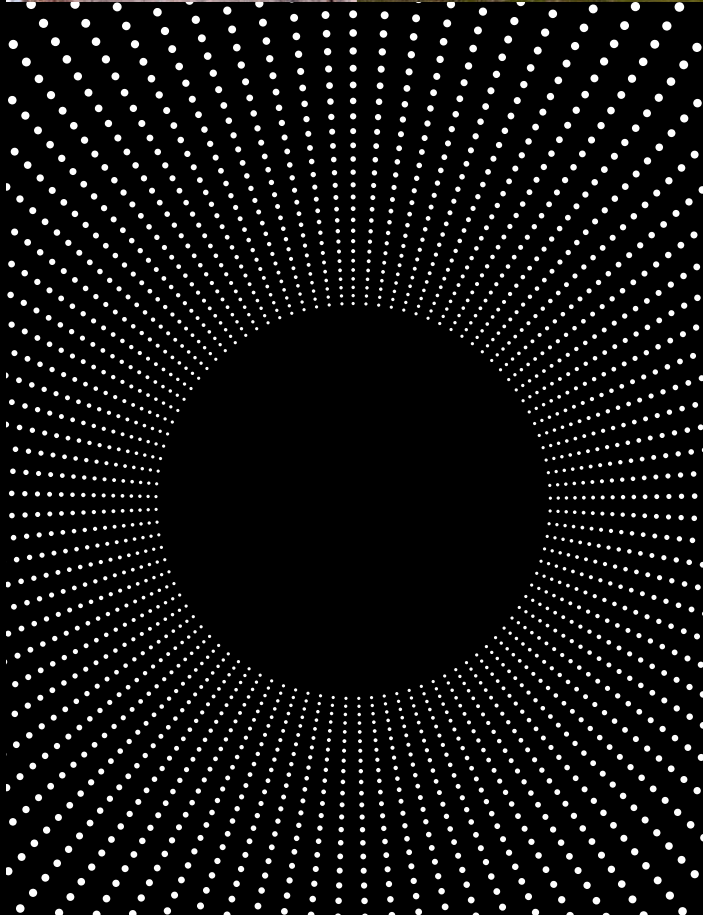
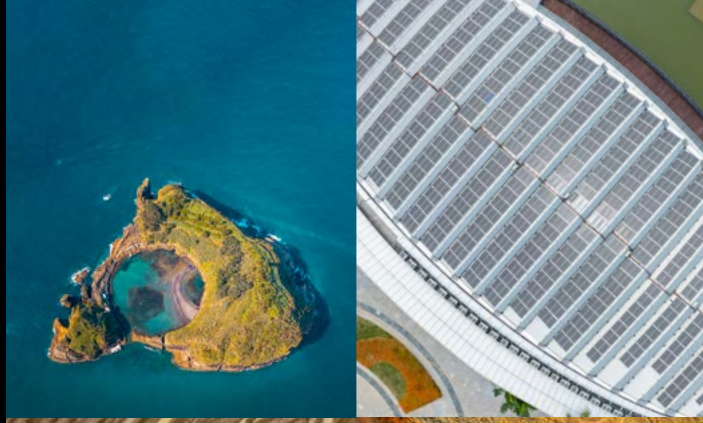


Net Zero and Climate Risk Report

Macquarie Group
5 December 2022





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Important information

This Report contains forward-looking statements, including climate-related goals, targets, pathways and ambitions. These statements are subject to various factors, many of which are beyond the control of Macquarie, which may cause actual results to differ materially from those expressed or implied in those statements. Whilst the measures and statements in this Report reflect Macquarie's best estimates and judgments as at the date of this Report, Macquarie's views may change in the future as metrics, methodologies and models evolve. This Report should be read together with the disclaimer on page 77 and the limitations and qualifications provided in the body of the report.



01

Foreword from
Macquarie's CEO

Macquarie's response to climate change is rooted in our organisational purpose — to empower people to innovate and invest for a better future.



Our response is based on three overarching principles:

First, the science on our changing climate is clear and unequivocal. In its latest report, the UN's Intergovernmental Panel on Climate Change noted that the world is already seeing widespread climate disruption, affecting the lives of billions of people, and that we can expect additional severe climate impacts. Human-induced climate change, and the global response to it, is an intergenerational issue that has for some time shaped the focus and ongoing development of our business.

Second, our greatest contribution will come through positive and practical climate solutions driven by our core capabilities. This includes developing and investing in green energy projects and related technologies at scale, advancing new climate solutions in transport, land use, buildings, and industrial processes, and aligning the world's largest portfolio of infrastructure assets with global net zero emissions by 2040, while adapting to a fast-changing climate.

Third, we believe in a managed, orderly, and just transition. This means supporting carbon-intensive industries and companies including those in the oil/gas, electricity, agriculture, mining, transport, and waste sectors to decarbonise, while protecting the vital services and jobs that our communities rely on. We have a global approach, including an important focus on emerging markets where the transition is lagging, and more rapid progress is needed if these markets are to meet their sustainable growth ambitions within wider global climate goals.

As this Report shows, Macquarie is already supporting a range of practical climate solutions. We are the top-ranked global financial adviser for renewables,¹ and we have recently significantly increased our investment in the green energy that the world needs and investors are seeking to fund. At the end of September 2022, we were involved in green energy projects totalling over 100 GW, with more than half of that total added to the development pipeline in the first half of Macquarie's current financial year. Beyond energy, we have been working with clients to support the decarbonisation of

the other major sources of emissions, including transport, agriculture and reducing the energy intensity of industrial processes. Our fossil fuel financed emissions are already relatively small compared to our global peers, and we expect to see them reduce further as we implement our pre-existing commitment to run-off our limited remaining equity and lending exposures to the coal sector by 2024.² In addition, we are targeting emissions intensity reductions in the oil/gas and motor vehicle sectors. We will add to these sectors of focus in the years ahead.

Events of the past year have shown us that the world's pathway to net zero will not be straightforward. It is clearer than ever that accelerating the deployment of climate solutions is the best collective response to our challenges — providing greater long-term energy security at the lowest cost. While we must act with urgency, we will also need to be patient as the transition will take time, and may require our financed emissions to go up on occasion as we positively engage with high-carbon industries to help them invest to deliver the changes that they need to make.

Finally, while the actions of individual institutions are important, they are more powerful when pursued with partners. The global transition to net zero will demand strong partnerships between financial institutions and our clients, between the private and public sectors, and with communities, whose ongoing support for this unprecedented global transition is critical. We are committed to maintaining and strengthening these partnerships.

We hope that this Report gives you a clear sense of how we think about our contribution to the world's transition to net zero, the role we play in driving practical and positive climate solutions, and how we manage climate risk.

We look forward to providing you with regular updates on our progress.

Shemara Wikramanayake
Chief Executive Officer
Macquarie Group

1. No. 1 Global Renewables Infrastructure Financial Adviser, IJ Global (CY2021 by value).
2. Supporting the transition to a net zero economy, macquarie.com.

An aerial photograph of agricultural fields. The fields are divided into various sections, some with distinct patterns of furrows. In the center, there is a circular field with a red tractor parked in the middle. The tractor is casting a shadow. The overall scene is bathed in warm, golden light, suggesting late afternoon or early morning.

02

Summary of Macquarie's climate strategy

Macquarie Group (Macquarie) has been driving practical climate solutions for almost 20 years, with our first investments in renewables dating back to 2005. Since then, we have evolved our approach year-by-year, building capabilities to support the global transition to net zero.

In this section, we provide a summary of our climate strategy following the four areas of action we identified last year as central to our approach.³

1

Increase our investment in climate mitigation and adaptation solutions.

2

Strengthen our support for clients and portfolio companies to help achieve their decarbonisation ambitions.

3

Continue to reduce the emissions of our own business operations.

4

Align our financing activity with the global goal of net zero emissions by 2050.

This is Macquarie's first combined Group Net Zero and Climate Risk Report (Report). The Report aims to align with emerging peer and industry practice, including the criteria set out by the Net Zero Banking Alliance (NZBA). The Report covers climate-related activities across Macquarie's operating groups. However, in line with the NZBA Guidelines, the sections dealing with financed emissions are limited to our on-balance sheet lending and equity investment activities.⁴

We continue to support the important work of the Task Force on Climate-related Financial Disclosures (TCFD) and are implementing its recommendations based on the four key pillars: governance; strategy; risk management; and metrics and targets.

This Report sets out progress on our **climate strategy implementation and engagement**, detailing how our approach has evolved, grown, and expanded in its scope and reach. In 2021, we restated our commitment to climate action with a broader net zero strategy. We have since refined the commitment for our own business operations emissions to reach net zero in Scope 1 and Scope 2 by 2025, while developing emissions reduction strategies for Scope 3 and evolving our carbon neutrality commitment in line with industry guidance (for further detail, refer to **Section 4 — Implementation and engagement**). We also include details of our recent activities including case studies and an outline of our planned next steps.

3. Supporting the transition to a net zero economy, macquarie.com.

4. This refers to on-balance sheet lending and equity investment activities, excluding on-balance sheet securities held for client facilitation and market-making purposes (as opposed to held for investment). Lending refers to loan assets held at amortised cost and excludes certain items such as leasing, asset finance, trading assets and short-term financing (e.g., inventory finance). Note, for motor vehicles, we have also included novated leases, given availability of both methodology and data.

Invested, committed or arranged in green energy assets^{5,6}

\$A32b

in the five years to 31 March 2022

Investing in new green energy capacity^{6,7,8,9}



18 GW

Currently operating



1 GW

Under construction



87 GW

In development

~107 GW

Total

Aligning our real asset portfolio with global net zero emissions by 2040

95%

of in-scope assets are now reporting GHG emissions¹⁰

29%

of in-scope assets have net zero targets

Sourced the equivalent of

100%

of our global electricity consumption from renewable sources in our own business operations in FY2022

Since our net zero commitment last year, we have focused our initial efforts on three carbon-intensive sectors (oil/gas, motor vehicles and coal) and in this Report we have set **science-based targets for those sectors**.

For oil/gas, we have benchmarked against the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) Net Zero 2050 scenario. NGFS is an international group of central banks and supervisors, including the Reserve Bank of Australia and the Australian Prudential Regulation Authority (APRA). APRA's recent Climate Vulnerability Assessment used two NGFS scenarios with additional modelling for the Australian context.

For motor vehicles (specifically passenger cars and light commercial vehicles), we have benchmarked against the United Nations Principles for Responsible Investment (UN PRI) commissioned Inevitable Policy Response (IPR) 1.5°C Required Policy Scenario (RPS), as that scenario provides granular data to analyse the Australian motor vehicle sector.

For coal, we have set our financed emissions target based on our pre-existing commitment to run-off our limited remaining on-balance sheet lending and equity exposure to coal companies by 2024.¹¹

5. Includes \$A2.3b invested, committed or arranged in green energy assets in the year to 31 March 2022, disclosed in the overview of investment in green energy assets (Section 5).

6. For detailed definitions and methodology, refer to Appendix 3.

7. On our balance sheet or under Macquarie management. Gigawatts (GW) of green energy assets reflect 100 per cent generating capacity of each asset, not the proportion owned/managed by Macquarie.

8. As at 30 September 2022.

9. GW numbers do not add up to total due to rounding.

10. Refer to the MAM 2021 Sustainability Report for further information. Data as at 30 June 2022, calculated as a percentage of the number of MAM-managed real asset portfolio companies that are in scope for greenhouse gas (GHG) emissions reporting to MAM. Assets not in scope may include recent acquisitions, pending divestments, concessions where GHG emissions are attributable to external operators, or assets under construction.

11. Supporting the transition to a net zero economy, macquarie.com.



Our financed emissions targets



Oil/gas

Our equity and lending exposures to the oil/gas sector comprise less than 1 per cent of our total equity and lending exposures and are small compared to most of our global and Australian peers. We target reducing Scopes 1, 2 and 3 physical emissions intensity by **10-15 per cent from FY2020 levels** by 2030.



Motor vehicles

We target reducing Scope 1 and 2 physical emissions intensity by **34 per cent from FY2020 levels** by 2030.



Coal

In line with our pre-existing commitment to run-off our limited remaining on-balance sheet lending and equity exposure to coal companies, we target reducing Scopes 1, 2 and 3 absolute financed emissions to **zero** by the end of 2024.^{12,13}

For coal, in addition to setting a target, we have also analysed historical financed emissions for the coal mining segment of the sector — in FY2020, this accounted for more than half of our financed emissions from fossil fuel sectors.

While the fossil fuel and motor vehicle sectors comprise a small portion of our total lending and equity investments, they are likely to have represented the majority of our total financed emissions in the FY2020 base year. In 2023, data allowing, we aim to include the residential mortgage and power generation sectors.¹³

These sectors, taken together with those included this year, will account for a significant majority of our total financing activities. In line with the NZBA Guidelines, we expect to set targets for all material carbon-intensive sectors by the end of 2024.

We have also set out our approach to **climate risk management and governance**, including our climate scenario analysis work and the continued integration and operationalisation of climate risk across Macquarie's risk management frameworks, policies, and procedures.

We will report on our progress on these topics annually.

12. This target does not include any emissions associated with potential projects that will significantly reduce GHG emissions in line with science-based scenarios or are for the purpose of diversifying away from the coal sector in line with a credible transition plan.

13. The power generation sector includes exposure to both renewable and conventional power generation, as well as small exposure to coal-fired power generation, which is covered by our pre-existing coal run-off commitment (refer to Section 5 — Metrics and targets).

An aerial photograph of a white wind turbine in a field. The field is marked with numerous parallel tire tracks in a reddish-brown soil, suggesting heavy machinery activity. The turbine's nacelle is visible, and its long, thin blades extend outwards. The overall scene is a mix of natural green grass and disturbed earth.

03

Energy
transition:
The defining
challenge of
our time

In 2021, the Intergovernmental Panel on Climate Change (IPCC) concluded¹⁴ that human influence on the warming of the atmosphere, ocean and land is unequivocal, and that the world needs to reduce greenhouse gas (GHG) emissions to net zero by 2050 if we are to limit the increase in global temperatures in 2100 to 1.5°C and thereby meaningfully reduce the risk of catastrophic impacts.

Encouragingly, most governments accept the need for urgent action, with over 125 countries formally committed to achieving net zero by 2050, and a further 12, including China, India and Russia, committed to reaching net zero between 2050 and 2070.¹⁵

These countries represent more than 80 per cent of global emissions and over 90 per cent of global Gross Domestic Product (GDP), reflecting much-improved coverage in recent years.

Global net zero coverage

83%

Emissions

80%

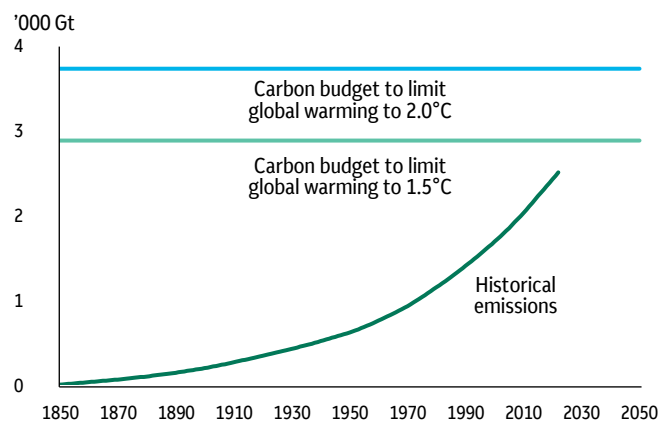
Population

91%

GDP

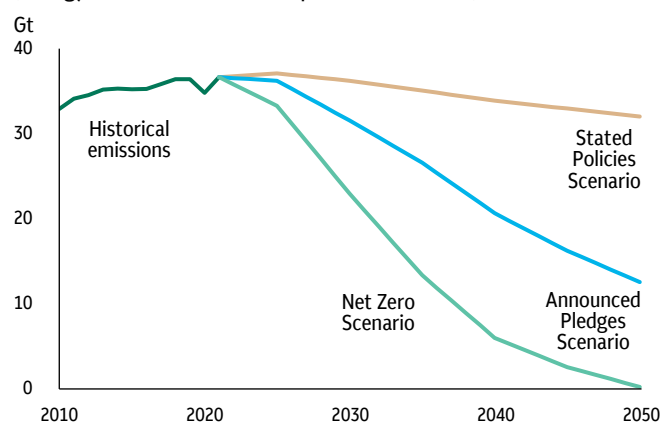
Source: Net Zero Tracker.

Cumulative global CO₂ emissions (Since 1850)



Source: Global Carbon Budget 2022,¹⁶ IPCC.

Global CO₂ emissions and IEA scenarios (Energy-related and industrial process emissions)



Source: International Energy Agency.¹⁷

14. IPCC (2021), *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*.

15. Based on Net Zero Tracker, as of 30 November 2022.

16. Friedlingstein et al. (2022), *Global Carbon Budget 2022*.

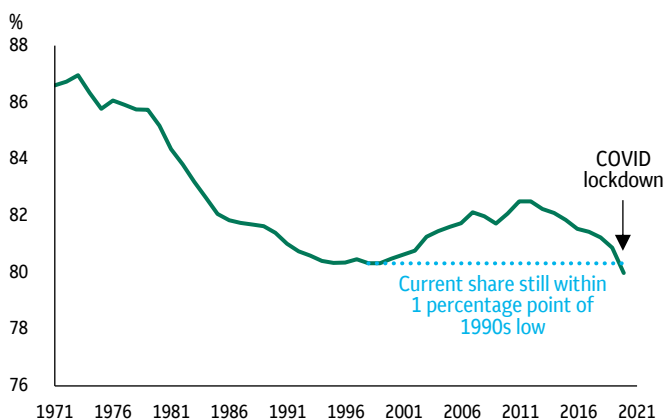
17. IEA (2022), *World Energy Outlook 2022*, IEA, Paris.

Many of the world's biggest companies, including in the highest-emitting sectors and large financial institutions, are also working towards net zero. However, while some progress has been made, there is much more work to be done, with current policies and announced pledges still falling short of the required ambition.

With fossil fuels still accounting for around 80 per cent of global primary energy consumption, the path to net zero will require the largest reorganisation of the global economy and energy systems since the industrial revolution. However, at Macquarie, we remain optimistic that the world will rise to this challenge, as increased investment combines with human ingenuity to drive the necessary technological change. Indeed, most advanced economies, led by Europe, have already made progress towards reducing reliance on fossil fuels.

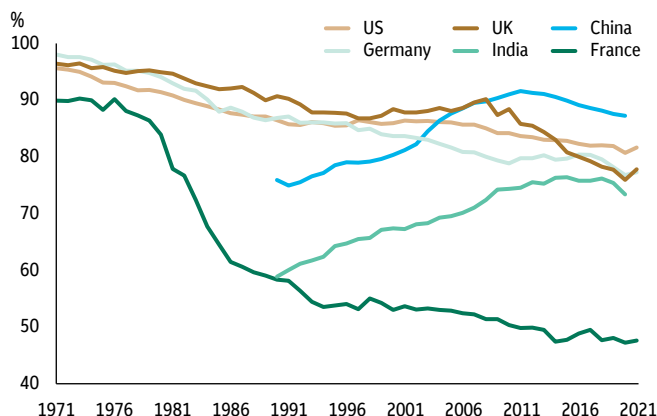
There are multiple pathways to net zero, with the ultimate outcome likely to depend in large part on the scale of clean energy investment as well as where and when technological innovation occurs. The focus needs to be on rapidly expanding electrification and clean energy capacity, storage, and distribution. As we have seen in the progress made by advanced economies in recent years, expansion in clean energy capacity needs to grow faster than underlying energy consumption to meaningfully reduce reliance on fossil fuels.

Global primary energy consumption (Fossil fuels, share of total)



Source: International Energy Agency.

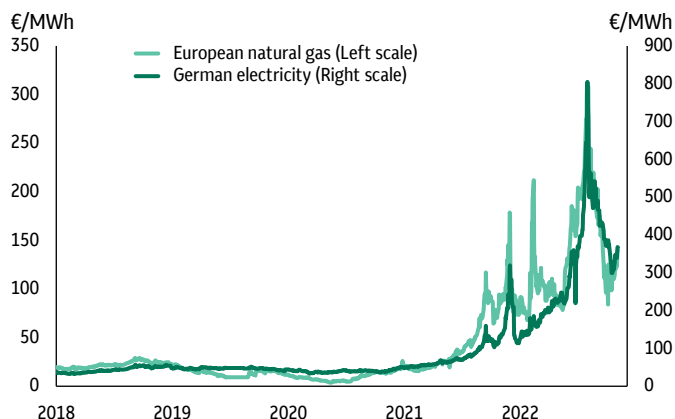
Major economy primary energy consumption (Fossil fuels, share of total)



Source: International Energy Agency.

A key lesson from the 2021/22 energy shock is that the world needs an orderly transition that preserves stable and secure energy supply, as the impact of energy shortages and price volatility is felt most acutely by the world's poorest citizens.

Energy prices

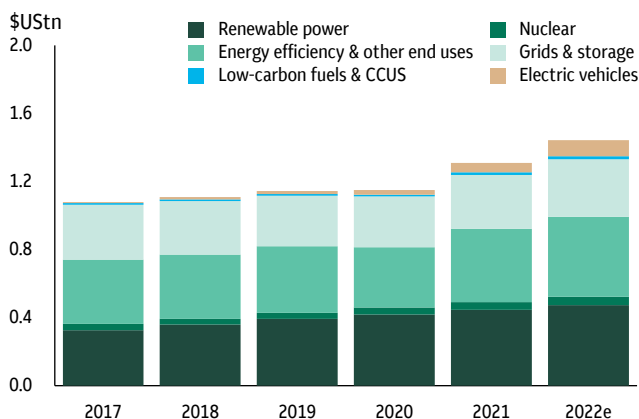


Source: Bloomberg.

High fossil fuel prices are encouraging increased investment in alternative energy sources and efficiency, with the International Energy Agency (IEA) expecting clean energy investment¹⁸ to have increased by more than 10 per cent in 2022 to a new high of around \$US1.4 trillion.¹⁹ However, in the short term, energy insecurity has also forced governments to temporarily increase their reliance on fossil fuels, despite ongoing decarbonisation ambitions.

Clean energy investment

(Real, 2021 prices)

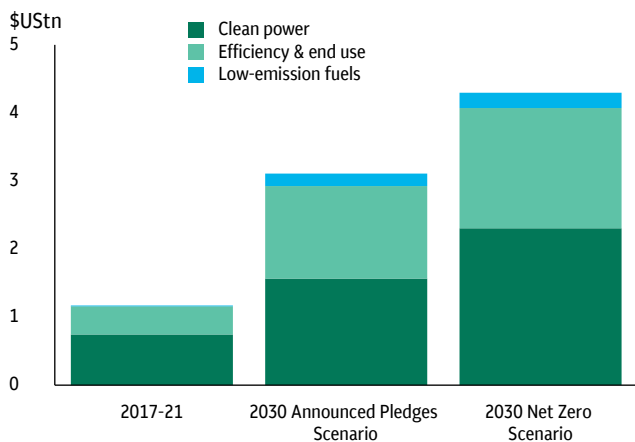


Source: International Energy Agency.

Unsurprisingly, estimates of the quantum of clean energy investment required to allow the world to quickly move away from high-emitting fossil fuels vary significantly, but there is little doubt that clean energy capital expenditure will need to increase dramatically. For example, the IEA estimates that clean energy investment would need to triple to over \$US4 trillion per annum by 2030 to put the world on a path towards reaching net zero by 2050.²⁰

Clean energy investment by technology

(Real, 2021 prices, annual average)

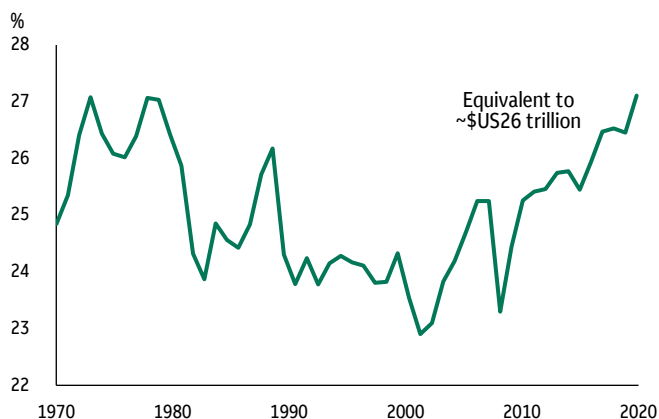


Source: International Energy Agency.

While that would be a significant step up, such a level of spending would not be without historical precedent. For example, the US government spent 6.5–7 per cent of GDP on public investment for much of the 1950s and 1960s, while total global investment is currently around \$US26 trillion per year (27 per cent of GDP). A total spend of \$US4 trillion in 2030 would be equivalent to around 3 per cent of global GDP.²¹

Global investment

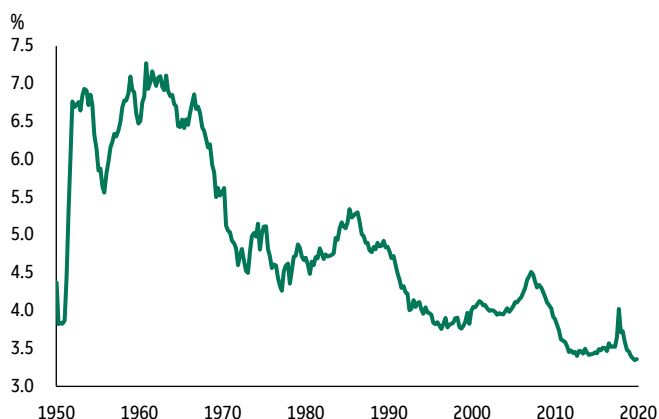
(Per cent of GDP)



Source: IMF, World Bank, Macrobond.

US Government investment

(Per cent of GDP)



Source: US BEA, Macrobond.

Some of the required expenditure will occur through a rebalancing of business-as-usual investment, while the long-term decline in the cost of renewable technologies should provide an economic incentive. However, an increase of this scale will take some time, as the world works to overcome production and deployment bottlenecks, including shortages of skilled labour and construction of infrastructure.

18. "Clean energy investment" in this section is as defined by the IEA. For more information, see page 488 of IEA (2022), *World Energy Outlook 2022*, IEA, Paris.

19. IEA (2022), *World Energy Investment 2022*, IEA, Paris.

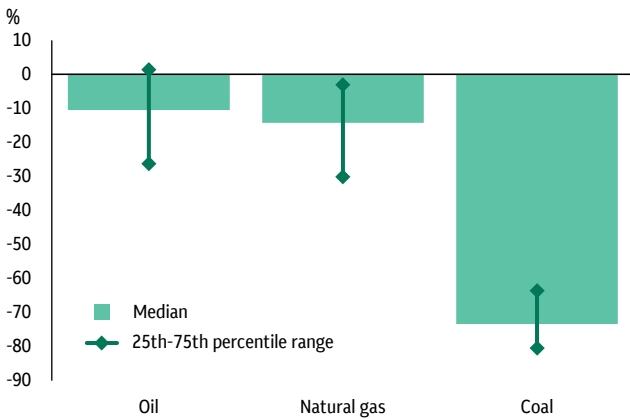
20. IEA (2022), *World Energy Outlook 2022*, IEA, Paris.

21. Based on extrapolated GDP forecasts from IMF (2022), *World Economic Outlook*, October.

To significantly cut global GHG emissions, the world must burn less coal. However, with coal still accounting for more than one quarter of global primary energy supply, science-based net zero by 2050 scenarios recognise the need for oil and gas to remain a significant part of the energy mix well into the future.

Change in primary energy demand

(Fossil fuels, across net zero scenarios*, 2020–2030)

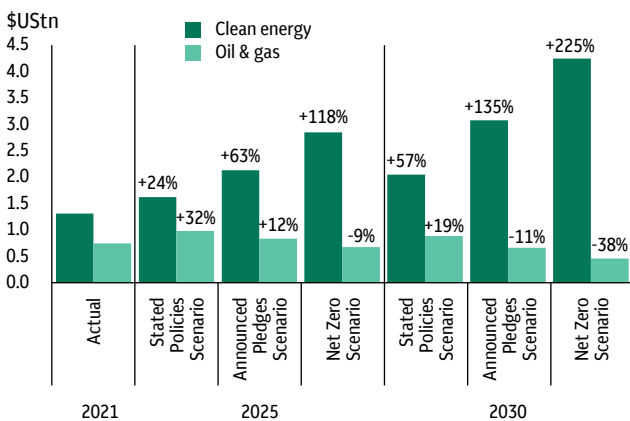


Source: International Energy Agency, IPCC, NGFS.
*Includes the NGFS Net Zero 2050 scenario, the IEA Net Zero Emissions by 2050 (NZE) Scenario, and 94 IPCC 1.5°C no or low overshoot scenarios.

For example, IEA modelling²² suggests that under current policies, oil and gas investment would need to increase between now and 2030. Only once annual investment in clean energy moves towards \$US2.5 trillion (an increase of around 90 per cent from the 2021 level) will the world be able to gradually reduce aggregate oil and gas investment without energy shortages.

Required energy investment

(Real*, 2021 prices, selected categories)

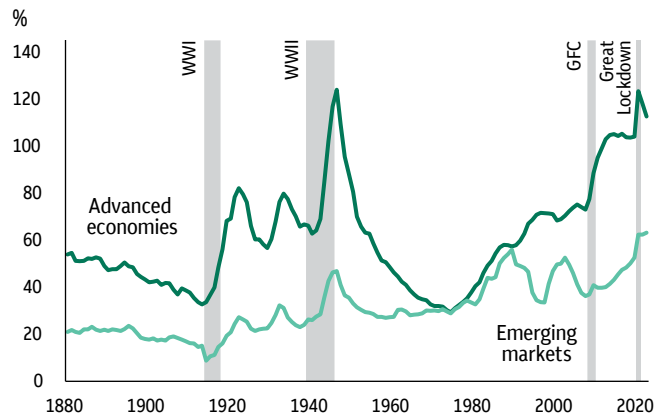


Source: International Energy Agency.
*Figures above bars represent estimated changes from 2021 levels.

The seismic changes required to the structure of the global economy are unlikely to occur unless governments take the lead, providing both economic and regulatory incentives. However, with government debt levels high in many countries, the private sector will need to play a critical role in financing the transition. Reflecting this reality, under its net zero by 2050 scenario, the IEA assumes that around 70 per cent of the required financing by 2030 comes from the private sector.

General government debt*

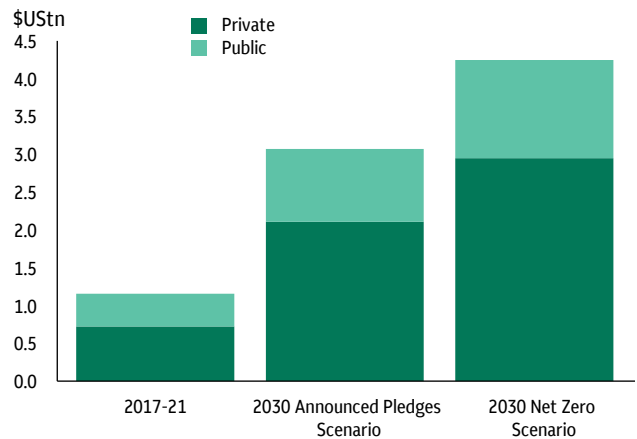
(Per cent of GDP)



Source: IMF, Macrobond.
*Purchasing power parity weighted average, based on a constant sample of 25 advanced economies and 27 emerging markets. Macquarie estimates for 2020–22.

Clean energy financing by source*

(Real, 2021 prices, annual average)



Source: International Energy Agency.²³
*Macquarie estimates based on IEA data.

Encouragingly, significant pools of capital have already been committed to emissions reduction, with investors actively seeking to participate in this historic opportunity. Macquarie has been a leader in the energy transition space for nearly 20 years, and we will continue to play our part.

22. IEA (2022), *World Energy Outlook 2022*, IEA, Paris.

23. Several figures in this section are adapted from IEA data and publications, as referenced above. This also includes analysis and figures based on IEA data from IEA (2022), *World Energy Balances 2022 Highlights*, IEA. All rights reserved; as modified by Macquarie Group Limited.

Implementation and engagement



How we are implementing our climate strategy and engaging with stakeholders across a diverse range of businesses and activities.

In this section, we demonstrate how we have built our climate solutions capabilities and how our strategy has evolved, specifically addressing the four areas of action we identified last year as central to our approach.²⁴

1

Increase our investment in climate mitigation and adaptation solutions.

2

Strengthen our support for clients and portfolio companies to help achieve their decarbonisation ambitions.

3

Continue to reduce the emissions of our own business operations.

4

Align our financing activity with the global goal of net zero emissions by 2050.

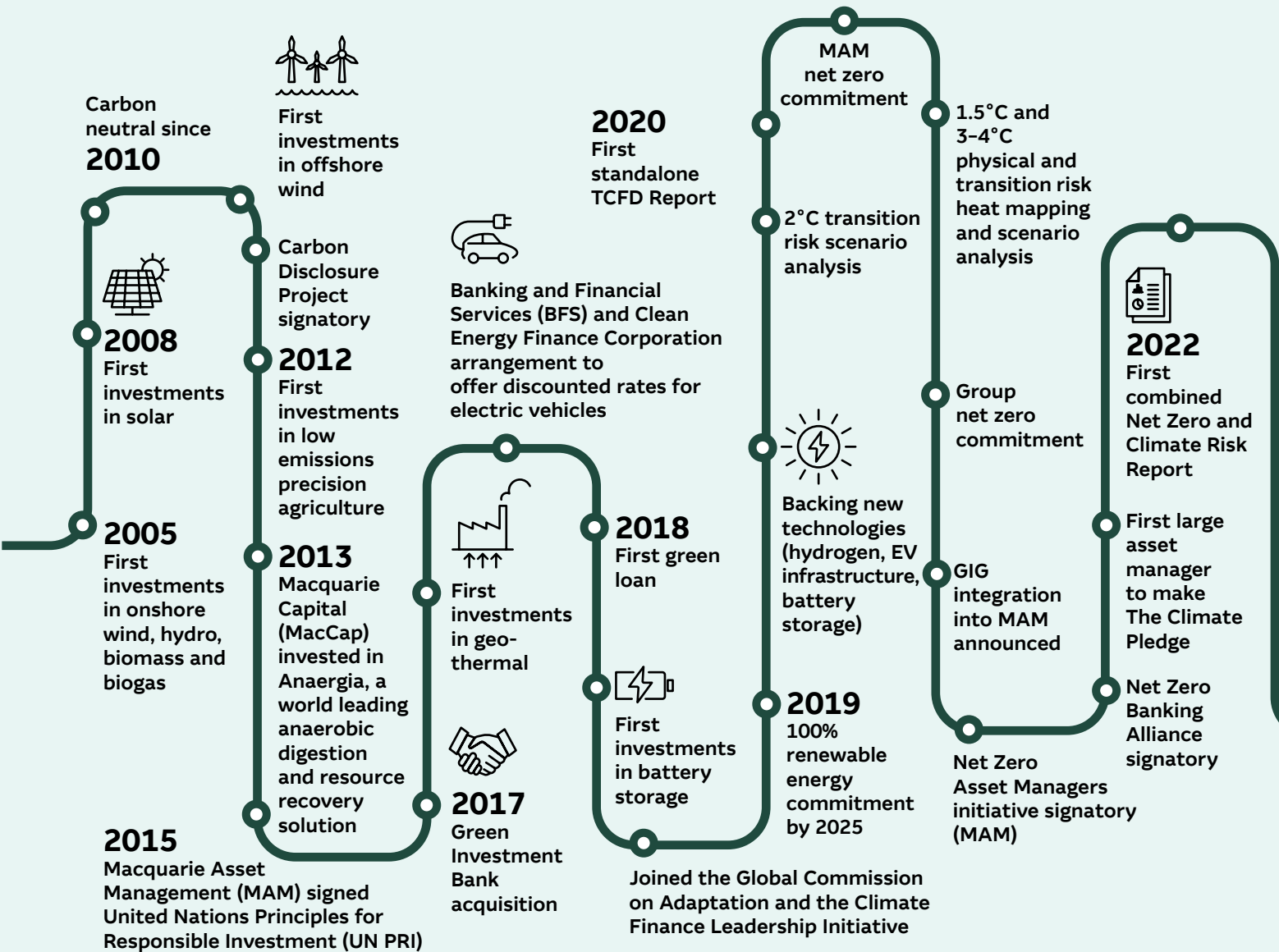
For each of these areas, we detail recent activities, near-term planned actions and case studies to demonstrate the impact of our activity. By focusing on concrete examples, we demonstrate the depth and breadth of our climate contribution, with climate-related projects and considerations increasingly becoming business-as-usual in each of our operating and support areas and across regions.

Further details on these activities can be found on [macquarie.com/climate](https://www.macquarie.com/climate) where we provide regular real-time updates.



²⁴. Supporting the transition to a net zero economy, [macquarie.com](https://www.macquarie.com).

Timeline of Macquarie climate activities



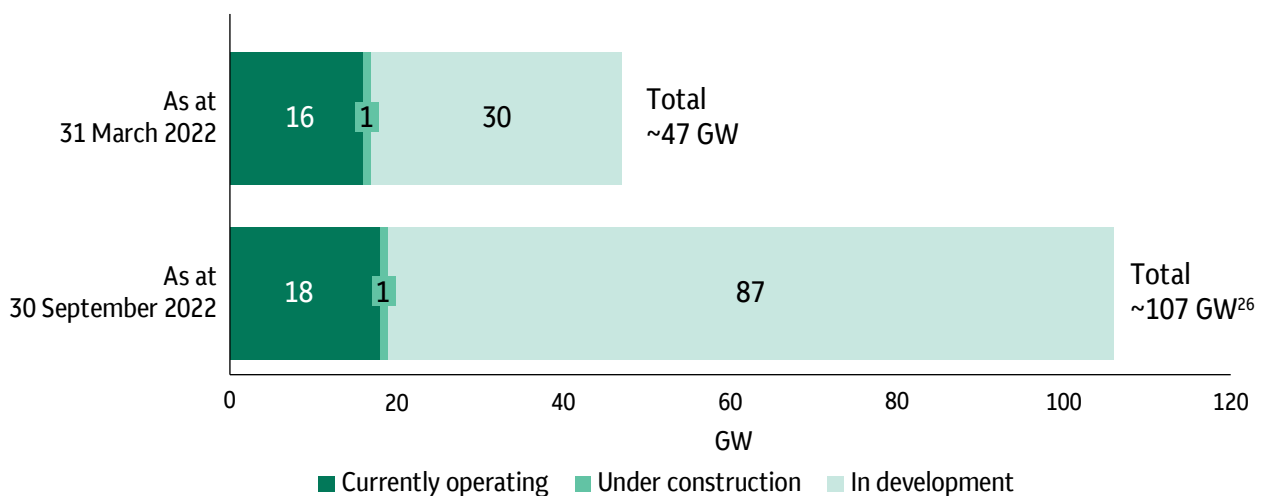
Action area 1:

Increasing our investment in climate mitigation and adaptation solutions

Building on our history of developing and managing essential infrastructure, we have long recognised that maximising our investment in green energy technology is the most meaningful climate action we can take. Our ambition is to maintain and grow our role as a leading supporter of green energy and other climate solutions around the globe.

We are actively investing in the development of new green energy and have more than doubled our green energy capacity pipeline in the first half of our financial year.

Investing in new green energy capacity:²⁵



Having played a key role in establishing green energy technologies such as utility-scale wind and solar as an investible asset class, we continue to innovate in emerging areas of opportunity such as hydrogen, carbon capture, utilisation and storage (CCUS), and energy storage. We are also investing in feed supplements for livestock, electric vehicles (EVs), and voluntary carbon markets.

The aim is to create and scale the solutions that will allow for a balanced green energy system, and the decarbonisation of transport, buildings, agriculture, and industrial processes.

To support our ambition to increase investment in climate solutions, in early 2022, we moved our Green Investment Group (GIG) into Macquarie Asset Management (MAM). This move allows us to combine the market leading project development and finance expertise of GIG and its portfolio specialist development platforms, with the fiduciary capital resources entrusted to MAM.



\$A32b²⁷

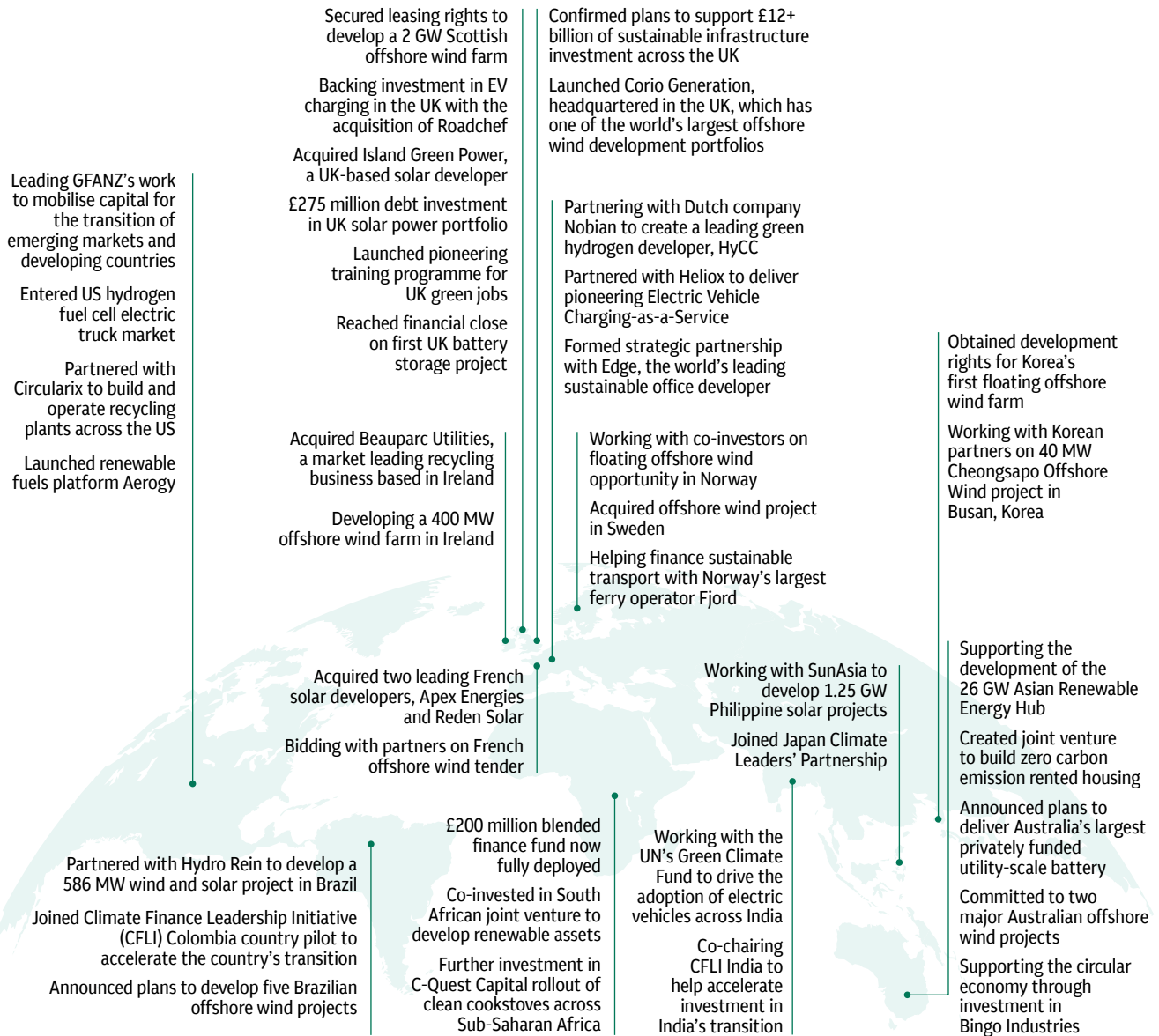
Invested, committed or arranged in green energy assets in the five years to 31 March 2022.

25. On our balance sheet or under Macquarie management. Gigawatts (GW) of green energy assets reflect 100 per cent generating capacity of each asset, not the proportion owned/managed by Macquarie. For detailed definitions and methodology, refer to Appendix 3.

26. GW numbers do not add up to total due to rounding.

27. Includes \$A2.3b invested, committed or arranged in green energy assets in the year to 31 March 2022. For detailed definitions and methodology, refer to Appendix 3.

Highlights of recent activities



This map includes projects delivered by Macquarie operating groups and our portfolio companies — including Corio Generation, Cero, Blueleaf, HyCC and others. Lists new activity since 1 April 2021, correct at 1 September 2022.

A. Enabling assets and people to adapt to a changing world

As the world's largest infrastructure manager and a leading developer of new greenfield infrastructure, we are working to improve the resilience of our real asset portfolio companies to the impacts of climate change and to ensure continuity of essential community services. Such initiatives include burying power lines to protect against extreme temperatures and fires, relocating infrastructure to protect from rising sea levels and stronger winds, and improving food security through higher yield precision farming techniques. We also play an active role in helping clients manage energy price volatility, with the goal of maintaining energy supply to households and economies.

Recent case studies



Adapting critical infrastructure to extreme climate events

In the Philippines we supported our portfolio company, Energy Development Corporation, to increase the resilience of its 1.5 GW renewable energy portfolio against future extreme weather events to ensure continuity of supply to communities. This important capital investment included rerouting pipelines and re-engineering cooling towers to withstand typhoons with greater than 300 kph winds.

In Australia, we are supporting portfolio company Endeavour Energy in utilising geospatial analysis from light detection and ranging data, to assess and quantify the risk of bushfires from vegetation near its network. This enables a more targeted and efficient vegetation maintenance program and, as a result, more proactive management of bushfire risks and potential damage to power supply infrastructure.



Helping clients manage their commodity risk

The Commodity Markets and Finance business within CGM provides a full service offering of risk management, capital and financing, market access and physical execution and logistics to clients with exposure to commodity markets. As part of this, the business offers products to clients to reduce risk from the impacts of the increased volatility that can result from climate events, as well as geopolitical tensions. In doing so, we play an important role in ensuring the continuity of energy supply to businesses and communities.

An example of this is the role we play in supporting our European utilities clients who are importing gas from the US given recent supply constraints in the region which have been exacerbated by weather events. Our hedging products enable them to manage the price risk associated with moving gas from one location to another, which is critical to maintain stability of energy supply as the world transitions energy sources.



Helping people reskill to work on the transition

Following catalytic funding from the Macquarie Group Foundation, the youth employment non-profit Generation UK has created a new training program for unemployed young people that will enable them to find jobs in the green sector.

The training is being delivered by expert instructors and includes one-on-one mentorship for learners, and placement with employer partners upon completion.

B. Accelerating the move to clean mobility

A key component of most science-based net zero by 2050 scenarios is the greening of the transport fleet, with recent policy announcements in many regions showing a determination to quickly adopt electric vehicles (EVs). In Australia, our retail banking business is helping clients switch to EVs. More broadly, Macquarie is helping commercial fleet operators finance the deployment of clean vehicles and their charging infrastructure in the US, the Netherlands, Belgium, Germany, and the UK.

Recent case studies



Helping our banking clients switch to EVs in Australia

EVs have steadily increased as a percentage of new vehicles financed through Macquarie's direct channel. We expect this number to grow in line with broader supply and policy developments.

Our Banking and Financial Services (BFS) business, which is also committed to helping our clients navigate the fast-changing industry landscape on EV ownership, has undertaken an advocacy campaign to educate and inform consumers on the benefits of transitioning to an EV, and maintains a specialised EV buying service.



Rolling out EV charging infrastructure in Europe

GIG launched Fleete in September 2022, a new company that aims to remove barriers to commercial EV adoption, by offering to install, manage, and finance charging infrastructure for a monthly fee and with no up-front costs. Fleete provides ultrafast charging equipment and software for scheduling of charging sessions with an eye on optimising energy consumption.

GIG has also announced a partnership with Heliox to deliver fully funded EV charging infrastructure to public transport and commercial fleet operators in Europe.



Partnering to deploy hydrogen trucks in the US

CGM is part of a consortium that was awarded grant funding by the California Air Resources Board and the California Energy Commission's Clean Transportation Program to deliver 30 hydrogen fuel cell electric trucks and associated refuelling infrastructure in California.

The project combines efforts of industry leaders to advance the transition of transportation to zero emissions in California. Macquarie's ownership and leasing of the trucks to international logistics company Glovis America marks an important milestone for the business as they look to progress similar vehicle rollouts across the commercial transportation sector in the future.

The Zero-Emission Drayage Truck and Infrastructure Pilot Project is part of California Climate Investments, a state-wide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy and improving public health and the environment — particularly in disadvantaged communities. Learn more at caclimateinvestments.ca.gov.

Our expertise in action

How we are using our deep capabilities in energy, infrastructure, technology and commodities to create practical climate solutions.



Creating specialist businesses across climate solutions

MAM has created a series of specialist businesses and project developers that each aim to be market leaders in their focus areas.

Corio Generation, launched in 2022, has one of the world's largest offshore wind development portfolios.

On-land developers (Cero Generation, Island Green Power and Apex Energies in Europe; Blueleaf Energy and CleanMax in Asia; and Reden Solar in Europe and the Americas) are building clean energy projects and helping their customers procure clean electricity for their operations.

In September 2022, GIG launched Fleete, an EV charging-as-a-service company that installs, manages, and finances EV charging infrastructure with no up-front costs. Additionally, in November 2022, GIG launched Eku Energy — a new global battery storage platform.

Unlocking progress with innovative solutions

Macquarie Capital (MacCap) has a long track record in making principal investments to help finance climate solutions. In 2018, MacCap invested in Form Energy, Inc., an energy company that aims to address remaining impediments to unlocking the power of renewable energy to transform the electricity grid. Form Energy is developing and commercialising ultra-low-cost, long-duration energy storage systems that can be located in any market and scaled to match existing energy generation infrastructure globally. These systems have the potential to significantly improve the reliability and transmission of renewables year-round, extending transmission capacity without building new wires, and completely replacing the need for conventional thermal generation.

MacCap also created renewable fuels platform Aerogy, which develops, operates, and invests in innovative renewable natural gas (RNG) projects across the US. Methane is among the most significant contributors to global warming, with emissions from livestock in the agriculture sector comprising approximately 32 per cent of human-caused methane emissions. RNG aims to address this by diverting methane released from cow manure and other sources and converting it into low-carbon energy. Upon its launch, Aerogy closed financing and commenced construction at Zahn's Farm, a leading dairy producer located near Gillett, Wisconsin.



Investing in a pioneering carbon capture business

Macquarie's Commodities and Global Markets (CGM) group's investment in Storegga Limited (Storegga) has created an independent, international developer of carbon capture and storage (CCS), hydrogen and direct air capture projects to accelerate carbon emissions reductions.

Storegga is the lead developer of the Acorn CCS and Hydrogen project in Aberdeen, and is also developing both green and blue hydrogen projects and a utility-scale direct air capture plant in the UK. Macquarie's investment will support these ongoing projects and Storegga's business development activities as they expand and continue to build a global portfolio of low-carbon projects.

Action area 2:

Strengthening our support for clients and portfolio companies to help achieve their decarbonisation ambitions

How we partner with clients, portfolio companies, multilateral and industry groups, and our own staff.

Partnering with clients to work together on their decarbonisation journeys is becoming business-as-usual across our operating groups. Each Macquarie operating group is engaging in a range of activities aligned to our climate strategy and net zero commitments.

Across our **Macquarie Asset Management (MAM) Private Markets** portfolio, asset management teams are working closely with over 165 private market portfolio companies and assets where we exercise control or significant influence to implement net zero plans in line with MAM's 2040 commitment — to report and verify emissions, set reduction targets, and develop business plans to achieve these targets.²⁸ For newly acquired assets, we are seeking to complete these steps within 24 months of acquisition. Our Green Investment Group (GIG) team is working to drive the large-scale deployment of the mature technologies of wind and solar as well as delivering pioneering approaches to accelerate deployment of emerging technologies like hydrogen, biogas, and e-mobility. Where our asset management teams do not have significant influence (for example, in our Public Investment portfolios), we are pursuing our net zero goals in alignment with our client-guided fiduciary and regulatory responsibilities. The Environmental, Social and Governance (ESG) analytical tools used by MAM's Public Investments teams provide insight into the carbon footprints of individual investments and portfolios and enable targeted engagement and proxy voting efforts.

Our **Commodities and Global Markets (CGM)** business is supporting clients in their decarbonisation pathways, utilising our deep expertise and capabilities across the energy spectrum and our leading commodities and financial markets platform. We provide capital and financing solutions, risk management, physical execution and logistics services, as well as market access to clients across voluntary and compliance carbon markets, renewables and flexible power, clean fuels, sustainable transport, critical minerals, and the circular economy.

More broadly, we are working with our clients to help them manage their decarbonisation journeys. Given the scale of the needed transition, we recognise that much of the world will depend on oil/gas for years to come. As such, we will continue to support clients in these sectors and are engaging with them to design both finance and technology solutions that will help them decarbonise and reduce the emissions intensity of their activities.

Our **Banking and Financial Services (BFS)** business is committed to supporting our clients' efforts to achieve their decarbonisation goals through empowering and supporting them to make more sustainable daily choices, ranging from the cars they drive to how they choose to invest their money.

Finally, as the leading Global Infrastructure Financial Adviser²⁹ and Renewables Infrastructure Financial Adviser,³⁰ **Macquarie Capital (MacCap)** advises on, develops, and helps create sustainable infrastructure assets that power, move, and connect communities around the world, and supports our clients to navigate the evolving demands of decarbonisation and the energy transition. Following the GIG transition into MAM, MacCap continues to support clients across a broad spectrum of mergers and acquisitions advisory, and investment and development opportunities, including: the structuring, financing, and development of clean energy projects; resource management (including water, electricity, gas and waste); decarbonising existing energy assets and industrial supply chains; energy storage and charging infrastructure; and new climate solutions (including hydrogen and CCUS).

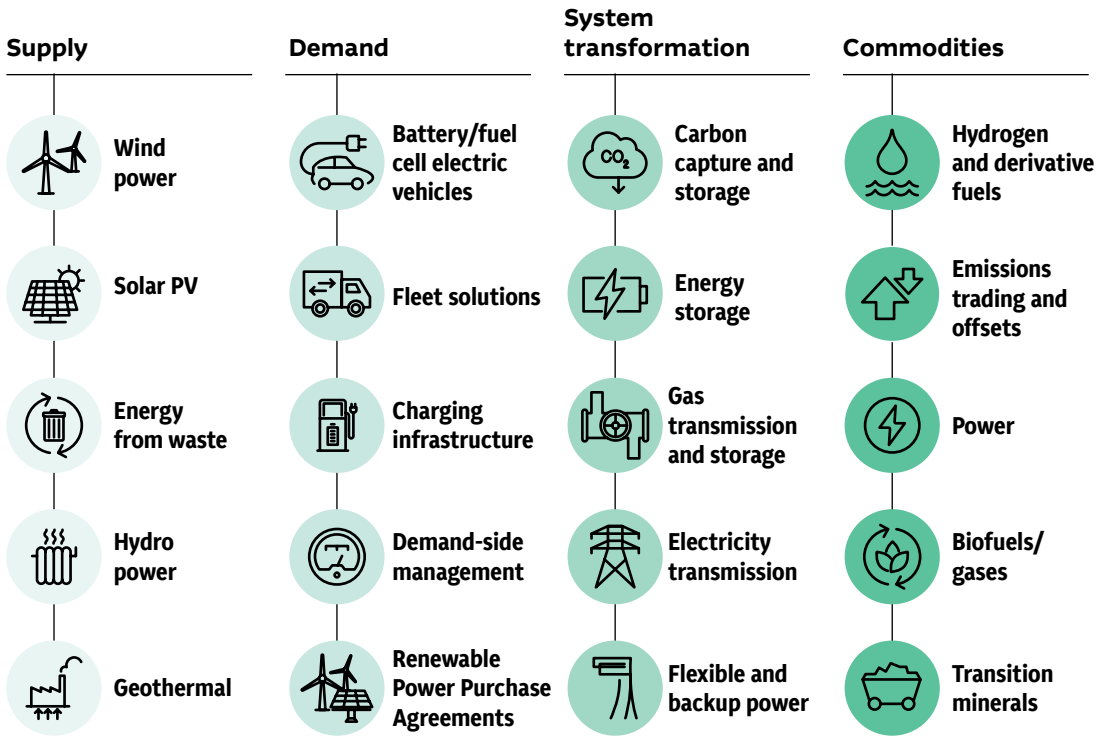
28. Net Zero Asset Managers.

29. Inspiratia (CY2021 by deal value).

30. IJ Global (CY2021 by value).

We have broad climate solutions capabilities

At Macquarie, through our different operating groups, we have extensive expertise and experience in scaling energy solutions and supporting clients on their decarbonisation journeys.



Specialist sectoral expertise

Electricity

Oil and gas

Transport

Industry

Agriculture

Waste

Mining



Our expertise in action

How we are using our deep capabilities in energy, infrastructure, technology and commodities to create practical climate solutions.



Supporting MAM's portfolio companies

In line with MAM's commitment to invest and manage our portfolio in line with global net zero by 2040, we are working closely with our Private Markets portfolio companies in their transition. Our roadmap to achieving our goal is set out in the [MAM 2021 Sustainability Report](#). As part of this we are on a journey of learning, adapting, and working collaboratively to address a range of challenges, including:

Stakeholders: obtaining key stakeholder agreement, including from portfolio company management teams, co-shareholders, and clients.

Technology: addressing availability and commercial viability of appropriate technology, such as carbon capture.

Financing: developing appropriate financing to support the sometimes capital intensive requirements of decarbonisation.

Regulation: navigating different regulatory regimes, including gaining support from regulators and overcoming regulatory disincentives or caps.

Forecasting: overcoming limitations associated with the long-term cost of abatement initiatives in portfolio company business planning.

Finding solutions in hard-to-abate sectors

The Global Carbon business, which launched in 2021, builds on CGM's 15-year involvement in physical and financial environmental product markets globally. CGM provides clients with integrated carbon offsetting solutions, representing an important bridge into longer-term structural decarbonisation.

As part of this, CGM is directly involved and invests in offset generating projects that can be brought to market. For example, we partnered with and invested alongside carbon project developer C-Quest Capital LLC to develop a Sub-Saharan Africa clean cookstove program. This program is expected to supply more than 200 million carbon credits, with verified contributions towards multiple UN Sustainable Development Goals, to the voluntary carbon market over the next 10 years.

Image courtesy of C-Quest Capital LLC.



Enabling the production of low-carbon goods

GIG is partnering with large corporates and industrials around the world to supply them with the clean energy needed to decarbonise their processes. In Brazil, GIG and Hydro Rein are developing an innovative hybrid wind and solar project to reduce emissions related to the production of alumina. In Europe, GIG's Cero Generation has signed long-term Power Purchase Agreements with Centrica and Axpo to underpin projects in Italy and Greece.

Helping our clients invest in the transition

Our clients are increasingly looking to invest their money in products aligned to their sustainability values. In 2021, BFS added six sustainable, separately managed accounts to the Macquarie Wrap platform, providing advisers and clients greater choice to integrate ESG considerations throughout the investment process. BFS has also updated its investment menu to include ESG rating information for some eligible investments, to support clients in understanding their portfolios.

Multilateral and industry group engagement

We work in close partnership with stakeholders in the public and private sectors to find solutions to some of the major transition challenges of the financial sector and the real economy. For example, we are working on several industry-led, UN-convened initiatives aimed at aligning the financial sector to better enable the transition to a net zero economy and at overcoming the emerging markets and developing economies climate financing gap.

We are building on our experience working with the public sector to develop innovative blended finance solutions that can unlock progress in earlier stage climate solutions and riskier markets. We also invest time to contribute to key climate events to engage with stakeholders and drive the partnerships that can accelerate climate action.



Joining Glasgow Financial Alliance for Net Zero (GFANZ)

Macquarie is a founding Principal member of GFANZ. Our CEO Shemara Wikramanayake is co-leading GFANZ's workstream on climate finance mobilisation for emerging markets and developing economies. The workstream seeks to increase the understanding of climate finance mobilisation drivers and barriers amongst the financial sector, support emerging market domiciled financial institutions to navigate the transition, and support country focused climate finance initiatives. Macquarie is also a member of the workstream on financial institution net zero planning. Finally, Macquarie became a member of the UN-convened Net Zero Banking Alliance (NZBA) in October 2021 while MAM joined the Net Zero Asset Managers initiative (NZAM) in March 2021.



Partnering to help emerging markets accelerate their transition

Macquarie supports several initiatives that bring together private and public sector partners to help find solutions to the decarbonisation challenges of individual countries. In 2021, our CEO Shemara Wikramanayake was appointed co-chair of the Climate Finance Leadership Initiative (CFLI) country pilot in India with Natarajan Chandrasekaran, the Chairman of Tata Group. The members of CFLI are collaborating to create catalytic financing vehicles and to engage with policymakers to identify enabling environmental action that can unlock private investment in sectors like e-mobility, hydrogen, the circular economy, and water sanitation. In September 2022, Macquarie joined the CFLI country pilot in Colombia.



Deploying innovative blended finance solutions

In April 2022, Macquarie announced a new partnership with the UN's Green Climate Fund (GCF) on a blended finance platform that seeks to accelerate the uptake of e-mobility in India. The platform aims to invest \$US1.5 billion across the Indian EV eco-system, including in commercial fleets, electric buses and charging infrastructure. The deployment of EVs in India is still at a relatively early stage and partnering with the GCF is critical to be able to encourage private investment and to deliver capacity building where it is needed. Macquarie has also worked with the UK Government as the manager of the UK Climate Investments fund which aims to mobilise investment in climate solutions across developing economies through innovative financing solutions. The fund has been fully deployed and has supported projects in Asia and Sub-Saharan Africa.



Convening clients and partners to engage on the transition

GIG has hosted a Green Energy Conference for over a decade for our clients and stakeholders, to discuss the key challenges and opportunities posed by the energy transition and share best practice from across the green economy.

In 2021, over 2,600 clients and stakeholders joined our virtual conference to hear from President for the 26th UN Climate Change Conference of the Parties (COP26), Alok Sharma, and industry leaders from organisations such as Tata Group, Enel, S&P Platts and Global Optimism. The Green Energy Conference format will evolve from 2023 to be hosted more frequently throughout the year and across different geographies so as to increase our capacity to engage with key stakeholders on the issues most relevant to their region.



Mobilising our leadership at global climate events

A delegation of senior Macquarie leaders, led by CEO Shemara Wikramanayake, joined the 27th UN Climate Change Conference of the Parties (COP27) in Egypt. They took part in a number of sessions throughout the conference, engaging with government, business, and industry leaders. Ms Wikramanayake led discussions on climate finance for emerging markets. Macquarie also hosted and participated in events during the New York Climate Week, engaging with partners on issues around the progress of the energy transition and the mobilisation of climate finance in emerging markets.



Global Center on Adaptation

Macquarie CEO, Shemara Wikramanayake, was appointed a founding Commissioner of the Global Commission on Adaptation on 16 October 2018. Macquarie teams provided insight and expertise to the Global Commission on Adaptation report, notably in relation to financing adaptation, and the investments required in resilient infrastructure. When the Commission's mandate ended in 2021, Ms Wikramanayake became a member of the supervisory board of the successor organisation, the Global Center on Adaptation.



Sustainable Markets Initiative

Macquarie became a member of the Sustainable Markets Initiative in 2021. We are an active member of the Financial Services, Hydrogen and Sustainability 30 taskforces.

Engaging internally to build consensus around our climate ambition

We are proud to work with our staff on cultivating a culture of sustainability and empowering our workforce to recognise opportunities for improving our management of climate risk.

Our operating and support groups have invested significant resources to enhance our climate and energy transition related capabilities and to support staff to stay ahead of the changes.



Providing our staff with the resources to support our climate goals

Training and awareness sessions are delivered to key senior stakeholders across Macquarie on an ongoing basis (including our Macquarie Group Limited (MGL) and Macquarie Bank Limited (MBL) Boards, MGL and MBL Executive Committees, senior leaders from each operating group, and client-facing and risk management staff).

The sessions have ranged from the principles and concepts of net zero ambitions, and their meaning for financial institutions, to guarding against risks of greenwashing. Further actions are planned with internal and external subject matter experts to continue the education of our workforce, ensuring we empower all staff to recognise opportunities for enhancement in our management of climate risk while maximising opportunities that the transition presents.

In support of the above, Macquarie's Climate Intelligence Unit (CIU) was established in 2021 to support and inform Macquarie's engagement and growth in issues related to climate change and the energy transition, providing weekly briefings on climate matters across Macquarie that are accessible to all staff.

Action area 3:

Continuing to reduce the emissions of our own business operations

The environmental impact of Macquarie's own business operations predominantly relates to the resources we consume in our offices, data centres, business travel, and our procurement activities. We seek to manage this impact by monitoring and reducing resource use, maintaining innovative and sustainable workplaces, maintaining carbon neutrality, and improving the sustainability of our supply chain.

Macquarie's **2025 Sustainability Plan** articulates our corporate sustainability commitments with specific and measurable targets across environmental and social pillars. In line with this plan, we have continued to make significant progress in reducing the emissions of our own business operations. For further details refer to **Section 5 — Metrics and targets**.

Moving from carbon neutrality towards net zero emissions for our own business operations

Macquarie has been carbon neutral since 2010, and we are committed to maintaining our carbon neutrality status for Scope 1 and 2 emissions and Scope 3 business travel emissions through to 2025 in line with our 2025 Sustainability Plan.

We recognise that achieving carbon neutrality is different from achieving net zero. Our first priority will be to develop approaches to reduce emissions wherever possible in our own business operations. We have undertaken detailed assessments of our Scope 1, 2 and 3 emissions and will work on specific strategies across the three scopes of emissions for our net zero targets. Going forward we will report on our commitment to net zero emissions of our own business operations covering Scope 1 and 2 emissions, separate to upstream Scope 3 operational value chain emissions. We will work towards developing a longer-term Scope 3 operational value chain emissions reduction target aligned to science. Further detail on our metrics and progress is provided **Section 5 — Metrics and targets**.

In line with emerging industry guidance, banks can use offsets for the attainment of interim and end-state operational net zero targets. Where residual or hard-to-abate emissions exist, we may seek to utilise credible offsets to achieve targets.³¹



31. For example, as appropriate and relevant: Net Zero Banking Alliance Offsets Position Paper and Oxford Principles for Net Zero Aligned Carbon Offsetting.

Our expertise in action

How we are using our deep capabilities in energy, infrastructure, technology and commodities to create practical climate solutions.

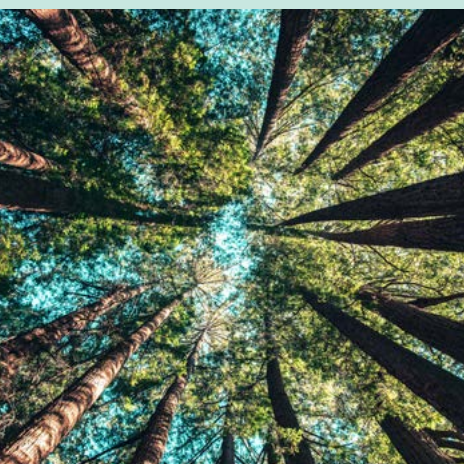


Using renewable energy

In 2019, Macquarie joined RE100, a global corporate renewable energy initiative which brings together businesses that source the equivalent of 100 per cent renewable electricity for their operations. Our commitment was to source the equivalent of 100 per cent renewable electricity across our global offices and data centres by FY2025. In FY2022, Macquarie sourced the equivalent of 100 per cent of our electricity consumption from renewable sources through a combination of green tariffs and energy attribute certificates. 98.4 per cent³² of our renewable energy purchases were sourced in line with the RE100 market boundary criteria.

Reducing electricity use

In FY2022, Macquarie achieved a 36 per cent reduction in electricity use (from a FY2014 baseline), well exceeding the original target of a 20 per cent reduction. We will re-baseline in 2024 upon the completion of the construction of our new global headquarters in Sydney.



Mitigating our residual emissions

Since 2010, Macquarie has maintained carbon neutrality by offsetting residual Scope 1 and 2 emissions and Scope 3 business travel emissions.³³

Macquarie will continue to purchase voluntary carbon credits certified by credible external bodies for quality, permanence, and verifiable emissions reductions and will evolve our offset strategy in line with industry guidance.

32. The equivalent of 100 per cent of our FY2022 electricity consumption was sourced from renewable sources through a combination of green tariffs (43 per cent) and energy attribute certificates (57 per cent). Due to a lack of availability, we were unable to source renewable energy certificates within the South Korean market, which is a requirement of the RE100 market boundary criteria. All other renewable energy purchases were sourced in line with the criteria, and we were 98.4 per cent compliant at FY2022.

33. From FY2010 to FY2020, the calculation of business travel emissions was limited to air travel. In FY2021, the calculation was expanded to include both air and rail travel. In FY2022, the calculation of business travel emissions was expanded further to include hotels, ground transportation and food & beverages. In FY2022, the calculation of air travel emissions was also refined to reflect the class of ticket flown (e.g., economy, business class).

Action area 4:

Aligning our financing activity with the global goal of net zero emissions by 2050

Last year, we committed to publishing a net zero plan by the end of 2022. In this Report we disclose our initial plan for our financing activities, covering our highest-emitting sectors. We intend to continue to expand the scope of our net zero plan by adding new sectors over time.

The implementation of our climate strategy requires significant engagement with our clients, portfolio companies, and other stakeholders. There is broad societal consensus on the need to act to decarbonise, the goals we need to reach, and the steps we need to take to get there. As a result, we are seeing more people and corporates take action to decarbonise.

For details of our baseline financed emissions and targets, refer to **Section 5 – Metrics and targets**.






05

Metrics
and targets


This section provides an overview of our metrics and approach to setting targets for emissions reduction across our own business operations and financed emissions for our initial in-scope sectors (oil/gas, motor vehicles and coal). In addition, we provide an overview of investments in climate solutions.

Definition of emissions “Scopes”


The Greenhouse Gas (GHG) Protocol Corporate Standard classifies a company’s GHG emissions into three “Scopes”.



Scope 1
emissions are direct emissions from sources owned or controlled by the company.



Scope 2
emissions are indirect emissions from the generation of purchased energy that is consumed by the company.





Scope 3
emissions include all other indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Overview and approach to Macquarie’s commitment to reduce the emissions of our own business operations

Achieving net zero emissions in our own business operations by 2025 (Scope 1 and Scope 2)

We are rapidly reducing the emissions of our own business operations. We have committed to net zero emissions in our own business operations across Scope 1 and 2 emissions by 2025 and have made significant progress by sourcing the equivalent of 100 per cent of our global electricity consumption from renewable sources in FY2022.

The following provides an overview of our baseline emissions and target setting approach:³⁴

	FY2020 baseline (tCO ₂ e)	Targets
Scope 1 and 2	30,244	Net zero emissions in our own business operations by 2025
 Scope 1	477	The electrification of premises where possible. Maintain carbon neutrality across our offices and data centres through the purchase of high-quality carbon credits.
 Scope 2	29,767	Meet operational electricity needs from the equivalent of 100 per cent renewable energy sources in line with RE100 by 2025. Our corporate offices and data centres consumed around 41 GWh in FY2022, which is a 36 per cent reduction from our 2014 baseline.

³⁴. See Appendix 1 for further details on emissions calculations.

Overview of our approach to Scope 3 operational value chain emissions

Our first priority will be to develop approaches to reduce the emissions of our own business operations wherever possible. Macquarie is continuing to analyse our Scope 3 operational emissions, as defined by the GHG Protocol. Initial analysis has enabled Macquarie to set targets for some key categories where they are considered material and where data allows, as outlined in the below table.

As mentioned, we are committed to maintaining our carbon neutrality status for Scope 1 and 2 and Scope 3 business travel emissions through to 2025 in line with our [2025 Sustainability Plan](#). We have also set new targets across our supply chain and are assessing further enhancements across business travel.

Scope 3 Category	FY2020 baseline (tCO ₂ e)	Targets
Category 1: Purchased goods and services	149,454	By 2030, have suppliers representing 75 per cent of our total supplier-related emissions (estimated based on spend) having set a science-based emissions reduction target. ³⁵
Category 2: Capital goods	Included in Category 1	
Category 3: Fuel- and energy-related activities	4,054	Meet operational electricity needs from the equivalent of 100 per cent renewable energy sources in line with RE100.
Category 4: Upstream transportation and distribution	Included in Category 1	
Category 5: Waste generated in operations	112	Diversion of 50 per cent of waste from landfill across our global headquarters by 2025.
Category 6: Business travel	68,744	To deploy Business travel Scope 3 emissions reduction strategies against the FY2020 baseline (see following table for detail).
Category 7: Employee commuting	Materiality and treatment subject to further analysis as baseline data is collected.	
Category 8: Upstream leased assets	Included in Category 1	

³⁵. Calculated in line with GHG Protocol Scope 3 "Spend-Based" Methodology.

Progress against our 2025 Sustainability Plan commitments

The following table outlines the progress and enhancements to commitments that support the reduction of emissions in our own business operations:

2025 Sustainability Plan commitments	2022 progress and target enhancements
Reviewing additional Scope 3 categories of emissions resulting from upstream operational value chain activities ³⁶	Completed materiality assessment of the emissions for each of the Scope 3 categories in our upstream operational value chain and developed the FY2020 baseline. Emissions reduction strategies are prioritised for the following material categories: <ul style="list-style-type: none"> • Purchased goods and services (Category 1) and Capital goods (Category 2). • Business travel (Category 6). The remaining categories' FY2020 baselines have also been disclosed, except if the category is deemed immaterial or, as in the case of Employee commuting (Category 7), the required data is still being sourced.
Deploying Business travel Scope 3 emissions reduction strategies against the FY2020 baseline	Enhancements include: <ul style="list-style-type: none"> • Work towards developing a longer-term emissions reduction target aligned to science. • Explore usage of sustainable aviation fuel to both help scale its adoption and reduce our own emissions. • Enhance travel emissions data visibility to support lower emission travel choices. • Continue to offset business travel emissions through the purchase of high-quality carbon credits. • Explore travel reduction strategies.
Deploying an end-to-end sustainable procurement framework to maximise positive environmental, social, and economic impacts across the supply chain. The framework will integrate sustainability throughout the procurement life cycle and bring our approach in closer alignment to global best practice as outlined in the ISO 20400:2017 ³⁷	A sustainable procurement framework is in development and will assist in identifying opportunities to increase our spend with diverse suppliers and on environmentally and socially sustainable products. In addition, we have established a new 2030 target related to emissions (see prior table for detail).
Increasing our spend on environmentally and socially sustainable products to 80 per cent of our global purchasing needs for prioritised goods by FY2025, and to 100 per cent by 2030	Clear and consistent sustainability definitions for prioritised goods are under development. Once finalised, these definitions will be built into the Macquarie procurement solution to drive an increased uptake in sustainable products.
Maintaining 100 per cent compliance with Macquarie's Supplier Governance Policy's environmental and social risk requirements	In FY2022, we achieved 100 per cent compliance with Macquarie's Supplier Governance Policy's environmental and social risk requirements, and we are enhancing our ongoing assurance program to better support environmental risk management in our supply chain.
80 per cent of employees in sustainably rated premises ³⁸	As of FY2022, 71 per cent of Macquarie employees occupied sustainably rated premises.
20 per cent reduction in electricity use by FY2023 (from the FY2014 baseline) in our corporate offices and data centres	<ul style="list-style-type: none"> • In FY2022, Macquarie achieved a 36 per cent reduction in electricity use (from the FY2014 baseline). • We continue to monitor our electricity consumption and execute strategies to reduce it and, as a result, Macquarie's electricity consumption continues to decline. This is mainly due to: <ul style="list-style-type: none"> – the consolidation, relocation and/or upgrades of office premises to more sustainable buildings; and – our cloud transformation strategy that enables rationalisation of servers.
<ul style="list-style-type: none"> • 60 per cent reduction in paper use (from the FY2019 baseline) • Procure 100 per cent of office paper from certified sustainable sources 	<ul style="list-style-type: none"> • As of FY2022, paper consumption reduced by 84 per cent from FY2019 baseline. • As of FY2022, 74 per cent of office paper procured was from a certified sustainable source.
Diversion of 50 per cent of waste from landfill across our global headquarters	In London and major Sydney offices, we reached an average recycling rate of 45 per cent (by weight).

36. As defined in the Greenhouse Gas (GHG) Protocol.

37. The International Standard for Sustainable Procurement that provides guidance to organisations, independent of their activity or size, on integrating sustainability within procurement.

38. Minimum LEED Gold, BREEAM Good, 5 Star Green Star or equivalent. See Sustainability ratings for Macquarie major offices.

Overview of our financed emissions commitment

For financial institutions, the bulk of emissions typically come from financed emissions (Scope 3, Category 15). For Macquarie, this relates to our lending and equity investments made in carbon-intensive sectors.

Under the Net Zero Banking Alliance (NZBA) Guidelines, net zero commitments are expected to include the “significant majority” of emissions associated with financing activities³⁹ within 36 months. This initially needs to focus on the following carbon-intensive sectors (on a “comply or explain” basis): Agriculture, Aluminium, Cement, Coal, Commercial and Residential Real Estate, Iron and Steel, Oil and Gas, Power Generation, and Transport.

In this Report, we disclose our financed emissions and interim targets for upstream oil/gas and motor vehicles.

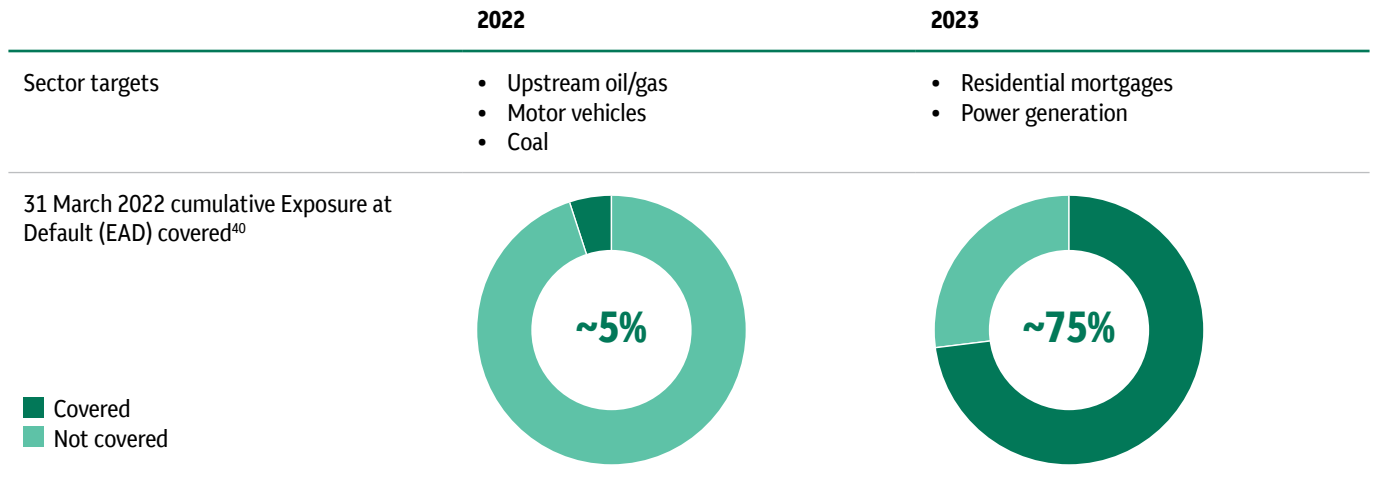
We also disclose our baseline financed emissions for coal mining, which is the most material segment of the coal value chain by exposure, and set a 2024 financed emissions target for the coal sector, based on our pre-existing commitment. Refer to **Section 5 on Coal** for further details of our pre-existing coal commitment and our financed emissions for the coal mining segment of the sector.

While these sectors comprise a small portion of our total lending and equity investments, they are likely to have represented the majority of our total financed emissions in the FY2020 base year.

Next year, data allowing, we are planning to include residential mortgages and the power generation sector. This will increase coverage to approximately 75 per cent of our total financing activities. In line with the NZBA Guidelines, by the fourth quarter of 2024, we expect to cover all material carbon-intensive sectors in our lending and equity investments exposure.

39. The NZBA Guidelines apply to banks' lending and investment activities (GHG Protocol Scope 3, Category 15). Refer to page 6 for further details of product inclusion and exclusion.

Net Zero Roadmap



Macquarie Group financing exposure as at 31 March 2022

Sector	31 March 2022 EAD (\$Ab) ⁴¹
Coal ⁴²	0.1
Oil/gas ⁴³	1.2
Motor vehicles	8.1
Residential mortgages	108.7
Power and Utilities ⁴⁴	4.5
Other ⁴⁵	44.5
Total	167.1

40. Based on sector level EAD as at 31 March 2022 and assumes no change to sector composition of our financing activities.

41. Includes on-balance sheet lending and equity investments for all sectors. In addition, for motor vehicles, it includes novated leases.

42. Includes coal mining and small exposure to coal-fired power generation.

43. Oil/gas includes upstream, midstream, and downstream segments of the value chain. Note, only upstream is included in the interim targets released in 2022.

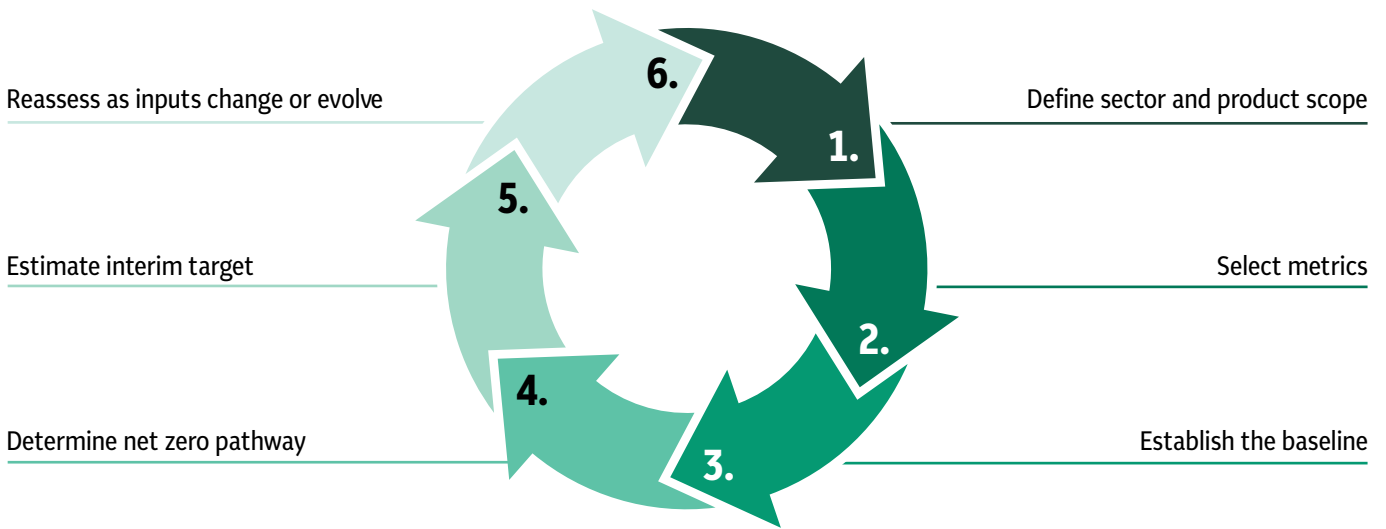
44. Covers exposure to both renewable and conventional power generation, and excludes a small exposure to coal-fired power generation. It also includes exposure to utilities clients, most of which relate to power.

45. This primarily includes exposure to non-carbon-intensive sectors, e.g., financial and professional services. It also includes exposure to the shipping, commercial property and metals mining sectors.

Approach to calculating financed emissions baseline and target setting

Our framework for analysing Macquarie's financed emissions (Scope 3, Category 15) reflects industry recommendations, including guidance from the GHG Protocol, Glasgow Financial Alliance for Net Zero (GFANZ), NZBA, United Nations Environment Program Finance Initiative (UNEP FI) and the Task Force on Climate-related Financial Disclosures (TCFD). It also leverages the Partnership for Carbon Accounting Financials (PCAF) Standard,⁴⁶ our internal expertise, and the most relevant, impactful, and credible data and metrics to drive progress.

A key feature of our framework is the use of sector-specific methodologies, which underpins our approach to setting targets. The following diagram outlines the framework we applied:



46. Global GHG Accounting and Reporting Standard for the Financial industry.

1. Define sector and product scope

To ensure appropriate focus across our financing activities, we began our analysis by covering the most carbon-intensive sectors that we finance, where we can have the greatest potential impact in supporting our clients' decarbonisation journeys. These sectors also have appropriate methodologies and data that enabled us to set science-based sectoral targets.

In line with the NZBA Guidelines, to define a sector, we used a combination of ANZSIC and GICS codes, business and product taxonomy in our systems, as well as our broader knowledge of our clients and their activities. In addition, for coal, in line with evolving industry practice, we also used the share of companies' revenue that comes from coal-related activities. The breadth of the business activities covered by our net zero plan for financed emissions includes the on-balance sheet lending and equity investment activities (as per page 6 of this Report) of both the banking and non-banking businesses of Macquarie. Where data and methodology allow, we also include other products, e.g., in motor vehicles product scope we have included novated leases.

2. Select metrics

Once the sector and product scope were defined, we developed one or more metrics for measuring and tracking emissions performance of companies and clients within those sectors in our portfolio. Considerations included available guidance and methodologies, commonly used metrics and data sources, as well as decarbonisation strategies implied by net zero pathways and our business strategy.

In line with the UNEP FI Guidelines for Climate Target Setting for Banks,⁴⁷ we have calculated and reported both absolute financed emissions and physical emissions intensity metrics for each in-scope sector.⁴⁸ Those Guidelines allow us to choose one or both metrics in setting sector targets. For sectors that will continue to play a key role in the economy into 2050, such as motor vehicles and oil/gas, we have chosen to set targets in terms of physical emissions intensities.

Our approach also recognises that, while the overall objective is to decrease global emissions on an absolute basis to net zero by 2050, rapid reallocation of capital from carbon-intensive assets could lead to undesirable consequences. We plan to achieve our net zero targets in line with broader ESG considerations, and to continue to support activities that advance carbon-efficient delivery of resources and support the rights of developing countries for economic development and access to energy.

In line with the PCAF Standard and the NZBA Guidelines, our approach covers our clients' Scope 1, Scope 2 and Scope 3 emissions, where significant and where data allows. We expect the quality and availability of our clients' emissions data to improve over time, and our view of the significance of emissions scopes may evolve as this data improves.

3. Establish the baseline

Prior to assessing net zero pathways and targets, we established our financed emissions baselines for each in-scope sector. Having a measure of our baseline financed emissions enables us to measure the carbon performance of in-scope sectors of our portfolio over time. At this stage within our framework, we made several methodological determinations, outlined in detail below.

Our baseline reporting year is from 1 April 2019 to 31 March 2020 (Macquarie's FY2020). We chose that baseline as it avoids potential distortions caused by COVID-19 in FY2021, and to a lesser extent in FY2022.

4. Determine net zero pathway

After choosing metrics and establishing the baseline, we analysed how to align our in-scope sectors to science-based net zero pathways. That involved selecting a sector-specific scenario for which decarbonisation pathways are available or can be reasonably derived. In selecting our benchmark scenarios, we complied with the criteria set out in the latest GFANZ Guidance,⁴⁹ ensuring appropriateness to the nature of our business, including sectoral and geographical relevance.

In some cases, it was necessary to perform additional analysis to account for emissions included in our metrics. For example, for the oil/gas sector, when assessing the available net zero scenarios it was necessary to derive the relevant physical emissions intensity metric based on the scenario projected energy sector emissions and projected energy demand estimates.

Assessing performance of our sector portfolios against industry scenarios does not mean that we necessarily adopt all the assumptions as part of our net zero action plan. We are supportive of efforts to facilitate global and country-specific, cross-industry collaboration to enhance comparability of decarbonisation targets with our peers. We also closely monitor development of decarbonisation pathways and will revisit our approach as those scenarios evolve.

47. UNEP FI Guidelines for Climate Change Target Setting.

48. NZBA also requires reporting of portfolio-wide economic intensity e.g., CO₂e/\$ lent or invested. However, this metric will be more meaningful once we have covered the remaining carbon-intensive sectors and larger proportion of our financing activities.

49. Glasgow Financial Alliance for Net Zero, Guidance on use of Sectoral Pathways for Financial Institutions.

5. Estimate interim target

Based on our selected net zero pathway, we estimated where our sector portfolio needs to be by 2030. Depending on the granularity of available scenario projections, and available science-based target setting methodologies, targets may be set as a specific value or as a percentage reduction from a specified baseline.





The actual performance of our portfolio against these targets may not follow a linear pathway, with year-to-year volatility to be expected as the portfolio changes over time. We will continue to work with our clients across these sectors in different regions to support their transitions.

6. Reassess as inputs change or evolve

Industry net zero scenarios are expected to be updated periodically to reflect relevant changes in the energy market, emission trends, data availability, government policy, and availability of transition technologies. These updates may lead to changes in net zero pathways, which may require updates to our targets. In addition, new or additional data may become available, which may enable us to refine and improve the quality of our metrics.

Therefore, as a critical element of our framework, we will periodically reassess key inputs and assumptions and adjust our targets and baselines as needed.

We have estimated financed emissions and have set targets for our initial in-scope sectors. Below is a summary of key methodology decisions we have made:

 Decision	 Oil/gas	 Motor vehicles	 Coal
Financing products covered	Lending and equity investments	Lending and leasing	Lending and equity investments
Value chain in scope	Upstream (oil/gas extraction)	Vehicle use	Estimated historical emissions: coal mining Target: all coal ⁵⁰ (refer to page 44)
Financial indicator	EAD	EAD	EAD
Target metric	Physical emissions intensity (gCO ₂ e/MJ)	Physical emissions intensity (gCO ₂ e/km)	Absolute emissions (MtCO ₂ e)
Client emissions attribution method	PCAF	PCAF	PCAF
Emissions intensity methodology	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity
External data sources used in estimating client / sector emissions	IEA, BP conversion factors	Vehicle make/model emissions data, NGER, Australian Bureau of Statistics (ABS)	IEA, NGER conversion factors
Emissions Scope	1, 2 and 3	1, 2	1, 2 and 3
Scenario selection	NGFS Net Zero 2050	UN PRI commissioned IPR RPS	N/A ⁵⁰
Geographical scope	Global	Australia	Global

50. Our coal target is based on our pre-existing commitment to run-off our limited remaining on-balance sheet lending and equity exposure to coal companies (inclusive of both coal mining and coal-fired power generation, and covering both metallurgical and thermal coal) by the end of 2024.



Scenario selection

Oil/gas

In determining net zero pathways for our initial in-scope sectors, we conducted an extensive review of available science-based net zero by 2050 scenarios, including the International Energy Agency (IEA) NZE, Network of Central Banks and Supervisors for Greening the Financial System (NGFS) Net Zero 2050, and other Intergovernmental Panel on Climate Change (IPCC) aligned scenarios. For the oil/gas sector, we adopted the NGFS Net Zero 2050 scenario in setting our initial 2030 target for several reasons:

- The NGFS scenarios acknowledge the uncertainty inherent in climate scenario modelling, making use of three alternative models⁵¹ for each of the six scenarios they consider, including the orderly Net Zero 2050 scenario. The NGFS scenarios are broadly consistent with a range of IPCC scenarios.
- These scenarios are designed to provide a common starting point for the financial sector to analyse climate risks to the economy and financial system. Moreover, two NGFS scenarios, based on the Global Change Analysis Model (GCAM), were used by APRA with additional modelling for the Australian context in its recent Climate Vulnerability Assessment (see **Section 7 — Risk management** for further information).
- The NGFS Net Zero 2050 scenario generally entails a relatively rapid phase-out of coal, while acknowledging that oil/gas are likely to remain an important part of the energy mix over the rest of this decade, as renewables capacity is built out. This aligns with Macquarie's views on the most feasible net zero pathway for oil/gas.
- The NGFS scenarios provide a high level of regional and sectoral granularity. In addition, these scenarios are expected to be updated frequently with improved usability and transparency.

Motor vehicles

Following an extensive review of available net zero scenarios, we benchmarked our alignment using the decarbonisation pathway for motor vehicles under the UN Principles for Responsible Investment (PRI) commissioned Inevitable Policy Response (IPR) 1.5°C Required Policy Scenario (RPS).

In selecting a pathway for motor vehicles, we focused on several guiding principles, which included identifying a pathway that met the NZBA Guidelines, as well as providing region-specific analysis to ensure a plausible pathway covering nuances within the Australian market.

Future updates

We intend to review the NGFS, UN PRI commissioned IPR RPS, and other industry net zero scenarios each year and consider recalibration of our benchmark targets.

51. These are the REMIND-MAgPIE model, the MESSAGEix-GLOBIOM model, and the GCAM model. Our analysis is based on the recent NGFS Phase III scenarios, published in September 2022, with the oil/gas target derived from the model with the most significant estimated reduction in physical emissions intensity. For more information, see Climate Scenarios for Central Banks and Supervisors.

Oil/gas

Sector overview

In science-based, net zero-aligned climate scenarios (e.g., NGFS Net Zero 2050, IEA NZE and IPCC), oil and gas generally remain critical components of the energy mix in 2030, which means decarbonisation of the operations of oil/gas companies is an important element of the energy transition, especially in the near term. In addition, those scenarios assume this sector plays a significant role in developing new technologies, such as CCUS, and development of alternative, low and zero carbon sources of energy.

Divestment strategies might not support real world emissions reductions and could result in a disorderly net zero transition that does not address the economic and social needs of the communities affected. Therefore, our approach for this sector is based on partnering with our clients to support their decarbonisation efforts.

Activities in scope

Our methodology for this sector currently focuses on Scope 1 and 2 emissions of upstream oil/gas, as well as Scope 3, combustion-related emissions by end users. While the industry recognises that end-use Scope 3 emissions are not directly controlled by upstream oil/gas companies, we have included them in our analysis, as they contribute the majority of emissions within this sector. For many clients, as they lack control and influence in reducing combustion-related emissions, the reduction in Scope 3 emissions intensity will need to be enabled by significant developments in government policy, technology, and end-use consumption.

In line with the NZBA Guidelines, the product scope includes lending and equity investments.⁵² The industry guidance and methodology for these products is still evolving. We will continue to monitor industry developments.

Measuring emissions

In line with the PCAF Guidance, our methodology initially places higher importance on emissions reported by our clients, sourced either via public databases (e.g., Carbon Disclosure Project (CDP)) or reported directly to us. To assess reasonableness of this client reported data, we have compared it against industry benchmarks.

However, the industry faces significant data availability and quality challenges when measuring emissions. Less than 50 per cent of our clients in March 2020 were able to provide emissions estimates.

Where our clients did not report their emissions, we initially estimated their emissions using client reported production data and weighted emissions intensity factors from the IEA.⁵³ For the remaining exposure, where production data for our clients was not available, emissions were proxied using the average intensity of the portfolio for which emissions have been calculated. Refer to **Appendix 2** for further details on emissions calculations.

2030 interim target

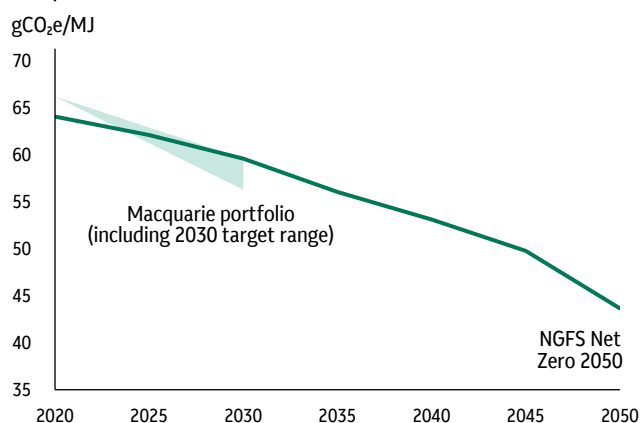
Our methodology for target setting supports the need for a rapid decline in emissions from flaring, fugitive, and vented methane emissions. We also recognise that companies in the oil/gas sector need to invest in new technologies, such as CCUS, and transition their businesses from the production of high-carbon fuels to low and zero carbon sources of energy, thereby contributing to a reduction in emissions. Given our small lending and equity exposure to this sector, and our limited ability to influence the degree of global combustion, our approach is based on continuing to support clients in this sector in reducing their operational and end-use carbon emissions. Therefore, we set targets for our portfolio based on physical emissions intensity for Scopes 1, 2 and 3.

52. Refer to page 6 for further details of product inclusion and exclusion.

53. IEA (2020), *Methane Tracker 2020*, IEA, Paris; and IEA (2020), *The Oil and Gas Industry in Energy Transitions*, IEA, Paris.

Using the emissions pathway implied by the NGFS Net Zero 2050 scenario, we have set a physical emissions intensity reduction target of 10-15 per cent relative to the FY2020 baseline. Given the underlying uncertainty surrounding both portfolio emissions estimates and the scenario-implied transition pathways, we consider a target range more appropriate than a point estimate.

Oil/Gas (upstream) emissions intensity (Scope 1, 2 and 3)

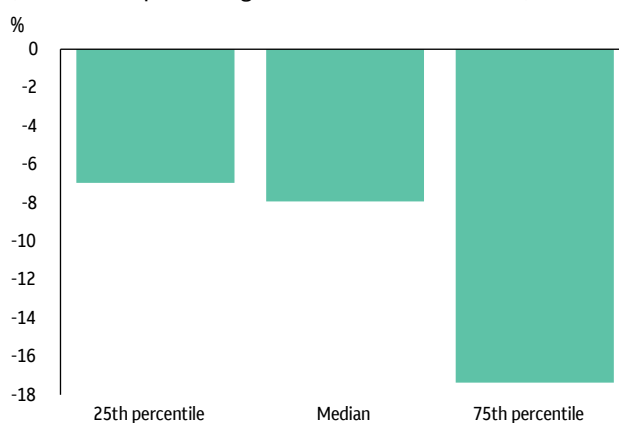


Source: NGFS.

Given the small size of our oil/gas exposures, annual physical emissions intensity outcomes are likely to exhibit considerable volatility (in both directions) as the portfolio evolves over time. Such volatility is to be expected and is consistent with our 2030 target.

Oil/Gas (upstream) emissions intensity

(Estimated implied change across scenarios*, 2020-30)



Source: International Energy Agency, IPCC, NGFS.

*Includes the NGFS Net Zero 2050 scenario, the IEA NZE Scenario, and 74 IPCC 1.5°C no or low overshoot scenarios.

Baseline emissions and interim targets for the oil/gas (upstream) sector:

Sector	31 March 2020 EAD	FY2020 absolute emissions (Scope 1, 2)	FY2020 absolute emissions (Scope 1, 2 and 3)	FY2020 physical emissions intensity (Scope 1, 2)	FY2020 physical emissions intensity (Scope 1, 2 and 3)	2030 physical emissions target (Scope 1, 2 and 3)	Reference scenario
Oil/gas (upstream)	\$A1.4 billion	0.51 MtCO ₂ e	3.88 MtCO ₂ e	8.3 gCO ₂ e/MJ	66.2 gCO ₂ e/MJ	10-15% reduction 56.3-59.6 gCO ₂ e/MJ	NGFS Net Zero 2050

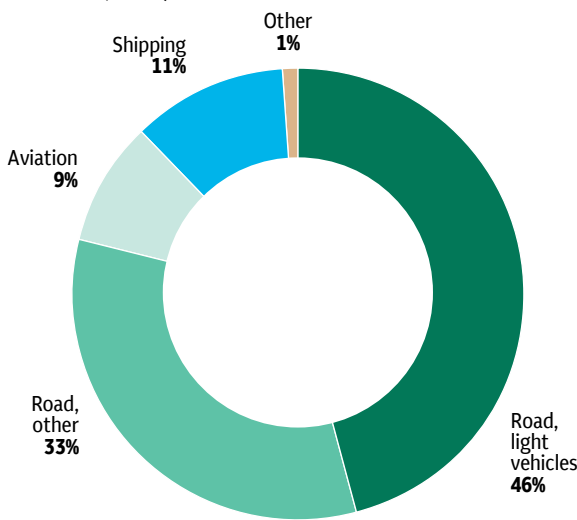
Motor vehicles

Sector overview

The transport sector emitted approximately 23 per cent of global CO₂ emissions in 2019 and 21 per cent in 2020. Motor vehicles contributed approximately 46 per cent of those CO₂ emissions in 2020 and are a major source of urban air pollution. For Macquarie, the motor vehicle segment represents the largest transport sector financing exposure, at \$A11.5 billion as at 31 March 2020.

Global transport-related CO₂ emissions

(By sub-sector, 2020)



Source: International Energy Agency.⁵⁴

Decarbonising the transport sector will require government and industry co-operation to support a policy framework that promotes a rapid transition to the availability of electric vehicles, enforces stricter fuel economy standards for internal combustion engine vehicles, and establishes sophisticated electric vehicle charging infrastructure. Furthermore, societies will need to see the growth in next generation battery technology, decarbonisation of the electricity grid and broader changes in consumer behaviour and preferences. The UN PRI commissioned IPR RPS assumes that the Australian passenger car and van fleet will increase by 37 per cent by 2050.

Activities in scope

Our analysis covers our vehicle finance business in BFS, namely passenger cars and light commercial vehicles offered in Australia.

Product scope in this sector includes consumer loans, commercial loans, and novated leases.

Measuring emissions

In line with the PCAF Standard, we include Scope 1 and Scope 2 emissions for vehicles we finance:⁵⁵

- Scope 1: emissions from fuel combustion for internal combustion engine (ICE) vehicles and plug-in hybrid electric vehicles (PHEVs); and
- Scope 2: emissions from electricity used to charge electric vehicles (EVs) and PHEVs.

The Australian vehicle emissions testing regime is limited to CO₂; however, to capture carbon equivalents, the emissions calculation has been expanded to also include methane and nitrous oxide from tailpipe emissions. Refer to **Appendix 2** for further details on emissions calculations.

54. Based on IEA (2022), *Global CO₂ emissions from transport by subsector, 2000-2030*, IEA, Paris.

55. The PCAF Standard Section 5.6 states that Scope 3 emissions related to the production of vehicles, delivery of vehicles to buyers, or decommissioning of vehicles after use do not need to be covered, as these are difficult to obtain and are not material.

2030 interim target

We have set a sector target using physical emissions intensity, as this enables us to continue to support the Australian economy’s transition to zero emission vehicles.

To derive a pathway based on the UN PRI commissioned IPR RPS, we used CO₂ emissions per car to obtain the emissions reduction rate required for our sector portfolio alignment to 2050. Currently this scenario does not consider transport emissions on a per kilometre basis. We therefore assumed that the average distance travelled by car remains constant year-on-year, which is a conservative assumption, as the Australian Government projections⁵⁶ suggest there is likely to be a minor reduction in the near term.

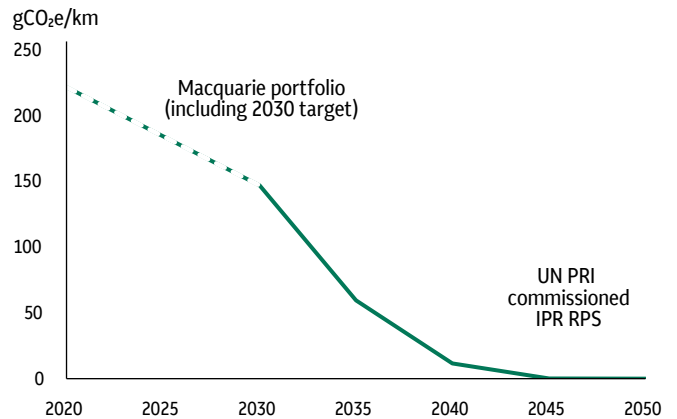
Based on the UN PRI commissioned IPR RPS net zero pathway, we estimate a physical emissions intensity reduction target of 34 per cent by 2030 from our baseline.⁵⁷ We believe this is achievable and we will continue to communicate our strategy and actions in future disclosures. However, our ability to meet our target will be subject to government and industry support for:

- Greening the electricity grid via renewable energy sources.
- Setting EV sales targets so that the community can work towards the transition in an orderly manner and supply and infrastructure can meet relevant demand.
- Vehicle manufacturers to maximise ICE vehicle efficiency and fuel standards in the immediate term, to enable the transition, and increase supply of EVs.

Baseline emissions and interim targets for the motor vehicle sector:

Sector	31 March 2020 EAD	FY2020 absolute emissions (Scope 1, 2)	FY2020 physical emissions intensity (Scope 1, 2)	2030 physical emissions target (Scope 1, 2)	Reference scenario
Motor vehicles	\$A11.5 billion	0.86 MtCO ₂ e	221 gCO ₂ e/km	34% reduction 147 gCO ₂ e/km	UN PRI commissioned IPR RPS

Motor vehicles emissions intensity (Scope 1 and 2)



Source: UN PRI.

56. Australia’s emissions projections 2021.

57. While scenario emissions per car data combined with Australian Government data on average distance travelled per car suggests that our baseline portfolio emissions intensity is below the scenario sector average intensity, the baseline year (2020) for Macquarie and the UN PRI commissioned IPR RPS scenario have been aligned to reflect the scenario-projected emissions target reduction rate over time due to limitations in distance travelled data.

Coal

Sector overview

Coal is the most carbon-intensive fossil fuel and is estimated to account for around 30 per cent of all GHG emissions globally.⁵⁸ Net zero scenarios that meet more ambitious climate goals generally feature a rapid decline in coal use. Across the scenarios recently assessed by the IPCC that are consistent with 1.5°C of warming with no or limited overshoot, the median reduction in coal usage was 75 per cent by 2030 and 95 per cent by 2050 (relative to 2019).

Activities in scope

In 2021 we announced our intention to run-off our limited remaining on-balance sheet lending⁵⁹ and equity exposures to coal companies by 2024. This commitment applies to coal companies in both the mining and coal-fired power generation sectors and to metallurgical and thermal coal.

At the time of the 2021 coal commitment, we followed the then standard industry practice of classifying clients as coal companies based on ANZSIC and GICS codes. However, over the past year the market has evolved, with NZBA guidance now focused on the proportion of a company's revenue that comes from coal-related activities. Consequently, we now define a coal company based on the proportion of its revenue derived from coal-related activities.

Given computational challenges associated with revenue shares (particularly in a world of high and volatile coal prices), we define a coal company as one that derives the majority (i.e., more than 50 per cent) of its revenue from coal (both thermal and metallurgical) production, mine ownership or operation, or coal-fired power station ownership or operation. We acknowledge that the 50 per cent threshold is not in line with the NZBA Guidelines, which define a coal company as one that derives more than 5 per cent of revenues directly from thermal coal. However, Macquarie has committed not to enter into new business activity with **any counterparty** where the underlying purpose is to fund the purchase, development or expansion of a coal mine or coal-fired power station.

The global community has recognised the urgent need to reduce global carbon emissions and the importance of working with carbon-intensive industries, such as coal, to help them decarbonise. Given this, going forward we will maintain the ability to work with coal companies to finance projects that will significantly reduce their GHG emissions in line with science-based scenarios, or are for the purpose of diversifying away from the coal sector in line with a credible transition plan.

For the purpose of net zero planning, coal-fired power generation and coal mining need to be analysed separately, due to differences in financed emissions methodologies. In this Report, we present historical emissions for coal mining, noting that this sector represented most of our limited equity and lending exposures to coal in FY2020. Next year, we are aiming to include analysis of historical emissions in the power generation sector, which will include our small exposure to coal-fired power generation.

Measuring emissions

The portfolio emissions include our clients' Scope 1, 2 and Scope 3 emissions (use of sold products, i.e., CO₂ from combustion), based on client level data, where available. Approximately 40 per cent of our clients in this sector reported their Scope 1 and 2 emissions. For clients that did not report Scope 1 and 2 emissions, these were estimated based on production data and average emissions intensities from clients that reported data. Scope 3 emissions were estimated based on client reported production data and weighted average emissions intensities from the IEA's World Energy Outlook 2021.⁶⁰

58. Based on data from IEA (2022), *GHG Emissions from Energy*, IEA, Paris.

59. Lending refers to loan assets held at amortised cost and excludes certain items such as leasing, asset finance, trading assets and short-term financing (e.g., inventory finance).

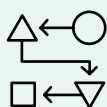
60. IEA (2021), *World Energy Outlook 2021*, IEA, Paris.

2024 target

In line with our pre-existing commitment to run-off our limited remaining on-balance sheet lending and equity exposure to coal companies, our target is to reach zero absolute financed emissions (Scopes 1, 2 and 3) in the coal sector by the end of 2024. This target does not include any emissions associated with potential projects that will significantly reduce GHG emissions in line with science-based scenarios or are for the purpose of diversifying away from the coal sector in line with a credible transition plan. In addition to this target, we present historical emissions for coal mining.

Baseline emissions for the coal mining sector:

Sector	31 March 2020 EAD	FY2020 absolute emissions (Scope 1, 2)	FY2020 absolute emissions (Scope 1, 2 and 3)	FY2020 physical emissions intensity (Scope 1, 2)	FY2020 physical emissions intensity (Scope 1, 2 and 3)
Coal mining	\$A0.3 billion	0.14 MtCO ₂ e	4.83 MtCO ₂ e	2.7 gCO ₂ e/MJ	93.7 gCO ₂ e/MJ



Data quality and future evolution of our methodology

Estimating emissions baselines requires the collection and analysis of large sets of new data and, as mentioned, there are significant challenges with both data availability and quality. We therefore produce some of our estimates based on assumptions and extrapolations. Given the urgency of climate action, we are disclosing baselines and targets based on current methodologies despite these data limitations. In making the data quality related determinations, we have applied the PCAF Standard data quality hierarchies. Refer to [Appendix 2](#) for further details on data quality determinations.

The data and models used in our methodology are subject to Macquarie's data governance policies and frameworks.

We will continue to assess available third-party data and service providers and refine our methodology and data collection and analysis capabilities.

Over time, we expect that the availability and quality of the data will improve. As a result, we may periodically restate our baseline emissions and, possibly, our emissions reduction targets. While a lag may occur in the progress made against any recalibrated targets, we are committed to pursuing the best data and modelling capabilities available and transparently updating our calculations, as necessary.

Overview of investment in climate solutions

In 2021, we committed to increase investment in climate mitigation and adaptation solutions. The table below shows the data we have tracked for FY2022.

In FY2022, we saw a reduction in capital invested from Macquarie's balance sheet compared to prior financial years. This is partly because the Green Investment Group's (GIG) investment strategy has shifted from the financing of the construction of projects to investing during the development phase. While investing during development is higher risk and generally viewed as high value in the context of the energy transition, it is generally less capital intensive.

In 2022, GIG was moved from Macquarie Capital (MacCap) to Macquarie Asset Management (MAM) with the explicit intent of utilising GIG's asset creation capabilities for the benefit of MAM clients. While this enables higher volumes of overall capital deployment, over time this will lead to further reductions in capital invested from Macquarie's balance sheet when measured on a consistent basis with previous disclosures.

Our ambition is to maintain and grow our role as a leading supporter of green energy and other climate solutions around the globe.

We expect many of our projects under management to come into operation over the coming years, supported by continued improvement in green energy economics and supportive policy environments. However, several important markets, notably in Europe, have challenging project development conditions, grid connection bottlenecks and high degrees of competition. As a result, setting a quantified target for our climate solutions investment (either on our balance sheet or under Macquarie management) over the coming years is not practical in the current environment.

In the years ahead, we expect to see increases across each of the metrics below as the decisions and actions set out in **Section 4 — Implementation and engagement** take further effect.

Investing in new green energy capacity: ⁶¹	FY2022
\$Ab invested, committed or arranged in green energy assets in the year	2.3 ⁶²
GW of green energy assets in development at year end	30
GW of green energy assets under construction at year end	1
GW of green energy assets currently operating at year end	16
\$Ab of renewable transactions advised on over the year	4.1

61. GW of green energy assets reflect 100 per cent generating capacity of each asset, not the proportion owned/managed by Macquarie. For detailed definitions and methodology, refer to Appendix 3.

62. This is included in the total \$A invested, committed or arranged in green energy assets in the past five years to 31 March 2022.

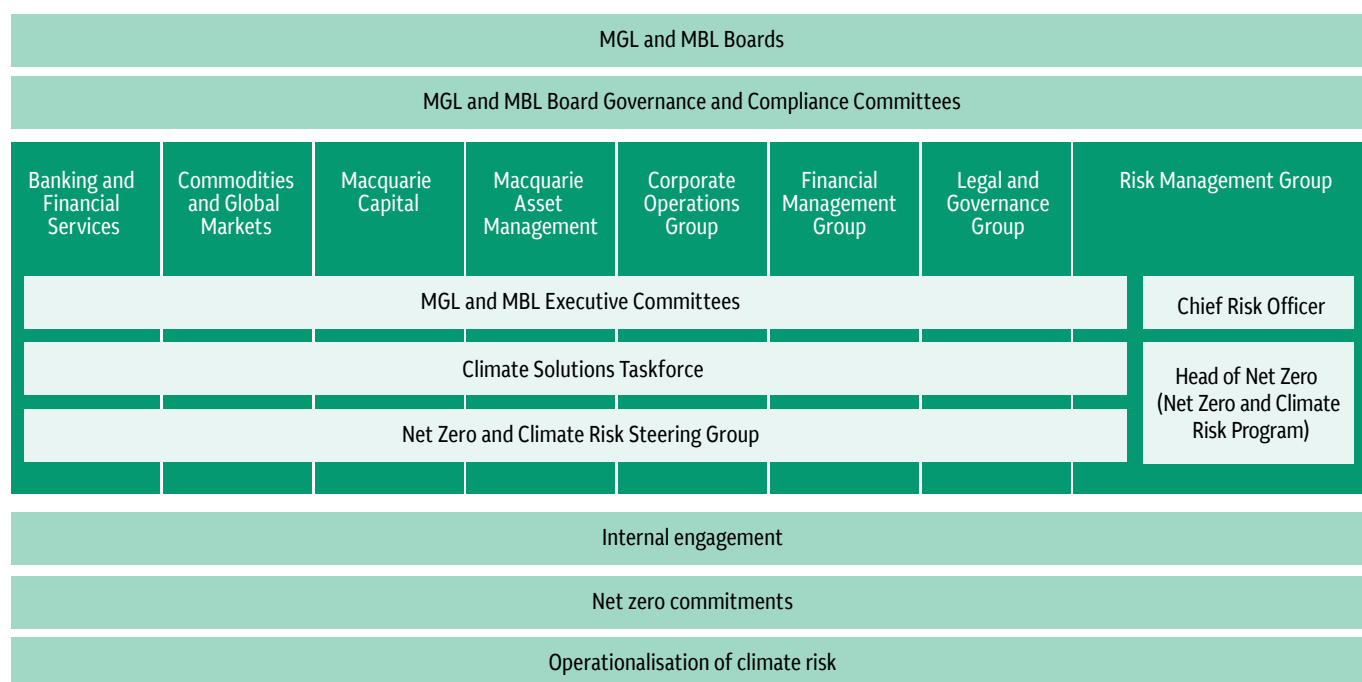


06

Governance

Macquarie’s Boards (as defined below) and management recognise the importance of sound Environmental, Social and Governance (ESG) practices as part of their responsibility to our clients, shareholders, communities, staff, and the environment in which Macquarie operates.

Climate change is one of Macquarie’s eight ESG focus areas and is core to our business and risk management practices. We have therefore integrated oversight of climate risks and opportunities throughout our governance structure, including at the highest level.



The **Macquarie Group Limited (MGL) and Macquarie Bank Limited (MBL) Boards**, in accordance with their respective charters, approve MGL’s and MBL’s risk appetite statement and risk management strategy, monitor material risks faced by MGL and MBL, and review how these are managed. The Boards are responsible for annually approving Macquarie’s Risk Management Framework (RMF), which includes our ESG framework and major ESG policies. The Boards also approve key decisions and documentation such as Macquarie’s Net Zero and Climate Risk Report and targets.

The **MGL and MBL Board Governance and Compliance Committees (BGCCs)**, in accordance with their respective charters, assist the MGL and MBL Boards by reviewing and monitoring the Group’s and Bank’s environmental and social risk management policies, practices and performance. The BGCCs monitor Macquarie’s management of climate risk based on reporting from management provided at least twice a year.

The **MGL and MBL Executive Committees** act as escalation and executive bodies for net zero and climate risk efforts across Macquarie, receiving periodic updates on progress and providing guidance on next steps.

The **Risk Management Group (RMG)** is an independent group responsible for objective review and challenge, oversight, monitoring and reporting in relation to Macquarie's material risks. When new or evolving risks such as climate risk are identified, the impacted areas of the RMF are assessed and adjusted where required to ensure the risks are managed effectively. In addition to the oversight activities performed by RMG, the Internal Audit Division (IAD) provides independent and objective risk-based assurance to the Board Audit Committee, other relevant Board Committees and senior management on the compliance with, and effectiveness of, Macquarie's RMF. IAD regularly reassesses emerging risks, regulations and trends to ensure that these are adequately captured within the internal audit plan. In addition, it is intended that the internal audit plan will provide ongoing, periodic assurance over the governance and progress of Macquarie's Net Zero and Climate Risk Program.

Last year, to support senior management with these responsibilities and drive progress, Macquarie established a dedicated centralised cross-Group **Net Zero and Climate Risk Program (the Program)**. Reporting to the Chief Risk Officer (CRO) and led by the **Head of Net Zero**, the central Program team provides a consistent and coordinated approach to net zero and to climate risk across Macquarie, aligning to existing approval forums and bodies. The Program builds on established capabilities within each operating group, all of which have dedicated teams involved in driving solutions with and for their clients. The CRO is responsible for the successful achievement of the Program's objectives, while the Head of Net Zero is responsible for the day-to-day Program operations. Both work closely with the Executive Committees, Boards, and Macquarie's RMG Environmental and Social Risk (ESR) team.

Supporting the Program is the **Net Zero and Climate Risk Steering Group**. This body has senior representatives from each operating and support group, who are responsible for driving outcomes and steering decisions relevant to the Program. They provide support to the various working groups and to senior management in decision-making.

Work to meet our net zero commitments

Aligning our financing activities with the global goal of net zero emissions by 2050: To achieve our net zero ambition, Macquarie has established the Financed Emissions Working Group. This includes representatives from across operating and support groups to enable the development of approaches, methodologies, frameworks, and governance required to deliver on our commitment. Each operating group has dedicated resources responsible for analysing industry sectors applicable to their group, quantifying emissions, assessing targets, and developing strategies and actions to meet those targets.

Net zero emissions in our own business operations by 2025 (Scope 1 and 2): Macquarie's Corporate Operations Group (COG) leads our efforts to reach net zero emissions in our own business operations. COG has a dedicated governance model to support these efforts, reporting into Macquarie Group's Chief Operating Officer. COG's Business Services Division leads the execution of Macquarie's **2025 Sustainability Plan** and net zero efforts in collaboration with Macquarie's other functions. Regular progress updates are provided to the Boards, Executive Committees, and Net Zero and Climate Risk Steering Group to ensure coordination of approaches across Macquarie and enable visibility and support where needed.

Investing and managing MAM's portfolio in line with global net zero emissions by 2040: Macquarie's Asset Management Group (MAM) is working to manage its portfolio in line with global net zero emissions by 2040. MAM has a dedicated governance structure, which supports these efforts as part of MAM's broader sustainability strategy. MAM's Chief Sustainability Officer reports to the MAM Group Head and is a member of MAM's Executive Committee. MAM's Sustainability Team is responsible for setting MAM's overall sustainability strategy and ESG framework, provides specialist expertise and supports portfolio and asset management teams in implementing MAM's net zero program and provides regular progress reports to MAM's Executive Committee. The MAM Sustainability Team works together with other MAM specialist teams, RMG's ESR and the Program teams. More information on MAM's ESG governance is provided in the **MAM 2021 Sustainability Report**.

Work to operationalise climate risk management

There are clear roles and responsibilities across Macquarie with respect to climate risk management and a well-established **Environmental and Social Risk (ESR)** function. The ESR team comprises subject matter experts who coordinate a diverse range of ESG activities across operating and support groups and regions, including developing and implementing Macquarie-wide and group-specific policies, reviewing transactions, providing advice on climate risks and opportunities, and facilitating training.

The **Climate Risk Working Group** provides an additional level of oversight of climate risk management. Each RMG division is represented on the Climate Risk Working Group, which reports to the Head of Net Zero. This ensures appropriate senior leadership oversight and management of climate risk and the program of activities to mature our operationalisation of climate risk across our risk management frameworks, policies, and procedures. The Climate Risk Working Group is supported by dedicated resourcing across our compliance and regulatory affairs teams, which engage in well-established processes to conduct regulatory horizon scanning and triage, as referenced in **Section 7 — Risk management**.

In **MAM**, our investment teams and portfolio company management team have access to a range of tools and frameworks to enable ESG risks to be identified and monitored, including in relation to both the physical and transition risks from climate change. As disclosed in the Net Zero Asset Managers initiative (NZAM) Initial Target Disclosure Report dated May 2022, MAM has committed to manage 43 per cent of its assets under management (including 100 per cent of its infrastructure and agriculture portfolios and more than 80 per cent of its real estate portfolio) in line with applicable Paris Aligned Investment Initiative Net Zero Investment Framework methodologies.

Work to pursue climate opportunities

Since 2017, Macquarie's Global Green Committee has promoted and advanced cross-Group collaboration on practical climate solutions. In 2022, the Global Green Committee was renamed as the **Macquarie Climate Solutions Taskforce (CST)**. CST has representatives from all operating and support groups and is working to support Macquarie's expansion into new climate-aligned technologies such as hydrogen and CCUS as well as Macquarie's ambition to strengthen the support it provides to carbon-intensive industries and clients, like the oil/gas sector. The CST is supported by a **Climate Intelligence Unit (CIU)** formed in 2021. The CIU provides expert support across Macquarie on clean technologies, market developments and cross-Group client opportunities.

Finally, the following climate capabilities are well established across Macquarie. This allows the Program to leverage internal expertise:

- CGM Energy Transition Steering Committee
- CGM Global Carbon business
- GIG Green Analytics Team
- MAM Sustainability Team
- Green Law Community (internal employee network on green law and regulation)
- Green@Macquarie (internal employee network on sustainability issues with over 2,600 members)
- BFS Environmental Sustainability Employee Network Group

Risk management



Macquarie's Risk Management Framework

Macquarie's Risk Management Framework (RMF) is the totality of systems, structures, policies, processes, and people within Macquarie that identify, measure, monitor, report, and control or mitigate internal and external sources of material risk. It is underpinned by the following elements:

Risk appetite

Risk appetite is the nature and amount of risk that Macquarie is willing to accept in pursuit of its strategic objectives and business plan and is detailed in the Board-approved Risk Appetite Statement (RAS). Risk tolerances, expressed as qualitative statements and quantitative limits or thresholds, are established to ensure that we only accept risks that are consistent with our risk appetite.

Risk Management Strategy

Macquarie's Risk Management Strategy (RMS) describes the key elements of our RMF, material risks faced by Macquarie and our approach to managing these risks.

Risk Taxonomy

The Risk Taxonomy is a comprehensive hierarchy of risks faced by Macquarie, which distinguishes between risk causes, events, and impacts.

Climate risk

In FY2022, Macquarie continued to enhance identification, assessment, monitoring, management, and reporting of climate risks across our RMF. Climate change and net zero transition were incorporated as level 2 causal risks under External Risk and Strategic Business Risk, respectively, within Macquarie's RAS, RMS,

and Risk Taxonomy. This ensures qualitative updates are provided to senior management. We acknowledge the risks associated with climate change are complex and pervasive. We seek to identify, assess, monitor, and manage these risks, including through scenario analysis.

Consideration of climate risks within Macquarie's existing risk functions

Aligning with regulatory guidance, Macquarie considers the financial and non-financial risks arising from physical climate risk, transition climate risk and liability climate risk drivers.

Physical risk

Physical climate risk includes the chronic risk arising from progressive shifts in climate patterns and the acute risk presented by changes to the frequency and magnitude of extreme weather events.

Transition risk

Transition climate risk includes risk arising directly or indirectly from the process of (orderly or disorderly) adjustment towards a lower-carbon and more environmentally sustainable economy, including changes in policy and regulatory settings, technological innovation, social adaptation, and market changes.

Liability risk

Liability climate risk arises from the potential for litigation or regulatory enforcement due to the failure to adequately consider or respond to the impacts of climate change.

Potential impacts on Macquarie's operations, clients, and assets



- Reduced revenues from production outages
- Remediation and repair costs
- Reduction in asset values due to physical climate threats



- Reduced revenues from shifts in demand or the introduction of carbon pricing
- Additional costs and capital expenditures to fund transition plans, including research & development
- Reduction in asset values or stranded assets due to transition risks



- Litigation and regulatory related costs and liabilities

Macquarie treats climate risk as a cross-cutting risk. This means that we recognise the impact climate risk may have on other material risk types within our RMF, as illustrated in the following table:⁶³

Risk type	Examples of potential climate impacts	Risk identification and management processes
Equity/Credit	<p>Where Macquarie has a direct interest in an asset, the potential financial impacts correspond with those described on the prior page. For loan exposures, the impacts on our clients can result in:</p> <ul style="list-style-type: none"> • Loan defaults • Decline in value of assets used as collateral • Increase in utilisation of credit facilities 	<ul style="list-style-type: none"> • Credit portfolio analysis and transaction due diligence for high-emitting sectors and clients. These processes will continue to mature, with analysis underway to consider next steps in this evolution. • Physical and transition risk scenario analysis (refer to Scenario analysis section on page 56).
Environmental & Social	<p>There is a risk of reputational or financial impacts due to failure to identify or manage material environmental or social issues arising from climate risks impacting on our investment, financing, client activities or supply chain.</p>	<ul style="list-style-type: none"> • Implementation of the Environmental and Social Risk (ESR) Policy (refer to policy details on page 55).
Work Health & Safety	<p>The risk of incidence of work-related injury, illness or disease or other events impacting health and safety of employees, contractors, visitors, and members of the public is heightened by physical climate risks.</p>	<ul style="list-style-type: none"> • Implementation of the Work Health and Safety (WHS) Policy.
Asset/Market	<p>Reduction in market value of Macquarie's assets and liabilities, or an increase in the volatility of interest rates, foreign exchange rates, equity prices, and commodity prices.</p>	<ul style="list-style-type: none"> • Physical and transition risk scenario analysis (refer to Scenario analysis section on page 56).
Operational	<p>Increased frequency and impact of extreme weather events could result in greater operational disruption at one or more Macquarie business locations.</p>	<ul style="list-style-type: none"> • Physical risk scenario analysis undertaken in FY2021 to assess the operational resilience of our business operations.
Regulatory & Compliance/Legal/Conduct	<p>Climate risk increases litigation and regulatory enforcement risk, and the likelihood of reputational damage due to failure to comply with current or emerging climate risk regulations or market expectations. This includes the risk of real or perceived misrepresentation during the creation of new products and public disclosures.</p>	<ul style="list-style-type: none"> • Conduct Management and Code of Conduct. • Global horizon scanning and triage activities (refer to Climate regulation section on page 55).
Strategic	<p>Strategic risk is the risk of Macquarie's business model being inadequate in the medium to long-term. Transition climate risk directly impacts Macquarie's strategic risk.</p>	<ul style="list-style-type: none"> • Strategic/business risk is managed through Macquarie's annual strategy and business planning process. The business is responsible for regularly reassessing their business strategy and the potential risk arising from their strategy.

63. This table is not an exhaustive list of risk types or climate impacts, rather demonstrative examples.

Macquarie Environmental and Social Risk (ESR) Policy

Our approach to managing climate risk is also underpinned by Macquarie's group-wide ESR Policy, which describes our approach to ESR management when onboarding or reviewing clients and other counterparties and across a broad range of transactions including equity investments, financing, leasing, and advisory mandates. The ESR Policy provides a robust process for embedding environmental and social risk management into investment decision-making. It takes a precautionary approach to ESR issues and provides decision-making and approval processes, alongside the standard credit approval process, for escalating matters with material environmental and social risks, including climate change risks, to the Chief Risk Officer, MGL and MBL Executive Committees or MGL and MBL Boards.

Macquarie Asset Management's (MAM) Environmental, Social and Governance (ESG) related policies, which set out its approach to ESG risk management, align with the Macquarie-wide ESR Policy and are adapted to MAM's business. MAM reports at least semi-annually to Macquarie's Boards on compliance with the Macquarie ESR Policy and other Macquarie requirements. Further details are set out in the MAM 2021 Sustainability Report.

Climate regulation

In line with existing roles and responsibilities, established functions within the Risk Management Group (RMG) provide dedicated global horizon scanning and triage activities for climate regulation (both prudential and non-prudential), as well as oversight and challenge on the resultant management of any changes.

These functions are of heightened importance given increased expectations from regulators and industry bodies on how institutions are managing climate risk. Given the rapid evolution of standards and best practices, Macquarie welcomes moves by regulators, and governments alike, to support increased guidance to enable consistent reporting and approaches across the industry.

To further support the ongoing assessment and adoption of regulatory needs and expectations, and to enable timely action, the RMG Climate Risk Working Group has been established (see **Section 6 — Governance** for detail). Comprising members of each RMG division, the Climate Risk Working Group provides an additional level of oversight of climate risk management.



Scenario analysis

Over the past few years, Macquarie has conducted the following scenario analysis to implement the Task Force on Climate-related Financial Disclosures (TCFD) recommendations and identify and assess our exposure to physical and transition risks:⁶⁴

Analysis conducted	2019	2020	2021	2022
	2°C / 3-4°C	1.5°C / 3-4°C	1.5°C / 3-4°C	<2°C / 3°C+
Transition risk analysis	<ul style="list-style-type: none"> Oil Gas Coal⁶⁵ Power generation 	<ul style="list-style-type: none"> Oil Gas Coal⁶⁹ Power generation Metals and mining 		<ul style="list-style-type: none"> Residential mortgage portfolio Australian business lending portfolio Credit risk exposures of Macquarie Bank Europe Designated Activity Company (MBE)
Physical risk analysis		<ul style="list-style-type: none"> Residential mortgage portfolio 	<ul style="list-style-type: none"> Macquarie's business operations Oil (extraction and storage) Gas (extraction and storage) Power generation 	<ul style="list-style-type: none"> Residential mortgage portfolio Credit risk exposures of MBE
Heat mapping		<ul style="list-style-type: none"> Global equity and debt exposures (all sectors) 		

Scenario analysis conducted in FY2020 indicated the impacts of transition risk in relation to Macquarie's exposures to the coal, oil/gas, metals and mining and power generation sectors would not be considered material given the diverse nature of Macquarie's portfolio, the short time horizon of our exposures (compared to those of the transition scenarios), and the limited size of our existing lending exposure to each sector.

Equally, physical risk scenario analysis conducted in FY2020 (Macquarie's residential mortgages portfolio) and FY2021 (prototypical assets in the offshore and onshore wind farm, oil/gas extraction and storage, thermal waste generation and combined cycle gas turbine industries) based on assets on Macquarie's balance sheet at the time concluded that the quantified impacts from both acute and chronic climate change were projected to be minimal.

64. Refer to prior TCFD reports for full detail on scenario analysis completed in 2019, 2020 and 2021.

65. Analysis included exposures to coal producers and traders.

In FY2022, scenario analysis focused on:

For MBL: APRA's Climate Vulnerability Assessment (CVA), which MBL participated in alongside the four largest Australian banks. The CVA focused on the following over a 30-year time frame under two NGFS climate scenarios — “delayed transition” and “current policies”, with additional modelling for the Australian context:

- transition and physical climate risks to MBL's residential mortgage portfolio in Australia;
- transition risk to MBL's Australian business lending portfolio;
- a bottom-up assessment of transition and physical risks to 25 select Australian counterparties of MBL; and
- balance sheet projections and assessment of a range of qualitative questions for non-credit risk types.

The CVA aided our organisation-wide understanding of climate scenarios and their potential financial impacts, further developed our climate risk modelling capabilities, and assisted in extending our ability to assess the impact of climate risks on individual counterparties. Last month APRA released a report summarising the aggregated, anonymised results of the CVA.

For Macquarie's Irish Credit Institution, MBE: an internal analysis of the impact of transition and physical risks on MBE's risk profile was conducted. The analysis concluded that MBE was not exposed to near-term material risks arising from the physical and transition scenarios considered.

The capabilities developed through these activities support Macquarie in evolving our understanding of climate risk and its consideration as part of ongoing stress testing and scenario analysis activities.



Macquarie Asset Management (MAM) has also completed a comprehensive physical climate risk assessment across its real assets and real estate portfolios. With over 160 portfolio companies and around 500 properties the review assessed over 1,500 geographical locations for exposure to physical risk events, including but not limited to, potential impacts of floods, extreme temperature, drought, and wildfires under the IPCC Representative Concentration Pathway (RCP) 4.5 and RCP 8.5 scenarios. The risks were assessed for 2021, 2030 and 2050. The review complements the physical risk assessments conducted as part of standard acquisition due diligence by the investment and sustainability teams, the outputs of which highlight potential short and long-term risks and inform adaptation and mitigation measures, which should be considered.

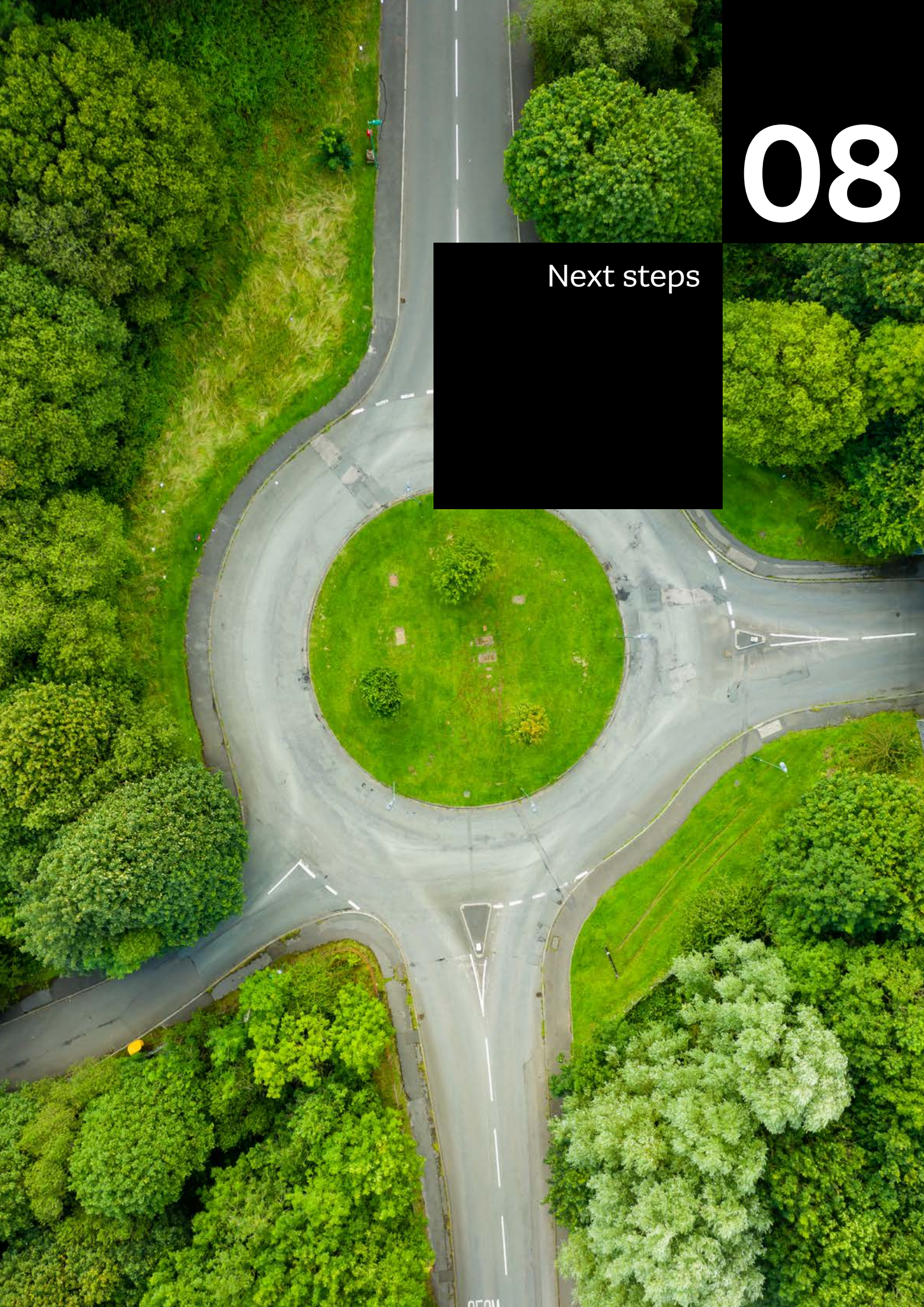
Climate risk reporting

As outlined in **Section 6 — Governance**, we ensure our Board Governance and Compliance Committees receive bi-annual updates through ESR's Material Risk Report and additional interim updates as required. These provide the Boards with material period-on trends in risk profile and a view of the effectiveness of the ESR risk management framework. We continue to improve our internal reporting to management — we have qualitative inclusions in our risk management framework and are now developing quantitative measures. Where targets are set for our financed emissions sectors, these will be embedded into our strategy, Board risk reporting, and risk management practices.

In addition to internal reporting, we will continue to align our external disclosures with the TCFD Guidelines, related emerging industry best practices and other reporting commitments such as those set out in the Net Zero Banking Alliance (NZBA) Guidelines and Net Zero Asset Managers initiative (NZAM) in the context of MAM. We will also continue to participate in voluntary external benchmarking initiatives and surveys, as a means of staying connected to industry best practice and monitoring our maturity.

08

Next steps



We are proud of our track record in driving decarbonisation solutions for our clients and our communities. However, we recognise that our commitment to align our financing activities with the global goal of net zero emissions by 2050 will require us to build on the progress to date.

The publication of this Report is an important milestone in the evolution of Macquarie's commitment to act on climate change. It sets out the detail on our new targets and provides a comprehensive overview of our implementation and engagement in four key areas of action.

- Increase our investment in climate mitigation and adaptation solutions.
- Strengthen our support for clients and portfolio companies to help achieve their decarbonisation ambitions.
- Continue to reduce the emissions of our own business operations.
- Align our financing activities with the global goal of net zero emissions by 2050.

We will continue to work to advance the actions we have set out under each of these areas.

Our greatest contribution will remain driving positive and practical climate solutions in line with our core capabilities. Important next steps include:



Developing and reporting emissions baselines, targets, and transition plans for the remaining carbon-intensive sectors, in accordance with the NZBA Guidelines.



Improving the availability and quality of climate data used in our sector portfolio assessments by incorporating additional datasets, advancing our methodology, and engaging with our clients to obtain more refined emissions data and insights, as appropriate.



Supporting greater collaboration between diverse stakeholders, regulators, and clients to facilitate a low-carbon transition.



Delivering on our commitment to invest and manage our portfolio in line with global net zero emissions by 2040, 10 years ahead of the deadline to achieve the goals of the Paris Agreement. This includes increasing the proportion of real assets portfolio companies with net zero business plans in place.



Developing methods to measure and track emissions reductions strategies across our Scope 3 operational value chain emissions. This includes a continued focus on evolving our carbon offsetting strategy in line with industry guidance. Work towards developing a longer-term Scope 3 operational value chain emissions reduction target aligned to science.



Further integrating climate risk into our broader risk management framework, policies and procedures.

A

Appendices



Appendix 1: Methodology for the emissions of Macquarie Group's own business operations

PwC has been assuring Macquarie's Scope 1 emissions since FY2017 and Scope 2 emissions since FY2010. Refer to the FY2020 **Independent Limited Assurance Report** section 3 for detailed criteria.

Coverage of Scope 1 and 2 GHG emissions

Corporate offices and data centres

Macquarie's corporate offices and data centres are defined as:

- Offices leased by Macquarie operating entities globally, which are also occupied by Macquarie staff and have a Net Usable Area (i.e., the area that can be fitted out by the tenant) of greater than 100m².
- Data centres around the world where Macquarie has oversight of electricity usage and pays for this usage.

Base buildings

Macquarie's base buildings are defined as:

- Offices or buildings where Macquarie owns and occupies the building. Base building energy refers to the energy required to operate the mechanical plant, lifts, and lighting in the lobby and other communal areas.

Calculating and measuring Scope 1 and 2 GHG emissions

Scope 1 emissions: Direct emissions associated with diesel, natural gas, and refrigerant usage

Scope 1 emissions for the baseline reporting period were estimated by multiplying energy usage by relevant emissions factors from government or international sources.

Usage has been sourced directly from meter data and supplier or landlord invoices, where available.

Where no tank meter readings were available, diesel usage was estimated based on engine performance data from diesel generator data sheets. For natural gas, where no invoiced data was available, usage was estimated based on usage in comparable offices. For refrigerant gases, usage was estimated based on

refrigerant charge and leakage rates in accordance with the NGER (Measurement) Determination.⁶⁶

Scope 2 emissions: Indirect emissions associated with total electricity consumed

The electricity usage data for the baseline reporting period was obtained directly from the actual tenancy or building data, where available, and the remaining energy consumption was estimated by one of the following prioritised data methodologies:

1. Extrapolation of actual electricity usage data from prior periods, adjusted for any year-on-year overall movements.
2. Where no electricity invoiced data was available for an office, estimating electricity consumed for that office based on its net lettable area and the average electricity consumption per square metre of other offices in the same region.

Emissions factors from relevant government or international sources have then been applied to determine the equivalent indirect emissions associated with electricity consumed.

Coverage of Scope 3 GHG emissions of our own business operations

Category 1: Purchased goods and services (including capital goods, upstream leased assets, and upstream transportation and distribution)

This category covers emissions arising from the procurement of goods and services (including capital goods, upstream leased assets and upstream transportation and distribution) that are paid for via Macquarie's procurement system, and are categorised according to Macquarie's internal taxonomy codes. This excludes transactions not associated with the purchase of goods and services and capital goods where identifiable e.g., intra-company and payroll payments, community/charitable donations, and taxation-related spend.

66. National Greenhouse and Energy Reporting (Measurement) Determination 2008 and subsequent amendments for the calculation of greenhouse gas (GHG) emissions (2018 & 2019).

Category 2: Capital goods

Given the capital goods spend data has been captured in the calculation methodology for Category 1, emissions related to Category 2 are not reported separately.

Category 3: Fuel- and energy-related activities

This category covers emissions arising from the extraction, production and transportation of fuels and energy consumed by Macquarie, including transmission and distribution (T&D) losses (i.e., generation of electricity, steam, heating, and cooling that is consumed (i.e., lost) in a T&D system including emissions from combustion). It excludes offices or buildings that are owned or managed by a Macquarie entity but are not tenanted by Macquarie staff, and properties for which we have no control or oversight of electricity usage.

Category 4: Upstream transportation and distribution

Given the upstream transportation and distribution spend data has been captured in the calculation methodology for Category 1, emissions related to Category 4 are not reported separately.

Category 5: Waste generated in operations

This category covers emissions arising from the disposal and treatment of waste generated in operations.

Exclusions:

- e-waste.
- Construction waste.

Category 6: Business travel

The primary source of business-related travel emissions data is Macquarie's exclusive global corporate credit card provider, American Express, and includes air travel, hotels, and ground transport. Additionally, our corporate card travel emissions data includes food and beverage spend for meals while travelling, as well as other forms of food and beverage spend that may not be directly related to business travel (e.g., staff or client entertainment).

Category 8: Upstream leased assets

Given the upstream leased assets spend data has been captured in the calculation methodology for Category 1, emissions related to Category 8 are not reported separately.

Calculating and measuring Scope 3 GHG emissions of our own business operations

Category 1: Purchased goods and services (including capital goods, upstream leased assets, and upstream transportation and distribution)

The "spend-based" method (as per the GHG Protocol Scope 3 Guidance) was used to calculate these emissions, with industry-average emissions factors applied based on the economic value of the goods and services and capital goods (upstream leased assets and upstream transportation and distribution) processed via Macquarie's procurement system.

Spend data was extracted from Macquarie's procurement system, which was categorised according to Macquarie's internal taxonomy codes and uploaded to an emissions calculation platform where emissions factors were applied. This platform applies the United States Environmentally-Extended Input-Output (USEEIO) dataset that estimates cradle-to-gate GHG emissions for each given industry or product category.

The corresponding USEEIO emissions factors were mapped against Macquarie's internal taxonomy and then applied to calculate overall emissions for this category. A weighted average emissions factor was applied for any uncategorised spend.

The latest USEEIO release provides data through to 2019, with emissions factors denominated in \$US. These were translated to the relevant period (i.e., to Macquarie FY2020) using relative price levels and then to the relevant currency (i.e., from \$US to \$A) using the period average exchange rate.

Emissions = \sum Spend by category \times converted emissions factor by category

Category 2: Capital Goods

Capital goods are covered under Category 1, as discussed above.

Category 3: Fuel- and energy-related activities

As discussed above, Category 3 includes the total electricity consumed from Macquarie's global corporate offices, data centres and base buildings. Usage is based on invoice data from energy retailers or landlords, where available, or estimated based on comparable offices. For energy consumed in Australia, state-level emissions factors were used, based on the National Greenhouse Accounts Factors published by the Department of Climate Change, Energy, the Environment and Water (2021). For energy consumed outside of Australia, emissions factors by country were used based on the UK Government GHG Conversion Factors for Company Reporting, DEFRA Emissions Factors (2019).

Emissions = \sum Quantity of electricity purchased by state/country \times emissions factor by state/country

Category 4: Upstream transportation and distribution

Upstream transportation and distribution are covered under Category 1, as discussed above.

Category 5: Waste generated in operations

Due to limited data availability, tonnes / FTE was calculated for sites where data was available, representing approximately 47 per cent of our global staff. This was then extrapolated out to the remaining population of our staff to estimate global emissions for waste generated in operations on a per capita basis. The headcount number excludes staff on extended leave, staff at a non-Macquarie office, casual staff and non-executive directors. Emissions factors are based on the UK Government GHG Conversion Factors for Company Reporting, DEFRA Emissions Factors (2019).

Category 6: Business travel

Air travel, hotels, ground transport and food and beverage emissions are calculated on the spend-based methodology provided by American Express, our corporate card provider, who calculates our carbon footprint where an American Express card is the form of payment.

Emissions factors from the relevant reporting period and government or international sources have then been used to determine the equivalent indirect emissions associated with air travel (by cabin flown), hotels, ground transport, and food and beverage spend on the corporate card program.

The following emissions factors have been applied in calculating GHG emissions (tonnes CO₂e) during the relevant period:

- **Air and Ground:** DEFRA Government greenhouse gas conversion factors for company reporting: Methodology paper for emission factors (2019-2020).
- **Hotel:** Applies the method defined by Cornell Hotel Sustainability Benchmarking (CHSB) Index (2019). The Business Travel News Corporate Travel Index was used to retrieve the average daily room rate to estimate the number of room nights of hotel stay. The number of nights was then multiplied by the appropriate emissions factor provided by CHSB based upon the class of service of the hotel, provided by Smith Travel Research.
- **Food and Beverage:** United States EPA factors. We multiplied the number of meals by an appropriate GHG emissions factor (2020) per meal.

Category 8: Upstream leased assets

Upstream leased assets are covered under Category 1, as discussed above.

Appendix 2: Methodology for Macquarie Group's financed emissions

Additional notes on methodology

In addition to the methodology decisions described in **Section 5 — Metrics and targets**, below we provide more details on our methodology.

Scope:

Our current product scope, in line with the NZBA Guidelines, includes on-balance sheet lending and equity investment activities.⁶⁷ This means that certain types of investments, e.g., the underlying investment vehicles managed by Macquarie Asset Management, are not in scope. However, we have also included some other products, where methodology and data is available. For example, in the motor vehicle sector, we focused on asset finance activity, which includes lending and novated leases. The breadth of the business activities covered by our net zero plan for financed emissions includes the on-balance sheet activities of both the banking and non-banking businesses of Macquarie.

In defining organisational boundaries (e.g., entity inclusion), Macquarie applies an operational control approach, as defined in the GHG Protocol.

Metrics:

When reporting emissions, we report in carbon dioxide equivalents (CO₂e) to account for other GHGs where they are material, e.g., methane emissions associated with oil/gas production. For the coal and oil/gas sectors, methane emissions were converted to CO₂e based on 100-year emissions factors published by the IEA.⁶⁸ For motor vehicles, given the Australia-specific nature of this business, non-CO₂ gases were converted based on NGER conversion factors.

Baseline:

Prior to assessing net zero pathways and targets, we needed to establish our financed emissions baselines for each in-scope sector. This is where we made certain methodological determinations, as outlined below.

Our baseline reporting year is from 1 April 2019 to 31 March 2020 (Macquarie's financial year 2020, FY2020) — this takes into consideration potential distortions caused by COVID-19 in FY2021 and to a lesser extent in FY2022.

To determine the amount of exposure to a sector and/or client, we use an Exposure at Default (EAD) measure as at the end of financial year. We use EAD because it is a well-recognised and understood data point, which we already use in external regulatory reporting, and is therefore already governed by Macquarie's data framework.

All data related to client financial (e.g., economic value including cash) and non-financial (e.g., production) values has been aligned to our baseline (FY2020) year-end date as closely as possible, i.e., we have taken information as at the client's closest financial reporting year-end date.

For debt exposure, we cover both drawn and committed undrawn components. This ensures a more complete analysis of our exposure to carbon-intensive sectors and reduces potential volatility from any scenarios where clients draw down on the committed portion of existing loan agreements.

67. Refer to page 6 for further details of product inclusion and exclusion.

68. A midpoint of 32 has been used as a conversion factor, based on the IEA Methane Tracker, where 1 tonne of methane is reported to be equivalent to 28-36 tonnes of CO₂ when looking at the warming impact over 100 years. Refer to IEA (2022), *Global Methane Tracker 2022*, IEA, Paris.

Sector-specific methodology for calculating emissions

In addition to the sector level methodology decisions described in **Section 5 — Metrics and targets**, below we provide further clarification of our methodology for each sector.

Oil/gas:

We have considered the full oil/gas sector value chain, including the upstream, midstream, and downstream segments. The upstream segment includes exploration and production activities such as drilling wells and extracting oil/gas deposits; the midstream segment includes transporting via gas pipelines and storing oil/gas; and the downstream segment includes refining crude oil and natural gas into end-use products such as gasoline, diesel, and jet fuel that are then sent to energy providers, gas stations, or other distributors and retail outlets.

We have focused our initial analysis on the upstream segment, including associated Scope 3 combustion by end users.

Our methodology for emissions initially relies on emissions reported by our clients, sourced either via public databases (e.g., CDP) or reported by clients directly to us. Most emissions sourced via this method were given a PCAF data quality score of 2, as they were not independently verified. We did, however, scan for results that looked to be inconsistent with industry benchmarks.

We attributed our clients' absolute emissions to Macquarie based on the PCAF Standard:

$$\text{Financed emissions} = \sum (\text{Client emissions}) \times \frac{\text{Client financing in EAD}}{\text{Client EVIC (or Total debt+ Equity, if private company)}}$$

We quantified the oil/gas sector portfolio emissions intensity based on the following formula:

$$\text{Portfolio weighted average physical emissions intensity} = \sum \left(\frac{\text{Client emissions}}{\text{Client production}} \right) \times \left(\frac{\text{Client financing}}{\text{Portfolio financing}} \right)$$

A significant portion of our clients did not report their Scope 1 and 2 emissions (approximately 50 per cent by FY2020 sector exposure) and most of them did not report their Scope 3 emissions (approximately 90 per cent by FY2020 sector exposure). In those cases, we estimated our clients' emissions using client reported production data and weighted emissions intensity factors using the following publications from the IEA:

- Methane Tracker 2020⁶⁹ for Scope 1, 2 emissions.
- World Energy Outlook 2021⁷⁰ for Scope 3 emissions.

In estimating our clients' emissions for Scope 1, 2 our methodology covered both CO₂ and methane associated with production and refining of oil/gas products. For Scope 3, we captured end-use emissions, namely CO₂ released into the atmosphere from combustion.

Emissions estimated using this method were given a data quality score of 3.

Where required, emissions intensities were converted using the conversion factors from the BP Statistical Review of World Energy.⁷¹

For the remaining exposure, where production data of our clients was not known, emissions were proxied using the average intensity of the portfolio for which emissions had been calculated. This methodology was used for approximately 1 per cent of the sector portfolio by exposure and the resultant emissions were given the lowest data quality score of 5.

69. IEA (2020), *Methane Tracker 2020*, IEA, Paris.

70. IEA (2021), *World Energy Outlook 2021*, IEA, Paris.

71. BP (2022), *bp Statistical Review of World Energy 2022* | 71st Edition, BP p.l.c.

Motor vehicles:

In the motor vehicle sector, we covered our vehicle finance business in BFS, namely passenger cars and light commercial vehicles offered in Australia. This business also finances other vehicle types such as trucks, buses, motorcycles etc.; however, this is a smaller part of the portfolio and may be considered separately in the future. In 2021, Macquarie sold its Dealer Wholesale business, therefore that segment of the value chain has not been included.

Product scope in this sector includes consumer loans, commercial loans, and novated leases. We included novated leases, given their similarity to loans, consistency of the methodology between the two products, and availability of data.

We have used the PCAF methodology to attribute vehicle emissions to our financing of those vehicles:

$$\text{Financed emissions} = \sum_{v,f} (\text{Efficiency}_{v,f} \times \text{Emissions factor}_f \times \text{Distance travelled}_v \times \text{Attribution factor}_v)$$

$$\text{where } v = \text{vehicle or vehicle fleet}; f = \text{fuel type}; \text{ and Attribution factor}_v = \frac{\text{EAD}_v}{\text{Total value at origination}_v}$$

Vehicle emissions were calculated based on known make and model, vehicle efficiency and fuel type data used as part of the Australian Government Vehicle Fuel Consumption Labelling Standard, and the data was sourced from industry sources. Where this was unknown or emissions factors were required to derive CO₂e per km, this information was sourced from government sources including the ABS Motor Vehicle Usage Survey and Australian Clean Energy Regulator NGER Measurement Determination.⁷²

The distance travelled data was sourced from the ABS Motor Vehicle Usage Survey. It is worth noting that the latest survey published in 2020 uses a reference period impacted by restrictions in movement due to COVID-19. Therefore, we have not used the data directly from that survey for our FY2020 baseline, and instead derived it using a growth rate between the data published in 2016 and 2018 surveys. This data input in our methodology will remain constant until a new survey is released.

Should there be changes by the Australian Government in the emissions testing regime or data availability, we will update our methodology accordingly.

We quantified the motor vehicle sector portfolio emissions intensity in gCO₂e/km based on the following formula:

$$\text{Physical emissions intensity} = \frac{\text{Financed emissions}}{\text{Total attributed activity}}$$

$$\text{where Total attributed activity} = \sum_v (\text{Distance travelled}_v \times \text{Attribution factor}_v)$$

72. National Greenhouse and Energy Reporting (Measurement) Determination 2008.

Coal:

In this Report, we analysed historical emissions for the coal mining segment of the coal sector, noting that it represented most of our limited equity and lending exposures to coal in FY2020.

Clients' Scope 1, 2 and Scope 3 (use of sold products, i.e., CO₂ from combustion) emissions were based on client reported data, where available. Approximately 40 per cent of our clients in this sector reported their Scope 1 and 2 emissions, and none reported their Scope 3 emissions. Reported emissions were given a PCAF data quality score of 2, as they were not independently verified.

Where client level data was not available, we estimated emissions by:

- Scopes 1 and 2: multiplying the client reported production data by the average physical emissions intensity of clients who reported their Scope 1, 2 emissions.
- Scope 3: multiplying the client reported production data by the weighted average emissions intensity from the IEA's World Energy Outlook 2021.⁷³

Emissions estimated using this method were given a data quality score of 3.

Where required, emissions intensities were converted using conversion factors from the NGER.⁷⁴

We attributed our clients' absolute emissions to Macquarie based on the PCAF Standard:

$$\text{Financed emissions} = \sum (\text{Client emissions}) \times \frac{\text{Client financing in EAD}}{\text{Client EVIC (or Total debt+ Equity, if private company)}}$$

We quantified the coal sector portfolio emissions intensity based on the following formula:

$$\text{Portfolio weighted average physical emissions intensity} = \sum \left(\frac{\text{Client emissions}}{\text{Client production}} \right) \times \left(\frac{\text{Client financing}}{\text{Portfolio financing}} \right)$$

73. IEA (2021), *World Energy Outlook 2021*, IEA, Paris.

74. NGER Publication, October 2020, *National Greenhouse Accounts Factors 2022*.

Data quality and future evolution of our methodology

In making the data quality related determinations, we have applied the PCAF Standard data quality hierarchies. This approach enables us to rate the quality of data from 1 to 5 (highest to lowest), which accounts for varying levels of uncertainty in our clients' emissions

data. Refer to the following data quality table, sourced from the PCAF Standard, which has been used to rate the data quality for baseline emissions in this Report, and which we will use to enhance data quality over time.

PCAF data quality hierarchy:⁷⁵ Oil/Gas (upstream) and Coal mining

Data quality score	Options to estimate financed emissions		When to use each option
Score 1	Option 1: Reported emissions	1a	Outstanding amount in the company and EVIC or total company equity plus debt are known. Verified emissions of the company are available.
Score 2		1b	Outstanding amount in the company and EVIC or total company equity plus debt are known. Unverified emissions calculated by the company are available.
	Option 2: Physical activity-based emissions	2a	Outstanding amount in the company and EVIC or total company equity plus debt are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data of the company's energy consumption and emissions factors specific to that primary data. Relevant process emissions are added.
Score 3		2b	Outstanding amount in the company and EVIC or total company equity plus debt are known. Emissions are calculated using primary physical activity data of the company's production and emissions factors specific to that primary data.
Score 4	Option 3: Economic activity-based emissions	3a	Outstanding amount in the company, EVIC or total company equity plus debt, and the company's revenue are known. Emissions factors for the sector per unit of assets (e.g., tCO ₂ e per \$ of asset in a sector) are known.
Score 5		3b	Outstanding amount in the company is known. Emissions factors for the sector per unit of asset (e.g., tCO ₂ e per \$ of asset in a sector) are known.
		3c	Outstanding amount in the company is known. Emissions factors for the sector per unit of revenue (e.g., tCO ₂ e per \$ of revenue earned in the sector) and asset turnover ratios for the sector are known.

75. Source: Carbon Accounting Financials, Table 5-3 and 5-5.

PCAF data quality hierarchy: Motor vehicles

Data quality score	When to use each option
Score 1	Actual vehicle fuel consumption and distance travelled data is available. Note: This approach would require clients to report their actual fuel consumption or distance travelled, which is unlikely unless there is an incentive.
Score 2	Vehicle efficiency and fuel type are available from known vehicle make and model , and distance travelled is estimated based on local statistical data.
Score 3	Vehicle efficiency and fuel type are available from known vehicle make and model , and distance travelled is estimated based on regional statistical data.
Score 4	Vehicle efficiency and fuel type are estimated from known vehicle type , and distance travelled is estimated based on local or regional statistical data.
Score 5	Vehicle efficiency and fuel type are estimated for an average vehicle , and distance travelled is estimated based on local or regional statistical data.

The below table summarises data quality scores for Scopes 1, 2 and Scope 3 emissions for our initial in-scope sectors:

PCAF data quality score by Scope by exposure

	Upstream oil/gas		Motor vehicles	Coal mining	
	Scope 1, 2	Scope 3	Scope 1, 2	Scope 1, 2	Scope 3
Average PCAF data score	2.4	2.9	2.2	2.6	3

Our methodology will continue to evolve to respond to changes to the external and internal environment, including the evolution of our businesses, increased sector inclusion, the macro-economic environment, updates to available data and tools as well as industry net zero scenarios. These influences may require us to update our baseline calculations and adapt our targets in response.

Appendix 3: Methodology for Macquarie Group's green energy assets

"GW (Gigawatts) of green energy assets on our balance sheet or under Macquarie management"

shows the total energy generation capacity of the green energy assets that Macquarie has an equity investment in or that are included in Macquarie's funds under management at a specified date. It excludes lending and private credit funds. The number of GW includes 100 per cent generation capacity of each asset, not the proportion owned/managed by Macquarie.

Energy generation capacity is disclosed by three stages in the project life cycle; "in development", "under construction" or "currently operating".

Assets are defined to be "in development" if Macquarie or any portfolio company of a Macquarie managed fund (i) has internally approved the commitment to allocate a meaningful amount of resources (people, funding) to assessing project feasibility (or a portfolio of projects), or made a partnering commitment to pursue a project/portfolio that is not yet "under construction"; or (ii) has obtained site control for a particular project. "In development" excludes those assets that are no longer active at the reporting date, as well as assets "under construction" or assets that are "currently operating".

Assets are defined to be "under construction" when a project is approved through a Final Investment Decision (FID). FID is the point in the capital project planning process when the decision is taken to make major financial commitments, which will provide the funding required to commence and complete the construction of the project to create an operational asset.

Assets are defined to be "currently operating" when a project has reached Commercial Operation Date (COD). COD is the point in time when the project is fully commissioned, placed into service, and all relevant parties are satisfied that it can operate as intended.

The amount of "\$Ab invested, committed or arranged in green energy assets" is made up of:

- Lending and equity investment made by Macquarie or MAM Private Markets Funds in green energy assets during the specified period;
- Lending and equity committed to by Macquarie or MAM Private Markets Funds for green energy assets during the specified period;
- Financing arranged by Macquarie for green energy assets during the specified period. This comprises of:
 - Financing arranged within MAM's Private Credit funds;
 - Financing arranged by GIG where GIG has i) invested equity into the project as a joint lead or lead sponsor or as part of a consortium, and ii) played an instrumental role in raising additional third-party financing for the project. If both criteria are met, 100 per cent of the "arranged" third-party funding is included.
- EV car finance (loans and novated leases). It excludes other short-term funding such as trading positions.

For our BFS Car Loans business and CGM Asset Finance business, funding is only included when it has been drawn. All other investments are considered "invested" or "arranged" at the point when a legally binding obligation has been entered into. They are considered "committed" when Macquarie has internally approved the commitment.

Macquarie's **definition of green energy assets** for the purpose of this Report, is made up of:

- Established renewable energy technologies such as solar, wind, hydro or geothermal energy;
- Emerging green energy technologies including green hydrogen, carbon capture, utilisation and storage (CCUS) and renewable natural gas;
- Waste-to-energy and bioenergy assets;
- Energy efficiency technologies such as smart meters, energy efficient lighting, biomass boilers and ground and air source heat pumps;
- Low carbon transport, including electric vehicles;
- Supporting infrastructure for the above assets, e.g., battery storage and EV charging infrastructure.

Appendix 4: Independent limited assurance report

To the Board of Directors of Macquarie Group Limited

Independent limited assurance report on operational greenhouse gas emissions, financed greenhouse gas emissions, green energy capacity metrics and \$ invested and exposure at default metric for the specified periods for Macquarie Group Limited

Scope

In accordance with the terms of engagement letter dated 4 October 2022 and the addendum to the engagement letter dated 15 November 2022, we were engaged by Macquarie Group Limited (the Group) to perform an independent limited assurance engagement in respect of specific categories of operational greenhouse gas emissions, financed greenhouse gas emissions, green energy capacity metrics and \$ invested and the exposure at default metric (the Subject Matter), as outlined below, presented in the Macquarie Group Net Zero and Climate Risk Report (the Report).

Subject Matter and Reporting Criteria

The subject matter comprises the following metrics:

Operational greenhouse gas emissions

- The Group's Scope 3 operational value chain emissions (detailed below) for the 12 months ended 31 March 2020 (baseline emissions (tCO₂e), as disclosed on page 32 of the Report):
 - Category 1: Purchased goods and services (which includes Category 2: Capital goods, Category 4: Upstream transportation and distribution and Category 8: Upstream leased assets)
 - Category 3: Fuel- and energy-related activities
 - Category 5: Waste generated in operations
 - Category 6: Business travel

Financed greenhouse gas emissions

- Financed Emissions — Exposure at Default (EAD) as at 31 March 2020:
 - Oil/gas (upstream) (\$A1.4 billion) — as disclosed on page 41 of the Report
 - Motor vehicles (\$A11.5 billion) — as disclosed on page 43 of the Report
 - Coal mining (\$A0.3 billion) — as disclosed on page 45 of the Report
- Financed Emissions — Oil/gas (upstream) for the year ended 31 March 2020 (as disclosed on page 41 of the Report):
 - Scope 1, 2 absolute emissions (0.51 MtCO₂e)
 - Scope 1, 2 and 3 absolute emissions (3.88 MtCO₂e)
 - Scope 1, 2 physical emissions intensity (8.3 gCO₂e/MJ)
 - Scope 1, 2 and 3 physical emissions intensity (66.2 gCO₂e/MJ)
- Financed Emissions — Motor vehicles for the year ended 31 March 2020 (as disclosed on page 43 of the Report):
 - Scope 1, 2 absolute emissions (0.86 MtCO₂e)
 - Scope 1, 2 physical emissions intensity (221 gCO₂e/km)
- Financed Emissions — Coal mining for the year ended 31 March 2020 (as disclosed on page 45 of the Report):
 - Scope 1, 2 absolute emissions (0.14 MtCO₂e)
 - Scope 1, 2 and 3 absolute emissions (4.83 MtCO₂e)
 - Scope 1, 2 physical emissions intensity (2.7 gCO₂e/MJ)
 - Scope 1, 2 and 3 physical emissions intensity (93.7 gCO₂e/MJ)
- Financed Emissions — Portfolio weighted Partnership for Carbon Accounting Financials (PCAF) data quality scores as at 31 March 2020 (as disclosed on page 69 of the report):
 - Upstream oil/gas — Scope 1, 2 (2.4) and Scope 3 (2.9) emissions
 - Motor vehicles — Scope 1, 2 (2.2) emissions
 - Coal mining — Scope 1, 2 (2.6) and Scope 3 (3) emissions

Green Energy Capacity Metrics and \$ invested

- Investing in the development of new green energy capacity (as disclosed on page 17 of the Report):
 - \$A32 billion invested, committed or arranged in green energy assets in the five years to 31 March 2022
 - \$A2.3 billion invested, committed or arranged in green energy assets for the year ended 31 March 2022
 - 16 gigawatts (GW) of green energy assets currently operating as at 31 March 2022
 - 18 GW of green energy assets currently operating as at 30 September 2022
 - 1 GW of green energy assets under construction as at 31 March 2022
 - 1 GW of green energy assets under construction as at 30 September 2022
 - 30 GW of green energy assets in development as at 31 March 2022
 - 87 GW of green energy assets in development as at 30 September 2022

Exposure at Default metric

- EAD (\$A billion) as at 31 March 2022 for the following sectors (as disclosed on page 35 of the Report):
 - Coal (\$A0.1 billion)
 - Oil/gas (\$A1.2 billion)
 - Motor vehicles (\$A8.1 billion)
 - Residential mortgages (\$A108.7 billion)
 - Power and utilities (\$A4.5 billion)
 - Other (\$A44.5 billion)

The criteria (the Criteria) against which we assessed the Subject Matter are established by management and are presented as follows:

- Methodology for the emissions of Macquarie Group's own business operations (as disclosed on pages 61 to 63 of the Report);
- Methodology for Macquarie Group's financed emissions (as disclosed on pages 64 to 69 of the Report); and
- Methodology for Macquarie Group's green energy assets (as disclosed on page 70 of the Report),

with the terms defined in [Appendix 5: Glossary of terms](#).

Management's responsibilities

The Management of the Group is responsible for the Subject Matter and for the preparation of the Subject Matter in accordance with the Criteria, applied as explained in Appendices 1 to 3 of the Report. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of the Report that is free from material misstatement, whether due to fraud or error.

Our Independence and Quality control

We have complied with relevant ethical requirements related to assurance engagements, which include independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

In accordance with Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, Other Assurance Engagements and Related Services Engagements* the firm maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our responsibilities

Our responsibility is to express a limited assurance conclusion based on the procedures we have performed and the evidence we have obtained.

Our engagement has been conducted in accordance with the Australian Standard on Assurance Engagements (ASAE 3000) *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* and the Australian Standard on Assurance Engagements (ASAE 3410) *Assurance Engagements on Greenhouse Gas Statements*. These standards require that we plan and perform this engagement to obtain limited assurance about whether anything has come to our attention to indicate that the Subject Matter has not been prepared, in all material respects, in accordance with the Criteria, for the Period. The procedures we performed were based on our professional judgement and included:

- Enquiries with management regarding the process and controls for capturing, collating and reporting the Subject Matter;
- Agreeing a sample of lending exposures to source systems and comparing their categorisation by counterparty to the Australian and New Zealand Standard Industrial Classification codes;
- Agreeing a sample of external data used in the estimation and attribution of Scope 3 operational emissions to third party sources;
- Enquiries with management regarding selected estimates made in preparing the Subject Matter;
- Reperforming a sample of calculations undertaken in preparing the Subject Matter and the appropriate application of the Criteria in those calculations;
- Reviewing the presentation and disclosure of the Subject Matter and Criteria in the Report; and
- With respect to the Financed Emissions data and Green Energy Capacity Metrics, performing procedures over the compilation of the data, however our scope did not include performing assurance procedures over the underlying data provided by third parties.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Use of report

This report was prepared for the Board of Directors of Macquarie Group Limited. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Board of Directors of Macquarie Group Limited, or for any purpose other than that for which it was prepared.

Inherent limitations - Assurance engagements

Because of the inherent limitations of any assurance engagement due to the selective testing of the information examined, it is possible that fraud, error or non-compliance may occur and not be detected. A limited assurance engagement is not designed to detect all instances of non-compliance of the Subject Matter with the Criteria, as it is limited primarily to making enquiries, of management, and applying analytical procedures. The limited assurance conclusion expressed in this report has been formed on the above basis.

Inherent limitations - Subject Matter

Non-financial information is subject to more inherent limitations than financial information, given the more qualitative characteristics of the subject matter and the methods used for determining conformance. The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measurement techniques and can affect comparability between entities over time.

As disclosed on page 45 of the Report, it is acknowledged by stakeholders globally, including regulators, that there are significant limitations in the availability and quality of emissions data from third parties, resulting in the extensive use of proxy data. The Partnership for Carbon Accounting Financials (PCAF) has established a data quality score to assist in understanding the source of data which is incorporated into the Group's Criteria. The limited assurance conclusion expressed in this report has been formed on the above basis.

Conclusion

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the Subject Matter has not been prepared, in all material respects, in accordance with the Criteria:

- for the period 1 April 2019 to 31 March 2020 for operational greenhouse gas emissions and financed greenhouse gas emissions,
- as at 31 March 2020 for exposure at default metric,
- as at 31 March 2022 for exposure at default metric,
- for the period 1 April 2017 to 31 March 2022 for \$A billion invested, committed or arranged in green energy assets,
- for the period 1 April 2021 to 31 March 2022 for \$A billion invested, committed or arranged in green energy assets, and
- as at 31 March 2022 and as at 30 September 2022 for GW of green energy assets currently operating, under construction or in development.

PricewaterhouseCoopers

PricewaterhouseCoopers

C. Mara

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Appendix 5: Glossary of terms

Term	Definition
ABS	Australian Bureau of Statistics
Absolute emissions	The total GHG emissions of an asset class or portfolio, expressed in terms of weight of CO ₂ (e.g., tCO ₂) or weight of CO ₂ -equivalents (tCO ₂ e) for a given scope.
ANZSIC	Australian and New Zealand Standard Industrial Classification
APRA	Australian Prudential Regulation Authority
BFS	Banking and Financial Services
BGCC	Board Governance and Compliance Committee
CCS	Carbon capture and storage
CCUS	Carbon capture, utilisation and storage
CDP	Carbon Disclosure Project
CEO	Chief Executive Officer
CFLI	Climate Finance Leadership Initiative
CGM	Commodities and Global Markets
CHSB Index	Cornell Hotel Sustainability Benchmarking Index
CIU	Climate Intelligence Unit
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalents
COD	Commercial Operation Date
COG	Corporate Operations Group
COP26/27	UN Climate Change Conference of the Parties
CRO	Chief Risk Officer
CST	Climate Solutions Taskforce
CVA	Climate Vulnerability Assessment
DEFRA	Department for Environment, Food and Rural Affairs
EAD	Exposure at Default, represents the estimated exposure in the event of a default. This is calculated in a manner consistent with APRA Prudential Standards.
Emissions factor	A figure provided by a credible third party that provides an estimated amount of CO ₂ emitted for a specific activity, e.g., emissions per barrel of oil combusted. These can be multiplied with production figures to estimate emissions.
EPC	Engineering, Procurement and Construction
ESR	Environmental and Social Risk
ESG	Environmental, Social and Governance
EV	Electric vehicle
EVIC	Enterprise value including cash
FID	Final Investment Decision

Term	Definition
Financed emissions	Emissions that are attributed to on-balance sheet lending and equity investment activities. Note within the motor vehicle sector emissions attributed to novated leases are also in scope.
FTE	Full Time Equivalent
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFANZ	Glasgow Financial Alliance for Net Zero
GHG	Greenhouse gas
GICS	Global Industry Classification Standard
GIG	Green Investment Group
Green energy assets	Refer to <u>Appendix 3: Methodology for Macquarie Group's green energy assets.</u>
IAD	Internal Audit Division
ICE	Internal combustion engine
IEA	International Energy Agency
IEA NZE Scenario	International Energy Agency Net Zero Emissions by 2050 Scenario
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
MacCap	Macquarie Capital
MAM	Macquarie Asset Management
MBE	Macquarie Bank Europe Designated Activity Company
MBL	Macquarie Bank Limited
MGL	Macquarie Group Limited
NGER	National Greenhouse and Energy Reporting
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NZAM	Net Zero Asset Managers initiative
NZBA	Net Zero Banking Alliance
NZBA Guidelines	Includes Guidelines for Climate Target Setting for Banks (published in April 2021), as well as related supporting notes and frequently asked questions, published by UNEP FI.
PCAF	Partnership for Carbon Accounting Financials
PHEV	Plug-in hybrid electric vehicle
Physical emissions intensity	Used to understand the efficiency of a portfolio in terms of total GHG emissions per unit of common output. Calculated as absolute financed emissions divided by an output value, expressed as e.g., gCO ₂ e/MJ, gCO ₂ e/km.
RAS	Risk Appetite Statement
RCP	IPCC Representative Concentration Pathway (RCP) scenarios
RE100	Commitment to source renewable electricity for our offices.
RMF	Risk Management Framework

Term	Definition
RMG	Risk Management Group
RMS	Risk Management Strategy
RNG	Renewable natural gas
Scope 1 emissions	Direct emissions from sources owned or controlled by a company.
Scope 2 emissions	Indirect emissions from the generation of purchased energy that is consumed by the company.
Scope 3 emissions	Include all other indirect emissions that occur in a company's value chain, including both upstream and downstream emissions.
TCFD	Task Force on Climate-related Financial Disclosures
T&D	Transmission and distribution
UN PRI commissioned IPR RPS	United Nations Principles for Responsible Investment commissioned Inevitable Policy Response 1.5°C Required Policy Scenario
UNEP FI	United Nations Environment Program Finance Initiative
US BEA	United States Bureau of Economic Analysis
US EPA	United States Environmental Protection Agency
USEEIO	United States Environmentally-Extended Input-Output
WHS	Work Health and Safety

Disclaimer

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This Report contains climate-related and other forward-looking statements and metrics — that is, statements related to future, not past, events or other matters — including, without limitation, statements regarding our intent, belief or current expectations with respect to Macquarie's businesses and operations, market conditions, results of operation and financial condition, risk management practices, targets, estimates, goals, ambitions, climate scenarios, target emissions and emissions intensity pathways and estimated climate projections. We use words such as “will”, “may”, “expect”, “indicative”, “intend”, “seek”, “would”, “should”, “could”, “continue”, “anticipate”, “believe”, “probability”, “risk”, “aim”, “commitment”, “target”, “goal”, “ambition”, “plan”, “estimate”, “outlook”, “forecast”, “assumption”, “projection”, or other similar words to identify forward-looking statements. This disclaimer should be read together with:

- Page 38 – 6. Reassess as inputs change or evolve.
- Page 45 and 68 – Data quality and future evolution of methodology.

Climate-related forward-looking statements are particularly affected by uncertainties and factors such as:

- Evolving standards, definitions and methodologies.
- Lack of accurate and reliable historical data, especially emissions data.
- Complex calculations, modelling and scenario analysis.
- Changing and uncertain climate-related laws, regulations and policies.

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