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Promises, pathways & performance

Climate change disclosure in the ASX200

August 2021

About ACSI

Established in 2001, ACSI exists to provide a strong, collective voice on environmental, social and governance (ESG) issues on behalf of our members.

Our members include 36 Australian and international asset owners and institutional investors. Collectively, they manage over $1 trillion in assets and own on average 10% of every ASX200 company.

Our members believe that ESG risks and opportunities have a material impact on investment outcomes. As fiduciary investors, they have a responsibility to act to enhance the long-term value of the savings entrusted to them.

Through ACSI, our members collaborate to achieve genuine, measurable and permanent improvements in the ESG practices and performance of the companies they invest in.

ACSI staff undertake a year-round program of research, engagement, advocacy and voting advice. These activities provide a solid basis for our members to exercise their ownership rights.

36 Australian & international investors

Leading voice on ESG issues and advocacy

ACSI members own around 10% of every ASX200 company

Table of contents

Introduction **4**
Key findings **5**
Net zero emissions commitments 5
TCFD adoption 5
Emissions reporting and targets 5
Transition risk scenario analysis: company resilience to low-carbon futures 6
Physical risk analysis: testing asset and operational risilience 6
TCFD adoption **7**
Net zero emissions commitments **10**
Company pathways and emissions reductions **13**
Target setting 13
Value in science-based accreditation 14
Climate targets and remuneration 14
Transition risk scenario analysis: company resilience to a low-carbon future **18**
Scenario analysis increasingly mainstream 18
Disclosure of scenario analysis is variable 19
Proliferation of scenarios challenges investors 20
According to current scenario analysis disclosure, every company is resilient 21
Integration of climate change strategy into corporate strategy 21
Physical risk analysis: testing resilience **27**
Appendix: Net zero targets by the ASX200 .... **28**
Appendix: Carbon neutral targets/achievements by the ASX200 .... **34**

Introduction

The Australian economy is heavily exposed to industries at the forefront of climate change risks and opportunities. The financial risks and impacts of climate change are manifesting throughout the global economy, impacting communities and businesses at increasing rates of frequency and magnitude.

Climate change is more than just an environmental issue. For ASX-listed boards the need to transform business activities and strategies in line with 1.5°C pathway is a governance issue and more importantly, a financial issue.

This is why ACSI members have actively engaged with carbon-intensive companies for more than a decade and encouraged them to provide detailed climate-related information to investors, manage climate change risk exposure and pursue low-carbon strategies and opportunities.

For our members that are long-term investors, the financial and physical risks borne from climate change are portfolio-wide and undiversifiable. The systemic risk climate change poses to investments and the Australian economy requires transformative change and collaboration from all participants in the financial system, including governments, companies, investors and creditors.

This study highlights examples of best practice and gaps in reporting, provides a snapshot for Taskforce on Climate-related Financial Disclosure (TCFD) adoption rates and an insight into how companies are setting objectives for meeting the Paris Agreement. We also examine the disclosure, comparability and depths of climate scenario analysis and physical risks assessments.

In preparing this research, ACSI reviewed all publicly available documents produced by ASX200 entities as at 31 March 2021 (referred to as 2020 reporting)[1]. This includes annual reports, sustainability reports, standalone TCFD Reports, company websites and ASX announcements. Additional context was drawn from ACSI's engagement with directors and management of ASX200 companies.

[1] As 31 March each year is the cut off for collecting information, the preceding year referred to as 2019 reporting, covers disclosures by companies up to 31 March 2020.

Key findings

Analysis of public reporting by ASX200 companies up to 31 March 2021 ("2020 reporting") found that management and disclosure of climate-related risks and opportunities has continued to significantly improve. However, there remains key challenges for companies in strengthening reporting standards so investors can adequately assess how strategies are aligning with the Paris Agreement goals.

Net zero emissions commitments

- **ASX200 companies with a collective market capitalisation of over $1 trillion dollars (50%) are now covered by net zero commitments.** This demonstrates that capital markets and companies are responding to market signals that ratchet the global economy towards holding warming to 1.5°C.

- **Net zero commitments more than tripled.** There are now 49 companies with net zero commitments, up from 14 in the previous year, demonstrating that corporate Australia has acknowledged the need to adapt to a low-carbon future. These include commitments from BHP, Rio Tinto, ADBRI, Fortescue Metals, Ampol, Origin Energy, AGL, Transurban and Wesfarmers.

- **Companies are articulating how they are 'Paris aligned' through** interim targets and pathways to net zero. Eighteen companies in the ASX200 are seeking to demonstrate 'Paris alignment' by obtaining science-based accreditation mostly for their Scope 1 & 2 emissions.

TCFD adoption

- **Adoption and disclosure against the TCFD accelerated during 2020, with 80 companies now having adopted the framework**. This is seven times the number in the first year of TCFD disclosure (FY17: 11 companies). With a further 18 companies committed to disclose against the framework, and 17 reviewing the use of the framework, we expect the majority of ASX200 companies to be using the TCFD framework by next year.

Emissions reporting and targets

- **Almost half of the ASX200 has set emissions-reduction targets –** 94 companies have set and disclosed a decarbonisation target (up from 74 in FY19). A further nine companies signalled an intention to set targets in the near term.

- **Companies are increasingly connecting short-medium- and long-term emissions reduction targets.** Sixty-six companies have set short term targets (to 2025), 54 have set medium-term targets (2026-2039) and 37 have set long-term targets (2040+). Demonstrating the accelerating change, last year's study found few companies had medium and long-term target setting in the ASX200.

- **Fifteen companies set targets and actions to drive Scope 3 emissions reductions, these include BHP, Rio Tinto, Santos and Origin Energy.** Companies are exploring a variety of ways that they can directly influence customers, how they can provide lower carbon product substitutions or work in partnerships with customers to find solutions in some of the more challenged industries. There is no consistent approach, with companies looking at many options to curb Scope 3 emissions.

- **Linking climate change targets to executive remuneration or explicitly disclosing these as hurdles in corporate scorecards are emerging trends.** AGL Energy, Ampol, BHP, Beach Energy, BlueScope Steel, Origin Energy, Orica, Oil Search, Rio Tinto, South32, Santos and Woodside Petroleum have either set specific weightings to climate change targets, defined hurdles in the corporate scorecard to climate change transition or plan to do so in FY21 reporting.

Transition risk scenario analysis: company resilience to low-carbon futures

- **Companies disclosing scenario analysis increased ~90% year-on-year.** Sixty-two companies have undertaken scenario analysis in 2020 reporting (FY19: 32), up from a low base of 18 in 2018.

- **Most of the companies that have undertaken scenario analysis have used modelling that results in less than 2°C of warming.** However, only 26 companies stress-tested their business against a 1.5°C scenario (FY19: 13, FY18: 8). Overall, this number is low given holding warming to 1.5°C is the ultimate aim of the Paris Agreement and the outcome that challenges businesses and society the most.

- **Comparability of scenario analysis continues to be an issue for investors, even amongst peer comparison and high use of International Energy Agency scenarios.** Alongside the almost doubling of companies undertaking scenario analysis, there are now over 70 different scenarios being disclosed against.

- **An increasing number of companies are demonstrating how scenario analysis informs business strategy and investing in defining these pathways,** but most appear reluctant to step beyond traditional short-term business planning and cycles. Some examples of companies providing long-term strategies include Santos, Rio Tinto, BHP, Origin Energy and Ampol, which have anchored these strategies with emissions-reduction targets, mechanisms and technologies designed to progressively decarbonise. However, few companies discuss how the scenario analysis informs corporate decisions and capital investment frameworks for assessing growth opportunities and acquisitions.

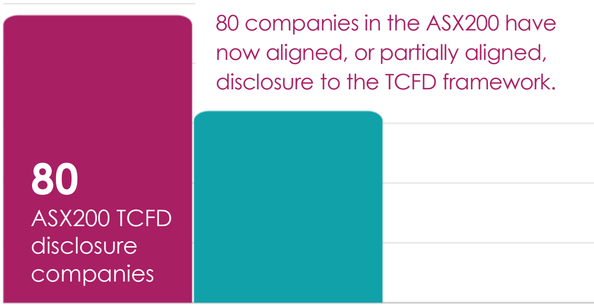
Physical risk analysis: testing asset and operational risilience

- **Physical risk reporting by ASX200 companies is increasing.** ACSI noted 36 companies had undertaken and disclosed physical risk analysis in the ASX200. A further 25 companies who disclosed a basic level of physical risk and weather-related risk identification.

- **Physical risk analysis by companies is typically not detailed enough and does not quantify financial impacts.** ACSI assessed that 36 companies, just over half the number undertaking scenario analysis, disclosed a detailed level of physical-risk analysis. However, this analysis was mostly a risk assessment of assets in different geographies. Disclosure related to weather-related events that could impact particular operations, with the more detailed analysis providing a risk or frequency level for each asset or jurisdiction. This was demonstrated, for example, by South32, Boral, and Rio.

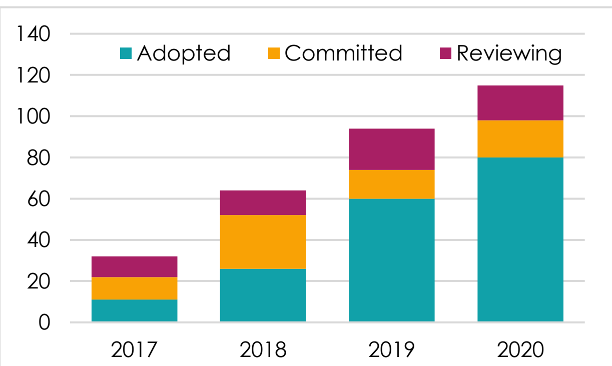
TCFD adoption

The continued, long-term, and constructive dialogue between investors and ASX-listed companies laid the groundwork for driving strong adoption levels of the TCFD framework across the ASX200. Alongside the increasing frequency of climate-related risks resulting in financial impacts, the number of companies disclosing against the TCFD framework continues to improve.

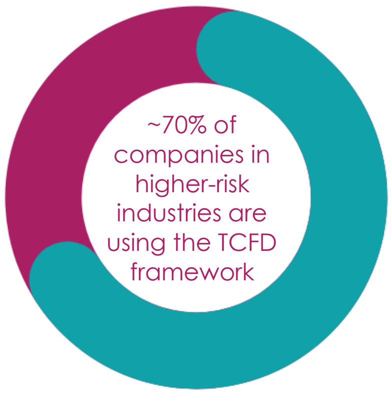


A further 20 companies joined the ranks of those reporting against the TCFD framework in FY20. There has been an eightfold increase in adoption since TCFD's first year of operation in 2017 (Graph 1). ACSI expects that at least half of the ASX200 will be using the framework by the end of 2021, based on already declared commitments and reviews, which would mean that TCFD-aligned reporting will be mainstream for ASX200 companies.

Graph 1: ASX200 companies adopting, committing and reviewing TCFD over time



The most carbon exposed ASX200 companies have the highest levels of TCFD adoption.



Given that these companies are at the forefront of physical, transition and litigation risk, it is a natural evolution to see the majority disclosing climate-related information to investors through the TCFD format.

Some 80% of Energy & Utilities, 65% of Materials (50% industrials and 74% miners) and 57% of Transport companies have adopted the framework. Of those companies not using the TCFD framework, the study found that most were in sectors with limited direct and indirect exposure to climate-change risks (Graph 2).

Increasing scrutiny by regulators on how companies address material ESG risks, and specifically climate change, is gaining prominence. In mid-2020, the Australian Securities and Investments Commission's (ASIC) sent letters to five ASX-listed companies and their auditors over complaints they had received that some companies were not disclosing risks from climate change in operating reviews and directors' reports[2].

[2] https://www.afr.com/companies/financial-services/asic-targets-fossil-fuel-companies-over-climate-change-20210531-p57wq4

Whilst companies' operating reviews typically cite climate change as a risk, most TCFD-based reporting sits standalone. As reporting matures, ACSI expects companies to increasingly integrate climate-related reporting with financial statements.

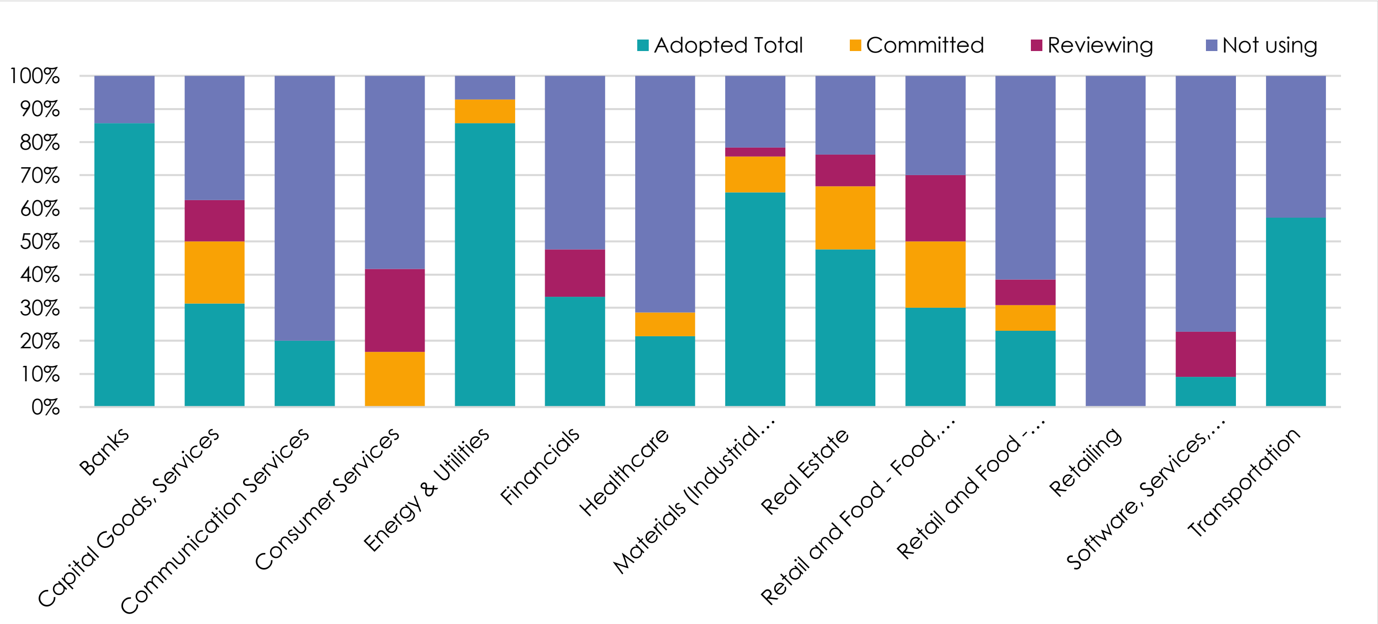
ACSI noted in our 2020 study that TCFD reporting expects companies to meaningfully connect climate-related reporting with existing financial statements and disclosure requirements. As a result, investors are also looking for that integration. Australian accounting guidance already note that, regardless of numerical impacts, qualitative external factors, including investor expectations, may make climate-related risks 'material' and appropriate for inclusion in financial statements.[3]

Banks and insurers in the spotlight

In addition to companies whose operations and assets expose their businesses to climate change financial risks directly, APRA has put climate vulnerability assessments on their agenda. It notes "although all parts of the economy will be impacted by climate-related risks and the global response to address it, the finance sector will have a central role to play in responding to this challenge, from financing physical infrastructure to adapt to climate change, to investing in long-term decarbonisation opportunities"4. In line with the increased focus on assessing vulnerability and understanding how financial institutions may need to adjust, financial sector companies understand the need to communicate how they are doing this, the pace they plan to reduce or mitigate exposure and how they will work with customers to transition.

Based on 2020 reporting, all three insurers (QBE, IAG and Suncorp) have adopted the TCFD framework, along with all banks, except for one outlier – Bendigo and Adelaide Bank.

Graph 2: Sectoral TCFD adoption:



[3] AASB/IASB Practice Statement 2 Making Materiality Judgements (APS/PS 2): https://www.aasb.gov.au/admin/file/content102/c3/AASB_AUASB_Joint_Bulletin_Finished.pdf
[4] https://www.apra.gov.au/apra%E2%80%99s-response-to-climate-related-financial-risks

Table 1: TCFD adoption by company over time

2017	2018	2019	2020
Aurizon Holdings Ltd	AGL Energy Ltd	ADBRI	AusNet Services
BHP Billiton Ltd	Ampol Ltd	AMP Ltd	Bingo Industries Ltd
Boral Ltd	Australia & New Zealand Banking Group Ltd	Ansell Ltd	Brambles Ltd
BlueScope Steel Ltd	Commonwealth Bank of Australia	APA Group	Coca-Cola Amatil Ltd
Incitec Pivot Ltd	CSR Ltd	Bank of Queensland Ltd	Costa Group Hldgs Ltd
Oil Search Ltd	Dexus Prop	Beach Energy Ltd	Challenger Ltd
South32 Ltd	Downer EDI Ltd	Coles Group Ltd	Cochlear Ltd
Stockland	DuluxGroup Ltd	Cooper Energy Ltd	Cleanaway Waste Management Ltd
Santos Ltd	Fortescue Metals Group Ltd	Cromwell Property Group	Domain Holdings Australia Ltd
Sydney Airport	Orica Ltd	CSR Ltd	Elders Ltd
Vicinity Centres	Origin Energy Ltd	DuluxGroup Ltd	Evolution Mining Ltd
	Orora Ltd	Fortescue Metals Group Ltd	Fisher & Paykel Healthcare Corporation Ltd
	Qantas Airways Ltd	GPT Group	Goodman Group
	Rio Tinto Ltd	Growthpoint Properties Australia	Gold Road Resources Ltd
	Sims Metal Management Ltd	Iluka Resources Ltd	IGO Ltd
		Insurance Australia Group Ltd	Lynas Rare Earths Ltd
		LendLease Group	Medibank Private Ltd
		Macquarie Group Ltd	Regis Resources Ltd
		Mineral Resources Ltd	SEEK Ltd
		Mirvac Group	Telstra Corporation Ltd
		National Australia Bank Ltd	Virgin Money UK PLC
		Newcrest Mining Ltd	Westgold Resources Ltd
		NIB Holdings Ltd	Woolworths Group Ltd
		Northern Star Resources Ltd	
		Orocobre Ltd	
		Orora Ltd	
		OZ Minerals Ltd	
		Pendal Group Ltd	
		QBE Insurance Group Ltd	
		Qube Holdings Ltd	
		Scentre Group	
		St Barbara Ltd	
		Suncorp Group Ltd	
		Sydney Airport	
		Transurban Group	
		Unibail-Rodamco	
		Viva Energy Group Ltd	
		Wesfarmers Ltd	
		Westpac Banking Corporation	
		Whitehaven Coal Ltd	
		Worley Ltd	

Net zero emissions commitments

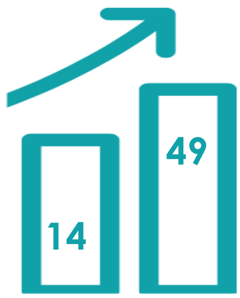
Capital markets are undoubtably moving towards net zero. Companies across the ASX200 representing a collective market capitalisation of $1.15 trillion dollars, or 50%, have adopted net zero commitments. With the trend accelerating towards almost half of the ASX200's market capitalisation, it is clear that market participants - seekers of capital, owners and manager of capital and financial intermediaries – are responding to global and market signals that the global economy is moving to one that is low carbon.

This trend is significant, reflecting the global awareness that to avoid the worst climate change impacts, the world must globally cut CO_2 emissions to net zero by mid-century – or sooner[5]. In April 2021, 44 countries and the European Union, accounting for around 70% of global CO_2 emissions and GDP, pledged to meet a net-zero emissions target[6]. The increased ambitions at each of these countries adds pressure for companies to align their activities to net zero.

The focus on companies decarbonising in line with the Paris Agreement is acute, with the upcoming United Nations Climate Change Conference of Parties (COP26) planned for November 2021.

Investor expectations are clear for companies with material exposure to climate-related risks, even if there is some ambiguity on the pathway to reach net zero emission, companies should be looking to:

- send a strong signal to the market with a Paris-aligned net zero commitment, and;
- give credence to this target by disclosing a low-carbon pathway and business strategy anchored to tangible short-and medium-term targets as well as actions that may include partnerships, research and development, or investment to address risks material to the company.



49 companies have set net-zero targets in 2020 reporting, up from 14 companies in 2019.

Companies have adopted net zero commitments to signal their strategic direction to the market, investors and stakeholders, and also as a means to move beyond traditional business planning cycles. Looking beyond traditional shorter-term cycles aligns risk measurement and management with the multigenerational time horizons over which long-term investors are exposed.

[5] IPCC Special Report 1.5°C: https://www.ipcc.ch/sr15/
[6] IEA Net zero by 2050: https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf

"Climate change is the Tragedy of the Horizon. We don't need an army of actuaries to tell us that the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors – imposing a cost on future generations that the current generation has no direct incentive to fix. That means beyond…the business cycle, the political cycle and the horizon of technocratic authorities, like central banks, who are bound by their mandates…

…In other words, once climate change becomes a defining issue for financial stability, it may already be too late."

- Mark Carney, UN Special Envoy on Climate Action and Finance, 2015[7]

In Australia, there is clear momentum and leadership from many companies on setting net zero commitments. The number of ASX200 companies making net zero commitments more than tripled between 2019 and 2020.

There are now 49 ASX-listed companies which have set a net zero target for 2050, or sooner. Most commitments are focused on operational emissions, working to pair these with interim targets, investment in technology and a rapid uptake of 100% renewable energy.

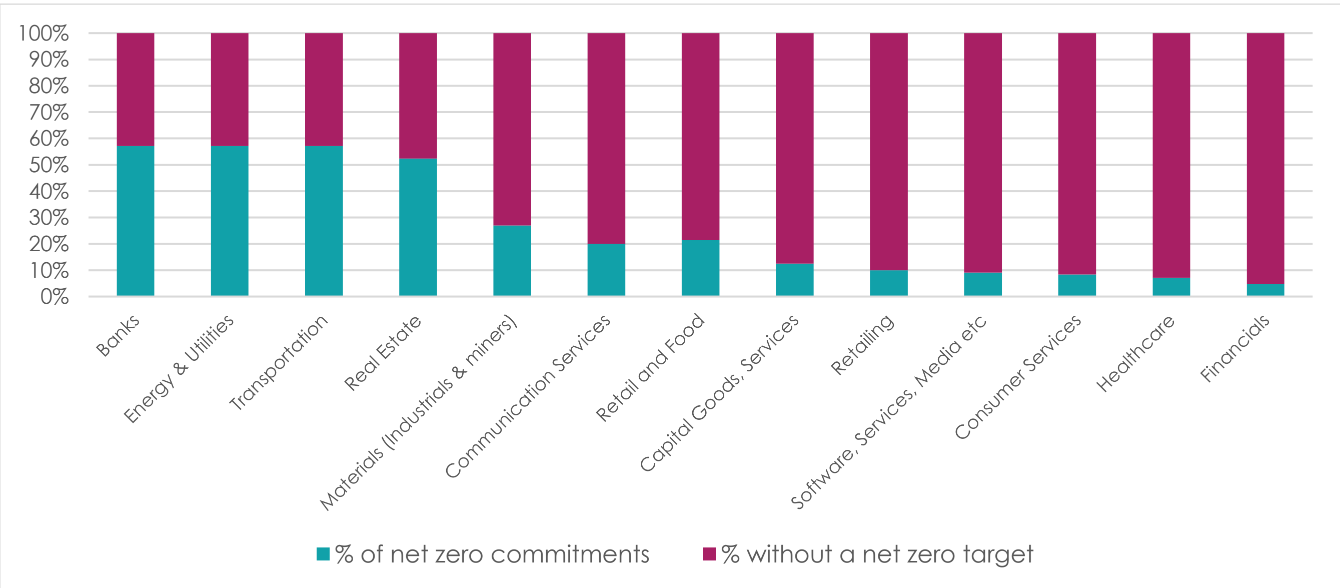
Whilst some of the language around these targets can range from aspirational to more detailed measures, the increasing trend of companies to articulate long-term objectives, is positive.

In addition to those with a net zero commitment, we also found 18 companies whose operations were already carbon neutral or had carbon neutrality targets set for the business. This includes many banks and financial services, see table here.

ACSI found that the sectors leading the way on setting net zero targets include Banking, Energy & Utilities, Transport, and Real Estate. The highest level of adoption was in the Banking sector, followed by Energy & Utilities, and Transport. Given net zero is unequivocally where Australian businesses need to be by 2050, the current levels of adoption, particularly in high-risk industries, will need to increase significantly.

50% of the collective ASX200 market capitalisation is covered by net-zero commitments.

Graph 3: ASX200 net zero commitments by sector



[7] https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf?la=en&hash=7C67E785651862457D99511147C7424FF5EA0C1A

These net zero targets come as industry groups, including the Business Council of Australia (BCA), Australian Petroleum Production & Exploration Association (APPEA), Minerals Council of Australia (MCA) and Australian Industry Group (Ai Group) all publicly commit to net zero by 2050. Super funds and asset managers are also committing to net zero portfolios, including UniSuper, AustralianSuper, Cbus Super, HESTA, IFM Investors, NGS Super, Aware Super, Macquarie Asset Management, BlackRock and Vanguard.[8]

Companies are beginning to set short- and medium-term targets to support their net zero aims. However, investors are questioning how they are aligned to the Paris Agreement.

Whilst there has been more than doubling of net zero targets year-on-year, 19 of the 49 companies have fully mapped[9] their pathway to net zero, and more broadly, just under half of the ASX200 have set some form of emissions reduction target (94 companies). Whilst a key challenge continues to be in communicating a pathway to net zero that is Paris-aligned, from company engagement we know many companies have work underway in their business to explore possible pathways. Equally investors are working with companies on facilitating the transition noting the role of all participants, including the providers of capital, are important to achieving significant transformation and decarbonisation.

"Go where the emissions are…That discipline of going there and assisting there with the transition is going to make the difference."

- Mark Carney, 2021 ACSI Annual Conference

As shown in Table 2 below, there continues to be gaps for many companies in their trajectory towards net zero. Of those with long-term net zero targets (2040+), only 13 companies have set both short and medium-term targets. The development of these targets will no doubt be a focus of future reporting to demonstrate that internal measures are Paris-aligned.

Long-term net zero commitments supported by short-and medium-term targets are seen at the following companies: Ampol Ltd, Australia & New Zealand Banking Group Ltd, Aurizon Holdings Ltd, Coca-Cola Amatil Ltd, Cromwell Property Group, Origin Energy Ltd, South32 Ltd, Santos Ltd, Suncorp Group Ltd, Transurban Group, Telstra Corporation Ltd, Wesfarmers Ltd and Woodside Petroleum Ltd.

See the table of net zero commitments by ASX200 companies here.

[8] Net zero momentum tracker: https://www.climateworksaustralia.org/net-zero/
[9] ACSI assessed a mapped pathway if a company with a medium-term target had interim short-term targets and for those with a long-term net zero target that they had set short and medium interim targets.

Company pathways and emissions reductions

As long-term investors, ACSI Members are invested across the ASX200 index. This multi-generational investment horizon closely correlates with the time horizons over which both transitional and physical financial risk impacts will emerge. Therefore, company disclosures across these timeframes, linking business strategy with tangible targets, investments, partnerships, and new low-carbon revenue streams, are equally as important as net zero commitments.

Impacts stemming directly from climate change, both physical and transitional, are now widely recognised as financial and material including by Australian policy makers and regulators. For example, APRA is undertaking a climate change financial risk vulnerability assessment that will involve entities estimating the potential physical impacts of a changing climate, including extreme weather events, on their balance sheet, as well as the risks that may arise from the global transition to a low-carbon economy[10]. The vulnerability assessment is designed to provide helpful insights on the impact of a changing climate on the broader economy, which will be analysed in conjunction with the Reserve Bank of Australia (RBA).

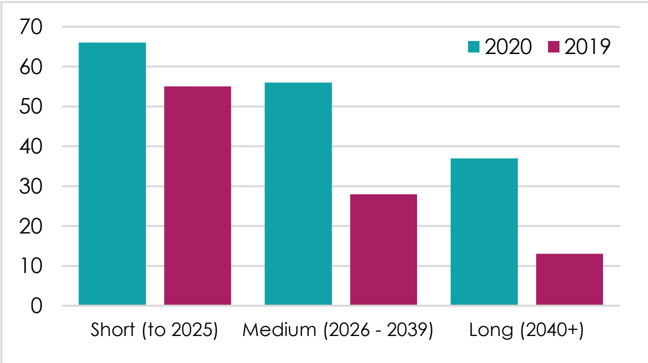
We also note the increasing frequency of climate-related financial impacts reflected in the balance sheet and disclosed in sustainability reporting is broadening into other areas of communication to stakeholders. Over the last 18 months, ACSI has noted significantly more instances of company executives addressing impacts and climate change strategy in investor calls, and of sell-side analysts asking for climate-related inputs and assumptions to underpin their valuations.

Target setting

Companies are responding by stepping up briefings on their medium and long-term target settings, reflecting a trend by Australian-listed companies to disclose how they are decarbonising, innovating and investing to adapt for a low-carbon future. While well under half the ASX200 index is yet to set medium and long-term targets, taking into account that exposure ranges widely, the year-on-year increase has been material.

> There is now double the number of companies who have set medium-term targets (2026-2039) and almost three-times the number of companies with long-term emissions reduction targets (2040+).

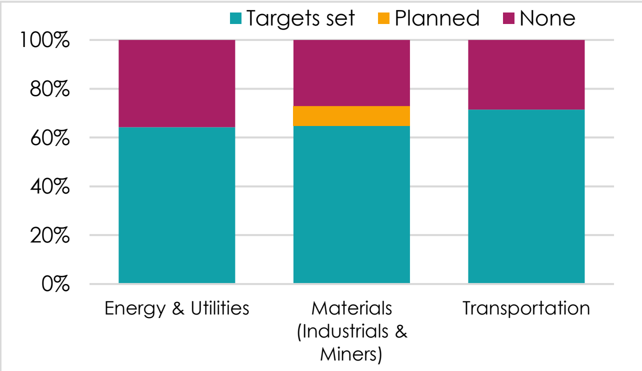
Graph 4: ASX200 target setting



ACSI continues to identify companies in higher risk sectors without any targets. In the Materials, Energy & Utilities and Transport sectors, only 65%, 64% and 71% respectively have set some form of target.

[10] https://www.apra.gov.au/understanding-and-managing-financial-risks-of-climate-change

Graph 5: Targets set by E&U, Materials and Transport companies



Value in science-based accreditation

Verifying targets as being 'science based' is increasingly the rationale companies are using to provide assurance to investors that their targets and strategies are aligned to the Paris Agreement. Science-based targets are verified to be in line with the latest climate science deemed necessary to achieve the Paris Agreement. In 2020 reporting, we found 18 companies (Table 2) had obtained science-based accreditation, and a further six were either committed to obtaining accreditation or had targets currently under review.

All companies but one, BHP, used the Science-Based Targets Initiative (SBTi) to provide assurance of their targets. BHP instead developed its targets by applying the same rate of reduction to BHP's emissions as the rate at which the world's emissions would have to contract in order to meet the relevant goal (known as the 'absolute contraction method'.

Climate targets and remuneration

As companies begin to set short and medium-term targets, ACSI has also seen an increase in the number of companies linking these into short or long-term incentives. For many carbon-intensive and hydrocarbon businesses climate change strategy is fundamental to business strategy. Therefore, ACSI expects more companies to integrate decarbonisation and transformational targets into incentive structures once meaningful targets have been set to transition the business. Some challenges have already arisen, such as companies that have climate change metrics and fossil-fuels growth metrics aimed at increasing production and resources in the same incentive schemes. Other are not disclosing explicitly what climate-related metrics are within corporate scorecards.

More work to be done on addressing Scope 3 emissions.

One area that is less developed within net zero commitments, and more broadly in target setting, is setting targets to address Scope 3 emissions. The majority of net zero commitments do not include these.

ACSI found 15 companies in the ASX200 had set Scope 3 emissions, see Table 3.

> Investors are working with companies on how they can meaningfully address Scope 3 emissions. Whilst some companies have little operational control over the end-use of their products, value-chain risks are a key challenge in the transition to a lower-carbon future.

For companies with challenging pathways, including defining their Scope 3 emissions, there are different ways to address medium-term actions. These can include mapping out commercialisation of new technologies, and their likely abatement or reduction impact, and disclosing partnerships, R&D or investment in lower carbon customer and technology solutions.

Table 2: Companies that have set a science-based target

Company	Scope of science-based target
Auckland International Airport Ltd	Auckland Airport commits to reduce scope 1 and 2 greenhouse gas emissions 45% per m^2 by 2025 from a 2012 base-year.
AMP Ltd	Committed to a 42.1% reduction in Scope 1 and 2 emissions by 2030, from a 2019 base year.
BHP Group Ltd	Reduce operational GHG emissions (Scope 1 and 2 from operated assets) by at least 30 per cent from FY2020 levels (18) by FY2030.
BlueScope Steel Ltd	One per cent year-on-year reduction in Scope 1 and 2 GHG emissions intensity for each of BSL's steelmaking sites to 2030.
Coca-Cola Amatil Ltd	Reduction of other emissions in line with The Coca-Cola Company's Science-Based Target of 25% reduction by 2030 (vs 2015).
Dexus	Commits to reduce absolute Scope 1 and 2 GHG emissions 70% and absolute Scope 3 emissions 25% by 2030 from a 2018 base year. The targets covering greenhouse gas emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 1.5°C.
Fletcher Building Ltd	30% reduction in our Scope 1 (direct) and Scope 2 (indirect) carbon emissions by 2030.
Fisher & Paykel Healthcare Corporation Ltd	Commits to reduce absolute Scope 1 and 2 GHG emissions 67% by FY2034 from a FY2019 base year. Also commits that 87% of suppliers by spend, covering purchased goods and services and the use of sold products, will have science-based targets by FY2024.
Insurance Australia Group Ltd	These absolute targets for Group scope 1 and 2 emissions include a: 20% reduction by 2020., 43% reduction by 2025., 71% reduction by 2030, 95% reduction by 2050.
National Australia Bank Ltd	Science-based GHG emissions (tCO2-e) – 51% reduction from 2015 baseline by 2025 for operations
News Corporation	News Corp commits to reduce absolute Scope 1 and 2 GHG emissions 60% by FY2030 from a FY2016 base year. News Corp also commits to reduce absolute scope 3 GHG emissions 20% over the same target period.
Origin Energy Ltd	Australian energy company Origin Energy commits to reduce Scope 1 and 2 GHG emissions 50% by 2032 from a 2017 base-year. The company al so commits to reduce Scope 3 emissions 25% over the same time-period. The targets covering greenhouse gas emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 2°C.
QBE Insurance Group Ltd	20% reduction in air travel by 2021 (from 2017 level, achieved already), 15% reduction in energy use by 2021 (from 2018 levels), 100% renewable electricity use for operations by 2025* (from 2018 levels), 30% reduction in Scope 1 and 2 carbon emissions by 2025 (from 2018 levels, achieved already) and zero direct investments in thermal coal by 1 July 2019, achieved already).
REA Group Ltd	42% reduction in Scope 1 and 2 emissions by 2030 and 25% reduction in Scope 3 emissions by 2030.
Suncorp Group Ltd	Will track and reduce its operational greenhouse gas (GHG) emissions footprint through its new carbon budget and science-based emissions reduction target: For corporate operations (Australia and New Zealand operations): 51% absolute reduction by 2030 (from 2017–18 baseline) & Industrial operations (Suncorp Insurance Ventures): 59% intensity reduction by 2030 (From 2017–18 baseline).
Transurban Group	Transurban commits to reduce absolute Scope 1 and 2 GHG emissions 50% by FY 2030 from a FY 2019 base year. Transurban commits to reduce Scope 3 GHG emissions from purchased goods and services associated with road infrastructure maintenance and operation 22% per vehicle kilometre travelled by customers by 2030 from a 2019 base year. Transurban commits to reduce Scope 3 GHG emissions from capital goods 55% per $M capital expenditure by FY 2030 from a FY 2019 base year. The targets covering greenhouse gas emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 1.5°C.
Unibail-Rodamco-Westfield	Committed to reduce by 50% its emissions across the value chain by 2030 in comparison with 2015 levels (35% on construction, 80% on operations and 40% on transportation of visitors).
Woolworths	Woolworths commits to reduce absolute Scope 1 and 2 GHG emissions 63% by 2030 from a 2015 base year. Woolworths commits to reduce absolute scope 3 GHG emissions 19% by 2030 from a 2015 base year. The targets covering greenhouse-gas emissions from company operations (Scopes 1 and 2) are consistent with reductions required to keep warming to 1.5°C.

Table 3: Scope 3 targets and actions

Company	Scope 3 targets
Amcor Plc	60% reduction in GHG-emissions intensity by 2030, inclusive of Scopes 1, 2, and 3, compared to its 2006 baseline
BHP Group Ltd	BHP has set targets around supporting the steel industry to identify pathways and develop technologies by 2030 to reduce emissions intensity by 30%. BHP will work with the maritime industry to support an intensity reduction of 40% in BHP-chartered shipping 40% reduction of emissions intensity in shipping, support tech development and pathways to reduce emissions intensity in integrated steelmaking. BHP has also partnered via MoU with Mitsubishi, China Baowu, HBIS Co., and invested in start-up Boston Metal.
Boral Ltd	Deliver annual growth in share of revenue from lower carbon, high recycled-content products & reduce CO_2-e emissions in its supply chain by 1.1–1.5 million tonnes through increased fly-ash supply by 2022.
Commonwealth Bank of Australia	Reduce emissions per full time employee to 2.0tCO_2-e by 2020.
Coca-Cola Amatil Ltd	25% reduction in emissions intensity across scope 1, 2 and 3 from 2010 baseline by 2020.
Dexus	To reduce absolute scope 3 emissions by 25% by 2030 (FY18 baseline), to be achieved through engagement with customers about improving energy efficiency and reducing emissions within their occupied space.
Fisher & Paykel Healthcare Corporation Ltd	Commits that 87% of suppliers, by spend covering purchased goods and services and the use of sold products, will have science-based targets by FY2024.
Origin Energy Ltd	25 per cent reduction in scope 3 emissions, incurred in the transport of energy to end users by 2032
REA Group Ltd	Scope 3 emissions reduction of 25% by 2030 from an FY20 base year
Rio Tinto Ltd	Announced partnerships on value chain emissions incl MoU with China Baowu, Tsinghua University and Nippon Steel.
South32 Ltd	Partner directly with customers across its steel and aluminium supply chain to reduce overall emissions
Santos Ltd	Actively work with customers to reduce their Scope 1 and 2 emissions by >1mtCO_2e per year by 2030.
Transurban Group	Reduce the carbon intensity of the goods and services purchased from suppliers by 22% by 2030 (Scope 3 tCO_2e from supplier spending, per km travelled on its roads as a measure of business output)
Unibail-Rodamco-Westfield	40% reduction in the carbon intensity from shopping centre visitors' transportation; 50% reduction in carbon emissions across the value chain by 2030
Woolworths Group Ltd	Reduce absolute Scope 3 greenhouse gas emissions by 19 per cent by 2030 from a 2015 base year

Table 4: Target setting across the ASX200

Short term	Medium term	Long term
present to 2025	2026-2039	2040+
ADBRI Ltd, AGL Energy Ltd, Auckland International Airport Ltd, Ampol Ltd, ALS Ltd, Amcor Plc, AMP Ltd, Ansell Ltd, Australia & New Zealand Banking Group Ltd, Afterpay Ltd, Alumina Ltd, Aurizon Holdings Ltd, Bapcor Ltd, Bendigo and Adelaide Bank Ltd, BHP Group Ltd, Boral Ltd, Bank of Queensland Ltd, Beach Energy Ltd, BlueScope Steel Ltd, Brambles Ltd, Commonwealth Bank of Australia., Coca-Cola Amatil Ltd, Charter Hall Group, Charter Hall Long Wale REIT, Cromwell Property Group, Coles Group Ltd, Computershare Ltd, Charter Hall Retail REIT, Fisher & Paykel Healthcare Corporation Ltd, G8 Education Ltd, Goodman Group, Growthpoint Properties Australia. GPT Group, Insurance Australia Group Ltd, Janus Henderson Group PLC, Lendlease Group. Lynas Rare Earths Ltd, Mirvac Group, Macquarie Group Ltd, Metcash Ltd, National Australia Bank Ltd, NIB Holdings Ltd, Orora Ltd, Origin Energy Ltd, Orica Ltd, Platinum Asset Management Ltd, Qantas Airways Ltd, QBE Insurance Group Ltd, South32 Ltd, Scentre Group, Shopping Centres Australasia Property Group, Stockland, The Star Entertainment Group Ltd, SkyCity Entertainment Group Ltd, Spark New Zealand Ltd, Santos Ltd, Suncorp Group Ltd, Sydney Airport, Transurban Group, Telstra Corporation Ltd, Technology One Ltd, Vicinity Centres, Virgin Money UK PLC, Westpac Banking Corporation, Wesfarmers Ltd, Woodside Petroleum Ltd.	Ampol Ltd, Amcor Plc, AMP Ltd, Australia & New Zealand Banking Group Ltd, Alumina Ltd, Aurizon Holdings Ltd, Bendigo and Adelaide Bank Ltd, BHP Group Ltd, Blackmores Ltd, Brickworks Ltd, BlueScope Steel Ltd, Coca-Cola Amatil Ltd, Charter Hall Group, Charter Hall Long Wale REIT, Cromwell Property Group, Chorus Ltd, Charter Hall Retail REIT, CSR Ltd, Downer EDI Ltd, Dexus, Fletcher Building Ltd, Fortescue Metals Group Ltd, Fisher & Paykel Healthcare Corporation Ltd, GPT Group, Insurance Australia Group Ltd, IGO Ltd, Incitec Pivot Ltd, Mirvac Group, Newcrest Mining Ltd, News Corporation, Origin Energy, Ltd, Orica Ltd, Oil Search Ltd, Perenti Global Ltd, REA Group Ltd, Rio Tinto Ltd, St Barbara Ltd, Scentre Group, Stockland, The Star Entertainment Group Ltd, South32 Ltd, SkyCity Entertainment Group Ltd, Santos Ltd, Super Retail Group Ltd, Suncorp Group Ltd, Sydney Airport, Transurban Group, Telstra Corporation Ltd, Unibail-Rodamco-Westfield, Vicinity Centres, Virgin Money UK PLC, Westpac Banking Corporation, Wesfarmers Ltd, Worley Ltd, Woolworths Group Ltd, Woodside Petroleum Ltd	ADBRI Ltd, AGL Energy Ltd, Ampol Ltd, Australia & New Zealand Banking Group Ltd, APA Group, Appen Ltd, Aurizon Holdings Ltd, BHP Group Ltd, Commonwealth Bank of Australia, Coca-Cola Amatil Ltd, Cromwell Property Group, Coles Group Ltd, Downer EDI Ltd, Growthpoint Properties Australia, Insurance Australia Group Ltd, Lendlease Group, National Australia Bank Ltd, Newcrest Mining Ltd, News Corporation, Origin Energy Ltd, Oil Search Ltd, OZ Minerals Ltd, Qantas Airways Ltd, Rio Tinto Ltd, South32 Ltd, St Barbara Ltd, Sandfire Resources Ltd, Sims Ltd, SkyCity Entertainment Group Ltd, Santos Ltd, Suncorp Group Ltd, Transurban Group, Telstra Corporation Ltd, Wesfarmers Ltd, Woolworths Group Ltd, Woodside Petroleum Ltd.

Transition risk scenario analysis: company resilience to a low-carbon future

The use of scenario analysis is widely recognised as a useful tool for testing company resilience and communicating it externally to regulators and investors. It also facilitates forecasting supply and demand outlooks, and in setting company strategy by integrating climate-warming scenarios. This enables companies to ensure that their short, medium and long-term decision-making and strategy are aligned to an economic outlook where GHG emissions are constrained and consider alternative growth options.

Scenario analysis increasingly mainstream

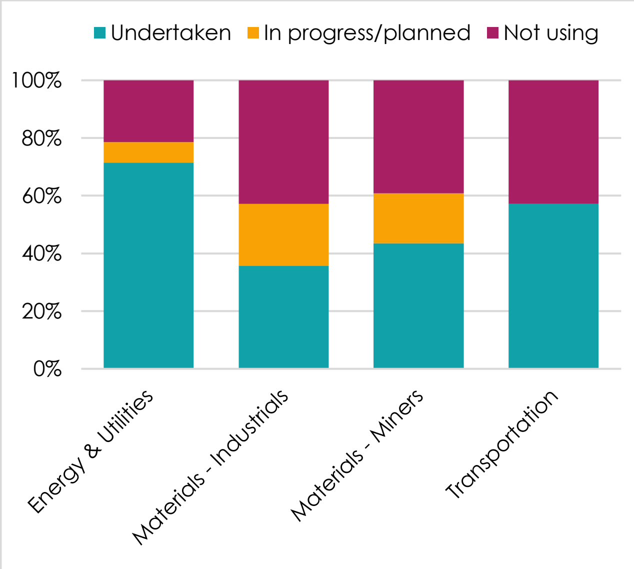
Over the last three years, ACSI has seen the number of companies undertaking scenario analysis more than treble to 62. That is up more than 90% on 2019 levels (32 companies) and almost 3.5 times 2018's 18 companies.

As shown in the Graph 6, stress-testing against low carbon scenarios has seen a significant uptake in high-risk industries. 71% of Energy & Utilities, 36% of Industrials, 43% of Miners and 57% of Transport companies have undertaken scenario analysis. This does, however, show that a reasonable cohort in each of these industries has not undertaken scenario analysis which is concerning given the significant transition risks.

Positively, most companies who are disclosing scenario analysis are using a Paris-aligned scenario (ones that result in well-below 2°C outcomes) in the range of plausible frameworks used to test resilience. However, only just over a third of companies used a 1.5°C scenario (23 companies in 2020, up from 13 in 2019).

~90% increase between 2019 and 2020 of companies undertaking scenario analysis but most are not using a 1.5°C scenario.

Graph 6: Scenario analysis by E&U, Materials and Transport companies



The IEA's 'Net Zero by 2050

A Roadmap for the Global Energy Sector', may be a catalyst for a greater number of ASX200 companies mapping and disclose their resilience to the new 1.5°C pathway. Given the more challenging and disruptive outlook for the oil & gas and energy generation sectors, we also expect companies to disclose a range of impacts and strategies on innovation and transformation in response.

Disclosure of scenario analysis is variable

At a high level, the rapid adoption and undertaking of scenario analysis suggests that it is becoming a part of the normal cycle of forecasting and analysis that companies undertake as a part of risk management and mitigation. However, we found one-quarter of companies were not providing any quantified impact analysis to investors or were only disclosing the strategy and steps to build resilience.

For example, information on how cash flows could be impacted by demand and supply changes, abatement and carbon costs, and how these would affect specific projects and business divisions is useful to understanding the company's strategic risks.

Additionally, we also found companies continue to favour qualitative disclosures that provide little insight for investors. From the investor perspective, a mix of quantitative and qualitative disclosure and discussion of outcomes would give greater insight into the risks and opportunities at an enterprise and asset level.

As climate risk reporting develops to incorporate both qualitative and quantitative disclosure, it will better assist investors in assessing relevant financial risk and opportunity.

Many companies are using their climate reporting to provide investors insight into the resilience of the organisation's strategy and discuss strategic performance and directional implications for the business, including the value chain, capital allocation decisions, and the company's research and development focus.

Table 5: Companies with Paris-aligned scenario analysis

Paris Aligned Scenarios	Company name
1.5°C	AGL Energy Limited, Ansell Limited, APA Group, BHP Group Limited, Brambles Limited, Coca-Cola Amatil Limited, CSR Limited, Cleanaway Waste Management Limited, Dexus, Fisher & Paykel Healthcare Corporation Limited, Insurance Australia Group Limited, Lendlease Group, Mirvac Group, Macquarie Group Limited, National Australia Bank Limited, Newcrest Mining Limited, Origin Energy Limited, Oil Search Limited, Scentre Group, Transurban Group, Westpac Banking Corporation, Wesfarmers Limited, Woolworths Group Limited.
Well-below 2°C	ADBRI Ltd, AGL Energy Ltd, AusNet Services, Aurizon Holdings Ltd, Beach Energy Ltd BlueScope Steel Ltd, Brambles Ltd, Coca-Cola Amatil Ltd, Challenger Ltd, Charter Hall Group, Charter Hall Long Wale REIT, Coles Group Ltd, Charter Hall Retail REIT, Fortescue Metals Group Ltd, Goodman Group, GPT Group, Mineral Resources Ltd, National Australia Bank Ltd, Newcrest Mining Ltd, Northern Star Resources Ltd, Orica Ltd, Qantas Airways Ltd, QBE Insurance Group Ltd, Rio Tinto Ltd, South32 Ltd, Scentre Group, Stockland, Santos Ltd, Sydney Airport, Telstra Corporation Ltd, Unibail-Rodamco-Westfield, Viva Energy Group Ltd, Westpac Banking Corporation, Whitehaven Coal Ltd, Woodside Petroleum Ltd.

Table 6: Scenario analysis in sectors

High-risk sectors	Undertaken scenario analysis	No scenario analysis
Energy	AGL Energy Ltd, Ampol Ltd, APA Group, Beach Energy Ltd, Origin Energy Ltd, Oil Search Ltd, Santos Ltd, Whitehaven Coal Ltd, Woodside Petroleum Ltd.	AusNet Services (in progress), Spark Infrastructure Group, Washington H. Soul Pattinson and Co. Ltd, Viva Energy Group Ltd (in progress), Worley Ltd.
Transport	Aurizon Holdings Ltd, Qantas Airways Ltd, Sydney Airport, Transurban Group.	Auckland International Airport Ltd, Atlas Arteria, Qube Holdings Ltd.
Materials	ADBRI Ltd, BHP Group Ltd, Boral Ltd, BlueScope Steel Ltd, CSR Ltd, Fortescue Metals Group Ltd, IGO Ltd, Iluka Resources Ltd, Incitec Pivot Ltd, Mineral Resources Ltd, Northern Star Resources Ltd, Orica Ltd, Rio Tinto Ltd, South32 Ltd, St Barbara Ltd.	Amcor Plc, Alumina Ltd (in progress), Brickworks Ltd (planned) , Deterra Royalties Ltd, Evolution Mining Ltd, Fletcher Building Ltd, Gold Road Resources Ltd (planned), James Hardie Industries Plc, Lynas Rare Earths Ltd, Newcrest Mining Ltd (in progress), Nufarm Ltd, Orora Ltd, OZ Minerals Ltd (in progress) , Perseus Mining Ltd, Ramelius Resources Ltd, Regis Resources Ltd (planned), Resolute Mining Ltd, Sandfire Resources Ltd, Sims Ltd, Silver Lake Resources Ltd, Westgold Resources Ltd.

Proliferation of scenarios challenges investors

Last year, ACSI was surprised to see that the number of scenarios being used by companies was greater than the number of companies undertaking the analysis. This trend was repeated in 2020, even with the near doubling of companies undertaking scenario analysis since 2019.

Even after grouping a number of companies under generic levels of warming when scenarios used were non-specific, and high usage of International Energy Agency (IEA) scenarios (23 companies), we still found over 70 different scenarios compared to the 62 companies which disclosed them, see scenario analysis table below.

From ACSI's extensive engagement with companies on these issues, we have noted a number of the challenges when undertaking scenario analysis included:

- Many scenarios were not industry specific enough to provide sufficient insight, which often led to companies designing bespoke, sector-relevant scenarios.
- Many scenarios do not adequately provide enough insight into specific markets, particularly the Australia energy context, or to markets in which Australia has significant exposure via exports.

As a result, the vast array of scenarios being used, makes it difficult for investors to understand how peer companies in a sector might perform relative to others in low-carbon scenarios.

ACSI does expect some level of harmonisation across scenario analysis, especially with the IEA '*Net Zero by 2050 - A Roadmap for the Global Energy Sector*' 1.5°C scenario which is likely to become a benchmark scenario for disclosure.

Additional challenges faced by investors and users of the scenario analysis include:

- It is not always clear what Inputs and assumptions have been used or excluded.
- Companies discuss outcomes qualitatively but are not quantifying impacts providing limited insight into the key risks the business faces and limited insight into the impact and severity of transition risks.
- Few companies disclose potential impacts at an operational level, such as a discussion on potential positive or negative impacts on a project, asset or business unit level. For example, many oil and gas companies' note in their scenario analysis that they are low cost and low emissions, but few provide additional disclosure to support these views.
- Many disclosures do not describe specific potential impacts or the resilience of specific assets. By disclosing where direct transition impacts, such as carbon costs, would be felt, or what abatement savings and ability to pass costs on to customers they have. Indirect transition impacts of demand destruction and creation might occur, would also help investors.

We do note there have been some good disclosures across various companies for different aspects mentioned above. For example, Rio Tinto provide detailed disclosure about where abatement opportunities can be achieved across various minerals in its business as well as the pathway it would take and the levels that would be used,[11] and BHP show the cumulative demand changes for each commodity under four different scenarios out to 2050[12].

According to current scenario analysis disclosure, every company is resilient

The 62 ASX200 companies that provided scenario analysis in the past year and quantified impacts for investors found that their businesses were resilient under all less than 2°C and 1.5°C scenarios.

Very few of these companies quantified any potential downside impacts to their business, or disclosed impacts in relation to specific assets or operations. We also found companies that did disclose negligible impacts did so under the assumption that they had a 'climate change response' however did not disclose the climate change response strategy. This makes it difficult for investors to assess the company's resilience.

In addition, for businesses with many assets, there is a potential risk that quantifying impacts at a portfolio level, rather than asset-by-asset, masks material impacts to some assets within the group.

Integration of climate change strategy into corporate strategy

The review of ASX200 disclosures indicates a trend of companies integrating climate into broader corporate strategy and market disclosures, including financial accounts.

During 2020, a number of companies began to disclose their pathway to net zero, and linked this with emissions-reduction targets – often including information on the technologies that would be used at particular points in time. Additionally, companies that recognise the need for emerging technologies to fulfil their long-term strategy, are now making significant investments in projects and partnerships – a marked change from 2019

[11] https://www.riotinto.com/-/media/Content/Documents/Invest/Reports/Climate-Change-reports/RT-climate-report-2020.pdf?rev=c415a8138bd7408496ccb3834511abc0
[12] https://www.bhp.com/sustainability/climate-change/

As disclosures develop investors are increasingly interested in the link between scenario analysis and corporate strategy. Some examples include:

- Company strategy, including a mapped pathway to meet net zero, and the actions and investments that need to be undertaken in the short and medium term to ensure the business is continually positioned to meet the goals of the Paris Agreement.
- How companies set short, medium and long-term targets, including the levels of reduction and the pace of change the company will need to undertake.
- Integration of Paris-aligned metrics into capital allocation frameworks including commitments on investing in key technologies the company is relying on and integration into investment and growth decision making.

Recently, a handful of companies have explicitly stated the dollar figure of investment in low-carbon opportunities and projects as part of their capital allocation frameworks.

They include BHP, Rio Tinto, Ampol and Santos. They also set out a long-term decarbonisation and transformation strategy.

The table below presents the frequency at which the ASX200 reported against scenarios of different levels of warming as well as the sheer scale of different scenarios used. The table shows all scenarios reported in public disclosure, which includes those undertaken and those planned or in progress.

Table 7: Scenario analysis for the FY19 reporting year up to 31 March 2020

Scenario reference		Banks	Comm. Services	Comm. & Prof . Services	Capital Goods & Services	Financials	Energy & Utilities	Retail & Food	Healthcare	Household & Personal Products	Insurance	Materials	Media & Ent.	Real Estate	Retailing	Transport
1.5°C	RCP 2.6			DOW		CGF		CCL	CSL, **CWY**		NHF, QBE	MIN, NST		CHC, CLW, CQR, SGP, MGR, GMG, GPT, SCP		
	Greenpeace advance energy revolution						OSH									
	1.5 °C Global Energy Monitor	NAB														
	'1.5 degrees' *								ANN			CSR, BHP		GPT, LLC, SCG	WES	TCL
	1.5°C 'All in'	NAB														
	1.5°C IPCC	WBC			BXB	MQG	AGL, APA,				IAG					
	Dedication & delivery													DXS		
	Sectorial Decarbonization Approach to 1.5°C							WOW								
Below 2°C	IEA 1.5 °C (only reaches 1.65°C so counted as a below 2°C scenario)						ORG									
	IEA Below 2°C Scenario						BPT, STO, ALD					NCM				
	Ambitious, global, coordinated action											ORI				
	Proactive effort											NST				
	Beyond 2 degrees															QAN
	Accelerated Action		TLS				AST									
	Aggressive mitigation						VEA									

Scenario reference		Banks	Comm. Services	Comm. & Prof . Services	Capital Goods & Services	Financials	Energy & Utilities	Retail & Food	Healthcare	Household & Personal Products	Insurance	Materials	Media & Ent.	Real Estate	Retailing	Transport
	Ambitious, coordinated global climate action											ORI				
	'Below 2 °C' *				BXB		AGL, APA	COL				BHP (being undertaken in 2020)		LLC		
	Rapid Transition											FMG				
	IEA Sustainable Development Scenario	NAB, WBC				MQG	BPT, NHC, STO, WHC, WPL					ABC, ORI, RIO, NCM		GMG		AZJ, SYD
	Society 3.0											RIO				
	Rapid transition											FMG				
	Renewable energy scenario	WBC														
	RCP 4.5 (IPCC)	CBA							CSL			NST, OZL		URW, VCX		
	Global Cooperation						AZJ	CCL			SUN	BSL, S32		GMG		
2-3°C	IEA 450	ANZ														
	Globally Aligned carbon policy											BLD				
	Global energy transformation											IGO				
	Bloomberg New Energy Finance											ORI				
	Emergence of new regional powerhouse											ORI				
	Divided world		TLS													
	Regionally Differentiated carbon policy											BLD				
	Passive response											NST				

Scenario reference		Banks	Comm. Services	Comm. & Prof . Services	Capital Goods & Services	Financials	Energy & Utilities	Retail & Food	Healthcare	Household & Personal Products	Insurance	Materials	Media & Ent.	Real Estate	Retailing	Transport
	Delay and disruption													DXS		
	IEA 2°C Scenario						ORG, OSH, STO									AZJ, QAN
	IEA STEPS											NCM, ORI, ABC				
	2°C 'Innovate'	NAB														
	IEA New Policies (2.7 °C)	ANZ, NAB				MQG	APA, BPT, ALD, OSH, NHC, STO, WHC					ORI				AZJ
	Global Accord											BHP				
	Sectorial Decarbonization Approach to 2°C							WOW						DXS		
	'2 degree' *						AGL, COE	A2M	BKL		IAG, QBE	CSR, IPL, ILU, SBM	NWS	GPT, LLC, WES		TCL
	RCP 6.0 (IPCC)								CSL							
	Lower carbon view											BHP				
	Technology 4.0											RIO				
	A New Gear											BHP				
	Two Giants											BHP				
	Coordinated Action											RIO				
3°C +	Patchy progress											BSL, S32				
	Current Government Policy (NDC)/IEA Current Policy						AGL, BPT, ALD, ORG, NHC, STO, WHC, ALD, AST					AGL				SYD
	Division & deterioration													DXS		
	Disorganized mitigation						VEA									
	'3 degree' *							A2M	ANN						WES	
	Limited mitigation						VEA									

Scenario reference	Banks	Comm. Services	Comm. & Prof . Services	Capital Goods & Services	Financials	Energy & Utilities	Retail & Food	Healthcare	Household & Personal Products	Insurance	Materials	Media & Ent.	Real Estate	Retailing	Transport
Accelerating transition											FMG				
Slow transition											FMG				
Changed climate		TLS													
Regressive action											NST				
Central energy view											BHP				
Closed doors											BHP				
Climate crisis scneario											BHP				
Co-ordinated Action											RIO				
IEA Reference Technology						STO									QAN
Reference Case											BLD				
Society 3.0											RIO				
Runaway climate change						AST					BSL, S32				
Limited Action											RIO				
Extreme climate change scenario											IGO				
RCP 8.5	CBA		DOW							NHF, QBE, SUN	NST, MIN, ABC, SBM, OZL		CHC, CLW, CQR, SGP, DXS, URW, GMG, GPT, SCP, VCZ		SYD
Realpolitik 2.0											RIO				
Widespread nationalistic economic policy											ORI				
'4 degree'	ANZ					APA		BKL			CSR, IPL, ILU		GPT, LLC	WES	TCL

Notes for the above table: The table includes those undertaken or disclosed as in progress or planned and thus is more inclusive than the statistics quoted above.
* Denotes scenarios that did not provide a specific name to reference or used a combination of scenario families
QBE's analysis refers to physical risk analysis for the below 2°C low emissions consistent with Representative Concentration Pathway (RCP) 2.6; greater than 2°C (3.2°C to 5.4°C), high emissions consistent with RCP 8.5 (They also do a transition risk analysis with 3 scenarios.

Physical risk analysis: testing resilience

The disclosure of physical risk analysis continues to lag transition-risk analysis across the ASX200, despite an increasing trend for companies to report financial impacts from severe weather events during investor presentations.

At the beginning of this research paper, ACSI highlighted just some of the financial impacts noted in recent research and company disclosures. Despite these broad trends, many companies are yet to disclose whether they have conducted an assessment of physical risk exposure and the results of the assessments undertaken.

ACSI found 36 ASX200 companies disclosed a detailed level of physical-risk analysis. Most companies did so by discussing how operations would be impacted, and the risk levels that certain to which assets would be exposed. This was demonstrated, for example, by South32, Boral, and Rio in their 2019 and/or 2020 disclosures.

We found an additional 25 companies had identified 'physical risks form climate change' as a material risk area for directors to be cognisant of, and a further 21 companies with plans to undertake this analysis.

If current trends continue, ACSI expects physical risk analysis will become more sophisticated, as companies develop adaptation plans to build resilience into their assets. Many companies have begun to assess risks, such as the need manage operations differently to account for lower production from extreme heat, severe rainfall, flooding and other extreme weather events.

Companies with physical risk analysis planned or in progress include:

ADBRI Ltd, Abacus Property Group, AGL Energy Ltd, Ampol Ltd, Aristocrat Leisure Ltd, APA Group, AusNet Services, Alumina Ltd, Aurizon Holdings Ltd, Bingo Industries Ltd, Brickworks Ltd, Bank of Queensland Ltd, BlueScope Steel Ltd, Gold Road Resources Ltd, Lendlease Group, National Australia Bank Ltd, Newcrest Mining Ltd, Rio Tinto Ltd, Saracen Mineral Holdings Ltd, Telstra Corporation Ltd, Treasury Wine Estates Ltd.

Table 8: Physical risk analysis

Companies that have undertaken and disclosed physical risk analysis of assets and operations		
Ansell Ltd	Fortescue Metals Group Ltd	QBE Insurance Group Ltd
Australia & New Zealand Banking Group Ltd	Goodman Group	Scentre Group
BHP Group Ltd	GPT Group	Shopping Centres Australasia Property Group
Boral Ltd	Iluka Resources Ltd	St Barbara Ltd
BWP Trust	Insurance Australia Group Ltd	Stockland
Charter Hall Group	Macquarie Group Ltd	Suncorp Group Ltd
Charter Hall Long Wale REIT	Metcash Ltd	Sydney Airport
Charter Hall Retail REIT	Mirvac Group	Transurban Group
Coles Group Ltd	Northern Star Resources Ltd	Vicinity Centres
Commonwealth Bank of Australia	Oil Search Ltd	Westpac Banking Corporation
Cromwell Property Group	Orica Ltd	Wesfarmers Ltd
Dexus	OZ Minerals Ltd	

Appendix: Net zero targets by the ASX200

Company	Short-term target	Medium-term target	Long-term target	Science based
ADBRI Ltd	5-year 7% GHG emissions reduction for scope 1&2 from 2019 baseline. 5-year target of 50% kiln fuel to be sourced from alternative fuels in SA from 2019 baseline. 5-year target of 20% increase in tonnage from 2019 baseline for alternative raw materials.		**Aspiration to be net zero by 2050.**	No
AGL Energy Ltd	10% reduction in the emissions intensity of its operated generation by FY24 from a baseline year of FY15.		**Commitment to net zero by 2050.**	No
Ampol Ltd	By 2025: Fuels and Infrastructure - reduce operational-emissions intensity (CO_2-e per kl of high-value product) by 5% from 2021 levels Convenience retail – reduce operational emissions on an absolute basis by 25% from 2021 levels. Renewable energy target – commit to 40% equivalent net renewable electricity for operational use. A Future Energy Strategy has been developed which has identified opportunities in electrification, hydrogen and other new products and solutions. An investment target has been set to a minimum $100m spend to 2025.	By 2030: Fuels and Infrastructure - reduce operational emissions intensity (CO_2-e per kl of high-value product) by 10% from 2021 levels. Convenience Retail – reduce operational emissions on an absolute basis by 50% from 2021 levels. Renewable energy – commit to 50% equivalent net renewable electricity for operational use.	**Commitment to net zero by 2040 (Scope 1 and 2).**	No
Australia & New Zealand Banking Group Ltd	Reducing scope 1 and 2 emissions by 24% by 2025 (against a 2015 baseline). 13% increase of renewables by 2020 (against 2017 baseline) 100% renewables for operations by 2025. Continuing to support diversified customers, which means, ANZ will no longer bank any new business customers with material (10% of	Reduce Scope 1 and 2 emissions by 35% by 2030 (against a 2015 baseline) plus other environmental targets. Reducing the carbon intensity of electricity generation lending portfolio by only directly financing low-carbon gas and renewable projects by 2030. Engaging with existing customers who have more than 50% thermal coal exposure to support	**Support transition to net zero by 2050.**	Yes

Company	Short-term target	Medium-term target	Long-term target	Science based
	revenue) thermal coal exposures. 100% renewable energy for operations by 2025.	existing diversification plans. Where these are not already in place, ANZ will expect specific, time-bound and public diversification strategies by 2025. Not directly financing any new coal-fired power plants or thermal coal mines (35% thermal coal reserves or production) including expansions. Existing direct lending will run off by 2030.		
APA Group			**APA, through the Australian Industry Energy Transitions Initiative have an ambition for net zero emissions in supply chains by mid-century.**	No
Appen Ltd	General aim to lower carbon footprint where possible		**Net zero by 2050.**	No
Aurizon Holdings Ltd	15% reduction in the GHG emissions intensity of our locomotive fleet by FY2020 (from a FY2015 baseline).	10% further emissions-reduction target by 2030 (2021 baseline).	**Net zero by 2050.**	No
BHP Group	Maintain GHG emissions below FY2017 baseline (target to FY2022).	Reduce operational GHG emissions by minimum 30% by 3030 40 reduction of emissions intensity in shipping, support tech development and pathways to reduce emissions intensity in integrated steelmaking	**BHP aims to achieve net-zero operational GHG emissions by 2050**	Yes – SDA method
Blackmores Ltd		**Net zero by 2030.** Group renewable energy target of 50% by 2030.		No
Brambles Ltd	**Operations to be net zero carbon by 2025.**			Yes
Commonwealth Bank of Australia	Reduce emissions per full time employee to 2.0 tCO_2-e by 2020. Finance $15 billion of low carbon projects by 2025. Source renewable energy for 25% of power needs by 2020.	A view to exiting the sectors [thermal coal mining and generation] by 2030, subject to Australia having a secure energy platform.	**Net zero by 2050.**	Reviewing SBTi
Coca-Cola Amatil Ltd	Reduce the carbon footprint of the drink in hand by 2020 – targets a 25% reduction in emissions intensity across Scope 1, 2 and 3 from	Reduce absolute carbon footprint by 25 per cent by 2030 (compared to 2015) (SBTi).	**Net zero by 2040 (Scope 1 and 2).**	Yes

Company	Short-term target	Medium-term target	Long-term target	Science based
	2010 baseline by 2020; Targets to increase low-carbon energy consumption to 60% of energy consumed in 2020.			
Charter Hall Group	Carbon neutral roadmap in place for all operating assets and developments, work with tenants to understand Scope 3 footprint.	**100% reduction in Scope 1 and 2 emissions by 2030.**		No
Charter Hall Long Wale REIT	Carbon neutral roadmap in place for all our operating assets and developments, work with tenants to understand Scope 3 footprint	**100% reduction in Scope 1 and 2 emissions by 2030.**		No
Cromwell Property Group	56.7kg $C0_2$-e/m2/pa.	45kg CO_2-e/m2/pa.	**Net zero target for 2050.**	No
Coles Group Ltd	100% renewable energy by 2025.	Reduce Scope 1 and 2 emissions by 2030 (FY20 baseline).	**Net zero by 2050.**	No
Charter Hall Retail REIT	Carbon neutral roadmap in place for all operating assets and developments, work with tenants to understand Scope 3 footprint.	**100% reduction in Scope 1 and 2 emissions by 2030.**		No
Downer EDI Ltd		Reduce Scope 1 & 2 by 45-50% by 2035 (from FY18 base).	**Net zero in "second half of this century".**	Yes
Dexus		**Net zero emissions by 2030.**		Yes
Fortescue Metals		Carbon neutrality by 2030 & 26% reduction in Scope 1 and 2 emissions by 2030, relative to 2020.	**Net zero by 2040.**	No
Growthpoint Properties Australia	10% reduction in Scope 1&2 by 2021 (2017 base).		**100% reduction in Scope 1&2 by 2050 (2017 base).**	No
Lendlease Group	**Net zero carbon scope 1 and 2 by 2025.**		**Absolute zero carbon by 2040.**	No
Mirvac Group	10MW renewable energy installed by 2023. Carbon intensity reduced by 5% in O&I and Retail by 2021.	**Net positive' by 2030 (generating more energy and water than they consume).**		No
National Australia Bank Ltd	$70b by 2025 to environmental finance; Sourcing 100% renewable sources by 2025; 51% reduction for scope 1 and 2 by 2025 (SBT) from a 2015 baseline.	Capping thermal coal mining exposures at 2019 levels, reducing by 50% by 2028 and intended to be effectively zero by 2035 apart from residual performance guarantees to rehabilitate existing coal assets. Expects thermal coal mining	**Net zero emissions lending portfolio commitment.**	Yes

Company	Short-term target	Medium-term target	Long-term target	Science based
		exposure to reduce by 50% by 2026, and to be effectively zero by 2030.		
Newcrest Mining Ltd		30% reduction in GHG emissions intensity per tonne by 2030 (against a 2018 baseline).	**Net zero by 2050.**	No
News Corporation		Reduce fuel and electricity carbon emissions (Scope 1 &2) 60% by 2030 from a 2016 base year.	**Achieve net zero carbon emissions by 2050.**	Yes
Origin Energy Ltd	Increasing the share of renewables to more than 25% of generation mix by 2020. Reduction in Scope 1 emissions by 10% on average, over the next three financial years to FY2023, compared to FY2017 SBTi baseline	50% reduction in Scope 1 and 2 (emissions from its generation business and other activities) and a 25% reduction in Scope 3 emissions, incurred in the transport of energy to end users by 2032.	**Net zero by 2050 or earlier.**	Yes
Oil Search Ltd		30% reduction by 2030 (2020 base year).	**Net zero by 2050.**	No
OZ Minerals Ltd			**Net zero by 2050.**	No
Qantas Airways Ltd	1.5% average annual fuel efficiency improvement from 2009 to 2020.		**Net zero by 2050.**	No
Rio Tinto Ltd		30% reduction in emissions intensity by 2030 and a 15% reduction in absolute emissions. It believes those targets are achievable without any technological change.	**Net zero by 2050.**	No
South32 Ltd	To hold Scope 1 emissions at FY15 baseline levels in FY21. To keep combined Scope 1 & 2 emissions below FY19 forecast of 24.3mt CO_2-e	50% reduction in Scope 1 and 2 on FY21 baseline	**Every 5 years sets emission reduction targets to achieve "net zero" emissions goal by 2050 in line with the ambition of the Paris Agreement.**	No
St Barbara Ltd		improve production emission efficiency (gold ounces/CO_2 t) by 18.6% (on 2013 levels) by 2030 (this is being put to SBTi for accreditation).	**Net zero by 2050.**	Yes
Scentre Group	Reduce emissions intensity (based on GLA) by 35% by 2025 (compared with 2009 baseline). Note: This target has been achieved and new targets being set in 2021.	**Net zero scope 1 and 2 by 2030 across wholly-owned portfolio.**		No

Company	Short-term target	Medium-term target	Long-term target	Science based
Sandfire Resources Ltd			**Net zero by 2050.**	No
Sims Ltd			**Net zero by 2050.**	Reviewing SBTi
Stockland	60% reduction in intensity of retail and office by 2025 (2006 baseline).	**Net zero carbon emissions by 2030 (Industrial, Retirement and corporate offices).**		No
The Star Entertainment Group Ltd	30% reduction in carbon and water intensity by FY2023 against a baseline of FY2013 on a square metre basis.	**Net zero carbon emissions for wholly owned and operated assets by 2030.**		No
Santos Ltd	Reduce emissions by more than 5% across Cooper and Queensland by 2025 & grow LNG exports by at least 4.5 mn tonnes per annum.	2030: Reduce Scope 1 and 2 absolute emissions by 26-30 per cent on 2020 baseline. 2030: Actively work with customers to reduce their Scope 1 and 2 emissions by >1mtCO_2e per year by 2030.	**Net zero by 2040 for Scope 1 and 2.**	No
Suncorp Group Ltd	100% renewable energy by 2025.	51% absolute reduction by 2030 (Corporate); 59% intensity reduction by 2030 (industrial) from 2017-18 baseline.	**Net zero (Scope 1 and 2 emissions) by 2050.**	Yes
Sydney Airport	50 per cent reduction in emissions per passenger by 2025 & carbon-neutral operations by 2025 in line with the Paris Agreement.	**Net zero by 2030 (Scope 1 and 2).**		No
Transurban Group	10% energy reduction by 2023, from a 2016 baseline	50% reduction in Scope 1 and 2 emissions by 2030, compared to 2020 levels. Reduce the carbon intensity of major projects by 55% by 2030 (Scope 3 tCO_2-e from major projects, per $M project capital cost). Reduce the carbon intensity of purchased goods and services by 22% by 2030 (Scope 3 tCO_2-e from supplier spending, per km travelled on its roads as a measure of business output).	**Net zero 2050.**	Yes
Telstra Corporation Ltd	Renewable energy generation equivalent to 100% of Telstra's consumption by 2025.	50% reduction in absolute emissions by 2030.	**Net zero 2050.**	Yes

Company	Short-term target	Medium-term target	Long-term target	Science based
Vicinity Centres	Annual portfolio energy/carbon intensity reduction target of 3% (against FY20 baseline) by end FY21.	**Net zero carbon emissions by 2030.**		No
Virgin Money UK PLC	5% reduction in operational carbon emissions by 2021 from 2020 baseline.	**Net zero operational (Scope 1 and 2) emissions by 2030, reducing carbon emissions across financing activities by at least 50% by 2030.**		Yes
Wesfarmers Ltd	All targets are for 2025 on 2018 baselines WesCEF – reduce emissions intensity below peers; Kmart – 20% absolute; Bunnings – 10% absolute; Officeworks – 25% absolute; Industrial Safety – 12% absolute; Coregas – reduce intensity below peers.	**Net zero Scope 1 and 2 for Bunnings, Kmart Group and Officeworks by 2030.**	**WesCEF and Coregas: net zero Scope 1 and 2 emissions by 2050 (aspiration). Industrial and Safety (ex-Coregas): net zero Scope 1 and 2 emissions by 2050.**	No
Worley Ltd		**Net zero by 2030 for Scope 1 + 2, plans to set Scope 3 targets**		No
Woodside Petroleum Ltd	15% below baseline by 2025 (Baseline is set as the average equity Scope 1 and 2 emissions over 2016-2020)	30% below baseline by 2025 (Baseline is set as the average equity Scope 1 and 2 emissions over 2016-2020)	**Net zero by 2050**	No
Woolworths Group		Reduce absolute Scope 1 and 2 greenhouse gas emissions by 63 per cent by 2030 from a 2015 base year (SBT) Reduce absolute Scope 3 greenhouse gas emissions by 19 per cent by 2030 from a 2015 base year (SBT)	**Net zero by 2050**	Yes

Appendix: Carbon neutral targets/achievements by the ASX200

Company	Target or achievement
AMP Limited	Already carbon neutral
Afterpay Limited	Aiming to achieve carbon neutrality by purchase of carbon credits & aiming for certification from Climate active
Bendigo and Adelaide Bank Limited	Carbon neutral by 2021, 100% renewable by 2025
Bank of Queensland Limited	Already carbon neutral
Challenger Limited	Already carbon neutral
Fortescue Metals Group Ltd	Carbon neutral by 2030 in addition to a net zero by 2040 target
Goodman Group	Carbon neutral by 2025
GPT Group	Already carbon neutral
IGO Limited	Carbon neutral by 2035
Macquarie Group Limited	100% renewable energy by 2025
National Australia Bank Limited	Already carbon neutral
NIB Holdings Limited	Carbon neutral by 2022
QBE Insurance Group Limited	Already carbon neutral
SkyCity Entertainment Group Limited	Already carbon neutral
Sydney Airport	Carbon neutral operations by 2025 in addition to a net zero target
Technology One Limited	Carbon neutral target (undisclosed timeframe)
Westpac Banking Corporation	Already carbon neutral
Xero Limited	Already carbon neutral

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