



Australian infrastructure in the race to net zero

How can infrastructure funds support Australia’s net zero ambitions? The CEFC is working with some of Australia’s leading funds to decarbonise substantial infrastructure portfolios, influencing the clean energy standards of a range of major social, economic, transport and electricity assets.



“

Australia’s progress in cutting emissions will be influenced by how fast and how well we can tackle those areas of economic activity where emissions are hardest to abate, including infrastructure, transport, telecommunications and, increasingly, data centres.”

Julia Hinwood
Infrastructure Director, CEFC

CEFC infrastructure investments

\$472m

Fund commitments

Lifetime to 31 December 2022

36

National infrastructure assets

~2.2 MtCO₂-e

Targeted annual Scope 1 and 2 emissions reduction

Low emissions future for critical infrastructure

Australia’s infrastructure sector delivers critical services across our economy, underpinning our energy, transport, waste, water and telecommunications systems, among others.

Analysis from the Climateworks Centre suggests these high-value and long-lived assets also play a role in producing some 70 per cent of our national greenhouse gas emissions, whether in their construction and operations phases, or through the activities they enable. It is clear then that infrastructure offers significant potential for emissions abatement as Australia focuses on achieving net zero emissions by 2050.

As a specialist investor, the CEFC works with some of Australia’s largest infrastructure investors to influence the emissions profiles of their significant portfolios, which include assets from capital city airports and eastern seaboard ports, to energy companies, wireless infrastructure, health services and carbon farming initiatives. We work to lift decarbonisation ambitions through active engagement in asset selection and development, emissions management and reporting, together with:

- IFM Australian Infrastructure Portfolio
- Macquarie Asset Management Australian Infrastructure Platform
- Morrison & Co Growth Infrastructure Fund
- QIC Global Infrastructure Fund.

Net zero and the 'new normal'

Achieving net zero emissions is becoming the "new normal" for investors, lenders, customers and regulators.

While there is a longer-term focus on achieving net zero emissions by 2050, in line with national targets, there is also increasing pressure on institutional investors to meet substantial nearer term goals, including 2030 emissions targets. In parallel, regulators across multiple jurisdictions are moving towards mandatory sustainability reporting for both institutional investors and asset managers.

~70%

Infrastructure share of national emissions: Climateworks Centre analysis

Investors and transparency

The increasing investor appetite for opportunities that demonstrate a rigorous and leading approach to decarbonisation is supporting increased transparency around measures to achieve emissions reduction.

According to the 2022 Responsible Investment Benchmark Report Australia, a record 45 per cent of investment managers are holding companies to account on matters relating to environmental and social issues, and reporting back to investors on the outcomes achieved. The Australian Council of Superannuation Investors has reported that the number of ASX200 companies with net zero commitments had almost doubled in the year to March 2022.

Given the asset diversity within infrastructure portfolios, there is no single emissions reduction benchmark that can evaluate decarbonisation success and inform infrastructure investment decisions. Funds working with the CEFC use international standards and frameworks to report decarbonisation progress, which helps deliver reporting transparency and provide a level of certainty for institutional investors.



Collaborating for net zero outcomes

The CEFC recognises that its investment activities are just the start of what is required to reduce emissions across our infrastructure sector. Efficient, rapid and wide-scale decarbonisation also requires active collaboration between asset owners and infrastructure users, together with industry bodies.

An infrastructure portfolio typically includes equity stakes in a range of large assets, and while funds may not own 100 per cent of a specific asset, they can still influence how an asset is managed by having a presence on company Boards and active engagement with senior management and sustainability teams.

CEFC Investment approach

1

Establish baseline Scope 1, 2 and 3 emissions

2

Set portfolio-wide Scope 1 and 2 net zero targets

3

Set specific asset-level emissions reduction targets

4

Regularly review targets and report on progress

5

Establish plans to address Scope 3 emissions.



CEFC insights: key trends in the infrastructure net zero transition



Access to accurate asset-level data is crucial for effective emissions management and may require new technology and monitoring systems



Expenditure on sustainability initiatives at the asset level can assist with value preservation and enhancement, potentially mitigating stranded asset risk



Both quantitative and qualitative targets may need adjustment over time to reflect a dynamic marketplace and improved technologies



Measures to reduce Scope 3 emissions require collaboration with asset operators, supply chain participants and end customers



Renewable energy contracts offer cost-effective emissions reduction, including in collaboration with others to unlock savings at scale

Case study

Off to a flying start

Airports typically require significant amounts of energy to power their terminals and hangars and have traditionally relied on diesel-powered heavy vehicles for ground support.

Melbourne and Brisbane airports are Australia's second and third largest in terms of passenger traffic volumes. They have committed to achieving net zero Scope 1 and 2 emissions by 2025, having signed renewable energy power purchase agreements (PPA) as part of the IFM Investors and QIC PPA program.

Asset

Brisbane and Melbourne Airports

Fund

IFM Australian Infrastructure Portfolio

Fund targets

2050: Net zero for the Australian infrastructure portfolio

2030: Interim emissions reduction target of more than 1m tCO₂-e for the infrastructure asset class.

CEFC commitment

\$150m

Key initiatives: Brisbane and Melbourne Airports

1

Integrating solar

Brisbane and Melbourne airports are both using renewable energy to reduce their emissions. In Brisbane, this includes meeting 18 per cent of its total energy needs via a 6 MW solar farm, with the aim of cutting ~7,000 tCO₂-e annually. In Melbourne a 12 MW solar array is meeting ~15 per cent of the airport's energy needs, with rooftop solar and battery storage also powering an onsite water treatment plant

2

Passive cooling

Melbourne Airport has coated some 47,000 square metres of roofing with Skycool, a technology which draws heat out of buildings and reduces the need for air conditioning. It estimates potential reduction of ~40,000 tCO₂-e annually

3

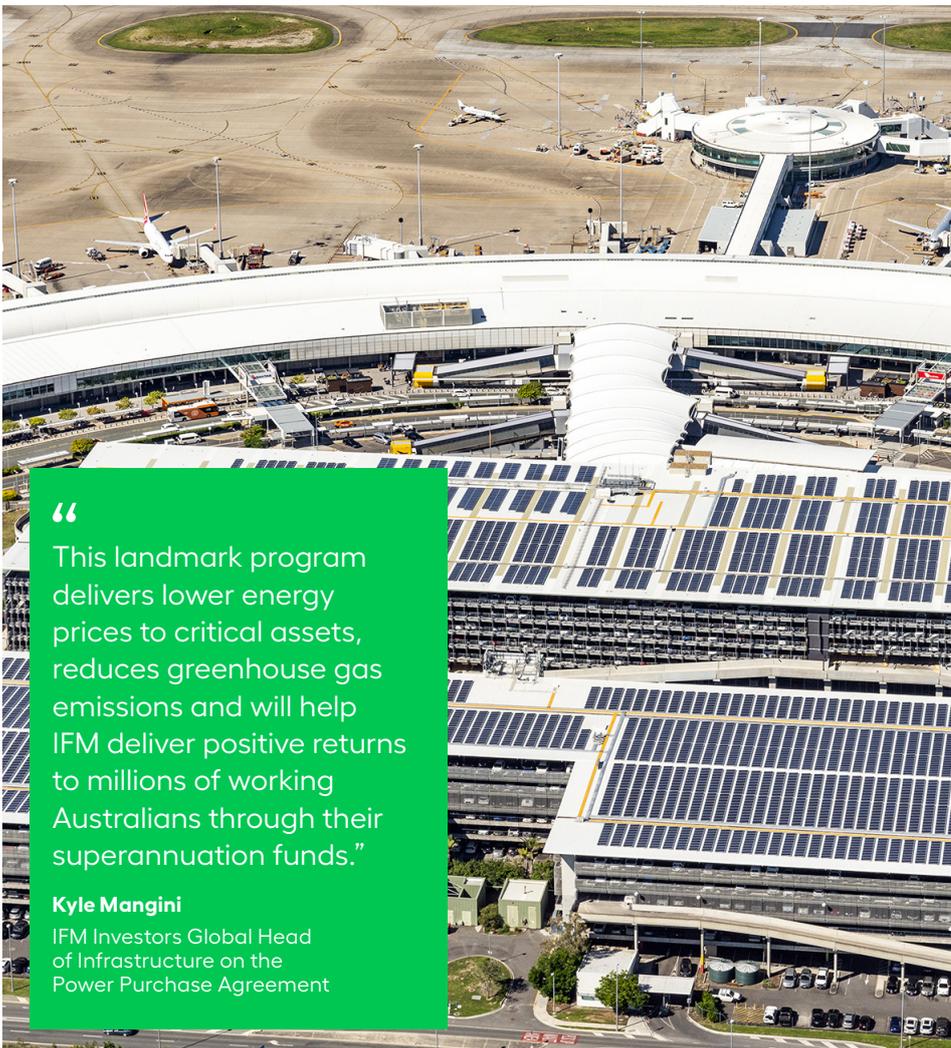
Electric vehicles

Brisbane Airport operates Queensland's first electric bus fleet, with the 11 buses expected to reduce emissions by 250 tCO₂-e annually. The airport also uses Australia's first electric hazardous goods and refueller vehicle, with the potential to reduce emissions a further 250 tCO₂-e annually

4

Sustainable aviation fuel

Brisbane Airport is a signatory to the World Economic Forum Clean Skies for Tomorrow 2030 Ambition Statement, which seeks to accelerate the supply and use of sustainable aviation fuel to 10 per cent by 2030.



“ This landmark program delivers lower energy prices to critical assets, reduces greenhouse gas emissions and will help IFM deliver positive returns to millions of working Australians through their superannuation funds.”

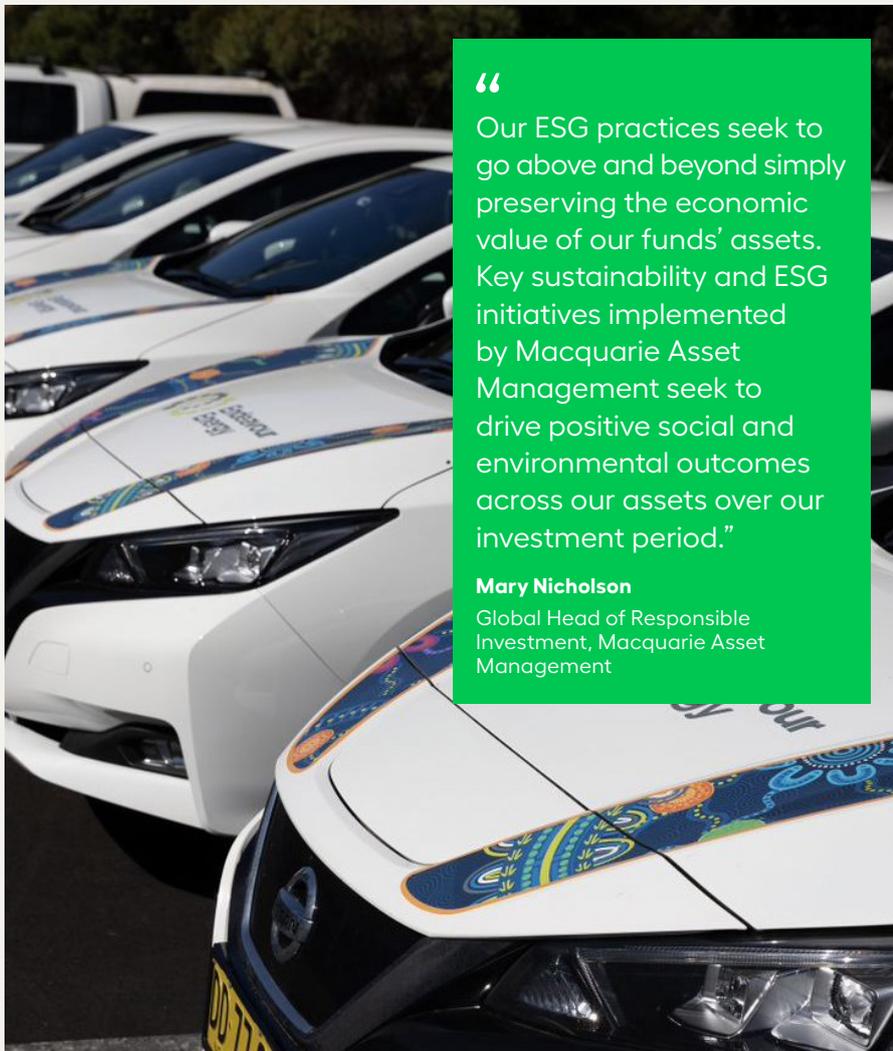
Kyle Mangini

IFM Investors Global Head of Infrastructure on the Power Purchase Agreement



Case study

Local focus a winning endeavour



“

Our ESG practices seek to go above and beyond simply preserving the economic value of our funds' assets. Key sustainability and ESG initiatives implemented by Macquarie Asset Management seek to drive positive social and environmental outcomes across our assets over our investment period.”

Mary Nicholson

Global Head of Responsible Investment, Macquarie Asset Management

Endeavour Energy powers one of the fastest growing regions in Australia, servicing more than 2.7 million people living and working across Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra and the New South Wales South Coast.

Endeavour Energy achieved 5 Star GRESB infrastructure ratings in 2021 and 2022 and is ranked in the top five per cent of global infrastructure GRESB respondents.

Asset

Endeavour Energy

Fund

Macquarie Asset Management
Australian Infrastructure Platform

Fund targets

Net zero Scope 1 and 2 emissions by 2040

CEFC commitment

\$100m

Key initiatives: Endeavour Energy

1

Sulphur hexafluoride gas

SF6 gas, used for insulation within the electricity grid, has the highest global warming potential of any greenhouse gas, according to the Intergovernmental Panel on Climate Change. Endeavour Energy is developing technology to better detect and measure SF6 leaks, while also working to identify SF6 alternatives

2

Fleet electrification

Endeavour Energy and JOLT are building a network of free and fast EV charging stations across Western Sydney, with ~230 charging stations to be installed on existing Endeavour Energy streetside substations by 2025, expanding to more than 1,000 chargers over the next decade. Endeavour Energy is also aiming to convert its vehicle fleet to 100 per cent zero emissions by 2040

3

Tackling electricity line energy loss

With energy loss through electricity distribution accounting for 96 per cent of Endeavour Energy's Scope 2 emissions, the company is trialling conservation voltage optimisation technology and using feedback from smart meters to limit energy wastage from customer appliances

4

Community battery

Endeavour Energy is building the first community microgrid for the NSW South Coast, with a \$4.8 million pilot program for residents in the coastal towns of Bawley Point and Kioloa. The community microgrid aims to include a grid connected battery, and links to rooftop solar generation and home batteries, supporting the use of localised and cost-effective renewable energy, to create a more sustainable network for residents.

Case study

The picture of health

More than 80 Qscan Radiology Clinics are supporting Australia's growing demand for preventative healthcare, with state-of-the-art diagnostic medical imaging services including x-ray, MRI, PET-CT and ultrasound.

Qscan has approximately 300 high-tech energy intensive imaging machines. The machines, with an effective lifespan of up to 15 years, have the potential to produce more than 5,000 tCO₂-e annually through their electricity consumption.

Asset

Qscan Radiology Clinics

Fund

Morrison & Co Growth Infrastructure Fund

Fund targets

Net zero Scope 1 and 2 emissions by 2030

CEFC commitment

\$150m

Key initiatives: Qscan Radiology Clinics

1

Transitioning to 100 per cent renewable electricity for all clinics and offices by 2025

2

A commitment to 20 per cent reduction in waste to landfill by 2025 from a 2021 baseline and reviewing recycling and waste disposal solutions to identify additional potential landfill emissions reduction

3

Introducing electronic alternatives such as SonoReview and e-referrals to reduce paper and film use

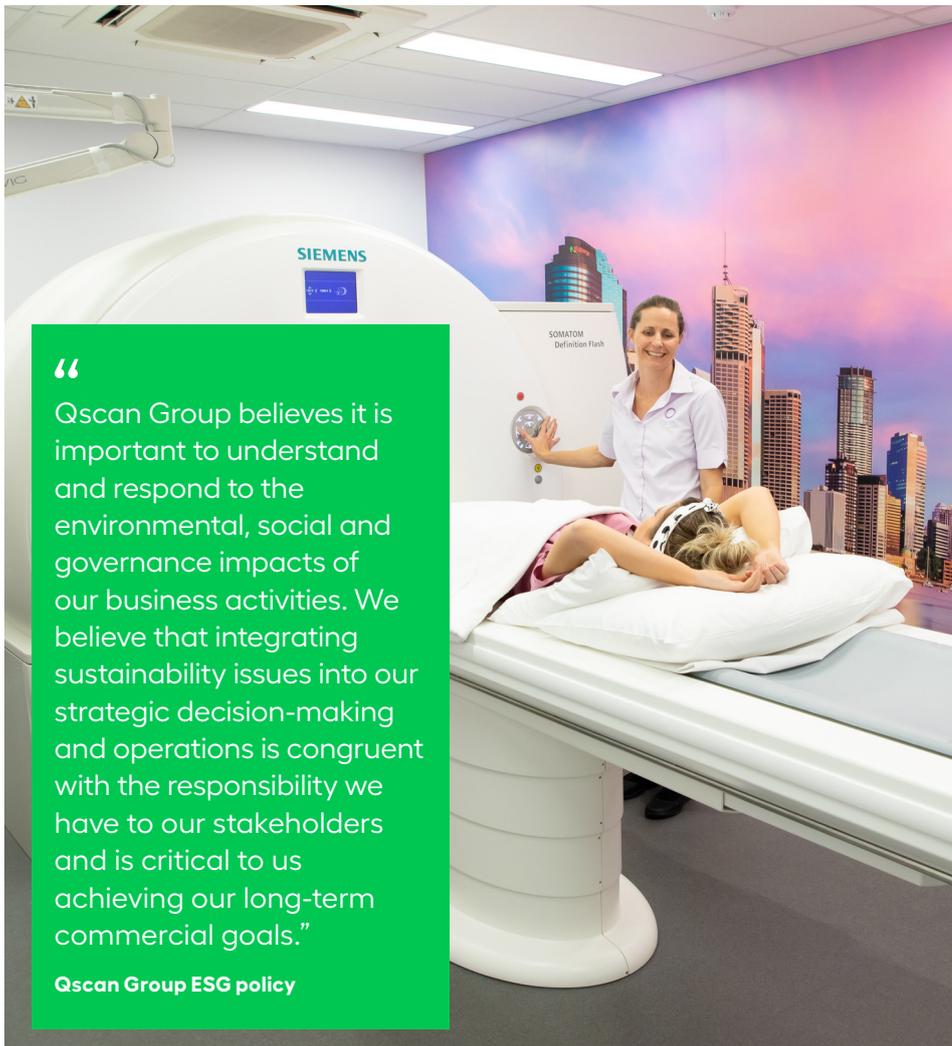
4

Reviewing emissions related to supply chain and travel activities

5

Undertaking an energy consumption audit and baselining exercise to understand energy usage in the clinics and opportunities for energy reductions. Key findings and opportunities:

- Majority of energy demand is from medical equipment, at 63 per cent, ahead of air-conditioning, lighting and power
- Energy efficiency is now a key focus for facilities upgrades, rather than 'end of life' replacement only
- Program of work for LED lighting upgrades and electricity submetering
- Smart electricity metering and energy efficient lighting with controls in new clinics.



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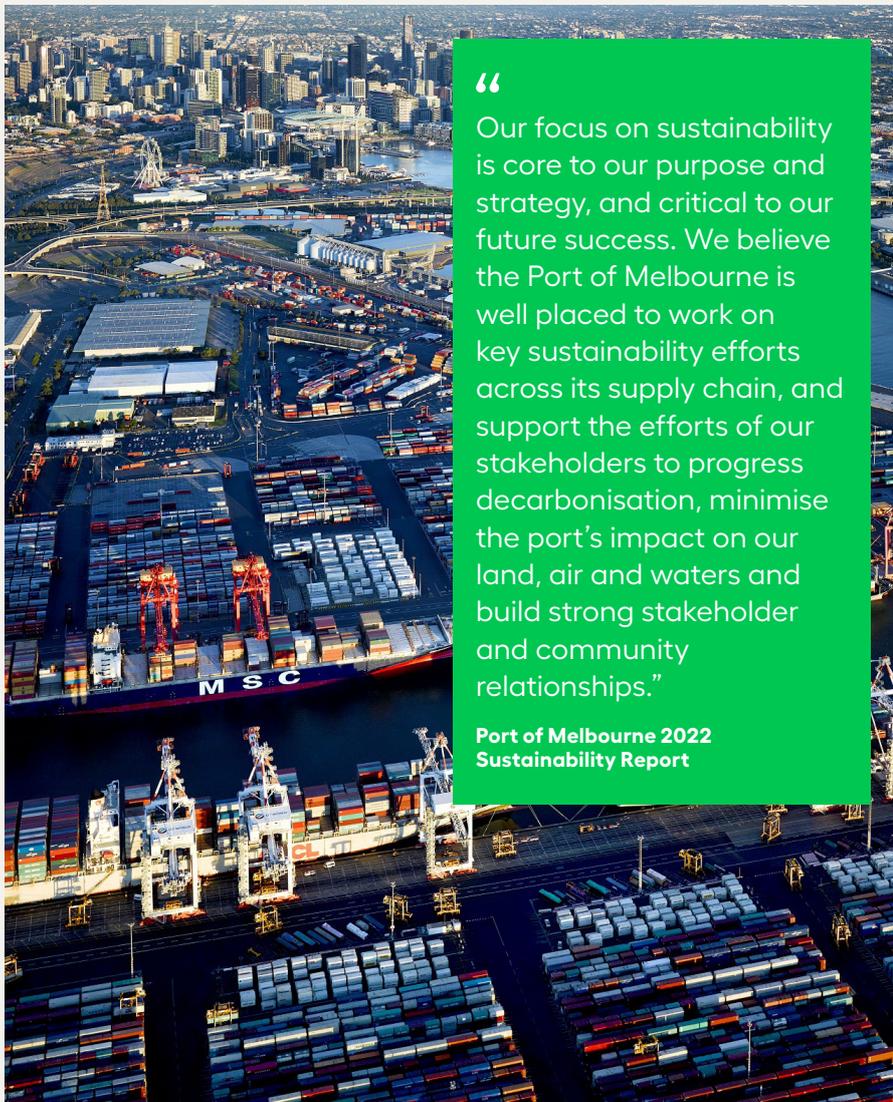
Qscan Group believes it is important to understand and respond to the environmental, social and governance impacts of our business activities. We believe that integrating sustainability issues into our strategic decision-making and operations is congruent with the responsibility we have to our stakeholders and is critical to us achieving our long-term commercial goals.”

Qscan Group ESG policy



Case study

Making waves in sustainability



“

Our focus on sustainability is core to our purpose and strategy, and critical to our future success. We believe the Port of Melbourne is well placed to work on key sustainability efforts across its supply chain, and support the efforts of our stakeholders to progress decarbonisation, minimise the port's impact on our land, air and waters and build strong stakeholder and community relationships.”

Port of Melbourne 2022 Sustainability Report

As Australia's largest general cargo and container port, the Port of Melbourne is a vital trading gateway for south-eastern Australia, facilitating more than one-third of the nation's container trade annually.

The port manages some 500 hectares of land, 52 kilometres of commercial shipping channels, 30 commercial berths and wharves, terminal and trade-handling facilities, with road and rail connections.

Asset

Port of Melbourne

Fund

QIC Global Infrastructure Fund

Fund targets

2040: Net zero Scope 1 and 2 emissions

2030: 50 per cent interim target against 2020 baseline

CEFC commitment

\$72m

Key initiatives: Port of Melbourne

1

Targeting net zero Scope 1 and 2 emissions at the Port of Melbourne by 2030

2

Measuring Scope 3 emissions across the port supply chain, while working with suppliers to continually improve the accuracy of emissions measurement

3

Engaging with stakeholders to assess emerging zero emissions fuels and energy sources that may be used in shipping and land transport in the future

4

Exploring the commercial feasibility of a green methanol bunkering hub at the port, via a Memorandum of Understanding with Maersk, ANL (a subsidiary of CMA-CGM), Svitzer, Stolthaven Terminals, HAMR Energy and ABEL Energy

5

Considering a rail infrastructure solution to provide a more efficient supply chain for port users, while also addressing road congestion and vehicle pollution in surrounding areas.

Complex task requires flexible approach

The CEFC approach to accelerating decarbonisation in the diverse infrastructure sector takes into account the complexity of the task at a sector-specific level, as well as the need for a variety of investment approaches and technology solutions at the individual asset level.

The CEFC invests in infrastructure across the capital structure, including equity, project and corporate finance. We work to increase decarbonisation ambitions through active engagement in asset selection and development, emissions management and reporting, with a focus on driving decarbonisation across three key areas:



Improving the emissions profile of existing infrastructure assets



Implementing emissions reduction technologies and reducing embodied carbon in the planning stages of future assets



Building new and upgrading existing infrastructure assets and fleet to enable the emissions transition, particularly in the transport sector.

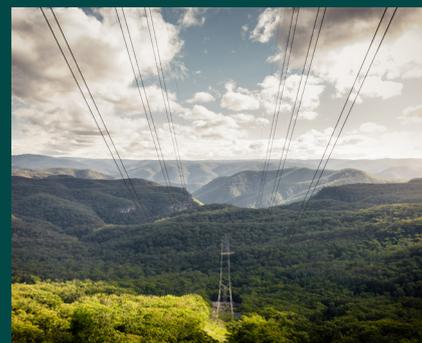
About the CEFC

The CEFC is a specialist investor with a deep sense of purpose: to invest as Australia's 'green bank' to help achieve our national goal of net zero emissions by 2050. With a strong investment track record, we're working across the economy to capture the benefits of the net zero transition – from renewable energy generation and transmission to energy efficiency, cleantech innovation and beyond. We invest alongside private investors, innovators and industry leaders, drawing on our deep sector experience, investment expertise and portfolio strength to fill market gaps and maximise our impact. In investing on behalf of the Australian Government, we have a strong commitment to deliver a positive return across our portfolio.

Research and insights help build market ambition

As a significant investor, the CEFC works with leading industry organisations to examine the potential for transforming infrastructure assets for a net zero future.

These insights are available at → cefc.com.au



Constructing a lighter footprint

→ **Australian buildings and infrastructure: Opportunities for cutting embodied carbon**, was developed by the CEFC, Green Building Council of Australia and Infrastructure Sustainability Council. The report helps quantify the challenge and identify solutions to reduce the carbon footprint of construction.

Lower emissions for critical assets

→ **The Issues paper: Reshaping infrastructure for a net zero emissions future**, developed by Climateworks Centre, provides insights into the challenges and opportunities for reshaping transport, energy, water, communications and waste infrastructure for a net zero emissions future.



The flight to lower emissions

→ **Clean energy and infrastructure: Pathway to airport sustainability**, a CEFC-led research report examining cost-effective best practice initiatives to reduce airport emissions, with practical information for asset owners, operators and investors.



Tapping into new finance mechanisms

→ **Green Infrastructure Investment Opportunities** developed by the Climate Bonds Initiative with input from the CEFC, investigates opportunities for green infrastructure investment through expanded green finance mechanisms.