



ClimateWorks

A U S T R A L I A

ClimateWorks Australia was co-founded by Monash University and The Myer Foundation
and works within the Monash Sustainable Development Institute

Assessing Climate Transition Risks

BNP Paribas Quant Forum 2019 – Positioning for a challenging 2020

Anna Skarbek, Chief Executive Officer, ClimateWorks Australia

10 December 2019



ClimateWorks
AUSTRALIA

Founded in 2009 through a partnership with The Myer Foundation and Monash University and working within the Monash Sustainable Development Institute.



About ClimateWorks Australia

ClimateWorks Australia is a non-profit, evidence-based independent adviser, committed to accelerating the transition to net zero emissions for Australia and SE Asia Pacific. We were co-founded ten years ago by The Myer Foundation and Monash University and work within Monash Sustainable Development Institute.

ClimateWork acts as a bridge between research and action, analysing net zero pathways for governments, businesses and investors, and helping facilitate conditions that encourage and support the transition to a prosperous, net zero emissions future.



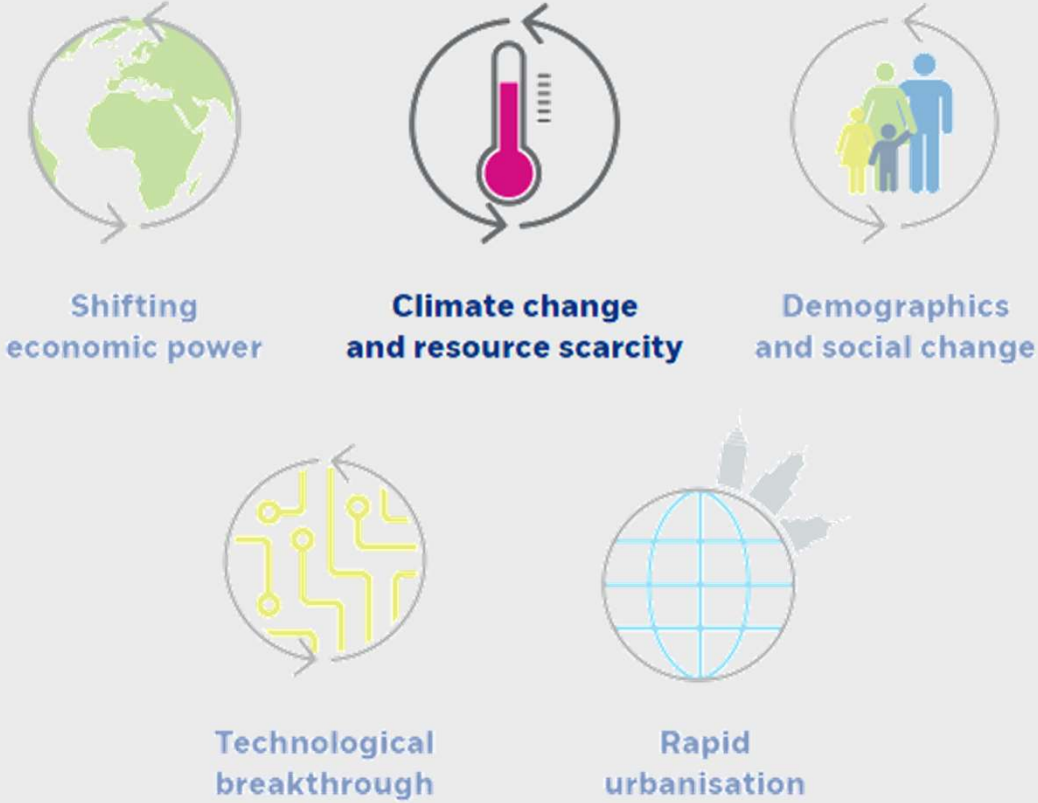
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Climate change is part of the interconnected megatrends shaping business



Source: *BlackRock*, 2018

The latest climate science reinforces the importance of limiting warming to 1.5°

- The impacts of climate change are hitting harder and sooner than assessments predicted a decade ago
- The Paris Agreement calls on countries to limit warming to **well below 2° by 2100**
- The IPCC's **special report on 1.5°** showed that impacts on humans and ecosystems in a 2° world are **significantly worse** than in a 1.5° world¹
- Reaching this 1.5 goal requires a **five-fold increase** in mitigation efforts²

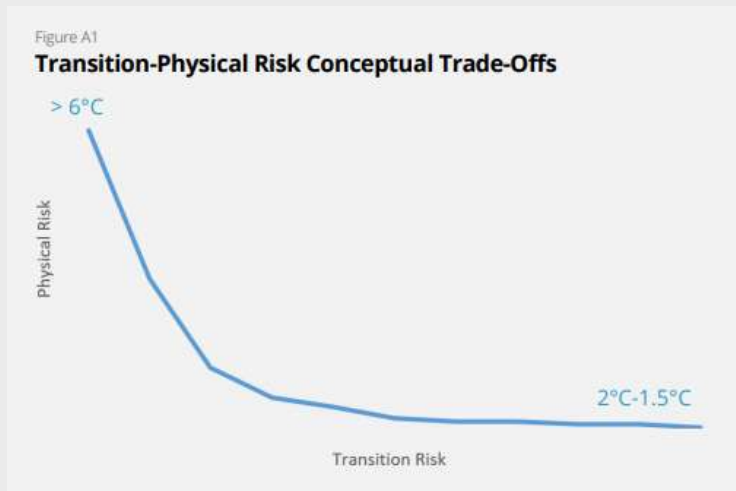
¹IPCC 2018, *Special Report: Global Warming of 1.5 °C*

²WMO 2019, *United In Science*

Differences in impact between...	1.5°C	2°C
Impact of 1.5°C and 2°C, respectively (IPCC 2018)		
Additional increase in temperature for extremely warm days on land at mid-latitudes (deg C)	3°C	4°C
Billion persons exposed to severe heat waves at least once per 5 years	1 billion	2.7 billion
Billion persons exposed to water stress	3.3 billion	3.7 billion
Land area projected to undergo a transformation of ecosystems from one type to another (million km ²)	9million km ²	17million km ²
Species projected to lose over half of their range (%)		
Vertebrate	4%	8%
Plant	8%	16%
Insect	6%	18%
Coral reefs experiencing long-term degradation (%)	70-90%	>99%
Differences in mitigation		
Emissions reductions by 2030 (compared to 2010)	-45%	-20%
Year of zero net emissions	2050	2075

Source: World Meteorological Organization 2019

The Taskforce for Climate-related Financial Disclosures (TCFD) has provided a framework for businesses to disclose and manage their climate risks



FSB TCFD Technical Supplement, *The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities*, June 2017

Transition Risks and Opportunities

Market and Technology Shifts

Policies and investments to deliver a low carbon emissions economy.

- Reduced market demand for higher-carbon products/commodities
- Increased demand for energy-efficient, lower-carbon products and services
- New technologies that disrupt markets

Reputation

Growing expectations for responsible conduct from stakeholders, including investors, lenders, and consumers.

- Opportunity to enhance reputation and brand value
- Risk of loss of trust and confidence in management

Policy and Legal

An evolving patchwork of requirements at international, national, and state level.

- Increased input/operating costs for high carbon activities
- Threats to securing license to operate for high carbon activities
- Emerging concern about liabilities

Physical Risks

Chronic changes and more frequent and severe extremes of climate.

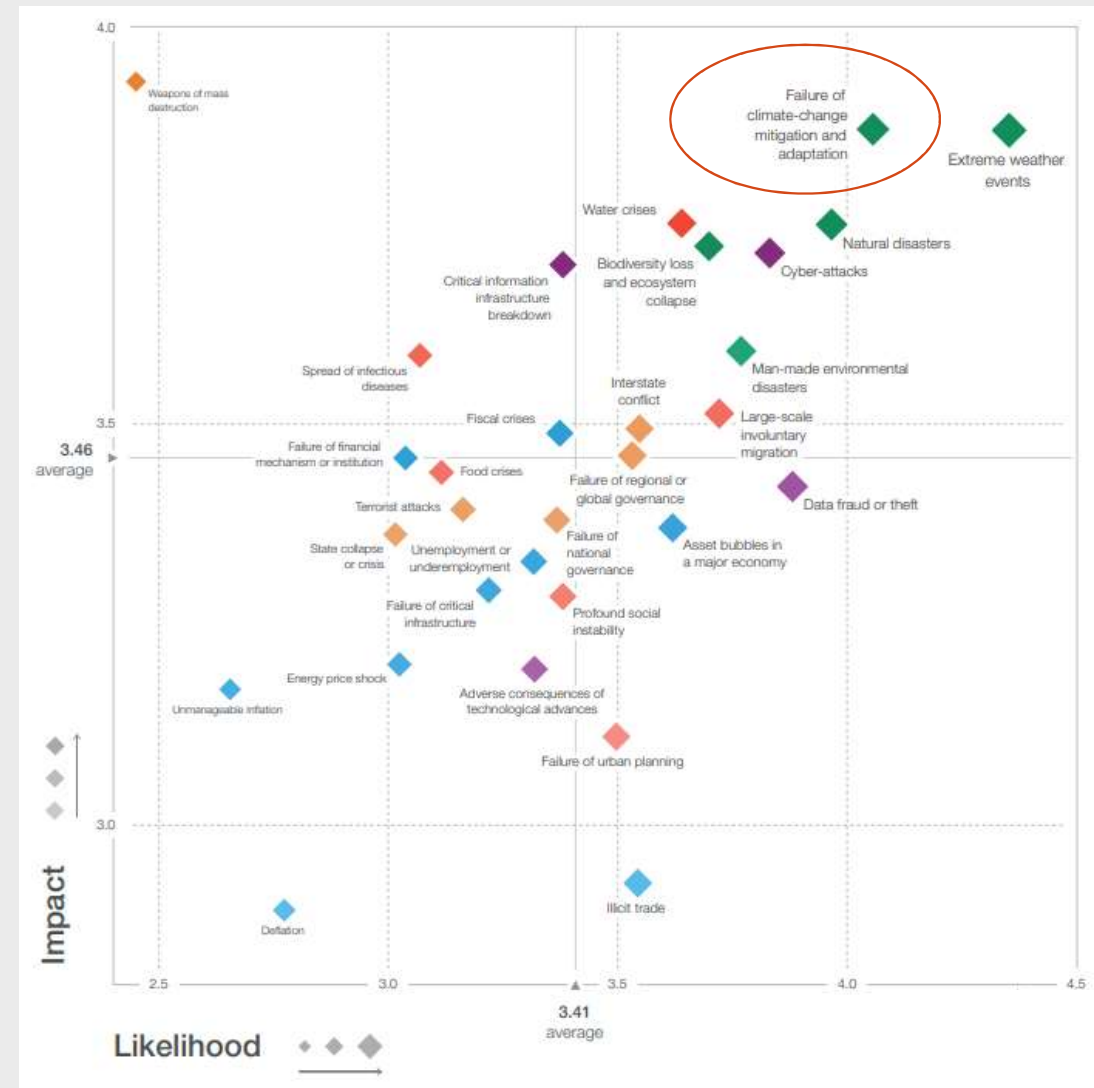
- Increased business interruption and damage across operations and supply chains with consequences for input costs, revenues, asset values, and insurance claims

Internationally, climate change is perceived as a key global risk

Each year the World Economic Forum identifies the most pressing risks facing the world in its Global Risks Report, and this year the top three risks were related to the environment and climate change:

- (i) extreme weather events;
- (ii) failure of climate-change mitigation and adaption; and
- (iii) natural disasters.

Source: The Global Risks Report 2019, World Economic Forum



Australia's financial regulators are pushing for companies to disclose and manage their climate risks

"We need to think about how the economy is currently adapting and how it will adapt both to the trend change in climate and the transition required to contain climate change. [...] Both the physical impact of climate change and the transition are likely to have first-order economic effects."

- **Guy Debelle (Reserve Bank of Australia), 12 March 2019¹**



"[...] if entities' internal risk management processes are not starting to include climate risk as something that has to be considered [...] that seems a pretty reasonable indicator there might be something wrong with the process."

- **Geoff Summerhayes (APRA), 17 February 2017²**

"[...] we are strongly focused on ensuring that, where the law requires it, companies disclose material climate change risks. [...] we encourage companies and directors to carefully consider the TCFD's report, not just in the disclosure context, but as a key resource to assist in understanding, identifying and managing climate risk and opportunity."

- **John Price (ASIC), 18 June 2018³**



¹<https://www.rba.gov.au/speeches/2019/sp-dg-2019-03-12.html>

²<https://www.apra.gov.au/news-and-publications/australias-new-horizon-climate-change-challenges-and-prudential-risk>

³<https://asic.gov.au/about-asic/news-centre/speeches/climate-change/>

Momentum is growing

“It’s as if you’re hammering and hammering on a ketchup bottle to get the sauce out and all of a sudden it comes out in one big splurge”

Mark Lewis, Head of sustainability research
at France’s BNP Paribas Asset Management



August 2011, Atlanta (US): KFC became the first national fast-food chain to introduce plant-based chicken in the U.S

Australian investors, as the businesses they financially support, are already facing climate transition risks

Pressure for businesses to be held accountable for their climate action is coming from multiple fronts

Sweden dumps Aussie bonds as country 'not known for good climate work'

The Age, 14 November 2019

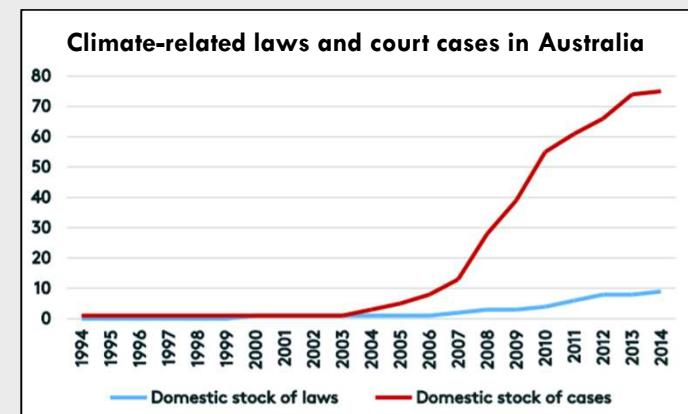
NAB, ANZ lag on climate risk disclosure: Market Forces

Australian Financial Review, 13 May 2019

The Hutley opinion on directors' duties concluded that:

"[...] it is likely to be only a matter of time before we see litigation against a director who has failed to perceive, disclose or take steps in relation to a foreseeable climate-related risk that can be demonstrated to have caused harm to a company."

Noel Hutley SC, 10 October 2016



Nachmany et al., *Global trends in climate change legislation and litigation*

"the exposure of individual directors to "climate change litigation" is increasing, probably exponentially, with time."

Mr Noel Hutley SC and Mr Sebastian Hartford Davis

The younger generations are driving a shift in demand



"In the years to come, the sentiments of these generations will drive not only their decisions as employees but also as investors, with the world undergoing the largest transfer of wealth in history: \$24 trillion from baby boomers to millennials. As wealth shifts and investing preferences change, environmental, social, and governance issues will be increasingly material to corporate valuations."

Larry Fink(Black Rock's CEO)'s 2019 letter to CEOs

Investors have started engaging with companies on climate risks

Financial firms lead shareholder rebellion against ExxonMobil climate change policies



Investors worth \$1trn say no to coal

PM's attack ignores reality

Focusing on activists ignores the financial risks of climate change.

Big banks facing investor heat on fossil fuel lending

Big banks face shareholder vote on coal lending

The financial sector has also started analysing their own exposure to climate risks and disclosing it in line with the TCFD requirements

Global Climate Risk Disclosure Barometer 2018 | EY

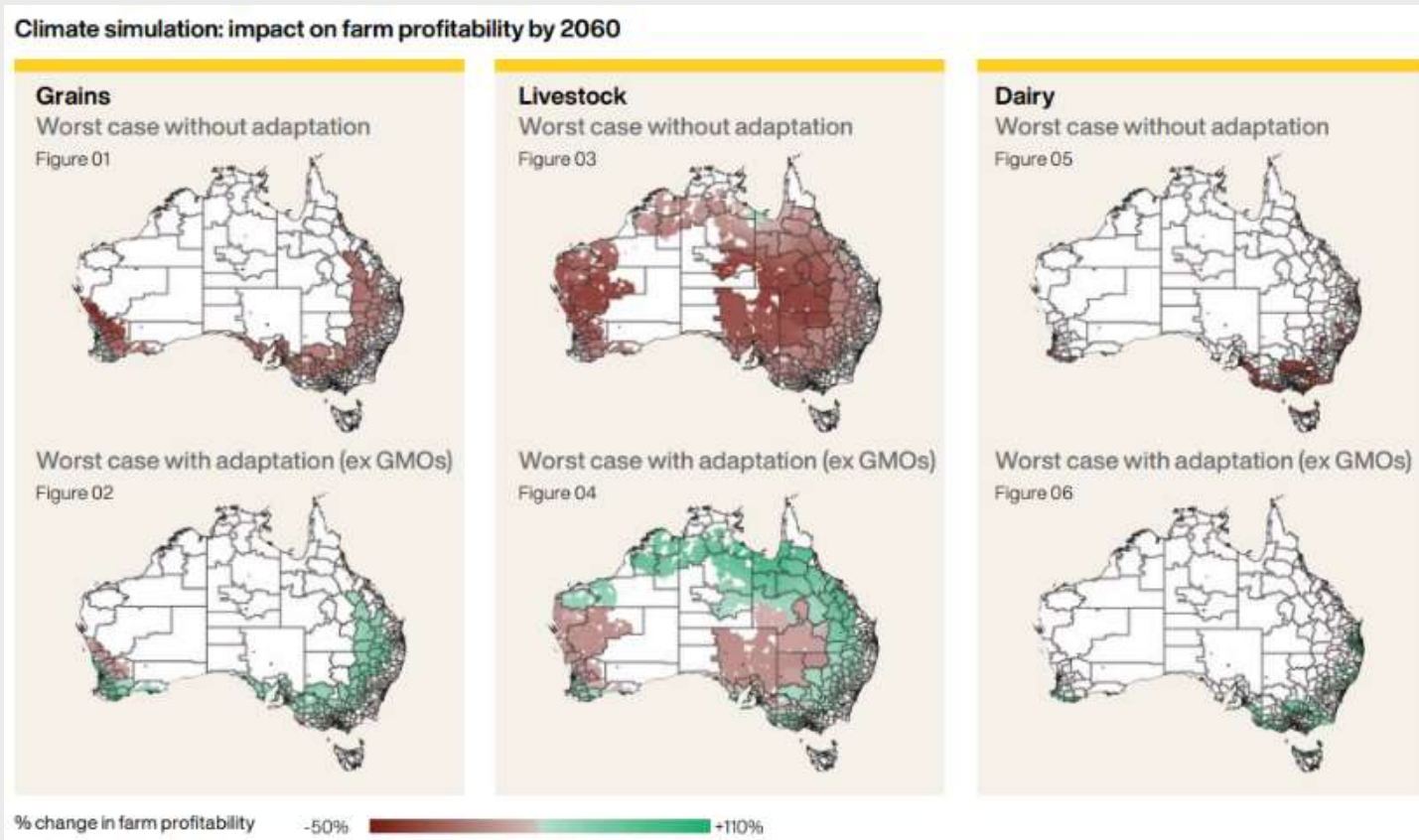


Transition risk heat map by industry (2017–2035)

Sector	Global Coordination	Disruptive decarbonisation	Policy Inertia
Accommodation and hotels	Green	Green	Green
Agricultural services and fishing	Green	Green	Green
Air transport	Green	Green	Green
Alumina	Yellow	Orange	Green
Aluminium	Yellow	Orange	Red
Business services	Green	Green	Green
Cement	Yellow	Yellow	Green
Coal mining	Orange	Red	Yellow
Communication services	Green	Green	Green
Construction services	Green	Green	Green
Dairy	Green	Green	Green
Electricity – coal	Red	Red	Red
Electricity – gas	Green	Green	Green
Electricity – hydro	Orange	Orange	Orange
Electricity – non-hydro renewable	Green	Green	Green
Electricity – oil products	Red	Red	Red
Electricity supply	Green	Green	Green
Financial services	Green	Green	Green
Forestry and logging	Green	Green	Green
Gas mining	Green	Green	Green

2018 CBA's Annual report

Climate risk assessment is driving changes in investment strategies



Source: FY19 climate scenario analysis – risks and opportunities in Australian agriculture, CBA's 2019 Annual Report

Net Zero Asset Owners Alliance - Announced during UN Climate Week, Sep. 2019



“... commit to transitioning their investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C ... & set interim targets every five years in line with Paris Art.4.9”

Led by Asset Owners representing more than US\$ 2 trillion AUM

The image displays the logos of the member organizations of the Net-Zero Asset Owner Alliance. The logos are arranged in two rows. The first row includes Allianz, Caisse des Dépôts GROUPE, CDPQ, Folksam, and PenslonDanmark. The second row includes alecta, AMF, CalPERS, Nordea, storebrand, Swiss Re, and ZURICH.

Globally, Central Banks and Supervisors are now focused on financial system stability risk

Network for Greening the Financial System (NGFS)



3 Workstreams:

- *Microprudential*
- *Macrofinancial*
- *Scaling up green finance*

35 central banks and financial supervisors have joined the Network for Greening the Financial System in last 18 months

AS OF MARCH 26TH 2019, THE NGFS CONSISTS OF THE FOLLOWING MEMBERS:

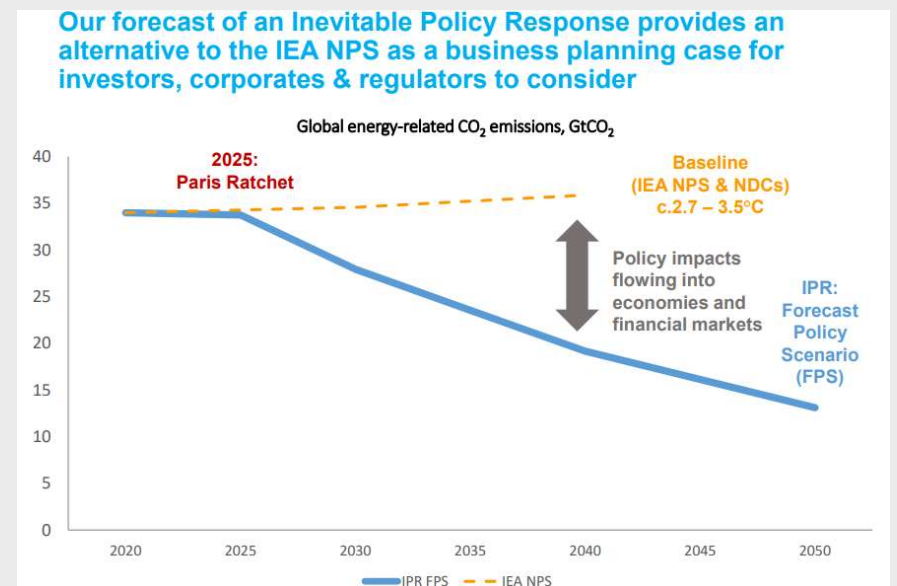
Banca D'Italia	De Nederlandsche Bank
Banco de España	Deutsche Bundesbank
Banco de México	European Banking Authority
Banco de Portugal	European Central Bank
Bank Al Maghrib	European Insurance and Occupational Pensions Authority (EIOPA)
Bank of Canada	Finansinspektionen (Swedish FSA)
Bank of England	Finanstilsynet (Norwegian FSA)
Bank of Finland	Japan FSA
Bank of Greece	Monetary Authority of Singapore
Bank Negara Malaysia	National Bank of Belgium
Bank of Thailand	Norges Bank
Banque Centrale du Luxembourg	Oesterreichische Nationalbank
Banque de France	People's Bank of China
Autorité de Contrôle Prudentiel et de Résolution (ACPR France)	Reserve Bank of Australia
Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin Germany)	Reserve Bank of New Zealand
Central Bank of Hungary	Sveriges Riksbank
Central Bank of Ireland	Superintendencia Financiera De Colombia
Danmarks Nationalbank	

Financial markets today have not adequately priced-in the likely near-term policy response to climate change

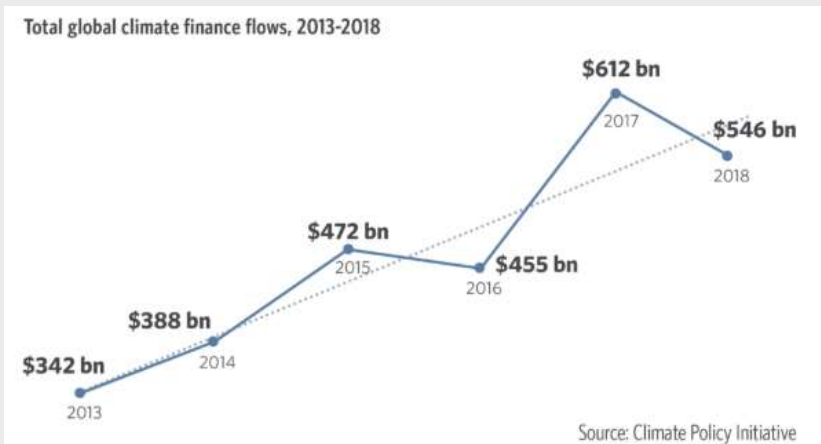
The Inevitable Policy Response (IPR), a collaboration between PRI, Vivid Economics and Energy Transition Advisors



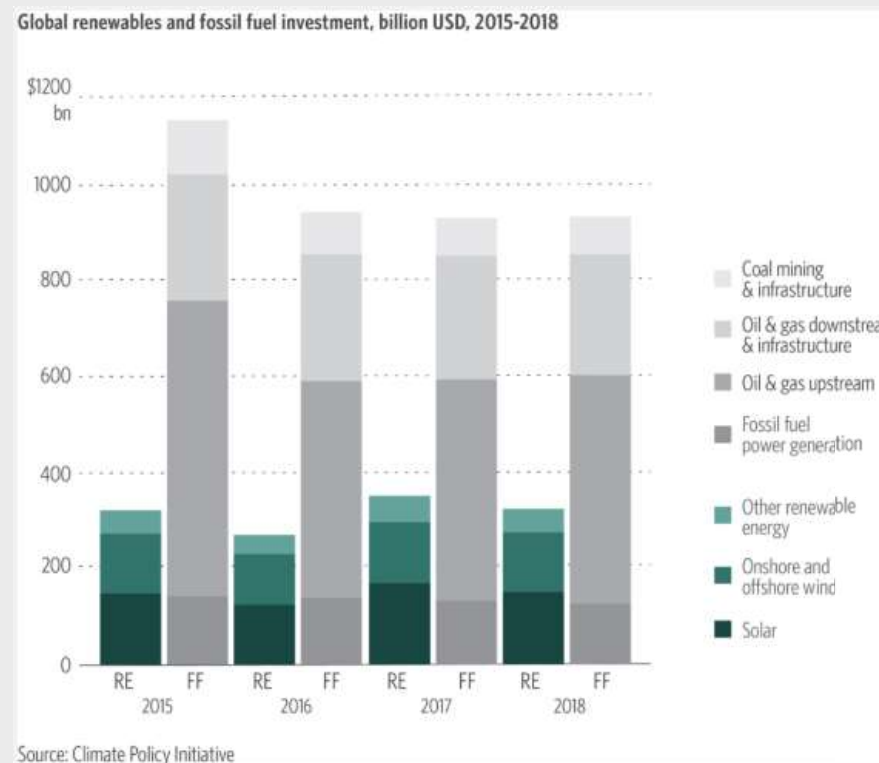
- The realities of climate change become increasingly apparent, it is inevitable that governments will be forced to act more decisively than they have so far.
- The question for investors now is not *if* governments will act, but *when* they will do so, *what* policies they will use and *where* the impact will be felt.
- The IPR project forecasts a response by 2025 that will be forceful, abrupt, and disorderly because of the delay.



While climate finance has reached record levels, level of action must increase many times over for what is needed under a 1.5 °C scenario



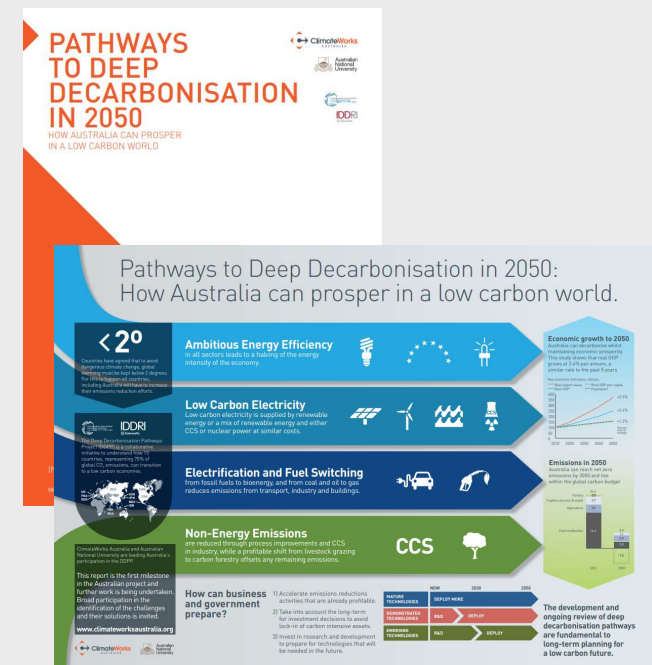
- Globally, climate finance flows reached a record high of USD 612 billion in 2017.
- This was followed by an 11% drop in 2018 to USD 546 billion.



Australian Sustainable Finance Initiative

Under such complexity and uncertainty, scenario analysis offers a powerful tool to explore the range of possible future pathways, and the risks and opportunities that exist within them.

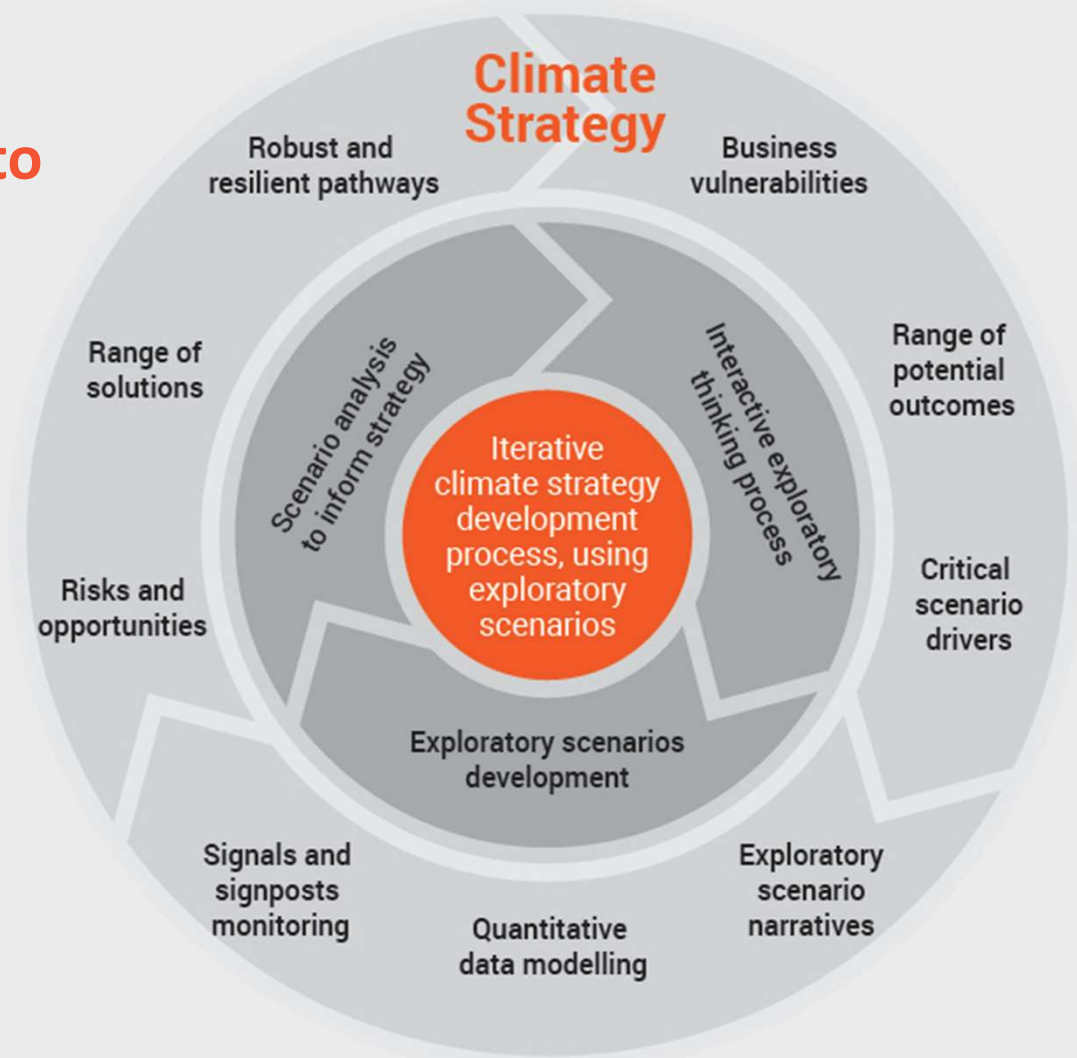
- The nature of the future global response to climate change is highly uncertain
- TCFD's recommendations: one of the Task Force's key recommended disclosures focuses on the resilience of an organization's strategy, taking into consideration different climate-related scenarios, including a 2° Celsius or lower scenario.
- Scenario analysis is a well-established method for developing strategic plans that are more flexible or robust to a range of plausible future states.
- CWA had developed one Deep Decarbonisation scenario for Australia in 2014. And there are many more pathways to consider for transition risks...



Source: ClimateWorks Australia

How to integrate climate change into your strategy

- ClimateWorks Australia has developed a framework to successfully integrate climate into strategy using interactive exploratory thinking process and scenario analysis.
- Together with Monash Sustainable Development Institute (MSDI), we have delivered our first executive education course, “Climate change and business risk: developing a strategic approach”, in May 2019.









Source: ClimateWorks Australia

Overview of the 6 scenarios modelled for the Decarbonisation Futures project

Source: Decarbonisation Futures project, ClimateWorks Australia, 2019

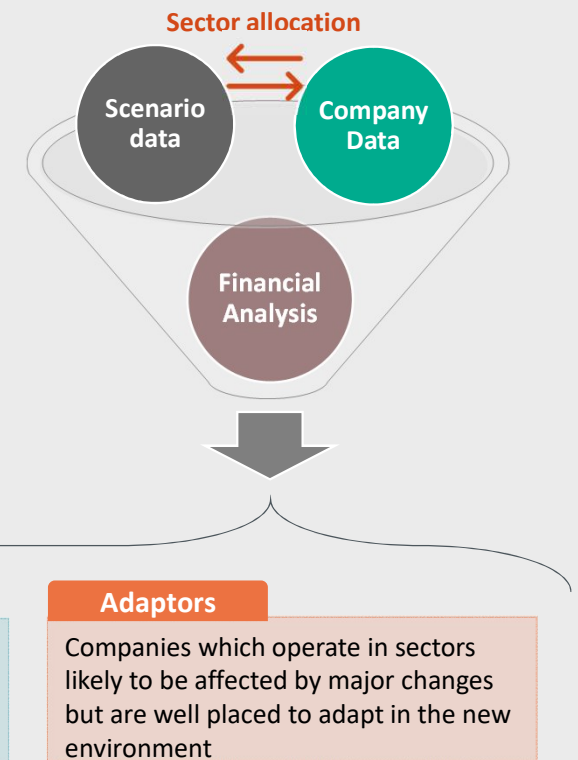
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	<i>Emissions outcome</i>	<i>Trajectory</i>	<i>Key drivers</i>	<i>Key disruptions</i>
Balanced Decarbonisation	2°C	Sufficient 	Strong policy, supportive (not disruptive) technology and little social change	<ul style="list-style-type: none"> • Maximum Electric Vehicles (EVs) • Maximum Forestry • Carbon Capture and Storage (CCS) allowed
Innovation	2°C	Sufficient 	Notably strong acceleration of technology	<p>Strong uptake in Australia of:</p> <ul style="list-style-type: none"> • Autonomous & Electric Vehicles • Renewable electricity • Circular economy
Disrupted Trade	2°C	Sufficient 	Notably strong acceleration of technology, included abroad	In addition to key disruptions from 'Innovation' scenario, this scenario considers a global adoption of circular economy
Delayed action	~2°C	Insufficient, then rapid 	Initial policy resistance until 2030, followed by strong response	Incremental, then all remaining
Stretch 1.5°C	1.5°C	Rapid 	Disruptive technology and supportive policies & social drivers	All
BAU [Business As Usual]	3-4°C	Insufficient 	Neither a lot nor none at all of action in any particular driver	Incremental approaches to technology, social and policy

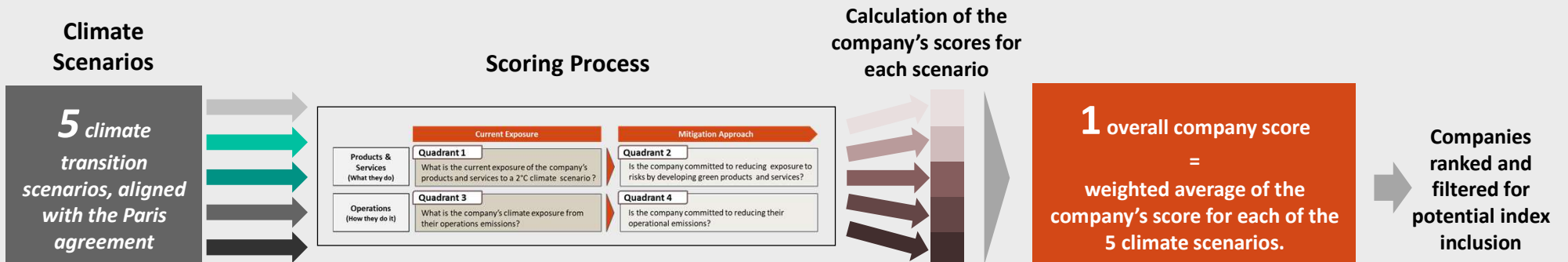
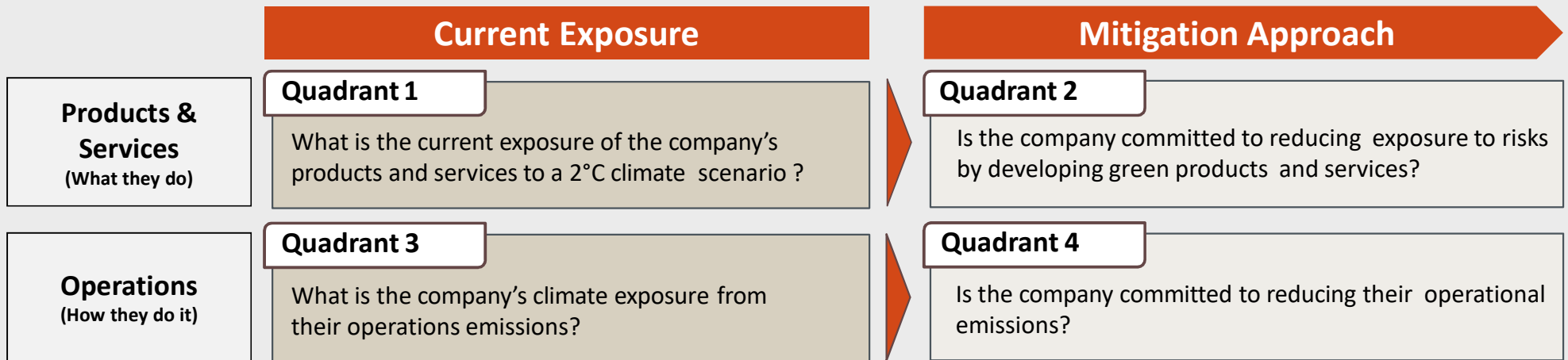
Scenarios can also be used in financial products

BNP Paribas' Australian Climate Transition ("ACT") Index

- The first **forward-looking** climate index reflective of future climate transition risks and opportunities for Australian companies
- The Index seeks to identify companies likely to perform well in a world undergoing a well below 2°C transition, and that will continue playing a part in the Australian economy in a net zero emissions world.

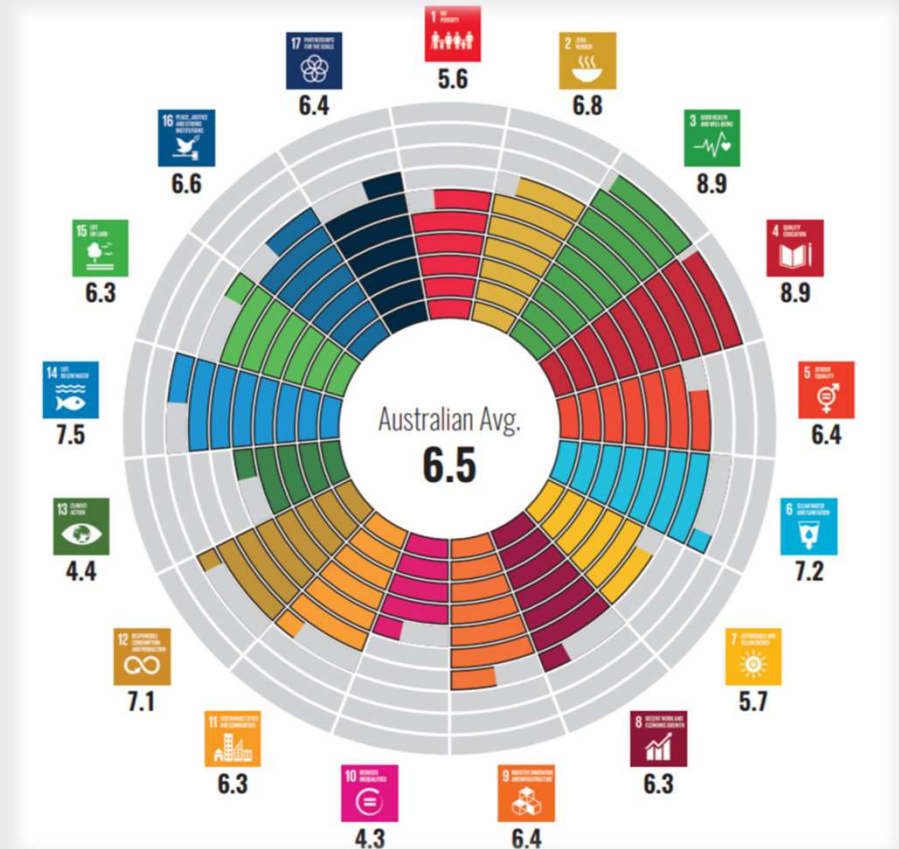


An engagement framework used as a scoring process





SUSTAINABLE DEVELOPMENT GOALS



Source: *Transforming Australia: SDG Progress Report*, National Sustainable Development Council in partnership with the Monash Sustainable Development Institute and SDSN Australia NZ Pacific, 2018

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