



Macquarie Asset Management

# 2020 Sustainability Report





## Important information

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● Energy Development Corporation (EDC)  
Philippines



## About this report

We are pleased to share with you Macquarie Asset Management's sustainability report. The report focuses on our Infrastructure, Renewables, Agriculture and Real Estate businesses.

The report has been prepared by the Macquarie Asset Management sustainability team with the support of other parts of Macquarie Group and companies across our portfolio. Except where indicated otherwise, the report focuses on information and performance over the course of 2020. The report scope, boundaries, and performance data focus on our activities and those from a selection of our assets worldwide. Given the sectoral and geographical breadth of our assets, the report provides examples of the challenges, opportunities and performance across our portfolio. It does not seek to present a comprehensive account of performance but to illustrate the types of issues and opportunities we face and how we manage them.

We welcome your feedback on the report and look forward to hearing your views on how we can improve our reporting in future.

We are focused on progressing and integrating sustainability strategies across all of Macquarie Asset Management's platform including our Private Credit, Transportation Finance and Public Investments businesses and look forward to reporting on their efforts in our reports in future years.

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# Leadership statement

## Investing to deliver positive impact for everyone



### Ben Way

Head of Macquarie Asset Management at Macquarie Group

Our purpose at Macquarie is empowering people to innovate and invest for a better future. This informs what we do and the way we do it. Not surprisingly, as the world grappled with a global pandemic, racial injustice and social inequality, remaining optimistic over the last year has at times felt challenging. However, we have seen positive change. Particularly in terms of the world coming together on the need to take real and measurable action to address climate change. In a year unlike any other, this has been a profound, critical and heartening development.

In the asset management sector, managers are placing sustainability at the centre of their strategy and leading change. Asset managers with a combined \$US43 trillion of assets under management have now made net zero commitments in line with the Paris Agreement.<sup>1</sup>

Macquarie Asset Management (MAM) is proud to be **the first large asset manager to commit to managing our investments in line with global net zero emissions by 2040**, ten years ahead of the deadline to achieve the goals of the Paris Agreement. (See page 16 for more detail).

Making this ambitious commitment is consistent with our approach to ensure that every investment **delivers positive impact for everyone**. Given the scale of our global real assets' portfolio, we know we have the potential to make a significant difference and to do so in the near term when the critical goals of the Paris Agreement remain attainable.

<sup>1</sup> Net Zero Asset Managers Initiative.

We have built our 2040 net zero commitment around our people, our clients, our partners and our portfolio companies. The ability to drive positive change through our investments is what motivates our team in coming to work every day. Our clients are investing for the long term – well beyond 2040 – and need solutions to meet their own sustainability and decarbonisation goals. Our partners and stakeholders in government are looking for private capital to help fund the economic recovery as they seek to 'build back better' after the pandemic. And our portfolio companies, their employees and customers want strong and resilient businesses as the long-term foundation of their communities. For all these reasons we are focusing our efforts on helping to achieve these goals.

While climate change is often at the centre of conversations about Environmental, Social and Governance (ESG), the ongoing discussions about racial and social equity and the effects of the pandemic are also of critical importance. We welcome the renewed focus from our people, our investors and our communities on wider social and governance issues. We know that we have more work to do on these issues and that we must lead by example. Over the past year we have redoubled our diversity and inclusion (D&I) efforts within MAM and at our portfolio companies. We have refreshed our D&I strategy, integrating D&I into our due diligence process for prospective investments and we are working with our portfolio of assets to embed best practice D&I strategies within each company.

### Real progress

Last year we published our inaugural Infrastructure Sustainability Report and this year we have extended the report to cover efforts across our Infrastructure, Renewables, Agriculture and Real Estate businesses. With more than 150 managed portfolio investments, over 480 properties and 4.7m hectares of farmland in our global portfolio, mapping the path to net zero for each individual business is a complex undertaking. But, we have made substantial progress and are on track to have net zero business plans in place for each of our controlled assets by the end of 2022.

Our commitment is also to transparency, reporting regularly on our progress in delivering against our commitments. The net zero business plans will take account of the specific challenges for each asset in reaching net zero, including assets operating in hard-to-abate sectors. In the months since publishing our 2040 commitment, we have conducted net zero workshops in multiple languages and we're ensuring that learnings are shared across the portfolio as each plan is progressed.

While this year's report focuses on our Infrastructure, Renewables, Agriculture and Real Estate businesses, we are also pleased with the progress we have made across our entire platform. Across our Public Investments business, we are leveraging our scale and our active asset management approach to drive enhanced disclosures and action on sustainability issues through direct engagement with companies, proxy voting and cross-industry initiatives. In our Private Credit business, we

have successfully launched our first green energy debt strategy aligned with the new EU Taxonomy, which evidences our commitment to attracting capital to sustainable investments. We continue to actively engage with our peers in the industry to collectively uplift ESG practices and reporting standards of borrowers to provide greater transparency for our investors. In our Transportation Finance business, we are working to enhance existing ESG policies and processes including measurable standards and a robust framework for reporting against these standards.

MAM's efforts are complemented by Macquarie Group's recent commitment to reach net zero operational emissions by 2025 and to further align its financing activities with global net zero emissions by 2050. Macquarie's commitment provides an overarching framework for the Group's diverse businesses and recognises that each business has its own path to net zero based on its particular client and business needs.

As we look to the future, we acknowledge the challenges that face our world. We also see huge opportunity to drive meaningful change. We know we don't have all the answers yet, but we are committed to playing a leadership role on this journey. We will of course be judged on our actions.

We thank you for your support and look forward to your ongoing partnership on this journey.

**Ben Way**



Sustainability is at the heart of our business. It is the right thing to do and clearly drives better investment performance and outcomes for everyone. We want all our communities to prosper. Sustainability is how we make it happen."



# A note from Christiana Figueres



Photo by Julien Paquin

## Christiana Figueres

Former Executive Secretary, UN Framework Convention on Climate Change (2010-2016)

Co-founder, Global Optimism

Advisor to Macquarie Group

In the past year we have seen a welcome sea-change in the trajectory of finance. Sustainably investing in the world we want to build is economically and financially attractive as well as life affirming for people in the workforce today.

This nascent understanding is growing deep roots in the finance sector. And this is happening just in time, as the investment decisions of the next few years will determine whether we cut greenhouse gas emissions in half by 2030, thereby opening the portal to a safer, more productive global economy. Welcome to what is now widely called the Decisive Decade.

History will remember this decade as the turning point for climate action and 2020 as the moment we bent the curve of emissions. We have finally woken up to the fact that despite (or because of) shocks like COVID-19, decoupling economic growth from harmful greenhouse gas emissions is the best way to safeguard our economies, and is by now inevitable. In fact, 32 countries, including some developing nations, have successfully grown their economies since 2005 without increasing their emissions.

This is why this Decisive Decade - despite the challenges we face in the short term - is such an exciting time for those who are allocating, managing and directing the financing of infrastructure, real estate and other long-lived assets. They are the heartbeat enabling the rapid technological and economic transformations we need right now.

In the past year alone, we've seen thousands of commitments to net zero emissions. This includes governments, companies and financial institutions large and small, collectively placing the Paris Agreement goal to keep temperature rise below 1.5C within reach.

Earlier this year the influential International Energy Agency (IEA) released its report on the energy transition, representing a remarkable pivot from more than 40 years of reporting. Their net zero analysis shows that the global electricity sector can decarbonise by 2040 and still comfortably meet growing energy demand with renewables and clean technologies. The IEA also stated that no new investments in oil, gas or coal are needed from this year onwards.

The collective message of these commitments is clear: we've crossed a new threshold and there's no going back to the high emissions trajectory of the past. Macquarie has been one of the frontrunners of this movement, committing the Group's operations to global net zero by 2025, the Asset Management business to be net zero aligned globally by 2040 (10 years early), and all activities across the Group to be net zero by 2050 globally.



Solvi Participações  
Brazil

The Paris Agreement, adopted just six years ago, set a blueprint for this century. The 195 sovereign countries that unanimously adopted it are aware of the fact that in order to follow the narrow path science has delineated, we must cut global emissions by 50 per cent in the 2020s and again in the decade that follows.

With the direction so clear and the stakes so high, I am delighted that Macquarie is leading the finance sector, seizing this moment to advance so many value-creating sustainability initiatives, at the same time shaping the future and also improving the present.

**Christiana Figueres**



# About us

## Macquarie Asset Management













Macquarie Asset Management (MAM) 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 \$US427.3 billion in assets globally, we provide access to specialist investment expertise across a range of capabilities including fixed income, equities, multi-asset solutions, infrastructure, renewables, agriculture, real estate, private credit, and transportation finance.

With a global team of over 1,900 people operating in 22 markets, we leverage our experience, diversity and culture of innovation to identify opportunities, mitigate risks and create long-term value for our clients and stakeholders.

MAM is part of Macquarie Group Limited (Macquarie), a diversified financial group providing clients with asset management, finance, banking, advisory and risk and capital solutions across debt, equity, and commodities. Founded in 1969, Macquarie employs over 16,000 people in 32 markets and is listed on the Australian Securities Exchange.

### Our investments shape the world

-  **No.1** infrastructure manager globally<sup>2</sup>
-  **150+** managed portfolio investments
-  **4.7 million** hectares of farmland
-  **~480** properties
-  **Our assets employ 150,000+** employees and contractors
-  **Airports ~12 million** passengers per annum
-  **Roads ~1 million** vehicles per day
-  **Rail ~34 million** passengers per annum
-  **Sea ports ~6 million** standard container units handled per annum
-  **Communications ~115 million** people reached
-  **Power generation ~44,000GWh** power generated per annum
-  **Water ~6 billion** litres of water treated per day
-  **Gas and electricity ~14 million** households

All information as at 31 March 2021. 2. Top 100 Infrastructure Investment Managers IPE Real Assets 2021. Based on total infrastructure AUM where AUM is defined as the total gross asset value of all assets managed and committed capital (including uncalled).

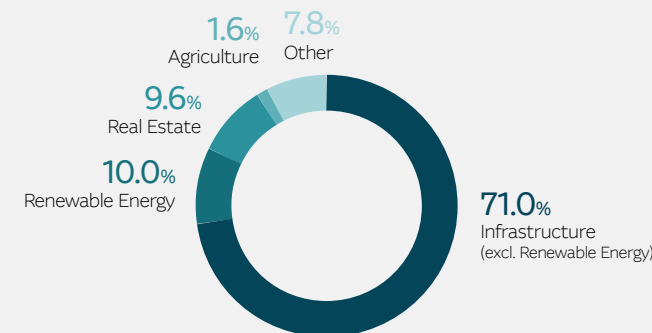
## Our infrastructure, renewables, agriculture and real estate portfolio

### Investing worldwide

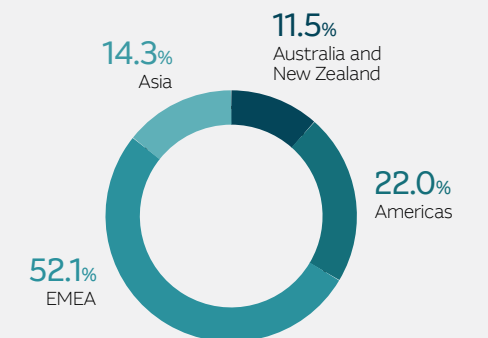


### Our portfolio by AUM

#### By asset type



#### By region



All information as at 31 March 2021. AUM is defined as proportionate enterprise value, calculated as proportionate net debt and equity value. For jointly managed funds, the amount is representative of our economic ownership of the joint venture manager. Adjustments are made when MAM-managed funds invest in other MAM-managed funds. AUM covers all private markets businesses.



# The macro trends shaping our world



The world requires a significant and urgent increase in annual climate investment. This mission will require every part of the green investment community – in the public, private and third sectors – to pull together to scale up best practice, remove barriers to investment and deliver innovative new solutions on an unprecedented scale.”

**Shemara Wikramanayake**  
Macquarie Group CEO

The more interconnected our world becomes, the more rapid developments can disrupt or transform society. This unpredictability creates challenges, but for agile and flexible businesses it also creates opportunity. Within this context and, above all else, we need to anchor ourselves to our primary goal – to create real value for all our stakeholders.

The COVID-19 pandemic has demonstrated how quickly events can have global repercussions – and how interdependent our societies have become. It has highlighted the importance of resilience in our business model and the fundamental importance of putting our people and their wellbeing at the heart of our thinking and actions.

While the onset and impact of coronavirus has been sudden, many other interconnected trends are already having profound social and economic impact. In some cases, these macro trends are transforming the very infrastructure and communities around us.

## Climate change

The consequences of inaction on climate change are clear. As extreme weather events become the norm, the environmental, societal and economic destruction they bring increases. This is particularly damaging in developing countries, which may often lack the resilience to withstand the impacts.

Infrastructure and other real assets have a vital role to play. But they need to be refined and reimaged to meet the growing needs of society and remain viable for generations to come.

Well designed, good quality infrastructure can improve communities' resilience to the long term consequences of climate change. Modern, prudently resourced infrastructure assets can support climate change mitigation by providing renewable energy, lower carbon transport, and smarter agriculture. They can help to address societal challenges in areas as diverse as waste management, transport, housing and care for the elderly.



## Urbanisation

Global urbanisation is continuing at a rapid pace. The UN projects that approximately 5.2 billion people will live in cities by 2030<sup>3</sup>, roughly 60 per cent of the global population. Much of this growth is taking place in developing countries, particularly in Africa and Asia.<sup>4</sup>

With the resource and infrastructure needs of city-dwelling people outweighing those in rural settings, the historically carbon-intensive built environment needs to be reimaged to meet the goals of a carbon-neutral future.

## Resource scarcity

As the global population continues to rise, estimated by the UN to reach 9.8 billion by 2050<sup>5</sup>, demand for basic necessities such as food, shelter and energy will continue to grow rapidly. This will put greater strain on the finite natural resources that underpin our economic and social structures.

World Wildlife Fund (WWF) has estimated that we currently need 1.6 'Earths' to provide the natural resources and ecological services that we now use and that we will need two Earths by 2050 to sustain the population if current trends continue.<sup>6</sup>

Meanwhile, the transition to a more sustainable future brings its own challenges to the world's scarce natural resources. There is pressure on the availability and use of land and the accessibility of metals such as lithium, nickel, and cobalt, which are vital to a low-carbon economy.

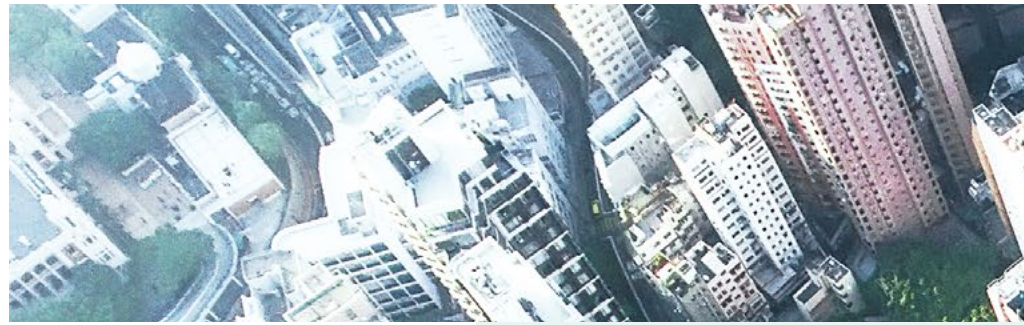
## Technology and innovation

Modern infrastructure that supports the transition to a more sustainable way of life has tremendous potential for worldwide growth. From wind and solar power, to digital telecommunications, electric vehicles, and a hydrogen economy, meeting fundamental human needs in a way that preserves and protects natural resources requires a readiness to embrace innovation. Developing smarter infrastructure that is resilient to future challenges, while serving people across economic and social divides, needs strategic thinking.

Digitisation, the fourth industrial revolution, can transform the way infrastructure is developed and managed. It can drive everything from design and better-informed decision making to operation and predictive maintenance. Effective use of data and communication technologies is revolutionising industry, life and leisure.

3. A global tipping point: Half the world is now middle class or wealthier. 4. UN Department of Economic and Social Affairs. 5. UN Department of Economic and Social Affairs. 6. WWF The Human Footprint.





**Human rights, fairness and equality**

Good infrastructure is a potential equaliser in a society that has become increasingly less equitable, delivering goods and services to people of all backgrounds, irrespective of race, religion, income, age, gender or social context.

Social movements like Black Lives Matter and #metoo, along with the gradual rise of nationalism in many countries, have shown the consequences of inequality and injustice. Expectations for businesses to make a positive contribution have never been higher. In the workplace, investment provides good quality jobs and generates economic benefit. Within communities, it can catalyse physical and social mobility. For investors, it can generate sustainable returns that deliver long-term benefit.

Against the backdrop of these macro trends, it is more important than ever to consider and respect human rights, whether in the context of a just transition to a low carbon economy or the impacts on human rights of increased demand for scarce resources or rapid urbanisation. These issues must be front and centre as we navigate towards a more equitable future.

**Aligning investment to social and environmental outcomes**

These macro trends, and others that will emerge, are redefining governmental, corporate and individual behaviour. They are increasingly reflected in agendas for action, including regulation and broader frameworks such as the UN Sustainable Development Goals (SDGs), standards and principles such as the UN-supported Principles for Responsible Investment (PRI) and benchmarking initiatives such as the GRESB.

We are active members of PRI, GRESB and other organisations seeking to drive best practice in responsible and sustainable investment. (Refer to page 19 for more details.)

A number of our funds already use the SDGs to assess the contribution of their portfolio assets to global development, and to report their impact. As part of our efforts to do business in a responsible way – and to improve transparency for investors – we are committed to expanding this across our global portfolio of funds.

The scope and scale of our investments and the impacts we have – across renewable energy, social infrastructure, urban development, resource efficiency and agriculture and land use – contribute to many of these social and environmental goals.

**Examples of how we are addressing these macro trends across our portfolio**

**EDC**, part of our portfolio of renewable energy assets, has adapted to catastrophic climate events to create a resilient and purposeful business in the Philippines. Read the case study on page 42.

See our case study on **Farms of the future**, which shows how we are helping farmers do more with less and be effective stewards of the land. Read the case study on page 44.

Our case study on the **Port of Newcastle** in Australia highlights the challenges and opportunities that come with changing and diversifying large infrastructure assets. Read the case study on page 36.

**TDC**, Denmark's largest telecoms company, is working in partnership to equip children for the digital future. Read the case study on page 40.





# Our approach

# Delivering positive impact for everyone

As one of the world's leading alternative asset managers, we are the custodians of vital businesses relied upon by more than 100 million people every day. We have a responsibility to create stronger, more sustainable investments.

That's why at the heart of our approach is a commitment to sustainability. We believe that the best kind of investment is one where everyone benefits.

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# Our approach to sustainability

Both in MAM and across Macquarie Group we've seen how our approach to sustainability benefits all stakeholders over the short and long term – investors, employees, communities and future generations.

Sustainability isn't just good in the sense of being 'the right thing to do' – it's good business. Good sustainability practices have helped us reduce operating costs, mitigate operational risks and increase the quality and reliability of earnings.



## Our ambition

We're ambitious. We want to be the global leader in sustainable real asset management, so we are continuously finding ways to improve our approach across the business, from formalising and systemising sustainability across all parts of MAM, to developing tools and targets, investment performance standards, culture, capacity and governance, and our systems for measurement and reporting.

This report represents a small but important part of that journey and we will continue updating our stakeholders in the years to come.

## Embracing responsible investment

Responsible investment is an approach that aims to incorporate ESG factors into investment decisions, to better manage risk and generate sustainable, long-term returns. Responsible investment is particularly compatible with real asset investing because of the long-term nature of this asset class and its focus on essential services.

We have been a signatory to PRI since 2015. This is a public commitment to incorporate ESG considerations into investments and transparently share details around our approach, progress and performance.

We have also been members of GRESB since 2016, which enables us to benchmark our ESG performance, identify areas for improvement and engage with investors.

## GRESB: Using a global benchmark to learn

We have been recognised as a sector leader in the 2020 GRESB assessment results for the third year running, but just as importantly, the results give us insights as to how we can continue to improve.

- In 2020, 22 funds and 62 assets across four regions participated in GRESB – an 82 per cent increase from 2019
- No fund or asset saw a decrease in score from 2019
- 15 five-star rated assets and four five-star rated funds
- Macquarie Asia-Pacific Infrastructure Fund 2 (MAIF2) fund sector leader
- Glasgow Airport (AGS Airports), Oiltanking Singapore Chemical Storage, MHL supply networks asset sector leaders
- In 2021, 26 funds and 85 assets completed assessments, the results of which will be available in October 2021.

## Committing to net zero

In December 2020, MAM announced its commitment to invest and manage its portfolio in line with global net zero by 2040, ten years ahead of the Paris Agreement goal. We believe we were the first large asset manager in the world to make a commitment to 2040.

In March 2021, we reinforced this commitment by becoming signatories to the Net Zero Asset Managers initiative.

Across our infrastructure, renewables, agriculture and real estate portfolio, with the help of industry experts, we are implementing the first stage of this commitment. We're working with our portfolio assets to set expectations and provide them with the tools, training and resources to help them establish baselines (if not already done), set targets and develop the plans to achieve them.



We are trusted to manage essential assets that impact people's daily lives – including housing, water, power, communications and transport.

We recognise the responsibility and the opportunity we have to place sustainability at the centre of everything we do. It brings a strong sense of purpose to our team's daily activities. We are proud of the progress we have made so far but we have a long journey ahead of us, and that is exciting."

**Chris Leslie**  
Head of Sustainability,  
Macquarie Asset Management



## Our commitment to net zero in action

### Bringing net zero to our portfolio

In portfolio companies where MAM has significant influence in the management, our goal is to have global net zero and Paris-aligned business plans in place by 2022.

We will work with our portfolio companies to:

- measure GHG emissions
- identify pathways to reduce emissions
- develop business plans that contribute to global net zero by 2040, or sooner.

For new investments, completion of these steps will be targeted within 24 months of acquisition.

We will also work with each business on an ongoing basis with the aim that they will be meeting their emissions reduction pathways by 2030.

We look forward to reporting on our progress annually.

Since making our commitment last December, we have made good progress. We have started the roll out of net zero workshops to

**120**

of our infrastructure assets across six sectors.

The workshops are available in **three languages** (English, Korean and Mandarin) and we expect to engage

**500+**

internal and external stakeholders through the process.

**65%**

of our infrastructure portfolio assets are regularly submitting GHG emissions and energy consumption data.

**22 assets**

have specific decarbonisation targets in place and we expect this number to rise significantly following the completion of the net zero workshops.



## Cadent: Exploring the possibilities of hydrogen

Zero carbon gases, such as hydrogen, will be a key part of plans to achieve the goals of the Paris Agreement and net zero emissions by 2050. MAM is supporting Cadent, the operator of a UK gas distribution network, as it works to ensure that the UK's gas network plays its role in securing zero carbon energy that is safe, reliable, flexible and convenient for customers.

Cadent is working collaboratively with the UK government on initiatives to pilot the use of hydrogen. By transitioning the gas network to bring hydrogen (and other gases such as biomethane) to homes and industries, it can reduce its carbon footprint. This will work alongside renewably generated electricity to help reach the UK's 2050 net zero target.

The company's HyNet North West project is an integrated hydrogen/carbon capture utilisation and storage project, which will decarbonise heavy industry in the UK's northwest region and provide hydrogen to decarbonise domestic heat, heavy transport and flexible power generation. The £7.5 million project seeks to produce 3TWh of low-carbon and low-cost hydrogen, and capture over 95 per cent of the carbon used in the process.



## The Australian decarbonisation project

The Australian decarbonisation project is an example of MAM's longstanding commitment to support climate change mitigation across our portfolio and has served as a catalyst for our global net zero project.

In October 2019, the Australian Government's Clean Energy Finance Corporation (CEFC) committed \$A100 million towards 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. The emissions committee established by MAM and CEFC continues to oversee the progress of the Australian decarbonisation project, which commenced with

a decarbonisation workshop that equipped MAM's Australian infrastructure portfolio businesses with insights and tools needed to reduce their greenhouse gas emissions.

Since its launch, nine portfolio companies have adopted or committed to adopt greenhouse gas emissions reduction targets and to undertake projects to drive decarbonisation across their businesses. MAM continues to engage with portfolio companies to help enable further emissions reductions across our portfolio in Australia and abroad. A progress update outlining the emissions, targets and projects of MAM's Australian infrastructure portfolio is enclosed in the Appendix.







Sustainability regulation is evolving rapidly across the globe. We are keeping pace with developments and preparing to meet the requirements.”

**Mary Nicholson**  
Head of Responsible Investment,  
Macquarie Asset Management

**Positive engagement**

Sustainability regulation is evolving rapidly. While the EU has set the pace, many jurisdictions now have their own disclosure regulations or sustainable taxonomies. MAM convened a multi-disciplinary working group in 2020 to ensure preparedness for the EU's Sustainable Finance Disclosure Regulations, which came into force in March 2021, and is actively monitoring developments in the EU and globally.



● BARD Offshore 1  
Germany

**A selection of MAM's affiliations, accreditations and commitments**

**Macquarie Group**



Our CEO, Shemara Wikramanayake was appointed a founding Commissioner of the **Global Commission on Adaptation** in October 2018.



Shemara Wikramanayake was appointed a founding member of the new **Climate Finance Leadership Initiative (CFLI)** in January 2019.



Macquarie has been a signatory to the **Carbon Disclosure Project (CDP)** since 2010.



In 2019, Macquarie joined **Renewable Energy 100 (RE100)** with a commitment to source 100 per cent electricity across our global offices and data centres by 2025.



Macquarie has been supporting the work of the Financial Stability Board's **Task Force on Climate-related Financial Disclosures (TCFD)** since 2018 and became a formal supporter in 2019.



Shemara Wikramanayake was a founding member of the Ministerial Reference Panel for the Australian Government's **Technology Investment Roadmap** supporting the country's vision to be a global leader in low emissions technology.

**MAM**



**Principles for Responsible Investment (PRI)** signatory since 2015 and represented on the Infrastructure Advisory Committee. MAM's Transparency Report has been made publicly available online and can be reviewed here.



MAM joined the **Net Zero Asset Managers initiative** in March 2021 to build on its commitment to climate change leadership.



Member of **Climate Action 100+ (C100+)** since 2020, an investor initiative that ensures that the world's largest corporate greenhouse gas emitters take necessary action on climate change.



Supporter of **The Transition Pathway Initiative (TPI)** since 2020. TPI is a global, asset-owner led initiative which assesses companies' preparedness for the transition to a low carbon economy.



Ally since 2021, **World Benchmarking Alliance (WBA)** has set out to develop transformative benchmarks that will compare companies' performance on the SDGs.



Accredited since 2019. The **Green Climate Fund (GCF)** aims to deliver results across the spectrum of climate action to promote low-carbon and climate-resilient paths.

**MAM's Infrastructure, Renewables, Agriculture and Real Estate businesses**



Member of **GRESB Infrastructure** since it was launched in 2016 and represented on GRESB's Infrastructure Benchmark Committee. We are also a member of GRESB Real Estate.



**Ceres** member since 2010, which includes over 175 institutional investors who are advancing leading investment practices and corporate engagement strategies.



In 2020 Macquarie became one of five founding members of the **One Planet Private Equity Funds (OPPEF)** initiative aimed at accelerating global efforts to combat climate change and meet the goals of the Paris Agreement.



Member of the **Institutional Investors Group on Climate Change (IIGCC)** since 2020, the European membership body of investor collaboration on climate change.



We are an active member of the **ULI Greenprint Center for Building Performance** who are dedicated to fostering cross-industry collaboration to make the net zero carbon goals of the Paris Agreement a reality.



**A commitment to learning and improving**

We have bold ambitions, but we believe in continually improving our approach as we learn from experience.

Our approach has expanded from an initial focus on managing risk. In building prosperous communities for the future, we believe that good sustainability management can have a positive and lasting impact for everyone.

We are always exploring how to further embed sustainability principles and policies to inform investment decisions, as well as how we operate as a business. For example, we have increased the number of ESG considerations embedded in our investment decision-making approach, applying performance standards across the portfolio and developing products that specifically serve our sustainability objectives. We are also working for greater diversity and inclusion (D&I), both within MAM and across our assets.

**Championing diversity and inclusion**

**Our diverse people**



Building a workforce that reflects all aspects of diversity to bring a range of perspectives, ideas and insights to everything we do.

**Our inclusive culture**



Creating a workplace where our people feel respected for their uniqueness, valued for their contribution and empowered to reach their full potential.

**Our clients and community**



Provide and support commercial and development opportunities for under-represented people in our community.



● Busan New Container Terminal South Korea

Our D&I strategy, relaunched in 2020, involves building a culture that supports diversity and inclusion across all our activities – at the Macquarie Group level, in MAM, and across our assets. Throughout, we want to create an environment where everyone is respected, valued and empowered, and which supports under-represented people in our communities.

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. We have reviewed our approach to hiring, promotions, engagement and succession planning and developed a number of resources to support our people leaders to create a more inclusive environment. All MAM staff have mandatory D&I objectives and we will continue to focus on improving D&I across the whole employee lifecycle.

At the asset level specifically, our action plan includes integrating D&I considerations into our own due diligence processes for prospective investments and supporting our assets to embed good D&I practices in their business strategies with appropriate Board-level oversight.

In 2020, we provided D&I strategy oversight training to MAM's asset Board Directors and surveyed MAM's asset directors and senior leadership across our portfolio to gain insights into each company's current approach to D&I. The survey identified opportunities to support the development of D&I strategies through improving data collection; sharing of best practices across the portfolio; and sponsoring the appropriate allocation of resources to drive progress.

We will continue to monitor progress across our D&I efforts and look forward to sharing more detail in next year's report.

**80%**

of eligible portfolio companies surveyed to better understand their approach to D&I and identify best practices.



# Our Environmental, Social and Governance framework

## Codifying sustainability

Our ESG framework helps us identify, assess, manage, monitor and disclose material ESG risks and opportunities associated with our funds' businesses. We do this through activities such as transaction screening, due diligence, acquisition decision-making, transition asset management, fund management and reporting.

## How we do it: Applying our ESG framework

We have a global sustainability team, with in-house specialists dedicated to promoting the sustainability of our business. They support on investments and acquisitions, product development, asset management and reporting.

Our team has a well-established framework for ESG issues, which it promotes and applies across the portfolio.

Our ESG framework is designed to reflect the specific nature of our business structure, operations, investments and stakeholders. Our framework is aligned with the broader Macquarie Group approach, set out on the Group website, Macquarie.com.

## Integration through the investment lifecycle

We assess and manage ESG risks and opportunities at every stage of the investment lifecycle.

01

**Screening:** All portfolio companies are initially screened for ESG 'red flags', including adverse news relating to negative stakeholder or reputational impact. Risk assessment considers matters identified in IFC Performance Standards, such as climate change, land acquisition, biodiversity, labour and working conditions, resource efficiency, community health and safety, indigenous people and vulnerable groups and cultural heritage.

02

**Due diligence:** Tailored due diligence depends on the location, type of asset and risk profile of the portfolio company. We use comprehensive scope checklists and engage external experts if needed to advise on specific ESG issues.

03

**Acquisition decision:** The results of due diligence – including key ESG issues, risks and mitigation measures – are presented to the managed vehicle board or investment committee prior to investment.

04

**Transition:** For every infrastructure, renewables or agriculture transaction where we can deliver improvements, we develop a transition plan that sets out actions and responsibilities that are tracked to completion by the asset management team. The plan includes a timetable for implementation.

06

**Exit:** ESG considerations are considered through the entire lifecycle of, to the eventual exit from, the asset. This includes screening potential acquirers and the source of their funds as part of our Know Your Client/Anti-Money Laundering process.

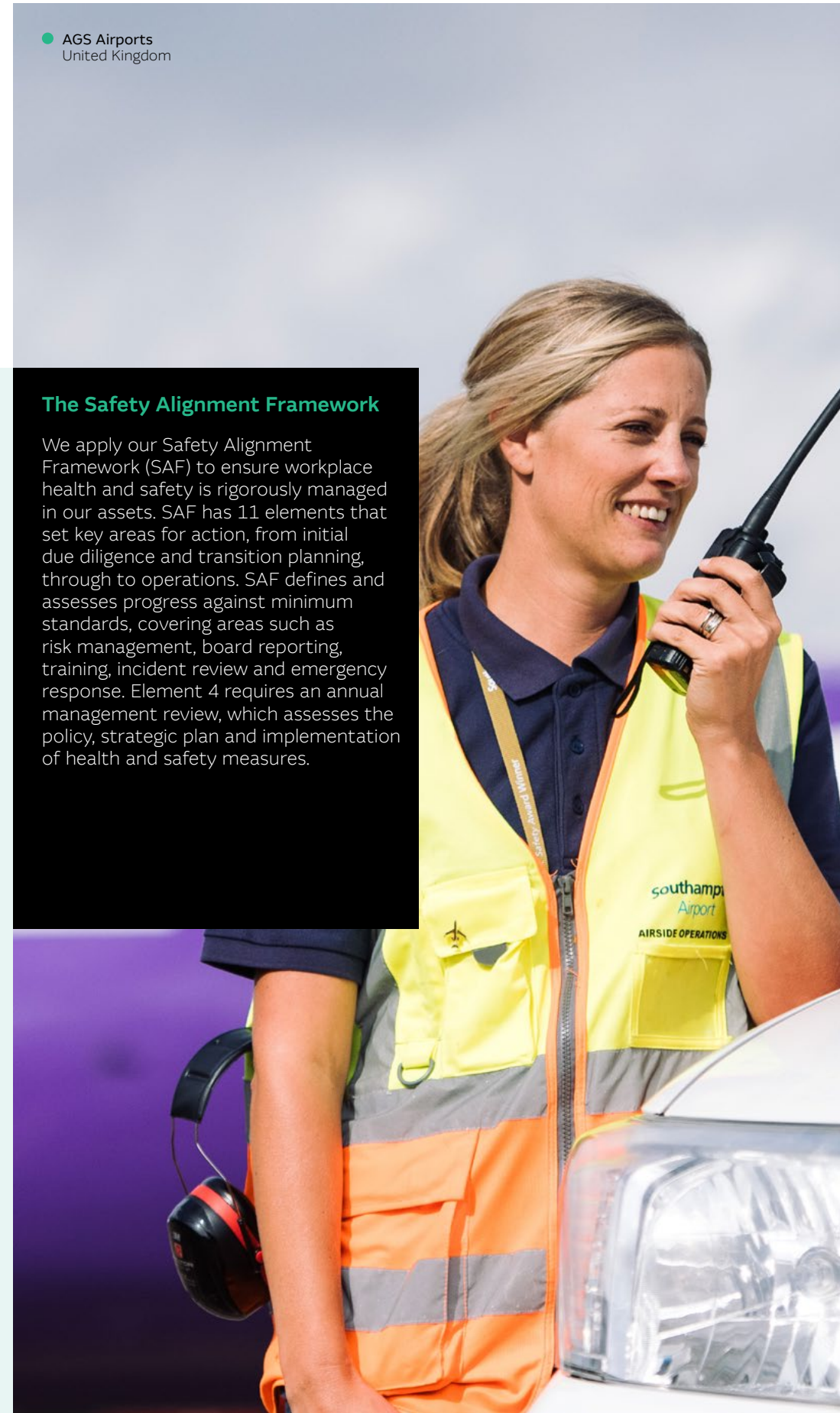
05

**Asset management:** Each asset's framework must be adequate to ensure compliance with relevant regulation and standards. It should help to achieve and promote ESG management practices and be appropriate to the level of ESG risk.

AGS Airports  
United Kingdom

## The Safety Alignment Framework

We apply our Safety Alignment Framework (SAF) to ensure workplace health and safety is rigorously managed in our assets. 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. Element 4 requires an annual management review, which assesses the policy, strategic plan and implementation of health and safety measures.







● Lawson Grains  
Australia

### Our expectations of portfolio companies

We work to ensure that our portfolio company frameworks include, at a minimum, procedures and processes to:

- identify and document significant ESG issues relevant to the business
- manage significant ESG risks, including environmental incident response
- audit compliance with ESG regulatory obligations and status of environmental risk management framework
- manage and report environmental and safety incidents
- report on ESG management to the Board.

We support each portfolio company in monitoring its compliance with key ESG requirements, metrics and KPIs relevant to the specific business, sector and jurisdiction, resolving identified issues on a timely basis and reporting to its board and shareholders on developments.

As a managed vehicle or asset manager, we also seek to establish:

- immediate reporting of serious ESG-related items to the portfolio company CEO and board and to our asset management and risk teams
- quarterly reporting and monitoring, including health, safety and environmental performance
- incorporation of ESG considerations, including opportunities, into the strategic plan and annual budget
- a philosophy of continuous improvement.

### Managing investments

As an asset manager, we nominate senior MAM employees to be appointed as non-executive directors to infrastructure, renewables, agriculture and real estate portfolio company boards. These MAM-nominated directors, along with all other directors of the board and the management team, have the legal responsibility for overseeing the portfolio company operations; including that management has appropriate ESG commitments, systems, procedures and practices in place.

### Stride Climate Investments: Safer and more reliable power

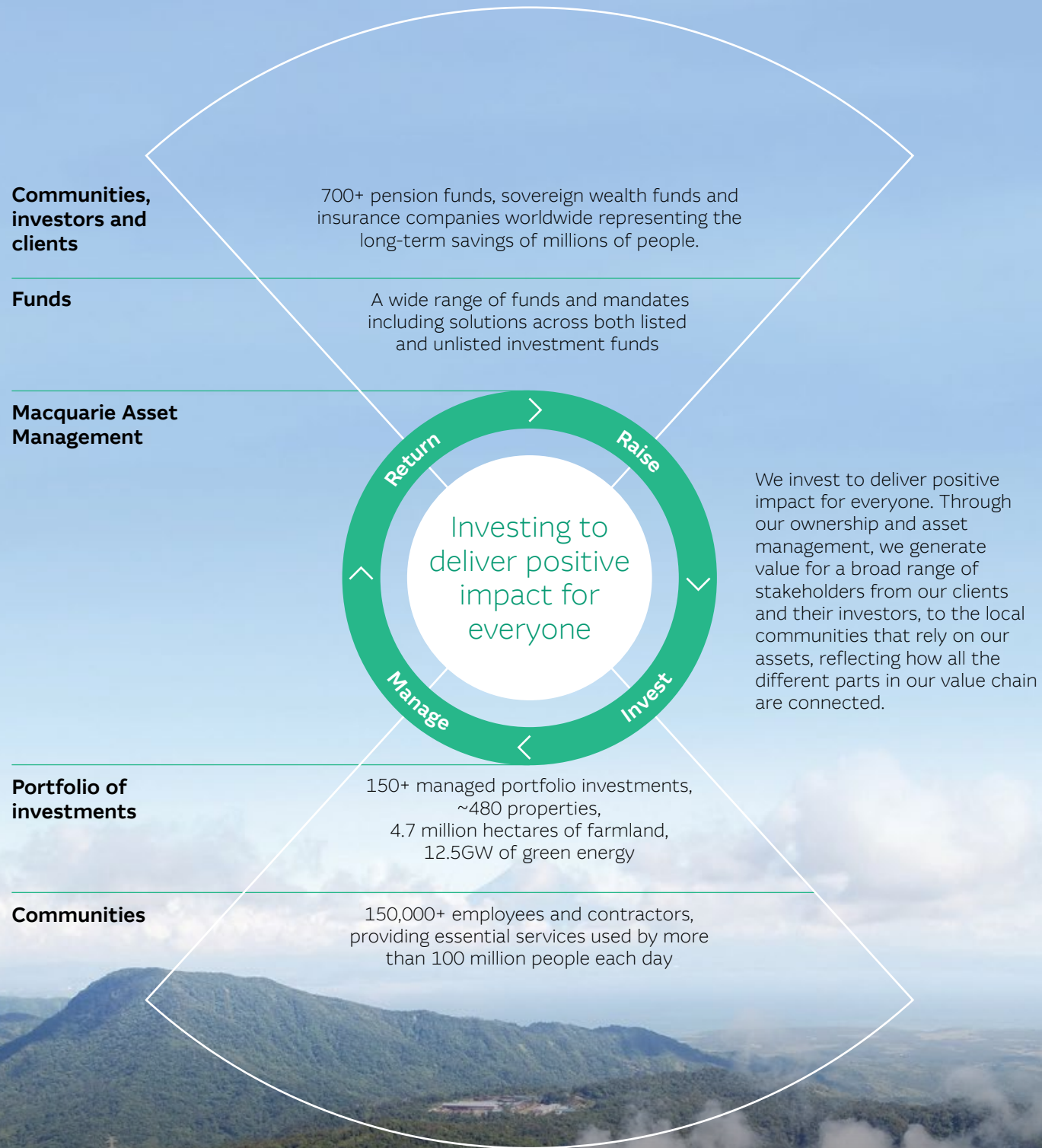
MAM has worked with Stride, a solar power provider in rural India, to improve employee and community safety – at work and on the roads. Stride has also engaged with nearby farming communities to minimise local air pollution, which has brought improvements to air quality and the operation of the solar panels.

Read the full case study on page 48.





# Our value chain



● Energy Development Corporation (EDC) Philippines

# Our stakeholders

Maintaining strong and enduring relationships with our stakeholders goes hand in hand with building long-term value across the full length of our value chain.

Every day, more than 100 million people use, and often rely on, essential services from across our portfolio of investments. Operating in the heart of communities, our investments employ over 150,000<sup>1</sup> employees and contractors, and are often regulated, meaning our stakeholders are many and varied.

Delivering a positive experience for these stakeholders is critical to our ability to deliver sustainable long-term value. While managing investments, we always focus on providing customers with reliable services, keeping employees safe, and ensuring that communities and regulators are supportive.

1. As at 31 March 2021

## Our stakeholder engagement principles

01

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

02

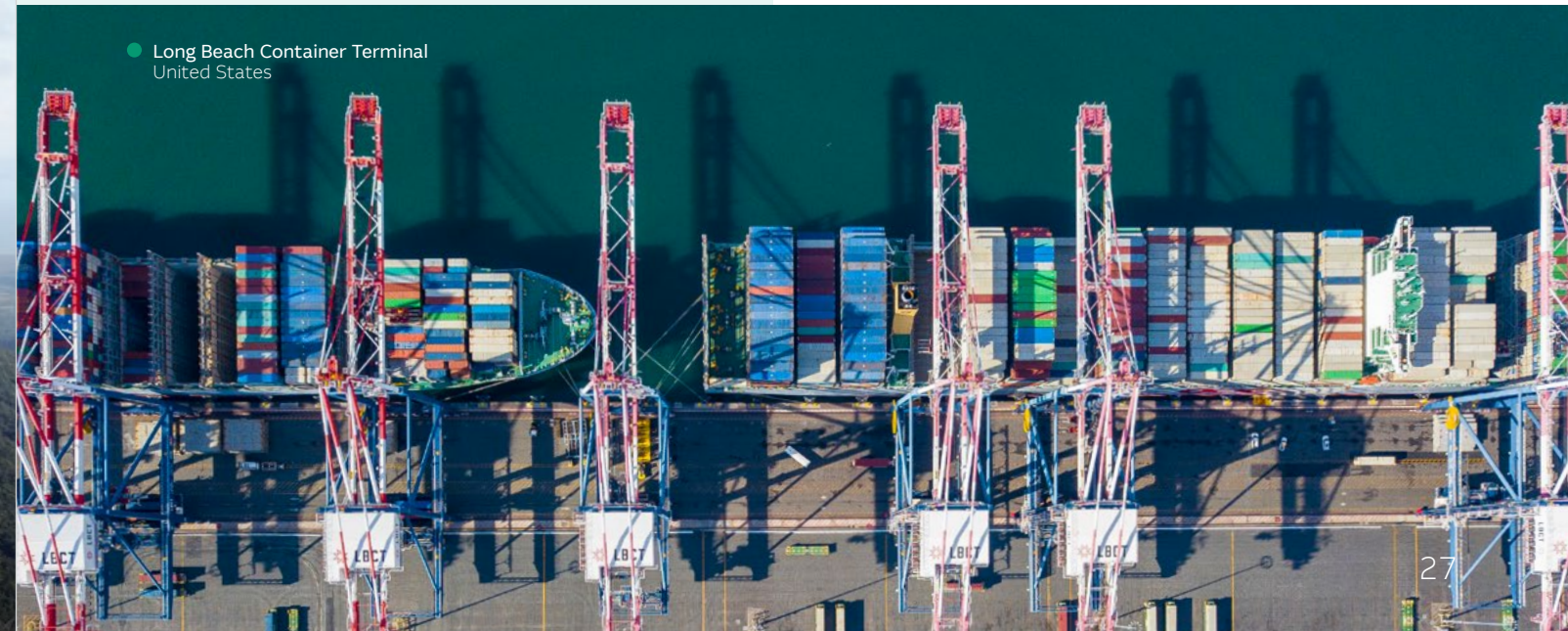
Focus on developing and maintaining constructive and enduring relationships

03

Embed stakeholder engagement activities in our asset management framework







04





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



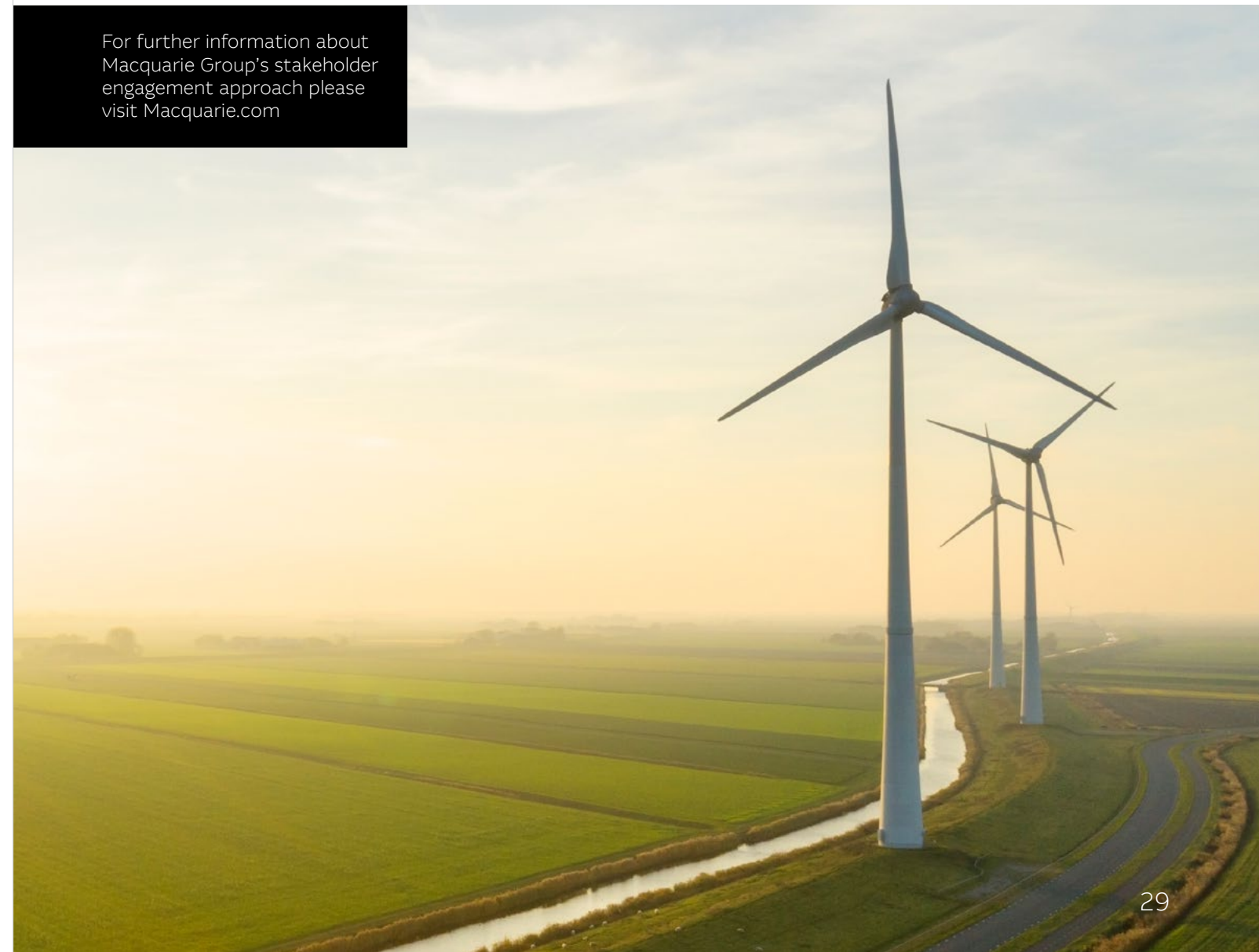
● Long Beach Container Terminal United States



Key stakeholders	Key issues	How we engage
 <b>MAM's investors</b>	<b>Fund activity and performance, acquisitions, divestments, reputational issues, asset highlights, KPIs, ESG integration</b>	Our teams engage with our investors through a variety of channels including for example: <ul style="list-style-type: none"> <li>• a dedicated client relationship manager</li> <li>• regular updates on fund activity and performance through quarterly reporting and Annual General Meetings, for example. We have also launched a dedicated investor portal</li> <li>• a range of client marketing communications such as knowledge-based events and webinars, sharing important announcement and thought leadership (such as our 'Pathways' series)</li> <li>• encouraging continuous client feedback through surveys and client workshops.</li> </ul>
 <b>Potential investors and consultants</b>	<b>Business overview, performance, strategic plans, KPIs, data reporting</b>	We use a variety of ways to engage potential investors and consultants to help them understand our business including: <ul style="list-style-type: none"> <li>• investor education sessions and pitches</li> <li>• a range of client marketing communications.</li> </ul>
 <b>Fund assets</b>	<b>Operations, strategic plans, performance, key performance indicators, data reporting, information about MAM</b>	Our asset management teams are in daily contact with our portfolio via: <ul style="list-style-type: none"> <li>• a dedicated asset team who work with the asset day-to-day supporting the running of the asset and engagement with the local community</li> <li>• in some regions bringing together our specialist teams with the C-suite from our assets for Annual Asset Leadership Forums</li> <li>• regular training and education webinars on a variety of key areas including health and safety, D&amp;I and other sustainability initiatives</li> <li>• regular asset specific communications.</li> </ul>
 <b>MAM staff</b>	<b>Day-to-day engagement as part of 'business as usual', impacts of business activities, employment opportunities</b>	Our people are fundamental to what we do and we engage and communicate with our staff through a broad range of online and offline channels including: <ul style="list-style-type: none"> <li>• regular communication from management through various online communications and Town Halls on key business updates and initiatives</li> <li>• using staff surveys, feedback loops and bi-annual reviews to ensure we continually engage and listen to our staff</li> <li>• a comprehensive learning and development programme</li> <li>• a broad range of wellbeing, diversity and inclusion initiatives.</li> </ul>
 <b>Prospective staff</b>	<b>Career opportunities</b>	We are always looking for new talent to join our team and engage with prospective staff through various forms of recruitment marketing such as: <ul style="list-style-type: none"> <li>• university recruitment, digital marketing</li> <li>• referral schemes and headhunting.</li> </ul>
 <b>Regulators and governments</b> (both those regulating MAM and those regulating our assets)	<b>Across our asset portfolio: regulatory periods, Concession/contract renewals, compliance, quality of service, asset performance, customer/ user pricing.</b>  <b>For MAM: regulatory compliance, transparency and disclosure, reputational issues.</b>	In MAM, as across all of Macquarie, we believe we are engaged and understand the evolving policy, political and regulatory environments in the jurisdictions in which we operate and invest. We do this through a number of ways including: <ul style="list-style-type: none"> <li>• our asset directors and asset senior management will engage directly with the relevant asset regulators and relevant local governments</li> <li>• we effectively monitor and comply with regulatory developments and policies which could impact our portfolio or funds' operations.</li> </ul>

Key stakeholders	Key issues	How we engage
 <b>Industry bodies</b>	<b>Business overview, industry expertise</b>	We engage with a range of industry groups in relevant sectors around the world through membership and active participation in industry bodies and organisations.
 <b>Media</b>	<b>Reputational issues, acquisitions and exits</b>	Across MAM, we engage the media through for example: <ul style="list-style-type: none"> <li>• positive outreach to build understanding,</li> <li>• publishing press releases</li> <li>• reactive responses</li> <li>• interviews from our senior team.</li> </ul>
 <b>Macquarie Group Leadership</b>	<b>Performance, reputational issues</b>	As a part of Macquarie Group, we are in constant contact with Macquarie Leadership through: <ul style="list-style-type: none"> <li>• Board reporting and updates</li> <li>• business head updates and presentations.</li> </ul>
 <b>Macquarie Group Shareholders</b>	<b>Performance, reputational issues, business overview</b>	MAM supports Macquarie Group's communications to shareholders, analysts' investors and their advisors participating in: <ul style="list-style-type: none"> <li>• all the key events of the corporate calendar including Group reporting, Annual General Meetings and Operational Briefing</li> <li>• as it relates specifically to sustainability, MAM also provides input into all of Macquarie Group's sustainability reporting.</li> </ul>

For further information about Macquarie Group's stakeholder engagement approach please visit [Macquarie.com](https://www.macquarie.com)





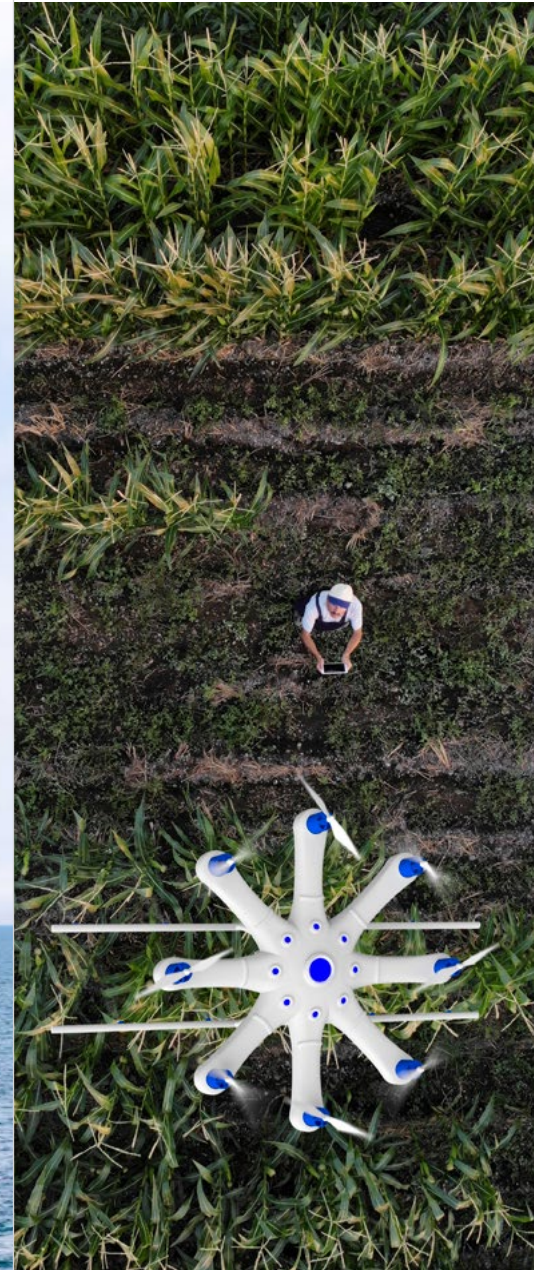
# Our approach to materiality



We believe that continuing to focus on all aspects of ESG will place us in a better position to create real and lasting value for our clients and ultimately the long-term savings of the investors they represent."

**Chandra Eastwell**  
Associate Director,  
Macquarie Asset Management

● BARD Offshore Windfarm 1  
Germany



## Materiality in our portfolio

We define materiality as the ESG factors considered to be material to our business. As both a part of Macquarie Group, and a fiduciary investor in and manager of real assets on behalf of our clients, we consider materiality in both contexts. We recognise that those areas material to Macquarie Group may be more nuanced at the asset level. Our portfolio has more than 4.7 million hectares of farmland, over 480 properties and over 150 assets each of which has its own set of material issues and opportunities. The portfolio itself is also dynamic, as we invest and divest.

When thinking about the areas of most importance to our individual assets, we take account of the sector, location, type of operations carried out, and its legal and environmental context. We also look to the recommendations and research of organisations that work globally to set benchmarks and standards for risk assessment management and reporting - including PRI, the International Finance Corporation's Environmental and Social Performance Standards and Environmental, Health and Safety Guidelines, and theGRESB ESG benchmark for real assets.

## We are custodians

As asset managers, we take our role as custodians seriously and engage with our assets to help them manage their own material areas. For this reason, we include 'custodianship' as one of our material areas and provide examples of this in action later in the report.

## How we manage risk and material issues

MAM has dedicated risk management and sustainability teams responsible for setting and implementing the ESG incorporation strategy and framework.

The MAM risk team is responsible for ensuring all operational risks, including ESG risks, are identified and managed. Reporting to the MAM Chief Risk Officer, the team is independent of MAM's portfolio management functions and is supported by specialist expertise within the business, including the MAM sustainability team and the risk management group.

The MAM sustainability team is responsible for setting MAM's sustainability strategy and ESG framework, providing specialist expertise on environmental and certain social issues and supporting asset management teams in harnessing ESG opportunities across the portfolio.





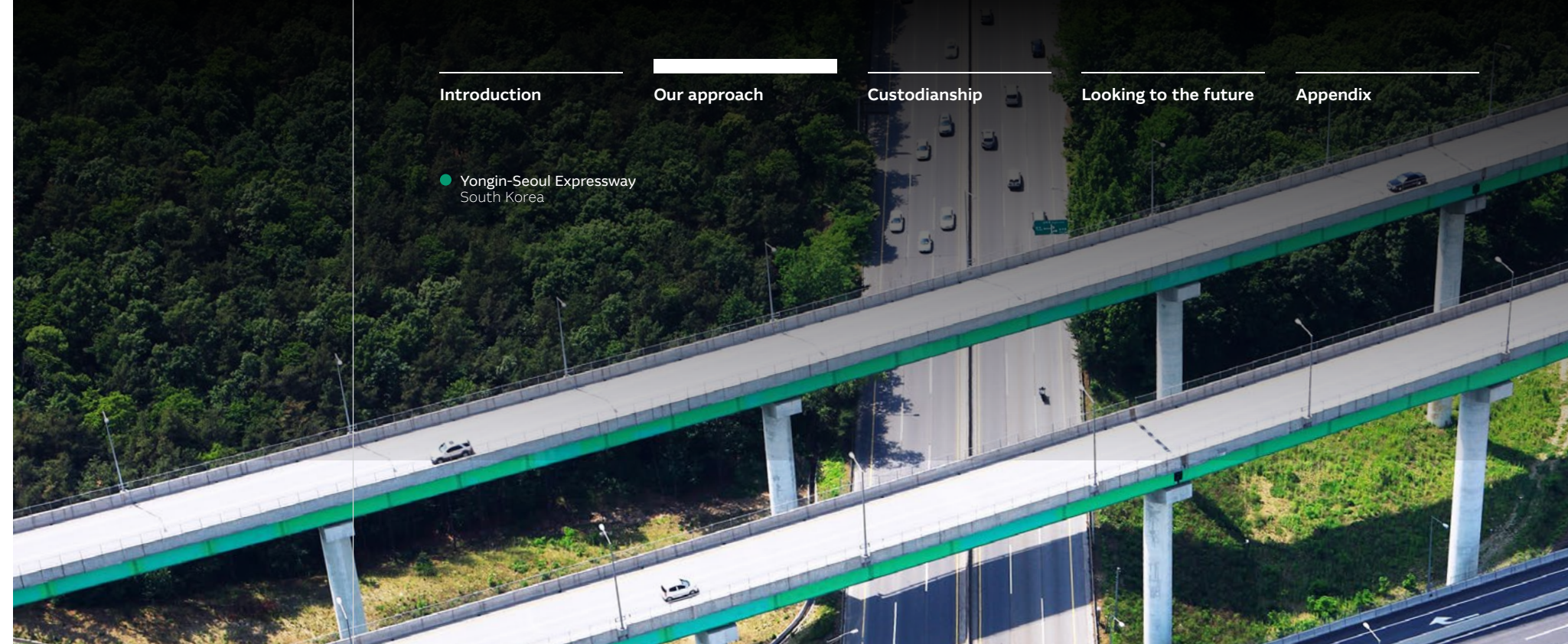
### Focus areas at the Macquarie Group level

The Group has identified a series of interconnected focus areas that are of particular importance to the Group and our stakeholders, derived from extensive research, internal and external engagement and benchmarking.

These areas are relevant to MAM and reflect the risks and opportunities we face as a business. As part of Macquarie Group, we report regularly to the Group on our management of these areas. In the table below are a few recent highlights from our material areas of focus.

In addition, we focus on key areas that relate to the particular features of our business and, in particular, our role as asset managers. We see custodianship as a key issue and expand on this theme in the case study examples later in this report.

### Selected highlights against MAM's material areas of focus



Introduction

Our approach

Custodianship

Looking to the future

Appendix

● Yongin-Seoul Expressway  
South Korea

ESG integration	Environmental and social financing	Climate change	Sustainability in direct operations	Client experience	People and workplace	Business conduct and ethics	Community	Custodianship
<p><b>ESG considerations embedded</b> throughout our investment decision making process and our approach to asset management</p> <hr/> <p>MAM has been a <b>PRI signatory</b> since 2015</p> <hr/> <p><b>62</b> Portfolio assets across <b>22 funds and four regions</b> completed GRESB assessments in 2020</p> <hr/> <p>Please refer to Macquarie Group's FY21 ESG report</p>	<p><b>£200 million</b> UK Climate Investments (UKCI); a <b>£200 million pilot investment programme</b> between the UK Government and Macquarie, mandated to invest in green energy investments in India and sub-Saharan Africa economies</p> <hr/> <p><b>12.7GWh</b> of green generation capacity under management</p> <hr/> <p>Visit <a href="https://www.macquarie.com">Macquarie.com</a> to find out more</p>	<p><b>2040</b> MAM <b>committed to net zero by 2040</b> and already started on the path to decarbonizing our portfolio of infrastructure, renewables, agriculture and real estate assets</p> <hr/> <p>MAM is a signatory to the <b>Net Zero Asset Manager's initiative</b> and Climate Action 100+, and a member of IIGCC and Ceres</p> <hr/> <p>Physical and transition risks considered at acquisition</p> <p>Top-down review of climate risks and opportunities performed across infrastructure portfolio</p> <hr/> <p>To find out more about the Group's approach to climate change visit <a href="https://www.macquarie.com/perspectives/climate-change">Macquarie.com/perspectives/climate-change</a>.</p>	<p><b>2025</b> Commitment across Macquarie Group to reach <b>net zero emissions for the Group's operations by 2025</b></p> <hr/> <p><b>Reduced Group-wide energy use</b> and maintained our carbon-neutral commitment by offsetting emissions from global electricity use and business air travel</p> <hr/> <p><b>100%</b> Macquarie became a <b>member of RE100</b> in 2019 with a commitment to source <b>100 per cent renewable electricity</b> across our global offices and data centres</p> <hr/> <p>For more detail on Macquarie's approach to sustainability in direct operations visit <a href="https://www.macquarie.com/about/company/environmental-social-and-governance/sustainability-in-direct-operations">macquarie.com/about/company/environmental-social-and-governance/sustainability-in-direct-operations</a></p>	<p>We have launched a <b>new investor portal</b> to enable our clients to access all necessary information on their holdings in our funds</p> <hr/> <p>We continuously seek <b>client feedback</b> to better understand their perspectives and investment needs and have created a <b>dedicated leadership role</b> responsible for driving and delivering our client experience strategy</p> <hr/> <p>In response to COVID-19, <b>we adapted our client engagement strategy</b> to ensure clients remained informed about the performance of their investments even hosting entirely virtual AGMs for our flagship funds in 2020</p> <hr/> <p>Visit <a href="https://www.macquarie.com/about/company/environmental-social-and-governance/client-experience">macquarie.com/about/company/environmental-social-and-governance/client-experience</a> to find out more</p>	<p><b>25</b> nationalities within our workforce speaking <b>37</b> languages</p> <hr/> <p>We <b>invested in our team's wellbeing</b> including virtual meditation and mindfulness sessions, tailored sessions for staff on mental health, managing work and family and more</p> <hr/> <p><b>100%</b> of MAM staff have a mandatory D&amp;I objective as part of their annual appraisal</p> <hr/> <p>For further details visit <a href="https://www.macquarie.com/about/company/environmental-social-and-governance/people-and-workplace">macquarie.com/about/company/environmental-social-and-governance/people-and-workplace</a></p>	<p><b>100%</b> of our people have completed Code of Conduct training and our director cohort have started <b>Ethical Leadership Programme</b> run in conjunction with the Ethics Center</p> <hr/> <p>Office heads and senior management participated in <b>psychological safety and whistleblowing workshops</b></p> <hr/> <p>Our people managers completed <b>'Supervision' and 'Listen Up' training</b>, to learn to recognise and respond to issues or concerns</p> <hr/> <p>To find out more about Macquarie's Code of Conduct visit <a href="https://www.macquarie.com/about/what-we-stand-for">macquarie.com/about/what-we-stand-for</a></p>	<p>Our people volunteered and fund-raised throughout 2020 raising over <b>\$A2.16 million of donations to 373 charities</b></p> <hr/> <p><b>70</b> In EMEA, over 70 members of our team took part in the <b>'Keepy Uppy' challenge</b>, raising funds for Médecins Sans Frontières in response to the COVID pandemic</p> <hr/> <p><b>\$A52,000</b> Over <b>\$A52,000 raised for the Bronx Community Relief Effort in New York</b> through an online cooking challenge to address food insecurity, housing stability and small business relief during the pandemic</p> <hr/> <p>For more information visit <a href="https://www.macquarie.com/about/community">macquarie.com/about/community</a></p>	<p><b>~100 million</b> Essential services used <b>by ~100 million people each day</b> and employing over <b>150,000</b> employees and contractors</p> <hr/> <p><b>Modern slavery</b> statements published by all relevant assets in the UK and Australia</p> <hr/> <p>All MAM nominee directors on asset boards received practical training on <b>best practice WHSE management</b></p> <hr/> <p>Please refer to the case studies later in this report</p>



# Custodianship

# Making hands-on custodianship a reality

By constantly looking for new opportunities today, we are positioning the world's capital to make a greater impact on tomorrow.

With investments in businesses across five continents, our portfolio is relied on by over 100 million people every day. As custodians of these essential services, we need to ensure that we create strong, sustainable businesses for the benefit of all.

We do this by leveraging our skills, resources and expertise to work with portfolio company management teams to drive improvements, across operations, financials and ESG.

The following case studies provide an example of this in action and, while some we have shared previously, we are pleased to share more detail on their progress and key learnings.

**Port of Newcastle**  
Australia's deepwater global gateway 36

**TDC Group**  
Connecting Denmark for everyone 40

**FIBRA Macquarie**  
Building sustainability in Mexico 42

**Energy Development Corporation (EDC)**  
Powering economic and social development in the Philippines 44

**MAM Agriculture and Natural Assets**  
Farms of the future 46

**Stride Climate Investments**  
Renewable energy and community engagement in rural India 48





Port of Newcastle

# Australia's deepwater global gateway

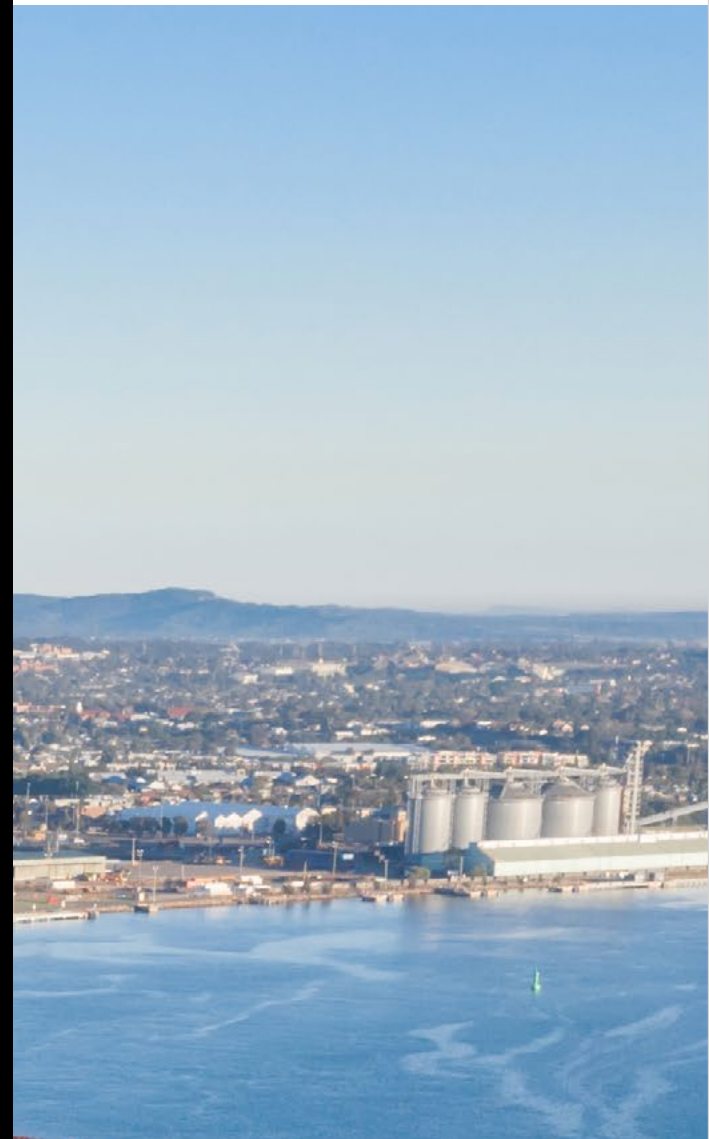


**Sector:**  
Transportation

**Location:**  
Newcastle, Australia

**Investment date:**  
2018

**Contributing to the SDGs including**



As the world moves away from fossil fuels, a community which has been exporting coal for over 200 years faces an uncertain future. We are working closely with our investment partner, the port and the local community to ensure a sustainable future for the port and the people of Newcastle.

A gateway to the second largest city in New South Wales, the Port of Newcastle's opportunities and challenges reflect its proud history and exciting future. The 792 hectares port has 47 tenants across a diverse range of trades including thermal and metallurgical coal, grain, fertilisers, cement and bulk liquids. The port has a deep 15.2m channel and direct heavy rail access to Sydney and via the Inland Rail, to Melbourne and Brisbane.

**The challenge**

The port has been exporting coal since 1799 with its first shipment to India. While the volume of the port's coal exports are small relative to

the domestic production of other countries in Asia, its coal still plays an important role in the Asian seaborne coal market. The calorific content of the coal is high, making it suitable for modern coal fired power plants in markets with low energy independence such as Japan and South Korea, and for blending with lower quality coal from domestic markets in other countries.

But while this higher coal quality remains important for current coal plants, the medium-to-longer-term future is less certain. The Paris Agreement on climate change is rapidly accelerating the transition to cleaner fuel sources in the lead up to 2050.

**MAM's engagement**

As the Manager of a 50 per cent shareholding, we are helping to guide the port through its strategic realignment. The board members are providing leadership in understanding and managing ESG issues, for example, by initiating the port's participation in GRESB and a major consulting project which ranked over 20 potential sustainability capex projects at the port.

The port has invested \$A35 million in a new ship unloader for its bulk fertiliser and cement terminal, replacing a 50-year-old piece of equipment and more than tripling the throughput of this industrial terminal.

The port has also commenced a tender process for two mobile harbour cranes to start the process of building a significant container trade at this deepwater port which, given the channel depth already in place for coal vessels, can handle the world's largest and most fuel-efficient container vessels. Overall, the port is planning to spend more than \$A300 million over the next five years on diversification projects and up to \$A3 billion over the next 15 years (subject to government approvals on an expanded container terminal).

**\$A1.5 billion**

approximate economic contribution made by the region, nationally.



## Port of Newcastle

### Outcomes

This strong management engagement, strategic thinking, and responsible governance have put the port's future on a stable footing. The Strategic Development Plan 2040 outlines the strategic development opportunities and provides a blueprint for future investment and an ambitious diversification strategy.

This includes securing \$A515 million in sustainability-linked loans from National Australia Bank, the first financing of its kind to a seaport in Australia. The loans incentivise Port of Newcastle by offering a lower margin on debt if it hits targets across a range of social and environmental metrics, including modern slavery assessments for suppliers, emissions reduction, mental health first aid and diversity and inclusion.

Sustainable management has therefore become an integral part of how the port directs its activities. This means rigorous oversight of the environmental impacts and building a track-record of good performance. Future commitment to science-based targets will build on the reductions in CO<sub>2</sub> emissions already achieved.

Partnerships with community groups, customers, partners and tenants both root the port to its past and nurture its future. Funding and in-kind support have helped local projects thrive and community initiatives are providing lasting social and environmental benefits. For example, Port of Newcastle has recently launched its first Indigenous STEM Scholarship. This will enhance the local region's capacity to meet future technology-led jobs and support tertiary education pathways for indigenous students.

To bring great focus to the economic opportunities in the region, MAM recently coordinated a stakeholder day at the University of Newcastle titled "Diversifying NSW's 2nd City" which included equity and bank representatives and panel speakers from advanced manufacturers and new energy companies in the region.

All this helps the port to maintain a strong competitive position and remain a vital part of the region's economic and social infrastructure. Recent independent economic estimates show that it contributes approximately 5,700 direct and indirect jobs in the Lower Hunter region of New South Wales and makes a \$A1.5 billion economic contribution.<sup>1</sup>

### Key learnings

Active community engagement leads to better, more widely accepted decisions – especially important in times of change. As part of this, we have seen the benefits of reliable data and transparency. By being open about longer-term challenges, the port has built support for its agenda in a city that has relied on the coal industry for hundreds of years. Through engagement with initiatives like EcoPorts, a European port sector initiative that seeks to raise awareness on environmental protection and improve environmental management, we have also seen the benefits of sharing information and ideas, helping Australian ports to improve their environmental management.

# 5,700

direct and indirect jobs have been created in the Lower Hunter region.



“

At Port of Newcastle we think in decades, not days and months. We are focused on ensuring a sustainable business, that will continue to support the economy and the local community. The Port's continued work with MAM is supporting the realisation of our shared vision for a sustainable future.”

**Jackie Spiteri**  
Senior Manager ESG  
Port of Newcastle

1. Report shows Port of Newcastle an economic powerhouse for NSW and Australia.



TDC Group

# Connecting Denmark for everyone



**Sector:**  
Communications

**Location:**  
Denmark

**Investment date:**  
2018

**Contributing to the SDGs including**



Fast, reliable telecommunications are the backbone of global connectivity; however, our digital world raises issues of privacy and personal safety, especially for children. With MAM's support, Denmark's leading telecommunications provider<sup>1</sup> is raising digital awareness and keeping the country's children safe from online bullying and predatory behaviour.

**The challenge**

From ensuring widespread access to modern networks and equipping people with the right skills, the rapid transformation to a digital world is creating challenges for society. Addressing issues of internet safety, privacy and data protection are essential to tackle criminal activity, with safeguarding children particularly important.

As the largest telecommunications provider in Denmark, TDC recognises its responsibility to foster digital inclusion within the community. Children are engaging with technology at a younger age and, with issues such as cyber bullying a real concern, the younger generation needs support in how it interacts with the digital world.

**MAM's engagement**

Since becoming a partner in 2018, alongside our co-shareholders, we have been actively supporting TDC on one of the largest and most complex capital investment programmes in its history: upgrading and expanding its fibre network for one million households and businesses. TDC is committed to strengthening Denmark's mobile connectivity, investing early and at scale to deliver the country's next generation mobile network.

**Outcomes**

Following years of planning and investment, TDC's 4G and 5G outdoor mobile network now covers 99.5 per cent of Denmark and, for the sixth year in a row, has been recognised as providing the country's best mobile experience.<sup>2</sup>

TDC has also developed a number of effective partnerships to foster digital inclusion within the community. For example, the 'Parents in the Digital World' initiative, delivered in collaboration with Børns Vilkår, the organisation behind the national children's helpline, combats cyber bullying by helping parents understand their children's digital lives and equip them with tools to engage with their children about positive and safe behaviour online. A recent awareness campaign on the topic of 'Sharenting' reached more than 200,000 people.

The 'WiFive' initiative, in partnership with the 'Danish Pupils' Association' (DSE, Danske Skoleelever), is helping students aged 8-12 to strengthen their digital awareness and online skills and gain their 'digital driver's licence'. In 2020, TDC and DSE operated courses for more than 1,900 schoolteachers, across almost 770 schools, to support them in teaching their pupils about digital citizenship and skills. Since the programme materials first launched in 2018, they have reached almost 100,000 pupils and are present at every third school in Denmark.

**Key learnings**

Cooperation is essential to designing and delivering innovative programmes. These are real-world examples of how the partnerships can make a tangible difference.

They also show the value of ambition. TDC is applying similar ambition to protect the environment. In 2019, it announced its pledge to become 100 per cent carbon-neutral in 2028 and to reduce CO<sub>2</sub> emissions by 50 per cent in 2023, against a 2020 baseline.

TDC has committed to set targets in line with the Science Based Targets initiative for ambitious climate action, including a scope 3 emissions reduction target, by September 2021. It also completed its first-ever Scope 3 emissions inventory in 2020, which revealed that the company's total value chain emissions are approximately 2.5 times greater than those arising from their direct operations. While this indicates the scale of the challenge ahead, the positive experience from recent emission reductions and the benefits of a collaborative approach are cause to be optimistic about the future.

1. TDC - Who we are. 2. Danish Technological Institute rates TDC as best mobile network provider in Denmark (April 2021).

**100,000**

Danish school pupils have been reached through TDC Group's 'WiFive' initiative.





FIBRA Macquarie

# Building sustainability in Mexico



**Sector:**  
Real Estate

**Location:**  
Mexico

Actively managed listed fund

Contributing to the SDGs including



Owning more than 250 industrial and retail properties, across some 20 cities, FIBRA Macquarie is a driving force in improving the sustainability of the real estate industry in Mexico.

**The challenge**

The real estate sector has a significant impact on the planet, consuming more than 40 per cent of global energy and producing 20 per cent of greenhouse gas emissions. To reach the Paris Agreement goals, the sector is under pressure to improve the efficiency and energy management of properties, while using more sustainable materials.

FIBRA Macquarie is a real estate investment trust, focusing on the acquisition, development, ownership, leasing and management of industrial and retail real estate in Mexico. We recognise that managing our portfolio for sustainable long-term success is a fundamental part of our responsibility to our stakeholders. ESG best practice is critical as we aim for continuous improvement in delivering environmental and financial returns.

**MAM's engagement**

We have been committed to implementing ESG best practice since our first day of operations in 2012. We have developed and deployed sustainability guidance, adopting the LEED® framework, to set a standard of excellence for all renovation work and raise our properties to the highest and most recognised construction criteria.

We have also developed a Sustainability Design and Construction, which covers the best ESG practices in the LEED categories. These standards are mandatory for all LEED-certified new construction, with some aspects also mandatory for alterations and improvements for properties that do not yet have sustainable certification.

**Outcomes**

Our approach has improved our sustainability performance and led to improving scores in the Global Real Estate Sustainability Benchmark (GRESB), with the 2020 benchmarking resulting in FIBRA Macquarie being awarded Three Green Stars. A good example is the design and development of an industrial property in Ciudad Juárez, Mexico, which achieved LEEDv4 Core and Shell Gold certification. The 217,000 square foot building combines technical features to minimise the environmental impact with tenant guidelines and educational signs that help interior adaptations and occupants to use the building in the most efficient way.

Starting with construction, the life cycle of the building materials was assessed; 21 per cent of the materials contains recycled content. Low energy lighting, thermal insulation and efficient HVAC systems create estimated energy savings of more than 20 per cent.

The building has easy and safe pedestrian access to local services and public transport, with preferential parking for car-pooled vehicles and bicycles, to reduce the impact of travel. The site's green areas have only native-adapted species, while water-saving fixtures and reuse of treated water for irrigation and bathrooms cut 77 per cent of total water consumption from the net. All used water is treated onsite and most of it reused onsite, while to neutralise any freshwater pollution, all rainfall is captured through a storm water basin and wells before being re-infiltrated to the ground.

Furthermore, six of our retail portfolio assets have received BOMA Best Bronze certification. Achieving this involved establishing various systems including a tenant engagement programme and a detailed five-year improvement plan to optimise operational and maintenance processes in order to achieve the highest levels of efficiency possible.

**Key learnings**

Good design and operating practices can be successfully implemented in new builds and make a real difference to our environment. However, we know making improvements to our existing building stock is a greater challenge and we have plans for additional green building certifications across the portfolio in the future.

Securing the support of tenants is a significant challenge. There is more progress to be made in the development of green leasing arrangements. As such we have developed and certified our green lease template under Green Lease Leaders and have provided sustainability training for our tenants to encourage the attainment of our common efficiency goals.

Creating awareness of better building design and operation is vital to make the sector more sustainable. In addition to creating the first LEEDv4 Core and Shell Gold certified industrial building in Latin America, we are the first to promote awareness of this by reporting against Sustainability Accounting Standards Board (SASB) requirements for real estate in addition to our existing Global Reporting Initiative (GRI) disclosures and Task Force on Climate-related Financial Disclosures (TCFD) in our FIBRA Macquarie ESG report for 2020.

## Six assets

Have received BOMA Best certification, the highest levels of efficiency possible.



Energy Development Corporation (EDC)

# Powering economic and social development in the Philippines



**Sector:**  
Renewable Power Generation

**Location:**  
The Philippines

**Investment date:**  
2017

Contributing to the SDGs including



Faced with the devastating impacts of climate change, Energy Development Corporation (EDC) had to act quickly to ensure the community had a reliable energy supply. Working closely with the local community and with MAM's support, EDC is now providing secure, clean and safe energy to communities across the country.

**The challenge**

Changes to our climate and the growing global demand for energy have created an urgent need to transform how we produce and consume energy. This is not only about long-term action. We can already see the immediate physical impacts of climate change, through the greater frequency and severity of extreme weather events.

In 2017, typhoon Urduja hit the Philippines, reducing generation capacity at EDC's Malitbog geothermal power plant by 50 per cent. The area was still recovering from a serious earthquake at the time, the consequences of which included regular power shortages, economic disruption and damage to property and livelihoods.

**MAM's engagement**

In 2017, a MAM-led consortium acquired a majority stake in EDC. As a major investor in renewables, overseeing investment in 12.4GW of green generation capacity worldwide, our experience supported the business as it improved the resilience of its portfolio and the reliability of energy supply.

EDC's investment included installing geohazard early warning systems, improved weather forecasting and more robust modelling to mitigate physical risk. For example, the business is reconfiguring and reinforcing pipelines and cooling towers to protect against seismic and typhoon-related disruptions. And by improving the accompanying infrastructure, such as roads, these modifications have benefited local communities too.

**Outcomes**

EDC has become the Philippines' leading 100 per cent renewable energy provider.<sup>1</sup> Through a portfolio of geothermal, wind, hydroelectric and solar energy, its 1.5GW accounts for almost 20 per cent of the country's total installed renewable energy capacity. The company is a critical component of the country's energy landscape, providing an uninterrupted supply of reliable, cleaner and cheaper power.

EDC has also helped more businesses move towards renewable energy. In 2019, it provided renewable energy at 92 customer facilities, a 29.8 per cent increase from the previous year. All while growing revenue by more than 10 per cent.

EDC also works closely with local communities and barangays (local administrative divisions of government), actively supporting agroforestry and enterprise development to provide livelihoods for more than 100 partner community organisations. EDC is the only Philippine partner of the IUCN's secretariat and Botanic Gardens Conservation International (BGCI), the world's largest plant conservation network, and has helped to establish emergency response teams and planning, while minimising landslide risk and protecting biodiversity, by planting indigenous species on almost 10,000 hectares. Furthermore, with the help of 186 partners across the country, it is propagating 96 flagship Philippine native tree species and, as part of BGCI's Global Tree Assessment (GTA), has already assessed 800 tree species, with 498 of them already updated and published in the International Union for Conservation of Nature (IUCN) Red List.

EDC has chosen a path characterised by profound care for the wellbeing of its people. This is emphasised in the organisation's values and mission - to 'forge collaborative pathways for a decarbonised and regenerative future'.<sup>1</sup> It is also reflected in its recruitment approach, seeking those with the highest regard for the environment, community and business partners. In short, people who are 'powered by good'.

**Key learnings**

The destructive impacts of climate change have shown the need for early investment in resilient and renewable infrastructure. In supporting this transition, EDC is helping to provide a clean, sustainable and reliable energy for everyone.

EDC's focus is now firmly on the implementation of a new business model in which everyone needs to transform to regenerative development. Recognising that no one organisation can succeed alone, the approach involves active and wide-reaching collaboration with all stakeholders. The aim of this mutually beneficial and committed stakeholder ecosystem is to do more than preserve and protect, its aim is to heal and ensure everyone has the opportunity to thrive in a healthier and safer environment.

**1.5GW**

accounts for 20 per cent of the country's installed renewable energy capacity.

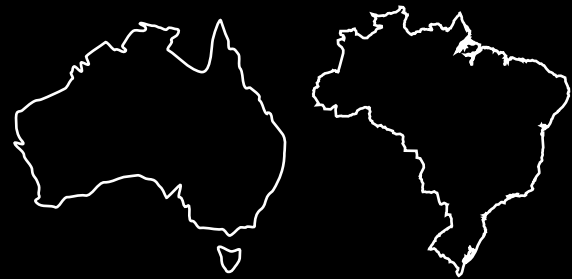
<sup>1</sup> EDC: Powering infinite possibilities through renewable energy.





MAM Agriculture and Natural Assets

# Farms of the future



**Sector:**  
Agriculture

**Location:**  
Australia and Brazil

**Contributing to the SDGs including**



Food is one of the world's most critical resources but as the weather gets more unpredictable and the global population continues to grow, food production and food security have never been more important. As one of the largest agriculture investment managers in the world, we are working with farmers to adapt and implement sustainable farming practices.



**The challenge**

With rapid population growth and increasing demand for better standards of living, the pressure on natural resources around the world has increased exponentially.

For the agricultural sector, this means improving the productivity of every hectare of land and protecting the ecosystems and natural resources of which farmers have been stewards for generations. There is pressure to produce more with less, while maintaining high standards of quality and safety.

To address this challenging context, farmers around the world have adopted parallel but complementary strategies. On the one hand, adopting natural climate solutions, such as reforestation, cover crops and wetlands restoration and, on the other, deploying increasingly sophisticated technology and data. For example, using analytics to improve yield and productivity, or satellite technology to maximise the precision and efficiency of inputs such as fertiliser. Piloting and implementing on-farm technology has also become an important driver of change in farming.

**MAM's engagement**

MAM's support for a net zero carbon future, captured in our own commitment, has set the scene for net zero efforts across our agriculture portfolio in Australia and Brazil. This has helped frame the approach to sustainability, as well as develop key performance indicators to measure progress.

Our asset managers develop plans for deploying resources and engaging with local communities, while promoting safety and good labour conditions for staff. Most of those involved live in the farming communities, reinforcing their ties to the local community.

We are encouraging the adoption of performance targets and promote regular reporting, which is then consolidated in an annual agriculture sustainability report.

**Outcomes**

We have delivered improved asset performance against a range of key metrics. For a number of years, we have measured the soil pH level, a key indicator of soil health, and pursued a target range of 5.5-7.0 for this level across our Australian portfolios. The data shows significant improvements due to soil maintenance programs implemented by management, with portfolios achieving or moving towards the target range.

Since 2019, we have been able to measure the emissions per unit of output for the Viridis Ag row cropping portfolio, using the FarmPrint tool. From 2019 to 2020, emissions intensity improved from 0.27 tCO<sub>2</sub>-e to 0.19 tCO<sub>2</sub>-e per tonne of production. We were able to understand the drivers of improvement, which included higher production due to strong rainfall, coupled with ongoing investment into energy efficient technologies and practices.

We are conscious that performance in our sector is heavily weather dependent, with no guarantee of continuous improvement every year, so it is critical to look at trends in performance over the long term.

There is evidence to suggest that, as sustainable practices are pursued, financial returns improve. For example, our portfolio companies have set a target of 100 per cent utilisation of Variable Rate Technology (VRT) for fertiliser application, to reduce both environmental impact and production costs. We are also seeing sustainable practices driving improvements in the livelihoods of local communities, where there is growing pride in adopting methods that demonstrate stewardship of the natural environment.

**Key learnings**

Systematic reporting is an important driver of good practice and a way of sharing awareness of key issues. In some cases, this involves reporting on actions that farmers have been

carrying out for years, but in others it requires new ways of thinking about a familiar challenge.

This is why MAM Agriculture annually reports its key metrics, including soil pH levels, emissions efficiency, VRT utilisation, water use efficiency, training hours and more. For some metrics such as emissions efficiency, we also benchmark our performance against regional peers, to understand where more improvement could be achieved.

In addition to key metrics, MAM Agriculture has been reporting against the UN SDGs since 2018. This framework resonates with our investors around the world and provides a common language that enables users to focus their efforts.

## 4.7 million ha

of farmland under management across Australia and Brazil.



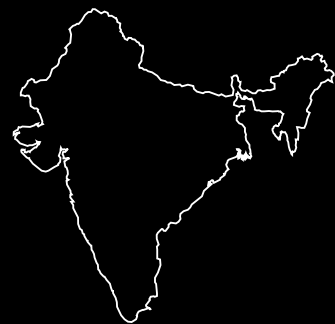
The creation of resilient farmland portfolios that can adapt to changing climate conditions and improve the natural resource base is core to what we do. The investment in technology and efficient infrastructure will drive productivity and lower GHG emissions, creating value for our investors and the communities in which we operate."

**Elizabeth O'Leary**  
Head of Agriculture and Natural Assets



Stride Climate Investments

# Renewable energy and community engagement in rural India

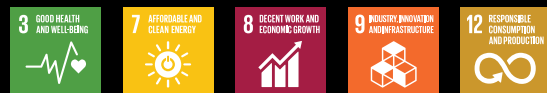


**Sector:**  
Renewable energy

**Location:**  
India

**Investment date:**  
2017

Contributing to the SDGs including



By working closely with local farmers, MAM and Stride Climate Investments have found ways to supply safer and more reliable power to the local grid while improving air quality, reducing GHG emissions and enhancing the operational efficiency of the solar panels - simple solutions with profound health, environmental and economic benefits.

**The challenge**

Because of adverse natural weather conditions and the impact of local farming practices, Stride has faced a number of operational challenges.

Regular crop residue burning by the farmers generates significant amounts of airborne ash at Stride's Punjab site, reducing the air quality, increasing greenhouse gas emissions and the risk of onsite fire. Poor air quality compromised employee wellbeing while reducing sunlight penetration and caused ash to accumulate on solar modules, reducing power generation.

Cultural challenges around road safety have also been an issue, with greater awareness needed in the local community.

**MAM's engagement**

A multi-dimensional response has been pursued, embracing new technology and a renewed focus on community engagement and outreach.

The initiatives were instigated and overseen by the local management team and fully align with our joint emphasis on preventative action to minimise environmental impact and our shared commitment to the

safety of employees and the public. They demonstrate our ambition to make a positive contribution and to have a durable beneficial impact wherever we have investments.

**Outcomes**

The result has been better environmental and operational performance. Following consultation, an agreement was reached with local farmers to collect and donate crop residue as feedstock to a local biogas plant. This 2,700 tonnes of residue has saved approximately 4,700 tonnes of greenhouse gas emissions, improving the air quality and reducing the fire risk and frequency of cleaning of the solar modules.

Drones have been deployed to monitor arrays and detect module degradation or shading issues, generating results as much as ten times faster than manual methods and enabling a rapid response to any issues. This has maximised power output and eliminated a number of safety risks.

There has also been a marked improvement in safety. Weather reports are monitored and emergency notifications and updates are communicated to all employees via email and SMS alerts.

Extreme weather resilience plans and controls at each of the facilities have made sure that there were no employee injuries or major asset damage when cyclones Fani and Vayu struck during 2019, while ensuring continuity for the impacted communities that rely on Stride's solar power. Emergency response training and audits have been carried out, with evacuation vehicles on standby during high-risk periods.

With road safety, a dedicated week involved members of the workforce and the public in awareness raising and training exercises designed to enhance pedestrian, occupational and vehicle road safety. This included getting involved in a national safety week campaign of training at several local schools and universities, focusing on first aid; road, fire and electrical safety; and COVID-19 awareness.

**Key learnings**

By combining traditional methods of engagement to improve safety with embracing new technology, Stride has shown a considered approach that ensures employee safety, as well as protects the company's assets and improves business continuity for all its customers.



**4,700 tonnes**

of greenhouse gas emissions saved by creating biogas at a local plant.



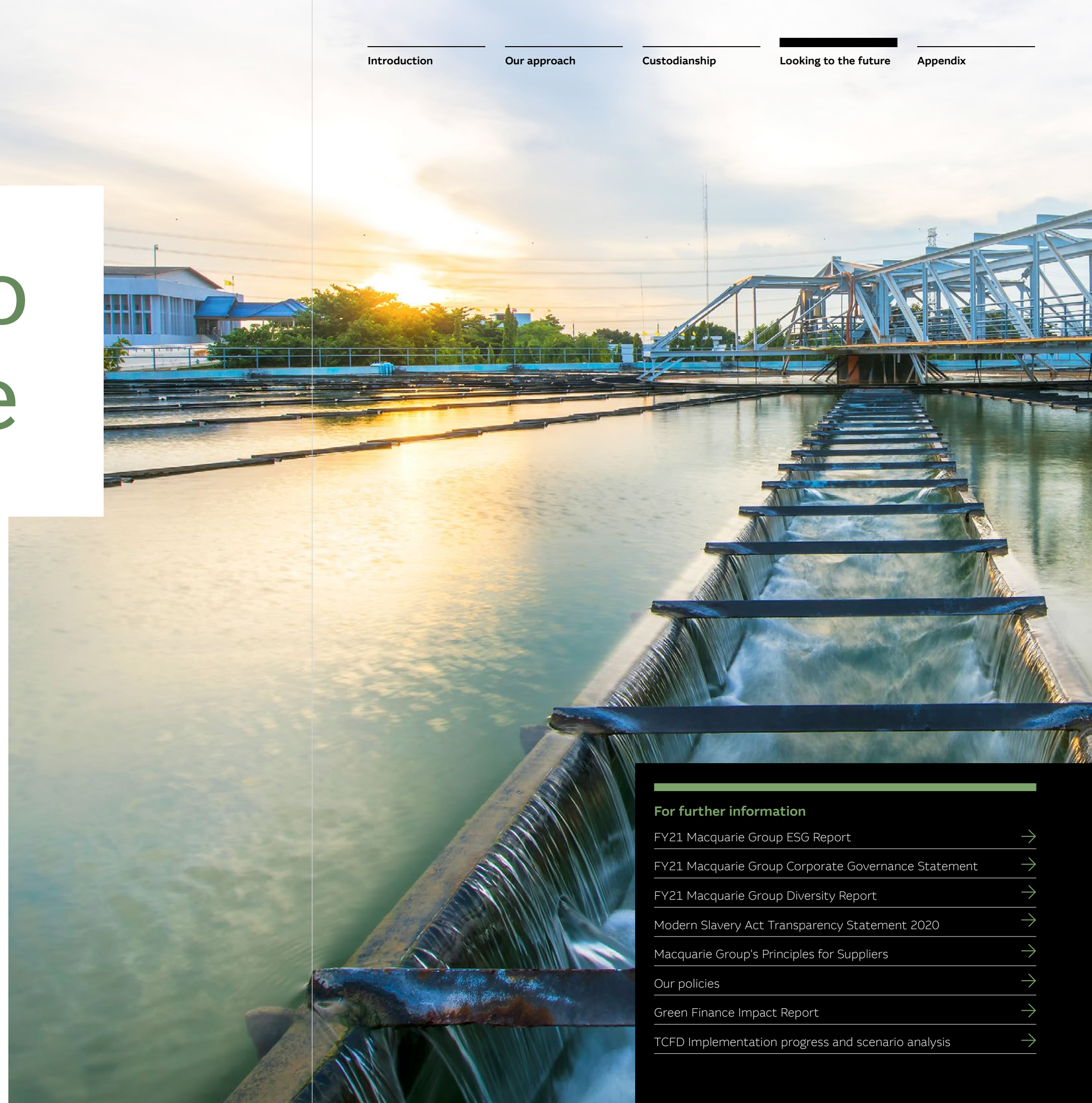
# Looking to the future

Meaningful sustainability requires collaboration and partnership. And it demands improvement in our own operations, with even more effective engagement with our assets, across the diverse challenges posed by their different sectors and geographies.

We have already made a number of clear commitments and important targets to deliver change, such as managing our portfolio in line with net zero by 2040. We are actively engaged with a wide range of multi-party organisations, such as Ceres and the IIGCC, and are committed to further integrating the UN SDGs into our business processes, with regular reporting on our progress. We have a clear plan of action over the next 12 months to drive progress on diversity and inclusion.

With our assets, we are already catalysing more effective management of ESG issues and will continue to work closely with them.

This report provides some insight into our activities and our aspirations, as we keep working towards continuous improvement across all the dimensions of sustainability. We remain committed to reporting openly and transparently on our successes and our failures as we continue on this important journey.



## For further information

- [FY21 Macquarie Group ESG Report](#) →
- [FY21 Macquarie Group Corporate Governance Statement](#) →
- [FY21 Macquarie Group Diversity Report](#) →
- [Modern Slavery Act Transparency Statement 2020](#) →
- [Macquarie Group's Principles for Suppliers](#) →
- [Our policies](#) →
- [Green Finance Impact Report](#) →
- [TCFD Implementation progress and scenario analysis](#) →



# Appendix

## Australian Decarbonisation Project

Infrastructure accounts for a substantial portion of Australia's total greenhouse gas emissions. As the world's largest real asset manager, MAM is uniquely positioned to help address the climate change mitigation challenge facing Australia and the world. With a stated ambition to be the global leader in sustainable real asset management, MAM has been actively encouraging and supporting action on climate change mitigation for many years as demonstrated by the continued progress of MAM's Australian decarbonisation project.

In October 2019, the Australian Government's Clean Energy Finance Corporation (CEFC) committed \$A100 million towards 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. In

order to achieve this objective, MAM and CEFC subsequently established an emissions committee and launched MAM's Australian decarbonisation project.

The project commenced with a decarbonisation workshop with representatives from across MAM's Australian infrastructure portfolio businesses. The workshop provided participants with information and tools that highlighted the importance of reducing greenhouse gas emissions, explained the target-setting process and provided case studies that showcased feasible and tested industry-relevant emissions abatement opportunities.

Since the workshop, nine Australian infrastructure portfolio companies have so far adopted or committed to adopt emissions reduction targets. These targets include emissions intensity reduction targets, aspirational science-based targets developed using the Science Based Target initiative (SBTi) framework and net zero targets. This process

has involved establishing baseline emissions inventories, developing business-as-usual emissions trajectories, setting emissions reduction targets and identifying abatement initiatives to enable participants to achieve their targets.

Since it first began, the level of ambition of MAM's Australian decarbonisation project has increased. Work is currently underway to help existing and new project participants upgrade their targets to align with MAM's 2040 net zero commitment announced in December 2020.

Last year, we described the origins and foundational work of the Australian decarbonisation project. This year, we examine how the emissions of our Australian infrastructure portfolio have varied over time, review the progress of project participants against their emissions reduction targets and provide updates for key abatement initiatives underway across our Australian infrastructure portfolio.

## MAM Australian infrastructure portfolio greenhouse gas emissions footprint

MAM continues to track the scope 1 and 2 emissions of our infrastructure portfolio. Table 1 below provides a breakdown of the scope 1 and scope 2 emissions of MAM's Australian infrastructure portfolio by sector.

**Table 1: Absolute and equity stake scopes 1 and 2 greenhouse gas emissions of MAM's Australian infrastructure portfolio by sector.<sup>1</sup>**

Sector	2018		2019		2020	
	Absolute emissions <sup>2</sup>	Equity stake emissions <sup>3</sup>	Absolute emissions	Equity stake emissions	Absolute emissions	Equity stake emissions
Utilities	681,197	106,467	838,415	121,986	812,925	116,401
Rail	153,158	56,209	147,225	54,032	140,072	63,815
Airports	0	0	54,815	10,630	54,856	10,310
Ports	0	0	3,545	1,773	2,412	1,206
Digital infrastructure	843	378	917	358	63,225	55,502
<b>Total</b>	<b>835,198</b>	<b>163,054</b>	<b>1,044,917</b>	<b>188,779</b>	<b>1,073,489</b>	<b>247,234</b>

1. Sources of reported data include data reported by external sustainability consultants, publicly available National Greenhouse Energy Reporting data and data self-reported by each asset. Some emissions data may not have been independently verified or assured to confirm its accuracy. MAM does not make any claim concerning the accuracy of reported data. Table excludes the following portfolio companies for which MAM managed an interest during calendar years 2018-2020: Celsius, Land Services WA and Sydney Desalination Plant. These non-reported assets combined are estimated to represent less than 1 per cent of total emissions for the relevant reporting periods. 2. The aggregate scope 1 and scope 2 emissions of reporting portfolio companies. 3. Calculated based on the proportionate share of portfolio company scopes 1 and 2 emissions which reflects the combined interest held by MAM, its managed funds, its advised funds and its clients.

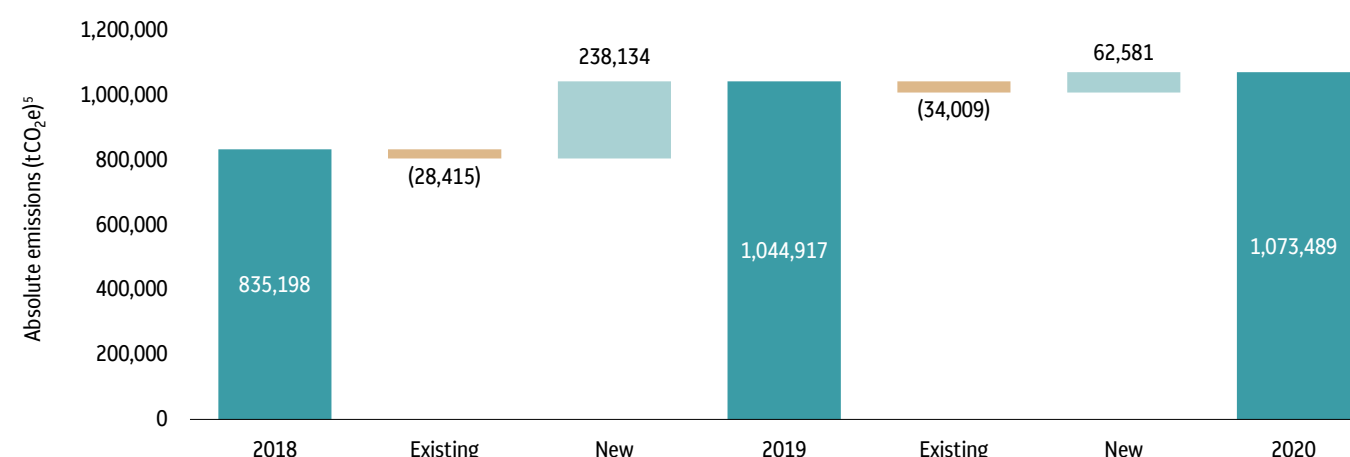
Table 1 shows that utilities and rail investments remain the most significant emitters of scopes 1 and 2 emissions. In 2020, utilities and rail contributed approximately 76 per cent and 13 per cent of the total scope 1 and 2 absolute emissions of MAM's Australian infrastructure portfolio, respectively. Approximately 98 per cent 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 clean energy generation.

Figure 1 depicts how new and existing investments have contributed to the greenhouse gas

emissions profile of MAM's Australian infrastructure portfolio. As shown, increases in the absolute and equity stake greenhouse gas emissions of MAM's Australian infrastructure portfolio are wholly attributable to new acquisitions, while the existing portfolio has exhibited a net decrease in its scopes 1 and 2 greenhouse gas emissions each year since 2018.

**Figure 1: Contribution of existing and new investments to the annual emissions profile of MAM's Australian infrastructure portfolio<sup>4</sup>**



We recognise that the impacts of COVID-19 have contributed to a decrease in the scopes 1 and 2 emissions of many investments in the Australian infrastructure portfolio (especially airports) and while we continue to encourage and support the decarbonisation of our Australian infrastructure assets, we expect that emissions may temporarily increase at some portfolio companies as they resume normal levels of operation. The impacts of COVID-19 have not reduced the emissions of airports as much as anticipated due to ongoing electricity consumption requirements for essential services and expedited development activity during the period.

4. Sources of reported data include data reported by external sustainability consultants, publicly available National Greenhouse Energy Reporting data and data self-reported by each asset. Some emissions data may not have been independently verified or assured to confirm its accuracy. MAM does not make any claim concerning the accuracy of reported data. Table excludes the following portfolio companies for which MAM managed an interest during calendar years 2018-2020: Celsius, Land Services WA and Sydney Desalination Plant. These non-reported assets combined are estimated to represent less than 1 per cent of total emissions for the relevant reporting periods. Where investment has been made mid-year, the total annual scopes 1 and 2 emissions of the portfolio company have been accounted for in that calendar year. This means, for example, that the total annual scopes 1 and 2 emissions of a portfolio company acquired in December 2018 are accounted for in the 2019 total. 5. The aggregate scope 1 and scope 2 emissions of reporting portfolio companies.



## Appendix

### Australian Decarbonisation Project progress update

Of the nine Australian infrastructure portfolio companies that have adopted or committed to adopt emissions reduction targets, six have finalised targets as outlined in Table 2. MAM continues to encourage and support all of our Australian infrastructure companies to adopt emissions reduction targets aligned with MAM's 2040 net zero commitment.

**Table 2: Australian infrastructure portfolio company emissions reduction targets<sup>6</sup>**

Asset	Baseline year	Baseline year emissions (tCO <sub>2</sub> e) <sup>7</sup>	Target year	Target year emissions (tCO <sub>2</sub> e)	Targeted reduction (tCO <sub>2</sub> e)	Targeted reduction (%)
<b>Endeavour Energy</b> Key abatement initiatives: • Conservation voltage optimisation (CVO) • Onsite solar installation • SF6 replacement	FY19	668,778	FY35	401,267	(267,511)	(40%)
<b>One Rail Australia</b> Key abatement initiatives: • Locomotive efficiency optimisation • Restricted idle and notch limiting • Locomotive batteries and regenerative braking	FY19	143,532	FY30	- <sup>8</sup>	- <sup>8</sup>	(10%)
<b>Perth Airport<sup>9</sup></b> Key abatement initiatives: • Building lighting efficiency upgrades • Investigating installation of onsite renewables • Trialling electric vehicles for corporate fleet	FY18	24,080	FY30	0	(24,080)	(100%)
<b>Port of Newcastle</b> Key abatement initiatives: • Renewable power purchase agreement • Electric vehicle corporate fleet • Lighting energy efficiency upgrade	CY18	3,410	CY30	2,387	(1,023)	(30%)
<b>Land Services SA</b> Key abatement initiatives: • Relocation to more sustainable office building • Electric vehicle corporate fleet • Digitisation of documentation	FY19	101	FY30	55	(46)	(46%)
<b>NSW Land Registry Services</b> Key abatement initiatives: • Relocation to more sustainable office building • Building lighting upgrades • Migration to agile IT infrastructure	FY20	188	FY24	153	(35)	(19%)
<b>Total</b>		<b>840,273</b>		<b>403,861</b>	<b>292,695</b>	<b>(34%)</b>

6. Table 2 excludes three assets that have committed to adopt emission reduction targets or are currently underway developing emissions reduction targets. 7. The baseline emissions of Endeavour Energy and Port of Newcastle are different to those reported last year because these portfolio companies have used the latest available information and data sources to improve the accuracy of their baselines retrospectively. The targeted reductions (%) reported by each remain the same. 8. One Rail Australia's emissions reduction target is, by FY30, to reduce their scopes 1 and 2 emissions intensity (tCO<sub>2</sub>e per gross tonne kilometre) by 10 per cent from a FY19 baseline. 9. In 2021, Perth Airport introduced a new, more ambitious 2030 net zero target that superseded their previous target reported last year.

Australian decarbonisation project participants continue to track progress against their emissions reduction targets as shown by Table 3. Cumulatively, these companies have so far abated 57,940 tCO<sub>2</sub>e since 2018. While the scopes 1 and 2 emissions of Perth Airport have Land Services SA have increased slightly due to higher than forecast activity levels, the annual emissions of each are expected to dip beneath their target trajectories as their abatement initiatives progress.

**Table 3: Progress against emissions reduction targets<sup>10</sup>**

Asset	Baseline year <sup>11</sup>	2018			2019			2020			Reduction from BAU	
		BAU	Target	Actual	BAU	Target	Actual	BAU	Target	Actual	tCO <sub>2</sub> e <sup>12</sup>	% <sup>13</sup>
Endeavour Energy	FY19	-	-	-	668,778	668,778	668,778	678,699	652,059	631,894	(46,805)	(3%)
One Rail Australia	FY19	-	-	-	143,532	-	143,532	157,825	-	140,762	(17,153)	(6%)
Perth Airport	FY18	24,080	24,080	24,080	24,080	22,073	27,006	23,884	20,067	28,968	8,010	11%
Port of Newcastle	CY18	3,410	3,410	3,410	3,860	3,325	3,545	4,099	3,240	2,412	(2,002)	(18%)
Land Services SA	FY19	-	-	-	101	101	101	94	99	104	10	5%
<b>Total</b>		<b>27,490</b>	<b>27,490</b>	<b>27,490</b>	<b>840,351</b>	<b>839,067</b>	<b>842,962</b>	<b>864,601</b>	<b>675,464</b>	<b>802,023</b>	<b>(57,940)</b>	<b>(3%)</b>

### Australian Decarbonisation Project key abatement initiatives

During the course of the Australian decarbonisation project to date, numerous abatement initiatives have been identified, explored and implemented by project participants. Learnings and challenges have been leveraged across MAM's global portfolio as well as shared with wider industry.

#### Conservation voltage optimisation (Endeavour Energy)

During the early stages of the Australian decarbonisation project, Endeavour Energy identified a key abatement initiative that has continued to exhibit promising results in its efficacy to reduce scope 2 emissions associated with electricity distribution network line losses.

Conservation voltage optimisation (CVO) helps regulate voltage swings on electricity networks, enabling the entire network to operate at a lower voltage set point and still achieve minimum voltage requirements at the fringe of the network. The technology utilises smart meter data, substation software algorithms and a relatively small number of physical units (STATCOMS) installed atop power poles at key points across 2-3 per cent of the network to monitor and respond to changes in network voltage associated with spikes and troughs in electricity demand.

Endeavour Energy has so far successfully completed Stage One trials of the CVO technology involving a very small portion of the network and Stage Two trials are currently underway to test the efficacy of the units across a larger area, involving deployment of 20-30 STATCOMS across the network.

Promising preliminary results indicate that at full scale the CVO technology may be able to achieve 2.6 MtCO<sub>2</sub>e of greenhouse gas emissions abatement if deployed across the National Electricity Market, as well as reductions in consumer electricity bills, improved household appliance lifespan and avoided curtailment of solar hosting.

In August 2020, MAM facilitated an industry forum hosted by Endeavour Energy aimed at sharing lessons learned in respect of its sustainability initiatives, including CVO and other abatement initiatives, with other Australian distribution network service providers and their investors. Representatives from several electricity network transmission and distribution network service providers across Australia joined the forum to share and discuss case studies and opportunities relating to sustainability and emissions reduction.

10. All tabulated figures represent absolute combined scopes 1 and 2 emissions. Assets that have not yet reported a full year of data since their baseline have been excluded. 11. "FY" refers to the Australian financial year ending 30 June while "CY" refers to calendar year ending 31 December. 12. Cumulative reduction from BAU (tCO<sub>2</sub>e) calculated as the sum of actual emissions less the sum of BAU emissions for years 2018-2020. 13. Cumulative reduction from BAU (%) calculated as the cumulative reduction from BAU (tCO<sub>2</sub>e) divided by the sum of BAU for years 2018-2020.



**MIRAFunds.com**

For more information, please  
contact our Sustainability team

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**Sydney**

50 Martin Place  
Sydney NSW 2000  
Australia

T +61 2 8237 2330  
T +61 2 8232 4713

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**London**

Ropemaker Place  
28 Ropemaker Street  
London EC2Y 9HD  
United Kingdom

T +44 20 3037 2000  
T +44 20 3037 2017

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**New York**

125 West 55th Street  
New York NY 10019  
USA

T +1 212 231 1000  
T +1 212 231 1828