

# Macquarie and climate change



Climate change presents significant challenges for society and the global economy. Macquarie recognises the importance of effective international policy frameworks to limit global greenhouse gas emissions and keep the average global temperature rise this century to well below two degrees Celsius above pre-industrial levels.

The financial sector has a critical role to play, alongside government, business, investors and the community to support the transition to a low-carbon and climate resilient economy. As a global financial services provider, we are committed to using our expertise in infrastructure, renewable energy, clean technology and environmental markets to support this transition.

## Climate change governance

Macquarie's Board is responsible for approving Macquarie's risk management framework which includes the environmental, social and governance (ESG) framework and key ESG policies. The Board Governance and Compliance Committee (BGCC) through its Charter, assists the Board by overseeing and monitoring the effectiveness of the ESG framework including the approach to and management of climate-related risks.

Macquarie's Chief Risk Officer is responsible for embedding climate change risks into the risk management framework. Macquarie's Environmental and Social Risk (ESR) team, which reports to the Chief Risk Officer, facilitates the assessment of climate-related risks. In doing so, the ESR team works with specialist teams within Macquarie's broader Risk Management Group and businesses. Senior Management (through our Management Committees) and the BGCC receive reports, at least on a six-monthly basis, on a range of ESG-related matters including climate-related risks and opportunities.

Macquarie's internal Global Green Committee, reporting to Senior Management, with representatives from across our businesses, promotes and coordinates business development opportunities related to the low carbon economy. Macquarie's Green Investment Group, which specialises in green infrastructure development and financing across the capital structure, is dedicated to supporting the growth of the global green economy.

## Climate strategy

The diversity of our operations combined with a strong capital position and robust risk management framework are important factors in our ability to adapt to changing conditions. Our climate change approach supports the transition to a low carbon and climate resilient economy and focuses on:

- identifying and leveraging opportunities for Macquarie and our clients
- assessing and managing the risks arising from climate change and future carbon constraints
- collaborating with industry, government and other stakeholders to share knowledge and build capacity
- managing the carbon footprint of our own operations.

## Realising opportunities

The international community and governments at all levels have made enduring commitments to mitigate and adapt to climate change, improve air quality and enhance resource efficiency. Macquarie believes that private capital is critical to delivering the scale of response necessary to meet these commitments and will continue to apply its resources and expertise to support the mobilisation of capital to meet this need. Macquarie will do this by:

- developing assets, investing and providing asset financing solutions in the renewable energy, clean technology and energy efficiency sectors
- making principal investments that will support the increase in volume and value of low carbon and clean assets in established and emerging markets
- providing clients and staff with research on the economic, policy and business impacts of climate change and emerging technologies
- assisting industry participants to prepare for compliance with carbon regulation and providing carbon risk management products.

## Managing climate change risks

Consistent with its strong risk management focus, Macquarie considers climate change and future carbon constraints within the existing risk management framework. The group-wide Environmental and Social Risk policy provides a robust process for embedding environmental and social risk management into investment decision making. Climate-related risks are considered through the assessment of changes to laws and regulations; technology developments and disruptions; physical and reputational risks; and the evaluation of adaptation and mitigation measures for transactions and counterparties in exposed industry sectors. Matters with material environmental and social risks, including climate change risks, may be escalated to the Chief Risk Officer, Executive Committee or Macquarie Board.

Macquarie regularly conducts sector-specific credit portfolio analysis, monitoring credit concentration by counterparty, country, risk type, industry and credit quality. Building on this credit portfolio analysis, Macquarie has evolved methodologies to incorporate the assessment of climate-related risks for carbon intensive sectors using climate vulnerability indices to assist in identifying potential risk concentrations across regions. We will continue to refine this analysis and seek to extend it to other industry sectors, where relevant.

### Scenario analysis

As recommended by the Financial Stability Board's (FSB) Task Force on Climate-Related Financial Disclosures (TCFD), in FY2019 we initiated climate scenario analysis to assess the potential risks and impacts to our business from climate-related risks. We built on the portfolio heat-mapping conducted in the prior year for our lending and equity portfolio, focusing on the coal, oil, gas and power generation sectors, being the most carbon-exposed industries.

#### Approach

There are numerous possible future pathways to reach a particular climate outcome. We selected two divergent scenarios representing plausible transition pathways to 2°C warming by 2100 and 3-4°C warming by 2100. These were based on the International Energy Agency (IEA) Sustainable Development Scenario and IEA New Policies Scenario, as outlined below:

**Decarbonise scenario** – *This scenario reflects a pathway to reduce emissions in line with the Paris Agreement to limit warming to <2°C. It reflects ambitious policies to drive the uptake of renewable energy in the power sector, improvements in energy efficiency and the deployment of carbon capture and storage technologies.*

**Business as usual scenario** – *This scenario reflects a pathway where emissions continue to rise, with no increased ambition to existing national and international policies and commitments. In this scenario warming reaches 3-4°C by 2100.*

In selecting these scenarios, a detailed review was conducted of a wide range of climate scenario models. Our selection was based on models that covered various climatic outcomes; provided information for the sectors and geographies relevant to Macquarie's exposures; are widely recognised and used by industry; and are regularly updated.

#### Scenario assumptions

	Decarbonise Scenario	Business as Usual Scenario
Reference scenarios	IEA Sustainable Development Scenario	IEA New Policies Scenario
Policy	A carbon price is implemented, applied to power, industry and aviation sectors. The carbon price varies by region, reaching \$140 /tCO <sub>2</sub> in Europe and North America in 2040.	A carbon price is implemented, applied to power, industry and aviation sectors. The carbon price varies by region, reaching \$48 /tCO <sub>2</sub> in Europe in 2040.
Energy	By 2040, total electricity generation comprises 63% renewables. By 2040, total primary energy demand comprises 29% renewables.	By 2040, total electricity generation comprises 40% renewables. By 2040, total primary energy demand comprises 20% renewables.
Emissions	Emissions peak in 2020 and then decline rapidly to approximately half by 2040.	Emissions continue to rise at a steady rate through to 2040.
Technology	Assumes use of carbon capture and storage technologies for coal power plants. Electric vehicles (EVs) comprise >40% of passenger car stock in 2040.	Electric vehicles (EVs) comprise 14% of passenger car stock in 2040.

Note: no adjustments were made to these scenarios to reflect varying views on technology futures.

The methodology developed to assess transition risk used a combination of qualitative and quantitative analysis. It included risk impact pathways that established links between specific factors within the climate scenario models and the potential financial implications (e.g. revenues, costs, financing requirements and impairment) to a specific sector. Consideration was given to sector and sub-sector level risk impact pathways in the short to medium term (to 2025) and long term (to 2040).

Sector	Sub-sectors
Oil and gas	Upstream Midstream Downstream
Power utilities	Generation (primary focus) Transmissions and distribution (secondary focus)
Coal	Thermal Metallurgical

Building on these risk impact pathways, quantitative modelling was undertaken at a sector level for the lending portfolio. The modelling used relationships between macroeconomic factors and portfolio performance to determine potential impact to the current portfolio (if rolled forward to 2040) from the climate transition scenarios selected.

The coal sector modelling indicated potential for increased default rates under both scenarios in the short, medium and long term. However, the impact on Macquarie is not considered material and is not expected to become material given the limited size and short tenor of our existing lending exposure to this sector. Separately, the oil and gas sector modelling indicated potential for marginally increased default rates under both scenarios, with potential impacts likely to be slightly higher for the Decarbonise Scenario across the short, medium and long term. However, the impact in both scenarios is limited and would not be considered material to Macquarie.

Macquarie will continue to evolve its approach to climate scenario analysis, building on our assessment of transition risks to the oil, gas, coal and power generation sectors to consider other sectors where we have potentially material exposures. We intend to develop additional climate scenarios including a 1.5°C scenario, to support the assessment of both physical risks and transition risks for our climate exposed sectors and sub-sectors. Consistent with the TCFD guidance, this analysis will be used to assess and manage any potential business or strategic implications arising from future alignment with these 1.5°C climate scenarios. Where such information is considered material, we will also disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities consistent with transition to a decarbonised economy. These next phases of scenario analysis will be disclosed in the FY2020 reporting cycle.

### Building knowledge and capacity

Macquarie has a longstanding commitment and expertise in the renewable energy and clean technology sectors through its investment activity, its cross-industry collaboration to accelerate the growth of the green economy and its industry-leading analysts dedicated to alternative energy research and the impact measurement of climate mitigation projects.

Working with a diverse network of partners, we support a broad suite of initiatives by bringing a focused, market-facing perspective on ESG matters including carbon and environmental markets and climate-related matters. In 2018, Macquarie's CEO was appointed as a Commissioner of the Global Commission on Adaptation, a World Bank-led initiative which seeks to accelerate climate adaptation action and focus on concrete solutions which enhance resilience. The CEO has also taken up a role as a member of the new Climate Finance Leadership Initiative. It was established at the request of the United Nations Secretary-General, under the leadership of the UN's special envoy for climate action Michael Bloomberg, to accelerate investments in clean energy and climate solutions globally.

More broadly, our industry experts continue to work with governments, non-government organisations and industry groups to build international capacity in the green finance sector and promote confidence among investors to finance green assets. Globally, last year, we took an active role in over 140 industry initiatives and conferences which included membership of the UK's Green Finance Task Force, and advisory groups establishing common international standards for Sustainable Finance.

## **Managing our footprint**

Macquarie strives to integrate resource efficiency and sustainability into the day-to-day operations of its offices and corporate operations. Focusing on sustainable buildings is a critical way for Macquarie to reduce direct resource consumption and greenhouse gas emissions. Since 2010, Macquarie has maintained its carbon neutral commitment by reducing and offsetting emissions from its office energy use and business air travel.

## **Our climate-related disclosures**

Macquarie supports the important work of the TCFD and is adopting the Taskforce recommendations. We will continue to enhance our disclosures as we develop our approach to scenario analysis to be consistent with all relevant Taskforce recommendations.

Within Macquarie's ESG Report, we provide metrics on our lending and equity exposures to the oil and gas, coal and renewable sectors. We also provide within the ESG report our operational metrics including the Scope 1, Scope 2 and Scope 3 emissions of our global operations.

Macquarie is a signatory to the Carbon Disclosure Project (CDP) and has responded annually since 2010. Macquarie's annual responses are available on the CDP website.

We continue to report our emissions for our Australian operations to the Clean Energy Regulator in accordance with the National Greenhouse and Energy Reporting Act.

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