



Net Zero and Climate Risk Report

Macquarie Group
11 December 2023



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 54** and the limitations and qualifications provided in the body of the Report.

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Macquarie's CEO**

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Foreword from Macquarie's CEO

Storegga, Aberdeen, United Kingdom

Macquarie Commodities and Global Markets first invested in Storegga in 2020, helping scale up a range of carbon capture technologies. This includes the Acorn project, part of the Scottish Cluster, which will capture CO₂ emissions from one of Scotland's largest manufacturing sites at Grangemouth (pictured), among others, and transport them to permanent geological storage under the North Sea.

Foreword from Macquarie's CEO

Earlier this year the Intergovernmental Panel on Climate Change noted that “human-caused climate change is already affecting many weather and climate extremes in every region across the globe.”⁽¹⁾ With the world still well short of meeting its net zero emissions by 2050 goal, addressing this collective challenge will require unprecedented collaboration across all levels of society, and across the world's regions.

Given the magnitude of the economic restructuring required, governments will need to play a leading role. Encouragingly, we have seen an intensification of efforts over the past year. In the United States the Inflation Reduction Act has seen clean energy investment increase dramatically, while the European Union continues to roll out the “Green New Deal”, and China has significantly increased its spending on clean energy solutions. The Australian Parliament also passed a law supporting the Government's 2030 43 per cent emission reduction target, against which various supporting initiatives have picked up momentum.

The corporate sector also has a role to play. At Macquarie, our response is rooted in our organisational purpose – to empower people to innovate and invest for a better future. Our teams continue to explore ways to facilitate the reduction of greenhouse gas emissions. However, with temperatures already well above pre-industrial levels and annual global emissions yet to fall, we are also focused on the urgent need for increased spending on climate adaptation.

In this, our second Net Zero and Climate Risk Report, we provide a progress update on our Group net zero commitments, as a member of the Net-Zero Banking Alliance, and as a supporter of the Task Force on Climate-related Financial Disclosures. For an overview of progress towards Macquarie Asset Management's climate commitments, see the **FY2023 Sustainability Report**.

I'm pleased to report that we are on track to meet our FY2025 net zero emissions target for our own business operations.⁽²⁾ We are also on track to meet our financed emissions target in the coal sector by next year, and have made progress towards our 2030 interim financed emissions targets for the oil/gas and motor vehicle sectors.⁽³⁾

This year we add an interim target for Australian residential mortgage lending, accounting for over 60 per cent of our on-balance sheet lending and equity exposures. We are targeting a reduction in emissions intensity of 50-70 per cent from 2021 to 2030. With Australia's population set to grow considerably in coming years, we plan to continue to increase our lending to this critical sector to support that growth. It is also important to acknowledge that the magnitude of emissions reductions achieved by the sector will in large part be driven by the Australian Government and industry's success in decarbonising the national electricity grid.

We now have targets in place for over 80 per cent of our dollar exposures⁽⁴⁾ to carbon-intensive sectors and will announce targets for the remaining material carbon-intensive sectors in our next Report.

At Macquarie, we believe that we can contribute most positively to the challenges and opportunities of climate change mitigation and adaptation through the financing of practical solutions driven by the core capabilities of our teams. Over the course of 2023, we continued to drive additional capacity in established clean energy technologies while also investing in emerging technologies that seek to reduce emissions across energy, transportation, land use, buildings, waste and industrial processes.

While our fossil fuel financed emissions remain relatively small compared to global peers, we continue to believe that an effective transition must be managed, orderly and just. Consistent with that philosophy, and in recognition that despite efforts, much of the world will depend on the oil/gas industries for years to come, we are working with our oil/gas clients to help them reduce their emissions as well as maintain sufficient energy supply. In addition, our commodity trading activities are helping clients manage their transition risks by maintaining and developing deep and liquid hedging markets, including in emerging commodities essential to the transition, thereby providing greater price certainty as they navigate this historic transformation.

Like the overall climate challenge, our activities are global, and span established and nascent sectors of the economy. Beyond our direct activities, we continue to actively engage on addressing some of the more significant global challenges to sustained progress. These include driving practical solutions that channel greater levels of investment to address climate impacts in emerging markets, and bringing together public, concessional and private finance to develop test projects that establish a replicable model that can scale investment.

In all of these efforts, the learning curve is steep and the glidepath to net zero is not linear. Across our diverse portfolio of businesses, and efforts to support clients and global industry initiatives, we seek to share learnings and adapt quickly to technological innovation within an ever-changing geopolitical, policy and commercial landscape.

In doing so, we are grateful for the tireless efforts of our teams, the support of our investors and clients and the partnership of governments and supra-national bodies around the world. 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 will continue to provide you with regular updates on our progress.

Shemara Wikramanayake
Managing Director and Chief Executive Officer

(1) IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115, <https://www.ipcc.ch/>

(2) Our 2025 net zero target for our own operations covers our business operations Scope 1 and Scope 2 emissions. See [Section 5 — Metrics & Targets](#) for further detail.

(3) See [Section 5 — Metrics & Targets](#) for further detail on scope and our progress.

(4) Exposures include on-balance sheet lending and equity investments. In addition, for motor vehicles, it includes novated leases. See [Appendix 3](#) for details.

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About this Report

Australian electric vehicle buying service

Macquarie has a specialised electric vehicle buying service, and is one of Tesla Australia's preferred finance providers.



About this Report

Macquarie Group (Macquarie) is a global financial services group, operating in 34 markets across asset management, retail and business banking, wealth management, leasing and asset financing, market access, commodity trading, renewables development, specialist advice, access to capital and principal investment.

This is Macquarie's second Net Zero and Climate Risk Report (Report), informed by recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)⁽¹⁾ and our commitments as a member of the Net-Zero Banking Alliance (NZBA).⁽²⁾

For an overview of progress towards Macquarie Asset Management's climate commitments, see the **FY2023 Sustainability Report**.

In line with the TCFD's recommendations, this Report provides details on Governance, Strategy, Metrics & Targets and Risk Management as pertaining to climate risk and net zero.

Consistent with the NZBA Guidelines, the financed emissions targets discussed in this Report refer to on-balance sheet lending and equity investment activities.⁽³⁾ Targets exclude on-balance sheet securities held for client facilitation and market-making purposes (e.g., trading). For a detailed account of the scope of financed emissions in this Report see **Appendix 3**.

Macquarie's financial year (FY) is from 1 April to 31 March each year, as referenced throughout this Report.

Note that Macquarie publishes climate-related information regularly through multiple channels, including our annual Group **Environmental, Social and Governance (ESG) Report**, regulatory filings and press releases.

(1) 'Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures', Task Force on Climate-related Financial Disclosures, June 2017, <https://assets.bbhub.io/> (PDF)

(2) 'The Commitment: Net-Zero Banking Alliance', UN Environment Programme, Finance Initiative, accessed September 2023, <https://www.unepfi.org/>

(3) Note, for motor vehicles we have also included novated leases given availability of both methodology and data.

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Governance

Macquarie office, South Korea

Macquarie's South Korea office at Centropolis, Seoul, has achieved a LEED Platinum rating for the base building, and LEED Gold for the fit-out which was completed in July 2021.



Governance

The Macquarie Group Limited (MGL) and Macquarie Bank Limited (MBL) Boards and management recognise the importance of sound Environmental, Social and Governance (ESG) practices as part of their responsibility to our clients, shareholders, communities, our people and the environment in which Macquarie operates.

Climate change is one of Macquarie's eight ESG focus areas⁽¹⁾ 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:



For internal reporting and risk management purposes, Macquarie is divided into four Operating Groups, which are supported by four Central Service Groups. As part of their broader activities, which are described on pages 18-21 of Macquarie's **FY2023 Annual Report**, each of the Operating Groups is engaging in a range of activities aligned to our climate strategy and net zero commitments.

To support oversight of net zero and climate risk, climate-related agenda items are tabled throughout the year at our Boards and management meetings. This includes for our regional entity Macquarie Bank Europe (MBE). Examples are shown below:

	Agenda item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MGL/MBL Boards	Net Zero & Climate Risk							✓		✓			
	ESG Report					✓							
MGL/MBL Board Governance and Compliance Committees	ESR Material Risk Report						✓					✓	
	ESG Report			✓									
MGL/MBL Executive Risk Committees	ESR Material Risk Report						✓					✓	
	ESG Report			✓									
MGL/MBL Executive Committees	Net Zero & Climate Risk							✓		✓			
MBE Board	Climate Risk			✓			✓		✓	✓	✓		✓

(1) Refer to page 50 of Macquarie's [FY2023 ESG Report](#) (PDF)

Governance

Continued

The **MGL and 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, targets and disclosures such as those included in Macquarie's Net Zero and Climate Risk Report, and provide oversight of progress towards meeting 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 receive climate-related reporting from management at least twice a year.

The **MGL and MBL Senior Management Committees** (the MGL and MBL Executive Committees and the MGL and MBL Executive Risk 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 that provides objective review and challenge, oversight, monitoring and reporting in relation to Macquarie's material risks. When new or evolving risks 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 Boards or Board Audit Committees, other relevant Board Committees and senior management on the compliance with, and effectiveness of, Macquarie's financial and risk management framework, including its governance, systems, structures, policies, processes and people for managing material risks. IAD regularly reassesses emerging risks, regulations and trends to ensure that these are adequately captured within the internal audit plan, including climate-related risks.

The **Financial Management Group (FMG)** is responsible for capital, funding, liquidity, tax and strategic analysis and advice to support the growth of the Macquarie business. It ensures Macquarie meets its financial, regulatory and tax reporting compliance obligations, as well as maintaining relationships with a range of significant external stakeholders. In line with the growing importance of sustainability-related disclosures, FMG has recently established a sustainability reporting function, which aims to consolidate sustainability reporting across Macquarie as reporting requirements grow and evolve.

To support senior management with their responsibilities and drive progress, in 2021 Macquarie formed 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 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. 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) function.

Supporting the Program is the **Net Zero and Climate Risk Steering Group**. This body has senior representatives from each Operating and Central Service 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 a **Financed Emissions Working Group**. This includes representatives from across Operating and Central Service 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. Senior management and the Boards approve targets and receive updates of progress towards meeting them.

Net zero emissions in our own business operations by FY2025 (Scope 1 and 2):⁽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. 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.

Work to operationalise climate risk management:

There are clear roles and responsibilities across Macquarie with respect to climate risk management and a well-established ESR function in RMG. The RMG ESR team comprises subject matter experts who coordinate a diverse range of ESG activities across Operating and Central Service Groups and regions, including developing and implementing Macquarie-wide and Operating Group-specific policies, reviewing transactions, providing advice on climate risks and opportunities, and facilitating training. Additionally, we have grown our teams within our Operating Groups to support, assess and manage environmental and social risks, including climate-related risks. This further embeds the responsibility and capability of our business teams ('first line of defence') to operationalise climate risk management.

(2) Throughout this Report when we refer to 'net zero' in relation to our own business operations Scope 1 and 2 emissions ambition, we are informed by recommendations from the Science Based Targets initiatives (SBTi) Corporate Net Zero Standard, Net-Zero Banking Alliance Supporting note: The Use of Carbon Credits in Climate Target Setting, and The Oxford Principles for Net Zero Aligned Carbon Offsetting. See [Section 4 — Strategy](#) for further detail.

Governance

Continued

The **Climate Risk Working Group**, reporting to the Head of Net Zero and comprising representatives from all RMG Divisions, provides an additional level of oversight of climate risk management. This provides 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 Prudential Risk teams, which engage in well-established processes to conduct regulatory horizon scanning and triage, as referenced in **Section 6 — Risk Management**.

Internal engagement:

The Macquarie **Climate Solutions Taskforce (CST)** is a committee formed with representatives from all Operating Groups and Central Service Groups. The CST works to support Macquarie's expansion into new climate-aligned technologies such as hydrogen and carbon capture, utilisation and storage, given Macquarie's ambition is to strengthen the support it provides to carbon-intensive industries and clients, like the oil/gas sector, to enable decarbonisation.

The CST is supported by a Climate Intelligence Unit (CIU) which supports and informs Macquarie's engagement and growth in issues related to climate change and the energy transition, providing weekly briefings on climate matters that are accessible to all of our people. The CIU provides expert support across Macquarie on clean technologies, market developments and cross-Group client opportunities.

In addition to the above, our Operating and Central Service Groups continue to enhance our climate and energy transition related capabilities and to support our people to understand and respond to the changes. Examples include the Banking and Financial Services (BFS) Net Zero Forum, Commodities and Global Markets (CGM) Energy Transition Steering Committee, CGM Global Carbon Business, CGM ESG and Climate Team, Macquarie Capital ESG Committee, Macquarie Capital Energy Transition Business, Macquarie Capital Net Zero and Climate Risk Team and the Macquarie Asset Management Sustainability Team.

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Strategy

Ekus Energy, Victoria, Australia

Ekus Energy, a global battery storage platform created by Macquarie Asset Management, holds a 3+ GWh development pipeline of utility-scale storage projects that, once built, are expected to provide grid services in key markets around the world, including the UK, Australia, Italy, and Japan.

Strategy

Macquarie's approach to climate is based around four areas of action:

<h1>1</h1> <p>Continue to reduce the emissions of our own business operations</p>	<h1>2</h1> <p>Leverage our knowledge and networks to help others decarbonise</p>	<h1>3</h1> <p>Align our financing activity with the global goal of net zero emissions by 2050</p>	<h1>4</h1> <p>Increase investment in climate mitigation and adaptation solutions</p>
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Action area 1:

Continue 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 and data centres, business travel and our procurement activities. We seek to manage this impact by monitoring and reducing resource use, developing innovative and sustainable workplaces and improving the sustainability of our supply chain. We offset residual Scope 1 emissions, purchase the equivalent of 100 per cent renewable electricity to cover Scope 2 emissions, and offset Scope 3 Category 6 business travel emissions.⁽¹⁾

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 progress in 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 by FY2025, and are progressing well towards achieving this. Throughout this Report, when we refer to 'net zero' in relation to our own business operations Scope 1 and 2 emissions ambition, we are informed by recommendations from the Science Based Targets initiative (SBTi) Corporate Net Zero Standard, Net-Zero Banking Alliance Supporting note: The Use of Carbon Credits in Climate Target Setting, and The Oxford Principles for Net Zero Aligned Carbon Offsetting.

First, to achieve our net zero commitment, we are aiming to reduce Scope 1 and 2 emissions from a FY2020 baseline, including purchasing renewable electricity for our office premises in line with our RE100 commitment. Second, we are purchasing carbon credits to offset residual Scope 1 emissions that are difficult to abate. The carbon offsets that we purchase for this purpose will be from projects that remove carbon from the atmosphere and provide longer-term storage for this carbon.

For our own business operations Scope 3 emissions we are developing methods to measure and track emissions reduction strategies and are working towards Scope 3 operational value chain emissions reduction targets aligned to science.⁽²⁾

In line with emerging industry guidance, we use credible carbon offsets for the offsetting of residual emissions and can use them for end-state operational net zero targets.⁽³⁾ Since FY2010, Macquarie has been offsetting its Scope 1, Scope 2 and Scope 3 business travel emissions. We are committing to continue offsetting residual Scope 1 emissions, purchasing 100 per cent renewable electricity to cover Scope 2 emissions, and offsetting Scope 3 business travel emissions beyond FY2025.⁽⁴⁾

(1) Emissions Scopes and Categories are defined under the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.

(2) Scope 3 emissions included in our own business operations emissions relate to Categories 1-8, as defined under the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

(3) The industry guidance we refer to includes the SBTi Corporate Manual, SBTi Criteria and Recommendations for Near-term Targets, SBTi Corporate Net Zero Standard, UNEP-FI Guidelines for Climate Target Setting for Banks, Net-Zero Banking Alliance Supporting note: The Use of Carbon Credits in Climate Target Setting, and The Oxford Principles for Net Zero Aligned Carbon Offsetting.

(4) In FY2022, the calculation of business travel emissions was expanded beyond air travel to include hotels, ground transportation (excluding rail) and food & beverages, and the calculation of air travel emissions was also refined to reflect the class of ticket flown (e.g., economy, business class).

Strategy

Continued

Action area 2:

Leverage our knowledge and networks to help others decarbonise

For internal reporting and risk management purposes, Macquarie is divided into four Operating Groups, which are supported by four Central Service Groups. As part of their broader activities, which are described on pages 18-21 of Macquarie's [FY2023 Annual Report](#), each of the Operating Groups is engaging in a range of activities aligned to our climate strategy and net zero commitments.

We recognise that the scale of the transition required can only be achieved with collaboration across a broader range of stakeholders. That is why each of Macquarie's Operating Groups is partnering with its clients and engaging with portfolio companies in different ways to scale clean energy solutions and support their decarbonisation journeys.

Macquarie Capital has global capability in:

- Advisory and capital raising services, providing clients with specialist expertise and flexible capital solutions across a range of sectors.
- Specialist investing across private credit, private equity, real estate, growth equity, venture capital, and in infrastructure and energy projects and companies.
- Equities brokerage, providing clients with access to equity research, sales, execution capabilities and corporate access.

Macquarie Capital supports clients who are involved in decarbonising by advising on green energy investments, while its cash equities team is able to help asset owners reduce the carbon intensity of their portfolios through their trading expertise, by offering diversified portfolio options.

Commodities and Global Markets (CGM) is a global business offering capital and financing, risk management, market access, physical execution and logistics solutions to its diverse client base across:

- **Commodities:** provides risk management, lending and financing, and physical execution and logistics to clients with exposure to commodity markets (which include power, oil/gas, agriculture, resources, and carbon).
- **Financial Markets:** provides risk management, financing and capital solutions, and market access to corporate and institutional clients with exposure to fixed income and equities.
- **Asset Finance:** global provider of specialist finance and asset management solutions.

CGM is developing and deploying climate solutions that meet its clients' diverse needs and ambitions and help them with their decarbonisation pathways. At Macquarie, we believe that the transition needs to be managed, orderly and just, which is why CGM is actively supporting carbon-intensive industries, like oil/gas, to reduce their emissions while maintaining the vital services they provide and on which our communities and industries still rely. As its clients' needs evolve, CGM adapts by drawing on its long-standing energy and commodities expertise to better align and expand its capabilities, ensuring it continues to provide the right support.

The scale and breadth of the energy transition is driving the delivery of holistic solutions across CGM's activities, markets, and client sectors, which are captured under the following broad energy verticals: carbon and emissions, renewable and flexible power, clean fuels, sustainable transport, critical minerals, and the circular economy.

Macquarie Asset Management (MAM) is a leading specialist global asset manager, providing investment solutions to clients across a range of capabilities in Private Markets and Public Investments, including infrastructure, green investments, agriculture and natural assets, real estate, private credit, asset finance, equities, fixed income and multi-asset solutions.

MAM is working with its portfolio companies and clients to reduce their emissions. The Green Investment Group (GIG), which became part of MAM on 1 April 2022 (now MAM Green Investments), continues to provide the energy solutions required to transition to a low-carbon economy. For more information, refer to the [FY2023 Sustainability Report](#).

Banking and Financial Services (BFS) serves the Australian market, and is organised into the following three business divisions:

- **Personal Banking:** provides a diverse range of retail banking products to clients with home loans, car loans, transaction and savings accounts and credit cards.
- **Wealth Management:** provides clients with a wide range of wrap platform and cash management services, investment and superannuation products, financial advice and private banking.
- **Business Banking:** provides a full range of deposit, lending and payment solutions, as well as tailored services to business clients, ranging from sole practitioners to corporate professional firms.

BFS is committed to supporting our clients' efforts to achieve their decarbonisation goals through empowering them to make more sustainable daily choices, ranging from the cars they drive, to connecting them with energy experts to discuss energy-saving solutions.

Strategy

Continued

Action area 2:

Continued

Recent case studies



Advising on an investment in a leading electric vehicle (EV) charging company

Macquarie Capital acted as a financial advisor to APG Asset Management on their €250 million investment in Driveco, a French EV charging company.

This investment aims to support Driveco's ambition to be a major player in EV charging infrastructure in France and in Europe.⁽⁵⁾ The additional financial resources will enable the company to strengthen its already significant presence – notably by deploying its own charging stations, accelerating its internationalisation strategy and consolidating its technological innovations to continuously improve client experience.



Executing one of the first Renewable Supply and Offtake Agreements (RSOA) in the market

CGM is working with Vertex Energy, Inc. (Vertex) an energy transition company and specialty refiner and marketer of renewable and conventional products, based in North America.

In order to establish and operate its new renewable diesel facility in Mobile, Alabama, Vertex entered into an RSOA this year with CGM, whereby CGM holds title to a portion of Vertex inventory to help fund the project. This is similar in nature to the existing Supply and Offtake Agreement executed in 2022 on the conventional side of the business.

The new RSOA helps Vertex manage the liquidity needs required to secure feedstock and monetise the renewable fuels and regulatory credits for the business. It also helps Vertex to finalise its long-term capital structure, propelling the business forward to capitalise on the growing demand for renewable fuels.

This transaction demonstrates how CGM can develop and enhance its existing capabilities to further support clients' decarbonisation pathways and, in this case, establish itself as a provider of structured working capital solutions for clients across the renewable fuels supply chain.



Scaling sustainable infrastructure investment with the FAST-Infra Label

Macquarie Asset Management is working with FAST-Infra and partners to create a globally applicable sustainability labelling system that aims to transform sustainable infrastructure into a mainstream, liquid asset class.

According to the G20's Global Infrastructure Outlook, the world needs to invest an additional \$US18 trillion in infrastructure above current projections by 2040, including \$US3 trillion to meet the UN Sustainable Development Goals. An urgent acceleration of investment into infrastructure is therefore required.⁽⁶⁾

Ensuring this investment is channelled into sustainable projects is essential. However, investors currently lack a common framework for evaluating the sustainability of infrastructure projects. This is the challenge a new initiative, developed by FAST-Infra and co-chaired by Macquarie, aims to address.

In partnership with FAST-Infra and industry partners, Macquarie Asset Management used its deep experience in green investment and pioneering approach to sustainability analytics to help develop the label's assessment framework. By building on existing standards, frameworks and taxonomies, we helped create a comprehensive set of sustainability criteria that can operate as a one-stop solution for sustainability labelling.

The FAST-Infra Label is now running an open call for the first set of projects to participate in its rollout. Global Infrastructure Basel Foundation has been appointed secretariat of the initiative, alongside Bloomberg as its data repository, and the initiative is expected to be fully operational in 2024.

By using the FAST-Infra Label, market participants can demonstrate the positive impact of a project, enabling capital allocations to be guided towards sustainable infrastructure and ultimately helping to bridge the \$US18 trillion investment gap.

(5) As a result of APG's investment, Driveco secured the funding to continue developing its network of charging stations in France and Belgium, and also expand internationally to Germany, Spain, Italy, Switzerland and the Netherlands. APG, 10 May 2023, <https://apg.nl/en/publication/apg-invests-250-million-in-european-electric-vehicle-charging-infrastructure/>

(6) Global Infrastructure Hub, 2023, <https://outlook.gihub.org/>

Strategy

Continued

Action area 2:

Continued

Recent case studies



Providing an electric vehicle (EV) savings calculator

Our BFS business is committed to supporting our clients to play a role in the energy transition.

This year, to complement our specialised EV buying service, BFS launched an online **EV savings calculator**, to help consumers compare the total estimated cost and carbon footprint savings of owning an EV to owning an equivalent petrol, diesel or hybrid vehicle.⁽⁷⁾

Partnerships and advocacy

Macquarie works across a wide range of sectors, including renewables, infrastructure, resources, commodities and energy. To better understand the policy context in those sectors, we work in close partnership with a wide range of public and private stakeholders. Through those partnerships, we aim to find solutions to some of the major transition challenges of the financial sector and the real economy. Engagements include:



Glasgow Financial Alliance for Net Zero (GFANZ)

Macquarie is a founding Principal member of GFANZ and Macquarie Group CEO Shemara Wikramanayake is co-leading GFANZ's workstream on climate finance mobilisation for emerging markets and developing economies. We are also a member of the workstream on financial institution net zero planning.



Climate Finance Leadership Initiative (CFLI)

Macquarie Group CEO Shemara Wikramanayake was appointed a founding member of the CFLI on 17 January 2019 and was appointed co-chair of the CFLI country pilot in India in 2021. In September 2022, Macquarie joined the CFLI country pilot in Colombia.



UN's Green Climate Fund

In April 2022, Macquarie announced a partnership with the UN's Green Climate Fund on a blended finance platform that seeks to accelerate the uptake of e-mobility in India.



UN's Global Investors for Sustainable Development (GISD) Alliance

Macquarie Group CEO Shemara Wikramanayake is a member of the GISD Alliance.



Global Center on Adaptation

Macquarie Group CEO Shemara Wikramanayake was appointed a founding Commissioner of the Global Commission on Adaptation in October 2018. 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, and we are an active member of the Financial Services and Sustainability 30 taskforces.



Green Loan Principles

Macquarie has issued loans under the Green Loans Principles since 2018.

(7) Compares operational CO₂ emissions, those being CO₂ emissions released from a vehicle's tailpipe, and CO₂ equivalent emissions from electricity used to charge a vehicle's battery.

Strategy

Continued

Action area 2:

Continued

Partnerships and advocacy



Financial Stability Board's Task Force on Climate-related Financial Disclosures

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



RE100

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



Carbon Disclosure Project (CDP)

Macquarie has been a signatory to the CDP since 2008.



Net-Zero Banking Alliance (NZBA)

Macquarie became a member of the UN-convened Net-Zero Banking Alliance in October 2021.



Mobilising our leadership at global climate events

Macquarie has attended COP 26, 27 and 28 with senior delegations to engage with delegates, senior government figures, industry and business leaders. Macquarie also attends other global climate events throughout the year.



World Bank Private Sector Investment Lab

Macquarie Group CEO Shemara Wikramanayake has been announced as one of the 15 founding members of The World Bank's Private Sector Investment Lab, charged with developing solutions to address the barriers to private sector investment in emerging markets.

Strategy

Continued

Action area 3:

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

We are on track to achieve our target of zero financed emissions in the coal sector by 2024, and have made progress towards our 2030 interim financed emissions targets for the oil/gas and motor vehicle sectors. Refer to **Section 5 — Metrics & Targets** for further details.

This year we set an interim target for Australian residential mortgage lending, accounting for over 60 per cent of our on-balance sheet lending and equity investment dollar exposures. We are targeting an emissions intensity of 11.6-19.3 kgCO₂e/m² by 2030, which implies a fall of 50-70 per cent from the FY2021 baseline.

With the Australian population set to grow considerably in coming years, we plan to continue to increase our lending to this critical sector to support that growth. It is important to acknowledge that the magnitude of emissions reductions achieved will primarily be driven by the Australian Government's and industry's success in decarbonising the national electricity grid.

We now have targets in place for over 80 per cent of our in-scope dollar exposures⁽⁸⁾ to carbon-intensive sectors as identified by the NZBA,⁽⁹⁾ and we will announce targets for the remaining material carbon-intensive sectors in our next Report.

Action area 4:

Increase investment in climate mitigation and adaptation solutions

The International Energy Agency (IEA) has suggested that annual clean energy investment worldwide will need to increase from \$US1.8 trillion in 2023 to \$US4.3 trillion by 2030 to put the world on track to reaching net zero emissions by 2050.⁽¹⁰⁾ This will require a collective effort across the private and public sectors. Supporting this need, our businesses are focused on providing solutions to our clients to help them and the communities we serve navigate the challenges and opportunities ahead.

Macquarie Capital is a leader in Global Renewables Infrastructure Financial Advisory and Global Infrastructure Financial Advisory.⁽¹¹⁾

Our **Commodities and Global Markets (CGM)** business is providing businesses with innovative asset finance, risk management and capital solutions that enable more clean energy production, trading and consumption globally.

Macquarie Asset Management (MAM), through its portfolio companies, is driving volume in mature clean energy technologies like wind, solar and biomethane and investing to accelerate the deployment of emerging technologies like hydrogen, battery energy storage and e-mobility. Learn more by reading the **FY2023 Sustainability Report**.

Our **Banking and Financial Services (BFS)** business, which is committed to helping our clients navigate the fast-changing industry landscape on EV ownership, has launched an EV savings calculator to help consumers compare the total estimated cost and carbon footprint savings of an EV, and offers a specialised EV buying service.⁽¹²⁾

Recent case studies



Committed to support up to \$US300 million in renewable energy projects

Macquarie Capital joins White House-led initiative to improve energy efficiency, reduce emissions in the US healthcare sector.

Macquarie Capital has committed to support up to \$US300 million in renewable energy project developments for hospitals and hospital systems designated as key priorities under a White House-led initiative. Led by the White House Office on Clean Energy Innovation and Implementation, in conjunction with the US Department of Health and Human Services, the initiative supports healthcare systems, investors and industry in leveraging grants and tax credits under the US Inflation Reduction Act (IRA) to finance and develop energy efficiency projects for critical healthcare hubs.

(8) Exposures include on-balance sheet lending and equity investments. In addition, for motor vehicles, exposures include novated leases. See [Appendix 3](#) for details.

(9) 'Guidelines for Climate Target Setting for Banks', UN Environment Programme, Finance Initiative, April 2021, <https://www.unepfi.org/> (PDF)

(10) 'World Energy Outlook 2023', International Energy Agency, October 2023, <https://www.iea.org/reports/world-energy-outlook-2023/>

(11) Macquarie Capital was ranked #1 Global Renewable Financial Adviser and #1 Global Infrastructure Financial Adviser by Inspiratia for the 2022 calendar year by deal value. There can be no assurance that other providers would reach the same conclusions.

(12) Compares operational CO₂ emissions, those being CO₂ emissions released from a vehicle's tailpipe, and CO₂ equivalent emissions from electricity used to charge a vehicle's battery.

Strategy

Continued

Action area 4:

Continued

Recent case studies



Transition of the Green Investment Group from Macquarie Capital into Macquarie Asset Management

In 2017, a Macquarie Capital-led consortium acquired the Green Investment Group (GIG) and transformed it into one of the world's leading green investors.

To meet growing investor appetite for access to energy transition opportunities, GIG moved from Macquarie Capital into Macquarie Asset Management (MAM) in April 2022 (now MAM Green Investments).

As part of the world's largest infrastructure asset manager⁽¹³⁾ the team is now able to mobilise institutional capital behind the energy transition, providing an even greater scale of decarbonisation solutions for clients, portfolio companies, communities and the environment.

Since joining Macquarie Asset Management, the team continues to create and invest into a number of specialist businesses, which are now owned by Macquarie managed funds, and in which a significant proportion of GIG's former development pipeline is now housed.

This includes Eku Energy, a utility-scale energy storage business launched in November 2022. Eku is taking forward a 3+ GWh global development pipeline previously managed by GIG.⁽¹⁴⁾ As MAM Green Investments' portfolio continues to transfer into Macquarie managed funds, we are able to offer investors access to new energy transition opportunities, while enabling the delivery of clean energy capacity at scale.

(13) IPE Real Assets Top 100 Infrastructure Investment Managers ranking 2022. The ranking was awarded in July 2022 and is the opinion of IPE Real Assets and not of Macquarie. No person creating the ranking is affiliated with Macquarie or is an investor in Macquarie-sponsored vehicles. IPE Real Assets surveyed and ranked global infrastructure fund managers. The ranking is based on AUM at 31 December 2021, which is defined by IPE as "the total gross asset value of all assets managed and committed capital (including uncalled)".

(14) 'Macquarie Asset Management's Green Investment Group launches new global battery storage platform', Eku Energy, 8 November 2022, <https://www.ekuenergy.com/news/>

Q5



Metrics & Targets

TerraFame, Sotkamo, Finland

Macquarie Commodities and Global Markets provided a working capital facility to support the continued development and ramp-up of TerraFame's battery chemicals plant and production of battery-grade nickel and cobalt sulphate.



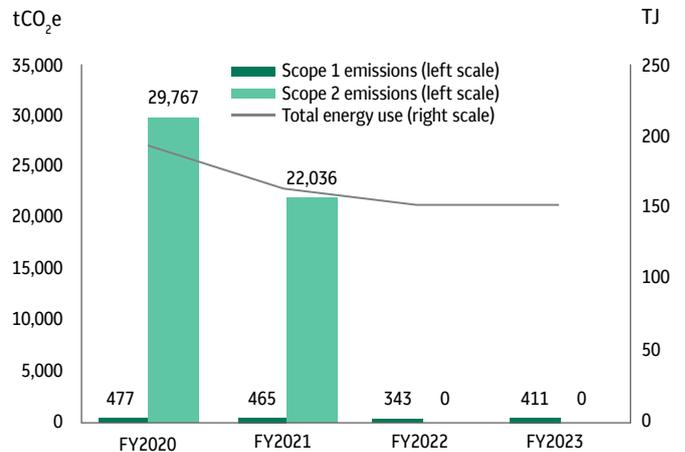
Metrics & Targets

Progress in managing the emissions of our own business operations

Committed to net zero emissions by FY2025 for Scope 1 and 2

Achieving net zero emissions in our own business operations for Scope 1 and 2 relies on improving energy efficiency within our premises and reducing energy use overall, electrification and using renewable electricity, and offsetting any residual emissions in line with industry guidance on credible carbon offsets.⁽¹⁾ Refer to **Appendix 1** for further detail.

Scope 1 and 2 emissions and total energy use



Scope 1 and 2 commitments and progress

Commitment	FY2023 progress against commitment
20 per cent reduction in electricity use by FY2023 (from a FY2014 baseline) in our corporate offices and data centres.	<p>Our FY2023 electricity consumption was 40.5 GWh, which is a 37 per cent reduction from the FY2014 baseline of 64.2 GWh.</p> <p>This reduction was mainly due to the consolidation, relocation and upgrades of office premises to more sustainable buildings, together with our cloud transformation strategy that enables rationalisation of servers.</p> <p>Following the move into our new global headquarters in Sydney in 2024 we will re-baseline our electricity consumption to reflect the energy performance of the new Sydney Campus.</p>
Sourcing the equivalent of 100 per cent renewable energy for our global electricity needs in line with our RE100 commitment.	<p>Sourced the equivalent of 100 per cent renewable energy for our global electricity needs, through a combination of renewable energy from building owners or utilities (46.5 per cent) and energy attribute certificates (53.5 per cent).⁽²⁾</p> <p>This has reduced our Scope 2 emissions to zero in FY2022 and FY2023 as reflected above.</p>
Net zero emissions in our own business operations by FY2025.	<p>Reduced and offset our residual emissions across our offices and data centres through the purchase of renewable electricity and credible carbon offsets.</p> <p>Macquarie's new global headquarters, currently being developed in Sydney, achieved a 6-Star Green Star Design rating and will be 100 per cent electric. Similarly, our New York office will be relocated to a recently refurbished sustainably rated building and will utilise many of the design principles of our Sydney headquarters, including being 100 per cent electric.</p> <p>In FY2023 Macquarie purchased and retired a portfolio of Australian Carbon Credit Units and other voluntary carbon offsets that met the Verified Carbon Standard, to cover 411 tonnes of residual Scope 1 emissions. The projects were selected based on quality and verifiable emissions reductions, and we conducted internal due diligence and engaged an independent third party to assist with the evaluation and selection of the projects.</p>
80 per cent of employees in sustainably rated premises by FY2025. ⁽³⁾	72 per cent of Macquarie people occupied a sustainably rated office as at the end of FY2023.

(1) Unless otherwise stated, all Scope 2 emissions in this Report have been calculated using the market-based methodology as described by the GHG Protocol Scope 2 Guidance. PwC has provided limited assurance over this metric and Scope 1 emissions as detailed in the PwC independent assurance report available within Macquarie's [FY2023 Basis of Preparation for ESG Reporting](#) (PDF). This also sets out the reporting boundaries, definitions, and measurement methodologies for the assured metrics.

(2) Based on RE100 boundary criteria, the equivalent of our FY2023 electricity consumption sourced from renewable sources is 99.6 per cent due to insufficient renewable energy certificates in the South Korean market. However, renewable energy certificates were purchased from other international markets to account for the 100 per cent renewable electricity. Energy attribute certificates were retired by 30 June 2023.

(3) Minimum LEED Gold, BREEAM Good, 5-Star Green Star or equivalent. See [Sustainability ratings for Macquarie major offices](#) (PDF)

Metrics & Targets

Continued

Reducing our business operations Scope 3 upstream emissions

In FY2023, we performed a materiality assessment and developed a FY2020 baseline of the emissions for the Scope 3 categories in our business operational value chain, and have established commitments for our most material categories.

Scope 3 business operations emissions by Category⁽⁴⁾⁽⁵⁾

Category	FY2020 baseline (tCO ₂ e)	FY2023 (tCO ₂ e)
Category 1: Purchased goods and services ⁽⁶⁾	149,454	155,097
Category 2: Capital goods	Included in Category 1	
Category 3: Fuel- and energy-related activities	4,054	3,862
Category 4: Upstream transportation and distribution	Included in Category 1	
Category 5: Waste generated in operations	112	187
Category 6: Business travel	68,744	56,872
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	
TOTAL (Categories 1-6 & 8)	222,364	216,018

Scope 3 business operations commitments and progress by Category

Category	Commitment	Progress against commitment
Category 1: Purchased goods and services ⁽⁶⁾	By FY2030, suppliers representing 75 per cent of our total supplier-related emissions (estimated based on spend) have set a science-based emissions reduction target.	We have commenced engagement with our suppliers to understand their net zero commitments and transition plans.
Category 5: Waste generated in operations	By FY2025: Divert 50 per cent of waste from landfill across our global headquarters and regional offices.	In FY2023: In our Sydney global headquarters and our London office we reached an average recycling rate of 51 per cent. ⁽⁷⁾
	Divert at least 70 per cent of premise fit-out projects' construction and demolition waste from landfill in FY2024 and 75 per cent in FY2025. ⁽⁸⁾	We have diverted 78 per cent of construction and demolition waste from landfill.
	100 per cent of e-waste managed through certified sustainable suppliers. ⁽⁹⁾	We are progressing the first phase of managing our e-waste which involves disposal of laptops, desktops and communications room e-waste. This is managed through sustainably certified suppliers globally. Macquarie follows the principle of reduce, reuse and recycle for its devices and appliances, and is aiming to improve the scope of reporting.
	100 per cent elimination of single-use plastic in premises operations. ⁽¹⁰⁾	We are making progress to remove single-use plastic in our cafés and operations including the elimination of single-use cups, cutlery and plastic packaging for food presented for sale in our cafés.
	60 per cent reduction in paper use (from FY2019 baseline). ⁽¹¹⁾	We achieved a 77 per cent paper use reduction from our FY2019 baseline.

(4) PwC has provided limited assurance over the FY2020 baseline Scope 3 business operations emissions in the 2022 Net Zero and Climate Risk Report. Limited assurance was also provided over FY2023 Scope 3 emissions as detailed in the PwC independent assurance report available within Macquarie's [FY2023 Basis of Preparation for ESG Reporting](#) (PDF). This also sets out the reporting boundaries, definitions and measurement methodologies for the assured metrics.

(5) ESG dataset, including prior years' data, is available for download at [macquarie.com](https://www.macquarie.com)

(6) Scope 3 categories 1, 2, 4 and 8 are calculated using the spend-based methodology as set out in the Greenhouse Gas Protocol and are directly correlated with the spend with suppliers that is processed via Macquarie's procurement system. This methodology does not take into account any supplier-specific emissions reduction initiatives. Currently, due to data limitations, this category excludes capital expenditure on the development of our global headquarters at 1 Elizabeth Street, Sydney, due to be completed in 2024. These offices will be included in Scope 1 and Scope 2 reporting from FY2025.

(7) We currently collect data from our Sydney global headquarters being 50 Martin Place, 1 Martin Place, and 1 Shelley Street, and from our London office at 28 Ropemaker Street.

(8) This target and progress relates to our fit-out projects only. The precinct development currently underway at 1 Elizabeth Street, Sydney, is not included.

(9) E-waste includes disposal of personal computers, monitors, technology infrastructure (servers, storage, and networking equipment), and large domestic appliances (fridges, dishwashers, and microwaves).

(10) We use locally legislated definitions for single-use plastics where they exist.

(11) Limited to paper products purchased through centralised procurement catalogues, and paper used in our print centres.

Metrics & Targets

Continued

Category	Commitment	Progress against commitment
Category 6: Business travel	Continue offsetting Scope 3 business travel emissions beyond FY2025, and engaging with key suppliers and developing travel emissions reduction strategies.	<p>We continue to explore the purchase of additional sustainable aviation fuel, travel reduction opportunities and enhancing data visibility to support lower emissions travel choices.</p> <p>In FY2022, the calculation of business travel emissions was expanded beyond air travel to include hotels, ground transportation (excluding rail) and food & beverages, and the calculation of air travel emissions was also refined to reflect the class of ticket flown (e.g., economy, business class).</p> <p>We offset our emissions through the purchase of credible carbon credits.</p>

Metrics & Targets

Continued

Emissions associated with in-scope financing activities

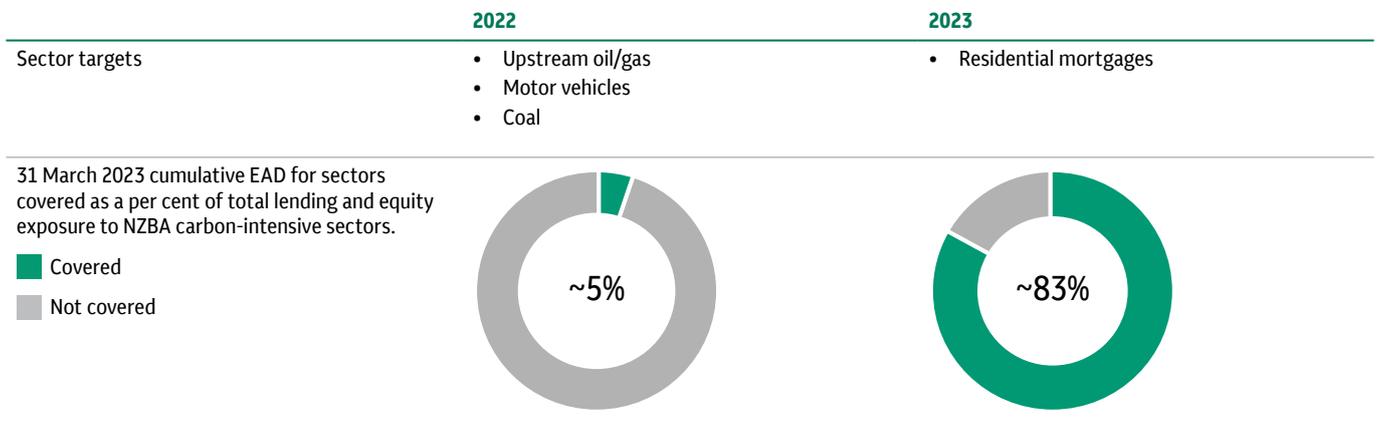
A key aspect of Macquarie's climate strategy is prioritising efforts to reduce financed emissions in carbon-intensive sectors, to help set a path for the global goal of net zero emissions by 2050.

In 2022, we estimated financed emissions and set interim targets for the oil/gas, motor vehicles and coal sectors. This year we add an interim target for Australian residential mortgage lending, accounting for over 60 per cent of our on-balance sheet lending and equity exposures. We are targeting an emissions intensity of 11.6-19.3 kgCO₂e/m² by 2030, which implies a fall of 50-70 per cent from the FY2021 baseline.

In addition, for the first time this year, we report historical emissions in the power generation sector. With the movement of MAM Green Investments' assets⁽¹²⁾ off-balance sheet ongoing, our on-balance sheet lending and equity exposures to the power generation sector will change materially in the coming year. We plan to announce a target in our next Report, once that process is further progressed.

We now have targets in place for over 80 per cent of our dollar exposures⁽¹³⁾ to carbon-intensive sectors and, in line with the NZBA Guidelines, we expect to set targets for all remaining material carbon-intensive sectors in our next Report.

Net Zero Coverage



(12) Our green energy assets definition can be found in Macquarie's FY2023 Basis of Preparation for ESG Reporting (PDF)

(13) Exposures include on-balance sheet lending and equity investments. In addition, for motor vehicles, exposures include novated leases. See Appendix 3 for details.

Metrics & Targets

Continued

Macquarie Group Exposure at Default (EAD) by sector⁽¹⁴⁾

Sector ⁽¹⁵⁾		FY2022 EAD	FY2023 EAD
		\$Ab	\$Ab
NZBA carbon-intensive sectors ⁽¹⁶⁾	<i>Coal⁽¹⁷⁾</i>	0.1	<0.1
	• Coal mining	0.1	<0.1
	<i>Oil/gas</i>	1.4	2.0
	• <i>Upstream oil/gas⁽¹⁸⁾</i>	0.9	1.4
	<i>Transport</i>	12.0	10.5
	• <i>Motor vehicles</i>	8.1	5.7
	<i>Real estate</i>	120.1	141.0
	• <i>Residential mortgages</i>	102.9	123.3
	<i>Power and utilities</i>	3.0	1.6
	• <i>Power generation⁽¹⁹⁾</i>	1.3	0.5
	<i>Metals and mining</i>	1.9	1.8
	<i>Agriculture and forestry</i>	0.2	0.2
	<i>Cement</i>	0.0	0.0
Other sectors	<i>Manufacturing</i>	0.8	0.9
	<i>Financial services</i>	13.0	13.6
	<i>Health and education</i>	4.2	5.8
	<i>Technology, media, and telecommunications</i>	3.3	4.2
	<i>Retail and wholesale trade</i>	0.9	1.3
	<i>Other</i>	5.8	8.7
Total	166.7	191.5⁽²⁰⁾	

Key: *italics* indicate where targets have been set.

(14) Includes on-balance sheet lending and equity investments for all sectors. In addition, for motor vehicles, exposures include novated leases. See [Appendix 3](#) for details.

(15) Sector also includes segments in-scope for targets. Clients' lending and equity exposures are mapped to an ANZSIC code sector, reflecting the client's primary business activity. As part of a review of clients' primary business activities, Macquarie has reallocated some clients between sectors, resulting in a restatement of certain FY2022 exposures.

(16) These sectors include segments which may not be deemed carbon-intensive by NZBA. For example, real estate agents and services within the real estate sector may not be considered carbon-intensive.

(17) The coal sector includes coal mining and a small exposure to coal-fired power generation. For further information, refer to progress on coal ([page 31](#)) below.

(18) Includes both pre-production and production upstream oil/gas producers.

(19) For the avoidance of double counting, in this table we have reported a small remaining coal-fired power exposure as part of the coal sector. Therefore, it is not included in the power and utilities sector/power generation sector.

(20) FY2023 figures do not sum due to rounding.

Metrics & Targets

Continued

Financed emissions targets and progress

Below is a summary of the key elements of our approach and our strategy for driving progress towards our targets. We disclose our portfolio baselines and targets, where applicable, and provide details of our performance to date in sectors where we set targets last year.

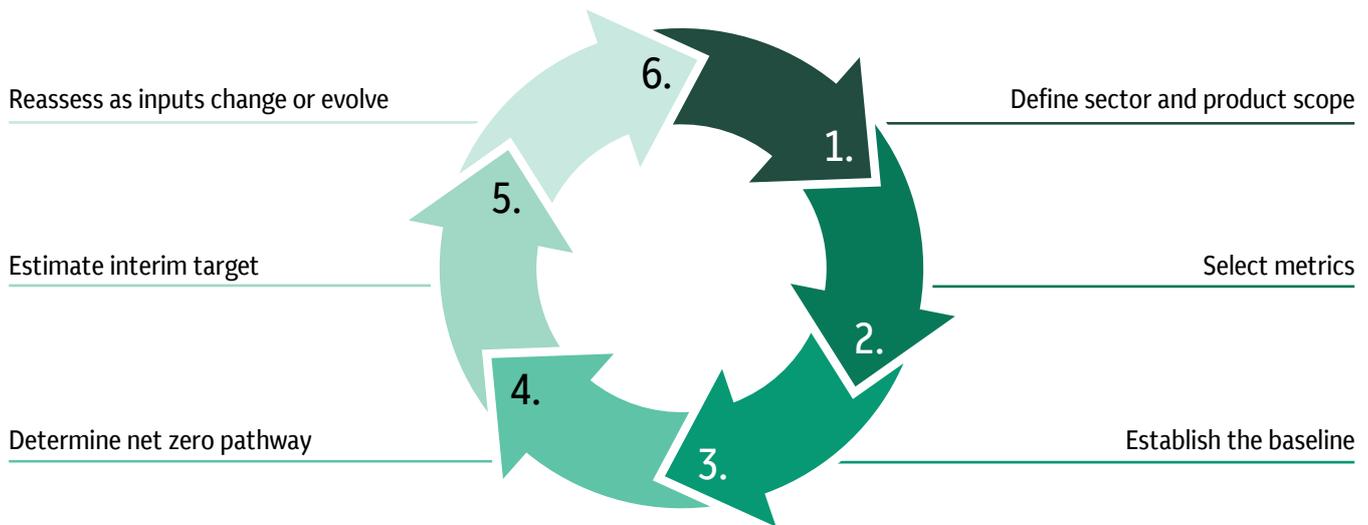
Key elements of our approach

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), the Net-Zero Banking Alliance (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,⁽²¹⁾ where appropriate, our internal expertise and the relevant, impactful, and credible data and decision-useful metrics to drive progress. A key feature of our framework is the use of sector-specific methodologies - this underpins our approach to setting targets.

We consider activities across all four of our Operating Groups and, in line with the NZBA Guidelines, include our on-balance sheet lending and equity investment exposures when determining our financed emissions.⁽²²⁾ Refer to **Appendix 2** for further details.

As part of the ongoing review of our data and methodology, this year we have updated our product scope⁽²³⁾ to exclude exposures associated with issued guarantees that are not related to any potential future loans or equity investments - this has resulted in the exclusion of environmental bonds.⁽²⁴⁾ This update further aligns our approach with the PCAF Standard⁽²⁵⁾ and broader industry practice.

The following diagram outlines our approach to calculating financed emissions and setting targets - these were described in detail in our **2022 Net Zero and Climate Risk Report**.



(21) 'Financed emissions: The Global GHG Accounting and Reporting Standard for the Financial Industry', Partnership for Carbon Accounting Financials, December 2022, <https://carbonaccountingfinancials.com/> (PDF)

(22) Also includes novated leases for our motor vehicles portfolio given availability of data and methodology.

(23) 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. Our product scope also excludes issued guarantees not related to any future loans or equity investment exposures.

(24) Exposure to issued guarantees was \$A0.3 billion as at 31 March 2022, and \$A0.6 billion as at 31 March 2023 across all sectors.

(25) Refer to page 80 of the **PCAF Standard** (PDF)

Metrics & Targets

Continued

Below is a summary of key methodology decisions we have made in estimating sector-specific emissions:

	Oil/gas	Motor vehicles	Coal	Residential mortgages	Power generation
Financial products covered	Lending and equity investments	Lending and novated leases	Lending and equity investments	Lending	Lending and equity investments
In-scope	Upstream (oil/gas extraction)	Vehicle use	Emissions reporting: coal mining Target: all coal ⁽²⁶⁾ (refer to page 31)	Homeowner	Power generation, including coal-fired power
Geographical scope	Global	Australia	Global	Australia	Global
Financial indicator	EAD	EAD	EAD	EAD	EAD
Target metric	Physical emissions intensity (gCO ₂ e/MJ)	Physical emissions intensity (gCO ₂ e/km)	Absolute emissions (MtCO ₂ e)	Physical emissions intensity (kgCO ₂ e/m ²)	Physical emissions intensity (kgCO ₂ e/MWh)
Client emissions attribution method	PCAF	PCAF	PCAF	PCAF	PCAF
Emissions intensity methodology	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity	Portfolio weighted physical emissions intensity
External data sources used in estimating emissions	IEA, BP conversion factors	Vehicle make/model emissions data, NGAF, ABS	IEA, NGER conversion factors	NGAF, AER, AES, property attribute data, ABS	NGER, EIA, NREL
Emissions scopes	1, 2 and 3	1, 2	1, 2 and 3	1, 2	1
Scenario selection	NGFS Net Zero 2050	UN PRI commissioned IPR RPS	N/A	CRREM	To be determined when target is set
Baseline year	FY2020	FY2020	FY2020	FY2021	To be determined when target is set

(26) 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).

Metrics & Targets

Continued

Analysis of additional sectors

Residential mortgages

Sector overview

The real estate sector accounted for around 33 per cent of global energy and process-related CO₂ emissions in 2022 when including operational emissions from use of fossil fuels and electricity in buildings, as well as those related to building construction.⁽²⁷⁾ Fossil fuel and electricity used within residential buildings accounted for around half of this total, demonstrating the critical importance of this sector in achieving global decarbonisation goals.

Reducing operational emissions in support of a net zero target in the real estate sector is heavily reliant on the decarbonisation of the electricity grid. This is critical to achieving a net zero pathway for Australian residential buildings. It is a challenging and complex task and will be dependent on the successful implementation of government policy.

Decarbonisation will also require a large increase in solar panel installations on residential properties, a reduction in household gas usage (via electrification) and energy efficiency improvements. Government reporting has shown recent new homes in Australia have an average energy rating of 6.1 stars out of a possible 10 stars, while the historical stock has an average rating of only 1.7 stars.⁽²⁸⁾ While there have been welcome changes to national construction codes to uplift the energy rating of new stock, historically lower standards will continue to contribute to a larger heating and cooling need and energy demand on the grid (where households have not adopted solar or battery solutions).

In the Australian context, a coordinated approach across federal, state and local governments will be required to encourage the growth of renewable energy supplies, update building standards and energy codes, and incentivise the acceleration of home energy retrofits. However, unless and until the grid is substantially rebalanced to renewable energy supplies, improvements in any other factor will only make marginal contributions to the sector's decarbonisation.

We acknowledge that we are reliant on government policy and action to materially reduce financed emissions associated with residential mortgages lending; therefore, we support market and policy development to encourage an orderly transition.

Activities in-scope

We include Macquarie's Australian-only residential mortgages portfolio originated within Banking and Financial Services (BFS), which accounts for over 95 per cent of our total Group on-balance sheet residential mortgages exposure. Our financed emissions estimates and target for this sector do not include reverse mortgages, committed exposures where the facility has been approved but not settled before the reporting period, and non-retail residential property exposure.

Measuring emissions

In line with the PCAF Standard, we include Scope 1 and 2 emissions related to residential mortgages.⁽²⁹⁾

- Scope 1: emissions from on-site fuel combustion (e.g., for heating and cooking), including natural gas and liquefied petroleum gas (LPG).
- Scope 2: emissions from the generation of electricity used on the property (e.g., for appliances, heating, and cooling).

For Scope 1 and 2, we include carbon dioxide (CO₂) as well as other greenhouse gases including methane and nitrous oxide.

There are significant data challenges associated with quantifying financed emissions from residential mortgages, with data quality and availability currently low. Property-level data on home energy efficiency and/or actual energy consumption is required to accurately gauge the emissions associated with the residential mortgages portfolio but is not yet widely available in Australia. Our methodology therefore relies on energy consumption proxies and is based on government sources (see **Appendix 2** for further details on these proxies and financed emissions calculations).

Macquarie is supportive of government efforts in this area to deliver a national disclosure framework which incorporates a verifiable energy rating scheme for new and existing buildings. It is equally important for the government to incentivise the adoption of the energy rating scheme through mandating disclosure rules as soon as practical, in order to see the required acceleration in uptake. As part of our advocacy efforts to improve data quality and availability, we have been actively engaging with industry through working groups and have partnered with CoreLogic and CSIRO as part of a pilot study using the RapidRate⁽³⁰⁾ tool to understand the thermal energy efficiency of our residential mortgages portfolio.

We will continue to evaluate our ability to estimate financed emissions as data quality and availability evolves.

(27) 'Buildings', International Energy Agency, accessed September 2023, <https://www.iea.org/>

(28) 'Report for Achieving Low Energy Existing Homes', COAG Energy Council, November 2019, <https://www.energy.gov.au/> (PDF)

(29) Scope 3 emissions, such as those associated with the building's construction or renovation activity, are currently excluded given a lack of appropriate methodology and data.

(30) "RapidRate is a tool developed by CSIRO, using Artificial Intelligence techniques, that can quickly rate the energy efficiency of a dwelling using a relatively small number of inputs. RapidRate generates an estimated Star Rating that is aligned with the Nationwide House Energy Rating Scheme (NatHERS). It also generates estimated heating energy and estimated cooling energy." 'RapidRate', CSIRO, accessed September 2023, <https://ahd.csiro.au/>

Metrics & Targets

Continued

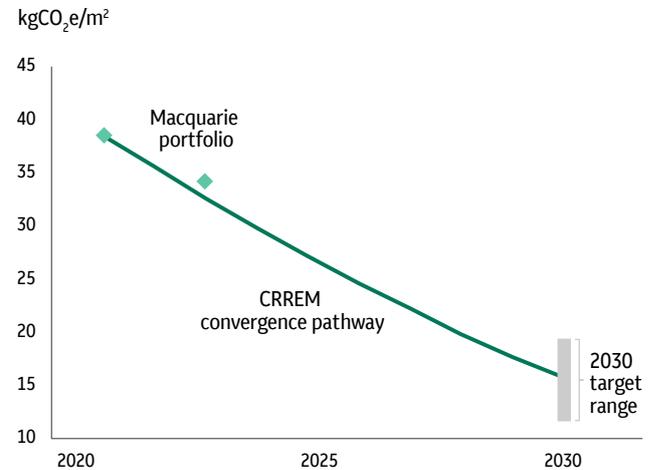
2030 interim target

Our target for this sector is based on physical emissions intensity. This reflects our commitment to growing our residential mortgage portfolio and providing Australians with the financing they need to purchase and build their homes.

We are limited in our ability to influence the energy efficiency of a home or the decarbonisation of the electricity grid. Ultimately, the emissions intensity of our residential mortgages portfolio and our ability to meet targets in this sector will depend on federal and state governments taking a lead position and implementing policies, plans, actions, and sectoral decarbonisation pathways.

We have set a physical emissions intensity target of 11.6-19.3 kgCO₂e/m² by 2030, which implies a fall of 50-70 per cent from the FY2021 baseline. The midpoint of our target is informed by the Carbon Risk Real Estate Monitor (CRREM) scenario, which provides an Australian adaptation of the International Energy Agency's science-based net zero by 2050 scenario. In acknowledgement of the uncertainties described above (including our limited influence), we consider a target range more appropriate than a point estimate. We will continue to evaluate our target for this sector by monitoring the delivery of market and policy developments.

Residential mortgages emissions intensity - Scope 1 and 2



Baseline emissions and interim target for the residential mortgages sector:

Sector	EAD ⁽³¹⁾		Absolute emissions (Scope 1, 2)		Physical emissions intensity (Scope 1, 2)		2030 physical emissions intensity target (Scope 1, 2)	Reference scenario
	\$Ab		MtCO ₂ e		kgCO ₂ e/m ²			
	Baseline FY2021	FY2023	Baseline FY2021	FY2023	Baseline FY2021	FY2023		
Residential mortgages	78.5	123.3	0.6	0.7	38.7	34.1	11.6-19.3 kgCO ₂ e/m ² , equivalent to a reduction of 50-70% from the baseline	CRREM

(31) In-scope residential mortgages does not include reverse mortgages, committed exposures where the facility has been approved but not settled before the reporting period, and non-retail residential property exposure.

Metrics & Targets

Continued

Power generation

Sector overview

The power generation sector is currently the largest source of CO₂ emissions globally due to continued reliance on fossil fuels, especially coal.⁽³²⁾ The sector is also leading the transition to net zero emissions through rapid deployment of renewables, such as solar and wind. Moreover, electrification is a key part of other sectors' strategies for significant emissions reductions, including transportation, industry and buildings. As a result, demand for electricity is already growing faster than that for other forms of energy, and electricity is expected to meet an increased share of global energy needs through 2030 and beyond. A fully decarbonised electricity sector is the essential foundation of a net zero energy system. Navigating this transition will require significant investment and innovative financing solutions to support new infrastructure, drive development and commercialisation of new technologies, manage risk and improve cost-effectiveness.

Reflecting the importance of the power generation sector to the world's decarbonisation ambitions, Macquarie has invested significantly in the development and deployment of climate solutions over the past two decades, with our first investments dating back to 2005, including through the purchase of the Green Investment Group (GIG) from the UK Government in 2017.

To further support our ambition, GIG moved from Macquarie Capital to Macquarie Asset Management (MAM) in April 2022 (now MAM Green Investments). This allows us to combine the market leading renewables project development and finance expertise of GIG and its portfolio of specialist development platforms with the fiduciary capital resources entrusted to MAM, thereby providing access to larger pools of capital and finance that in turn will allow us to facilitate the development of renewables projects on a much larger scale. The transition of MAM Green Investments' assets off-balance sheet is ongoing.

Activities in-scope

Our power generation sector exposure consists of on-balance sheet lending to, and equity investments in, companies that are engaged in electricity generation.⁽³³⁾ This includes utility companies, independent power producers, as well as diversified companies where power generation is the primary activity.⁽³⁴⁾

Measuring emissions

In line with industry practice and the NZBA Guidelines, we measure companies' direct Scope 1 emissions from power generation, which allows us to focus our analysis on the segment responsible for most of the sector's emissions and consequently where the greatest amount of strategic focus and investment is required. The Scope 2 and Scope 3 emissions for companies that generate electricity from fossil fuels are generally comparatively small and/or do not relate directly to power generation activity.

To calculate the weighted average emissions intensity of our portfolio, we have used the emissions data reported by our clients and supplemented it with our own proxy calculations, where our clients do not report their emissions. For renewable power generation (e.g., solar, wind power), where our clients do not report their emissions, we have used the National Renewable Energy Laboratory (NREL) emission factors. NREL emission factors do not currently distinguish between Scope 1 and 2. Therefore, taking a conservative approach, our calculations of Scope 1 emissions associated with renewable power generation assets also include Scope 2 emissions, which are immaterial.⁽³⁵⁾

Across Macquarie we aim to continue to grow our exposure to green energy generation. The transition of MAM Green Investments' assets off-balance sheet will, all other things being equal, reduce our on-balance sheet exposure to the power generation sector and increase the emissions intensity of the remaining assets.

As at 31 March 2023 our total on-balance sheet exposure to the power generation sector has fallen to \$A0.5 billion, which is 0.3 per cent of our total on-balance sheet lending and equity investments. Of this only \$A0.3 billion will remain once the transition of MAM Green Investments' assets off-balance sheet is fully complete.

In the following table, we disclose our absolute emissions and emissions intensity for the year ending 31 March 2023, both including and excluding MAM Green Investments' remaining on-balance sheet renewable power generation assets.

We plan to publish an interim 2030 emissions target in our next Report, once the movement of renewable power generation assets off-balance sheet is further progressed.

Emissions for the power generation sector including/excluding MAM Green Investments' remaining on-balance sheet assets:

Sector	FY2023 EAD in-scope \$Ab	FY2023 absolute emissions (Scope 1) ⁽³⁶⁾ MtCO ₂ e	FY2023 physical emissions intensity (Scope 1) ⁽³⁵⁾ kgCO ₂ e/MWh
Power generation including MAM Green Investments' remaining on-balance sheet assets	0.5	0.75	339
Power generation excluding MAM Green Investments' remaining on-balance sheet assets	0.3	0.75	589

(32) 'Electricity Market Report 2023', International Energy Agency, February 2023, <https://www.iea.org/>

(33) Electricity generation includes operational renewable power generation, waste to energy and fossil fuel based power generation, including coal-fired power.

(34) Note, we include companies whose primary purpose is the generation of electricity for profit as well as gentailers. Primary purpose means that the majority (greater than 50 per cent) of the electricity generating capacity is operational and therefore revenue generating.

(35) 'Life Cycle Greenhouse Gas Emissions from Electricity Generation: Update', Table 1, NREL, accessed September 2023, <https://www.nrel.gov/> (PDF)

(36) For NREL proxied renewable power generation assets, this also includes immaterial Scope 2 emissions.

Metrics & Targets

Continued

Progress towards our existing targets

Last year, we published our sector-level emissions reduction targets for upstream oil/gas, motor vehicles and coal. Since then, we have been engaging with our clients on key climate topics, including our climate strategy, and sharing our expertise with them where appropriate.

The below table summarises our sector emissions profiles for the upstream oil/gas, motor vehicles and coal mining sectors as at 31 March 2023.

Sector	Emissions scopes covered	FY2023 EAD in-scope \$Ab	FY2023 absolute emissions MtCO ₂ e	TARGET DETAILS					TARGET PROGRESS	
				Benchmark scenario	Target metric	Target (2030, unless otherwise specified)	Baseline year	Baseline	FY2023	% change from baseline
Oil/gas (upstream)	1, 2 and 3	1.4	3.5	NGFS Net Zero 2050	Physical emissions intensity	56.3-59.6 gCO ₂ e/MJ, equivalent to a 9-14% reduction	FY2020	Revised: ⁽³⁷⁾ 65.8 gCO ₂ e/MJ	61.9 gCO₂e/MJ	-6%
Motor vehicles	1 and 2	5.7	0.35	UN PRI commissioned IPR RPS	Physical emissions intensity	147 gCO ₂ e/km, equivalent to a 34% reduction	FY2020	221 gCO ₂ e/km	220 gCO₂e/km	-0.5%
Coal mining⁽³⁸⁾	1, 2 and 3	<0.1	0.35	N/A	Absolute emissions	100% reduction by 2024	FY2020	Revised: ⁽³⁹⁾ 3.58 MtCO ₂ e	0.35 MtCO₂e⁽⁴⁰⁾	-90%

(37) For detail on the revised oil/gas baseline, refer to [page 29](#).

(38) Our coal target includes both coal mining and coal-fired power generation segments of the sector. 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. For further information see [page 31](#).

(39) Baseline has been revised from 4.83 MtCO₂e to 3.58 MtCO₂e. This is due to the removal of \$A58 million of issued guarantees relating to environmental bonds from our FY2020 (baseline) exposures. This revised baseline forms part of our PwC limited assurance.

(40) Last year, our emissions disclosure included only the coal mining segment of the coal sector. FY2023 emissions and percentage change disclosures are aligned to the coal mining segment as well. This means coal-fired power assets are not included here, and are instead included in power generation sector scope.

Metrics & Targets

Continued

Oil/gas

We are making progress towards our target of 56.3-59.6 gCO₂e/MJ which implies a 9-14 per cent reduction in physical emissions intensity by 2030 from the FY2020 baseline. In FY2023 the physical emissions intensity of our oil/gas sector has decreased by ~6 per cent to 61.9 gCO₂e/MJ, from the FY2020 baseline. This was primarily due to a bigger proportion of our clients in FY2023 reporting lower operational (Scope 1 and 2) emissions.

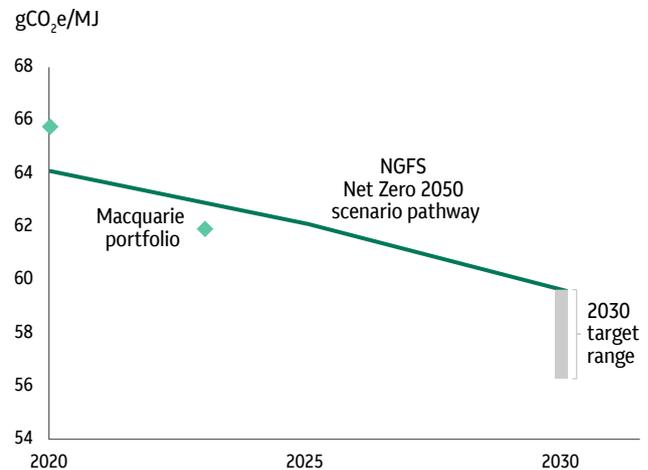
While this reduction is encouraging, as noted last year, given the small size of our lending and equity exposure to the sector relative to peers, annual physical emissions intensity outcomes are likely to exhibit considerable volatility (in both directions) as the portfolio evolves over time. Such volatility is to be expected and is consistent with our 2030 target. As noted last year, given the scale of the needed transition, we recognise that much of the world will depend on oil/gas for years to come and we will continue to support clients in these sectors.

As part of our ongoing efforts to improve our data and methodology, this year we have:

- more closely aligned product scope with PCAF by excluding exposures relating to issued guarantees (environmental bonds) as these do not relate to any potential future loans or equity investments;
- performed a review of our clients' sector classifications and enhanced the associated controls. That process identified two additional in-scope clients that we have added to our historical FY2020 baseline;
- refined one client's self-reported emissions data to better align their production and emissions metrics;
- revised our conversion factor for natural gas liquids to a barrel of oil equivalent to more closely align with evolving industry practice.

The aggregate impact of these data and methodology enhancements is an increase in FY2020 absolute financed emissions from 3.88 MtCO₂e to 4.59 MtCO₂e. While the physical emissions intensity of our portfolio in FY2020 fell modestly from 66.2 gCO₂e/MJ to 65.8 gCO₂e/MJ, our target for 2030 remains unchanged at 56.3-59.6 gCO₂e/MJ. However, given the lower physical emissions intensity starting point in FY2020, that target now implies a reduction of 9-14 per cent between FY2020 and 2030 (previously 10-15 per cent).

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



Metrics & Targets

Continued

Motor vehicles

The physical emissions intensity of our motor vehicles portfolio fell marginally, by 0.5 per cent between FY2020 (base year) and FY2023. We continue to see pathways to achieve our 2030 interim target for the motor vehicle sector.⁽⁴¹⁾

We consider there to be three key factors which will determine whether we meet our 2030 target for this sector:

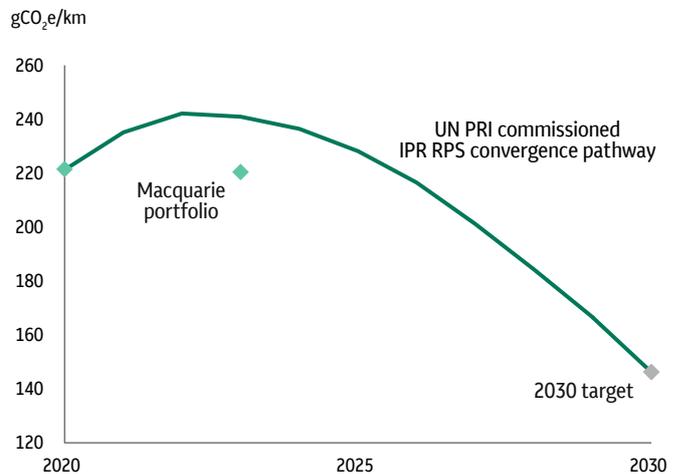
1. Increasing the electric vehicle (EV) share of our total motor vehicle financing exposure in line with the market.
2. Improvements in internal combustion engine (ICE) vehicle emissions intensity.
3. Decarbonisation of the Australian electricity grid via renewable energy sources.

In January 2023, EVs only accounted for around 0.4 per cent of motor vehicles on Australian roads.⁽⁴²⁾ With EV sales increasing to ~4 per cent of total new vehicle sales in FY2023,⁽⁴³⁾ recent reporting suggests we are likely to see further electric vehicle uptake,⁽⁴⁴⁾ which is expected to contribute to a reduction in our emissions intensity in coming years. Our ability to meet our target will be subject to government and industry support for encouraging EV supply and uptake, improving vehicle efficiency standards and decarbonising the grid.

To help break down barriers to EV uptake, BFS has developed an EV savings calculator which complements our existing specialist EV buying service. The calculator takes into account a number of factors to support clients to compare the costs associated with, and environmental benefits of, purchasing and running an EV compared to an equivalent petrol, diesel or hybrid vehicle.

Macquarie also welcomed the opportunity to make a submission in relation to Australia's National Electric Vehicle Strategy, supporting the federal government's commitment to encourage the uptake of EVs in Australia.

Motor vehicles emissions intensity - Scope 1 and 2



(41) To improve data quality, we have updated the source for the emission factors data from National Greenhouse Emissions Reporting (NGER) to National Greenhouse Accounts Factors (NGAF) (this results in a shift from forecasted emissions to actual emissions). This has had an immaterial impact on our FY2020 baseline.

(42) 'BITRE Road Vehicles', Australian Government, January 2023, <https://www.bitre.gov.au/>

(43) VFACTs New Vehicle Sales Data.

(44) 'State of Electric Vehicles', Electric Vehicle Council, July 2023, <https://electricvehiclecouncil.com.au/> (PDF)

Metrics & Targets

Continued

Coal

We are on track to run-off our remaining on-balance sheet lending⁽⁴⁵⁾ and equity exposures to the coal sector by the end of 2024.⁽⁴⁶⁾ To align our methodology with the PCAF Standard⁽⁴⁷⁾ and broader industry practice, this year we have updated our product scope to exclude issued guarantees that are not related to any potential future loans or equity investments. For coal, this relates to environmental bonds (e.g., to rehabilitate a mine at the end of its life). This methodology enhancement has reduced our previously reported FY2020 EAD from \$A0.3 billion to \$A0.2 billion, and the baseline absolute financed emissions from 4.83 MtCO₂e to 3.58 MtCO₂e. It also had an immaterial impact on FY2020 physical emissions intensity, reducing it from 93.7 gCO₂e/MJ to 93.6 gCO₂e/MJ. There is no impact on our existing coal target.

As per last year, given computational challenges associated with revenue shares (particularly in a world of high and volatile coal prices), we continue to 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 GHG emissions and the importance of working with carbon-intensive industries, such as coal, to help them decarbonise. Given this, going forward we will continue to maintain the ability to work with coal companies to finance projects that will significantly reduce their greenhouse gas (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.

With only one remaining coal mining client (\$A6.7 million EAD), our absolute financed emissions for coal mining decreased from 3.58 MtCO₂e in FY2020 to 0.35 MtCO₂e in FY2023. Our emissions intensity decreased from 93.6 gCO₂e/MJ in FY2020 to 91.8 gCO₂e/MJ in FY2023. To align with sector methodologies, emissions from coal-fired power generation are reported as part of the emissions of the power generation sector.

(45) 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).

(46) 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.

(47) Refer to page 80 of the [PCAF Standard](#) (PDF)

Metrics & Targets

Continued



How we are driving progress towards our targets

We continue to drive progress towards our sector-specific targets through our knowledge and expertise, helping our clients to develop and act on decarbonisation plans.

To appropriately consider sector-specific targets in financing decisions for our carbon-intensive sectors in institutional-side businesses, we have developed a Net Zero Risk Assessment (NZRA) process which is currently applied to the upstream oil/gas sector. Over time, we will look to expand to other sectors where we set targets.

The process uses a combination of quantitative and qualitative factors (where required) to evaluate clients' climate ambition and performance for new in-scope transactions.

Quantitative factors include:

- The client's historical emissions.
- Macquarie's overall sector emissions profile at a point in time and at the maturity of the transaction.
- Macquarie's sectoral target.

Qualitative factors include:

- Existence and reasonableness of the client's decarbonisation plans.
- Strategic actions taken by the client to achieve decarbonisation plans.
- Assessment of GHG management practices relative to peers.

By considering this process as one element of our transaction-level decision making, we can assess how a given in-scope transaction may affect progress towards our sector-level targets.

In addition to transaction-level assessments, twice-yearly we determine the collective progress of emissions reductions against our sector-level targets. The results of this analysis are discussed with representatives of each impacted Operating Group and the Risk Management Group.

Accountability for progress towards targets has been assigned to senior leaders in relevant Operating Groups. This senior-level accountability, coupled with the NZRA (which includes independent 'second line' review by the Risk Management Group) and six-monthly sector-level reviews, serve as a control and monitoring mechanism to help senior management oversee progress towards achieving our targets.

For motor vehicles, we have implemented portfolio review and management reporting, which is presented in business and risk oversight forums to track and discuss progress with senior leadership.



Data quality and ongoing evolution of our methodology

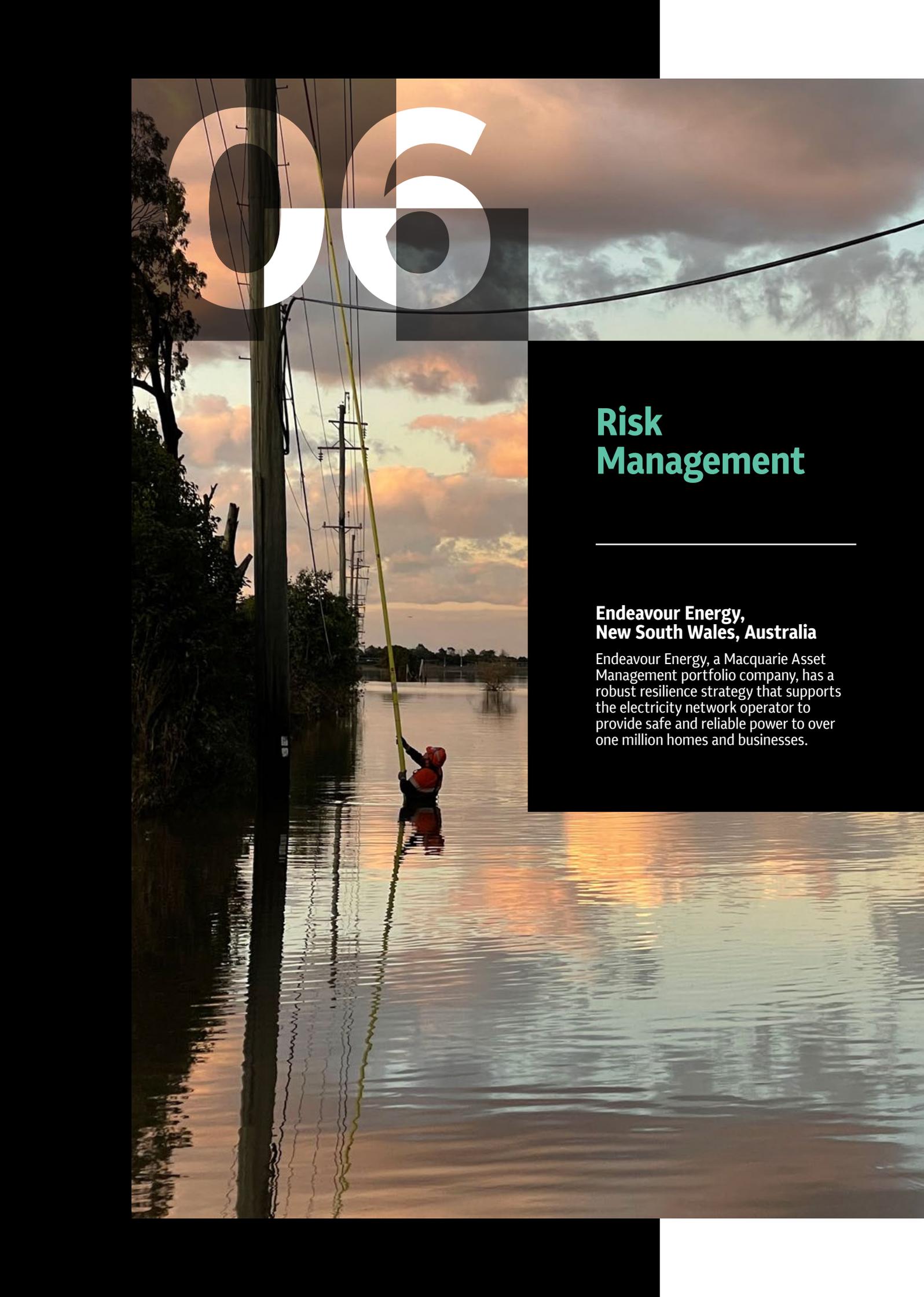
Estimating emissions requires the collection and analysis of large sets of new data and, as mentioned last year, there are significant challenges with both data availability and quality. We therefore produce some of our estimates based on assumptions and extrapolations. Given the urgency of climate action, we are disclosing emissions and targets based on current methodologies despite these data limitations.

In making the data quality related determinations, we continue to apply 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.

While we are proud of the progress made in developing and refining our financed emissions methodology, this remains a nascent area, with ongoing industry development. We will continue to refine our approach as industry guidance matures.

Over time, we expect that the availability and quality of the data will improve. As a result, applying these data and modelling capabilities and continuously pursuing transparency, we may periodically restate our baseline emissions and, possibly, our emissions reduction targets. We note that scenarios are likely to change with the pace of decarbonisation and we will review our approach as required.



06

Risk Management

Endeavour Energy, New South Wales, Australia

Endeavour Energy, a Macquarie Asset Management portfolio company, has a robust resilience strategy that supports the electricity network operator to provide safe and reliable power to over one million homes and businesses.

Risk Management

Macquarie's Risk Management Framework (RMF)

Macquarie's RMF is the totality of systems, structures, policies, processes, and people within Macquarie that identify, measure, evaluate, monitor, report, and control or mitigate all internal and external sources of material risk. It is underpinned by the Risk Appetite Statement and Risk Management Strategy:

- **Risk Appetite Statement:** Defines the overarching risk-taking settings of Macquarie and its subsidiaries.
- **Risk Management Strategy:** Serves to set out Macquarie's RMF, including describing each material risk identified, and our approach to managing these risks.

Macquarie's Risk Appetite Statement and Risk Management Strategy have been updated to reflect our treatment of climate risk. This ensures qualitative updates are provided to senior management.

The risks of climate change to Macquarie (climate risk) are the financial and non-financial risks arising from physical climate risk, transition climate risk or liability climate risk drivers:

- **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** 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; and
- **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.

Macquarie continues to embed and enhance the identification, assessment, monitoring, management and reporting of climate risks across the RMF. Existing policies and processes that support the RMF are largely risk agnostic and therefore appropriate for the management of climate-related risks, examples include:

Risk and Control Management

Macquarie's Risk and Control Management Policy outlines the principles that govern our risk practices, ensuring Macquarie maintains a strong control environment and can effectively monitor the risk profile of its activities on an ongoing basis. A Risk and Control Self-Assessment (RCSA) is performed semi-annually to assess all material risks across the organisation, aligned to the products, services and enterprise-wide activities that Macquarie performs.

This year, teams responsible for completing the RCSA were provided guidance on the treatment of climate-related risks to support the appropriate identification of risks and relevant controls.

Incident and Issue Management

Macquarie's Incidents and Issues Policy aims to ensure suspected or actual incidents and issues are rectified quickly and effectively to limit their impact to our clients, counterparties, the markets and communities in which we operate, our people and our reputation. A risk event caused by climate change would be captured under the Policy.

This year, we continued to embed climate risk in our existing processes and Operational Risk teams received guidance on how to identify and log climate-related incidents and issues.

New Product and Business Approval

Macquarie's New Product and Business Approval Policy sets out the change approval requirements for new products, new businesses, major organisational projects or significant changes to products, businesses, processes, or systems. An environmental and social risk (ESR) review is required for all new business activities, in line with the ESR Policy requirements. In addition, Macquarie's Business Services Division considers environmental obligations for new or material changes to supplier arrangements.

Risk Management

Continued

Climate-related impacts on our material risks

The risks of climate change to Macquarie (climate risk) are considered cross-cutting. This means that we recognise climate risk may impact a broad range of material risks within our RMF, for example:⁽¹⁾

Material risk type	Examples of potential climate-related impacts	Risk identification and management processes
Credit/ Equity/ Asset	<p>Where Macquarie has a direct interest in an asset, potential financial impacts include:</p> <ul style="list-style-type: none"> • Reduced revenues from production outages. • Remediation and repair costs. • Reduced revenues from shifts in demand or the introduction of carbon pricing. • Reduction in asset values or stranded assets. • Litigation and regulatory-related costs and liabilities. <p>For loan exposures, the impacts on our clients could 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 processes. • Physical and transition risk scenario analysis (refer to scenario analysis section).
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 Policy. • Implementation of the Greenwashing Standard.
Market/ Liquidity	<p>The risk of reduction in market value of Macquarie's assets, 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).
Operational Risk	<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"> • Our Business Resilience standard protects against disruption caused by severe weather events.
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 <i>Code of Conduct</i>. • Global horizon scanning and triage activities. • Implementation of the Greenwashing Standard.
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"> • Macquarie's annual strategy and business planning process.
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 Policy (refer to page 53 of Macquarie's FY2023 ESG Report).

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

Risk Management

Continued

Credit Risk

Macquarie regularly conducts sector-specific credit portfolio analysis, monitoring credit concentration by counterparty, country, risk type, industry, and credit quality. The assessment of climate and environmental risks for new transactions and investments is managed in consultation with ESR teams as part of the credit approval process.

This year, we continued to embed climate into our existing processes and updated our Credit Risk Management Framework to include our definitions of climate risk. We are working to embed the analysis of climate risk, with a particular focus on transition risk and exploring how climate risk scorecards can support credit risk assessments.

Environmental & Social Risk

Our approach to managing climate risk is underpinned by Macquarie's group-wide ESR Policy, which describes our approach to ESR management when onboarding or reviewing clients and other counterparties across a broad range of transactions including equity investments, financing, leasing and advisory mandates. The ESR Policy provides a process for embedding ESR management into investment decision-making. It takes a precautionary approach to ESR issues and provides escalated decision-making and approval, alongside the credit approval process, for material environmental and social risks. A new transaction review system has also been implemented to better manage and assess transactions and clients from an ESR perspective. Over time, it will be enhanced to incorporate more specific climate and environmental risk considerations to better support risk assessments, decision-making and risk reporting.

In FY2023, we further developed our analysis of environmental, social, and climate-related risks, beginning with European entities. Analysis considers the materiality of climate and environmental risks on separate legal entities, including considering relevant regulatory expectations and requirements for that legal entity as well as the environmental and social risk profile of transactions and clients of that entity. This is communicated to entity-level boards as appropriate.

In FY2024, we plan to further develop climate-related metrics, to better inform practices and associated senior management and Board reporting, as well as evaluate our approach to deforestation and nature-related risks.

Market Risk

Macquarie's trading businesses do not typically take illiquid, long-dated market risk positions. If market conditions became unfavourable as a result of physical or transition risk from climate change, Macquarie could exit the affected markets. This is applicable whether risk is driven by equity and commodity prices, interest rates or foreign exchange. Scenario analysis and stress-testing are used to quantify and constrain our exposure to market volatility that might result from these risks. For the treatment of large derivative exposures, refer to the section on 'Credit Risk' above.

Operational Risk

Macquarie's Business Resilience Standard helps mitigate climate-related operational risk. The Standard is aimed to protect against business disruption caused by events including severe weather. Business resilience plans document the recovery strategies, activities and actions to prepare for and manage disruptions to Macquarie.

Regulatory & Compliance

Established functions within the Risk Management Group, namely Compliance and Prudential Risk, provide oversight and advice on climate risk regulation and industry guidance (both prudential and non-prudential) and undertake global horizon scanning to ensure regulatory requirements and expectations are being met.

To help manage legal, regulatory and reputational risks relating to greenwashing, in June 2023 Macquarie launched a Greenwashing Standard to provide guidance to our people on how to identify and manage greenwashing risk. Greenwashing training and accompanying Q&A sessions have been provided for targeted groups/divisions.

Strategic Risk

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. To help mitigate the risk of our strategy/business model not aligning with our commitment to net zero, Macquarie introduced a Net Zero Risk Assessment (NZRA) process to appropriately consider sector-level targets in financing decisions for carbon-intensive sectors in our institutional-side businesses. For motor vehicles, we have implemented portfolio review and management reporting processes. See **Section 5 — Metrics & Targets** for more detail.

In Macquarie Bank Europe (MBE), representatives from across the business were involved in assessing the implications of varying transition paths on the existing business strategy, where the findings of this scenario analysis will be embedded in the MBE business strategy.

Risk Management

Continued

Scenario analysis

Since our first climate-specific report in 2019, Macquarie has continued to conduct scenario analysis to help identify and assess Macquarie's exposure to physical and transition risks, in line with Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Details of this scenario analysis can be found on Macquarie's website and in Macquarie's Annual Reports.

In 2023, we ran two scenarios: an orderly transition scenario and a rapid transition scenario. We have enhanced our scenario analysis capabilities, with key areas of uplift being the establishment of a scenario development process and refinement of our transition risk modelling capabilities for the oil and gas sector. Additionally, we have completed further transition risk analysis across all sectors of MBE exposures to understand any further impacts on this contained portfolio.

Macquarie's climate scenario analysis efforts have included strengthening our approaches, methodologies, insights, and addressing a number of learnings identified from the Australian Prudential Regulation Authority's 2022 Climate Vulnerability Assessment exercise and the initial exploratory analysis conducted for MBE in 2021. Highlights from the analysis activities undertaken in 2023 include:

- assessment of the climate scenario analysis approaches and methodologies used by international peers and required by regulators in order to understand emerging best practice;
- review of data used in climate scenario analysis (both internal data and external climate scenario data) to better understand data quality and associated challenges;
- establishment of overarching scenario analysis objectives to assist with climate scenario selection and scenario development across Macquarie; and
- completion of transition risk focused scenario analysis, including uplift of the approach, the qualitative and quantitative methodologies used, and the sector-specific credit modelling used for the oil and gas sector.

The analysis identified the impact of transition risk to the overall oil and gas sector across the regions and portfolios where we have exposure. Based on the findings, we concluded that our business models remain resilient and there are no material risks in the short-term. It also informed our climate risk model development, identifying:

- underlying drivers within the oil and gas portfolio to inform transition risk model development;
- the severity and impact of the two scenarios at a global and regional level; and
- areas of uncertainty in the climate scenarios to facilitate further sensitivity analysis.

The MBE analysis was extended to capture further impacts at the entity-level. Highlights include:

- qualitative assessments of anticipated capital and liquidity impacts, following the quantitative risk driver assessments across revenues, exposures, and expected credit losses; and
- the integration of the findings into business strategy and forecasting for MBE, including the identification of potential areas of opportunities and risks.

Whilst significant progress has been made to understand the potential risks presented by climate change in Macquarie's portfolio through scenario analysis, we intend to continue to develop our impact analysis capabilities. The insights we gain will continue to inform business strategy and forecasting where appropriate and will support the further enhancement of our risk analysis and modelling capabilities.

Risk Management

Continued

Climate risk reporting

As outlined in **Section 3 — Governance**, we ensure our Boards and Board Governance and Compliance Committees receive twice-yearly updates through ESR's Material Risk Report and additional interim updates as required. These provide the Boards and Board Committees with material period-on-period 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 and are now working towards developing relevant climate risk metrics that our Boards can use to better manage and oversee climate and environmental related risks.

Refer to **Section 5 — Metrics & Targets** for further detail on reporting processes in place for our sector-specific targets.

In addition to internal reporting, we continue to align our external disclosures with the TCFD recommendations, related emerging industry standards and best practices and other reporting commitments such as those set out in the Net-Zero Banking Alliance (NZBA) Guidelines. Given the growing range of standards and best practices, Macquarie welcomes moves by regulators, governments and strategic industry bodies to support production of increased harmonised guidance on climate-related risk management and reporting approaches across the industry. This includes the work of the International Sustainability Standards Board (ISSB) under the International Financial Reporting Standards (IFRS) Foundation.

We participate in voluntary external benchmarking initiatives and surveys, as a means of staying connected to industry best practice and monitoring our maturity. Macquarie also engages with the Australian Banking Association on transition planning and climate risk (among other topics) to support an orderly transition.

Providing our people with the resources to support our climate goals

Macquarie has a comprehensive database of resources available to further the knowledge of our people on climate-related topics. This provides information on our climate-related capabilities and commitments, Macquarie's global partnerships across the private and public sector, case studies of our expertise in action, and the latest news and reporting from across Macquarie. For example, the Climate Intelligence Unit (CIU) provides weekly briefings on climate matters that are accessible to all of our people.

In addition to information sharing, Macquarie-wide climate risk awareness training was delivered this year, providing education on climate change, the energy transition and climate risk at Macquarie. We continue to assess ongoing training needs.

This year Macquarie Asset Management (MAM) released a new publicly available podcast series, Navigating to Net Zero. The podcast included stories from leaders at MAM's infrastructure portfolio companies and real estate properties who share unique insights into their business' decarbonisation challenges and the practical climate solutions they are implementing.

We are proud to work with our people on cultivating a culture of sustainability and empowering our workforce to recognise opportunities for improving our management of climate risk. This is supported by networks such as: the Banking and Financial Services Sustainability Employee Network Group, the Green Law Community (a Macquarie-wide group of lawyers who share knowledge and discuss issues on green law) and Green@Macquarie (an internal network on sustainability issues with around 2,500 members).

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Appendices

Sapphire Wind Farm, New South Wales, Australia

Macquarie Capital acted as exclusive financial adviser to Partners Group on the sale of CWP Renewables to Squadron Energy, which operates Sapphire Wind Farm - currently the largest operational wind farm in New South Wales.⁽¹⁾

(1) <https://www.squadronenergy.com/our-projects/sapphire-wind-farm>

Appendices

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

Energy consumption and Scope 1 and Scope 2 emissions for the year ended 31 March 2023

Operational boundary for energy consumption and Scope 1 and 2 greenhouse gas (GHG) emissions for corporate offices and data centres

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

- Offices leased by Macquarie Group Limited (MGL) and its subsidiaries, which are also occupied by Macquarie people 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.
- New offices from business acquisitions from the month the acquisition is completed.

The following exclusions have been applied in determining the reporting boundary for corporate offices and data centres:

- Offices or buildings that are owned or managed by an MGL entity but are not tenanted by Macquarie people.
- Serviced offices, data centres and cloud computing services used by MGL where MGL has no oversight of the energy usage of the office, data centre and cloud computing services. Energy costs for serviced offices are typically included as part of a service fee.
- Joint venture offices. Joint venture offices are defined as offices where Macquarie people may be located as part of a joint venture business activity but where Macquarie has limited ability to influence the operation of these offices and does not have oversight of the data required to calculate electricity consumption and GHG emissions.
- Properties associated with businesses acquired by Macquarie that are operationally segregated subsidiaries (OSSs - refer to **Appendix 5 — Glossary**) are excluded until such time as the associated lease obligations are renewed by Macquarie post-acquisition.

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.

The following exclusions have been applied in determining the reporting boundary for base buildings:

- Energy use in this category excludes tenanted energy use in Macquarie owned and operated buildings.
- OSSs.

Process for calculating energy consumption and 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 emission factors from government or international sources.

Usage has been sourced directly from meter data, supplier, or property owner invoices, where available. Approximately 82 per cent of Scope 1 emissions data for the reporting period was obtained directly from actual meter usage data, supplier, or property owner invoices. 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 National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008.⁽²⁾

Emission factors have then been applied to determine the equivalent direct emissions associated with diesel, natural gas and refrigerants consumed (Scope 1 emissions).

Scope 2 emissions: Indirect emissions associated with total electricity consumed

Approximately 82 per cent of the electricity usage data for the baseline reporting period was obtained directly from the actual tenancy or building data, where available, and the remaining 18 per cent of energy consumption was estimated by one of the following prioritised data methodologies:

1. To account for seasonal variances, estimates are derived as follows:
 - Where a clear seasonal trend exists from previous reporting periods, the estimate is based on an extrapolation of these trends and adjusted for any year-on-year overall movements.
 - Where no clear seasonal trend exists from previous reporting periods, the actual figure for the same period in the prior year is used as the estimate.
2. Where invoiced data exists for part of the reporting period, the average daily invoiced electricity consumed for that part of the reporting period is determined and extrapolated out to the remainder of the reporting period. This method is used when some of the invoiced data within the reporting period is unavailable from the energy providers.
3. Where no invoiced data is available for a particular office, the electricity consumed for that office is estimated based on the Net Lettable Area of the office and the average electricity consumption per square metre of other offices in the same region.

(2) 'Measurement Determination', Australian Government, Clean Energy Regulator, 6 September 2023, <https://www.cleanenergyregulator.gov.au/>

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Emission factors have then been applied to determine the equivalent indirect emissions associated with electricity consumed (Scope 2 emissions).

Scope 3 operational emissions Categories 1-6 and 8 for the year ended 31 March 2023

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.

Currently, due to data limitations, this category excludes capital expenditure on the development of our global headquarters 1 Elizabeth Street, Sydney, due to be completed in 2024. These offices will be included in Scope 1 and Scope 2 reporting from FY2025.

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 (being electricity, steam, heating, and cooling), including transmission and distribution (T&D) losses. Only electricity is included in the calculation as other fuels and energy are not material. It includes emissions from Macquarie's global corporate offices, data centres and base buildings.

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.
- Effluents and wastewater.

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 (by cabin flown), hotels, ground transport (excluding rail) and food and beverage (which includes meals while travelling and other forms of food and beverage activity that may not be related to business travel such as 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.

Process description

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

The latest USEEIO release provides data through to 2018 with emission factors denominated in \$US. These were translated to the relevant period (i.e., to Macquarie FY2023) using relative price levels and then to the relevant currency (i.e., from \$US to \$A) using the period average exchange rate.

$$\text{Emissions} = \sum \left(\text{Spend by category} \times \frac{\text{converted emission factor}}{\text{(Ef) by category}} \right)$$

Category 2: Capital goods

Capital goods are included under Category 1, as described above.

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Category 3: Fuel- and energy-related activities

As discussed above, Category 3 covers emissions arising from the extraction, production and transportation of fuels and energy consumed by Macquarie (being electricity, steam, heating, and cooling), including T&D losses. Usage is based on invoice data from energy retailers or property owners, where available, or estimated based on comparable offices. For energy consumed in Australia, state-level emission factors were used, based on the National Greenhouse Accounts Factors published by the Department of Climate Change, Energy, the Environment and Water (2021 & 2022). For energy consumed outside of Australia, emission factors by country were used based on the UK Government GHG Conversion Factors for Company Reporting, Department of Environment, Food and Rural Affairs (DEFRA) Emission Factors (2021).

$$\text{Emissions} = \sum \left(\text{Quantity of electricity purchased by state/country} \times \text{Ef by state/country} \right)$$

Category 4: Upstream transportation and distribution

Upstream transportation and distribution are included under Category 1, as described above.

Category 5: Waste generated in operations

Data for waste generated in operations has been sourced directly from property owner or cleaning provider reports. Due to limited data availability, tonnes/FTE was calculated for sites where data was available (Sydney: 1 Martin Place, 50 Martin Place, 1 Shelley Street and London: Ropemaker Street), representing approximately 50 per cent of our global people. This was then extrapolated out to the remaining population of our people to estimate global emissions for waste generated in operations on a per capita basis. The headcount number excludes Macquarie people on extended leave, people at a non-Macquarie office, casual people, and non-executive directors. Emission factors are based on the UK Government GHG Conversion Factors for Company Reporting, DEFRA Emission Factors (2022).

Category 6: Business travel

Business travel emissions are calculated by American Express based on spend on corporate cards. American Express utilises emission factors for the relevant reporting period, based on government or international sources, to determine the equivalent indirect emissions associated with air travel, hotel, ground transport, and food and beverage spend and associated activity data.

American Express estimates GHG emissions (tonnes CO₂e) as follows:

- **Air travel:** emission calculations are based on distance per flight segment or leg, with the emission factor determined by class of ticket and flight haul type, with reference to spend and DEFRA conversion factors (2022).

$$\text{Emissions} = \sum (\text{Ef}_i \times \text{Distance}_i)$$

- **Hotel:** emission calculations are based on total hotel spend at a particular hotel and the average daily rate per Business Travel News's Corporate Travel Index to estimate room nights based on location, with reference to Smith Travel Research's database to identify the class of service for each hotel. The emission factor is determined by class of hotel service and property location per the Cornell Hotel Sustainability Benchmark Index (2021).

$$\text{Emissions} = \sum (\text{Ef}_i \times \text{Estimated Room Nights}_i)$$

- **Ground transport:** emission calculations are based on spend on taxis, car rentals and ride shares, where the average distance travelled is determined with reference to Numbeo's report of Prices by Country of Taxi 1km (Normal Tariff) (Transportation) (2023). The emission factor is based on car type, as determined by American Express using internally developed codes and DEFRA conversion factors (2022).

$$\text{Emissions} = \sum (\text{Ef}_i \times \text{Distance}_i)$$

- **Food and beverage:** emission calculations are based on spend by restaurant category and the United States EPA factors (2023). Restaurant category is determined by both industry codes and American Express merchant classifications.

$$\text{Emissions} = \sum (\text{Ef}_i \times \text{Spend}_i)$$

Category 8: Upstream leased assets

Upstream leased assets are included under Category 1, as described above.

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Appendix 2: Financed emissions methodology

Additional notes on methodology

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

Scope

Our current product scope, in line with the Net-Zero Banking Alliance (NZBA) Guidelines, includes on-balance sheet lending and equity investments.⁽³⁾ This means that certain types of investments are not in scope, e.g., underlying investment vehicles managed by Macquarie Asset Management. However, we have included other products where methodology and data are available. For example, in the motor vehicle sector, we focused on asset finance activity, which includes lending and novated leases. Our financed emissions work includes the on-balance sheet activities of both the banking and non-banking businesses of Macquarie. Refer to **Appendix 3** for further details on product scope.

In defining organisational boundaries (e.g., entity inclusion), Macquarie applies an operational control approach, as defined in the Greenhouse Gas (GHG) Protocol.⁽⁴⁾

Exposure

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 the 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.

By using EAD we include both drawn and undrawn components of our exposure. 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.

Where client reporting periods differ from Macquarie's reporting year end, we have taken their latest available data as disclosed on or prior to our year end.

Where client emissions are reported to government entities and a data lag may exist, the most recent period available for a client has been used.

Metrics

When reporting emissions, we report in carbon dioxide equivalents (CO₂e) to account for other GHGs where they are material.

Baseline year

Prior to assessing net zero pathways and targets, we establish our financed emissions baseline for each in-scope sector. This is where several methodological determinations are made.

Our financed emissions baseline reporting year for oil/gas, motor vehicles and coal mining is from 1 April 2019 to 31 March 2020 (Macquarie's financial year 2020, FY2020) – this takes into consideration potential distortions caused by the COVID-19 pandemic in FY2021 and to a lesser extent in FY2022.

Our financed emissions baseline reporting year for residential mortgages is from 1 April 2020 to 31 March 2021 (FY2021) – this closely aligns with the most recent reporting periods of the government data sources in our proxy analysis.

Sector-specific methodology

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

Oil/gas

In analysing the sector, we considered 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, including 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.

In estimating the emissions associated with the oil/gas sector, we focused our analysis on Scope 1 and 2 of the upstream segment, as well as 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, NGER) or reported by clients directly to us. Most emissions sourced via this method were given a Partnership for Carbon Accounting Financials (PCAF) data quality score of 2, as they were not independently verified. We also performed reasonableness checks on reported emissions relative to industry benchmarks.

Some of our clients did not report their Scope 1 and 2 emissions (15 per cent by FY2023 sector exposure) and most did not report their Scope 3 emissions (94 per cent by FY2023 sector exposure). In those instances, we proxied our clients' emissions using client reported production data and weighted emissions intensity factors estimated using the following publications from the International Energy Agency (IEA):

- Methane Tracker 2020.⁽⁵⁾
- The Energy Security Case for Tackling Gas Flaring and Methane Leaks.⁽⁶⁾
- Tracking Clean Energy Progress 2023.⁽⁷⁾
- World Energy Outlook 2022.⁽⁸⁾

(3) Refer to **Appendix 3** for further details of product inclusion and exclusion.

(4) 'A Corporate Accounting and Reporting Standard, Chapter 3, Setting Organisational Boundaries', Greenhouse Gas Protocol, accessed September 2023, <https://ghgprotocol.org/>

(5) 'Methane Tracker 2020', International Energy Agency, March 2020, <https://www.iea.org/>

(6) 'The energy security case for tackling gas flaring and methane leaks', International Energy Agency, June 2020, <https://www.iea.org/>

(7) 'Tracking Clean Energy Progress 2023', International Energy Agency, July 2023, <https://www.iea.org/>

(8) 'World Energy Outlook 2022', International Energy Agency, October 2022, <https://www.iea.org/>

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

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

Where required, emissions intensities were converted using the BP Statistical Review of World Energy.⁽⁹⁾

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

We attributed oil/gas clients' absolute emissions to Macquarie based on the PCAF Standard and quantified the oil/gas sector emissions intensity in gCO₂e/MJ.

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

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

Exposure to, and emissions from, upstream pre-production oil/gas clients were included in overall sector exposure and absolute emissions calculations, but were excluded from emissions intensity calculations as those clients have zero production.

Motor vehicles

In the motor vehicles sector, we covered our vehicle finance business in Banking and Financial Services (BFS), namely passenger cars and light commercial vehicles offered in Australia. Other vehicle types financed by BFS (such as trucks, buses, motorcycles) make up a smaller part of the sector and may be considered separately in future disclosures. In 2021, Macquarie sold its dealer finance business, therefore it has not been included.

Product scope in this sector includes consumer loans, commercial loans, and novated leases. While novated leasing is not included in NZBA product scope for financed emissions, we included this product given its similarity to loans, consistency of the methodology between the two products, and availability of data.

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

- 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.

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

$$\text{Financed emissions} = \sum_{vf} (\text{Efficiency}_{vf} \times \text{Emission factor}_f \times \text{Distance travelled}_v \times \text{Attribution factor}_v)$$

Where:
 v = vehicle or vehicle fleet; f = fuel type; 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⁽¹⁰⁾ and data obtained from industry sources. Where this was unknown or emission factors were required to derive CO₂e per km, this information was obtained from government sources including the Australian Bureau of Statistics (ABS) Motor Vehicle Usage Survey,⁽¹¹⁾ Green Vehicle Guide⁽¹²⁾ and Australian National Greenhouse Accounts.⁽¹³⁾

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 the 2016 and 2018 surveys. This data input in our methodology will remain constant until a new survey is released.

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

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

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

Coal mining

In the coal mining sector, emissions include our clients' Scope 1, 2 and 3 emissions (use of sold products, i.e., CO₂ from combustion), based on client-level data, where available.

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

- Scope 1 and 2: multiplying the client reported production data by the average physical emissions intensity of clients who reported their Scope 1 and 2 emissions within our sector exposure.

(9) 'Statistical Review of World Energy', bp, 28 June 2022, <https://www.bp.com/>

(10) 'Vehicle Standard (Australian Design Rule 81/02 — Fuel Consumption Labelling for Light Vehicles) 2008', Australian Government, Federal Register of Legislation, 1 October 2011, <https://www.legislation.gov.au/> and 'Vehicle Standard (Australian Design Rule - Definitions and Vehicle Categories) 2005', Australian Government, Federal Register of Legislation, 31 May 2012, <https://www.legislation.gov.au/>

(11) 'Survey of Motor Vehicle Use, Australia', Australian Bureau of Statistics, accessed September 2023, <https://www.abs.gov.au/statistics/>

(12) 'About us', Green Vehicle Guide, accessed September 2023, <https://www.greenvehicleguide.gov.au/>

(13) 'Australian National Greenhouse Accounts Factors Workbook', Australian Government Department of Climate Change, Energy, the Environment and Water, accessed September 2023, <https://www.dcccew.gov.au/climate-change/publications/national-greenhouse-accounts-factors>

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- Scope 3: multiplying the client reported production data by the weighted average emissions intensity from the IEA's World Energy Outlook 2022.⁽¹⁴⁾

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

Where required, emissions intensities were converted using the National Greenhouse Accounts Factors.⁽¹⁵⁾

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

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

Power generation

In line with industry practice and the NZBA Guidelines, we measure companies' direct Scope 1 emissions from power generation, which allows us to focus our analysis on the segment responsible for most of the sector's emissions and consequently where the greatest amount of strategic focus and investment is required. The Scope 2 and Scope 3 emissions for companies that generate electricity from fossil fuels are generally comparatively small and/or do not relate directly to power generation activity.

In the initial analysis of the sector we considered the pre-generation, power generation, distribution and storage, and power supply segments. The pre-generation segment includes primary energy acquisition and the development and construction of power generation assets; the power generation segment includes generation from fossil fuel sources, renewable sources, waste to energy sources and multi-utility and gentailers; the distribution and storage segment includes grid transmission, battery and pumped hydro energy storage and wholesale electricity trading; the power supply segment includes retail and industry consumers and EV charging utilities and infrastructure.

We focused our emissions measurement on the power generation segment and only included clients whose primary activity⁽¹⁶⁾ is electricity generation and who contribute energy to the grid, as well as any multi-utility companies and gentailers who have operational generation assets. We focused on Scope 1 emissions associated with power generation only, given it relates to combustion of fossil fuels, the biggest contributor to the sector's emissions.

Our methodology for emissions measurement prioritises data reported by our clients, sourced either via public databases (e.g., CDP, NGER, EPA) 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 also performed reasonableness checks on reported emissions relative to industry benchmarks.

For renewable power generation (e.g., solar, wind power), where our clients do not report their emissions, we have used the National Renewable Energy Laboratory (NREL) emission factors.⁽¹⁷⁾ NREL emission factors do not currently distinguish between Scope 1 and 2. Therefore taking a conservative approach, our calculations of Scope 1 emissions associated with renewable power generation assets also include Scope 2 emissions, which are immaterial. For waste to energy where clients did not report emissions, we used factors from comparable clients within our **Green Investment Group Financed Emissions Report** where Government sources were not readily available. Emissions estimated using these methods were given a data quality score of 3.

For the remaining exposure, where production data of our clients was not known, or where the exposure was below a threshold of \$A5 million, emissions were proxied using the average intensity of our sector exposure for which emissions had been calculated. This methodology was used for approximately 4 per cent of the sector by exposure and the resultant emissions were given the lowest data quality score of 5.

We attributed our clients' absolute emissions to Macquarie based on the PCAF Standard and quantified the power generation sector emissions intensity in kgCO₂e/MWh using our sector exposure weighted average physical emissions intensity formula from **page 44** (oil/gas).

Residential mortgages

Our residential mortgages sector covers Australian loans issued by BFS secured by residential property,⁽¹⁸⁾ excluding reverse mortgages, committed exposures where the facility has been approved but not settled before the reporting period, and non-retail residential property exposure.

In line with the PCAF Standard, we include Scope 1 and 2 emissions related to residential mortgages:

- Scope 1: emissions from on-site fuel combustion (e.g., for heating and cooking), including natural gas and liquefied petroleum gas (LPG).
- Scope 2: emissions from the generation of electricity used on the property (e.g., for appliances, heating, and cooling).

For Scope 1 and 2, we include CO₂ as well as other greenhouse gases including methane and nitrous oxide.

Our estimates for household energy consumption covering electricity, gas and LPG are based on two national data sources given this information is not readily available at a property-level:

- The primary source is the Australian Energy Regulator (AER) Electricity and Gas consumption benchmarks for 2020,⁽¹⁹⁾ which estimates consumption based on household size, state and climate zone. We have used the number of bedrooms (sourced from external data providers) as a proxy for household size due

(14) 'World Energy Outlook 2022', International Energy Agency, October 2022, <https://www.iea.org/>

(15) 'National Greenhouse Accounts Factors: 2020', Australian Government, September 2020, <https://www.dcceew.gov.au/>

(16) Primary activity means that the majority (greater than 50 per cent) of the electricity generating capacity is operational and therefore revenue generating.

(17) National Renewable Energy Laboratory, accessed September 2023, <https://www.nrel.gov/>

(18) Includes construction loans at settlement, vacant land where there is an intention to build, and all retail residential mortgage loan purpose codes.

(19) 'Electricity and Gas consumption benchmarks for residential customers 2020', Australian Government, Australian Energy Regulator, 11 June 2020, <https://www.aer.gov.au/>

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to data availability issues. Number of bedrooms is multiplied by the ratio of average number of people per household (2.5) and average number of bedrooms per dwelling (3.1) sourced from the ABS 2021 Census data.

- Where AER data is unavailable, we use annual data from the Australian Energy Statistics (AES) published by the Department of Climate Change, Energy, the Environment and Water.⁽²⁰⁾ AES does not have the same level of household data disaggregation that is available in the AER benchmarks. Household-level estimates are obtained by dividing State/Territory residential industry energy consumption by the estimated number of dwellings within the State or Territory using data from the ABS. This back-up approach is used for emissions related to LPG, geographical areas not covered by AER benchmarks (Western Australia and Northern Territory) and where household size (proxied using number of bedrooms) is unknown.

Once we have estimates for household energy consumption, we then calculate emissions that occurred to produce that energy (using emission factors). State grid emission factors are used for electricity, which are derived from the composition of generation.⁽²¹⁾ Combustion emission factors are used for natural gas and LPG.

Finally, we estimate the percentage of each household's emissions attributable to Macquarie. We do this by multiplying the estimated emissions by the loan-to-value ratio, where property value is estimated as at the latest client-led credit revaluation event.

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

$$\text{Financed emissions} = \sum_{b,e} \text{Energy consumption}_{b,e} \times \text{Emission factor}_e \times \text{Attribution factor}_b$$

Where:
b = building, e = energy source

Floor area is obtained from external data providers. Where it is not known a portfolio-based average by number of bedrooms is applied.

We quantified the residential mortgages sector emissions intensity based on the following formula:

$$\text{Physical emissions intensity} = \frac{\sum \text{Building} \left(\frac{\text{EAD}}{\text{Property value}} \times \text{Building emissions} \right)}{\sum \text{Building} \left(\frac{\text{EAD}}{\text{Property value}} \times \text{Floor area} \right)}$$

Data quality and future evolution of our methodology

In making the data quality related determinations, we 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 tables, sourced from the PCAF Standard, which have been used to rate the data quality for emissions in this Report, and which we will use to enhance data quality over time.

PCAF data quality hierarchy:⁽²²⁾ Oil/gas, coal mining, power generation

Data Quality	Options to estimate the 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.
Score 3	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 emission factors specific to that primary data. Relevant process emissions are added.
		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 emission 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. Emission 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. Emission 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. Emission 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.

(20) Department of Climate Change, Energy, the Environment and Water, Australian Energy Statistics, Table F, September 2023, <https://www.energy.gov.au/publications/australian-energy-update-2023>. For our 2021 baseline we have used the FY2021 data, and for 2023, we have used FY2022 data given it is the latest available.

(21) 'Australian National Greenhouse Accounts Factors Workbook', Australian Government Department of Climate Change, Energy, the Environment and Water, accessed September 2023, <https://www.dceew.gov.au/climate-change/publications/national-greenhouse-accounts-factors/>

(22) Source: Partnership for Carbon Accounting Financials, Table 5-3 and 5-5 of the [PCAF Standard](#) (PDF)

Appendices

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PCAF data quality hierarchy: Motor vehicles

Data quality	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.

PCAF data quality hierarchy:⁽²³⁾ Residential mortgages

Data quality	When to use each option
Score 1	Actual building energy consumption is available. Emissions are calculated using supplier-specific emission factors specific to the respective energy source.
Score 2	Actual building energy consumption is available. Emissions are calculated using average emission factors specific to the respective energy source.
Score 3	Estimated building energy consumption per floor area based on official building energy labels and the floor area are available. Emissions are calculated using average emission factors specific to the respective energy source.
Score 4	Estimated building energy consumption per floor area based on building type and location specific statistical data and the floor area are available. Emissions are calculated using average emission factors specific to the respective energy source.
Score 5	Estimated building energy consumption per building based on building type and location specific statistical data and the number of buildings are available. Emissions are calculated using average emission factors specific to the respective energy source.

The below table summarises data quality scores for Scope 1, 2 and 3 emissions for our in-scope sectors for FY2023:

Average PCAF data quality score by scope by exposure

Sector	Upstream oil/gas		Motor vehicles	Coal mining		Power generation	Residential mortgages
Scopes	1,2	3	1,2	1,2	3	1 ⁽²⁴⁾	1,2
Base year	2.4	2.9	2.2	2.4	3.0	N/A	4.1
FY2023	2.2	2.9	2.1	2.0	3.0	2.4	4.1

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. This year our oil/gas and coal sector baselines have been updated. Refer to [Section 5 – Metrics & Targets](#) for further detail.

(23) Source: Partnership for Carbon Accounting Financials, Table 5-3 and 5-5 of the [PCAF Standard](#) (PDF)

(24) Note, for NREL proxied renewable power generation assets, this also includes immaterial Scope 2 emissions.

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Appendix 3: Financed Emissions – Scope of Activities

In May 2021, we made a public **commitment** to align the emissions of our financing activities with the objective of enabling and accelerating the world's pathway to net zero by 2050. Later, in October 2021, we **signed up** to the Net-Zero Banking Alliance (NZBA), which enabled us to partner with our peers and the industry to leverage the NZBA Guidelines in developing our own financed emissions methodology, in order to deliver on our commitments.

Currently, the NZBA Guidelines cover on-balance sheet lending and equity investments only. As such, the sections of this Report relating to financed emissions cover our on-balance sheet lending and equity investments activities excluding on-balance sheet securities held for client facilitation and market-making purposes (as opposed to held for investment). Note, for motor vehicles, we have included novated leases, given availability of both methodology and data.

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). Investments related to our liquidity portfolio are also excluded.

To determine which of Macquarie's equity investments are in scope of financed emissions, we are guided by our adoption of an 'operational control approach', as defined by the GHG Protocol, which helps us define our organisational boundaries.

The NZBA Guidelines currently exclude the following activities from the scope of the commitments:⁽²⁵⁾

- Cash, cash balances at central banks and other demand deposits.
- Financial assets held for trading (trading book).
- Derivatives (hedge accounting).
- Advisory services (including Mergers & Acquisitions).
- Equity capital markets (structuring or advisory services on equity instruments).
- Debt capital markets (structuring or advisory services on debt securities).
- Brokerage activities.

The NZBA have indicated their intention and plan to expand the scope to facilitated emissions from banks' capital markets (i.e., underwriting) activities. We will consider expanding our product scope to include facilitated emissions once a practicable methodology is ready and adopted by the NZBA.

The NZBA states that if entities within the group structure carry out other types of business such as insurance, pension funds, or asset management, those entities may follow alternative frameworks. Therefore, activities undertaken by Macquarie Asset Management's funds are excluded from the scope of financed emissions.

(25) 'Guidelines for Climate Target Setting – Supporting notes', UN Environment Programme, Finance Initiative, August 2022, <https://www.unepfi.org/> (PDF)

Appendices

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Appendix 4: Independent Limited Assurance Report

To the Directors of Macquarie Group Limited

Independent Limited Assurance Report on identified Subject Matter in Macquarie Group Limited's 2023 Net Zero and Climate Risk Report ('the Report')

The Board of Directors of Macquarie Group Limited ('**Macquarie**' or '**MGL**') and its subsidiaries (together '**the Group**' or '**Macquarie Group**') engaged us to perform an independent limited assurance engagement in respect of the identified metrics set out in Appendix 1 of this independent limited assurance report (the '**Subject Matter**').

Subject Matter and Criteria

The criteria used by Macquarie to prepare the subject matter information ('the Criteria') are established by Macquarie management ('Management'). The Criteria are outlined within the following sections:

- 'Financed emissions methodology' for Macquarie Group as set out in Appendix 2 of the Report (pages 43 to 47)
- 'Financed Emissions - Scope of Activities' as set out in Appendix 3 of the Report (page 48)
- 'Glossary' as set out in Appendix 5 of the Report (page 52 to 53)

We assessed the Subject Matter against the Criteria. The Subject Matter needs to be read and understood together with the Criteria. The Subject Matter are set out in Appendix 1 of our assurance report. The maintenance and integrity of Macquarie's website is the responsibility of Management; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any changes that may have occurred to the reported Subject Matter or Criteria when presented on Macquarie's website.

Our assurance conclusion is with respect to the year ended 31 March 2023 or as at 31 March 2023 as appropriate (or as specified in Appendix 1 of this independent limited assurance report) and does not extend to information in respect of earlier periods, except where otherwise stated, or to any other information included in, or linked from, the Report including any images, audio files or videos.

Responsibilities of Management

Management is responsible for the preparation of the Subject Matter in accordance with the Criteria. This responsibility includes:

- determining appropriate reporting topics and selecting or establishing suitable criteria for measuring, evaluating and preparing the underlying Subject Matter;
- preparing the Subject Matter as well as the 2023 Net Zero and Climate Risk Report in its entirety;
- the prevention and detection of fraud and error in relation to the Subject Matter;
- ensuring that those Criteria are relevant and appropriate to Macquarie and the intended users; and

- designing, implementing and maintaining systems, processes and internal controls over information relevant to the evaluation or measurement of the Subject Matter, which is free from material misstatement, whether due to fraud or error, against the Criteria.

Our independence and quality control

We have complied with the ethical requirements of the Accounting Professional and Ethical Standard Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* relevant to assurance engagements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Australian Standard on Quality Management ASQM 1, *Quality Management for Firms that Perform Audits or Reviews of Financial Reports and Other Financial Information, or Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate a system of quality management including policies or 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 ASAE 3410 *Assurance Engagements on Greenhouse Gas Statements*. Those 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 year ended 31 March 2023 or as at 31 March 2023 as appropriate (or as specified in Appendix 1 of this independent limited assurance report). 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.

In carrying out our limited assurance engagement we:

- enquired of relevant management of the Group regarding the processes and controls for capturing, collating, calculating and reporting the Subject Matter;
- agreed a sample of lending and equity exposures to source systems and comparing their categorisation by counterparty to the Australian and New Zealand Standard Industrial Classification codes;
- enquired with management regarding selected estimates made in preparing the Subject Matter;

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- reperformed a sample of calculations undertaken in preparing the Subject Matter and the appropriate application of the Criteria in those calculations;
- reviewed the presentation and disclosure of the Subject Matter and Criteria in the Report; and
- performed procedures over the compilation of the financed emissions data.

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

Inherent limitations

Inherent limitations exist in all assurance engagements due to the selective testing of the information being examined. It is therefore 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 the Management and applying analytical procedures.

Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and estimating such data. The precision of different measurement techniques may also vary. 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, evaluation and measurement techniques that can affect comparability between entities and over time. In addition, Greenhouse Gas (GHG) quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

Our scope did not include performing assurance procedures over the underlying data provided by third parties.

In particular, 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 Macquarie's Criteria.

The uncertainties and limitations are laid out in more detail in the Criteria.

The limited assurance conclusion expressed in this report has been formed on the above basis.

Our limited assurance conclusion

Based on the procedures we have performed, as described under 'Our responsibilities' and the evidence we have obtained, 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 year ended 31 March 2023 or as at 31 March 2023 as appropriate (or as specified in Appendix 1 of this independent limited assurance report).

Use and distribution of our report

We were engaged by the board of directors of Macquarie on behalf of Macquarie to prepare this independent limited assurance report having regard to the Criteria which is set out within:

- 'Financed emissions methodology' for Macquarie Group as set out in Appendix 2 of the Report (pages 43 to 47)
- 'Financed Emissions - Scope of Activities' as set out in Appendix 3 of the Report (page 48)
- 'Glossary' as set out in Appendix 5 of the Report (page 52 to 53).

This report was prepared solely for the Directors of Macquarie, to assist the Directors in obtaining independent assurance over the Subject Matter for the purposes of reporting as part of the Report.

We accept no duty, responsibility or liability to anyone other than Macquarie in connection with this report or to Macquarie for the consequences of using or relying on it for a purpose other than that referred to above. We make no representation concerning the appropriateness of this report for anyone other than Macquarie and if anyone other than Macquarie chooses to use or rely on it they do so at their own risk.

This disclaimer applies to the maximum extent permitted by law and, without limitation, to liability arising in negligence or under statute and even if we consent to anyone other than Macquarie receiving or using this report.

PricewaterhouseCoopers

PricewaterhouseCoopers

C. Mara

Caroline Mara
Partner

Sydney
11 December 2023

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Appendices

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Appendix 1 – Subject matter information

Financed greenhouse gas emissions

Financed Emissions – Exposure at Default (EAD) as at 31 March 2023 as disclosed on page 22 of the Report

- Oil/gas (upstream) (\$A1.4 billion)
- Motor vehicles (\$A5.7 billion)
- Coal mining (<\$A0.1 billion)
- Residential mortgages (\$A123.3 billion)
- Power generation (\$A0.5 billion)
- All remaining sectors (sectors not covered by the above) (\$60.5 billion)

Financed Emissions – Oil/ Gas (upstream) for the year ended 31 March 2023 and 31 March 2020 as disclosed on pages 28 and 29 of the Report

- Scope 1, 2 and 3 absolute emissions (2023: 3.5 MtCO₂e and 2020: 4.59 MtCO₂e)
- Scope 1, 2 and 3 physical emissions intensity (2023: 61.9 gCO₂e/MJ and 2020: 65.8 gCO₂e/MJ)

Financed Emissions – Coal (upstream) for the year ended 31 March 2023 and 31 March 2020

- Scope 1, 2 and 3 absolute emissions (2023: 0.35 MtCO₂e) as disclosed on page 28 of the Report and (2020: 3.58 MtCO₂e) as disclosed on page 31 of the Report
- Scope 1, 2 and 3 physical emissions intensity (2023: 91.8 gCO₂e/MJ and 2020: 93.6 gCO₂e/MJ) as disclosed on page 31 of the Report

Financed Emissions – Power generation for the year ended 31 March 2023 as disclosed on page 27 of the Report

- Scope 1 absolute emissions including remaining GIG assets (0.75 MtCO₂e)
- Scope 1 physical emissions intensity including remaining GIG assets (339 kgCO₂e/MWh)
- Scope 1 absolute emissions excluding remaining GIG assets (0.75 MtCO₂e)
- Scope 1 physical emissions intensity excluding remaining GIG assets (589 kgCO₂e/MWh)
- Exposure at default excluding remaining GIG assets (A\$0.3 billion)

Financed Emissions – Motor vehicles for the year ended 31 March 2023 as disclosed on page 28 of the Report

- Scope 1, 2 absolute emissions (0.35 MtCO₂e)
- Scope 1, 2 physical emissions intensity (220 gCO₂e/km)

Financed Emissions – Residential mortgages for the year ended 31 March 2023 and 31 March 2021 as disclosed on page 26 of the Report

- Scope 1, 2 absolute emissions (2023: 0.7 MtCO₂e and 2021: 0.6 MtCO₂e)
- Scope 1, 2 physical emissions intensity (2023: 34.1 kgCO₂e/m² and 2021: 38.7 kgCO₂e/m²)
- Exposure at default (2021: \$A78.5 billion)

Data Quality Score for the year ended 31 March (year specified below) as disclosed on page 47 of the Report

- Oil /gas (Upstream) Scope 1 and 2 (2020: 2.4 and 2023: 2.2)
- Oil / gas (Upstream) Scope 3 (2020: 2.9 and 2023: 2.9)
- Coal mining Scope 1 and 2 (2020: 2.4 and 2023: 2)
- Coal mining Scope 3 (2020: 3 and 2023: 3)
- Power generation Scope 1 (2023: 2.4)
- Motor vehicles Scope 1 and 2 (2023: 2.1)
- Residential mortgages Scope 1 and 2 (2021: 4.1 and 2023: 4.1)

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Appendix 5: Glossary

Term	Definition
ABS	Australian Bureau of Statistics
AER	Australian Energy Regulator
AES	Australian Energy Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
BFS	Banking and Financial Services
BGCC	Board Governance and Compliance Committee
CDP	Carbon Disclosure Project
CFLI	Climate Finance Leadership Initiative
CGM	Commodities and Global Markets
CIU	Climate Intelligence Unit
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalents
COAG	Council of Australian Governments
COG	Corporate Operations Group
Convergence pathway	Sector emissions intensity trajectory derived from baseline emissions intensity converging to that of a net zero scenario
COP26/27/28	United Nations Climate Change Conference of the Parties
CRREM	Carbon Risk Real Estate Monitor
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CST	Climate Solutions Taskforce
DEFRA	Department for Environment, Food and Rural Affairs
EAD	Exposure at Default measure disclosed is Exposure at Default pre-Credit Conversion Factor. This measure is calculated as defined by the APRA Prudential Standards.
EIA	Energy Information Administration
EPA	Environmental Protection Agency
ESG	Environmental, Social and Governance
ESR	Environmental and Social Risk
EV	Electric vehicle
EVIC	Enterprise value including cash
FMG	Financial Management Group
FTE	Full-time equivalent
FY	Financial Year

Term	Definition
GFANZ	Glasgow Financial Alliance for Net Zero
GHG	Greenhouse gas
GHG Protocol	Greenhouse Gas Protocol
GIG	Green Investment Group
GISD	Global Investors for Sustainable Development
GWh	Gigawatt-hour
IAD	Internal Audit Division
ICE	Internal Combustion Engine
IEA	International Energy Agency
IFRS	International Financial Reporting Standards
IPCC	Intergovernmental Panel on Climate Change
IRA	Inflation Reduction Act
ISSB	International Sustainability Standards Board
LEED	Leadership in Energy and Environmental Design
LPG	Liquefied petroleum gas
MAM	Macquarie Asset Management
MBE	Macquarie Bank Europe
MBL	Macquarie Bank Limited
MGL	Macquarie Group Limited
MJ	Megajoules
NatHERS	Nationwide House Energy Rating Scheme
NGAF	National Greenhouse Accounts Factors
NGER	National Greenhouse and Energy Reporting
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NREL	National Renewable Energy Laboratory
NZBA	Net-Zero Banking Alliance
NZRA	Net Zero Risk Assessment
OSS	Operationally segregated subsidiary
PCAF	Partnership for Carbon Accounting Financials
PHEV	Plug-in hybrid electric vehicle
RCSA	Risk and Control Self-Assessment
RE100	Commitment to source renewable electricity for our offices
RMF	Risk Management Framework
RMG	Risk Management Group
RSOA	Renewable Supply and Offtake Agreement

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Term	Definition
SBTi	Science Based Targets initiative
Scenario pathway	Sector emissions intensity trajectory derived from a net zero scenario
Scope 1 emissions	Direct emissions from sources owned or controlled by Macquarie, for example company facilities or company vehicles
Scope 2 emissions	Emissions Macquarie generates indirectly, for example from the generation of purchased energy consumed
Scope 3 emissions	Include all other indirect emissions that occur in Macquarie's value chain, including both upstream and downstream emissions. There are 15 categories of Scope 3 emissions, including Investments i.e., Financed Emissions (Category 15).
T&D	Transmission and distribution
TCFD	Task Force on Climate-related Financial Disclosures
TJ	Terajoules
UN PRI commissioned IPR RPS	United Nations Principles for Responsible Investment commissioned Inevitable Policy Response 1.5C Required Policy Scenario
UNEP FI	United Nations Environment Program Finance Initiative
USEEIO	United States Environmentally-Extended Input-Output

Disclaimer

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- **Page 23** – 6. Reassess as inputs change or evolve.
- **Page 46** – 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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