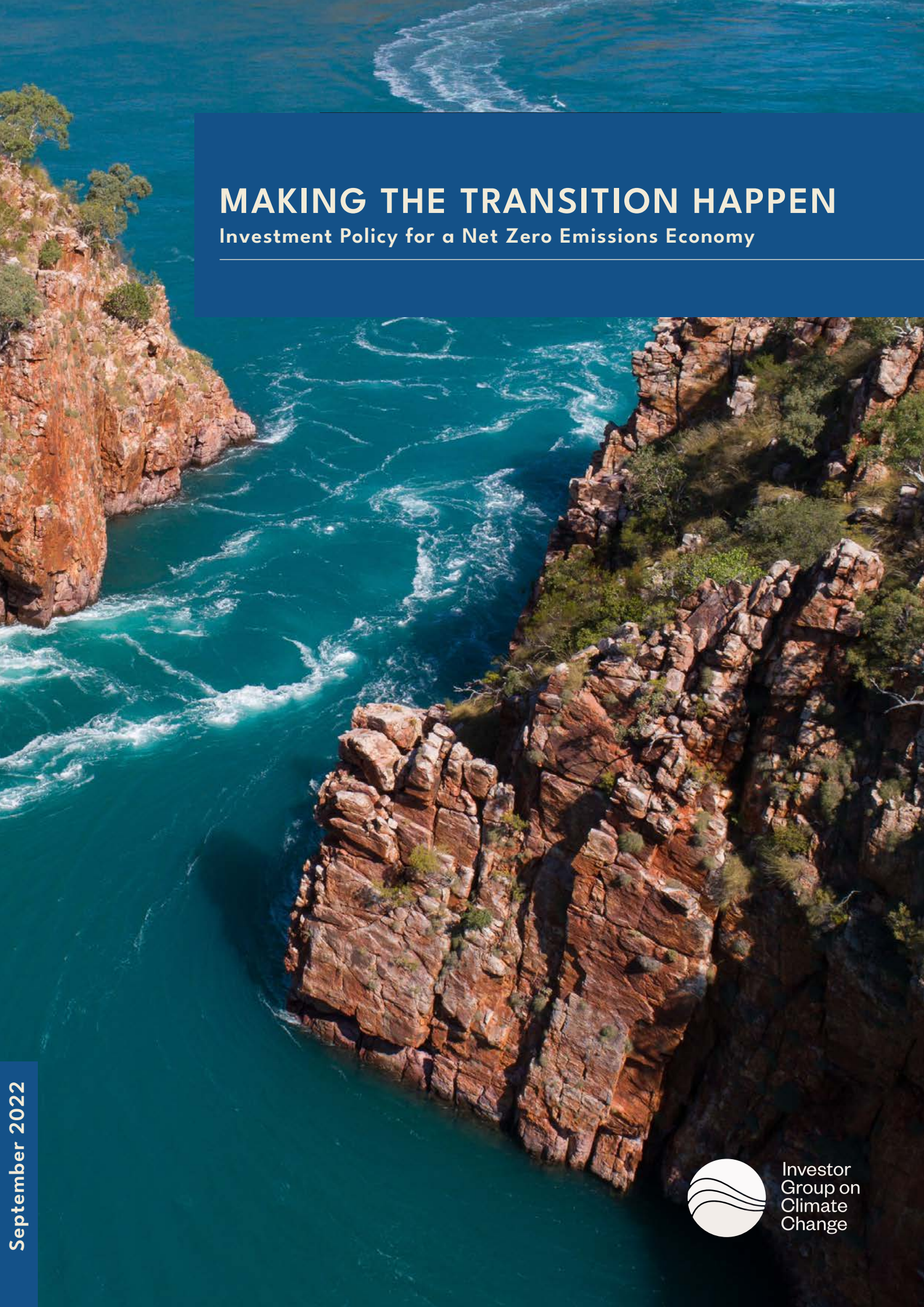
MAKING THE TRANSITION HAPPEN

Investment Policy for a Net Zero Emissions Economy



Investor Group on Climate Change

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Although the people listed above, and the wider IGCC membership provided input, these policy priorities are IGCC's recommendations. Readers should not infer that any one IGCC member or group of members specifically endorses these recommendations. Various members may have particular views on none, one, or more of the recommendations, or the analysis presented herein.

About the Investor Group on Climate Change

The Investor Group on Climate Change (IGCC) is a collaboration of Australian and New Zealand institutional investors focused on the impact of climate change on investments. IGCC represents investors with total funds under management of over $3 trillion in Australia and New Zealand and $30 trillion around the world. IGCC members' beneficiaries include more than 7.5 million people in Australia and Aotearoa New Zealand.

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Cover Image: Garaanngaddim, or the Horizontal Falls, Kimberley, West Australia.

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1. Executive Summary

Institutional investors have the capital to finance a clean energy economy.

As the long-term custodians of trillions of dollars in retirement funds, investors have a fiduciary duty to deliver long-term returns for their beneficiaries. Unless climate change is addressed in an orderly and just way, the long-term retirement savings of millions of Australians are under threat.

Australia has the potential to be a prosperous and vibrant economy in a net zero world. The country has all the potential ingredients to attract investment, across the economy, to achieve net zero emissions by 2050. There are export opportunities, which will be driven by increasing demand for existing and new products, including green steel and aluminium, green hydrogen and many critical raw materials.

While the transition to net zero emissions offers an enormous opportunity to Australia, it also presents significant risk. Australia's economy is relatively emissions intensive and has higher carbon exposures than other major markets. In addition, a failure to implement strategies for a just transition with measurable outcomes would also erode public and investor confidence in national climate policy directions.

The biggest risk is that the world does not get on a path to limit climate damage. Scientists state that climatic warming above 1.5 ˚C puts at risk the overall stability and resilience of the societal, financial and environmental systems that investors operate within.

1.1 An Essential Partnership to Achieve Net Zero

Institutional investors are, and will continue to be, co-owners of companies and assets throughout the Australian and global economies, which means that climate is a risk they cannot divest from. Therefore, institutional investors must act within their portfolios and engage with businesses and policymakers to collaborate on climate solutions.

Realising these opportunities and addressing these risks requires a partnership between investors, communities, business and governments. Credible, investable and durable policy frameworks, developed in partnership, can support strong investor and beneficiary returns into the future, enhance Australia's economic competitiveness and help keep and attract the capital our economy relies on.

1.2 Investable Climate Policy to 2025

This document articulates the public policy priorities that investors seek so they can deploy capital into the opportunities and solutions to climate change. It is based on extensive input from IGCC's membership, industry peak bodies and a wider set of stakeholders.

These policy recommendations address climate change at a systemic level. They address the opportunities and risks associated with the transition to net zero emissions and the physical risks associated with climate change itself.

The policy recommendations have an implementation horizon to 2025. Although addressing climate objectives is urgent, not all of these policies can be enacted at once.

These policy recommendations are also open to discussion and debate to find possible better solutions.

Each section of this document proposes specific policy principles and priorities that reflect investors' policy priorities.

1.3 Key Policy Priorities

To deliver sustainable long-term returns to beneficiaries and the broader economy, policy should contribute to three main objectives:

1. limiting climate change damage by reducing emissions and limiting global warming above 1.5 ˚C,
2. undertaking transformational adaptation and resilience to limit climate damage from current and committed climate change, and
3. ensuring financial flows in the economy support the above two objectives.

Aligning National Economic Strategy to 1.5 ˚C:

- Australia's emissions targets under the Paris Agreement, the Nationally Determined Contributions (NDCs), should be aligned with limiting global warming to 1.5 ˚C.
- Social equity should be central to policy decisions. Australia should establish a National Transition Authority (NTA) to support a just and orderly transition.
- The Australian Government should establish clear 2030, 2035 and 2040 climate policy goal posts for the economy's key sectors. This would include:
  - ensuring the country's existing carbon pricing mechanism – the Safeguard Mechanism – is aligned with 1.5 ˚C
  - putting in place an emissions reduction incentive across the electricity market to ensure the orderly and timely closure and replacement of coal-fired generation
  - implementing targeted policies to build domestic and international demand and consumption of near-zero emissions products such as green hydrogen.

Aligning Finance to 1.5 ˚C:

- Australia needs a mandatory climate risk disclosure regime that is consistent with international best practice and fit for purpose for Australia. The regime should be aligned with the Task Force on Climate-related Financial Disclosures (TCFD) and signal that the International Sustainability Standards Board (ISSB) standards will be adopted into Australia.
- Australia should commit to phasing out all fossil fuel subsidies by 2025, with the process being established in consultation with investors, business and the broader community.

Climate Adaptation and Resilience:

- A standing advisory group with Council of Australian Governments (COAG) members and the private sector should be established, with a core mandate to develop and drive a range of financial products, mandates and co-investment opportunities to co-fund resilience and adaptation investment.
- Australian federal, state, territory and local governments should consider the physical risks of climate change in any land use planning decisions, building codes and other relevant regulations.
- The Australian Government should provide consistent, accurate, comprehensive, timely and commercially available records of national physical climate risks and fund adequate science to produce this data reliably.

Bandilngan (Windjana Gorge), Lennard River, West Australia.

2. Background: Climate Change Risks and Opportunities for Australia

Climate change is the biggest investment risk and opportunity of this century.

Long-term investors with a strong interest in the financial wellbeing of the economy share a common objective with governments to support a prosperous, healthy and resilient future for all Australians. Ultimately, this can only be achieved through a rapid, orderly and just transition[1] to net zero emissions.

Ongoing delay on ambitious climate action will lead to a disorderly and more costly transition to net zero emissions.[2]

Significant funds are available to support the net zero emissions economy. In Australia and New Zealand[3] alone, responsible investment funds account for $120 billion under management, up over 40 per cent from the previous year.[4] With IGCC members holding more than $3.6 trillion in local funds under management, IGCC has identified more than $131 billion in credible opportunities to deploy capital into climate-positive investments.[5]

2.1 Climate Change is a Material Financial Risk

It is well recognised that climate change is a material financial risk to investors, a first-order risk to the economy and threatens the stability and functioning of the global financial system.[6]

This risk has seen regulatory and legal guidance in almost all major global financial centres, including Australia, identifying climate change as a foreseeable, material and actionable risk that directors and trustees have a fiduciary duty to address.[7]

Institutional investors are, and will continue to be, co-owners of companies and assets throughout the Australian and global economies, meaning that climate is a risk they cannot divest from.[8]

1 The Paris Agreement states that governments should take 'into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities'. Just transition has many potential interpretations. This report uses the following definition: 'A just transition for all towards an environmentally sustainable economy ... needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty'. Just Transition Centre (2017), *Just transition: A report for the OECD*, https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf.

2 S. Kreibiehl et al. (2022), *Chapter 15: Investment and finance* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter15.pdf.

3 IGCC's previous three-year policy document also included recommendations for the New Zealand Government. Given the different stages of policy development between the two countries this document just focuses on Australia. Separate recommendations will be made to New Zealand policy makers in 2023.

4 Plan for Life & ISS Market Intelligence (2022, 15 July), *Market overview. Analysis of Australian & New Zealand responsible funds at March 2022*, https://www.pflresearch.com/news/2021/7/responsible-investment-managed-funds-market-up-318-at-the-end-of-march-2022.

5 IGCC (2020), *Mapping Australia's net zero investment potential*, https://igcc.org.au/wp-content/uploads/2020/10/121020_IGCC-Report_Net-Zero-Investment-Opportunity.pdf.

6 See, for example, G20 Financial Stability Board, https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/climate-related-risks/; International Monetary Fund, https://www.imf.org/en/Topics/climate-change; Bank of International Settlements, https://www.bis.org/topic/green_finance.htm; Network for Greening the Financial System, https://www.ngfs.net/en; and Council of Financial Regulators, https://www.cfr.gov.au/financial-stability/climate-change.html.

7 For example, Centre for Policy Development (2021), *CPD releases new materials on directors' duties, climate risk and net zero*, https://cpd.org.au/2021/04/directors-duties-2021/.

8 I. Monasterolo (2020), Climate change and the financial system, *Annual Review of Resource Economics*, *12*, 299–320, https://doi.org/10.1146/annurev-resource-110119-031134.

Even if investors could completely divest of emissions-intensive industries and assets, they would still be exposed to climate change risk through the widespread physical impacts of climate change on the economy. This includes direct and indirect risk to infrastructure, businesses, private assets, supply chains, food production, global markets, financial instruments such as insurance, and the wellbeing of local communities. There is also risk to the overall stability and resilience of the societal, financial and environmental systems that investors operate within.

Investors recognise that climate is a factor that needs to be incorporated on all fronts. They understand that they must work to mitigate worsening impacts, become resilient to the risks that have already started to manifest and capitalise on opportunities to invest in climate solutions. Ultimately, investors are seeking to fund the transition while supporting returns for their beneficiaries.

2.2 The Benefits of Early Investment

Accelerated, well-targeted investments in rapid, just and orderly decarbonisation and resilience will provide the highest net benefit and returns to the overall economy and institutional investors' beneficiaries (see Box: Net Economic, Community and Social Benefits of 1.5 °C). Capital must be deployed to decarbonise Australia's energy systems and realise clean energy export opportunities. Jobs can be created in making vital but capital-intensive infrastructure and industry more resilient.

However, the scale of necessary investment is beyond either the private sector or the public sector alone. Both sectors are already making climate-positive investments, but for the greatest net benefit, the scale needs to grow substantially. Investors, business and governments will need to work together to meet this challenge, and credible national policies will be critical to give clear signals to business and investors to invest in zero carbon opportunities.

Finally, Australia's response to climate change will unavoidably involve significant change across most industries and regions. This will involve costs and opportunities that must be spread fairly within the Australian community. Without enduring community support, the transition to net zero emissions will be far more difficult, slower and more costly.

Orderly vs Disorderly Transitions

Globally, investors, companies and financial regulators conceive of two broad pathways to net zero emissions.[9]

The first has early, ambitious action to a net zero emissions economy ('orderly transition'), and the second has action that is late, disruptive, sudden and/or unanticipated ('disorderly transition').

The Intergovernmental Panel on Climate Change (IPCC) defines these two transition types as follows[10]:

- **An orderly transition** is defined as a situation in which market players can anticipate the price adjustments that could arise from the transition. In this case, while there would still be losses associated with stranded assets, market players can spread losses over time and plan ahead to minimise value destruction and economic disruption.
- **A disorderly transition**, in contrast, is defined as a situation in which a transition to a low-carbon economy is achieved, but the impact of climate policies – in terms of reallocation of capital into low-carbon activities and the corresponding adjustment in prices of financial assets (e.g., bonds and equity shares) – is large, sudden and not fully anticipated by market players and investors.

An orderly transition has a far lower overall risk profile, much less difficult to manage and provides greater positive opportunities.

9 Network for Greening the Financial System (2020), *NGFS climate scenarios for central banks and supervisors*, https://www.ngfs.net/sites/default/files/medias/documents/820184_ngfs_scenarios_final_version_v6.pdf.

10 S. Kreibiehl et al. (2022), *Ch 15: Investment and finance* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter15.pdf.

Types of Climate-Related Financial Risks and Opportunities

This report refers to material climate risks and opportunities in two broad categories[11]:

- **Transition risk:** This is the risk that businesses, economies and communities face through the process of decarbonising economic activity. The global transition away from fossil fuels and carbon-intensive production and consumption is underway and accelerating.[12] It will also mean some existing fossil fuel assets will be stranded.[13] This transition will affect the profitability of businesses and the wealth of households, creating financial risks and opportunities for lenders and investors. The transition will also affect the broader economy through investment, productivity and relative price channels.
- **Physical risk:** The impacts of the physical manifestations of climate change on the economy will require a significant level of investment and adaptation from companies, households and governments. The physical manifestations of climate change will have two main impacts:
  - Acute impacts from extreme weather events are likely to disrupt businesses and damage property. For example, these events are likely to increase underwriting risks for insurers. Insurance coverage is already unavailable in some regions, a situation that is likely to worsen. Asset values may be impaired and long-term macroeconomic damage may be expected.
  - Chronic impacts, particularly from increased temperatures, sea level rise and precipitation, are likely to affect labour, infrastructure, land, house prices and natural capital[14] in the specific areas where physical risks manifest.

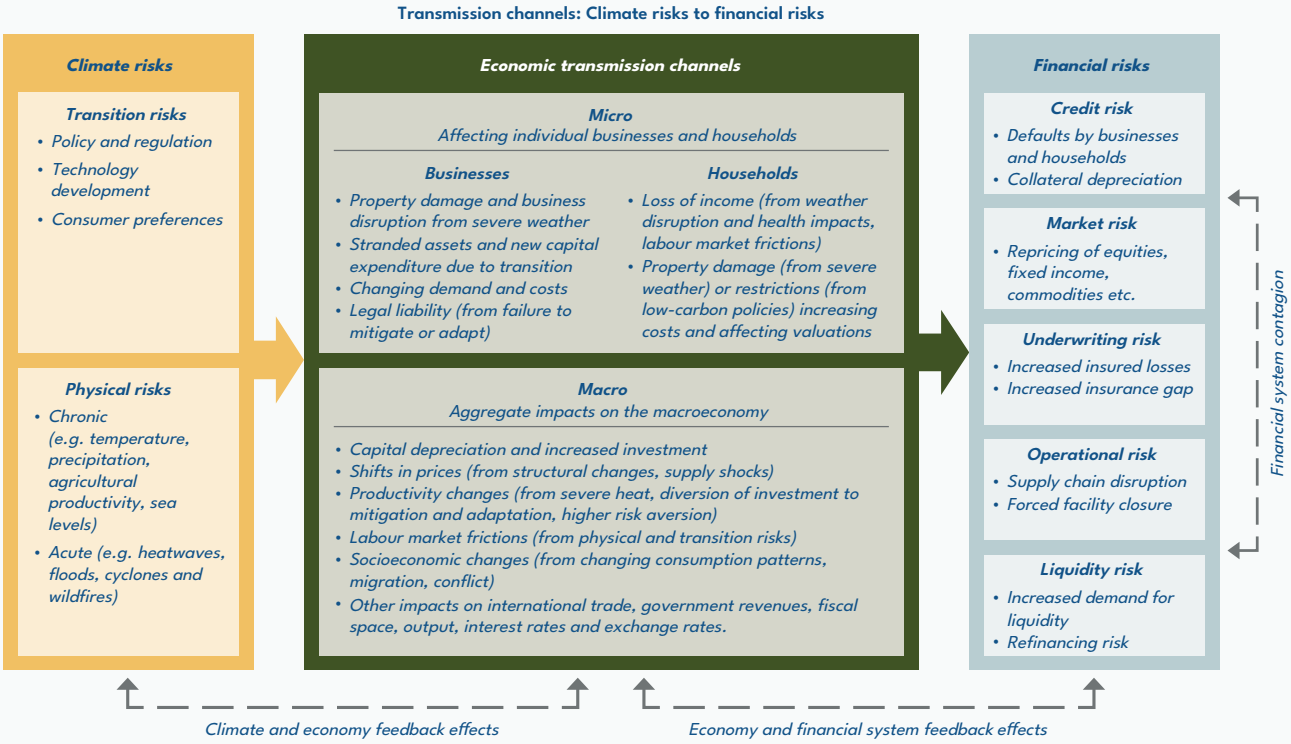


Figure 1: Climate risks could affect the economy and financial system through a range of different transmission channels[15]

11 Additional financially material climate risks include:
- Liability risks: people or businesses seeking compensation for losses they may have suffered from the physical or transition risks.
- Reputational risks: changing customer or community perceptions of an organisation's contribution to climate change.
- Data risks: market corrections due to new data and analytics exposing large climate risks.

12 International Energy Agency (2021), *Renewables 2021. Analysis and forecasts to 2026*, https://www.iea.org/reports/renewables-2021.

13 S. Kreibiehl et al. (2022), *Chapter 15: Investment and finance* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter15.pdf.

14 'Natural capital' refers to the stock of renewable and non-renewable resources (e.g., plants, animals, air, water, soils and minerals) that combine to yield a flow of benefits to people.

15 Network for Greening the Financial System (2020), *NGFS climate scenarios for central banks and supervisors*, https://www.ngfs.net/sites/default/files/medias/documents/820184_ngfs_scenarios_final_version_v6.pdf.

2.3 Australia's Unique Exposure and Opportunities

Australian investors, Australia's economy and Australian communities are highly exposed to the transition risks and physical risks of climate change. However, the country also has an abundance of renewable resources and other assets that are central to the global transition away from fossil fuels, including a highly skilled and educated workforce and a robust financial system. This creates enormous economic opportunities for the country.

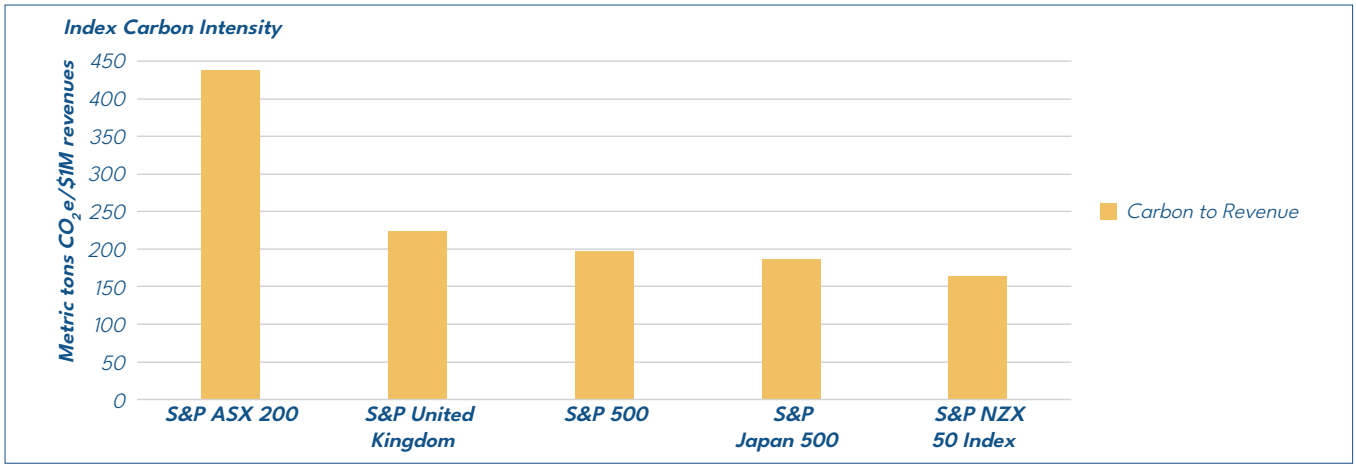
Australia's Key Risk Exposures

- **Australia's economy is the most emissions intensive in the OECD.**[16]
  One implication of this is that a passive investment in the S&P/ASX 200 exposes investors to around twice the carbon exposure per dollar invested than in other major markets (Figure 2). As Australian and international investors increasingly factor carbon emissions into their investment decisions, the S&P/ASX 200 will become increasingly less attractive and increasingly exposed to climate-related risks.

- **Australia is one of the world's largest exporters of coal and gas.**
  The use of both energy sources will need to be rapidly phased out to limit climate damages, which will occur with even 1.5 ˚C of global warming. For example, in 1.5 ˚C-aligned scenarios, Australia's net export of liquified natural gas (LNG) will decline; slightly to 2030, then sharply by 2050 to less than 20 per cent of current levels.[17] The International Energy Agency's 1.5 ˚C-aligned Global Energy Roadmap identified a need for thermal coal use to be phased out globally by 2040.[18] The inevitable decline in demand for Australia's fossil fuel exports has implications beyond the impact on isolated communities, individual projects and specific companies. It will also reduce government royalties and have negative impacts on sovereign debts, exchange rates and credit ratings (see Box: Climate Change and Sovereign Debt).[19]

- **Australia is highly exposed to the physical risks of climate change.**
  Climate change–fuelled extreme events are already causing cascading and compounding damage to the economy, cities, communities, infrastructure, supply chains and services in Australia.[20] The IPCC has concluded that the scale and scope of compounding climate damages from around 2 ˚C of global warming put at 'high risk' the capacity of Australia's institutions, organisations and systems ability to address the socio-economic damages of this level of climate change.[21] Australia's regional neighbours and trading partners are also highly exposed to climate change damages. For example, Swiss Re estimates that climate change could reduce South-East Asia's GDP by over 35 per cent by 2050.[22]

Figure 2: Investment in the ASX exposes investors to high carbon risks.[23]



16 OECD database, https://stats.oecd.org/Index.aspx?DataSetCode=AIR_GHG.

17 IGCC (2022), *Changing pathways for Australian gas. A 1.5˚C scenario analysis of new Australian gas projects*, https://igcc.org.au/wp-content/uploads/2022/04/IGCC-Changing-pathways-for-Australian-gas-FINAL.pdf.

18 International Energy Agency (2021), *Net zero by 2050: A roadmap for the global energy sector*, https://www.iea.org/reports/net-zero-by-2050.

19 A. Dibley & Z. Whitton (2021), *Beyond disclosure: Managing sovereign climate risks*, in preparation.

20 J. Lawrence et al. (2022), *Chapter 11: Australasia*, IPCC, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter11.pdf.

21 J. Lawrence et al. (2022), *Chapter 11: Australasia*, IPCC, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter11.pdf.

22 Swiss Re (2021), *From the ground up: Tackling the secondary perils protection gap in the Asia Pacific*, https://www.swissre.com/risk-knowledge/mitigating-climate-risk/tackling-secondary-perils- protection-gap-in-apac.html.

23 S&P Global (2021), *Operational and first-tier supply chain greenhouse gas emissions*. For more information, see www.spglobal.com/spdji/en/esg-metrics.

Climate Change and Sovereign Debt

Climate risks to sovereign debt span physical risks, including the fiscal costs of climate-related disasters, and transition risks, including reduced revenues from fossil fuel royalties (Figure 3).

Climate change is currently a significantly under-priced risk in sovereign debt markets. As a result, a rapidly growing area of investor stewardship and practice is understanding the implications of climate risks and opportunities for sovereign debt.

Climate risks to sovereign debt also exemplify how climate risk and opportunities can be transmitted through the economy.

		CATEGORY	RISK	EXAMPLE	
Impacts of climate change	Primarily physical	Chronic natural capital depletion	Declining health and productivity outcomes	Health impacts of declining air quality	Sovereign Risk
			Increasing expense to provide ecosystem services	Increasing water sourcing and treatment costs	
		Fiscal impact of climate-related disasters	Direct impacts and response costs	Disaster response costs from more intense rain events	
			Ongoing impacts on civilian resilience and demand	Depression of demand where regions are under-insured	
		Reduced productivity and output	Reduced labour productivity	Reduced construcion productivity on hotter days	
			Reduced agricultural and industrial productivity	Reduced utilisation for industrial assets on hotter days	
		Policy impacts	Impact of mitigation and adaptation policies	Reduced state income from fuel taxes	
	Primarily transition	Supply and demand shocks	Impacts of resilience needs in consumer spending	Diversion of discretionary demand into insurance cost	
			Shifting demand for goods and services, including regionally	Decreased tourism demand following weather events	
			Impacts of rapidly changing energy and industrial demand	Demand stranding in fossil-fired generators	
		Financial system impacts	Impacts of capita constraints in specific regions or industries	Increased capital cost for highly-exposed industries	
			Impacts of more rapid asset deployment needs	Increased capital requirements in the energy system	
			Flow-on impacts of asset re-pricing	Financial instability driven by rapid repricing of assets	
		Political stability and security impacts	Direct security and stability challenges	Regional conflict or unrest	
			Impact of wide-scale and chronic movements of people	Political polarisation following large movement events	
		Demand and trade changes	Impact of changing commodity and goods demands	Declining export demand for energy commodities	
			Impact of sovereign policy on trade barriers	Declining export competitiveness following border adjustments	

Figure 3: Examples showing how climate change presents several macroeconomic and microeconomic risks to sovereign debt[24]

The Zero Carbon Opportunities for Australia

Australia has significant natural and strategic advantages to produce and capitalise on climate change–related opportunities. An emissions-constrained world will have increasing demand for existing and new export products, including green steel and aluminium, green hydrogen and many critical raw materials.

According to CSIRO, 'Australia has many sources of comparative advantage for low emissions technologies to build on. While the transition to a low emissions economy is often framed in terms of cost, this transition will also create demand for new products and services both in Australia and in export markets'.[25]

Several major studies have demonstrated Australia would economically benefit from a well-managed transition to net zero emissions and could create new export industries, including:

- Deloitte Access Economics found Australia would grow its economy by $680 billion, increase GDP by 2.6 per cent and add 250,000 jobs by 2070 by adopting a comprehensive transition approach.[26]
- The Grattan Institute found Australia is well positioned to develop an export green steel industry and that capturing 6.5 per cent of global trade would generate $65 billion in export earnings and create 25,000 manufacturing jobs in NSW and Queensland.[27]
- ACIL Allen forecast that Australian hydrogen exports could be worth up to $5 billion by 2040.[28]
- The Office of the Chief Economist projected that by the end of 2025–26, a surge in Australian export earnings of metals used in technologies central to the global energy transition – copper, lithium and nickel – will replace the fall in thermal coal earnings arising from the net zero emissions transition.[29]

24 A. Dibley & Z. Whitton (2021), *Beyond disclosure: Managing sovereign climate risks*, in preparation.

25 CSIRO (2017), *Low emissions technology roadmap*, https://igcc.org.au/wp-content/uploads/2022/08/LowEmissionsTechnologyRoadmap-Main-report-170601.pdf.

26 Deloitte Access Economics (2020), *A new choice: Australia's climate for growth*, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-new-choice-climate-growth-051120.pdf?nc=1.

27 Grattan Institute (2020), *Start with steel: A practical plan to support carbon workers and cut emissions*, https://grattan.edu.au/report/start-with-steel/.

28 ARENA (2018), *Opportunities for Australia from hydrogen exports*, https://arena.gov.au/assets/2018/08/opportunities-for-australia-from-hydrogen-exports.pdf.

29 Department of Industry, Science, Energy and Resources (2021, March), *Resources and Energy Quarterly*, https://publications.industry.gov.au/publications/resourcesandenergyquarterlymarch2021/index.html.

2.4 Working with Policymakers to Unlock Capital for Climate Solutions

Under the right policy conditions, private investors can deploy significant capital to help achieve the policy objectives of government to drive a just transition to net zero emissions, build resilience to the physical impacts of climate change and support national goals around energy security and industry development. Government policy provides the signals and incentives that direct the flow of capital across the global economy. Credible, investable and durable policy frameworks put in place today will not only support strong investor and beneficiary returns into the future but also enhance Australia's economic competitiveness and help attract international capital.

Investors do not advocate for unnecessary subsidies (see section 4.2) but do require a supportive, credible, consistent and stable policy environment that will facilitate private investment by reducing policy-related sovereign, transition and physical risks and shape markets for climate solutions.Long-term investors are engaging in policy because it is a necessary extension of their responsibilities and duties to deliver strong returns for their members. This report sets out what institutional investors see as the key policy priorities for the Australian Government up to 2025.

2.5 The High-Level Policy Objectives that will Deliver Long-Term Returns to Australians

To deliver sustainable long-term returns to beneficiaries and the broader economy, policy should contribute to three main objectives:

1. limiting climate damages by reducing emissions and limiting global warming above 1.5 ˚C
2. undertaking transformational adaptation and resilience to limit climate damage from current and committed climate change
3. ensuring financial flows in the economy support the above two objectives.

The Paris Agreement, to which Australia is a party, recognises these goals as its overall objectives.[30]

Additional Principles in Investable Policy

There are additional considerations and principles that investors support when designing and assessing potential climate policies. IGCC also supports the policy principles developed by the Australian Climate Roundtable.[31]

1. **Delivering net benefits:** Early action to address transition and physical risks delivers the greatest net benefit to long-term investment returns.[32] The alternative – a disorderly transition – will increase the costs to investors, communities and the overall economy. Notwithstanding the need to use systemic policy levers, there will also need to be policies that target specific sectors. The most cost-effective policy response to addressing climate change requires a mix of macroeconomic and sector-specific policy measures.[33]
2. **Addressing impacts at a systemic level:** Addressing the system-wide economic and social implications of transition and physical climate risks requires a response across the whole economy and society. In addition, capital markets are globally interconnected. Australian policy settings and frameworks will promote efficient investment, and avoid fragmentation, if they match international best practice and are globally interoperable.
3. **Setting targets and plans that are credible and science aligned:** Substantially reducing the financial damage caused by climate change requires credible emission reduction targets and plans in line with the objectives of the Paris Agreement. Countries that are not setting clear policy signals and taking action to mitigate the climate risk in their economy will become less attractive for international investment.
4. **Providing stability:** Political consensus on climate change policies is important to ensure investor confidence. Credible long-term market signals would reverse the historic trend of turbulent climate policymaking in Australia. Any policy with the potential to be dismantled under a change of government may promote some short-term investment but will not remove the long-term risk premium associated with the lack of political consensus on policy in Australia.
5. **Promoting social equity:** Social equity should be explicitly addressed in the policy design process. Reducing Australia's emissions and adapting to unavoidable climate impacts involves costs and opportunities. The costs of climate policy should be spread fairly within the Australian community. Climate policy should protect the most vulnerable, avoiding disproportionate impacts on low-income households and the organisations that support them and assisting the fair and successful transition of workers and communities exposed to economic shocks, transition risks or physical risks.

30 The objectives of the Paris Agreement, as articulated in Article 2, are (emphasis added):
This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:
(a) Holding the increase in the global average temperature to well below 2 ˚C above pre-industrial levels and pursuing efforts to *limit the temperature increase to 1.5 ˚C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change*;
(b) Increasing the ability to *adapt to the adverse impacts of climate change and foster climate resilience* and low greenhouse gas emissions development, in a manner that does not threaten food production; and
(c) Making *finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development*.

31 'The Australian Climate Roundtable is a broad alliance of major Australian business, environmental, farmer, investor, union and social welfare groups. We came together in 2014 because climate change and climate policy impact our missions and our members. In the process we found that despite our very different constituencies and focusses, our groups have much in common and this is captured in our joint principles for climate policy. [...] The members of the Australian Climate Roundtable are: Australian Aluminium Council, Australian Conservation Foundation, Australian Council of Social Service, Australian Council of Trade Unions, Australian Energy Council, Australian Industry Group, the Business Council of Australia, Investor Group on Climate Change, National Farmers' Federation [and] WWF Australia'. Australian Climate Roundtable, https://www.australianclimateroundtable.org.au.

32 Network for Greening the Financial System (2020), *NGFS climate scenarios for central banks and supervisors*, https://www.ngfs.net/sites/default/files/medias/documents/820184_ngfs_scenarios_final_version_v6.pdf.

33 N. K. Dubash et al. (2022), *Chapter 13: National and sub-national policies and institutions* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter13.pdf.

Net Economic, Community and Social Benefits of 1.5 ˚C

The projected warming under current global emissions reduction policies will put many social and ecological systems at very high risk and beyond adaptation limits. In Australia, impacts will exacerbate many extreme events, increase heat-related mortality and morbidity for people and wildlife, and reduce water availability in some regions.[34]

Delays in emission reductions and adaptation will impede climate-resilient development, resulting in more costly impacts and greater scale of adjustments required. These impacts will disproportionately affect vulnerable people and communities.

Conversely, limiting global warming to 1.5 ˚C, with low overshoot, will have significant social and economic benefits, including opportunities associated with transition and avoided physical risk and adaptation costs. The figure below highlights the impact of different emissions pathways on global GDP, demonstrating the significantly reduced costs and greater opportunity under a 1.5 ˚C pathway.

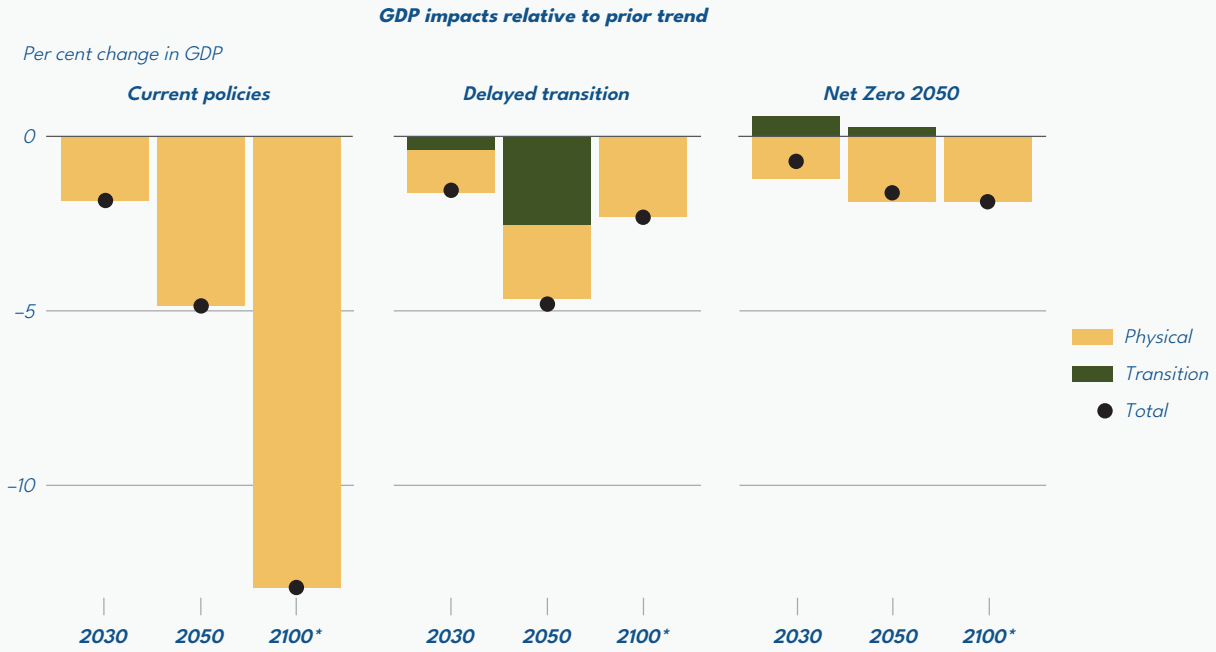


Figure 4: GDP impacts relative to no climate change scenarios.
Source: Network for Greening the Financial System (NGFS)[35]

34 J. Lawrence et al. (2022), *Chapter 11: Australasia*, IPCC, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter11.pdf.

35 Network for Greening the Financial System (2020), *NGFS climate scenarios for central banks and supervisors*, https://www.ngfs.net/sites/default/files/medias/documents/820184_ngfs_scenarios_final_version_v6.pdf.

Image on next page: Walgun, (Cape Byron)
Byron Bay NSW, Australia

3. Policy Group 1: Policy Responses at a Systemic Level

Countries that mitigate the climate risk in their entire economy with clear policy signals will be more competitive in attracting and maintaining local and global investment. They will face relatively lower sovereign risks, lessening the risk of downgrades to debt and credit ratings, as investors increasingly assess the underlying transition and physical implications of climate at a national level. To have effect at an economy-wide level, systemic levers are needed.

3.1 Aligning National Economic Strategy to 1.5 ˚C

The greatest net benefit to the economy can be achieved by early policy interventions to align national economic strategies to the objective of the Paris Agreement to limit average global warming to 1.5 ˚C.[36] National targets provide investment signals to capital markets and should guide all national decision-making.

In Australia, there is bipartisan and broad community and business support for achieving net zero emissions by 2050. The country's current 2030 target of a 43 per cent emissions reduction on 2005 levels under the Paris Agreement establishes a policy floor. It provides clarity to investors because the treaty prevents countries from backsliding on their international treaty commitments.

Australia's 2035 target is also very important to investors. A Paris Agreement–aligned 2035 target will give investors longer term visibility of national policy goals and promote early investment to achieve greater emissions reductions over the coming decade. For example, a 1.5 ˚C-aligned pathway for Australia's 2035 NDC would be around a 75 per cent emissions reduction on 2005 levels (see Box: Australian 1.5 ˚C Emissions Pathways).

Recommendation One

Australia's NDCs under the Paris Agreement should be aligned with limiting average global warming to 1.5 ˚C.

36 See, for example, Network for Greening the Financial System (2020), *NGFS climate scenarios for central banks and supervisors*, https://www.ngfs.net/sites/default/files/medias/documents/820184_ngfs_scenarios_final_version_v6.pdf; T. Kompas et al. (2019), *Australia's clean energy future: Costs and benefits* [Issues Paper No. 12], MSSI, The University of Melbourne, https://sustainable.unimelb.edu.au/__data/assets/pdf_file/0012/3087786/Australias_Clean_Economy_MSSI_Issues_Paper12.pdf; Deloitte Access Economics (2020), *A new choice: Australia's climate for growth*, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-new-choice-climate-growth-051120.pdf?nc=1.

Australian 1.5 ˚C Emissions Pathways

Numerous experts have assessed possible Australian emissions pathways consistent with an equitable and technologically possible contribution to the objectives of the Paris Agreement.[37]

Figure 5 shows 1.5 ˚C-aligned emissions pathways for 2030, 2035 and 2040 based on current national assessments.[38] It also shows the emissions pathway implied by Australia's commitment to 43 per cent reductions by 2030 and net zero my 2050. These assessments present the most economically efficient technology and other pathways within assumed 1.5 ˚C emissions constraints. They do not capture all the costs (e.g., unmanaged community impacts) or benefits (e.g., international competitiveness).

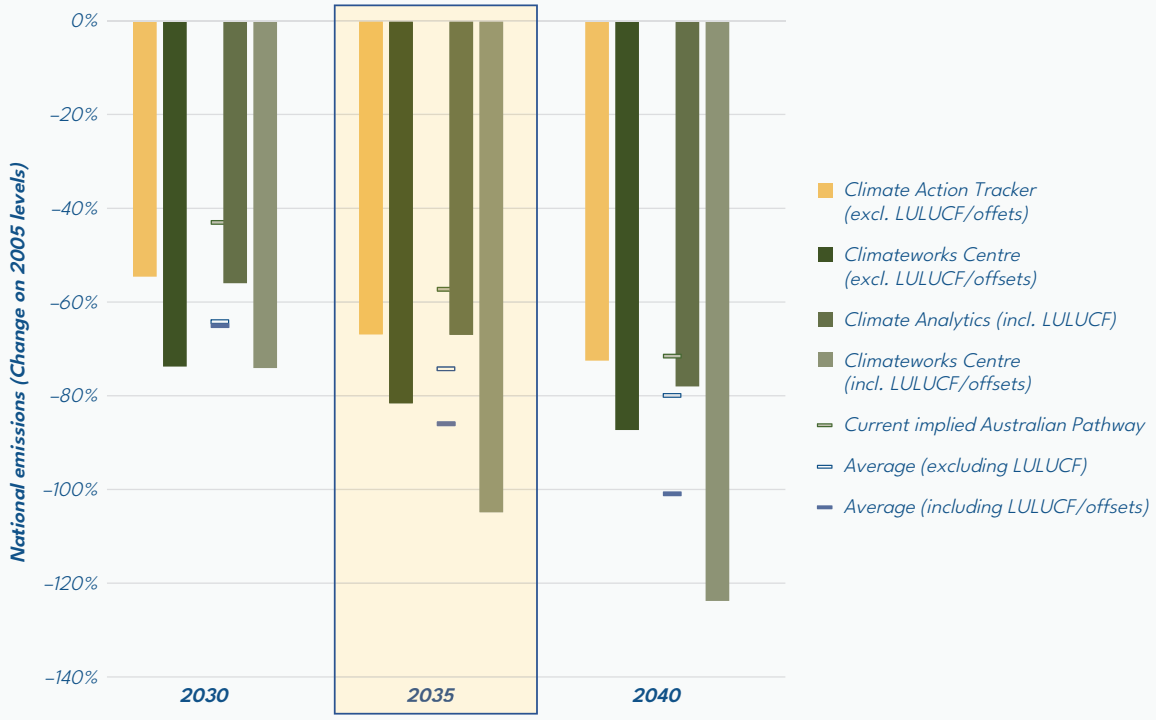


Figure 5: 1.5 ˚C Emissions Pathways

3.2 Stable Climate Governance to Promote Investor Confidence

A clear, robust and long-term legislative framework to manage the systemic economic risks and opportunities of climate change would support an orderly and just transition.

Confidence and transparency as to the future direction of climate-related policy, along with efforts to enlist broad public and parliamentary support, enhance the efficient allocation of capital. With knowledge, investors can more accurately price current and future climate risks.

Transparency and stakeholder support also reduce the risk that investments will be unpredictably stranded as governments increase action through time or act abruptly with later policy interventions.

Finally, transparency helps investors to identify investment opportunities across the economy, capitalise new industries where Australia will have competitive advantage and support national goals around energy security and industrial development.

37 See, for example, C. Butler et al. (2020), *Solutions, actions and benchmarks for a net zero emissions Australia. Technical report*, Climate Works Australia, https://www.climateworkscentre.org/wp-content/uploads/2020/04/CWA-DECARBONISATION-FUTURES-2020-TECH-REPORT.pdf; U. Fuentes et al. (2020), *Scaling up climate action in Australia*, Climate Analytics, https://climateanalytics.org/publications/2020/scaling-up-climate-action-in-australia/; Australian Energy Market Operator (2022), *Integrated System Plan (ISP)*, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp.

38 The physical science of climate change can only inform global emissions reductions required to limit global warming. Downscaling this to national emissions requires assumptions on factors, such as around equity (e.g., historic contribution to the problem), national economic opportunities and challenges in the transition (e.g., access to renewable energy resources), and assumptions on international accounting methods (e.g., use of land use, land use change and forestry [LULUCF] and international carbon markets).

Recommendation Two

Establish a national climate change legislative framework that enshrines Australia's net zero by 2050 target, embeds a response to physical risk and ensures independent advice to the public and Parliament on key policy matters. Acknowledging that the Climate Change Act 2022 has started this process, several additional legislative changes and instruments will need to be implemented to achieve these outcomes.

Key elements of the framework would include:

- **embedding a just and equitable transition into government decision-making**
- **ensuring climate change opportunities, physical risks and transition risks are considered and acted upon in all government decision-making, including in agencies, in departments and at the executive level**
- **the Climate Change Authority providing advice and data to the public and Parliament on:**
  - **progress towards current emissions reductions targets**
  - **1.5 ˚C and technology emissions pathways for each sector of the economy**
  - **policy changes that may be required to meet short- and long-term targets to support an orderly transition**
  - **any Australian NDC and other existing or new international commitments**
- **the Climate Change Authority undertaking regular reviews of the system-wide response to physical risks of climate change (including a review of government fiscal measures)**
- **the Climate Change Authority making recommendations on policy changes to support climate-resilient economic development**
- **any appointments to the Climate Change Authority board should support a balance of expertise and experience of climate-related threats and opportunities, including climate science, net zero carbon transitions across the economy, public policy, investment, technology and innovation skills, experience in dealing with strategic disruptions, and adaptation and resilience to physical risks.[39]**

3.3 Promoting a Just Response to Climate Change

Australia's response to climate change will unavoidably involve significant change across most industries and regions. A key consideration for all stakeholders, including investors, is the need to guarantee social equity and a just transition for affected workers and communities throughout the response.

An additional consideration is the need to ensure a high level of social cohesion and broad, ongoing public support for climate action as these conditions are essential to investors' ability to create sustainable financial returns and overall benefits for beneficiaries.

Under the right conditions, investors will be able to contribute to a just and equitable transition, particularly via their stewardship and capital deployment. Decarbonising the energy sector provides an immediate example.

On one hand, there are incumbent sub-sectors, companies, workers and communities that are deeply exposed to the economic and social shocks that would accompany an unplanned and disorderly decline of fossil fuels.

On the other hand, there is the potential for significant growth in mature renewable energy generation and storage, and emerging low and zero emissions technology, fuels and services. Investors can make large investments in these areas, which can accelerate the pace of the energy transition, helping to secure Australia's competitive edge as a global clean energy hub while providing new intellectual property and jobs.

Stable climate and energy change policy that has bipartisan support will create the conditions necessary for all stakeholders to participate in a just energy transition.

39 Investors expect government governance structures to be aligned with capital market expectations. See IGCC (2021), *A changing climate: What investors expect of company directors on climate risk*, https://igcc.org.au/wp-content/uploads/2021/11/IGCC-Climate-Change-Board-Report.pdf.

Investors' Role in the Just Transition

In 2021, IGCC published *Empowering communities: How investors can support an equitable transition to net zero.*[40] This report discusses the opportunities and actions investors can take to support a just transition for high-risk communities that are dependent on emissions-intensive energy industries. It identified key roles for investors to support a just energy transition, including:

1) Investment strategy and capital allocation:
   a. include support for a just transition in climate and responsible investment policies
   b. assess exposure to just transition risks (e.g., through portfolio ownership of companies in exposed sectors, such as utilities)
   c. seek opportunities to allocate capital towards risk-adjusted investment opportunities that support just transition outcomes.
2) Corporate engagement:
   a. outline clear and consistent expectations of relevant companies, including:
      i. extensive stakeholder consultations (including workers, unions and affected communities) to co-develop just transition plans (some companies will require asset-specific transition plans)
      ii. disclosure of co-designed transition plans, which should include costed actions with expected timeframes for implementation, and annual reporting of progress against the transition plan/s
      iii. integration of just transition considerations into capex plans, such that the company's growth strategy reflects a fair transition for workers and communities.
3) Advocacy and partnerships:
   a. advocate for place-based approaches and generous public funding to guide and underpin transition efforts in affected regions, including through the establishment of national and regional transition authorities
   b. participate in local, regional and national dialogues about decarbonisation, just transition and regional development to ensure transition capital is deployed in alignment with local development priorities
   c. de-risk investments by seeking partnerships with government, impact investors and other organisations seeking to mobilise investment capital towards just transition outcomes.

Recommendation Three

Governments[41] should establish concurrent national and regional transition authorities to support a just and orderly transition.

To maximise investment opportunities and social benefits for affected sectors and communities, the remits of these authorities should include:

- **an expert national advisory body that advises the federal government on the transition**
- **formal engagement with key stakeholders, including the finance sector, on their roles in the just transition**
- **development of a just transition framework to underpin local development of regionally specific just transition plans**
- **alignment of the just transition framework to other policies, including those on regional development, skill development and training, and climate change.**

Regional transition authorities should immediately support localised transition planning processes in key fossil fuel production regions as a matter of priority (e.g., Upper Hunter, Latrobe Valley, Bowen Basin), given their immediate exposure to transition risks.

40 IGCC (2021), *Empowering communities: How investors can support an equitable transition to net zero*, https://igcc.org.au/wp-content/uploads/2021/07/IGCC-Investors-role-in-an-Equitable-Transition-to-net-zero-emissions_FINAL-150720211-copy.pdf.

41 Efficient coordination will require action from federal, state, territory and local governments.

4. Policy Group 2: Unlocking Financial Flows to Deliver Universal Returns

Delivering a resilient, net zero emissions economy requires the global financial system to be aligned for the objectives of the Paris Agreement. Investors have been vocal in support of this goal.[42]

However, the IPCC has concluded that progress towards aligning financial flows to a resilient and net zero emissions economy remains slow.[43] This reflects a persistent misallocation of global capital and persistent and high levels of fossil fuel–related financing from private and public sources.

The gap between the current and required low-carbon finance flows in Australia, Japan and New Zealand is larger than in other advanced economies (Figure 6).[44] In Australia, this has, in part, been the result of policy misalignment between stated long-term climate goals and enacted national climate policies, lack of clear strategies for a just and orderly transition and limited political consensus. All of these affect risk perception and, ultimately, financing costs.

Reversing this historic trend will require strong climate policy signals to support investment decisions. Aligning finance flows with achieving an orderly and just transition to net zero emissions will require:

- carbon pricing to maintain international competitiveness
- a mandatory climate risk disclosure regime to support market function
- phase out of fossil fuel subsidies to remove policy misalignment.

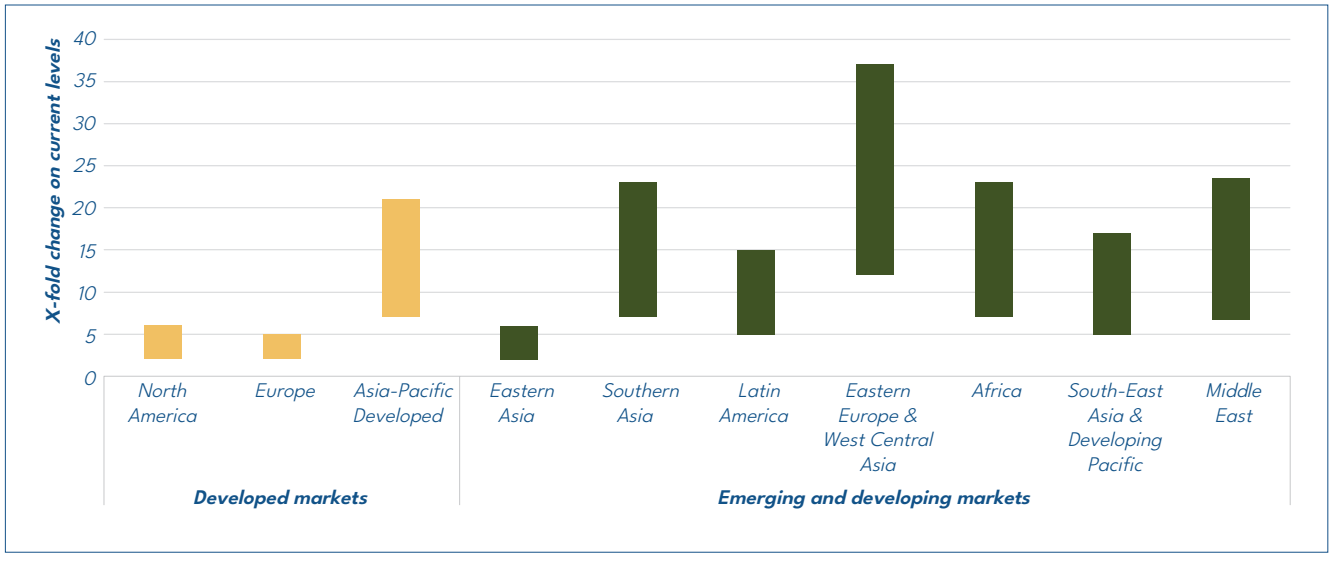


Figure 6: 1.5˚C-aligned finance gap by region (relative to today's levels). The bars show a range of estimates of the x-fold increases in annual climate finance need to meet Paris Agreement–aligned 2030 emissions targets. This excludes adaptation climate finance needs.

42 An example is the *Global Investor Statement to Governments on the Climate Crisis*. In 2021, 733 investors representing over US$52 trillion in assets signed the statement, which included a call for policy aligned with Paris and 1.5 ˚C. The Investor Agenda (2021), *Global Investor Statement to Governments on the Climate Crisis*, https://theinvestoragenda.org/wp-content/uploads/2021/09/2021-Global-Investor-Statement-to-Governments-on-the-Climate-Crisis.pdf.

43 S. Kreibiehl et al. (2022), *Chapter 15: Investment and finance* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter15.pdf.

44 S. Kreibiehl et al. (2022), *Chapter 15: Investment and finance* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter15.pdf. This assessment includes only the requirements of transition financing and does not include climate change adaptation needs.

4.1 Carbon Pricing is Essential to Australia's Competitive Advantage

Clear and transparent carbon pricing sends market signals, accurately prices the cost and impact of emissions, and incentivises behavioural change and investment flows into lower and zero emissions solutions. Having policy frameworks and signals that support the widespread dissemination of carbon price signals will incentivise emission reduction investment decisions across the economy.

The more carbon is explicitly priced, the more investment will flow to new zero emissions technologies and the more efficiently industry will be able to ensure economic and overall policy objectives are met.

Markets and many businesses are currently integrating carbon price assumptions into investment decisions and forecasting,[45] but there is limited transparency and investors and financial regulators face significant challenges in assessing the robustness of the carbon price assumptions. Increasingly, Australia will also be unable to escape carbon pricing in global market decisions, or through explicit global pricing mechanisms such as the Carbon Border Adjustment Mechanism.[46]

An immediate priority in Australia is to ensure the country's existing carbon pricing mechanism – the Safeguard Mechanism – is aligned with avoiding climate damages from warming above 1.5 ˚C.

Recommendation Four

Safeguard emissions baselines for existing and new entrants should be aligned with emissions and technology pathways consistent with limiting warming to 1.5 ˚C. These emissions baselines should be set based on the sectoral goals outlined by the Climate Change Authority (recommendations two and eight).

In addition, the policy design should consider:

- **maintaining direct abatement incentives across covered sectors, while at the same time recognise that different technological pathways to net zero exist in different sectors**
- **avoiding a disorderly transition to net zero emissions and loss of international competitiveness from failing to match more credible policy settings in other countries.**

The shielding of unsustainable operations and sectors will increase the cost of achieving emissions reductions and will push effort onto other sectors of the economy. Therefore, any transitional competitiveness measures should:

- **focus on those industries that have a clear future in an Australian net zero emissions economy (e.g., renewable energy, critical minerals, green steel and green hydrogen)**
- **not be provided to industries that will decline in a net zero economy, such as coal and LNG. Support towards these sectors should be limited to the development of near-zero emissions technologies (see recommendation eight) and collaboration to support a just transition for affected employees and communities (see recommendation three).**

Investment Risks and Opportunities in Carbon Offsets

The use of carbon offsets must be considered in the context of how and when they are being used. Carbon offsets are a useful mechanism to immediately net out emissions from industrial practices, and some consumer-based products and services, where immediate emissions reductions options are not available.

However, the use of offsets to meet emissions targets is increasingly being scrutinised by investors. This is an indication that businesses and projects that rely heavily on offsets face significant transition risks.

Investors' concerns include that offset mechanisms can be used as a delaying tactic by high emitters, slowing the necessary transition and locking in heightened risk of carbon price and stranded assets.

For investors, the integrity of offsets is also critical; investors need to have confidence in the market.

For this reason, investors advocate for offsets that deliver actual emissions reductions, have verification of lifecycle emissions and regulatory regimes that enforce these standards.[47]

45 Golman Sachs (2020), *Carbonomics*, https://www.goldmansachs.com/insights/pages/gs-research/carbonomics-10-key-themes-from-the-inaugural-conference-f/report.pdf.

46 The Australian Industry Group (2021), *Swings and roundabouts: The unexpected effects of Carbon Border Adjustments on Australia*, https://cdn.aigroup.com.au/Reports/2021/Carbon_Border_Adjustments_Policy_Paper.pdf.

47 The Oxford Principles for Net Zero Aligned Carbon Offsetting outline how offsetting needs to be approached by governments, businesses and investors. M. Allen et al. (2020, September), *The Oxford Principles for Net Zero Aligned Carbon Offsetting*, Smith School of Enterprise and the Environment, Oxford University, https://www.smithschool.ox.ac.uk/research/oxford-offsetting-principles.

4.2 Mandatory Disclosures: The Competitive Advantage in Making Climate Risks and Opportunities Visible

Clear and comparable disclosure of information is one of the foundational building blocks of a well-functioning global and Australian financial system. This includes climate information.

To invest capital in Australia, global and local investors need transparency, consistency and comparability of disclosures. This supports informed and efficient asset allocation.

Currently, the transition risks, physical risks and opportunities associated with climate change are extremely under-priced in the Australian economy.

For investors, mandatory climate risk disclosure, including both transition and physical risk, has two key benefits.

- First, a mandatory well-designed disclosure regime applied to investors allows them to improve their own risk management and business strategies.
- Second, a mandatory disclosure regime applied to businesses allows investors to value climate risk and opportunities in financial decision-making, helping align investment flows towards climate-resilient businesses and assets (including infrastructure).

Setting clear, mandatory requirements will help to align regulation with industry expectations and global standards. Making climate disclosures mandatory and standards aligned reduces ambiguity in requirements, reducing and streamlining reporting effort. Given that the international community is rapidly progressing mandatory disclosure requirements, locally mandated climate disclosures will help Australian investors and companies to manage reporting requirements for international stakeholders (see Box: Mandatory Climate Risk Disclosure: The Emerging Norm in Financial Markets).

Mandatory climate reporting also reduces the likelihood of material risks being hidden until they can no longer be addressed. Early government signals in support of that regime would indicate to economic actors to build their capacity (e.g., skills and data) to meet standards.

Mandatory Climate Risk Disclosure: The Emerging Norm in Financial Markets

There is growing momentum towards mandatory reporting among Australia's international peers and trading partners to address the mispricing of climate risks and opportunities in financial markets. Countries that have introduced (or will be introducing) mandatory disclosure include Belgium, Brazil, Canada, Chile, the European Union, France, Hong Kong, Japan, New Zealand, Singapore, Sweden, Switzerland and the United Kingdom.[48] It is currently under consideration in the United States.[49] This is welcome, but without coordination, the proliferation risks market fragmentation and impedes the efficient allocation of capital to climate solutions.

International Sustainability Standards Board (ISSB)

The establishment of the ISSB at COP26 in 2021 demonstrated a positive move towards more effective coordination and standardised disclosures on a global scale.[50] The Australian Government supported the establishment of the ISSB.

The ISSB has released two proposals, building on the recommendations of TCFD, which set out requirements for the disclosure of material information about a company's significant sustainability-related risks and opportunities. Such disclosure is necessary for investors to adequately assess a company's enterprise value and prospects. Australia can support its investors by engaging with the ISSB in the development of the global standards, then promptly integrating the new ISSB standards in Australia.

The Australian finance industry fully supports a global approach to the development of sustainability disclosure standards and are supportive of the ISSB being the global body to issue these standards.[51] Of note:

- A clear, transparent, comprehensive and comparable disclosure of sustainability-related information should be part of the foundation of a well-functioning global financial system.
- The overarching goal should be a globally consistent, comparable, reliable and verifiable corporate reporting system to provide all stakeholders with a clear and accurate picture of an organisation's ability to create sustainable value over time.
- It is critical that the ISSB and other jurisdictions developing sustainability standards take a coordinated approach to avoid regulatory and standard-setting fragmentation by aligning key definitions, concepts, terminologies and metrics on disclosure requirements.

48 IGCC et al. (2021, June), *Confusion to clarity: A plan for mandatory TCFD aligned disclosure in Australia*, The Investor Agenda, https://igcc.org.au/wp-content/uploads/2021/06/ConfusiontoClarity_APlanforMandatoryTCFDalignedDisclosureinAus.pdf; Task Force on Climate-related Financial Disclosures (2021), 2021 status report: *Task Force on Climate-related Financial Disclosures*, https://www.fsb.org/2021/10/2021-status-report-task-force-on-climate-related-financial-disclosures/.

49 A. H. Lee (2022, 21 March), *Shelter from the storm: Helping investors navigate climate change risk* [Statement], U.S. Securities and Exchange Commission, https://www.sec.gov/news/statement/lee-climate-disclosure-20220321.

50 IFRS Foundation (2021, 3 November), *IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements*, https://www.ifrs.org/news-and-events/news/2021/11/ifrs-foundation-announces-issb-consolidation-with-cdsb-vrf-publication-of-prototypes/.

51 Australian Peak Bodies (2022), *Major consensus reached on Australian climate risk reporting*, https://igcc.org.au/major-consensus-reached-on-australian-climate-risk-reporting/.

Recommendation Five

Phase in a mandatory climate risk disclosure regime that is both consistent with international best practice and fit for purpose for Australia. The regime should be aligned with TCFD and signal that the ISSB standards will be adopted in Australia.

The key features of the policy would include:

- Interoperability: Supporting a global approach to the development of sustainability and climate-related disclosure standards through the ISSB. The overarching goal should be a corporate reporting system that is globally consistent, comparable, reliable and verifiable. This would help provide all stakeholders with a clear and accurate picture of an organisation's ability to manage the transition and physical risks and opportunities. It is critical that the standards take a coordinated approach to avoid regulatory and standard-setting fragmentation by aligning key definitions, concepts, terminologies and metrics on disclosure requirements.
- Scope 3 emissions disclosure: It is essential that climate reporting standards cover the entire value chain, including material scope 3 emissions. The credibility of the system relies on reporting material scope 3 emissions as this is where an organisation's key market risks lie. In particular, scope 3 emissions present the largest climate risk to many investments, including those in the coal, oil and gas industry. A timebound phase-in for some entities will be important in early reporting periods to allow the market to develop robust and accurate reporting capacity.
- Corporate transition plans: Implementing a minimum standard for climate transition plans approved by the board of directors, to be applied to the economy's highest-emitting companies. Corporate climate transition plans help enable investors to differentiate between companies that are operating 'business as usual' or 'greenwashing', and those that are on a long-term credible transition pathway. Transition plans also support investors' ongoing stewardship and engagement with Australian companies. Companies will need to provide investors with credible transition plans if they wish to retain and attract quality, long-term capital. Reporting of transition plans would be consistent with the ISSB standards.
- Application across the economy: Mandatory disclosure requirements should apply to entities operating across the economy. Given this scale, they could be introduced via a phased approach by 2025 and include:
  - ASX 300-listed companies
  - large financial institutions (banking, superannuation, asset management and insurance) with either annual consolidated revenue of at least $100 million or total assets under management of at least $5 billion
  - large, unlisted, non-financial companies (including government-owned companies and financial institutions) with annual consolidated revenue of at least $100 million.
- Support from government: Aligning the work of the Council of Financial Regulators and other agencies and initiatives to work with the market to deliver standards, auditable data and scenarios (including at a sector level) for the disclosure of climate-related physical and transition risks.
- Increasing baselines for disclosure: Increasing the minimum expectation for climate-related reporting over time, through phased compliance periods, step-by-step approaches to increase the quality of disclosures and establishing review processes to consider necessary improvements in disclosure.

4.3 Backing Winners, Not Losers – Removal of Fossil Fuel Subsidies

Fossil fuel subsides exacerbate the systemic risks of climate change by distorting the market and slowing the decarbonisation of key sectors. Fossil fuel subsidies also have sizable fiscal costs[52] and hinder growth by promoting inefficient allocation of an economy's resources. Removing fossil fuel subsidies will:

- correct a policy misalignment that currently undermines the credibility of public emission reduction commitments and increases energy transition risks
- even the playing field for new and emerging zero and low emissions technologies
- increase revenue available for targeted social spending, such as energy workforce and community transition programs, and allow for reductions in other inefficient taxes
- reduce systemic reliance on volatile fossil fuel supplies, thereby improving energy security.

Recommendation Six

Commit to phasing out all fossil fuel subsidies by 2025, with a process established in consultation with investors, business and the broader community.

In addition, federal, state and territory governments should:

- **set phase-out dates for programs and policies that enable any ongoing expansion, extraction or use of fossil fuels**
- **review industry support programs and, where necessary, redesign them to avoid transition risks**
- **increase transparency and accountability about national and state/territory fossil fuel subsidies (Treasury should publish an annual review of all federal-, state- and territory-based explicit, implicit, production and consumption-based fossil fuel subsidies).**

52 The scale of fossil fuel subsidies is contested in Australia due to different experts and advocates defining what constitutes a subsidy in different ways. For example, the IMF estimates that fossil fuel subsidies in Australia amount to US$44 billion annually (3.2% of GDP), while The Australia Institute estimated subsidies were A$11.6 billion in 2021–22. I. W. H. Parry et al. (2021, 24 September), *Still not getting energy prices right: A global and country update of fossil fuel subsidies* [Working Paper No. 2021/236], IMF, https://www.imf.org/en/Publications/WP/Issues/2021/09/23/Still-Not-Getting-Energy-Prices-Right-A-Global-and-Country-Update-of-Fossil-Fuel-Subsidies-466004; The Australia Institute (2022), *Australian fossil fuel subsidies surge to $11.6 billion in 2021-22* [Media release], https://australiainstitute.org.au/post/australian-fossil-fuel-subsidies-surge-to-11-6-billion-in-2021-22/.

5. Policy Group 3: Unlocking Sectoral Investment in Net Zero

National targets and macroeconomic policies define the overall direction of the Australian economy to net zero emissions. However, least-cost approaches to achieving national objectives involve a combination of national and separate sector-specific policies.[53]

Not all sectors or industry pathways will match the national pathway as technological and other emissions reductions measures differ in each sector. For example, due to its zero emissions technology readiness and importance in reducing emissions from other sectors through electrification, the electricity sector can and should decarbonise much faster than the national average (see Box: Sector Pathways to 1.5 ˚C).

Recommendation Seven

Based on advice from the Climate Change Authority, establish clear 2030, 2035 and 2040 policy goal posts for all sectors:

- Establishing sector targets to guide policy development will inform investor expectations on future policy. It will also establish performance benchmarks for future policy review and development. Sector targets contribute to a clear framework for investors and the companies they own, guiding business strategy, targets and metrics and allocation of capital towards new technology and/or other expenditure.
- Enact sector-specific regulatory measures, targets and investment programs to support a just and orderly transition to net zero emissions. Specifically, COAG's national energy transition plan should:
  - implement a sector-wide policy to place an emissions reduction incentive across the electricity market that ensures the orderly and timely closure and replacement of coal-fired generation
  - implement targeted policies to build domestic demand and consumption of low emissions products such as green hydrogen
  - ensure just transition considerations and robust environmental regulation are central to the policymaking (given the scale of new infrastructure required and potential for social and environmental disruption)
  - build global demand for net zero emissions technologies, products and services. To build demand, governments can use procurement and building relationships with target markets to set global standards for near-zero emissions technologies, including hydrogen and vehicles; set near-zero emissions targets; and seek alignment of finance systems to 1.5 ˚C pathways
  - support private sector investment in new and pre-commercial technologies by ensuring enabling environments for large-scale investment exist and that the well-recognised barriers to institutional investment in zero and low emissions technologies are overcome.[54]

53 N. K. Dubash et al. (2022), *Chapter 13: National and sub-national policies and institutions* [Draft], IPCC, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter13.pdf.

54 For specific recommendations, see IGCC (2020, June), *Submission to Australia's Technology Investment Roadmap: Discussion paper*, https://igcc.org.au/wp-content/uploads/2020/06/IGCC-submission-technology-roadmap-FINAL.pdf; IGCC (2022), *Unlocking investment in the Australian hydrogen industry*, https://igcc.org.au/wp-content/uploads/2022/08/Investor-Group-on-Climate-Change-Hydrogen-Report.pdf.

Sector Pathways to 1.5 ˚C

Several research bodies and government agencies have produced analyses of least-cost pathways to 1.5 ˚C in Australia.[55] Results differ due to different assumptions about technology costs, emissions constraints and accounting assumptions around the use of land sector abatement and offsets. The figure below broadly summarises possible 1.5 ˚C-aligned benchmarks for the electricity and transport sectors. In these scenarios, building, mining, manufacturing and other industry sectors also reduce emissions significantly by 2030 through investment in energy efficiency, electrification and circular economy[56] processes. The land and agriculture sectors also see similar investments and significant investment in nature-based climate solutions.

	Current baseline[57]		1.5 ˚C target	
	Technology change (2030)		Technology change (2030)	
Electricity		Emissions reductions: ~–60–80%		Emissions reductions: ~–95%
		Renewable energy: ~70–85% of Australian generation		Renewable energy: ~80–95% of Australian generation
		10,000 km+ of new transmission and distribution infrastructure		
		Coal phase out by 2035		
		Mid-merit gas phase out by 2040		
Transport		Emissions: Peak before 2030		Emissions reductions: ~–15–25%
		50% of new vehicle sales are EV EVs comprise 15% of total fleet		76% of new vehicle sales are EV EVs comprise 28% of total fleet
				Internal combustion engines phased out by 2035

55 See, for example, C. Butler et al. (2020), *Solutions, actions and benchmarks for a net zero emissions Australia. Technical report*, Climate Works Australia, https://www.climateworkscentre.org/wp-content/uploads/2020/04/CWA-DECARBONISATION-FUTURES-2020-TECH-REPORT.pdf; U. Fuentes et al. (2020), *Scaling up Climate Action in Australia*, Climate Analytics, https://climateanalytics.org/publications/2020/scaling-up-climate-action-in-australia/; Australian Energy Market Operator (2022), *Integrated System Plan (ISP)*, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp.

56 IGCC (2022), *Regenerate and restore: A circular economy discussion paper for investors*, https://igcc.org.au/regenerate-restore-circular-economy-discussion-paper-for-investors-released-today/.

57 Current best guess (ISP) or scenarios that achieve the government's at least 43 per cent reduction by 2030 emissions target (Climate Centre 2 ˚C scenario).

Need for a Carbon Incentive in the Electricity Sector

Decarbonising the electricity sector over the next 10–15 years is central to achieving net zero emissions. As outlined above, a national emissions pathway consistent with avoiding large climate damages requires the closure of coal-fired generation by around 2035; massive renewable energy, storage and transmission investment; and the electrification of large parts of the economy.

In addition to the other policies outlined in this document, decarbonising the electricity sector will require an incentive to retire and replace the existing coal-fired generation fleet with clean energy in a just and predictable way. The Australian Energy Market Operator's (AEMO) Integrated System Plan's most likely future and least-cost scenario sees coal-fired generation exiting the system over the next 10–15 years.[58] However, closure plans currently announced by the coal-fired generation companies would see the fuel remain in the system beyond 2040.

The gap between announced closures and the AEMO's plan can be explained by AEMO applying a carbon constraint and price on the electricity sector to achieve the outcomes in its most likely and least-cost electricity market scenario. In effect, AEMO is assuming that governments impose a policy instrument on the electricity sector to ensure it meets climate goals and delivers a least-cost transition (Figure 8).

In short, applying a policy mechanism to the electricity sector to incentivise the early and managed exit of coal-fired generation and its replacement with zero emissions technologies is critical to achieving the least-cost outcome for the economy.

Several policy experts have proposed various mechanisms to address this policy gap, including expanding the current RET, strengthening the emissions baseline for the electricity under the Safeguard Mechanism, and auctions or incentives directly focused on the orderly and early closure of coal-fired plants.[59]

Regardless of the mechanism or mechanisms used to address the policy gap, from an investor's point of view, the mechanism should:

- **Deliver net benefits:** A disorderly transition in the electricity sector will increase cost to investors, communities and the overall economy. Policies must avoid excessive complexity, administrative and regulatory burdens (which increase cost) and instead promote an open, transparent and competitive electricity market solution.
- **Address impacts at a systemic level:** Design considerations must be integrated into the whole suite of current and proposed energy and climate policies.
- **Set targets and plans that are credible and science aligned:** Emission reduction targets should be in line the objectives of the Paris Agreement.
- **Provide stability:** Political consensus on climate change policies across federal, state and territory governments is central to ensure investor confidence. This extends to ensuring energy security.
- **Promoting social equity:** Achieving the objectives of policy will require just transition, equity and social licence being central to any policy and strategy.

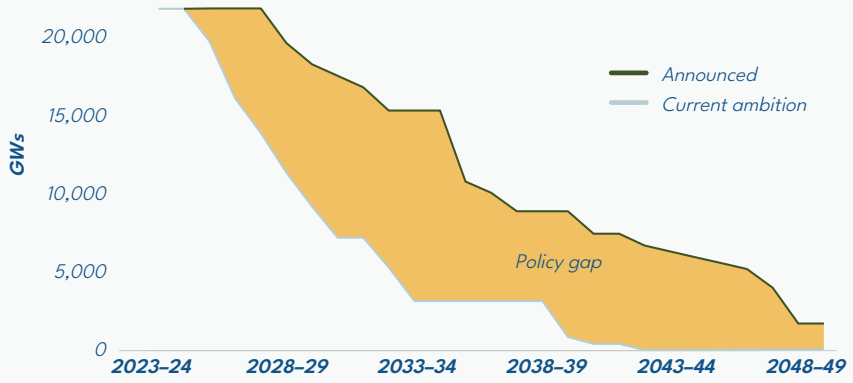


Figure 8: The gap between current policy ambition and currently planned coal-fired generation reduction.[60]

58 Australian Energy Market Operator (2022), *Integrated System Plan (ISP)*, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp.

59 See, for example, F. Jotzo & S. Mazouz (2015), Brown coal exit: A market mechanism for regulated closure of highly emissions intensive power stations, *Economic Analysis and Policy*, *48*, 71–81, https://doi.org/10.1016/j.eap.2015.11.003; T. Nelson et al. (2020), Overcoming the limitations of variable renewable production subsidies as a means of decarbonising electricity markets, *Economic Analysis and Policy*, *69*, 544–556, https://doi.org/10.1016/j.eap.2020.12.018; T. Edis & J. Bowyer (2021), *Fast erosion of coal plant profits in the National Electricity Market: Analysis of likely 2025 generation mix shows coal plant revenue reductions of 44%–67%*, Green Energy Markets and Institute for Energy Economics and Financial Analysis (IEEFA), https://ieefa.org/wp-content/uploads/2021/02/Coal-Plant-Profitability-Is-Eroding_February-2021.pdf.

60 Australian Energy Market Operator (2022), *Integrated System Plan (ISP)*, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp. The physical science of climate change can.

6. Policy Group 4: Building Australia's Resilience to the Changing Climate

The physical impacts of climate change will cost the Australian economy hundreds of billions of dollars in the coming decades, primarily driven by loss of life and physical damage from extreme weather events.[61]

Institutional investors are exposed to these impacts directly and indirectly. Direct impacts may include damage caused by more intense and more frequent extreme weather events or reduced productivity due to altered climate conditions. Indirect impacts may include disruptions to supply chains that interrupt business, more expensive or unavailable insurance and worse overall economic conditions.

For investors and governments, financing adaptation and other climate resilience is a necessity and an opportunity. Innovative financial mechanisms and public–private co-investments will be required to avoid the costs of climate change falling on vulnerable people and communities. The government also risks becoming the insurer of last resort.

This section outlines nine resilience and adaptation policy recommendations specifically designed to enable institutional investors to align with and support the objectives and priorities outlined in Australia's existing National Recovery and Resiliency Agency National Action Plan[62] and National Climate Resilience and Adaptation Strategy.[63]

Defining Resilience and Adaptation

'Resilience' and 'adaptation' have a wide range of meanings. This document uses the definitions from the National Climate Resilience and Adaptation Strategy.[64] The definition of 'transformational adaptation' is from IPCC Sixth Assessment Working Group II's Report.[65]

- **Resilience:** The capacity of communities, environments and economies to cope with a hazardous event or disturbance while maintaining their essential functions and structure.
- **Adaptation:** The process of adjusting to actual or expected changes in climate to reduce or avoid climate impacts or exploit beneficial opportunities.
- **Transformational adaptation:** Changing the fundamental attributes of a social-ecological system in anticipation of climate change and its impacts.

61 IPCC (2022), *Climate change 2022: Impacts, adaptation and vulnerability*, https://www.ipcc.ch/report/ar6/wg2/; Deloitte Access Economics (2022, January), *Economic reality check: Adapting Australia for climate-resilient growth*, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-economic-reality-check-minderoo-foundation-17012022.pdf.

62 National Recovery and Resilience Agency (2020), *Strategies and frameworks*, https://recovery.gov.au/about-us/governance-and-reporting/strategies-and-frameworks.

63 Department of Climate Change, Energy, the Environment and Water (2021), *National Climate Resilience and Adaptation Strategy*, https://www.dcceew.gov.au/climate-change/policy/adaptation/strategy.

64 Department of Climate Change, Energy, the Environment and Water (2021), *National Climate Resilience and Adaptation Strategy*, https://www.dcceew.gov.au/climate-change/policy/adaptation/strategy.

65 IPCC (2022), *Climate change 2022: Impacts, adaptation and vulnerability*, https://www.ipcc.ch/report/ar6/wg2/.

Managed Retreat: A Conversation and Plan We Need to Have

Managed retreat can be defined as 'purposeful, co-ordinated movement of people and assets out of harm's way'.[66] Historically, managed retreat has occurred reactively in Australia after extreme events, such as the 2011 Grantham floods and the 2009 Black Saturday bushfires. The New Zealand Government has made managed retreat central to its next national adaptation strategy.[67]

Managed retreat matters to investors because policies to address unadaptable climate impacts will impact on the assets they own, including infrastructure and property, and on the systems and communities that support economic development.

The IPCC found that habitability in some Australian regions is threatened with unmitigated global warming.[68] The impact of recent, compounding, repeated and extreme climate events in Australia (e.g., flooding in northern NSW) has also prompted local discussions on managed retreat.[69]

However, there are real and significant barriers to managed retreat. People have valuable connections to place and community. Managed retreat requires coordination and learning. Existing vested interests lobby against retreat, and there may be short-term political incentives and questions of who will pay. Some barriers to managed retreat are outlined in the figure below.

Recommendations ten and eleven outline the appropriate policy response.

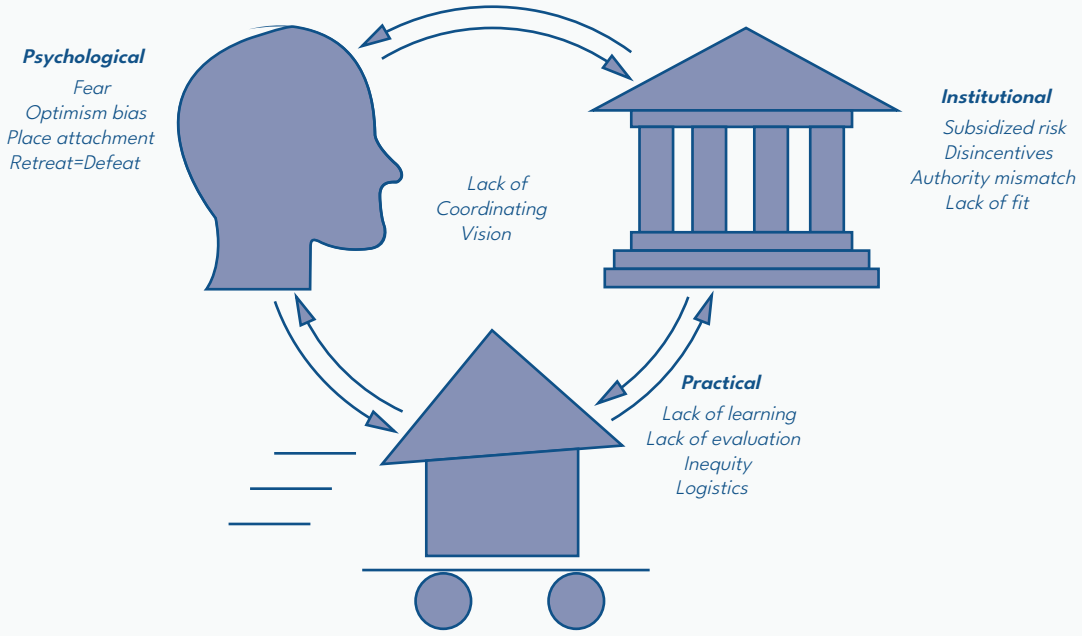


Figure 9: Barriers to managed retreat[70]

66 A. R. Siders (2019), Managed retreat in the United States, *One Earth*, *1*(2), 216–225, https://doi.org/10.1016/j.oneear.2019.09.008.

67 REF.

68 IPCC (2022), *Climate change 2022: Impacts, adaptation and vulnerability*, https://www.ipcc.ch/report/ar6/wg2/.

69 Settle (2022, 14 March), After the floods, the distressing but necessary case for managed retreat, *The Conversation*, https://theconversation.com/after-the-floods-the-distressing-but-necessary-case-for-managed-retreat-178641.

70 A. R. Siders (2019), Managed retreat in the United States, *One Earth*, *1*(2), 216–225, https://doi.org/10.1016/j.oneear.2019.09.008.

Coalition for Climate Resilient Investment

The Coalition for Climate Resilient Investment (CCRI) is an international, cross-sectoral, public–private initiative with the aim of improving understanding and pricing of physical climate risk in financial decision-making. This is supported by the development and implementation of practical tools, solutions and financial instruments, and positions physical risk as an opportunity for investors and governments.

CCRI has three key working groups: systemic resilience, asset design and structuring, and financial innovation. This multi-level approach seeks to develop methodologies that will allow consistent pricing of both the risk and opportunity (i.e., resilience) from the asset to the systems or sovereign level. These methodologies are tested within pilot projects.

The Australian Government signed on to support CCRI in 2021 to better integrate physical risk into investment decisions, signalling a commitment to improve climate resilience and build safer communities.[71] The government should continue to engage with CCRI and consider applying any metrics and methodologies developed by the coalition to their own risk assessments and investment decisions (recommendations thirteen and fifteen).

6.1 Building Better: Codes, Standards and Land Use Planning

Building codes, standards and land use planning are key mechanisms to increase the resilience of new developments. For the Australian commercial and residential property sector, updating the National Construction Code, and relevant standards (e.g., AS 3959 – Construction of buildings in bushfire-prone areas), to account for altered physical risks due to climate change would reduce economic and social impacts and the need and costs for adaptation in the future.

In addition, while land use planning occurs at the state, territory and council level, the federal government should work with lower level governments to develop a nationally consistent process to consider the impact of physical climate risk on new and existing developments. This may avoid costs associated with building adaptation and resilience in the future, including managed retreat from high-risk areas.

Recommendation Eight

The National Construction Code, and other relevant standards, should be amended to specifically include resilience to physical climate risk over the lifetime of a building.

Recommendation Nine

The Australian Government should work with state, territory and local governments and the finance industry to develop a nationally consistent process to consider physical climate risk in land use planning and make this information publicly available. Managed retreat must be central to the process and relevant adaptation and resilience policies going forward. This would include the development of the next national adaptation strategy, interjurisdictional adaptation policy forums, relevant land use planning decisions and consultation with the finance sector on the management of stranded assets.

Recommendation Ten

The Australian Government should work with state, territory and local governments to provide targeted support to people most at risk from physical climate risks (e.g. increased insurance premiums, decreased property values and managed retreat). Examples are the Victorian Government's voluntary buyback scheme after the 2009 Black Saturday bushfires and the Queensland Government's Household Resilience Program or Resilient Home Fund. The priority for any support should be to protect the most vulnerable individuals, avoiding disproportionate impacts on vulnerable people, low-income households and the organisations that support them.

71 CCRI (2021, 28 January), *Australia to join CCRI signals major commitment to improve climate resilience and build safer communities*, https://resilientinvestment.org/australia-to-join-ccri-signals-major-commitment-to-improve-climate-resilience-and-build-safer-communities/.

6.2 Government Investment in Climate Resilience

Extreme weather events have cost Australian communities an estimated $120 billion over the past 50 years, and this is expected to increase to $150 billion over the next decade and to $1 trillion by 2050 under a business-as-usual scenario.[72] At present, 97 per cent of all disaster spending in Australia occurs after the event,[73] and this reactive approach is costly, inefficient and disruptive.

However, investing in adaptation and resilience today can reduce the cost of extreme weather events in the future, improve social and ecological outcomes, and decrease the role of governments as an insurer of last resort. For example, under a business-as-usual scenario, $380 billion of the $1 trillion of economic costs by 2050 is avoidable through climate action that can be taken today.[74] Even under a low emissions scenario, the Insurance Council of Australia estimated that $2 billion of investment today could reduce costs to the Australian Government and Australian households by at least $19 billion by 2050, which is a return on investment exceeding 9.6.

Science and Data

To assess communities and infrastructure at risk of the physical impacts of climate change, investors require consistent, centralised, credible and user-ready data from the Australian Government, for a range of scenarios and consistent with global frameworks (e.g., TCFD and/or NGFS). This will allow investors to value and manage physical risks as both a risk and opportunity and feed into their mandatory disclosure requirements (see section 4.3.1). Additionally, it will support transparency and enable investors to proactively work with corporates and communities to develop sector-specific adaptation plans. This information will also support investment in adaptation and resilience where it will be most effective.

Recommendation Eleven

The Australian Government should provide consistent, accurate, comprehensive, timely and commercially available records of national physical climate risks and fund adequate science to produce this data reliably. This includes regularly publishing assessments of infrastructure, sectors and regions at risk from the physical impacts of climate change, as committed to in the last National Climate Resilience and Adaptation Strategy (see section 4.3.1).

6.3 Unlocking the Net Benefits of Resilience and Adaptation

Countries, communities and investors that invest in early and transformative climate adaptation will be more resilient and competitive in the future. As governments alone cannot afford to fund the magnitude of adaptation and resilience projects required in Australia, private–public partnerships will be essential. However, there are large barriers to private sector investment in adaptation and resilience measures, including large upfront costs, long payback times and uncertainties related to climate impacts.[75]

Neither the government or investors can address this challenge alone. Despite this, there are currently no government-led initiatives to facilitate deployment of private capital into adaptation and resilience investments.

Recommendation Twelve

The Australian Government should establish a standing advisory group with COAG members and the private sector, with a core mandate to develop and drive a range of financial products, mandates and co-investment opportunities to help co-found resilience and adaptation investment.

72 Deloitte Access Economics (2022, January), *Economic reality check: Adapting Australia for climate-resilient growth*, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-economic-reality-check-minderoo-foundation-17012022.pdf.

73 National Recovery and Resilience Agency (2021, 10 December), *97% of disaster funding is spent on recovery and just 3% is spent getting communities prepared*, https://recovery.gov.au/stories/97-disaster-funding-spent-recovery-and-just-3-spent-getting-communities-prepared.

74 Deloitte Access Economics (2022, January), *Economic reality check: Adapting Australia for climate-resilient growth*, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-dae-economic-reality-check-minderoo-foundation-17012022.pdf.

75 World Resources Institute (2015, 8 December), *Adapting from the ground up*, https://www.wri.org/research/adapting-ground.

Innovative Finance Mechanism on Resilience

The severity of economic losses from disasters can be reduced by investing in resilience. Benefits may include reduced asset damage, faster post-disaster economic recovery, increased confidence for business, and reduced social and ecological costs. These benefits, in turn, can result in realised cash savings through reductions in insurance premiums. Where insurance is not in place, public funding may allow investors to realise a financial return from resilience measures. Innovative financial mechanisms to help monetise resilience for investors may include insurance-linked loan packages, resilience impact bonds, resilience bonds and/or resilience service companies.[76]

Despite the significant potential return of resilience, with the total benefits usually outweighing costs by four to one, resilient infrastructure is underinvested in.[77] In Australia, initiatives such as the Resilience Investment Vehicle,[78] Enabling Resilience Investment[79] and Resilience Valuation Initiative[80] are exploring feasible financial mechanisms for this investment, and in many cases, policy support and/or public funding will be required (recommendations 6.4 and 6.9). Additionally, alignment with global initiatives, such as CCRI, will increase investor confidence in these mechanisms (recommendations 6.5 and 6.7).

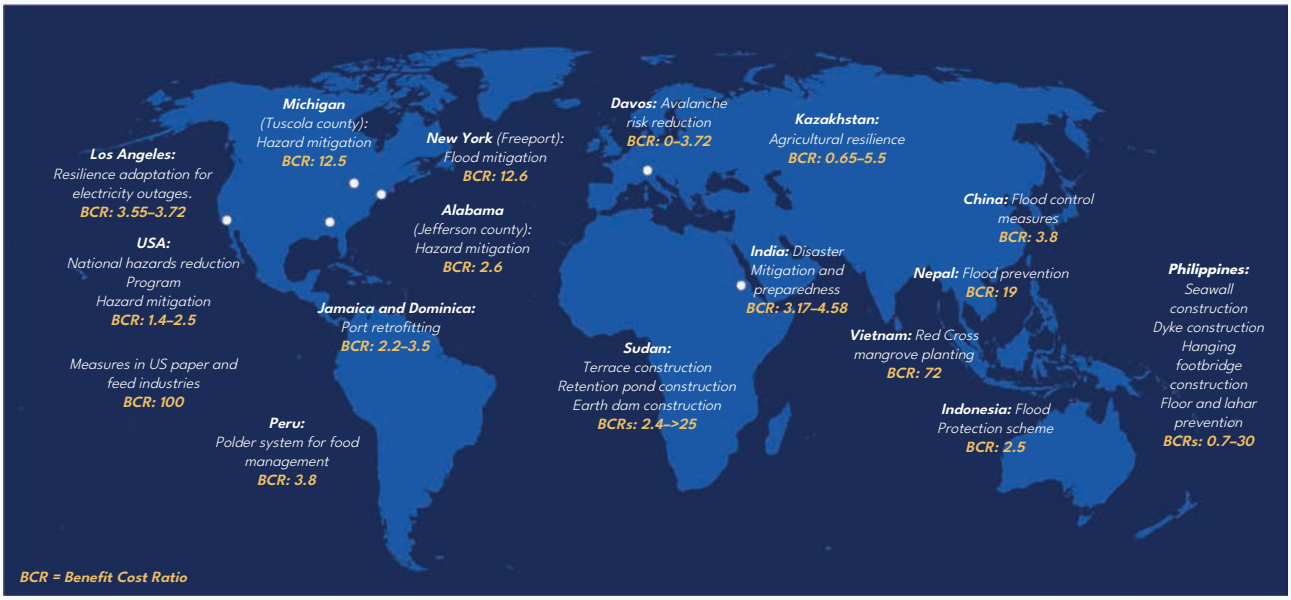


Figure 10: The benefit–cost ratio of resilience measures around the world. A ratio >1 means that the benefit is greater than the cost.[81]

76 Lloyd's (2018), *Innovation report 2018: Understanding risk. Innovative finance for resilient infrastructure*, https://assets.lloyds.com/assets/pdf-innovativefinance-final-web/1/pdf-InnovativeFinance_FINAL_web.pdf.

77 Lloyd's (2018), *Innovation report 2018: Understanding risk. Innovative finance for resilient infrastructure*, https://assets.lloyds.com/assets/pdf-innovativefinance-final-web/1/pdf-InnovativeFinance_FINAL_web.pdf.

78 CSIRO (2021), *Piloting a Resilience Investment Vehicle*, https://www.csiro.au/en/research/natural-disasters/disaster-resilience/piloting-a-resilience-investment-vehicle.

79 CSIRO (2021), *Enabling Resilience Investment approach*, https://research.csiro.au/enabling-resilience-investment/.

80 Resilience Valuation Initiative, http://resiliencevaluation.com.au/.

81 Lloyd's (2018), *Innovation report 2018: Understanding risk. Innovative finance for resilient infrastructure*, https://assets.lloyds.com/assets/pdf-innovativefinance-final-web/1/pdf-InnovativeFinance_FINAL_web.pdf.

7. Conclusions

Climate change is an everyday consideration for investors, businesses, communities and governments across Australia. It raises serious questions; how to invest in clean energy solutions to deliver long-term value to beneficiaries? How to pay for insurance and food as the climate worsens? What is the future of the coal industry? How to implement economic policy to remain competitive in a world where capital markets are backing a net zero future?

Addressing these and the many other questions climate poses will require active, focused and directed engagement across diverse and, in some cases, opposed interests. This cannot be undertaken without governments.

Investors can support national governments in achieving policy objectives and this national policy conversation. Investors are and can deploy very large amounts of capital into climate solutions across the economy, take a long-term view on economic settings and have members from every part of the community.

Investors are also acutely aware of the impacts of a disorderly transition to net zero emissions. To achieve net zero emissions, the Australian economy will undergo a once-in-a-generation transformation. Australia will build an energy system built around renewable energy, electrify everything, export clean commodities to the world and, yes, strand existing fossil fuel assets.

In the development of this document, IGCC undertook significant investor consultation. Common themes that emerged in these discussions included:

Climate change is a systematic threat and opportunity: We need an all of economy, investor, business and community response. This is hard and needs active engagement of investors early to reduce financial risks and promote investment in Australia. Addressing the physical impacts of climate change is emerging as a significant macroeconomic and community threat.

A just and equitable transition is central to all policy design: This is not wallpaper but genuine engagement and policy developed between all levels of government, communities, investors, business, unions and community organisations to find solutions.

Policy misalignment with 1.5 ˚C must be addressed: Carbon pricing and mandatory climate risk and opportunity reporting are essential enabling environments of zero carbon investment. Remove fossil fuel subsidies. Set sector goals to achieve an orderly transition and Paris Agreement–aligned industry policy. Establish a plan to ensure the just and orderly exit of coal, oil and gas from the economy.

The policies and principles in this document set out key investor policy priorities for the next term of the Australian Parliament. They are a starting point for discussion, not the end, and IGCC hopes they make a positive contribution to ongoing policy decisions.

Image on Next Page: Garaanngaddim, (Horizontal Falls), Kimberley, West Australia.

8. Summary of Recommendations

8.1 Policy Responses at a Systemic Level

Recommendation One
Australia's NDCs under the Paris Agreement should be aligned with limiting average global warming to 1.5 ˚C.

Recommendation Two
Establish a national climate change legislative framework that enshrines Australia's net zero by 2050 target, embeds a response to physical risk and ensures independent advice to the public and Parliament on key policy matters. Acknowledging that the Climate Change Bill 2022 has started this process, several additional legislative changes and instruments will need to be implemented to achieve these outcomes.

Key elements of the framework would include:

- embedding a just and equitable transition into government decision-making
- ensuring climate change opportunities, physical risks and transition risks are considered and acted upon in all government decision-making, including in agencies, in departments and at the executive level
- the Climate Change Authority providing advice and data to the public and Parliament on:
  - progress towards current emissions reductions targets
  - 1.5 ˚C and technology emissions pathways for each sector of the economy
  - policy changes that may be required to meet short- and long-term targets to support an orderly transition
  - any Australian NDC and other existing or new international commitments
- the Climate Change Authority undertaking regular reviews of the system-wide response to physical risks of climate change (including a review of government fiscal measures)
- the Climate Change Authority making recommendations on policy changes to support climate-resilient economic development
- any appointments to the Climate Change Authority board should support a balance of expertise and experience of climate-related threats and opportunities, including climate science, net zero carbon transitions across the economy, public policy, investment, technology and innovation skills, experience in dealing with strategic disruptions, and adaptation and resilience to physical risks.

Recommendation Three
Governments should establish concurrent national and regional transition authorities to support a just and orderly transition.

To maximise investment opportunities and social benefits for affected sectors and communities, the remits of these authorities should include:

- an expert national advisory body that advises the federal government on the transition
- formal engagement with key stakeholders, including the finance sector, on their roles in the just transition
- development of a just transition framework to underpin local development of regionally specific just transition plans
- alignment of the just transition framework to other policies, including those on regional development, skill development and training, and climate change.

Regional transition authorities should immediately support localised transition planning processes in key fossil fuel production regions as a matter of priority (e.g., Upper Hunter, Latrobe Valley, Bowen Basin), given their immediate exposure to transition risks.

8.2 Unlocking Financial Flows to Deliver Universal Returns

Recommendation Four
Safeguard emissions baselines for existing and new entrants should be aligned with emissions and technology pathways consistent with limiting warming to 1.5 ˚C. These emissions baselines should be set based on the sectoral goals outlined by the Climate Change Authority (recommendations two and eight).

In addition, the policy design should consider:
- maintaining direct abatement incentives across covered sectors, while at the same time recognise that different technological pathways to net zero exist in different sectors
- avoiding a disorderly transition to net zero emissions and loss of international competitiveness from failing to match more credible policy settings in other countries.

The shielding of unsustainable operations and sectors will increase the cost of achieving emissions reductions and will push effort onto other sectors of the economy. Therefore, any transitional competitiveness measures should:
- focus on those industries that have a clear future in an Australian net zero emissions economy (e.g., renewable energy, critical minerals, green steel and green hydrogen)
- not be provided to industries that will decline in a net zero economy, such as coal and LNG. Support towards these sectors should be limited to the development of near-zero emissions technologies (see recommendation eight) and collaboration to support a just transition for affected employees and communities (see recommendation three).

Recommendation Five
Phase in a mandatory climate risk disclosure regime that is both consistent with international best practice and fit for purpose for Australia. The regime should be aligned with TCFD and signal that the ISSB standards will be adopted in Australia.

The key features of the policy would include:
- Interoperability: Supporting a global approach to the development of sustainability and climate-related disclosure standards through the ISSB. The overarching goal should be a corporate reporting system that is globally consistent, comparable, reliable and verifiable. This would help provide all stakeholders with a clear and accurate picture of an organisation's ability to manage the transition and physical risks and opportunities. It is critical that the standards take a coordinated approach to avoid regulatory and standard-setting fragmentation by aligning key definitions, concepts, terminologies and metrics on disclosure requirements.
- Scope 3 emissions disclosure: It is essential that climate reporting standards cover the entire value chain, including material scope 3 emissions. The credibility of the system relies on reporting material scope 3 emissions as this is where an organisation's key market risks lie. In particular, scope 3 emissions present the largest climate risk to many investments, including those in the coal, oil and gas industry. A timebound phase-in for some entities will be important in early reporting periods to allow the market to develop robust and accurate reporting capacity.
- Application across the economy: Mandatory disclosure requirements should apply to entities operating across the economy. Given this scale, they could be introduced via a phased approach by 2025 and include:
  - ASX 300-listed companies
  - large financial institutions (banking, superannuation, asset management and insurance) with either annual consolidated revenue of at least $100 million or total assets under management of at least $5 billion
  - large, unlisted, non-financial companies (including government-owned companies and financial institutions) with annual consolidated revenue of at least $100 million.
- Support from government: Aligning the work of the Council of Financial Regulators and other agencies and initiatives to work with the market to deliver standards, auditable data and scenarios (including at a sector level) for the disclosure of climate-related physical and transition risks.
- Increasing baselines for disclosure: Increasing the minimum expectation for climate-related reporting over time, through phased compliance periods, step-by-step approaches to increase the quality of disclosures and establishing review processes to consider necessary improvements in disclosure.
- Corporate transition plans: Implementing a minimum standard for climate transition plans approved by the board of directors, to be applied to the economy's highest-emitting companies. Corporate climate transition plans help enable investors to differentiate between companies that are operating 'business as usual' or 'greenwashing', and those that are on a long-term credible transition pathway. Transition plans also support investors' ongoing stewardship and engagement with Australian companies. Companies will need to provide investors with credible transition plans if they wish to retain and attract quality, long-term capital. Reporting of transition plans would be consistent with the ISSB standards.

Recommendation Six
Commit to phasing out all fossil fuel subsidies by 2025, with a process established in consultation with investors, business and the broader community.

In addition, federal, state and territory governments should:
- set phase-out dates for programs and policies that enable any ongoing expansion, extraction or use of fossil fuels
- review industry support programs and, where necessary, redesign them to avoid transition risks
- increase transparency and accountability about national and state/territory fossil fuel subsidies (Treasury should publish an annual review of all federal-, state- and territory-based explicit, implicit, production and consumption-based fossil fuel subsidies).

8.3 Unlocking Sectoral Investment in Net Zero

Recommendation Seven

Based on advice from the Climate Change Authority, establish clear 2030, 2035 and 2040 policy goal posts for all sectors:

- Establishing sector targets to guide policy development will inform investor expectations on future policy. It will also establish performance benchmarks for future policy review and development. Sector targets contribute to a clear framework for investors and the companies they own, guiding business strategy, targets and metrics and allocation of capital towards new technology and/or other expenditure.
- Enact sector-specific regulatory measures, targets and investment programs to support a just and orderly transition to net zero emissions. Specifically, COAG's national energy transition plan should:
  - implement a sector-wide policy to place an emissions reduction incentive across the electricity market that ensures the orderly and timely closure and replacement of coal-fired generation
  - implement targeted policies to build domestic demand and consumption of low emissions products such as green hydrogen
  - maximise the efficiency of infrastructure assets and support coordination and asset sharing arrangements that enable an energy transition (e.g., transmission and distribution, electric vehicle infrastructure, minerals production, processing and manufacturing of inputs, and hydrogen ports, conversion facilities and pipelines)
  - ensure just transition considerations and robust environmental regulation are central to the policymaking (given the scale of new infrastructure required and potential for social and environmental disruption)
  - build global demand for net zero emissions technologies, products and services. To build demand, governments can use procurement and building relationships with target markets to set global standards for near-zero emissions technologies, including hydrogen and vehicles; set near-zero emissions targets; and seek alignment of finance systems to 1.5˚C pathways
  - support private sector investment in new and pre-commercial technologies by ensuring enabling environments for large-scale investment exist and that the well-recognised barriers to institutional investment in zero and low emissions technologies are overcome.

8.4 Building Australia's Resilience to the Changing Climate

Recommendation Eight

The National Construction Code, and other relevant standards, should be amended to specifically include resilience to physical climate risk over the lifetime of a building.

Recommendation Nine

The Australian Government should work with state, territory and local governments and the finance industry to develop a nationally consistent process to consider physical climate risk in land use planning and make this information publicly available. Managed retreat must be central to the process and relevant adaptation and resilience policies going forward. This would include the development of the next national adaptation strategy, interjurisdictional adaptation policy forums, relevant land use planning decisions and consultation with the finance sector on the management of stranded assets.

Recommendation Ten

The Australian Government should work with state, territory and local governments to provide targeted support to people most at risk from physical climate risks (e.g. increased insurance premiums, decreased property values and managed retreat). Examples are the Victorian Government's voluntary buyback scheme after the 2009 Black Saturday bushfires and the Queensland Government's Household Resilience Program or Resilient Home Fund. The priority for any support should be to protect the most vulnerable individuals, avoiding disproportionate impacts on vulnerable people, low-income households and the organisations that support them.

Recommendation Eleven

The Australian Government should provide consistent, accurate, comprehensive, timely and commercially available records of national physical climate risks and fund adequate science to produce this data reliably. This includes regularly publishing assessments of infrastructure, sectors and regions at risk from the physical impacts of climate change, as committed to in the last National Climate Resilience and Adaptation Strategy (see section 4.3.1).

Recommendation Twelve

The Australian Government should establish a standing advisory group with COAG members and the private sector, with a core mandate to develop and drive a range of financial products, mandates and co-investment opportunities to help co-found resilience and adaptation investment.

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