¹

29%

assets with board-approved net zero 2040 targets in place.²¹ We are working with the remainder toward our 31 December 2022 goal.

20. Operational emissions include scope 1 and 2 emissions, and emissions from business travel. 21. As at 30 June 2022, calculated as a percentage of the number of MAM-managed real asset portfolio companies that are in-scope for greenhouse gas (GHG) emissions reporting to MAM. Assets not in scope may include recent acquisitions, pending divestments, concessions where GHG are attributable to external operators, or assets under construction.

MAM's Net Zero Roadmap to 2040 for our Real Asset portfolio companies



Driving portfolio and industry solutions

The percentage of our total committed AUM covered by NZAM represents how far we have come – not where we expect to be by 2040. Rapid change is needed, but it will not be easy. Our commitment is complex. Decarbonising our platform, given its breadth and size, reflects on a smaller scale the challenges we face decarbonising the global economy.

Reaching net zero by 2050 in itself is already ambitious, but we are determined to be bold and to encourage others through our leadership by delivering global net zero across our portfolio 10 years earlier. This also means aligning our portfolio companies and co-investors with our ambition. We are on a journey of learning, adapting and working collaboratively to address a range of challenges, including:

- **Stakeholders:** obtaining key stakeholder agreement, including from portfolio company management teams, co-investors, co-shareholders and customers.
- **Technology:** addressing availability and commercial viability of appropriate technology, such as carbon capture.
- **Financing:** developing appropriate financing to support the sometimes capital-intensive requirements of decarbonisation.
- **Regulation:** navigating different regulatory regimes, including gaining support from regulators and overcoming regulatory disincentives or caps.
- **Forecasting:** overcoming limitations associated with the long-term cost of abatement initiatives in portfolio company business planning.

22. Per SBTi: "Targets are considered "science-based" if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement - limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C." In line with best practice, MAM is targeting 1.5°C pathways for its portfolio. Targets are initially for scope 1 and 2 GHG emissions.

📷 CleanMax Solar Farm, Tumkur,
30MWp (India)

To support our assets in delivering on our commitment, we have:

- conducted workshops, in conjunction with third-party experts, offered to our infrastructure and real estate portfolio to outline MAM's commitment and our requirements for each portfolio business
- produced and provided guidance and tools to help portfolio companies understand the importance of net zero and to deliver against these requirements
- provided draft scopes of work, vetted and recommended consultants to assist in delivering a net zero target and plan
- connected businesses in similar industries across the portfolio to facilitate knowledge sharing and best practice
- provided ongoing one-on-one feedback and review on abatement mapping and plans
- took on additional expertise in our MAM Sustainability team including expert secondees who are available to portfolio companies to support them.

MAM Coal Policy

Since 2019, our Private Markets businesses have been subject to a policy restricting investments in businesses with exposure to coal: no further investments will be made in standalone coal-fired generation or in any asset for which more than 25% of its revenue is dependent on coal. For businesses with a smaller exposure to coal, the investment case must incorporate a transition away from that dependency.

For our Public Investments listed equity and corporate bond investments, we committed in 2022 to phasing out our investments in thermal coal activities (specifically thermal coal mining and coal-fired power generation). By 2030, any investee companies with residual exposure to these activities must have a net zero target in place in line with an acceptable framework.

These policies apply to MAM's portfolio and are distinct from Macquarie Group's commitment to run off equity and lending coal exposures by FY2024.

Decarbonising with CEFC

Our work with the Clean Energy Finance Corporation (**CEFC**) is an example of MAM's early commitment to decarbonisation across our portfolio ahead of our global net zero commitment.

In 2018, the CEFC invested in MAM's Australian agriculture platform to support research and implementation of sustainable on-farm asset management practices. In 2019, the CEFC invested in MAM's Australian infrastructure platform with the objective of reducing carbon emissions and improving the energy efficiency of infrastructure assets across sectors including airports, electricity, port, rail and water. A progress update is enclosed in this report as an Appendix.

More recently, in 2021 the CEFC invested into MAM's Australian specialist disability accommodation platform to support construction and operation of homes that are customised for people with high physical support needs which will be combined with sustainable technology and features to monitor and help lower their carbon footprint.

Our most recent work with the CEFC was announced in August 2022, with CEFC investing into our Australian agricultural platform with the aim of reducing on-farm methane emissions at Paraway Pastoral Company, one of Australia's largest pastoral operators.



ALIGNED DATA CENTRES

Powering the internet sustainably

Sector **Digital Infrastructure**

Region **Americas**

Investment date **2018**

Demonstrating contribution to UN SDGs:²³



23. The alignment to a global environmental and/or social goal, as now framed by the UN SDG targets, has been conducted by MAM using the MAM SDGs Alignment Framework and is based on the intended outcomes each strategy or initiative sought to contribute to at the outset. The assessment is therefore based on judgement and outcomes and alignment are provided for illustrative purposes and are not guaranteed. Likewise, investment and corporate strategies may intentionally seek to contribute to additional SDG targets that have not been included for the specific case study included in this report.

In 2018, a MAM-managed fund invested in Aligned Data Centers (Aligned), an American developer and operator of multi-tenant wholesale and hyperscale data centre facilities. Aligned has since set the goal of net zero hosting by 2024, supported by its own award-winning technology.

Scaling sustainably, on demand

Alongside the growth of digital commerce, powering the internet has become one of the fastest growing sources of GHG emissions. Aligned is addressing the issue head on. In adding necessary scale sustainably for its clients, Aligned's approach encompasses the design, construction and operation of its adaptive data centres. It works with clients to innovate ways to reduce existing data centre water and energy demands and offsets 100% of its energy consumption with renewable energy.

Award-winning cooling technology

Foundational to Aligned's sustainability arsenal is its proprietary, award-winning Delta Cube (**Delta³**) cooling array technology.

Delta³ combines Aligned's patented coil technology with high-volume/low velocity fan design to facilitate efficient heat absorption.

It enables Aligned's data centres to use less space, power and water - or to run waterless, as is the case for Aligned's recent new-build facilities. It can also integrate with liquid cooled infrastructure to accommodate the high temperatures associated with supercomputer technology.

The Delta³ technology particularly suits hyperscale clients, allowing incremental increases in capacity and density to be built vertically, so clients can scale-up on demand, without any disruption to their business or increase in footprint.

By supporting Aligned's hyper-scalable and ultra-efficient environment, Delta³ supports the stewardship goals of Aligned and its clients.

'Zero carbon hosting' by 2024

In bringing new data centres online, Aligned builds and manages them to deliver its goal of 'zero carbon hosting' by 2024. Aligned builds sustainably and its intelligent infrastructure ensures its Power Use Effectiveness is minimised.

Innovating sustainable finance for growth

To realise its sustainable growth goals, and supported by MAM's long-standing financing relationships, in 2020 Aligned completed the first ever US data centre sustainability-linked financing. Aligned has since refinanced and upsized its financing package, while still maintaining the same sustainability indicators. On meeting all the key performance indicators in 2021, the company was able to accelerate its next phase of strategic growth and continue to meet clients' growing needs in a sustainable way.



EDGE

Developing real estate for the future

Sector **Real Estate**

Region **Europe**

Investment date **2022**

Demonstrating contribution to UN SDGs:²³



24. World Green Buildings Council, <https://www.worldgbc.org/embodied-carbon>.



In 2021, we launched a MAM-managed real estate fund focused on investing in real estate designed for tomorrow's world.

In early 2022, we acquired a stake in EDGE, a leading sustainable office developer with operations in the Netherlands, Germany and the UK, as well as joint ventures in the US. EDGE is committed to making the built environment greener, smarter and healthier, as it delivers on its mission to bring the world better buildings. EDGE builds efficient, tech-enabled office spaces – their buildings consistently set new benchmark scores for sustainability, recognised with industry certifications such as BREEAM (Outstanding), DGNB (Platinum) and WELL (Gold). EDGE is currently developing around €5 billion of new office buildings, including Berlin's EDGE East Side, Amsterdam's The Pulse and EDGE London Bridge.

With the built environment responsible for 39% of global energy-related carbon emissions,²⁴ the real estate sector has a key role to play in the world's decarbonisation efforts. EDGE's buildings are designed and constructed with the intention to address this challenge, creating spaces suited to resource-efficient operation. EDGE understands that wellbeing is of increasing importance to occupiers, integrating principles of healthy building design into projects.

We are partnering with EDGE's management team to expand the business in existing and new markets, drawing on our investment management experience to support the continued growth of EDGE's project portfolio.



Globally we have seen COVID-19 accelerate changing trends in the office sector, with growing demand for sustainable office spaces that are suitable for new economy tenants and their workforces.”

Jelte Bakker

Head of Opportunistic Real Estate, Macquarie Asset Management

PUBLIC INVESTMENTS

Influencing issuers through engagement and industry partnerships

Sector **Transportation**

Region **Americas**

Demonstrating contribution to UN SDGs:²³



Valero Energy is a manufacturer and marketer of transportation fuels and other petrochemical products. As a leading supplier of refined products and renewable fuels, we identified Valero as an engagement candidate to gain an understanding of its intent to increase renewable fuel production as well as the company's efforts towards reducing the carbon emissions produced by its refining processes.

Over the year to August 2021, we undertook five separate engagements with Valero. The engagements were direct one-on-one meetings and email exchanges initiated by MAM, joint engagements involving the investment team and MAM's Sustainability team, and a collaborative engagement involving the Climate Action 100+ initiative. The engagements focused on topics such as: climate disclosure; carbon capture and underground

storage; renewable diesel fuel; and biofuel supply and demand. Valero was represented in these meetings by its CEO, Head of Investor Relations, and Director of Regulatory Compliance and ESG, among others. We encouraged Valero's management to devote more capital to developing lower-carbon transportation fuels and to improve its reporting of carbon exposure and climate-related risks.

It is always difficult to connect a company's actions directly to our engagement efforts. However, Valero has publicly expressed an increase to its investments in renewable diesel projects. In its third-quarter earnings call, the company said: "Over half of our growth capital in 2021 is allocated to expanding our renewable diesel business" and "we expect to quadruple our renewable diesel production in the next couple of years. In addition, we continue to explore and develop opportunities in

carbon sequestration, sustainable aviation fuel, renewable hydrogen and other innovative projects to strengthen our long-term competitive advantage."

Valero has disclosed GHG emissions reduction targets, including its plans to reduce and offset 100% of its global refining GHG emissions by 2035. It has also recently published a report aligned with the TCFD and scenario analysis aligned with the Paris Agreement. We continue to engage with Valero and are encouraging it to disclose long-term reduction targets and a net zero trajectory that aligns with its commitment based on realistic assumptions.

This engagement illustrates our ability to influence issuers in support of MAM's overall net zero commitment.

The green energy transition

Major investment in renewable energy is essential to meeting the goals of the Paris Agreement.

The global energy transition provides a significant opportunity for MAM to be part of the green transition and facilitate change.

We recognise our role in supporting a fair and just transition and will actively seek opportunities to help drive job replacement and reskill our community stakeholders in a collaborative, planned process.

Our existing portfolio of renewable energy generation assets has a total operational capacity of 16GW across wind, solar, hydropower, geothermal and biomass-energy generation.

To accelerate our position as a leader in green infrastructure investment and low-carbon solutions, in October 2021 we announced the transition of GIG into MAM. This transition was completed 1 April 2022 and brings into MAM over 30GW of capacity under development or in construction across more than 240 projects. Importantly, it also provides our clients with access to dedicated development of green energy companies, assets and technologies at significant scale and pace.

MAM has been in partnership with GIG since 2017, managing two dedicated renewable energy funds and investing climate finance on behalf of the UK Government through managing the UK Climate Investments (**UKCI**) fund.

Developing offshore and onshore wind markets

MAM is a major player in offshore wind. We manage investments in 10 offshore wind farms around the UK, contributing about 30% of the UK's total operational offshore wind generation capacity. We also continue to advance projects in Romania and Germany.

Accelerating the solar power transition

We are managing the construction and operation of solar assets across the globe. This includes Apex Energies in Europe and US Residential Solar Co in the US. These businesses specialise in the development and delivery of utility-scale solar projects.

MAM is also playing a leading role investing in new solar capacity across Asia to support the dual objectives of sustainable economic development and power grid decarbonisation. Stride Climate Investments, CleanMax, Fortum and Lightsource BP are adding solar power capacity to power grids across India. In South Korea, we are adding solar capacity to rooftops and ground-mounted solar farms through MAM's investments into PV Energy and Ionia Energy.



Commercialising hydrogen

Governments and industry are increasingly looking to hydrogen to play an important role in the energy transition. To help meet this demand, we work with a variety of partners to accelerate the commercialisation of hydrogen.

We are supporting energy networks to provide lower carbon heat to homes. Open Grid Europe, the largest independent gas transmission system operator in Germany, is seeking to establish a nation-wide hydrogen network as a first step to creating a hydrogen backbone across Europe.

We are supporting [Cadent](#), a UK gas distribution network, in its pilot to deliver hydrogen in a safe and reliable way into UK homes and businesses. We are supporting the [Port of Newcastle](#) in Australia, which is partnering with leading industrial businesses in the creation of green hydrogen hubs to support domestic and export opportunities.

In late 2021 we acquired our first pure-hydrogen investment and largest supplier of hydrogen in Korea, Deokyang (see page 41).

Increasing our geothermal energy exposure

Geothermal energy has an important role in the green energy transition through its unique ability to provide low-carbon baseload energy and reliable capacity 24 hours a day.

In 2017 we invested in [Energy Development Corporation \(EDC\)](#), the largest renewable energy company in the Philippines. EDC has 1.5GW of generation capacity across geothermal, solar, hydropower and wind.

In 2020, we acquired the Hudson Ranch geothermal operations in the US, which we combined with Salt Lake City-based Cyrq Energy in 2021 to create one of the largest independent geothermal renewable energy platforms in the US.

Smarter energy networks

Our portfolio companies manage the operation and development of electricity distribution networks in Australia, Austria, Finland, Spain and the US. We support these critical assets in delivering more reliable, efficient, safe and sustainable electricity to the communities they serve.

Consumer-level technology is also playing an important role in accelerating the energy transition. The roll-out of almost six million smart meters in the UK enables more efficient energy networks and gives customers and system operators more information and control over their energy use. Alongside this, we are delivering utility-scale battery storage projects to enable more renewable energy capacity to be connected to the grid.





DEOKYANG

Innovating clean hydrogen production

Sector **Renewables**

Region **Asia**

Investment date **2021**

Demonstrating contribution to UN SDGs:^{23,25}



Deokyang is the largest supplier of hydrogen in Korea. Established in 1974 as a supplier of specialty gases to industrial customers, Deokyang expanded its business to include supply of hydrogen in 2001 and today employs over 240 people to support the operation of its four plants across South Korea.

The company produces circa 990 million cubic metres of hydrogen per annum, which accounts for approximately 80% of its revenue. Deokyang also sells by-products of the hydrogen gas production process, including steam (utilised as a source of process heat by industrial customers) and small quantities of carbon dioxide gas and dry ice (totaling around 90 kilotons per annum) for cold storage and industrial applications.

Deokyang's plants produce hydrogen in two ways. First, Deokyang purifies exhaust gases from customers' industrial processes and isolates the hydrogen fraction for sale.

Second, Deokyang utilises a steam methane reforming process to convert feedstock hydrocarbons (for example methane or propane) to hydrogen. Both of these processes produce carbon dioxide as a by-product, most of which is captured and sold for industrial applications including shipbuilding, semiconductor manufacturing and cold storage.

Under MAM ownership, Deokyang is on its journey to become the largest blue hydrogen provider in Korea. Deokyang has started by investing significant capex in carbon capture, utilisation and storage (**CCUS**) infrastructure, and by actively participating in new CCUS solution initiatives led by government. The Deokyang management team are also in discussion with global experts and other stakeholders regarding other clean energy initiatives including the importation and distribution of blue ammonia as a feedstock for hydrogen production. Deokyang proactively engages in research, trials and

collaboration to help expedite the maturity and commercial feasibility of no- and low-emissions hydrogen production methods, to which it plans to transition over time.

By producing hydrogen at scale, Deokyang is playing a critical role in helping drive the energy transition domestically and globally. As economies continue to shift away from emission-intensive fossil fuels, Deokyang plays an important supply-side role in ensuring that hydrogen fuel is produced efficiently and with lower emissions than alternative liquid fuels.



25. SDG assessment is based on initiatives driven by the portfolio company prior to MAM's acquisition and subsequently supported and sought to be enhanced over MAM's holding period.

UK CLIMATE INVESTMENTS

Catalysing investment in green energy, housing and opportunity

Sector **Renewables**

Region **Africa**

Investment date **2021**

Demonstrating contribution to UN SDGs:²³



UK Climate Investments (UKCI) is a joint venture between GIG and the UK Government. It targets transformational green energy investments where its participation can mobilise private sector capital in clean, green growth opportunities in India and Sub-Saharan Africa. MAM has managed UKCI since 2017.

In November 2021, UKCI committed the remainder of its £200 million of allocated International Climate Finance into following two new investments in South Africa and Kenya.

In South Africa, UKCI and Norfund, the Norwegian international development fund, financed a joint venture between H1 Holdings and Pele Green Energy to develop renewable energy assets.

H1 Holdings and Pele Green Energy are Black-owned and managed South African renewable energy investors and operators. The funding enabled them to participate in the development of one of South Africa's largest renewable energy

portfolios – a 700MW portfolio of onshore wind farms – investing alongside the global operator Enel Green Power.

Now close to completion, the portfolio will help increase access to clean, reliable and affordable energy, to help accelerate South Africa's transition to a low-carbon economy with an emphasis on Black Economic Empowerment (BEE). UKCI uses an innovative BEE-compliant financing instrument it developed to address a gap in the green finance market. The investment will also support annual social investments in historically disadvantaged communities hosting the wind farms and strengthen the joint venture partners' positions as leading Independent Power Producers.

Recognising the need to support the energy transition across the broader economy, in Kenya UKCI committed £30 million into a new locally managed fund platform to build and rent green affordable housing. At full size, the fund is targeting delivery of approximately 10,000 new, affordable homes for low-income families in Kenya.

High levels of population and economic growth in Kenya have come with increasing urbanisation, creating an urgent need and opportunity to develop affordable and sustainable housing solutions. Developing low-carbon buildings can help accelerate Kenya's rapidly progressing energy transition and help adaptation to the effects of climate change already apparent.

Delivery of this project will help embed international green standards in the Kenyan housing market and support the development of sustainable building as a new green asset class for local investors, readying Kenyan institutional capital to further invest in the sector.



Biodiversity and ecosystems

Biodiversity and ecosystem services underpin our society and economies. With rapid population growth and increasing demand for better standards of living, the pressure on natural resources around the world has increased exponentially. Exacerbated by climate change, biodiversity loss is accelerating globally.

Biodiversity loss presents key physical, systemic and transition risks for investors. Across our business we are evolving our approaches to identify, consider and limit the impact on biodiversity from our assets and investment activities – including land regeneration, water efficiency and native species preservation.

With over 4.6 million hectares of natural landscapes under management, MAM is implementing a range of sustainable farm management practices across its Agriculture and Natural Assets portfolio to promote biodiversity conservation and carbon capture.



Carbon sequestration through nature-based solutions

While reducing GHG emissions worldwide remains a key priority, removing carbon from the atmosphere, or carbon sequestration, will be required to offset unavoidable emissions.

Nature-based solutions (**NbS**) are naturally occurring processes that work by either avoiding GHG emissions or removing carbon from the atmosphere. NbS are a way to sustainably manage naturally occurring assets while generating social and economic benefits.

The agriculture industry is well positioned to generate NbS through carbon sequestration – a process of atmospheric carbon dioxide removal. This would enable landowners to offset difficult-to-avoid emissions and create a new source of income in the form of carbon credits.

MAM Agriculture and Natural Assets' farmland portfolios provide significant potential for large-scale, cost-effective carbon capture and storage with a variety of projects already under operation and development, including:

- Soil carbon projects that allow our agricultural assets to generate carbon credits by increasing the amount of carbon that is sequestered and stored in the soil
- The use of seed-based microbial inoculum in row cropping systems to improve the storage of carbon in soils
- The implementation of alternative management practices, including the use of cover crops, to help increase soil carbon sequestration in some row cropping systems
- Environmental tree planting projects on underutilised areas of farmland to capture and store carbon across large-scale farming operations.

As environmental markets mature, we expect the size of carbon abatement opportunities to grow significantly across our portfolios, through the development of improved methodologies and more sophisticated and cost-effective ground-truthing practices.

We also see opportunity for carbon capture and storage in our infrastructure assets.

Cleco Power is investing in the development of a new, state-of-the-art carbon capture facility in Louisiana at the Brame Energy Center. Cleco Power is currently conducting a front-end engineering design study to re-engineer one of its existing plants to reduce 95% or more of its CO₂ emissions through carbon capture and sequestration technology. The study will be one of the first American projects to capture the existing CO₂ emissions of a power plant and sequester them in geological formations.

MAM AGRICULTURE AND NATURAL ASSETS

Advancing sustainable farming

Sector **Agriculture**

Region **Australia**

Investment date **2007-2018**

Demonstrating contribution to UN SDGs:²³



Biodiversity and conservation projects

MAM is an industry leader in the early adoption of a number of carbon, biodiversity and conservation projects across Australia. Each project is carefully selected and designed by our asset management teams to meet the specific needs of each landscape to maximise sustainability outcomes, while also improving the productivity and resilience of each asset from an agricultural perspective.

At **Steam Plains Station** in Australia, MAM has begun the restoration of a former irrigated rice farm to a native grassy-woodland, typical of what would have existed prior to European settlement. The Station Manager has developed extensive knowledge of sustainable land management practices and is passionate about restoring native flora and fauna to the site. Land use change from an annual cropping system to perennial grasses and native woodland is a proven method of sequestering carbon in the soil and the project will help the business towards carbon neutrality while enhancing biodiversity.

Following baseline soil organic carbon sampling at **Merrimba Station** in 2020, a 100-hectare multi-species pasture was sown in 2021 with the aim of increasing soil carbon sequestration. The subsequent rainfall and careful management by the Station Manager have enabled a diverse pasture containing grasses, legumes and forbs to establish, helping boost soil organic carbon and stimulating life below the soil. Livestock have been introduced to graze the paddock to maximise vegetative growth and soil carbon sequestration. Preliminary analysis using novel remote sensing methodologies has produced encouraging results of over 2.9 tCO₂e sequestered per hectare. Next steps in the project will be to understand how the management of soil carbon impacts animal performance.

Improving soil carbon using microbial inoculum

In 2021, Viridis Ag partnered with Australian agtech start-up, Loam Bio, to trial the use of seed-based microbial inoculum to improve the storage of carbon in soils.

Microbial soil sequestration is one of the many ways farmers can remove carbon from the atmosphere, whilst also actively improving soil health and productivity. The process involves coating a seed with a microbial endophyte before it is sown. Once the seed germinates, the microbes help to increase the plant's ability to store carbon in the soil.

Viridis Ag is one of the first commercial operators to trial this new technology and we are excited by its potential. While Loam Bio's microbial inoculum is still in the early stages of commercial development, independent small-scale trials conducted during 2020 were able to successfully demonstrate a 6-17% increase in soil carbon from crops treated with the microbial endophyte. The trial also demonstrated small increases in crop yields, an added benefit of improved nutrient and water holding characteristics often associated with higher root-zone soil carbon levels.

In 2021, trials were established at Gindurra and Englefield Plains in New South Wales in fields planted to canola crops.

2021 harvest results show the microbial treatments increased yields at Gindurra by approximately 60kg/ha when compared with the control crop, while no yield differences were observed at Englefield Plains. Soil carbon measurements were also taken post harvest to assess the impacts of the different inoculants on soil carbon levels.

We are encouraged by this new technology and its potential scalability across our row cropping portfolio.



We consider ourselves stewards of the land and with that role comes a responsibility to protect and strengthen the ecosystems in and around our properties."

Elizabeth O'Leary

Head of Agriculture and Natural Assets, Macquarie Asset Management

AGS AIRPORTS

Putting biodiversity at the heart of a sustainability strategy

Sector **Airports**

Region **Europe**

Investment date **2014**

Demonstrating contribution to UN SDGs:²³



AGS Airports, operator of Aberdeen, Glasgow and Southampton Airports, was acquired by MAM in 2015 in partnership with Ferrovial.

In line with MAM's sustainability focus, AGS has prioritised biodiversity as one of five key environmental issues (the others being climate change, local air quality, material resources and water) forming part of its overall Sustainability Strategy, launched in 2021.

Each airport has a dedicated strategy for supporting biodiversity: Southampton Airport owns Marlhill Copse, an ancient semi-natural woodland (of approximately 8.5 hectares) and a registered Park and Garden within the Itchen Valley Conservation area; Glasgow Airport owns Paisley Moss, a local nature reserve; and Aberdeen Airport contributes to protecting biodiversity in the River Don.

AGS Airports made out a number of key biodiversity commitments and targeted outcomes for all three airports in its 2021 Sustainability Report. It is aiming to achieve [The Wildlife Trust's Biodiversity Benchmark](#) and targeting no net loss of biodiversity across its airports by the end of 2022.

At Southampton Airport, the overall vision for Marlhill Copse is "to deliver a place of extraordinary biodiversity that provides a safe, sustainable, and accessible space which educates, inspires, and is prized by all". AGS Airports has created the Woodland Management Plan 2030 for Marlhill Copse, which aims to enhance, protect and improve the resilience of the woodland and positively improve the health of plants and wildlife. Since its acquisition of the ancient woodland in 2018, AGS Airports has delivered both environmental and social outcomes for Marlhill Copse including: establishing a baseline survey and risk assessment; the thinning of 209 immature

sycamore trees to enable the development of sustainable flora and fauna biodiversity on the floor of the woodland area; the creation of 40 bat boxes and, from a social perspective, extensive community engagement through biodiversity educational events for local schools and adults.

In delivering on its vision and biodiversity action plan for Southampton Airport, AGS Airports has had to manage its responsibilities to limit tall trees to comply with European aviation legislation. This involved

extensive consultation with multiple stakeholders including its local communities and government, ecological experts and statutory bodies.

AGS Airports will continue to invest in the long-term ownership of Marlhill Copse and future long-term initiatives will include reviewing its biodiversity impact on the River Itchen and the local environment close to the woodland.



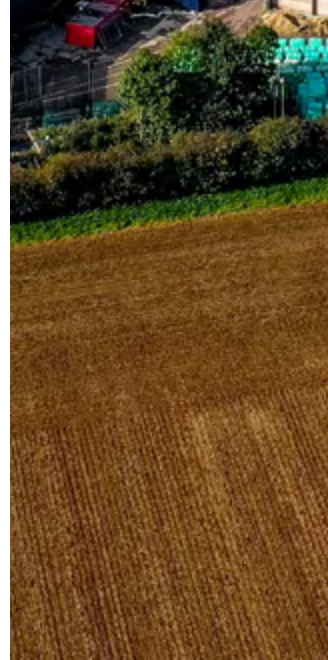
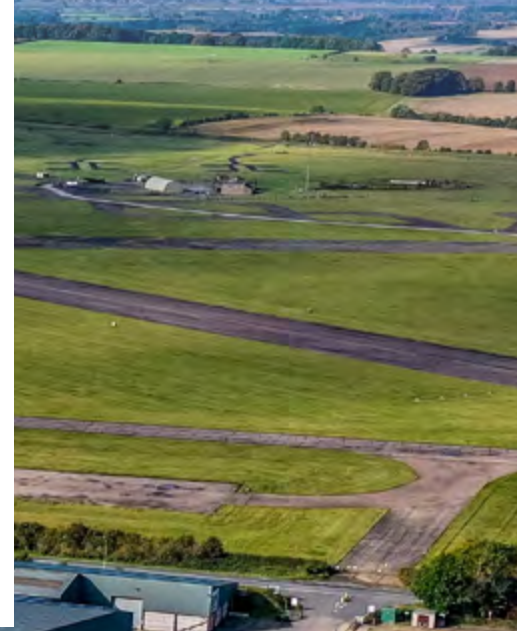
Resource efficiency

Resource efficiency and the circular economy reflect a need for society to rethink its approach to the use of products and raw materials, preventing waste and pollution while supporting the regeneration of natural ecosystems.

In conjunction with our assets, we are supporting and developing facilities and cleaner processes that reduce, recycle or reuse waste, driving more optimal use of our resources.

MAM has been an active investor in the waste industry globally since 2008 with a primary focus on vertically integrated waste companies with a traditional approach to waste disposal (for example through landfill or traditional waste-to-energy processes excluding biomass).

Among our latest investments in 2021 are the buyout of Australia's largest waste management company, Bingo Industries, and the acquisition of Irish waste company Beuparc Utilities.



BEAUPARC

Turning waste into energy for Ireland

Beuparc Utilities is an Irish waste management company acquired by MAM in June 2021. The company is active in professionalising the waste industry in Ireland and is transitioning to be a low-carbon and circular economy company.

Ireland was previously dependent on landfill as a waste management solution. In 1992 it had over 100 municipal solid waste (MSW) landfills, many of them informal tipping areas at the edges of towns and near beaches, scenic areas and rivers. They cause odour, pest nuisance, ground and surface water pollution.

Since the late 1990s Ireland has gradually closed non-engineered landfills and replaced them with waste-to-energy facilities and modern landfills compliant with stringent EU environmental directives.

Beuparc operates the Knockharley landfill site in county Meath, north of Dublin Airport. One of only three operating MSW landfills in Ireland, the site was selected for its highly impermeable soils. The facility operates on a 135-hectare landscaped site which was built to comply with the EU landfill directive and it operates under an Industrial Emissions licence (W0146-02) from the Environmental Protection Agency.

On starting the Knockharley site operations in 2004, Beuparc was initially authorised to accept up to 88,000 tonnes of waste per annum. In 2021 it received planning permission to increase capacity by 500%, up to 440,000 tonnes per annum.

Landfills were historically a source of odour nuisance due to the gases produced by the decay of organic materials in the core of the landfill. This gas was comprised primarily of methane, a greenhouse gas up to 80 times more potent than CO₂.

To prevent odours, Knockharley captures landfill gases under a gas impermeable liner which forms part of a complex multilayer landfill cap.

The gas is then directed through an extensive network of pipes, captured and pumped to onsite gas engines which can produce up to 4.2MW of instantaneous output which is fed to Ireland's national electrical grid.

A novel gas cleaning system was added to the site's landfill gas treatment system in 2021. Placed upstream of the gas engines, it removes unwanted components in the gas, improving the efficiency of the gas engines and further reducing emissions.

By capturing the gas and combusting in the gas engines, the facility creates a unique triple win: eliminating local odour nuisance, generating renewable electricity and eliminating methane emissions.

Sector **Waste Management**

Region **Europe**

Investment date **2021**

Demonstrating contribution to UN SDGs:²³



MAHER TERMINALS

Re-purposing into reefs and bridges

Sector **Ports**
 Region **Americas**
 Investment date **2016**
 Demonstrating contribution to UN SDGs:²³



Following advances in security scanning technology, huge concrete platforms previously needed to scan shipping containers were sitting dormant at Maher Terminals' facility in Port Elizabeth, New Jersey.

Rather than transporting them to be destroyed by heavy machinery, the company repurposed them at the suggestion of a Maher employee to create an artificial reef off the New Jersey coast.

Artificial reefs are typically made up of concrete, steel, decommissioned ships and barges. They initially provide a habitat for marine organisms like algae, mussels, barnacles, anemones, coral and other invertebrates, which attract small fish, which then attract larger fish. This lifecycle progression produces a complex marine habitat, where none existed before, creating a prime

location for recreational diving and sport fishing.

In 2020, Maher Terminals partnered with the New Jersey Department of Environmental Protection to redeploy 151 concrete platforms - each 40 feet long and weighing over 20 tons - to create the new artificial reef.

The Maher Terminals team now sends divers to visit the reef annually to document its journey from bare concrete on featureless sand to 1.25 acres of reef habitat, which forms part of the New Jersey Artificial Reef Program.

Far from New Jersey, wire cables used by enormous cranes to lift containers are helping to connect isolated communities to the jobs, education, markets and services that enable economic development.

Once these cables exceed the manufacturer's operational specifications, the cables, often more than 2,000 feet long, are

wound around giant wooden spools and loaded into empty containers. The containers are then loaded on to cargo ships operated by Maher's clients, bound for Africa.

The cables may no longer be rated to lift cargo containers, but they will easily support people on pedestrian bridges built to cross otherwise impassable terrain.

Maher Terminals is partnering with the NGO [Bridges to Prosperity](#), who repurpose the cables to build bridges in African regions where safely connecting people can help to create long-term economic growth.

“There is a significant interconnection between providing efficient port and terminal-related services and our responsibility to the environment and the communities we call home. The creation of this reef is part of our broader commitment to a more sustainable future. We're excited to give these concrete platforms a second life as part of New Jersey's Artificial Reef Program.”

Gary Cross
 CEO, Maher Terminals

More on Maher Terminals' progress toward sustainability can be found [here](#).





06

Social

Supporting communities

We recognise that we must earn our licence to operate every day. As investors and managers of essential assets, we must create positive impact for the millions of people that work at and use our assets – to meet not only our own expectations, but also those of our broader stakeholders.

Reaching communities through custodianship

As custodians of businesses that provide essential services and manage the infrastructure underpinning economic activity around the world, we recognise our responsibility to invest to create strong sustainable organisations that provide lasting benefits and allow communities to prosper.

Given their essential nature, the operational continuity of these businesses is of key importance. We actively support our portfolio companies and their teams to ensure their business continuity plans are robust and that appropriate precautions are being taken to safeguard their employees and customers.

The unprecedented health, economic and social impact of the COVID-19 pandemic has resulted in hardship across the globe. We are committed to supporting the communities in which we live and work through both the [Macquarie Group Foundation](#) and at our [portfolio companies](#).

We build partnerships with community groups, customers, partners and tenants across our business. Funding and in-kind support help local projects thrive and community initiatives are providing lasting social and environmental benefits.



Engaging local communities

Solvi Group provides integrated environmental solutions to its customers. Solvi's operations are focused on waste disposal and treatment (including energy generation through landfill gas-to-energy plants) but it also has residential, commercial and industrial collection activities. Solvi's activities are mainly in Brazil but it also has a presence in Argentina, Bolivia and Peru.

The Solvi Institute for Humanity works through the Group's operating businesses in each region supporting Solvi employees to act as agents of change by fostering socio-environmental development where they work. Solvi employees adapt ideas and

actions to the needs, culture and uniqueness of their immediate communities. In 21 years the programme has had an impact on more than 10 million people.

In partnership with local non-profit organisations Solvi's teams create and support programmes around environmental education, sport, leisure, culture and health to build lasting legacies for their communities.

In 2021, Rocklands Station, **Paraway Pastoral** Company's largest cattle breeding operation, situated on the border of Queensland and the Northern Territory, began a collaboration with representatives of the Indjalandji-Dhidhanu people,

the traditional owners of the land. It aimed to facilitate farming and harvesting of spinifex, a hardy native grass with minimal grazing value which grows naturally across the station. Recent research showed that the strong nanofibres of spinifex can be used as a natural building block in the manufacture of certain hard-wearing products. Supported by MAM, a spinifex research agreement has been signed between the Myuma Group (representatives of the Indjalandji-Dhidhanu people) and the University of Queensland to develop a nanofibre bio-processing facility in the local township.

Following significant flooding in March 2021 across the Hawkesbury Nepean Valley in Australia, **Endeavour Energy** announced a rapid customer assistance package to support customers and communities with recovery. The package included free switchboard safety inspections, free reconnection services and substantial efforts from Endeavour staff at evacuation centres to improve community awareness around electrical safety. Endeavour also supplied back-up generator power where the network remained inundated with floodwater, as an interim measure before crews could safely access damaged power lines and underground cables to perform rectification works.

Social infrastructure

There is an increasing need for new social and digital infrastructure to support a growing, urbanising and interconnected global population.

In launching new ways for regulated non-profit sectors to secure investment, we are helping to **deliver high-quality affordable and social housing**. In Australia we have supported the launch of new investment platforms to build sustainable, community-based build-to-rent housing at an attainable price, and specialist disability accommodation for tenants eligible under the National Disability Insurance Scheme. In the UK we have invested over £800 million on behalf of clients over the past five years in the social housing sector.

Connectivity is key to promoting digital inclusion. The world's communications needs have never been greater, with unprecedented data growth showing no signs of slowing.

We are helping to invest in the infrastructure that underpins innovation in the world's rapidly evolving **digital economy** - supporting the development and operation of broadcast, towers, fibre, cable, wireless networks and data centres. Each year, businesses in which we manage investments reach more than 168 million people through communications infrastructure.²⁶

This includes the accelerated rollout of UK fibre at KCOM to provide broadband to poorly connected communities (see page 51) and through our investment in [INEA](#) where we are helping to ensure that all Polish people - irrespective of where they live - have the opportunity to benefit from the growing digital economy.

26. As at 31 March 2021 or most recent. Based on MAM calculations.



📷 Viamed Salud (Spain)

KCOM

Providing greater digital inclusion

Sector **Communications Infrastructure**

Region **Europe**

Investment date **2019**

Demonstrating contribution to UN SDGs:²³



KCOM provides essential voice and broadband connectivity services, with a network reaching approximately 265,000 homes and businesses across the North of England.

One of the longest-established providers of communications services in the UK, KCOM's history dates to 1904 with the opening of Hull's first telephone exchange. It has been a pioneer throughout: establishing Europe's first all-digital network in 1984 and first "fast internet" service in 1998, underlining its track record with the creation of the UK's first full-fibre city in 2019.

MAM acquired KCOM in 2019 and has since supported KCOM's management team and workforce to expand the reach of its ultrafast broadband network to communities historically lacking broadband infrastructure investment across the North of England. MAM helped set in motion a plan to more than double the company's £100 million investment in fibre-to-the-premises technology as it expands within and beyond its traditional boundaries of Hull and East Yorkshire.

This ambitious programme has seen KCOM's Lightstream network reach more than 20 new towns and villages in East and North Yorkshire and North Lincolnshire. As a result, more than 12,000 new homes are now among the 38% of UK homes with access to full-fibre broadband, benefiting from internet speeds of up to 1Gbps.

These high-capacity digital networks provide greater digital inclusion, underlined during the COVID-19 pandemic when reliance on ultrafast broadband supported people to work, learn, shop and stay connected with family and friends. KCOM's investment ensured it could support the doubling of internet traffic on certain days during the UK's lockdowns.

KCOM's ultrafast broadband network has the potential to underpin future economic growth and innovation by enabling businesses in the region to participate in the expanding digital economy. This was demonstrated in 2020 when Hull – the centre of KCOM's fibre-to-the premises network – was the top destination for investment in the technology sector in the North of England.



“

By investing in the expansion of our quality ultrafast broadband network to more residents and more businesses, our infrastructure can underpin innovation and support the great potential our region has to prosper.”

Tim Shaw
CEO, KCOM

Investing

£100m+

in expanding KCOM's fibre network

Bringing fibre broadband to

12,000+

new homes and businesses

Reaching

20+

new towns and villages in the North of England

INVESTING IN INCLUSIVE HOUSING

Backing affordable, energy efficient homes

In Australia, a joint venture managed by MAM is launching **Local**, a new build-to-rent platform designed to create positive change in the Australian housing market. The platform, which incorporates affordable housing and targets zero carbon emissions, will seek to provide sustainable housing at an attainable price in an inclusive community. All Local projects will incorporate a targeted component of housing intended to create positive social impact, focusing on three groups – key workers such as nurses and hospitality workers, people living with a disability and women over the age of 55 who are at risk of homelessness.

In England and Wales, our Private Credit business is partnering with the UK's not-for-profit housing sector and tailoring long-term finance to support their growth aspirations.

The Havebury Housing Partnership provides affordable, social and shared ownership housing in the East of England – owning and managing around 7,000 homes. MAM's initial debt investment in 2017 continues to support Havebury in its goal to build more than 1,200 new homes between 2017 and 2023.

An additional £210 million package finalised in early 2022 will enable Havebury to maintain the quality of its existing portfolio and upgrade all homes to achieve Energy Performance Certificate of Level C by 2030. It will also support the development of 250 new homes each year out to 2028.

In Wales, in mid-2021 the team agreed long-term debt facilities totalling £150 million with Melin Homes, a social housing association. Melin owns and operates approximately 4,600 homes in south-east Wales, providing affordable housing to more than 9,000 people.

In addition to homes for rent, Melin Homes also offers properties for sale through its low-cost home ownership scheme and subsidiary Candleston.

The made-to-measure financing provides Melin Homes with both flexibility and certainty as it seeks to deliver 1,000 new homes by 2025 and meet its long-term growth ambitions.

Backed by the UK experience, the MAM Private Credit team has turned toward Europe, looking to support provision of much needed affordable homes in other jurisdictions.

“

Macquarie is a long-term supporter of ours and we are absolutely delighted to be able to deepen our partnership with them. We have an exciting development programme already underway and I am pleased that Macquarie will be there to support us as we continue to grow and invest in our existing homes.”

Marie McCleary

Director of Resources
at Havebury Housing Partnership

Demonstrating contribution to UN SDGs²³:



SPECIALIST DISABILITY HOUSING

Supporting the evolution of specialist disability accommodation

Sector **Social Infrastructure**

Region **Australia**

Investment date **2021**

Demonstrating contribution to UN SDGs:²³



27. 'Disability Care and Support', Productivity Commission, Report no. 54, 31 July 2011, <https://www.pc.gov.au/>. 28. 'Disability Care and Support', Productivity Commission, Report no. 54, 31 July 2011, <https://www.pc.gov.au/>. 29. 162 completed at 31 Dec 2021.

The National Disability Insurance Scheme (NDIS) was established in Australia in 2013, centralising the funding of long-term high-quality care and support for people with significant disabilities.²⁷ For people with extreme functional impairment or very high support needs²⁸ – approximately 6% of NDIS-eligible individuals – this included the provision of high-quality, bespoke and community-integrated homes.

Importantly, the NDIS was also structured to provide government payments directly to participants, empowering them to make their own choices about care and accommodation needs. This was a transition away from the traditional block-funding model and allowed the individual to directly “buy” their services and providers as an empowered consumer rather than an allotted recipient.

To facilitate this new approach and establish a private sector-led market to fund, build and manage the new accommodation, in 2016 Specialist Disability Accommodation (SDA) was

introduced by the National Disability Insurance Agency – administrators of the NDIS.

MAM has been engaged in the SDA sector since 2017. Our involvement – with our housing partners, government and other market players – helped raise awareness and understanding of SDA, supporting its growth toward becoming a stable asset class. Working directly with high-quality SDA providers – those who best understand the needs of SDA participants – MAM is directly financing the creation of more than 230²⁹ new SDA dwellings across Australia.

Not-for-profit organisations are working with MAM, assisting in dwelling design and procurement, marketing accommodation to prospective tenants, and helping to facilitate the provision of services needed by people living in the properties.

Initially focused on new-build properties in Australia's mainland cities, located close to key infrastructure amenities, we expect to build on capability in the sector, with the support of our investor clients.



The disability accommodation sector is in its early stages. By investing in and coalescing partners around its evolution, it is generating strong opportunities for growth and maturity, and the potential for great positive impact.”

Ben Barry

Executive Director, Macquarie Asset Management

239

dwellings financed (committed finance)²⁹

162

dwellings constructed

100%

of tenants in dwellings are NDIS participants with a disability

100%

of dwellings assessed for tenant suitability and 100% of required customisations were provided



The Macquarie Group Foundation

The [Macquarie Group Foundation](#) plays a vital role in how we live out our purpose through its strong staff-led approach to giving.

MAM staff are actively involved in the Foundation's activities, giving their time, expertise and donations. For the 12 months to 31 March 2022,³⁰ \$A44 million³¹ was contributed (by our people and matching by the Macquarie Group Foundation), supporting over 2,300 non-profits.

Our people volunteer their time and skills in a variety of ways, including pro bono service and leading on non-profit organisation boards. Many employees provide their time and skills to non-profit organisations supporting social and economic mobility among young people, aligned with the Foundation's global grant-making focus.

Virtual volunteering remained active in 2021, with our people continuing to be highly engaged in global initiatives such as Macquarie Foundation Week, as well as regional initiatives including Mentoring Week in the Americas, Raise Foundation mentoring in Australia, Better Migration Week in Asia and Social Mobility Week in Europe.

In October 2021, Macquarie's Group eighth annual Foundation Week contributed \$A2.7 million to 175 non-profits, with more than 212 fundraising and volunteering events held across 44 offices. By hosting 87% of Foundation Week fundraising and volunteer events either virtually or in a hybrid way, Macquarie people ensured the non-profit organisations they were passionate about still received support.



📷 Courtesy of Good Return

Social impact investing

MAM staff were part of a small volunteer working group which helped develop and launch the Macquarie Group Foundation's [social impact investing](#) platform. A \$A20 million allocation is being used to fund impact investments, representing an additional tool to help the Foundation scale its social impact, building on over 10 years of philanthropic sector support. Three investments have been made to date, including to the Good Return Impact Investment Fund.



Good Return is an Australia-based organisation that works to empower people across the Asia-Pacific region to grow their incomes and break the poverty cycle for good, by making sure they can access responsible financial services as well as financial education and business skills.

Macquarie's investment into the Good Return Impact Investment fund will finance SMEs in rural Indonesia and Cambodia and other target regions, focusing on businesses which are women-led and generate jobs and income in low-income communities. The funding will also provide business skills and training, and better access to markets for these businesses.

More information on the Foundation's social impact investing activities is available on Macquarie's [website](#).

30. Being Macquarie Group's reporting year: 1 April 2021 to 31 March 2022. 31. Contribution figures comprise Macquarie employees' donations and fundraising; Foundation matching support for employees' donations and fundraising; Foundation donations to commemorate employees attaining 10-year and 25-year anniversaries at Macquarie; Foundation grants to non-profit organisations to recognise 12 months of board service by a Macquarie employee; and Macquarie and Foundation grants to community organisations in the 12 months to 31 March 2022.

Empowering our people

Our people are fundamental in driving our business. We believe a culture that supports diversity, equity and inclusion in everything we do – in MAM and across our assets and investments – is essential to our roles as an employer and steward.

We recruit talented individuals and support them to realise their potential in an environment that values excellence, inclusion and innovation. Fostering their development and supporting their wellbeing underpins how we meet the highest standards in our activities and serve the evolving needs of our clients and stakeholders.

Our people are supported by Macquarie Group and MAM's investment in and commitment to:

- evolving the Macquarie leadership standards and aligned personal development planning
- the need for future-focused skills and attracting talent in the marketplace

- staff training across a variety of topics including management and leadership, personal effectiveness and wellbeing
- empowering and investing in early career talent
- identifying and developing talent through strategic talent interventions and an engaging employee experience
- providing our people with the tools and technology to collaborate effectively in a hybrid working environment
- fostering DEI across our global operating environment.

Further details about these initiatives can be found in [Macquarie Group's FY22 ESG Report](#) and on our [People and Workplace website](#).



Macquarie Voice Survey

The Macquarie Voice Survey is an annual global survey which gives our people an important opportunity to provide honest feedback about their employee experience with respect to Macquarie's culture, leadership and inclusiveness. The results are used to identify opportunities for improvement and drive meaningful action.

85% of MAM people participated in the 2021 survey. Feedback identified opportunities to further promote wellbeing and evolve hybrid working practices; and investing in our people and recognising their contribution.

A number of initiatives are being implemented in 2022 in response, including:

- the introduction of Team Charters for hybrid working
- the use of 'Meeting Free Fridays' and 'Wellbeing Leave Days' for MAM staff
- the implementation of a future skilling strategy to lift the capability of our people in the skill areas that will be important for the future of our industry and delivery of MAM's strategy.
- a new induction programme for all new staff and incoming colleagues joining MAM from other businesses, to help orientate people to our business, make connections and thrive in their future careers with MAM.

90%+

workplace satisfaction at MAM in 2021 Staff Survey

Macquarie Group employer recognition:

#1

UK Stonewall Workplace Equality Index

Top 10

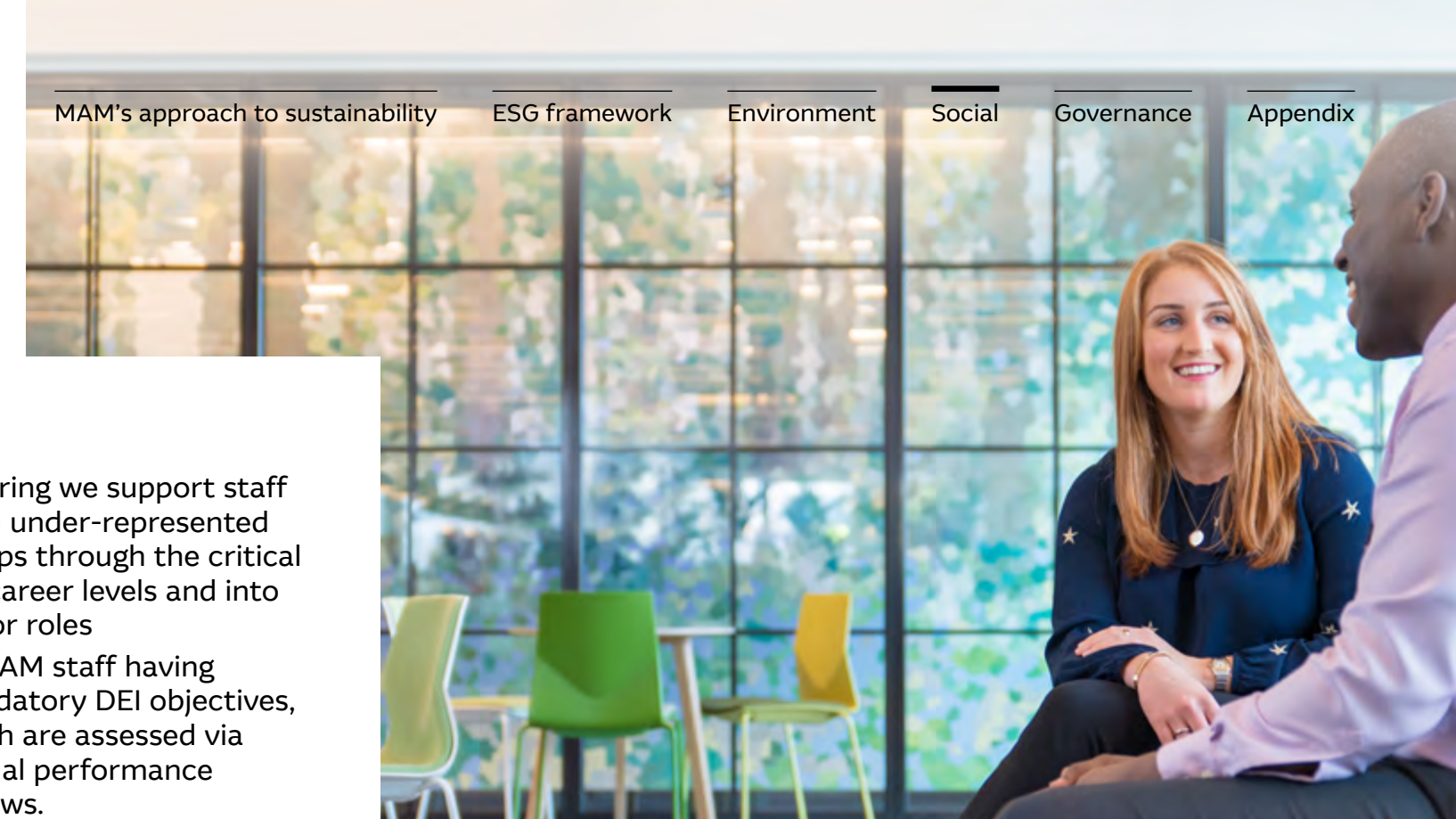
employer, British LGBT awards

Top 10

Australian Workplace Equality Index for fourth year, qualifying as a Platinum Employer for LGBTQ+ inclusion

100/100

ranking maintained on the US Human Rights Campaign Foundation's Corporate Equality Index



Diversity, Equity and Inclusion at MAM

DEI continues to be a business priority and remains fundamental to our success.

An inclusive, equitable workplace enables us to deliver more innovative and sustainable solutions for our clients, communities and people.

The strategy is underpinned by visible executive leadership, a global network of ambassadors

and a commitment to ongoing measurement of our progress, both quantitatively and culturally.

Macquarie's DEI strategy encompasses three pillars, building on our progress and challenging ourselves to do better:

In 2021 we reconfirmed our commitment to building a diverse workforce that reflects the communities in which we operate. We elevated equity in our strategy and enhanced our internal metrics for measuring progress. MAM has also developed a DEI strategy to realise tangible results and is committed to:

- continuing to measure diversity by giving our people the opportunity to self-identify across a broader range of diversity dimensions, including cultural and racial diversity, disability, gender identity, lesbian, gay, bisexual, transgender or queer (LGBTQ+), and parenting and caring roles
- reviewing our talent practices including our approach to hiring, promotions, engagement and succession planning, and developing resources. This, amongst other activities, includes:
 - continuing to focus on creating opportunities for all staff to demonstrate skills and capability and their promotion readiness

- ensuring we support staff from under-represented groups through the critical midcareer levels and into senior roles
- all MAM staff having mandatory DEI objectives, which are assessed via annual performance reviews.
- further embedding DEI in all people-related policies, processes and programmes to ensure the highest and fairest standards, including maintaining pay equity for like roles and performance, providing equal access to opportunities and future skilling, maintaining equality for women and men in promotion decisions and providing all staff with access to flexible working.

For further details on Macquarie's DEI strategy, including specific objectives on gender equality and our progress against these objectives, see [Macquarie Group's FY22 DEI Report](#) as well as Macquarie's [Workforce Diversity Policy](#).



Our diverse people

Continuing to build a diverse workforce that feels safe to be themselves and bring a range of perspectives, ideas and insights to everything we do.



Our inclusive culture

Fostering a workforce that encourages psychological safety, where our people feel respected for their uniqueness, valued for their contribution and supported to perform at their best.



Our clients and community

Providing and supporting commercial and development opportunities for underrepresented people in the communities we serve.

Appointed a

Global Head of DEI

for MAM, covering both internal and portfolio DEI efforts

41%

female workforce

Over the past 12 months, we have increased female representation at the director level by

11%

and reduced female director turnover by

67%

During 2021, women comprised

34%

of MAM employment. However, we hired

41%

women, approaching 50% at our entry level and most senior levels

Industry initiatives

We actively engage with our peers on issues around diversity and inclusion. In 2021 MAM became a signatory to the [Institution Limited Partners Association's Diversity in Action initiative](#). The initiative requires members to publicly commit to specific actions that advance the DEI agenda, with the aim of motivating participants to become more diverse and inclusive. MAM is currently meeting all recommendations under the initiative.

In addition, Macquarie is a signatory to [The Valuable 500](#), aiming to promote innovation around disability inclusion, and the [30% Club](#), aiming to boost the number of women in board seats and executive leadership of companies globally.

DEI in our portfolio companies

In our Private Markets portfolio companies, we embed DEI considerations into our due diligence processes for prospective investments and support our assets to embed good DEI practices in their business strategies with appropriate board-level oversight.

During 2021, we made the following DEI-related progress:

- increased the number of portfolio companies³² with DEI strategies from 38% to 64% and the percentage of those conducting board-level discussions on DEI in the last 12 months from 48% to 78%.
- provided educational sessions with portfolio company senior leadership and boards on the design and development of DEI strategies, including the continuation and/or launch of HR Director Forums to educate and share best practice.

- required portfolio companies to have a board-approved DEI strategy that is reviewed and tracked annually by the board within the first 18 months of ownership
- commenced the collection of demographic and qualitative DEI maturity data from across the portfolio, to monitor and manage DEI objectives
- introduced DEI as part of due diligence for new investments.

DEI-related metrics are also being utilised in sustainability-linked loans. For example, NSW Land Registry Services was one of the first in Australia to be issued a sustainability-linked loan which included DEI-related metrics such as gender diversity targets and indigenous reconciliation goals.

DEI will continue to be a key business priority this year and beyond, with activities including but not limited to:

- exploring appropriate measures for a sustainable increase in the level of diversity within portfolio company boards
- continued education, upskilling and best practice sharing of company senior leadership including CEOs, CHROs and nominee directors on DEI strategy and best practice
- monitoring all controlled companies to ensure they have a board-approved DEI strategy within the first 18 months of acquisition and providing additional support for existing companies who do not yet have strategies in place
- enhanced collection of demographic and qualitative DEI data
- using insights to map DEI maturity across the portfolio, including assessing baseline quality of DEI strategies and leveraging insights to design appropriate recommendations, including external consulting support as required.

“

Workplace psychological safety is essential in fostering an inclusive culture. This is a priority for us, both with our MAM colleagues and with our diverse range of stakeholders.

Our investors are interested in knowing that MAM is truly committed to DEI as it enriches our communities and has a very tangible impact on returns. There is not a one-size-fits-all DEI strategy. We continue to work with our portfolio companies to develop strategies that are hyper-relevant to their business strategy and context. This allows companies to truly reap the benefits of diversity.”

Johnathan Medina

Global Head of DEI,
Macquarie Asset Management

32. Portfolio companies where MAM has control or significant influence.

Workplace health and safety

We have a comprehensive approach to achieve a simple goal of zero harm. Good businesses are always safe businesses.

In MAM, investing for a better future starts with everyone going home each day in the same condition they arrived. This is embodied by our vision, our purpose, and is enabled by maintaining a disciplined approach to risk management.

First and foremost, it's about making sure our activities are safe for workers, users, customers and communities. A safe workplace is also a productive workplace, with a more engaged workforce, a better relationship with the broader community and lower insurance premiums.

In MAM, we are committed to building and promoting safe workplaces which enable and empower our people to do their best work. To achieve this, we build and maintain a safety-positive workplace culture and manage our WHS risks effectively. See Macquarie Group's [Work Health and Safety Policy](#) for further information.

WHS at our portfolio companies

To provide support and leadership on WHS issues, our in-house specialists work with MAM-nominated NEDs to provide appropriate training to support them in seeking the effective adoption of best practice in their director duties and to provide advice and guidance on specific business issues.

Our proprietary **Safety Alignment Framework (SAF)** establishes the WHS expectations of nominated NEDs in our infrastructure, agriculture and real estate businesses and deepens the level of accountability for WHS outcomes. SAF has 11 elements that set key areas for action, from initial due diligence and transition planning through to operations. SAF defines and assesses progress against minimum standards, covering areas such as risk management, board reporting, training, incident review and emergency response.

Our approach to safety starts with a thorough understanding of the business we are investing in – through to a comprehensive transition plan to embed the standards that we know will reduce safety risks to an acceptable level and improve the reliability of the business. We then focus on establishing an open and transparent culture in the business – where employees are encouraged to raise issues and concerns to top management and, where appropriate, to the board.

In recent years, the SAF has deepened the confidence and capability of our directors to understand how to reduce WHS risks across the platform. It has added structure to the care that directors have always exercised – setting standards for how safety is to be governed in portfolio companies. Semi-annual SAF assessments provide an opportunity for directors to reflect on their successes and challenges, and to set goals for the next six months.

We seek to ensure WHS practices and frameworks are implemented by asset management and specialist operators, including where relevant:

- regular training and competency assessment of employees
- rigorous due diligence, selection and management of contractors and their sub-contractors
- thorough induction training for visitors
- an open culture for reporting of near misses and non-compliant working practices
- reward and recognition for employees and contractors setting exceptional standards
- fair consequence management reviews for employees and contractors where compliance concerns are identified by in-depth reviews by independent third parties of operational and WHS frameworks
- auditing of Permit to Work and Safe Operating Procedures
- frequent third-party safety audits
- management and board meetings held at regional operating facilities to allow opportunities for management and directors to discuss WHS matters directly with company employees.

📷 Busan New Container Terminal (South Korea)



AIRTRUNK

Industry-leading safety performance across Asia-Pacific and Japan

Sector **Digital Infrastructure**

Region **Asia-Pacific**

Investment date **2020**

Demonstrating contribution to UN SDGs:²³



AirTrunk was founded in 2015 with the goal to scale and sustain a data centre platform that would deliver the future digital needs across Asia-Pacific and Japan.

Since opening Australia's first and largest hyperscale data centres in Sydney and Melbourne in 2017, AirTrunk looked to Asia - home to some of the world's largest technology companies - opening hyperscale facilities in Singapore, Hong Kong, Japan and Sydney in recent years.

Collectively, AirTrunk's platform is the largest in the region (ex-China) at 1.2GW of capacity, providing a connected, secure and sustainable home for data across the region.

When MAM acquired a majority interest in AirTrunk in March 2020, it was a young business and early in the evolution of its approach to WHS management.

With thousands of people working across the construction and operations of its data centres, consistently high WHS standards and governance were critical. Our asset management and WHS teams worked with AirTrunk's executive team to introduce a proactive WHS strategy focusing on the safety of work, managing critical risks and continuous learning.

Key to this transition was the appointment of a Chief Safety Officer and the establishment of a WHS committee of the board who meet quarterly to discuss WHS strategy, incidents and critical risks.

Led by the Chief Safety Officer - and reporting to the CEO - an independent safety function within the business develops and reinforces a culture of WHS excellence, supporting strategic improvement from design, through construction and in operations.

AirTrunk has integrated WHS performance requirements across the full data centre lifecycle - from design to contractor selection, procurement, execution, commissioning and operations while working closely with suppliers, vendors and delivery. It is now certified under the ISO45001 Health and Safety Management Systems standard.

A set of global minimum standards has been established for high-risk activities across the regions in which AirTrunk operates. WHS maturity assessments are also undertaken to understand how the standards are being implemented.

In 2021, the company opened two data centres while operating and fitting out new capacity across five existing facilities. Applying its WHS framework, all projects were delivered ahead of schedule and budget, with no fatalities and a lost time injury frequency rate well below the industry average.

“

We have been relentless in our pursuit of WHS excellence and achieving safe outcomes every day.

MAM's support has been invaluable in enabling our team to remain focused on delivering capacity at record speed, while maintaining industry-leading safety performance.

Robin Khuda,

AirTrunk Founder & CEO





07

Governance

Corporate governance

Robust and comprehensive corporate governance practices are intrinsic to our investment philosophy and to delivering long-term value. Our success is built on supporting our people and the longevity of robust ethical business practices.

Governance framework

A sound **risk culture** has always been integral to Macquarie and MAM's risk management approach. Business ownership of risk is an essential element in understanding and managing risk. Each business team is responsible for identifying risks within its business and ensuring that they are managed appropriately.

MAM operates within Macquarie's Risk Management Framework, a comprehensive suite of policies and procedures covering all aspects of risk management across Macquarie. In addition, MAM has its own risk management policies that reflect the investment, credit, liquidity, operational, legal and reputational risks specific to our business structures, operations, investments and stakeholders.

Our Risk Management Framework is based on a 'three lines of defence' model:

MAM

- Primarily responsible for managing its own processes
- Responsible for identifying and controlling risks by using business control frameworks, implementing internal processes and adequate controls
- MAM Risk Team works alongside MAM management.

1

Risk Management Group (RMG)

- Sets Macquarie-wide Risk Management Framework
- Provides Independent reporting to MAM management, Macquarie board/committees
- Ensures 1st line take ownership
- Acts as a advisor/consultant to 1st line.

2

RMG Internal Audit

- Provides assurance about design and effectiveness of 1st and 2nd lines
- Reporting line to Macquarie audit committee
- Advisory role to improve processes.

3

ESG-related framework

ESG risk identification and mitigation are core components of our Risk Management Framework. MAM's ESG-related frameworks are set out in our business-aligned ESG policies, as detailed in the *ESG Framework* section of this report.

MAM ESG-related policies are also aligned with the broader Macquarie approach set out in its Environmental and Social Risk (**ESR**) Policy, which establishes group-wide processes for identifying, assessing, managing, mitigating and reporting material environmental and social risks. MAM reports at least semi-annually to Macquarie's board on our compliance with the Macquarie ESR Policy and other Macquarie requirements.

- Code of Conduct training is completed by all staff and the Ethical Centre Leadership Program, run in conjunction with The Ethics Centre, is available to directors.
- Office heads and senior management participate in psychological safety and whistleblowing workshops. People managers have completed 'Supervision' and 'Listen Up' training, to learn to recognise and respond to issues or concerns.
- Regular training and education webinars are provided to staff on a variety of key areas, including sustainability risk management, WHS, DEI and net zero.

Macquarie Group ESG-related policies:

[ESR Policy Summary](#)

[Code of Conduct](#)

[Corporate Governance Statement](#)

[Business Conduct and Ethics](#)

[Whistleblowing Policy](#)

[Continuous Disclosure and External Communications Policy](#)

[Anti-Bribery and Corruption Policy](#)

[Sanctions Compliance Statement](#)

ESG governance

Under our Code of Conduct, all our people share responsibility for identifying and managing environmental and social issues as part of normal business practice in all our activities. Our teams are supported by MAM's dedicated Sustainability and Risk teams, as well as other specialists across MAM and Macquarie Group.

Organisational structure

The MAM Executive Committee has ultimate responsibility for approving MAM's ESG framework, including major ESG policies. Our Chief Sustainability Officer, appointed in June 2022, reports to the MAM Group Head and is a member of MAM's Executive Committee.

A simplified organisational chart of the key teams involved in supporting and integrating our ESG framework across MAM is shown here.

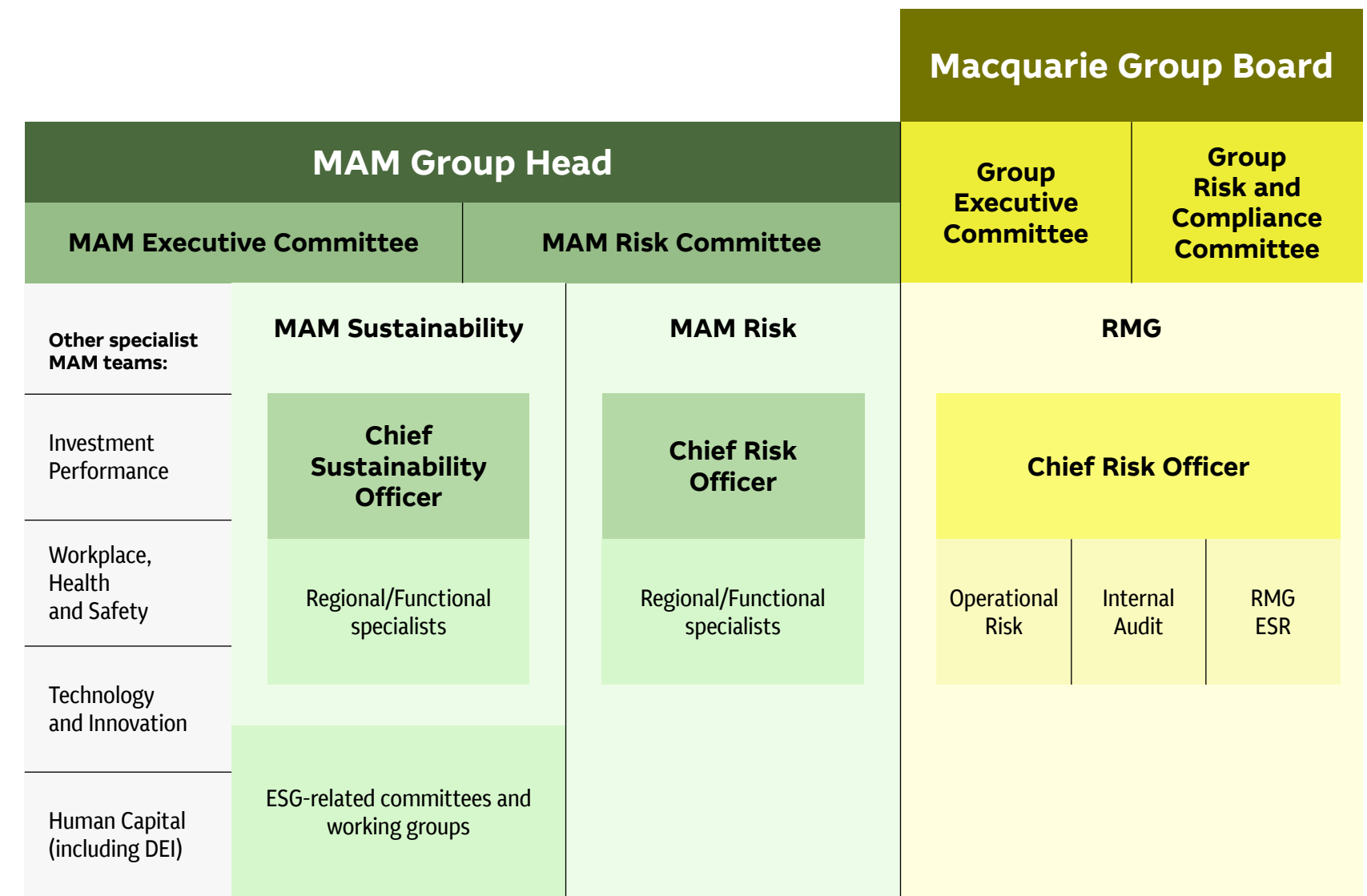
Our Sustainability team is responsible for setting MAM's overall sustainability strategy and ESG framework. It provides specialist expertise on environmental and certain social issues, and supports asset management teams in harnessing ESG opportunities and sustainability-enhancing strategies across their portfolios.

The team works with other MAM specialist teams including Investment Performance, WHS, Technology and Innovation, Human Capital and a number of ESG-related committees and working groups. For example, the Client Solutions Group's Sustainability Working Group is a collaboration of representatives across MAM to continuously improve sustainability communications and ensure our clients' needs are fed into our sustainability efforts.

They also work in a close collaboration with our Risk team, which is responsible for ensuring all risks, including ESG risks, are identified and managed across MAM. MAM's Chief Risk Officer reports directly to MAM's Group Head, ensuring independence between MAM's Risk and transaction or portfolio management teams.

MAM's Risk team has an escalation line into Macquarie's Head of Operational Risk and Governance, and other areas within RMG. RMG's Environmental and Social Risk team (**RMG ESR**) assists Macquarie staff to identify and manage environmental and social risks. RMG ESR supports MAM with a diverse range of specialists to provide guidance and oversight in our collective approach towards ESG.

See MAM's [2021 Stewardship Report](#) for more information on our ESG governance practices.



Regulation and reporting

Sustainability regulation is evolving rapidly.

The pace of regulatory change is only getting faster. This is why we go beyond reactive compliance to future-proof the business and our investments by proactively considering the impact of existing and future regulations on our portfolio and investors. Where possible, we also help shape the industry response to emerging requirements.

Preparedness

The regulatory landscape for sustainability has changed beyond recognition over the past few years, and the pace with which new regulations and guidelines are coming into force seems to be ever-increasing. In MAM we are actively tracking more than 50 current and forthcoming regulations and taxonomies globally.

These regulations seek to encourage capital flows into sustainable activity, ensure appropriate management of climate and other sustainability-related risks, and to minimise greenwashing.

To ensure preparedness to meet the regulations as they come into force, we have taken a number of actions, including:

- strengthening the MAM Sustainability team with a dedicated sustainability legal counsel
- establishing a cross-disciplinary working group (in mid 2020) to ensure the requirements of the EU SFDR were met as they came into force
- investing in systems and data and developing processes and governance to operationalise the required reporting
- training our teams across MAM on emerging regulations and their implications.

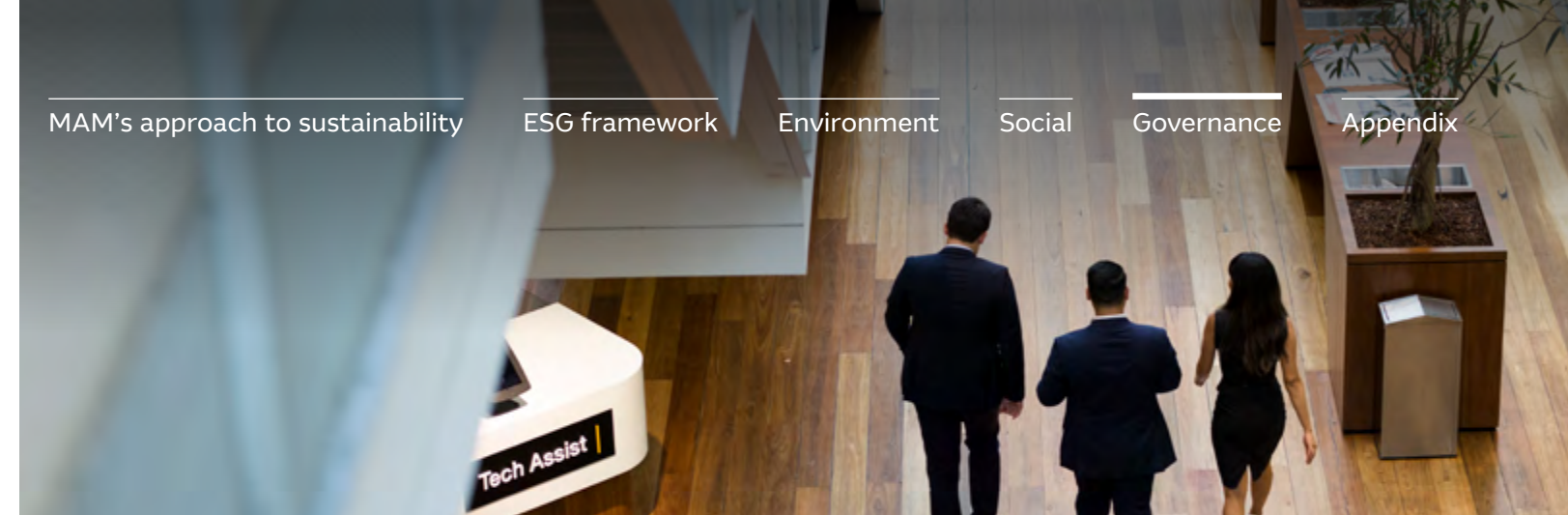
We use a number of channels to keep abreast of developments. These include industry groups, through which we have been able to play a role in shaping regulations as well as the industry response to them.

For example, MAM is a member of the UK's Investment Association, through which we have provided feedback on various regulatory consultations, including SFDR and the EU Taxonomy. We are an active participant in the association's SFDR regulatory forum and were part of a small group of members on its TCFD Disclosures for Investment Managers Working Group, helping to develop an industry template for the provision of carbon emissions data by investment managers to UK pension fund clients.

We collaborated with peers to develop a market solution to the problem of a lack of data in the private credit space to meet SFDR requirements, including developing an ESG covenant package.

Spotlight on SFDR

- The EU's SFDR requires asset managers and financial advisers to make sustainability-related disclosures to investors both in respect of themselves and the financial products they manage.
- MAM's manager-level disclosures are available on our website and outline how we take into account sustainability risks in our investment process and remuneration framework, and how we take into account the adverse impacts of our investment decisions on sustainability factors (being environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery measures).
- Although a disclosure regulation, SFDR has been used by the market as a labelling regime given the requirement for products with sustainable characteristics or objectives subject to Articles 8 or 9 of the regulation to make additional detailed disclosures. This has helped to clearly differentiate ESG products. As at 31 December 2021, MAM had 25 products subject to Articles 8 or 9 of SFDR. This number is expected to more than double by the end of 2022 in light of recent guidance and as we focus on providing more ESG solutions to clients.
- The EU Taxonomy is a classification system that defines which economic activities are considered to be "environmentally sustainable". Through mandatory disclosure, the Taxonomy aims to redirect capital flows towards sustainable investment to achieve sustainable and inclusive growth in line with the objectives of the Paris Agreement and the United Nations' Sustainable Development Goals. The Taxonomy amended parts of SFDR to require asset managers to make disclosures with respect to the Taxonomy-alignment of the investments of financial products subject to Articles 8 or 9 of SFDR. MAM is working towards reporting its Taxonomy alignment for in-scope products in 2023 in line with SFDR requirements.



Business response

Since the advent of the EU Sustainable Finance package, we have seen significantly increased investor demand for sustainable products.

Developments have been rapid, so the industry has been learning together. MAM has conducted teach-in sessions for investors and prepared briefing materials to explain the regulations and their practical implications for our funds.

We have adapted investment strategies and structured specific products to meet client needs and expectations, such as in relation to Taxonomy alignment – the resulting capital inflows into sustainable activities serving as a demonstration that the regulations are achieving their desired effect.

Greenwashing

Rightly, just as investor demand for sustainable products increases, so has market and regulator focus on greenwashing globally. Greenwashing, whereby a party misleads its clients regarding its environmental practices or the environmental benefits of a product or service, is a legitimate concern for both investors and asset managers. Pervasive greenwashing raises the risk of investors not being able to rely on financial products delivering their intended benefit and leads to overall scepticism towards asset managers' efforts to provide societal benefits through their ESG offerings.

Greenwashing allegations and legal claims have been increasing and can result in negative consequences for asset managers, including litigation, regulatory action or reputational damage.

To address this risk, we have further enhanced our governance processes in line with the new regulatory focus aimed at preventing greenwashing and embedded these within our existing organisational processes and throughout the lifecycle of an investment product. We have a rigorous risk and governance framework to ensure new products and offerings to clients are diligently assessed and reviewed by the appropriate control functions. In addition, we have provided training on greenwashing across MAM.

📷 Macquarie Sydney office (Australia)

ESG Covenant Package

Collaborating to standardise industry ESG reporting

Over the past year, MAM has been working with a group of infrastructure debt investors to develop an ESG covenant package. The initiative aims to:

1. unify ESG data collection by providing a consistent set of requirements as best practice for borrowers when reporting to lenders in respect of ESG matters; and
2. facilitate lenders' compliance with their increasing ESG disclosure obligations under applicable EU and/or UK law and regulations and, where relevant, lenders' compliance with their own net zero targets and investor demand.

The ESG covenant package has been designed to be provided and considered as part of the term sheet negotiation stage between the relevant parties, to facilitate discussion of ESG reporting obligations under the finance documents.

To ensure that the ESG covenant package has the widest reach, market recognition and is available for adoption by any type of lender, it was shared publicly at the end of 2021 for feedback from market participants.

The group is working with the Loan Market Association with the aim to have it published as a standard form document that will be widely used by the market.

📷 Macquarie London office (UK)

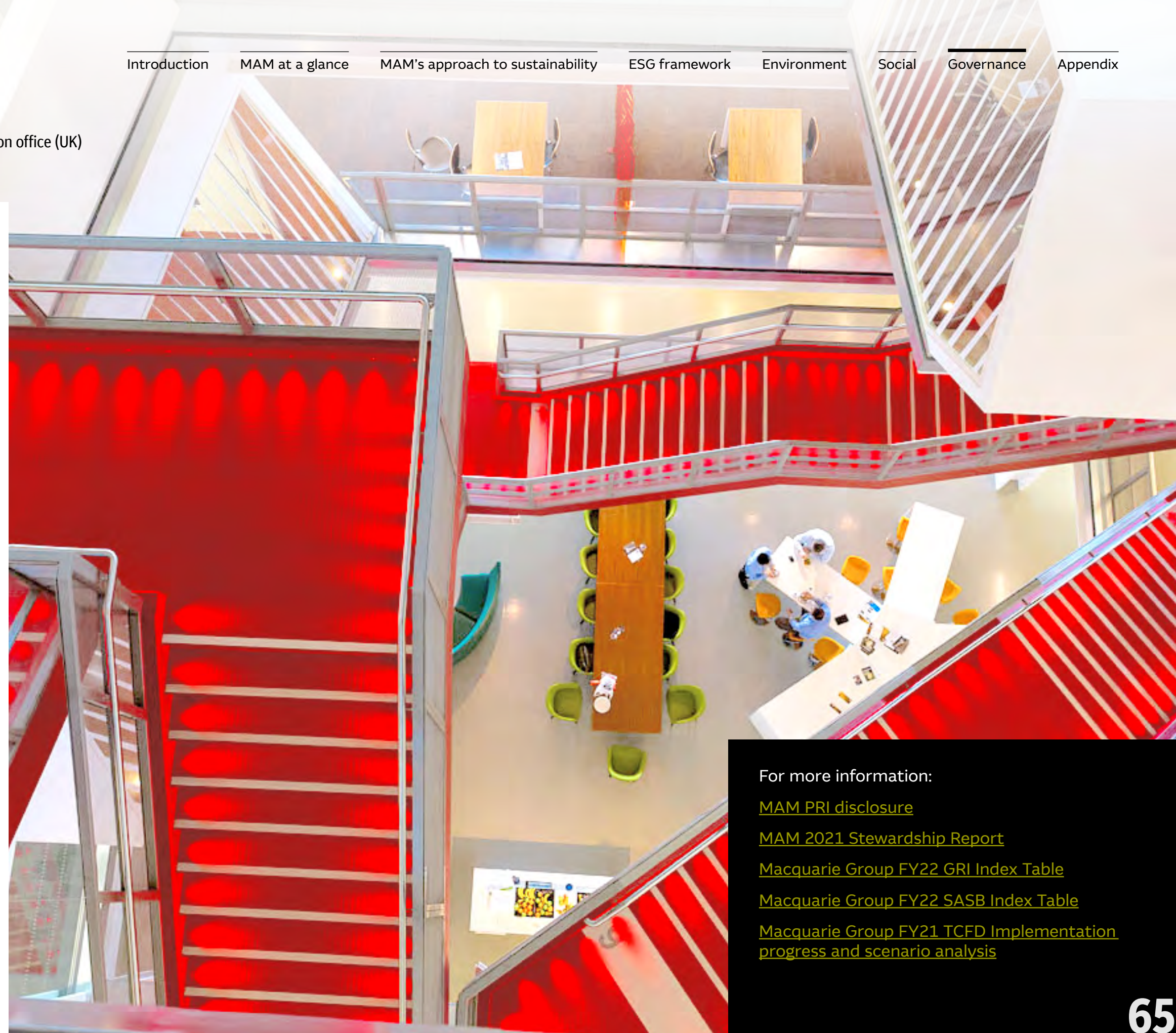
Reporting

Transparency and accountability through improved disclosure are important responses to greenwashing risk.

We continue to expand our sustainability reporting to clients. For example, in MAM's Real Assets business, we are reporting more data points and providing deeper insights into the sustainability performance of fund portfolios, including reporting in line with TCFD recommendations and reporting contributions to the UN SDGs. The level of reporting provided to clients will again increase significantly in the coming years as regulatory requirements come into force. Data quality and coverage remain a focus. We have onboarded additional data providers and are considering solutions where we currently cannot source all the data we need.

At the MAM level, we report annually on our activities and progress on implementing the six Principles for Responsible Investment in accordance with the PRI reporting framework. In addition, we published our first Stewardship Report for 2021 and have been accepted as a signatory to the UK Stewardship Code 2020.

Our reporting is complementary to Macquarie's ESG reporting. Macquarie also reports annually on its sustainability progress, including MAM's activities, within the [Macquarie Group ESG Report](#). Macquarie also provides annual reporting under SASB, GRI and TCFD.



For more information:

[MAM PRI disclosure](#)

[MAM 2021 Stewardship Report](#)

[Macquarie Group FY22 GRI Index Table](#)

[Macquarie Group FY22 SASB Index Table](#)

[Macquarie Group FY21 TCFD Implementation progress and scenario analysis](#)

Human rights and modern slavery

Against the backdrop of macro trends, it is more important than ever to support ethical business practices by protecting and enhancing human rights and mitigating modern slavery risk in our operations and supply chains.

We support fundamental human rights as set out in the Universal Declaration of Human Rights and core International Labour Organization conventions. In line with the UN Guiding Principles on Business and Human Rights, we recognise the duty of states to protect human rights and the fundamental responsibility of businesses to respect these rights.

Macquarie's [Modern Slavery Act Transparency Statement](#) outlines the actions we undertake to identify and mitigate the risk of modern slavery and human trafficking occurring in our business operations and supply chain.

Many of our Private Markets assets report in respect of their human rights policies and practices annually via the GRESB assessment and periodically during our portfolio company deep-dives. At a minimum, the adopted framework must be adequate to ensure compliance with relevant regulations and standards in the countries and industries in which the portfolio company operates.

Macquarie's [Principles for Suppliers](#) cover expectations of suppliers in relation to human rights and labour and workplace practices. They are applied across MAM and aim to assist in upholding our core values in our supplier relationships, to create long-term, sustainable value for our clients, shareholders and the broader community.



Data privacy and cyber security

We recognise that in our increasingly connected world, cyber and data security risk has risen significantly over the past few years and is inherent in the use of the technology platforms that support our business activities. We take the responsibilities we have around the data we handle very seriously and uphold the highest standards of privacy practice and security.

Cyber security risk globally has risen significantly over the past few years and is often now one of the top risks for industry. All industry sectors are at risk from cyber criminals looking to extort funds or data from organisations. This risk will only continue to increase as more companies rely on online infrastructure to operate.

Cyber security threats can affect our business and the assets we manage, in particular given the critical infrastructure nature of some assets in our Private Markets funds. We are very aware of this heightened risk and the responsibility to manage it appropriately to minimise risks to the communities that rely on these services and to our investors. Macquarie has a dedicated, centralised team responsible for preventing, monitoring, detecting and responding to cyber risk events.

MAM took the following actions over the past year to respond to cyber security risks at both the portfolio company and organisational level:

- In our Private Markets business, cyber security continues to be a focus area for our portfolio companies and we have kept open lines of communication with asset technology teams to understand the impact of cyber issues.
- Given the prevalence of cyber events in infrastructure assets, further work is underway to enhance our minimum standard cyber due diligence and provide a standard template framework for all acquisitions and asset management activities which can be used across MAM where relevant. We engaged a third-party specialist to

support the assessment and prioritisation, as well as the ongoing implementation of cyber minimum standards.

- MAM has increased cyber-focused training to ensure adequate oversight of portfolio assets. This includes the use of external expert consultants, given the changing and complex nature of this risk, which have been engaged to support Private Markets with global cyber training to NEDs and asset directors. The training programme is designed to raise cyber awareness, and provide an understanding of the cyber threat landscape, regulatory trends and cyber best practices.



08

Appendix

Appendix

Australian decarbonisation project

In 2019, the CEFC committed \$A100 million towards MAM's Australian infrastructure platform with the objective of reducing GHG emissions and improving the energy efficiency of infrastructure assets across sectors including airports, electricity, port, rail and water.

MAM and the CEFC subsequently established an infrastructure emissions committee to oversee the progressive decarbonisation of MAM's Australian infrastructure portfolio.

Since it first began, the level of ambition and maturity of MAM's

Australian decarbonisation project has increased. Work is currently underway to help new and existing portfolio companies develop or upgrade their targets to align with MAM's 2040 net zero public commitment.

Emissions footprint

Table 1 below provides a breakdown of the scope 1 and scope 2 emissions of MAM's Australian infrastructure portfolios by sector.

Table 1: Absolute and equity stake scope 1 and 2 GHG emissions of MAM's Australian infrastructure portfolio companies by sector.³³

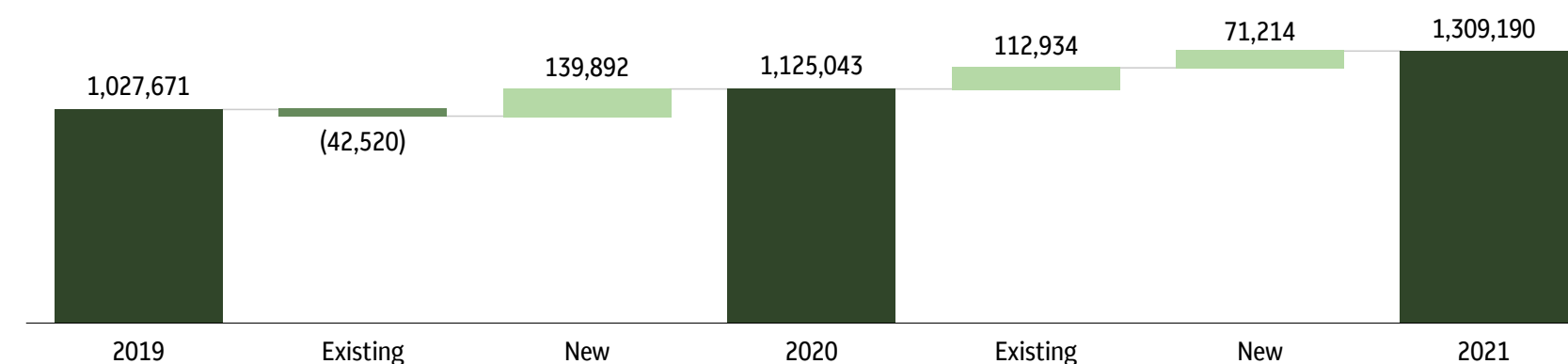
Sector	2019		2020		2021	
	Absolute emissions ³⁴	Equity stake emissions ³⁵	Absolute emissions	Equity stake emissions	Absolute emissions	Equity stake emissions
Digital	1,188	626	140,757	123,817	262,568	235,218
Transport	188,042	80,317	187,647	154,367	222,432	190,341
Utilities	838,441	268,975	796,639	256,148	824,191	291,058
Total	1,027,671	349,918	1,125,043	534,332	1,309,190	716,617

Table 1 shows that utilities remain the most significant emitters of scope 1 and 2 emissions, followed by digital and then transport investments. Approximately 90% of utilities emissions are attributable to line losses experienced by electricity transmission and distribution networks. These line losses occur due to electrical resistance offered by metal transmission or distribution wires, which results in energy losses in the form of heat. Scope 2 emissions associated with line losses are expected to decrease as Australia transitions to a greater mix of zero-emission and low-emission power generation.

Figure 1 depicts how new and existing investments have contributed to the GHG emissions profile of MAM's Australian infrastructure portfolio. From 2019 to 2020, all existing portfolio companies reduced their aggregate scope 1 and 2 GHG emissions. From 2020 to 2021 all but two existing portfolio companies (AirTrunk and One Rail Australia) reduced their aggregate scope 1 and 2 GHG emissions. AirTrunk's global 2021 scope 1 and 2 GHG emissions increased by 73% from the prior year due to substantial business growth, including scaling up operations at its data centre in Singapore, which completed construction

in December 2020, as well as construction completion and scaling up of operations at two new data centres in Australia during 2021. These milestones resulted in a substantial increase in tenancy rates and tenant electricity consumption across AirTrunk's data centres in Australia and abroad. One Rail Australia's 2021 emissions grew by 25% from the prior year due to increased haulage volumes attributable to increased demand for commodities domestically and abroad. One Rail Australia was signed for divestment in October 2021.

Figure 1: Contribution of existing and new investments to the annual scope 1 and 2 GHG emissions of MAM's Australian infrastructure portfolio.^{33,36}



33. Data shown is that recorded by MAM as at reporting date 30 June 2022. Sources of reported data include data audited or reported by external consultants, publicly available National Greenhouse Energy Reporting data and data self-reported by each asset. Some data may not be verified by external third parties and MAM does not make any claim concerning the accuracy of reported data. Non-audited data is subject to change if portfolio companies retrospectively revise their emissions data upon detecting errors or omissions via an audit process or otherwise. Table excludes the following Australian portfolio companies in which MAM managed an interest during calendar years 2019 to 2021: Celsus, North Queensland Airports. These non-reported assets combined are estimated to represent less than 1% of total emissions for the relevant reporting periods. 34. The aggregate scope 1 and scope 2 emissions of reporting portfolio companies recorded from the first quarter during which MAM managed an interest in each portfolio company to the last quarter during which MAM managed an interest for the entire quarter. 35. The product of the total MAM-managed ownership stake at the end of each quarter and the absolute emissions of the portfolio company during each quarter. 36. Portfolio companies acquired part-way through a calendar year have contributed less than four quarters of data to the 'new' series for that year. The global emissions of AirTrunk have been included, not just emissions associated with their Australian operations. The 2021 calendar year emissions of One Rail Australia have been included in the 2021 column despite its divestment being signed in October 2021.

Emissions reduction targets

Since the commencement of the Australian decarbonisation project, 12 Australian infrastructure portfolio companies have adopted or committed to adopt net zero scope 1 and 2 GHG reduction targets. Of these, seven have had their net zero targets and business plans to achieve these targets board approved.

Table 2 outlines the net zero targets of Australian infrastructure portfolio companies alongside key abatement initiatives planned to be deployed to achieve these targets. As shown by Table 2, these 12 companies are targeting to abate approximately 1.25 million metric tonnes of carbon dioxide equivalent in aggregate.

37. Ballarat Water's net zero target is aligned with the 2050 net zero target of the local regional water corporation and Victorian state government.

38. Portfolio company draft net zero target not yet board approved and subject to change. 39. Historical emissions figures reported here for NSW Land Registry Services and Port of Newcastle differ from those reported in our previous sustainability report because these portfolio companies retrospectively revised their historical emissions figures since our previous report was published.

Table 2: Australian infrastructure portfolio company scope 1 and 2 emission reduction targets.

Asset	Reporting year end	Baseline year	Baseline year emissions (tCO ₂ e)	Target year	Target year emissions (tCO ₂ e)	Targeted reduction (tCO ₂ e)	Targeted reduction (%)	Key abatement initiatives
AirTrunk³⁸	Jun	2022	442,000	2030	0	442,000	100%	<ul style="list-style-type: none"> Onsite/offsite renewables Energy efficiency improvements Renewable energy procurement
Ballarat Water	Jun	2019	9,528	2050 ³⁷	0	9,528	100%	<ul style="list-style-type: none"> Onsite renewables Plant/equipment efficiency upgrades Renewable energy procurement
BINGO Industries³⁸	Jun	2020	86,957	2040	0	86,957	100%	<ul style="list-style-type: none"> Landfill gas capture and utilisation Garbage truck fleet fuel switching Onsite renewables
Endeavour Energy	Jun	2021	619,077	2040	0	619,077	100%	<ul style="list-style-type: none"> SF6 management/replacement programme Fleet electrification Renewable energy procurement
Land Services SA	Jun	2019	101	2030	0	101	100%	<ul style="list-style-type: none"> LED lighting upgrade Fleet electrification Renewable energy procurement
Land Services WA	Jun	2020	30	2030	0	30	100%	<ul style="list-style-type: none"> LED lighting upgrade Fleet electrification Renewable energy procurement
North Queensland Airports³⁸	Jun	2019	11,507	2026	0	11,507	100%	<ul style="list-style-type: none"> Energy efficiency upgrades Onsite renewables Renewable energy procurement
NSW Land Registry Services	Jun	2020	284 ³⁹	2030	0	284	100%	<ul style="list-style-type: none"> Electrification of head office water boilers Energy efficiency upgrades Renewable energy procurement
Perth Airport	Jun	2018	24,080	2030	0	24,080	100%	<ul style="list-style-type: none"> Energy efficiency upgrades Onsite renewables Renewable energy procurement
Port of Newcastle³⁸	Dec	2018	3,781 ³⁹	2040	0	3,781	100%	<ul style="list-style-type: none"> Sweeper vessel Dredger replacement Renewable energy procurement
Queensland Airports Limited³⁸	Jun	2019	10,878	2030	0	10,878	100%	<ul style="list-style-type: none"> Sweeper vessel Dredger replacement Renewable energy procurement
Vocus	Jun	2019	45,173	2040	0	45,173	100%	<ul style="list-style-type: none"> Hot/cold aisle containment Free cooling Renewable energy procurement
Total			1,253,396		0	1,253,396		

Portfolio companies continue to track progress against their emissions reduction targets as shown by Table 3. All portfolio companies beat their 2021 emissions target except three – Land Services WA, Perth Airport and Queensland Airports Limited. The target overshoot exhibited by Land Services WA is minor and the company is expected to undershoot its target in future years as key abatement initiatives are implemented. Target overshoots exhibited by Perth Airport and Queensland Airports Limited are attributable to higher than forecast passenger numbers and onsite activity. Perth Airport and Queensland Airports Limited are expected to undershoot their targets in future years as key abatement initiatives are implemented at each company. In aggregate, these portfolio companies beat their 2021 scope 1 and 2 GHG targets by nearly 100 tCO₂e.

MAM continues to encourage and support all MAM-managed portfolio companies to adopt net zero emissions targets consistent with MAM's 2040 net zero commitment.

Table 3: Progress against emissions reduction targets.

Asset	Year end	Baseline year	2019			2020			2021		
			Target	Actual	Delta	Target	Actual	Delta	Target	Actual	Delta
Ballarat Water	Jun	2019	-	9,528	-	9,221	8,010	(1,211)	8,913	4,414	(4,499)
BINGO	Jun	2020	-	-	-	-	86,957	-	82,609	76,820	(5,789)
Land Services SA	Jun	2019	-	101	-	92	104	12	83	68	(15)
Land Services WA	Jun	2020	-	-	-	-	30	-	27	30	3
NSW Land Registry Services³⁹	Jun	2020	-	-	-	-	284	-	255	221	(34)
Perth Airport	Jun	2018	22,073	24,080	2,007	20,067	27,002	6,935	18,060	28,476	10,416
Port of Newcastle³⁹	Dec	2018	3,609	3,755	146	3,437	2,207	(1,230)	3,265	2,286	(979)
Queensland Airports Limited	Jun	2019	-	10,878	-	9,889	11,683	1,794	8,900	9,711	811
Total					2,153			6,301			(87)

Important information



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