Investor Group on Climate Change (IGCC)

Submission to:

Royal Commission into National Natural Disaster Arrangements

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ABOUT US

The Investor Group on Climate Change (IGCC) is a collaboration of Australian and New Zealand investors focused on the impact that climate change has on the financial value of investments. The IGCC represents institutional investors with total funds under management of over $2 trillion, and others in the investment community interested in the impact of climate change. IGCC members cover over 7.5 million people in Australia and New Zealand.

Summary

The Investor Group on Climate Change (IGCC) welcomes the opportunity to make a submission to the *Royal Commission into National Natural Disaster Arrangements*. Institutional investors play a critical role in the long-term health of the economy and in the financial wellbeing of millions of Australians. Globally, investors have trillions of dollars of capital to deploy towards climate change solutions if the policy settings to support this investment are right. This private capital will be critical to climate change resilience measures as governments are likely to be fiscally constrained for some time due to the impacts of the COVID-19 pandemic.

Institutional investors also have systemic exposure to climate change risks. Climate change and its impacts on bushfires can directly impact the finance system through the consequences of extreme weather on property, infrastructure, agricultural production and other climate dependent industries. It will also have indirect impacts on sovereign credits risks, supply chains, the property market, insurance pricing or wider economic conditions.

Investment in building resilience is far more cost effective than funding disaster recovery. The longer Australia waits to implement effective adaptation planning and infrastructure solutions to emerging climate change impacts the more expensive it will become to adapt. These impacts will be significantly magnified and irreversible if governments fail to implement policies to achieve the objectives of the Paris Agreement - limiting global warming to 1.5^{o}C to well below 2^{o}C. If governments choose to not address emissions, the viability of adaptation and resilience measures will increasingly become untenable as climate impacts increase and the limits of adaptation are breached.

Sophisticated investment tools are rapidly emerging to strengthen the resilience of infrastructure, the economy and our communities to the physical effects of climate change. However, the legal or regulatory requirements for private sector actors to actively address the physical risks arising from increased climate change are limited or weak. The majority of private sector activity to actively identify and respond to emerging physical risks for critical infrastructure, or across the wider community, is largely emerging on a voluntary basis, or in response to signals emerging from the legal interpretation of directors' duties or fiduciary obligations. Policy signals are muted and data availability is poor or inconsistent across regions or asset classes and fails to drive standardised vulnerability assessments. In addition, investment in resilience is constrained by what is often referred to as 'adaptation arbitrage' as private sector players choose the adaptive pathway of least cost.

There are a number of clear and actionable policy solutions governments can assist with to overcome these barriers and unlock private sector capital investment into adaptation and resilience measures:

Climate Change information and data sharing

- **Provision of consistent data and information sharing:** There is currently a proliferation of data, portals and proprietary tools to assess climate change risk. Governments should serve a role in the provision of this core information and provide greater funding to the science that underpins it.

- **Establish a National Climate Services Capability**: IGCC would support the establishment, by government, of a National Climate Services Capability for Australia, in coordination with the private sector, to support both market needs and national disaster risk planning. This body should include coordination between the Bureau of Meteorology, CSIRO, academia and private and public sector users for the provision of climate data and authoritative knowledge sharing.

- **Implementation of mandatory reporting of climate-related financial disclosures:** While existing emissions and financial reporting frameworks, such as the G20's Task Force on Climate-related Financial Disclosures (TCFD), have proven to be useful building blocks in climate-risk disclosure, they no longer comprehensively serve the needs of investors who are seeking to understand and price the financial implications and effective management of systemic climate risks. There is an important role for financial and corporate regulators, and the government, to provide guidance on appropriate standards to support the TCFD in the Australian context. Without other layers of guidance, it is likely that companies will continue to underreport climate-related risks such as asset impairments due to the physical impacts of climate change.

- **Climate risk assessment standards:** The Climate Measurement Standards Initiative (CMSI) is an industry-led initiative that will deliver a set of open source standards for the disclosure of climate-related physical risks by companies with financial interests in physical assets. IGCC would welcome government support of the private sector led CMSI standard development.

Unlocking private sector investment

- **Understanding vulnerability and the adaptation investment pipeline:** Australia is far from understanding its systemic vulnerability to climate change, determining adaptation pathways and timing of adaptation actions required and the level of investment needed. Much of this investment will need to be financed by private capital. IGCC believes that a crucial first step requires an up-to-date national assessment of infrastructure at risk to the effects of climate change and an indicative quantification of the investment required into adaptation, to facilitate private sector capital flows.

- **Valuing resilience:** Currently, the risks of physical climate impacts are not properly priced into asset valuing considerations or initial investment decisions. Properly pricing climate risk in financial decision-making will align investment flows towards infrastructure capable of withstanding a changing climate and drive a shift toward a more climate resilient economy. IGCC would welcome involvement of the Australian Government in international collaborations, such as the *Coalition for Climate Resilient Investment*, in understanding the financial value of resilience and developing resilience solutions for Australia and the region.

- **Developing financing solutions for adaptation**: The Clean Energy Finance Corporation (CEFC) has been a significant investor in emissions reduction projects across Australia. Drawing on this experience of mitigation finance, public-private investment could be facilitated by extending the mandate of the CEFC to include adaptation and resilience projects. Conversely, a separate arm of the CEFC, or similar such body, could be developed with the specific aim of applying pooled approaches to aggregate smaller scale adaptation projects, in order to deliver sufficient scale to attract private sector co-investment.

  Other financing models that could be drawn on for aggregation of adaptation projects and to facilitate the most efficient deployment of capital could include Resilience Bonds, the adoption of Social Impact Investment frameworks; or the development of a co-investment resilient fund or facility for upgrading critical infrastructure. Solutions may also include the development of a State Government resilience bond or fund for community level resilience.

- **Clearer and better coordinated approach to cross-government ownership of adaptation funding and implementation:** Lack of clarity with respect to responsibility for adaptation implementation or funding is not conducive for private sector involvement. One solution may be the establishment of a reference/advisory group with representatives from all three levels of government and the investment/finance community to drive investment in adaptation outcomes.

Standards to build resilience

- **Revision to National Construction Code:** The National Construction Code serves as the nation's compulsory minimum standard for the safety and health; amenity, accessibility, and sustainability in the design, construction, performance and liveability of new buildings. Updating the National Construction Code to account for a changing climate is therefore key to ensuring the resilience of Australia's commercial and residential property sector.

IGCC would be happy to engage further on the issues set out in this submission.

Introduction

The Investor Group on Climate Change (IGCC) welcomes the opportunity to make a submission to the *Royal Commission into National Natural Disaster Arrangements*. Institutional investors play a critical role in the long-term health of the economy and in the financial wellbeing of millions of Australians. Globally, investors have trillions of dollars of capital to deploy towards climate change solutions if policy settings support this investment. This private capital will be critical to the necessary climate change resilience measures, particularly as governments are likely to be fiscally constrained for some time due to the impacts of the COVID-19 pandemic.

Institutional investors also have systemic exposure to climate change risks. These risks have been acknowledged by financial regulators globally,[1] and climate change has been characterised in Australia as 'material, foreseeable and actionable',[2] requiring robust governance and risk management approaches from institutional investors.

In 2017[3] and 2018,[4] IGCC published research and analysis on the challenges and barriers to institutional investment to build resilience to the impacts of climate change. This submission builds on this analysis and offers practical measures governments can implement to build a more prosperous and resilient economy in response to escalating climate change and more dangerous bushfires.

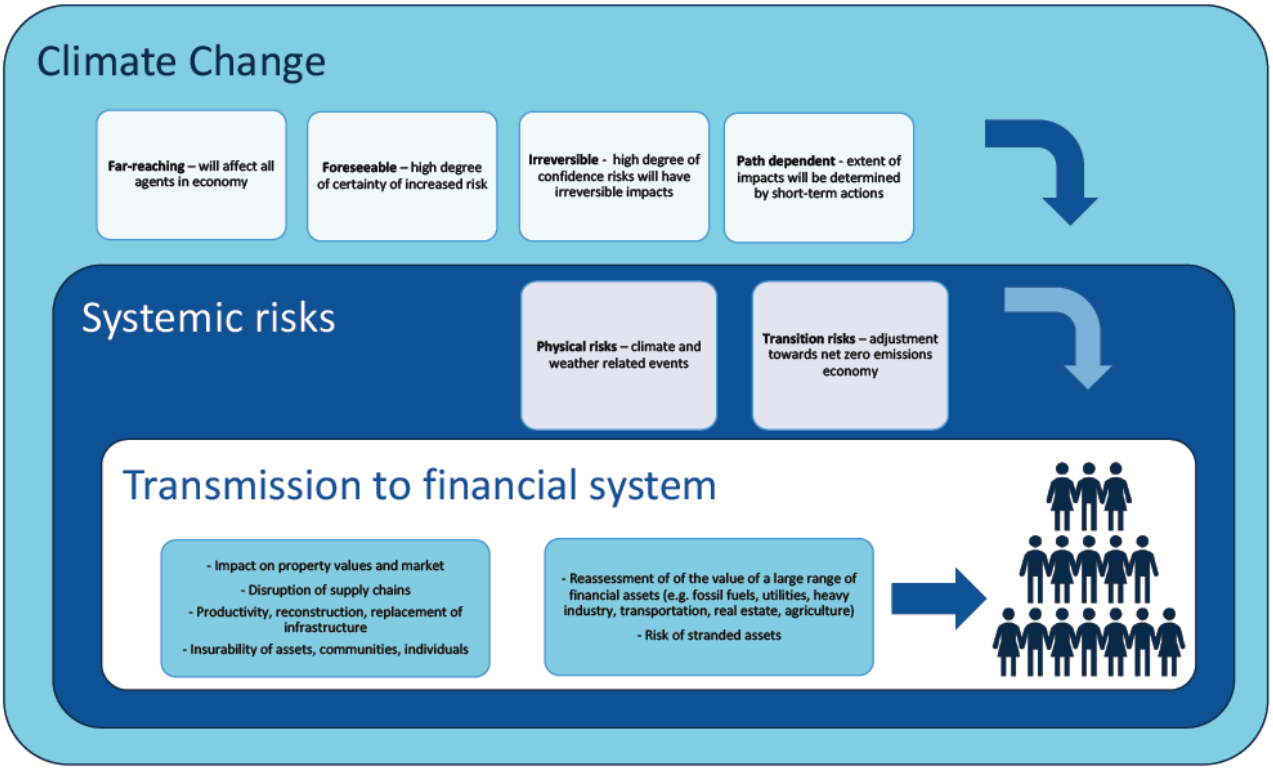
This submission focuses specifically on a central point of inquiry for the Royal Commission:

> *Australia's arrangements for improving resilience and adapting to changing climatic conditions, what actions should be taken to mitigate the impacts of natural disasters, and whether accountability for natural disaster risk management, preparedness, resilience and recovery should be enhanced, including through a nationally consistent accountability and reporting framework and national standards;*

Physical risks of climate change: An investor perspective

Climate change is recognised as a systemic threat to the financial system, requiring thoughtful and prudent management (Figure 1). The economic impacts of climate change are material to the investment returns of long-term asset owners and their beneficiaries. As such, institutional investors must consider climate risks as part of their fiduciary duty to their members.

Figure 1: Climate change and macroeconomic and financial stability. *Developed from Central Banks and Supervisors, Network for Greening the Financial System (2019)*[5]



Australia is one of the most vulnerable developed countries in the world to the physical impacts of climate change and increasingly frequent and severe bushfires is one pathway in which climate change will impact on institutional investors (e.g. through impacts on supply chains and infrastructure) and the broader financial system (e.g. availability and affordability of insurance, broader macro economic impacts).

Climate change and its impacts on bushfires can directly impact the finance system through the consequences of extreme weather on property, infrastructure, agriculture production and other climate dependent industries. It will also have indirect impacts on sovereign credit risk, supply chains, the property market, insurance pricing or wider economic conditions. Table 1 provides an example of climate change related issues for infrastructure investments.

Table 1: Climate change and infrastructure. *The long-term nature of infrastructure assets requires that investors understand the risk and opportunities arising from the impacts of climate change. Source: Based on QIC, 2020*[6]

Issue	Potential impact
Damage to physical assets	• Increased capital costs to rectify damage • Potential loss of revenue if services disrupted
Increased adaptation costs	• Increased capital costs to implement adaptation strategies • Increased operational and maintenance cost • Incorporate assessment of climate risks into maintenance cycles • New facilities incorporate climate resilience in design
Operational disruption	• Adverse revenue impacts from weather disruption • Additional operations and maintenance costs • Higher insurance costs • Infrastructure interdependencies
Employee safety	• Extreme weather can increase risk to workers e.g. extreme heat days can result in risk of heat stress for workers which could increase the risk of injuries on site and in turn lower productivity
Increased weather volatility	• For example, changes in temperatures may reduce agricultural production in any given area and consequently reduce demands on related infrastructure such as ports and rail `
Reputational risk	• Failure to provide services or restore services in a timely manner can materially impact the businesses reputation and social license to operate. In addition, there is a risk of fines being levied, operating licenses lost or increased regulatory oversight
Regulatory change / Policy uncertainty	• Increased regulatory focus on resilience in infrastructure could cause exposure to increased capital expenditure to implement adaptation strategies
Macroeconomic risks	• Disruptions in global supply chains • International conflict from resource scarcity • Threats to global finance system stability and resilience • Vulnerability of property market to stranded assets and uninsurable asset loss • Sovereign credit risks

Critical issues to consider include:

- **The interrelationship between direct impacts and indirect impacts is crucial.** For example, investments in property and infrastructure can be directly impacted by extreme weather events. However, potentially more important are the impacts on supporting infrastructure like electricity supply, telecommunications and water supply. This critical infrastructure is likely to sit outside the control of a facilities' asset owner but disruptions to these services and other supply chains can have material impacts on the effects on the valuation and return on assets, even after repairs have been taken on the investment itself.

- **The impacts of climate change on bushfire activity can not be viewed in isolation to other emerging climate change impacts** such as the drying of key agriculture regions, more extreme flooding in some regions and increased frequency and severity of heat waves. The increased frequency and severity of extreme weather in Australia will lead to compounding impacts on regions, communities and investments.

- **The combined impacts of climate change are likely to see investments stranded by climate change risks or direct impacts.** For example, the combined impacts of climate change are likely to make agricultural production in some regions become untenable. This could see infrastructure assets becoming economically unviable as revenues decline and communities are not available to support them. Note this is not just an issue for institutional investors. Banks are starting to assess the impacts of climate change on their agri-business loans.[7] Without effective mitigation and adaptation efforts the ability of communities and businesses in vulnerable regions to acquire affordable debt will be constrained, further exacerbating community decline and migration away from vulnerable regions.

- **Global credit rating agencies are factoring climate risks into their research and analysis** and have signalled that they anticipate embedding physical and transition risks arising from climate change into their sovereign risk assessment and credits risk ratings in the near term. This would likely have implications for an economy such as Australia because it is highly vulnerable to climate change impacts and the economy is relatively emissions intensive exposing it to global and domestic actions to reduce emissions.

  In January 2020, Moody's Investors Service published research and analysis noting that while currently State and Federal governments have the capacity to absorb the near-term credit impact from the ongoing bushfires:

  > *"…over time, increasingly frequent and severe natural disasters related to climate change are likely to result in rising and recurring costs that will test the government's capacity to mitigate these costs … the more material costs for the general government will be related to recurring financial support to the states as climate change leads to more frequent and severe natural disasters. Moody's currently expects the government will be able to offset these*

recurring costs through higher revenue or other spending costs, although the rate and magnitude of such costs will become clearer over time and may lead the rating agency to revise its assessment".[8]

- **Building resilience is far more cost effective than investing in disaster recovery.** Federal and state governments currently spend an average of $2.75 billion per year on direct recovery from disasters, comparative to funding for natural disaster resilience of approximately $100 million per year. The total economic cost of natural disasters is expected to rise to $39.3 billion by 2050, even without consideration of the effects of climate change.[9] Prudent public and private sector spending in adaptation measures could significantly reduce the cost of government spending and reduce the risk to communities. Though the longer Australia waits to implement effective adaptation planning and infrastructure solutions the more expensive it will become to adapt.

- **Emissions reductions and resilience measures must work hand in hand.** The argument that establishing a choice between investing in reducing climate change through emissions reductions and investing in building resilience to climate change impacts is a false one. Scientists have known for 30 years that climate change in response to increased greenhouse gas concentrations is "certain".[10] The lack of a global response to significantly limit climate change over this period means that the warming that is locked into the climate system is worse than it needed to be. As a result, both investment in reducing emissions to net zero and much greater investment in climate change resilience is needed to limit the systemic impacts of climate change on communities and economies.

  If governments choose to not address emissions, the viability of adaptation and resilience measures will increasingly become untenable as climate impacts increase and the limits of adaptation are breached. Investors are already making decisions in infrastructure assets on the basis of climate risk assessments. The less action we take to reduce emissions the more likely it becomes that investors will withdraw capital from infrastructure, regions and economies vulnerable to the impacts of climate change. Australia and our region is highly vulnerable to climate change impacts and highly dependent on foreign capital to support economic prosperity. This creates a perfect storm of potential government and market failure, which the nation should avoid.

Barriers to institutional investment in climate resilience

Sophisticated investment tools are rapidly emerging to strengthen the resilience of infrastructure, the economy and our communities to the physical effects of climate change.[11] However, there are a number of practical barriers to investing in and supporting climate change adaptation and resilience measures.

Governments have a clear role in helping overcome these barriers to build more resilient communities and economies. Investors identified the following gaps as major barriers to investment, including:

1. **Lack of transparent investable information and data on climate risks:** The level of investment needed to respond to climate change in Australia has not been calculated. In other words, we do not know how much investment is needed, how much has already been invested, or when the investment is needed. Currently, there is a lack of funding for basic climate science, no up-to-date national assessment of infrastructure, sectors and regions at risk to the effects of climate change, no indicative quantification of the investment required for adaptation, and no guidance from corporate or financial regulators on appropriate climate change risks disclosure in financial statements.

2. **A clearly defined project scope where the resilience component is made explicit:** The project details and the financing needs of climate change resilience projects are generally not clearly articulated. Project proponents (whether representing the private sector, local and state governments or regional partnerships) need to make adaptation needs and specific activities more transparent to potential funders.

3. **A credible project proponent or counterparty:** Adaptation projects generally occur at the regional or local government level but very few local government representatives understand investment requirements or have experience dealing with the finance or investment sectors. Overcoming governance and project finance skills gaps at the local government level is likely to be a significant barrier and needs attention.

4. **A revenue stream and commercial investment return:** Finding a revenue stream and commercial level of return is an absolute prerequisite for any type of private investment, including resilience projects. For a large number of these projects (for example sea walls protecting coastlines or future proofing communities to increased fire risk) it can be difficult to find a revenue stream or provide a commercial level of return. For institutional investors, projects that cannot clearly guarantee a commercial return will not be attractive investments.

5. **Adequate project scale:** Investment for resilience can only be leveraged if the project or initiative is of sufficient scale. Investors undertake due diligence assessment over

all prospective investments which is a costly exercise. At the moment several large adaptation projects would need to be aggregated or pooled to make investment worthwhile.

6. **An accepted framework for allocating financial benefit (value add)**: Often the adaptation benefit or value add (resilience) of the adaptation project is difficult to quantify in financial terms. There is no accepted measurement framework used to price or put an asset value on the project or adaptation feature. Without an accepted methodology, it will remain difficult to attract private investment finance.

7. **Effective coordination across different levels of government:** Well-coordinated action across different tiers of government could help overcome many capacity barriers. This lack of coordination and inconsistency of approach signals uncertainty that will not help assure private investors about the investment potential of resilience projects.

Actionable policy solutions to unlock private capital

Currently, the legal or regulatory requirements for private sector actors to actively address the physical risks arising from increased climate change are limited or weak. The majority of private sector activity to actively identify and respond to emerging physical risks for critical infrastructure, or across the wider community, is largely emerging on a voluntary basis, or in response to signals emerging from the legal interpretation of directors' duties or fiduciary obligations. Policy signals are muted, data availability is poor or inconsistent across regions or asset classes and fails to drive standardised vulnerability assessments, while investment in resilience is constrained by what is often referred to as 'adaptation arbitrage' as private sector players choose the adaptive pathway of least cost (if at all).

There are a number of clear and actionable policy solutions for governments to assist with unlocking private sector capital into adaptation and resilience measures and which would strengthen Australia's preparedness and responsiveness to escalating climate risks.

These fall into three overarching areas for consideration.

Climate Change information and data sharing

Provision of consistent data and information sharing: There is currently a proliferation of data, portals and proprietary tools to assess climate change risk. However, the provision of consistent, comparable, intelligible and user-ready data and information, to both assess climate change risk in detail and further to identify adaptation solutions, is lacking. Governments should serve a role in the provision of this core information and provide greater funding to the science that underpins it.

Coordination with climate agencies, academia and private sector through a National Climate Services Capability: IGCC would support the establishment, by government, of a

National Climate Services Capability for Australia, in coordination with the private sector, to support both market needs and national disaster risk planning. This body should include coordination between the Bureau of Meteorology, CSIRO, academia and private and public sector users, for the provision of climate data and authoritative knowledge sharing.

Implementation of mandatory reporting of climate-related financial disclosures: Investors preside over financial risk for the long term and need to be managing climate-related transition, physical and litigation risks as part of their fiduciary duties. Financial regulators also need to have good visibility of the system-wide implications of decarbonisation and climate change itself. The community is increasingly engaging with superannuation funds to better understand the carbon footprint of and climate change risk in their retirement savings. Effective carbon risk disclosure integrated into routine financial reporting is the foundation of good risk management for all of these constituencies.

While existing voluntary emissions and financial reporting frameworks, such as the G20's Task Force on Climate-related Financial Disclosures (TCFD),[12] have proven to be useful building blocks in carbon disclosure, they no longer comprehensively serve the needs of investors who are seeking to understand and price the financial implications and effective management of systemic climate risks.[13]

Investors are increasingly calling for greater take up of TCFD recommendations. At the same time, government policy coordination is critical to improving the quality of disclosures to ensure that material and investable information is delivered transparently to market.

A guiding principle and objective of climate-related disclosures should be to mainstream climate action into the lifeblood of the financial system. All sectors of the economy will be impacted by climate change risks. This extends beyond the impact of climate change on a particular asset, to how climate change will impact supply chains, sectors, international trade and the overall economy. For investors, managing these risks requires at least the same levels of governance, oversight and active management as any other dimension of material financial performance.

Mainstreaming the assessment of climate-related risks into existing financial and corporate reporting requirements is appropriate given:

- The systemic materiality of the risk and the potential materiality of specific types of risk to specific organisations;
- The need to ensure the appropriate governance of climate risk;
- The need to make managing climate risks core to the functioning of the financial system, and,
  critically, to ensure financial regulators and supervisors are empowered to take responsibility for oversight of climate-related disclosures as part of their role in supporting financial stability.

IGCC is currently working with its members to define clear investor expectations around decision useful TCFD reporting. There will also be an important role for financial and corporate regulators, and the government, to provide guidance on appropriate standards to support the TCFD in the Australian context, for example, development of standardised scenarios to stress test financial portfolios against the transition and physical impacts of climate change. Global scenarios are under development by the central banks internationally[14] and the Australian Prudential Regulation Authority (APRA) has signaled it will localise these scenarios for testing the resilience of Australian financial institutions.[15] Without other layers of guidance, it is likely that companies will continue to underreport climate-related risks e.g. asset impairments due to strong climate policy responses or the physical impacts of climate change.

Climate risk assessment standards: The Climate Measurement Standards Initiative (CMSI), which IGCC participates in, is an industry-led collaboration between insurers, banks, scientists, regulators, reporting standard professionals, service providers and supporting parties to develop open-source technical business and scientific standards for climate physical risk projections of future repair and replacement costs of residential and commercial buildings and infrastructure in Australia.

The outputs of the Initiative will be a set of open source standards for the disclosure of climate-related physical risks by companies with financial interests in physical assets, including residential and commercial buildings or other infrastructure in Australia. These include banks, insurers, and asset owners such as superannuation funds.

Having standardised data and assumption inputs into climate risk assessments and scenarios will:

- Enable a consistent approach to disclosure under the TCFD, so that disclosure by each company adopting the standard is comparable;
- Increase confidence in disclosures by users, as the standards will be supported by scientific advice from Australia's leading climate experts; and
- Provide a potential framework for regulators to adopt under mandatory climate-related financial disclosures.

IGCC would welcome government support of the private sector led CMSI standard development. As outlined above, IGCC also calls for further guidance from corporate and financial regulators on what should be included in physical climate risk disclosures.

Unlocking private sector investment

Understanding vulnerability and the adaptation investment pipeline: Resilience must be an important consideration by all levels of government, and for business, industry, and the community. Whilst adaptation planning in Australia is underway in specific instances, there remains a long way to go in understanding systemic vulnerability, determining the pathway and timing of adaptation actions required and the level of investment needed, much of which will need to be financed by private capital.

IGCC believes that a crucial first step requires an up-to-date national assessment of infrastructure at risk to the effects of climate change and an indicative quantification of the investment required into adaptation, to facilitate private sector capital flows.

Key to this is the effective implementation of a National Adaptation Action Plan, underpinned by Australian scientific research which delivers a roadmap for managing the costs and impacts of climate change for investors and the community.

Valuing resilience: Currently the risks of physical climate impacts are not properly priced into asset valuing considerations or initial investment decisions. Properly pricing climate risk in financial decision-making will align investment flows towards infrastructure capable of withstanding a changing climate and drive a shift toward a more climate resilient economy.

IGCC has been working with the *Coalition for Climate Resilient Investment*, led by a selection of global governments, the Global Commission on Adaptation, the World Economic Forum and a collection of private financial sector institutions to mobilise the global private financial industry to produce, validate and pilot practical solutions for the efficient pricing of physical climate risks in investment decision-making. These are aimed to be actionable solutions for use by global investors and other public and private decision makers, to incentivise adaptation in developed, emerging and developing economies alike.

IGCC would welcome involvement of the Australian Government in international collaborations, such as the *Coalition for Climate Resilient Investment*, in understanding the value of resilience and developing resilience solutions for Australia and the region.

Developing financing solutions for adaptation: The Clean Energy Finance Corporation (CEFC) has been a significant investor in emissions reduction projects across Australia. Drawing on this experience of mitigation finance, several barriers to financing adaptation in Australia, such as insufficient project scale, lack of credible counter-parties and deriving a commercial investment return, could be overcome by extending the CEFC mandate to include adaptation and resilience projects.

Conversely, a separate arm of the CEFC, or similar such body, could be developed with the specific aim of applying pooled approaches to aggregate smaller scale adaptation projects, in order to deliver sufficient scale to attract private sector co-investment. IGCC would also encourage increasing government funding to the CEFC or similar such body, for co-investment with the private sector.

Other financing models that could be drawn on for aggregation of adaptation projects and to facilitate the most efficient deployment of capital could include Resilience Bonds or an adaption of Social Impact Investment frameworks, or the development of a co-investment resilient fund or facility for upgrading critical infrastructure. Solutions may include the development of a state government resilience bond or fund for community level resilience.

Clearer and better coordinated approach to cross-government ownership of adaptation funding and implementation: Lack of clarity with respect to responsibility for adaptation implementation or funding is not conducive for private sector involvement. One solution may be the establishment of a reference/advisory group with representatives from all three levels of government and the investment/finance community to drive investment in adaptation outcomes. This model has been effectively demonstrated previously by the Reef Trust's Partnerships for the Reef program, which seeks to engage a wide range of stakeholders including financial institutions and the philanthropic sector to work together in developing joint ventures to protect the Great Barrier Reef.

Standards to build resilience

Revision to National Construction Code: The National Construction Code serves as the nation's compulsory minimum standard for the safety and health, amenity, accessibility and sustainability in the design, construction, performance and liveability of new buildings. While many leading Australian property developers are ahead of the curve, working towards zero-carbon targets and ensuring projects include high-performance, highly energy-efficient buildings, with top green star ratings, more action is needed via legislation and enforced compliance to lift the overall efficiency and performance, particularly of residential buildings, and to ensure that accurate climate change projections are included in the underlying design data.

Updating the National Construction Code to account for a changing climate is therefore key to ensuring the resilience of Australia's commercial and residential property sector. This will have resulting effects on the safety, comfort, work and liveability of the Australian community, as well as the economic effect of reduced energy costs for commercial and residential owners and tenants from better climate-proofed buildings, based on accurate climate risk information. Greater resilience could be achieved across communities with the further provision of an adaptation bond, to lift existing houses up to the new standard.

Conclusion

Investment in building resilience is far more cost effective than funding disaster recovery. Failure to plan effectively for a climate change future today will increase economic risks, costs and impacts across the community. These are already being felt and will continue to ratchet up over time, unless we take active steps to mitigate these risks by investing in the transition to a net zero emissions economy in line with the objectives of the Paris Agreement. As Australia's financial regulators have already identified, institutional investors and the finance sector as a whole also have systemic exposure to climate change risks.

An effective national response should incorporate harmonised approaches to exposure and vulnerability assessment, standards and planning, data and disclosure, finance and investment.

Sophisticated private sector frameworks and investment tools for increasing the resilience of infrastructure and communities have emerged in recent years.

However, current approaches to climate risk and resilience are piecemeal, uncoordinated and highly dependent on private sector players voluntarily embedding climate change risk assessment into their policies and practices. A number of practical barriers to scaling up investment in climate change adaptation and resilience remain.

IGCC has identified a number of policy solutions which would effectively unlock investment in resilience and strengthen Australia's response to natural disasters. Many of these build on private sector activity underway, scientific data sets or systems and capabilities that Australia already has in place in some form or which are under development. At the heart of these solutions is the need to better understand Australia's systemic vulnerability to climate change, the adaptive pathways available, timing of adaptation actions and the level of investment required through a national assessment of infrastructure at risk.

The global financial system is increasingly recognising climate change, and the implications for infrastructure and communities, as core business and a financial and economic risk. As a trade-exposed, carbon-intensive economy, highly vulnerable to the physical effects of climate change, Australia must take steps to strengthen our climate change response in the face of warming temperatures and the associated impacts for our communities.

If governments choose to not reduce emissions in line with the goals of the Paris Agreement, the viability of resilience measures will increasingly become unaffordable as climate impacts increase and the limits of adaptation are breached. Investors are already making decisions in infrastructure assets on the basis of climate risk assessments. The less action we take to reduce emissions the more likely it becomes that investors will withdraw capital from infrastructure, regions and economies vulnerable to the impacts of climate change.

Australia and our region is highly vulnerable to climate change impacts. Investing in mitigation, adaptation and resilience is clearly of significant economic benefit to the Australian economy and the wider community. By working with investors and the finance community, there is a significant opportunity to strengthen Australia's national response.

IGCC would be happy to engage further on the issues set out in this submission.

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