



Our role in supporting the delivery of practical climate solutions

October 2024



Macquarie Capital acquired **ONYX Insight**, a provider of turbine condition-based monitoring solutions to the global offshore and onshore wind industries.

Delivering practical climate solutions

At Macquarie, we are using our deep expertise in energy, infrastructure, technology and commodities to support the energy transition and advance solutions to climate challenges.

Through our specialist capabilities in advisory, project and company development, financing, asset management, and trading and risk, we are supporting the delivery of practical climate solutions around the world – from Brazil to India, and the UK to Australia.

This document gives an overview of our capabilities, recent activities and how we are working alongside and in partnership with our clients and communities.

Shemara Wikramanayake
CEO, Macquarie Group

Our approach to climate change

Macquarie recognises the science on climate change and the widespread disruption it is causing. We believe that we can contribute positively to the challenges and opportunities of climate change mitigation and adaptation through the financing of practical solutions driven by our core capabilities. We also believe that the transition must be managed, orderly and just, which is why we are supporting carbon intensive industries to reduce their emissions and continuing to work with oil and gas companies, in recognition that much of the world will depend on carbon-intensive industries for years to come.

This document is intended to give you an overview of how our activities are driving climate solutions. These activities are one part of what Macquarie Group does. For a comprehensive overview, see our [Annual Report](#), and for more information on our own climate commitments, see our [Net Zero and Climate Risk Report](#).



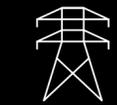
📷 Shemara Wikramanayake joined senior leaders of multilateral development banks, finance and international organisations at the announcement of the launch of the Global Capacity Building Coalition at COP28 in the UAE.

We have broad climate solution capabilities

Macquarie, through our operating groups, has extensive expertise and experience in scaling energy transition solutions and supporting clients on their decarbonisation journeys

Supply	 Wind power	 Solar PV	 Energy from waste	 Hydropower	 Geothermal
Demand	 Battery/fuel cell electric vehicles	 Fleet solutions and logistics	 Charging infrastructure	 Demand-side management	 Renewable PPAs
System transformation	 Carbon capture, and storage	 Energy storage	 Gas transmission and storage	 Electricity transmission	 Flexible and back-up power
Commodities	 Hydrogen and derivative fuels	 Emissions trading and carbon offsets	 Power	 Biofuels / gases	 Critical and transition minerals

Specialist sectoral expertise



Electricity



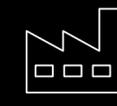
Oil and Gas



Transport



Digital infrastructure



Industry



Agriculture



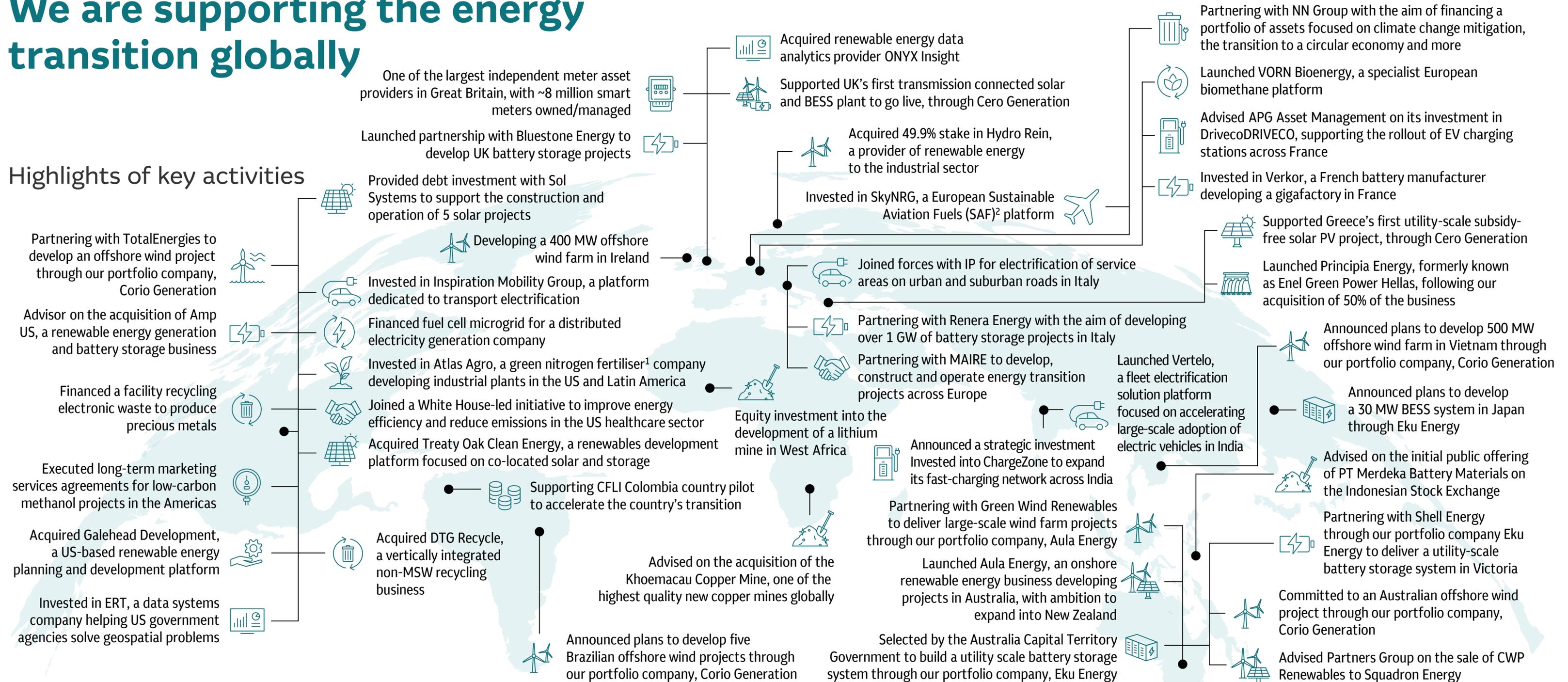
Waste and recycling



Mining

We are supporting the energy transition globally

Highlights of key activities



Correct as at 31 May 2024.

This map includes projects delivered by Macquarie operating groups, Macquarie Asset Management's Green Investments and its portfolio companies - including Corio Generation, Eku Energy, Fleete, HyCC and others. 1. 'Green nitrogen fertilizer' means a nitrate-based fertilizer where ammonia has been produced using green hydrogen. 2. 'Sustainable aviation fuel' means aviation fuel derived from biogenic materials or otherwise via a carbon capture process that sources atmospheric carbon for incorporation into fuel molecules. Cero Generation is a Macquarie Asset Management portfolio company, operating on a stand-alone basis.

Supporting climate solutions

In line with our Climate Risk Strategy, we are using our deep capabilities in energy, infrastructure, technology and commodities to deliver and scale climate solutions across four key areas.



Developing and investing in the energy transition



Enabling the transition of customers, clients and portfolio companies



Investing in nature, adaptation and resilience



Working with partners to accelerate progress

Our operating groups have specialised expertise.

Macquarie Capital

With market-leading renewables and infrastructure advisory expertise and global capabilities in capital raising, Macquarie Capital combines specialist expertise and flexible capital solutions to support client and partners' climate commitments, invest in resilient energy transition infrastructure and companies supporting the energy transition.

Macquarie Asset Management (MAM)

MAM is a global asset manager, integrated across public and private markets and with a focus on generating positive outcomes for our clients, portfolio companies and communities. Its specialist Green Investments team connects clients to a range of green investment opportunities and transition solutions, across technologies, geographies, and stages of the energy transition.

Commodities and Global Markets (CGM)

A global business offering capital and financing, risk management, market access, physical execution and logistics solutions to clients across commodities, financial markets and asset finance. It is developing and deploying climate solutions that meet its clients' diverse needs and ambitions and help them with their decarbonisation pathways.

And they support a range of activities under the following categories:

Advisory

We advise clients on strategic and financial issues, including on decarbonisation goals.

Finance

We support clients seeking to manage and respond to environmental challenges and capitalise on emerging opportunities through a diverse range of financial solutions across capital structures.

Project and company development

We develop projects and portfolio companies that build renewable energy infrastructure and invest in climate adaptation.

Asset Management

We provide investment solutions to clients across a range of capabilities in private markets and public investments.

Trading and risk

We provide risk management services and bring capital and expertise to carbon offset generating projects as well as wider decarbonisation initiatives.

Developing and investing in the energy transition

We are committed to playing a role, by providing our clients with access to green investment opportunities, while driving the delivery of practical decarbonisation solutions. Since making our first investment in renewables in 2005, we have used our deep expertise to develop, construct and operate green energy assets and other climate solutions across six continents, working alongside clients and investors.

We are also providing businesses with innovative asset financing, risk management and capital solutions in sectors such as renewable energy, energy efficient technologies and flexible and peaking power.

Working alongside clients and investors, we develop, construct and operate green energy¹ assets across the world.

95 GW

of green energy assets in development

3 GW

of green energy assets under construction

12 GW

of operational green energy assets

No.1

Global Financial Adviser in Energy Transition by deal volume²

1. As at 31 March 2024 on our balance sheet or under Macquarie management. GW of green energy assets reflect 100% generating capacity of each asset, not the proportion owned/managed by Macquarie. Excludes lending and private credit funds. Refer to Macquarie's FY2024 Basis of Preparation for ESG Reporting for a fuller explanation of this data, including the definition of 'green energy assets'.

2. In February 2024, Macquarie Capital was ranked #1 Global Energy Transition Financial Adviser by inspiratia for the 2023 calendar year by deal value. There can be no assurance that other providers would reach the same conclusions.



Developing and investing in the energy transition



📷 Principia Energy's Monastiri I Wind Park in Thrace, Greece.

Supporting wind power onshore and offshore

Corio Generation, a Macquarie portfolio company named Offshore Developer of the Year at the 2023 Wind Investment Awards,³ continues to expand its geographic reach by preparing for country first wind auctions in Portugal, Norway and Australia. We also have new onshore wind projects in Greece, through **Principia Energy**, and Australia, through **Aula Energy**.

Macquarie Capital advised TotalEnergies on the sale of 50 per cent of its stake in **Seagreen Offshore Wind Farm**, and acquired **ONYX Insight**, a provider of wind turbine performance analytics and condition-based monitoring to the wind energy industry.



📷 Larks Green solar PV project in South Gloucestershire, UK.

Accelerating the solar power transition

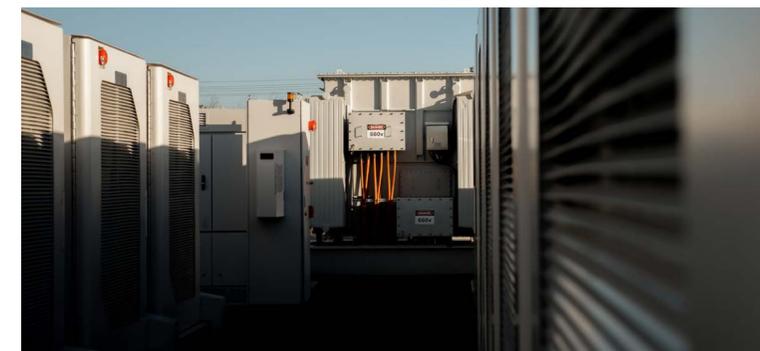
Our portfolio companies continue to develop, construct and operate solar projects globally. Highlights include **CleanMax** - in which Macquarie-managed UK Climate Investments has invested - partnering with Apple to **accelerate renewable energy adoption in India**; Cero Generation's **70 MW Italy project** commencing operation, and energising the Larks Green project in the UK - the first solar PV array to connect directly into the electricity transmission network - which was developed together with Enso Energy.



📷 National Gas, UK.

Working to scale future fuels

We advised on the sale of Weltec Holding, a German biogas and biomethane producer, invested into **SkyNRG**, a sustainable aviation fuel (SAF) developer, and executed several supply and offtake agreements for renewable fuel producers across North America. We are also engaged in projects to produce **low-carbon intensity methanol**, supporting its supply and delivery at scale, and are supporting Great Britain's **National Gas** to create a next-generation transmission system capable of transporting low-carbon gases across its network.



📷 Hazelwood Battery Energy Storage System in Victoria, Australia.

Supporting energy storage and resiliency

Ekus Energy, a Macquarie portfolio company and global battery storage business, is backing large scale developments including Rangebank BESS in partnership with **Shell Energy** and the **Big Canberra Battery**. We supported the growth of Indonesia's EV value chain through our role in **Merdeka Battery Materials' IPO**; we **invested in Verkor**, a large-scale producer of low carbon batteries for European EV manufacturers; and advised **Statera Energy**, a developer and operator of large-scale energy storage and flexible generation assets, on its sale to EQT Infrastructure.

3. Wind Investment Awards 2023, May 23, 2023, <https://tamarindo.global/event/wind-investment-awards-2023/#winners>.

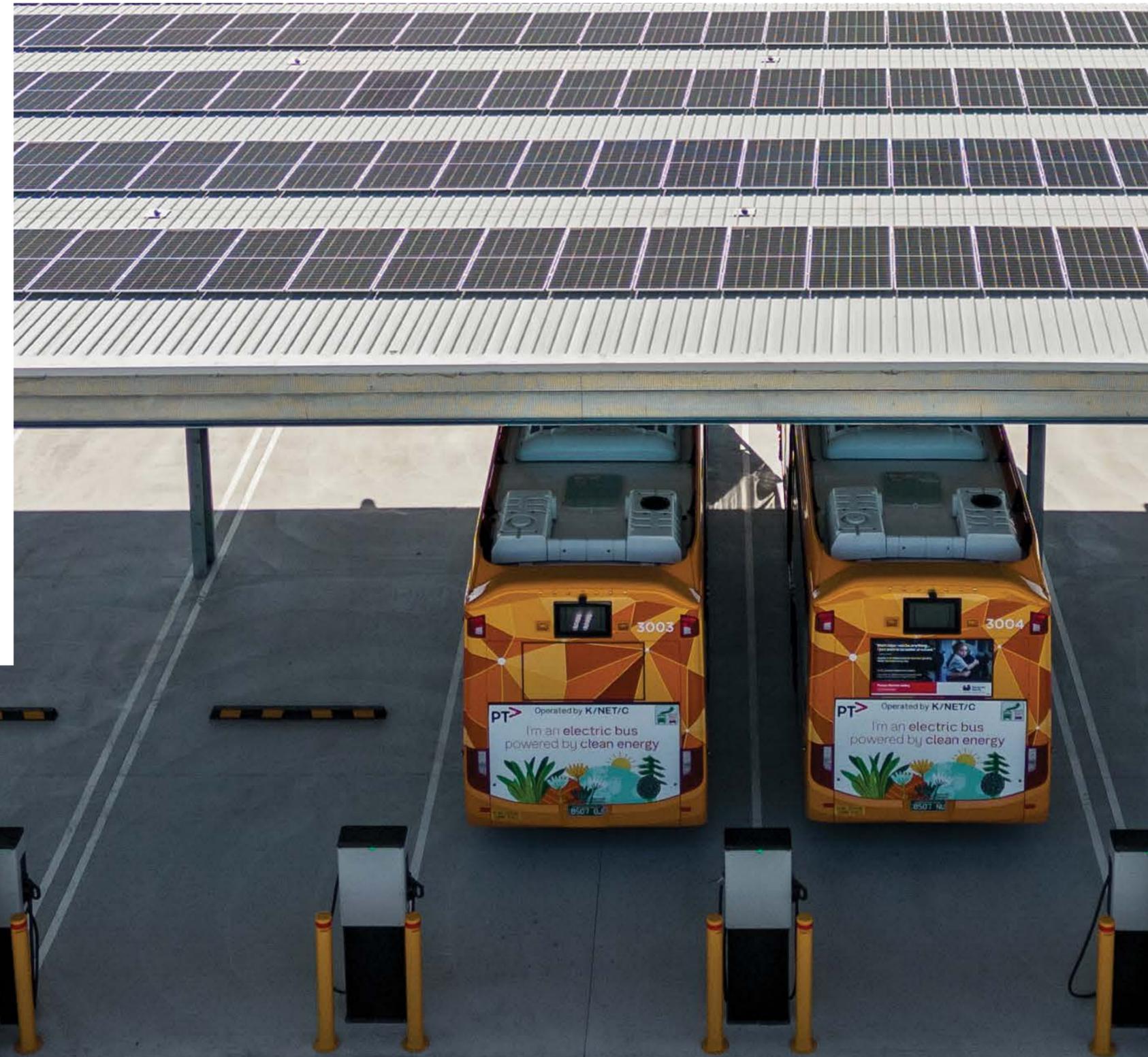
Enabling the transition of customers, clients and portfolio companies

Fewer than a fifth of the world's 2,000 largest private and public companies are cutting emissions fast enough to reach net zero by 2050.⁴

Our experience has shown that the scale of transition requires collaboration. That's why we are partnering with clients and engaging with portfolio companies to accelerate their decarbonisation journeys.

We provide expertise to those looking to meet climate commitments through advisory services, risk management, market access, physical execution and logistics, finance and capital solutions, and are supporting the scale-up of low-carbon technologies and solutions.

[Read more about how partnerships are powering the path to decarbonisation.](#)



4. Accenture, Destination net zero, November 2023.

Enabling the transition of customers, clients and portfolio companies



📷 Ventos de São Zacarias onshore wind project in Piauí, Brazil.

Partnering to scale green energy uptake globally

We are partnering with large corporates and industrials around the world to supply them with the renewable energy they need to decarbonise their processes and operations. Our portfolio company Virbant Energy is partnering with **Amazon** to establish offtake agreements for renewable energy projects in India. Through our investment in **Hydro Rein**, a provider of renewable energy solutions to industrials, we are helping finance a pipeline of wind and solar projects to support industrial decarbonisation - including Ventos de São Zacarias, a 456 MW wind project in the northeast of Brazil.



📷 Vertelo electric buses in Mumbai, India.

Accelerating the move to low-carbon mobility

Vertelo, our newly launched fleet electrification solutions platform is focused on accelerating large-scale adoption of electric vehicles in India, and has received an anchor investment from the Green Climate Fund (GCF). Also in India, we announced a strategic investment into **ChargeZone**, an EV charging company which will support the growth of electric vehicle infrastructure and green mobility in the country. In Europe, we partnered with **IP** to create IPLANET, a joint venture for electrification of service stations on urban and suburban roads across Italy. And in Australia and New Zealand we are working with **Kinetic**, an industry leader in the electrification of bus fleets and depot networks.

To help meet growing demand for lithium - a critical component of energy technologies - we have **developed hedging solutions** to help our corporate clients manage pricing risk and stabilise supply.



📷 Storegga's Acorn project at St Fergus in Aberdeenshire, UK.

Enabling the decarbonisation of carbon-intensive sectors

We have invested in **Atlas Agro**, which is building industrial scale green nitrogen fertiliser plants that will utilise green hydrogen in lieu of fossil fuels in production processes. Macquarie acted as financial adviser to **Rio Tinto** on power purchase agreements from wind and solar generation assets in Queensland, Australia, to repower its aluminium assets with green electricity. And we have invested in **Storegga**, an independent, international developer of carbon capture and storage (CCS), hydrogen and direct air capture projects.

Through investment in **Hydro Rein**, we are helping finance tailor-made solutions to help decarbonise hard-to-abate industries, including low-carbon aluminium for use in the automotive sector.



📷 Cleco electricity distribution network in Louisiana, US.

Supporting our portfolio companies

During FY24, Macquarie Asset Management (MAM) made progress on its net zero commitment with its infrastructure and agriculture portfolio companies measuring and verifying their baseline emissions, setting interim 2030 targets, and identifying abatement measures to form the basis of their net zero business plans.

Macquarie Asset Management is supporting Cleco to explore the development of a carbon capture facility at the Brame Energy Centre in Louisiana, helping decarbonise energy production while preserving and expanding local employment.

Investing in nature, adaptation and resilience

To reach climate, biodiversity and land degradation targets by 2030, finance flows into nature-based solutions must almost triple to \$US542 billion annually. To achieve this, both public and private investment must increase significantly.⁵

Given MAM's activity across infrastructure and farmland, our focus on climate resilience and adaptation is helping manage the effects of climate change, by preparing critical infrastructure and communities.

Its agriculture portfolio provides significant potential for large-scale, cost effective, nature-based carbon sequestration. The Natural Assets team – experts in **nature-based solutions** (NBS) – can support this ambition, providing access to offsets from high quality NBS projects. High-quality NBS projects demonstrate strong attributes around additionality, permanence, and leakage, as well as positive ecosystem services, in the form of enhanced biodiversity, ecosystem connectivity, and other environmental and social benefits.

MAM continues to invest in the adaptation and resilience of our infrastructure portfolio, helping to improve early detection of potential risks and take proactive measures to reduce downtime of these critical assets. This includes some of our portfolio companies installing back-up power supplies to strengthen their networks, and using sensors, drones and geospatial technologies to anticipate and manage extreme weather events.



We manage investments in over **170** infrastructure portfolio companies and **4.6 million**⁶ hectares of farmland globally.

5. Targets as defined in the Rio Conventions. Global annual finance flows of \$7 trillion fueling climate, biodiversity and land degradation crises, 9 December 2023, United Nations environment programme, <https://www.unep.org/>.

6. As at 31 March 2024.



Investing in nature, adaptation and resilience



📷 FORLIANCE's XiCO2e: Durango Forest Project, Durango, Mexico.

Investing in nature-based climate solutions

Macquarie has invested into **FORLIANCE**, a nature-based carbon developer focused on projects that utilise natural assets such as forest, wetlands, grasslands and agricultural lands to generate carbon credits. FORLIANCE has a development pipeline of natural climate solutions projects across South and Central America that enable greater ecological management of the landscape and have the potential to unlock several co-benefits for the local population, biodiversity, and global climate. These solutions include Afforestation and Reforestation and Integrated Forest Management projects, which help minimize or reverse the ecological and climate impacts of deforestation and forest degradation.



📷 Paraway Pastoral, Australia.

Yielding environmental co-benefits in agriculture

Paraway, a wholly-owned portfolio company of MAM, owns and operates a diversified portfolio of farmland assets across Australia. In collaboration with the New South Wales Local Land Services through the NSW Fencing Northern Basic Riverbanks Program,⁷ Paraway undertook **capital improvement works** across several assets, constructing over 26 kilometres of fencing to protect and restore approximately 48 kilometres of river frontage and 380 hectares of sensitive riparian areas, and installed 19 alternative water points for livestock. By protecting these riverbanks from livestock movement, the work will allow remnant native vegetation to be re-established and conserved.



📷 TDC NET data centre, Denmark.

Increasing the resiliency of infrastructure

To help build greater resilience in its digital network and protect digital infrastructure in Denmark, our portfolio company **TDC Net**, has installed water sensors and alarms, alongside emergency power supplies at its critical facilities. Advanced pumps, well and drainage systems ensure efficient water removal, while its mobile network operates across three physical locations to mitigate the impact of short circuits caused by the flooding of mobile equipment.

Puget Sound Energy, a MAM portfolio company and Washington state's largest utility, is taking a comprehensive approach to wildfire preparedness by creating more resilient physical infrastructure through vegetation management, equipment upgrades and, in some cases, undergrounding power lines.



📷 GreenWaste's renewable energy digestion facility in California, United States.

Furthering the circular economy

Expanding the re-use of existing products and reduction of raw material usage can play a role in delivering the energy transition. We have invested in **Beauparc** in the UK and **GreenWaste** in the US, both waste-to-resource companies seeking to minimise waste ending in landfill, and have provided a construction-to-permanent loan to an electronic waste recycler also based in the US. We have also formed a joint venture to produce food-grade recycled polyethylene terephthalate (rPET) at scale, reducing plastic pollution and the need for virgin plastic production. Additionally, we acted as financial adviser to **I Squared Capital** on its acquisition of Enva – an environmental services platform providing waste management in the UK and Ireland.

7. Fencing Northern Basin Riverbanks Program, NSW Government, Local Land Services, <https://www.lls.nsw.gov.au/what-we-do/our-major-projects/fencing-northern-basin-riverbanks-program>.

Working with partners to accelerate progress

We are working in partnership with our clients, governments, communities and the finance sector to accelerate efforts to mitigate and adapt to climate change.

We are committed to supporting progress and engagement across decarbonisation challenges and opportunities through participation in major climate initiatives.

Given the scale of the challenge and the level of investment required, the private and public sectors will need to work in close partnership to ensure we can meet more ambitious climate targets. These partnerships take different forms, focusing on the many challenges ahead – including mobilising climate finance into emerging markets and developing economies, finding innovative solutions to scale up investment in adaptation, and supporting the training and upskilling of people to tackle the transition’s skilled labour shortage.



Over 500 external guests

and industry stakeholders attended Macquarie Group’s Green Energy Conference (GEC) event series in person across London, New York and Sydney in 2023.



📷 Shemara Wikramanayake interviewing The Hon. Chris Bowen MP, Australia’s Minister for Climate Change and Energy, at GEC23 Sydney.

Working with partners to accelerate progress



📷 Macquarie joined a White House-led initiative to support energy and resilience projects for healthcare facilities in the US.

Collaborating with governments and industry partners

We have joined a **White House-led initiative** that aims to increase efficiency, lower energy costs, reduce emissions and improve resilience for critical healthcare hubs, with a focus on safety-net providers in economically disadvantaged communities.

We are also 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.



📷 Macquarie's Green Energy Conference (GEC) event in Sydney, Australia.

Convening cross-sectoral dialogue on the transition

Our **GEC event series** brings together leaders in industry, finance and policy to discuss the challenges, opportunities and progress in the global transition to net zero. In 2023, the series discussed the role of partnerships in overcoming complex decarbonisation, energy security, critical mineral and scaling emerging technologies.

In 2024, GEC has continued conversations started at COP28, focusing on the next phase of decarbonisation and exploring the opportunities and challenges it holds for the industry and our investors.



📷 Macquarie co-chaired the Climate Finance Leadership Initiative (CFLI) India.

Working with partners in emerging markets

Macquarie is a member of the **World Bank Private Sector Investment Lab**, created to help the World Bank meet its objective of catalysing more private sector investment in emerging markets. Alongside Tata Group, we co-chaired **CFLI India**, which **announced** activities with the potential to mobilise more than \$US6.5 billion in support of India's low-carbon, climate resilient development at COP28. We are also participating in the CFLI **Colombia country pilot** and continue to support the Just Energy Transition Partnerships in **Indonesia** and **Vietnam**.



📷 Macquarie is a member of the Hawthorn Club network for women in energy.

Building an inclusive transition

Macquarie understands the importance of a just and equitable transition and is committed to providing the individuals driving the energy transition with the resources they need to deliver net zero globally. We are a member of the **Hawthorn Club**, an international network for women in energy, and have partnerships with the **The Bullard Center for Environmental and Climate Justice** in the US creating new student training programs and with **generation** in the UK and France, supporting training programmes for new jobs.

Discover more about how Macquarie is supporting
the delivery of practical climate solutions at:
[macquarie.com/climate](https://www.macquarie.com/climate)

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