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AASB-AUASB RESEARCH REPORT

Trends in climate-related disclosures and assurance in the Annual Reports of ASX-listed entities

November 2023

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Foreword

We are pleased to present this updated research report on the evolving landscape of climate-related disclosures and assurance within the annual reports of ASX-listed entities. This report reflects the collaborative efforts of the Australian Accounting Standards Board (AASB) and the Auditing and Assurance Standards Board (AUASB) in keeping with our commitment to advancing high-quality financial reporting and assurance. The joint collaboration between the AASB and the AUASB highlights our commitment to advancing a deeper understanding of climate-related disclosures within the Australian business environment. We believe that by working together, we can better address the complexities and challenges posed by climate change reporting that meets user needs.

As the global conversation surrounding climate change intensifies, timely research is critical to understanding the trends and developments in corporate reporting practices. This research report serves as a valuable resource for stakeholders, providing insights into the evolving dynamics of climate-related disclosures and the role of assurance thereon.

We extend our sincere gratitude to Jean You and Professor Roger Simnett, who authored this research report. This research contributes significantly to our understanding of emerging issues, best practices, and areas that require further attention, setting an example that academic research plays an important role in this collaborative endeavour.

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Preface

This Research Report builds on the AASB-AUASB research report authored by You and Simnett (2022)[1], which identified trends in climate-related disclosures and associated assurance practices in Annual Reports of Australian listed entities 2018-2021, by extending this analysis to consider such disclosures in 2022. Much has happened since we published the AASB-AUASB research report in 2022. In particular, to address the demand for climate-related financial disclosure requirements, in February 2023 the AASB decided to add a separate project to its work program to develop climate-related financial disclosure requirements for Australia (AASB 2023). In addition, in June 2023 the International Sustainability Standards Board (ISSB) issued IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* and IFRS S2 *Climate-related Disclosures* (IFRS 2023). IFRS S1 requires an entity to disclose information about its sustainability-related and opportunities that is useful to users of general-purpose financial reports in making decisions relating to providing resources to the entity. IFRS S2 sets out the requirements for disclosing information about an entity's climate-related risks and opportunities. It builds on the earlier recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), requiring an entity to disclose information that enables users of General Purpose Financial Reports (GPFR) to understand:

a. the governance processes, controls and procedures the entity uses to monitor, manage and oversee climate-related risks and opportunities;

b. the entity's strategy for managing climate-related risks and opportunities;

c. the processes the entity uses to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process; and

d. the entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

The IFRS S1 and S2 are effective for annual reporting periods beginning on or after 1 January 2024, with early adoption permitted. Various national standard setters and regulators are discussing its adoption or alignment as they consider issuing a sustainability reporting standard.

In June 2023, the Australian Treasury (2023) issued a consultation paper on Australian reporting and international alignment for climate-related financial disclosures and associated assurance requirements. This consultation paper outlined that the detailed climate-related disclosure standards will be formally established in Australia by the AASB.

There have also been parallel developments in the assurance space. In June 2023 the International Auditing and Assurance Standards Board (IAASB) approved releasing an Exposure Draft on General Requirements for Sustainability Assurance Engagements (Proposed ISSA 5000). ISSA 5000 aims to serve as a comprehensive, stand-alone standard suitable for sustainability assurance engagements, including the recently released IFRS S1 and S2. In August the Australian Auditing and Assurance Standards Board (AUASB) released a Consultation Paper seeking public comment on the IAASB's Exposure Draft on Proposed ISSA 5000, with the comment period closing on 10 November 2023.

This research aims to provide information to inform the AASB and the AUASB in any consideration of current reporting and assurance standards regarding climate-related disclosures, using a large sample that covers almost all listed entities in Australia for 2018-

1 https://www.aasb.gov.au/media/xu5leeby/aasb-auasb_rr_climaterelateddisclosures_12-22.pdf

2022. With the emphasis of IFRS S2 on being informing users of GPFR, this report does not explicitly cover climate-related disclosures and assurance practices outside the Annual Report, except to the extent that those disclosures are replicated or summarised in the Annual Report. As such, the findings of this report have implications for considerations of climate-related disclosures and assurance under AASB standards for the AASB, and auditing (ASA) and assurance (ASAE) standards for the AUASB.

Executive Summary

Some of the major considerations identified were:

Implications for Consideration
Australian listed entities increasingly report climate-related information in their Annual Report/Corporate Governance Statement, with the overall disclosure rate increasing from 36.1% of listed entities in 2021 to 42.8% in 2022. While this increase is welcome, it suggests many listed entities may require substantial work to meet the requirements of IFRS S2.
This increase in reporting of climate-related information in Annual Report/Corporate Governance Statements is observed across all industry groups, demonstrating that such improvement is spread across all types of listed entities. The increasing disclosure rate across all industries supports the AASB and AUASB joint submission to the ISSB (2022) regarding the usefulness of industry-specific reporting guidance and may provide a basis for any consideration as to which disclosures are most relevant in Australia.
Climate-sensitive industries continue to be more likely to disclose climate-related information with extant reporting standards and/or guidelines. However, in no industries were disclosures at 100%, with the lack of reporting and associated assurance commentary suggesting either that there continues to be an under-consideration of climate-related matters or that such matters are immaterial to all listed entities, even for some entities in climate-sensitive industries.
In relation to ASX entity size, while there has been a plateauing in 2022 of the disclosure rates for ASX 300 entities, there has been a marked increase in other listed entities incorporating climate-related information into their Annual Report. The ASX 300 entities appear to be reaching close to a saturation point in voluntarily disclosing climate-related information in the Annual Report.
In relation to the location of the climate-related information in the Annual Report, most of the disclosures are still in the other information section of the Annual Report, (outside the Financial Report and the Directors' Remuneration Report). However, there has been a significant jump in 2022 in disclosures in the Annual Report (Notes to the Financial Report) of 75.3% compared with 2021, and of 59.5% in disclosures in the Directors' Remuneration Report compared with 2021. This supports the view that Australian entities increasingly recognise the significance of climate-related impacts on their financial position and performance.
The disclosures in the Financial Report for 2022 are particularly pronounced for the largest ASX 500 entities, with, for example, more than 50% of the largest ASX 100 entities that disclose climate-related information now disclosing such information in these statements, compared with 36.3% of such entities in 2021. This increase is also seen to be spread across all industry groups.

The significant jump in the disclosures in the Notes to the Financial Report is especially reflected in a significant increase in the specific notes related to *accounting policies and judgement, or basis of preparation*, with an increase from 19 instances in 2021 to 64 in 2022. Other notes in which climate-related disclosures were most frequently observed were the *carrying value and impairment of non-financial or intangible assets* (26 in 2021 to 34 in 2022), followed by *risk management* (17 in 2021 to 23 in 2022), *property, plant and equipment* (11 in 2021 to 21 in 2022) and *subsequent events, including provisions and contingencies* (14 in 2021 to 19 in 2022).
The largest entities are identified as those that are most likely to include climate-related content in their remuneration reports. There are significant increases for ASX 100 entities from 31.9% (29 of 91 disclosers) in 2021 to 41.8% (38 of 91 disclosers) in 2022, and for ASX 101-300 entities, increasing from 5.8% (6 of 103 disclosers) in 2021 to 16.8% (19 of 113 disclosers) in 2022. We continue to observe very limited climate-related disclosures in the remuneration reports outside ASX 300 entities in 2022.
The number of disclosers referencing the TCFD recommendations continually increases from 61 out of 1,914 (3.2%) in 2018 to 181 out of 1,930 (9.4%) in 2021 and further to 211 of 2,004 (10.5%) in 2022. The number of entities reporting following the explicit four pillars of the TCFD reporting structure increases from 17 of 1,914 (0.9%) in 2018 to 62 of 1,930 (3.2%) in 2021 and further to 69 of 2,004 (3.4%) in 2022.
From an assurance perspective, many climate-related disclosures in the Annual Report are still outside the Financial Reports and thus not subject to audit. The credibility-enhancing techniques for such disclosures are covered by ASA 720. The final revised ASA 720 was one of the more contentious outcomes from the revision of the auditor reporting standards, with concerns about whether the auditor's level of involvement is correctly understood. We believe that this disclosure trend increases the importance of ensuring that ASA 720 is fit for purpose in the current environment.
The continuing significant increase in climate-related information in Financial Reports and remuneration reports also directly impacts the Financial Report audits. Although this was anticipated by the AASB-AUASB (2019), there has not been a consequential change in underlying auditing standards or application material to support audit practice in these circumstances. Application material may be especially beneficial with the proposed IASB S2 disclosures requiring assurance in the near future.
The number of climate-related content in KAMs continues to increase, from 9 in 2021 to 14 in 2022. Climate-related KAMs are often sticky and commonly repeated in the subsequent years. There is no guidance or examples in the current ASA 700 series for auditors as to how, what and why they should incorporate these types of KAMs in their auditor's report. We believe climate-related issues are increasingly likely to give rise to KAMs, and we are now seeing instances of better practices that could be showcased.
The Australian Treasury (2023) provides an assurance roadmap, with, for example, in 2026, reasonable assurance for scope 1 and 2 emissions and limited assurance of scope 3 emissions, scenario analysis and transition plans. Very few entities are currently being assured at this level, with the three identified in 2022 being the same number as identified in 2021. The AUASB currently provides no clear guidance for such hybrid levels of assurance engagements or the format of the assurance report that should result.

1. Methodology

This Research Report extends an earlier AASB/AUASB research report authored by You and Simnett (2022), which considered climate-related disclosures in Annual Reports by Australian listed entities and associated audit/assurance practices for 2018-2021, by evaluating and reporting on such disclosures and associated audit/assurance practices by Australian listed entities in 2022. We especially highlight any observed trends in reporting from 2021 to 2022.

The research builds off a joint bulletin issued by the AASB and AUASB (2019) to guide climate-related and other emerging risk disclosures and related audit/assurance practices in Annual Reports. It also builds off updated ASIC regulatory guidance highlighting the reporting of climate risk in the operating and financial review, prepared as a result of their examination of climate-related disclosures in the largest listed entities (ASIC 2018). In addition, the ASX (2019) requested listed entities to disclose material environmental risks in their Corporate Governance Statements.

We define Annual Reports as the reporting package organisations must deliver under the corporate, compliance or securities laws of the country in which they operate. As such, we focus on climate-related disclosures in the Annual Report (which contains the audited financial results) and disclosures contained in the associated Appendix 4G Corporate Governance Statement (CGS), which is required under the reporting framework of the ASX Listing Rules[2], irrespective as to whether it is contained in the Annual Report or not. We include all climate-related disclosures in the CGS to remove the impact on our trend analysis of the increasing trend to report the CGS separately to the Annual Report. Although separate disclosure is permitted, if so separately disclosed it required to be referenced within the Annual Report and lodged at the same time as the Annual Report.

This research aims to inform the AASB and the AUASB of trends in climate-related disclosures and related audit approaches. We use a large sample that covers almost all listed entities in Australia for 2018-2022. The report does not cover climate-related disclosures and assurance practices outside the Annual Report, except to the extent that those disclosures are replicated or summarised in the Annual Report. As such, the findings of this report have implications for considerations of the development of climate-related disclosures and assurance standards. The findings also indicate the level of early reporting or preparedness to meet the IFRS S2 requirements.

Our data are sourced from the Connect4 database which provides textual searching in the combined Annual Reports and CGS (hereafter, Annual Reports) issued by all ASX-listed entities. Our sample period begins in 2018, corresponding to the first year after the issuance of the Task Force on Climate-related Financial Disclosures (TCFD) reporting recommendations (2017), and ends in 2022, the latest full year of data available at the time of writing.[3] The scope of the research report is nearly all ASX-listed entities, and thus our sample size totalled 9,588 observations from 2018 to 2022. The breakdowns for each year are reported in Figure 1 in the next section.

To identify climate-related disclosures, we use the same key terms You and Simnett (2022) used to ensure appropriate comparison. The key terms used were “climate change”, “global warming”, “carbon emission”, “greenhouse gas”, “climate risk”, “carbon risk”, “CO2”, “climate related”, “climate-related”, “climate strategy”, “TCFD”, “Climate Resilience”, “climate active”, “climate action” and “GRI”.

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2 ASX listing rule 4.10.3 requires an entity’s Corporate Governance Statement to be published in its annual report or on its website (ASX 2019).

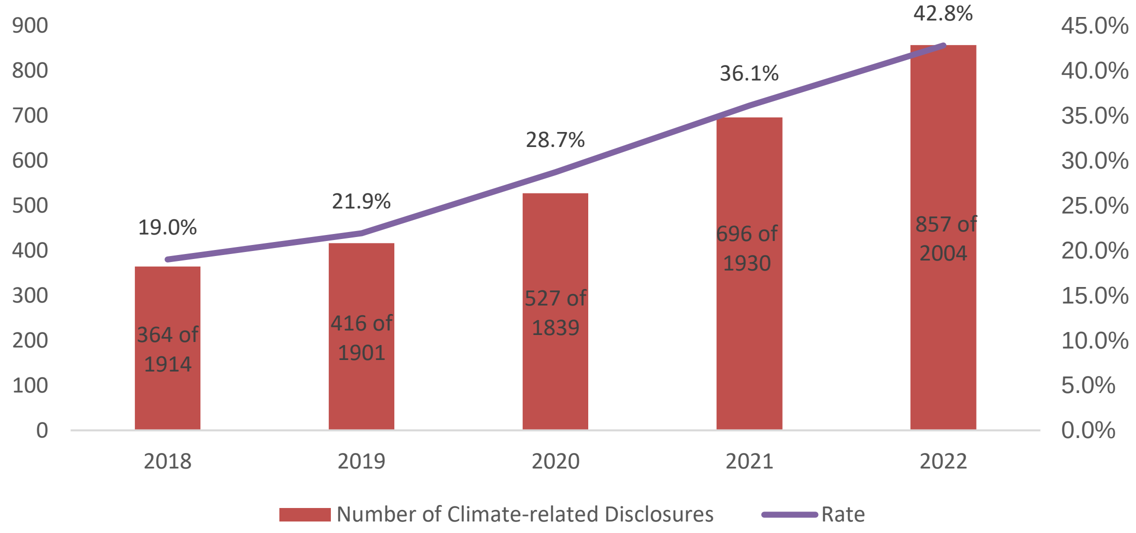
3 The data collected for this report was available up until August 2023.

Based on these key terms we first identified entities with climate-related disclosures in the sample period and downloaded their Annual Reports from the Connect4 database. Then we manually reviewed such disclosures to find out the nature of disclosures and their locations (or sections) in the Annual Reports and excluded disclosures captured where the content was irrelevant to entities' climate performance.[4] In addition, we reviewed any reports of assurance on climate-related information as well as climate-related content in the independent auditor's report. We will now discuss our analysis in the next section.

2. Climate-related disclosures in Annual Reports: extent

Figure 1 demonstrates a steady increase in disclosing climate-related information in Annual Reports among ASX-listed entities. The number of entities disclosing climate-related information in their Annual Reports or Corporate Governance Statements increased from 364 (19% of listed entities) in 2018 to 857 (43% of listed entities) in 2022. The yearly increase indicates that Australian entities progressively recognise and report the significance of climate-related impacts.

Figure 1: Overview of climate-related disclosures for listed companies in Australia



4 Such as, where a search term was contained in the name of a product or a subsidiary.

2.1 Disclosures by industry

Further to the overall rate, Figures 2A and 2B report the disclosure practices in each industry using the Global Industry Classification Standard (GICS) sector classification. Guided by TCFD (2017) and AASB-AUASB (2019), we group the industries by the extent to which they are exposed to climate-related risks, and define climate-sensitive industries as Consumer Staples, Energy, Financials, Industries, Materials, Real Estate and Utilities.

Every industry has experienced an increasing trend, with Utilities having the highest proportion of disclosers in Annual Reports for every year from 2018 (56%) to 2022 (80%). Health Care (9% in 2018 to 27% in 2022) and Information Technology (7% in 2018 to 29% in 2022) have the lowest proportion of entities currently disclosing. The improvements in the disclosure rates for each industry from 2018 to 2022 range from 18% to 37%, with the greatest increase in the Energy sector and the smallest in the Healthcare sector. A comparison of Figures 2A and 2B shows that, on average, entities in climate-sensitive industries are significantly more likely to disclose climate-related information in Annual Reports, while there is a continual increase every year in every industry.

Figure 2A: Disclosures by climate-sensitive industries

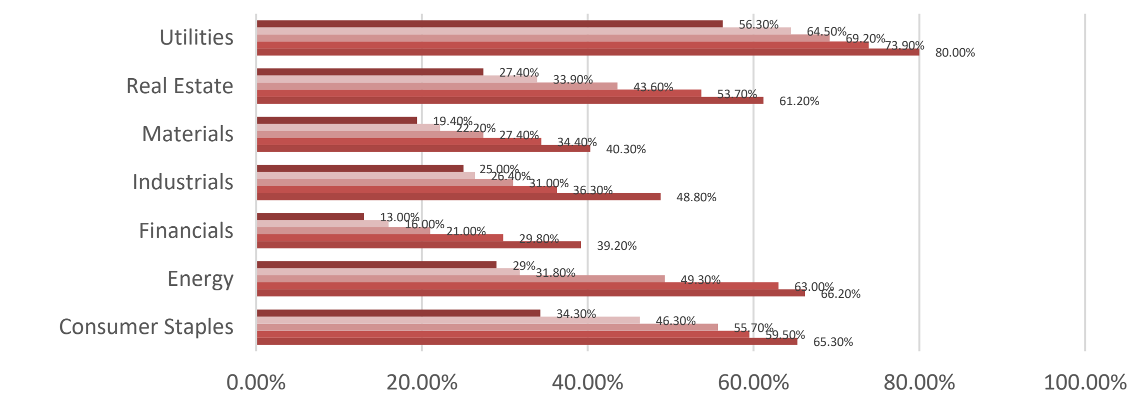
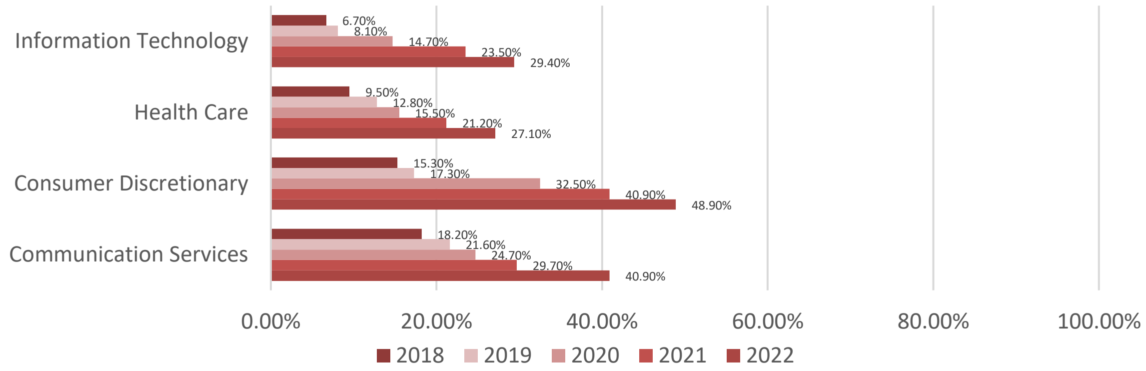


Figure 2B: Disclosures by other industries



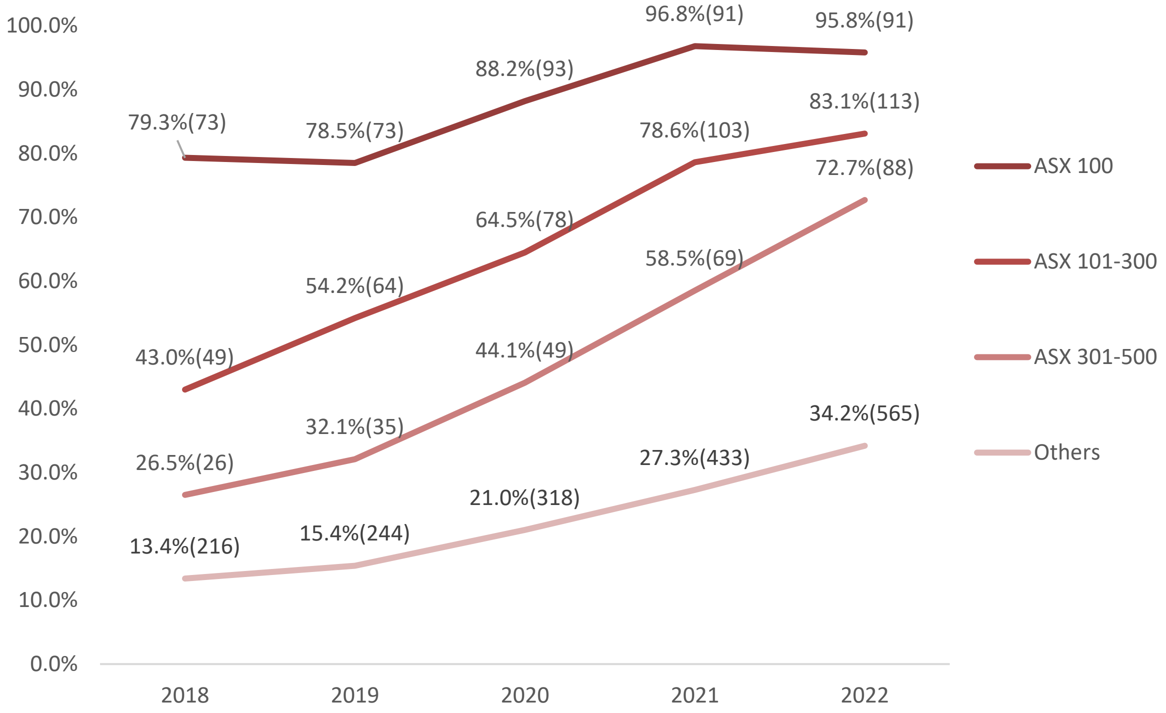
2.2 Disclosures by entity size

In addition to industries, we have also analysed disclosures of climate-related information in Annual Reports based on entity size, as categorised by ASX 100, ASX 101-300, ASX 301-500 and others. The ASX categorisation, applied over the years, was based on the market capitalisation ranking of a listed entity as of 20 August 2023, not on membership of these groups for index (share-trading) purposes. We undertake this approach to keep the size categories contemporaneous and ensure that movements in categories reflect changes in disclosures and assurance for entities in that cohort rather than within-section variations caused by entities moving between categories.

The expectation that entity size is likely to impact the likelihood of climate-related disclosures is shown to hold, as reflected by the disclosure rate rising with entity size. ASX 100 entities are most likely to disclose climate-related information in their Annual Reports, followed by ASX 101-300 and ASX 301-500. While there has been a plateauing of the disclosure rate for ASX 300 entities identified in 2022, there has been a marked increase in other listed entities incorporating climate-related information into their Annual Reports.

As the largest 300 ASX entities appear to be reaching close to a saturation point in disclosing climate-related information in the Annual Report, as the AASB considers mandating disclosures for all listed entities, it may be informative for them to examine why a small number of the largest ASX companies have decided to-date not to do so.

Figure 3: Disclosure rate by entity size



Notes: (1) the number of disclosers is in brackets. (2) Others include listed entities that are not in the ASX 500, or, over time, delisted and suspended.

3. Climate-related disclosures in Annual Reports: location

Further to the overall disclosures, we are also interested in identifying the sections of the Annual Report in which climate-related disclosures occur. From an auditors' perspective, information outside the Financial Report is not subject to audit. However, ASA 720 requires auditors to read and consider other information in the Annual Report to determine if it is materially consistent with the Financial Report and the auditor's knowledge and evidence obtained during the audit. As auditors have different responsibilities towards the information in the Annual Report based on where it is disclosed, it is important to understand where climate-related disclosures appear in the Annual Reports.

Table 1 outlines the sections in the Annual Report where climate-related information is disclosed. We identify that all entities disclosing climate-related information have disclosed this information in sections of the Annual Report outside those parts audited, being the Financial Report and the Directors' Remuneration Report. The likely sections include principle 7.4 of the Corporate Governance Statement, or, in the Annual Report, sections on sustainability, risk management, operating and financial review, environmental regulation, or a discussion of performance in the director's report and chairperson's or CEO's letter. Given that the format of Annual Reports is not standardised in Australia, there is also a scattering of disclosures outside these stated sections.

Table 1: Sections in the Annual Reports with climate-related disclosures

	2018		2019		2020		2021		2022	
	No.	%	No.	%	No.	%	No.	%	No.	%
Entities with climate-related disclosures	364		416		527		696		857	
Disclosures in the notes to Financial Reports	16	4.4%	31	7.5%	47	8.9%	73	10.5%	128	14.9%
Disclosures in Directors' Remuneration Reports	5	1.4%	14	3.4%	21	4.0%	42	6.0%	67	7.8%
Disclosures in other sections of Annual Reports	364	100%	416	100%	527	100%	696	100%	857	100%

Information outside the financial statements is not subject to audit. However, the auditing standards require the auditor to read and consider such information in the Annual Report to determine if it is materially consistent with the financial statements and the auditor's knowledge. It is important that users understand that the auditor's opinion does not cover this other information outside the financial statements, and auditing standard ASA 720 has been amended to require the auditor's report to communicate this explicitly.

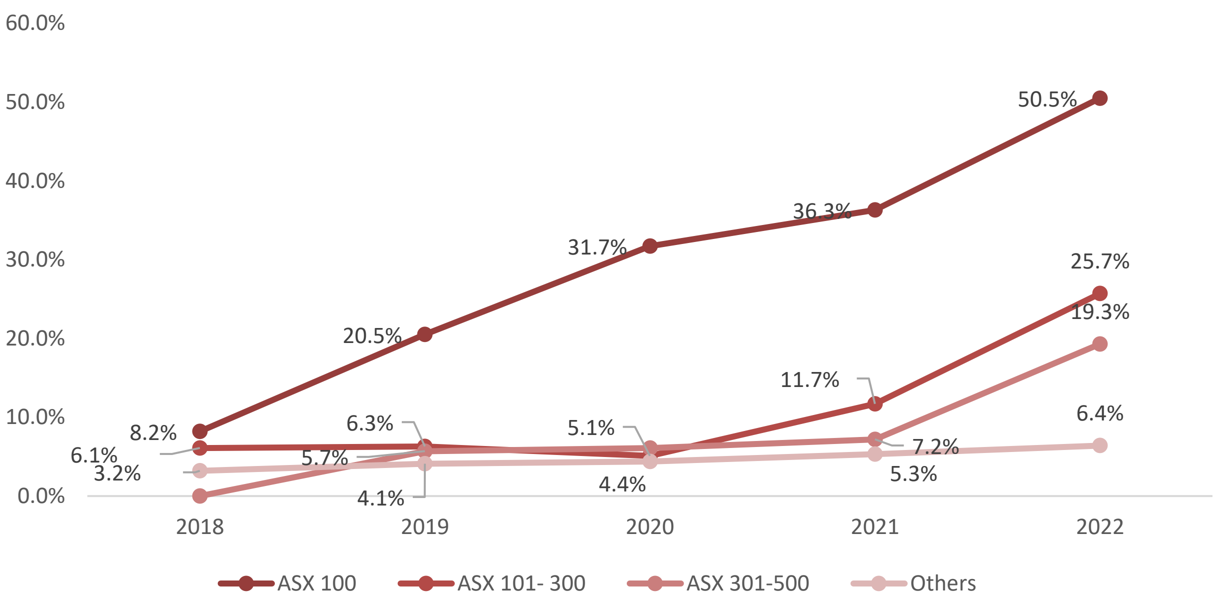
With respect to parts of the Annual Reports that are audited, being the Financial Report and the Directors' Remuneration Report, we find an increase in the climate-related disclosures in the Financial Report (Notes to the Financial Report) from 16 of 364 (4.4%) in 2018 to 128 of 858 (14.9%) in 2022, as shown in Table 1. In particular, the number of entities reporting such information in the Notes to the Financial Report (128) in 2022 is a 75.3% increase above the number reporting in 2021 (73). This supports the view that Australian entities increasingly recognise the significance of climate-related impacts on their financial position and performance. More details of the specific Notes in which this climate-related information is discussed in Section 3.1.

We also notice an increasing number of entities that have directors' compensation linked to climate-related performance, which has led to an increase in such disclosures in remuneration reports. In particular, the number of entities reporting such information in the Directors' Remuneration Report (67) in 2022 is a 59.5% increase above the number reporting in 2021 (42). Climate-related performance is usually reflected by quantifiable or factual indicators, such as reduction in greenhouse gas emissions and issuance of climate reports. The credibility of the underlying quantitative climate-related information is expected to be enhanced, especially the climate-related impacts on the remuneration policies, by audit requirements covering remuneration reports.[5] We also report more details about climate-related disclosures in the Directors' Remuneration Reports in Section 3.2.

3.1 Disclosures in Notes to the Financial Reports

As outlined above, there is a significant jump in climate-related mentions in the Notes to the Financial Report for the period from 2018 to 2022, as reported in Table 1. Similar to the overall disclosure trend, we find the largest entities have the highest likelihood of considering climate-related impact in their Notes to the Financial Report. Figure 4A reports the percentage of climate-related disclosures in the Notes to the Financial Report in each size-based group. ASX 100 entities have the greatest proportion across four years, ranging from 8.2% (6 entities) in 2018 to 50.5% (46 entities) in 2022 of climate-related disclosers each year. Despite fluctuations in the percentage in the groups of ASX 101-300 and ASX 301-500 due to an increase in the number of disclosers, there is an overall rising trend of disclosures in the Notes to the Financial Report across each of the size categories, and this trend is especially pronounced in 2022. The proportion of ASX 101-300 increases from 6.1% (3 entities) in 2018 to 25.7% (29 entities) in 2022, and ASX 301- 500 goes from none in 2018 to 19.3% (17 entities) in 2022. Small entities also follow the trends of ASX 500 entities, with an increase in the disclosure rate in the Notes to the Financial Report from 3.2% in 2018 to 6.4% in 2022.

Figure 4A: Disclosure rate in the Notes to the Financial Report among disclosers by company size

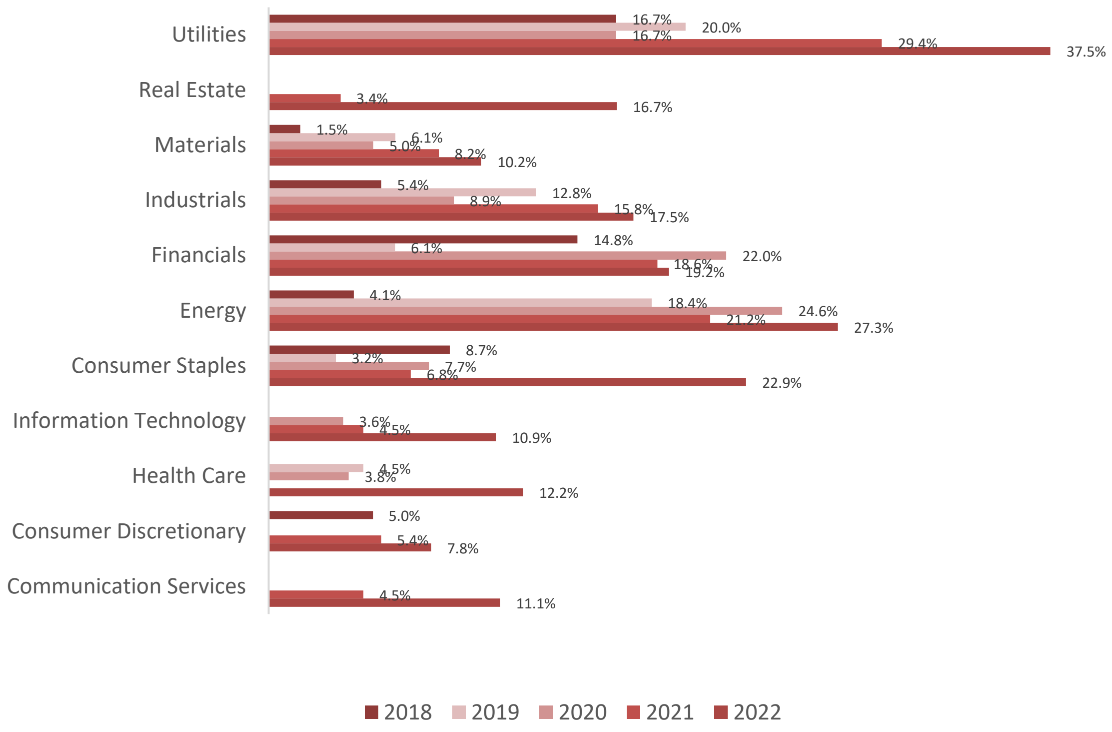


Notes: (1) Others include listed entities that are not in the ASX 500, or over time, delisted and suspended; (2) the percentage is based on the number of disclosers in the corresponding group.

5 Recognising that the auditor has only audited the impact on the remuneration policies.

Figure 4B reports the disclosure rate based on the industry in which the discloser is located. In general, entities in climate-sensitive industries are more likely to have climate-related Notes to the Financial Report.

Figure 4B: Disclosure rate in the Notes to the Financial Report among disclosers by industry

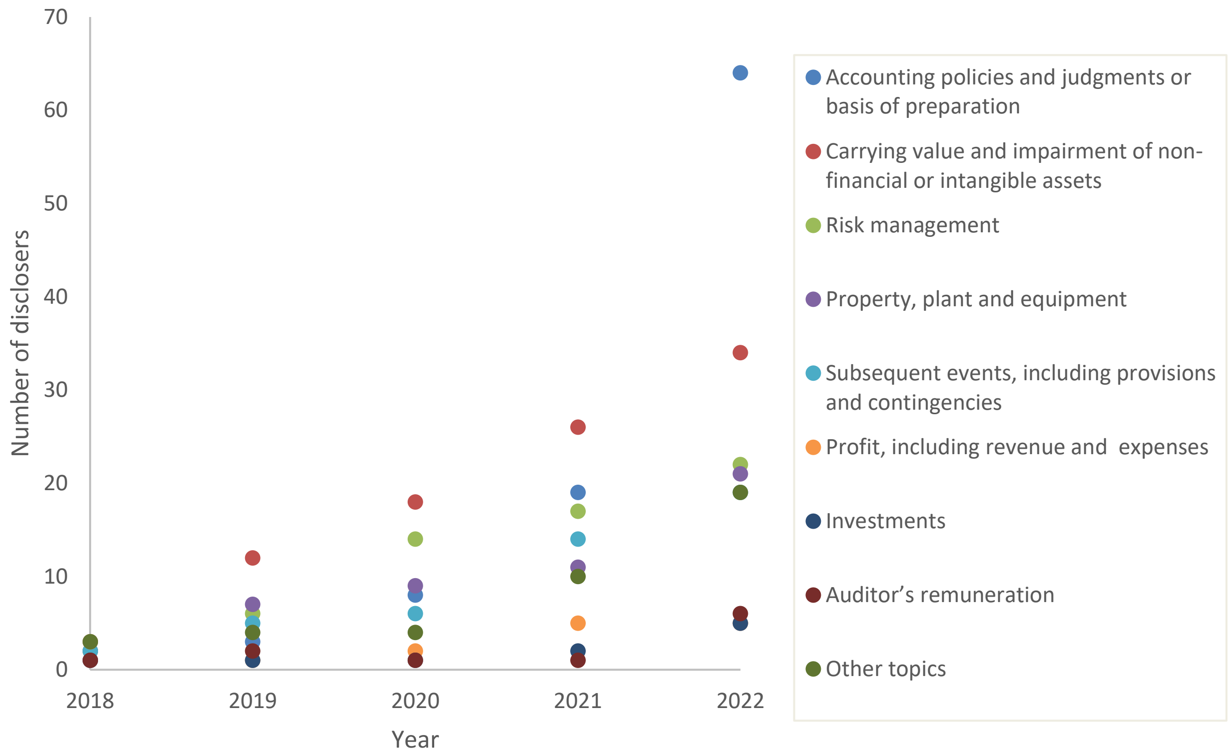


Note: the percentage is based on the number of disclosers in the corresponding industry.

We summarise the topics of relevant Notes containing climate-related disclosures in Figure 4C. The significant jump in the climate-related disclosures in the Notes to the Financial Report is especially reflected in a large increase in the specific notes related to *accounting policies and judgement, or basis of preparation*, increasing from 19 instances in 2021 to 64 in 2022. Other notes in which climate-related disclosures were most frequently observed were the *carrying value and impairment of non-financial or intangible assets* (26 in 2021 to 34 in 2022), followed by *risk management* (17 in 2021 to 23 in 2022), *property, plant and equipment* (11 in 2021 to 21 in 2022) and *subsequent events, including provisions and contingencies* (14 in 2021 to 19 in 2022). Although there are also other mentions of climate-related impacts in notes categories other than those listed, they are less frequent and usually related to specific types of entities or assets.

We also observe an increase in 2022 by six observations (from five entities in total for 2018-2021 to a total of 11 entities for 2018-2022) in the Notes to Financial Reports, which contain references to expenses/remuneration paid to auditors on climate-related services. It encompasses assurance of climate-related disclosures and/or non-assurance services their incumbent auditors provide, such as TCFD disclosures gap analysis. We also notice instances where the auditor considers climate-related topics in the Notes to the Financial Report a key audit matter (KAM). Auditors, especially Big 4 auditors, also discuss climate-related impacts in their auditors' report. It suggests that both management and auditors recognise the importance of the climate-related effects on Financial Reports. We will further discuss climate-related impacts on Financial Report audits in Section 5.

Figure 4C: Topics of the Notes with climate-related diclosures in the Financial Report



3.2 Disclosures in remuneration reports

As expected, the largest entities are identified as most likely to include climate-related content in their remuneration reports, which aligns with the overall disclosure trend discussed in Section 2. As shown in Figure 5A, ASX 100 entities represent the largest proportion of ASX entities with climate-related disclosures in remuneration reports, increasing from 31.9% (29 of 91 disclosers) in 2021 to 41.8% (38 of 91 disclosers) in 2022. Following ASX 100, entities in ASX 101-300 also experienced a growth in the disclosures in the remuneration reports, increasing from 5.8% (6 of 103 disclosers) in 2021 to 16.8% (19 of 113 disclosers) in 2022. We continue to observe very limited climate-related disclosures in the remuneration reports outside ASX 300 entities.

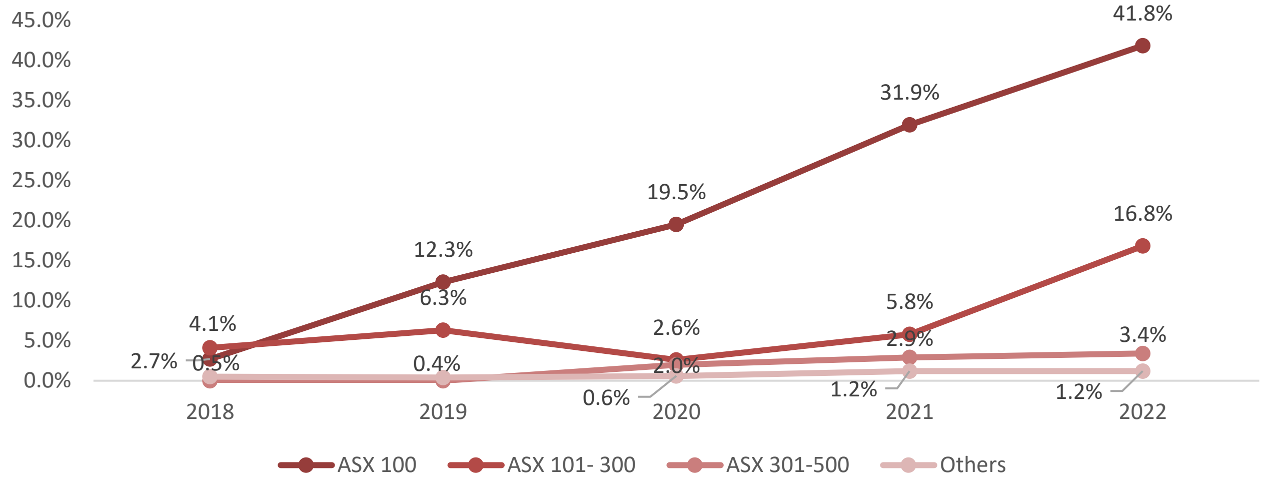
We also observe that remuneration reports containing climate-related disclosures are audited primarily by large audit firms. While Big 4 audit firms audited most disclosers, three instances were identified where the disclosers were audited by non-Big 4 audit firms, one each by Grant Thornton, RSM and BDO in 2022.

In terms of industries, Figure 5B reflects that climate-related disclosures in remuneration reports are more likely to happen if the entity operates in a climate-sensitive industry. In particular, we observe two industries where climate-related information is likely to be included in the remuneration reports: Utilities and Real Estate, where the rates of entities disclosing such information are over 20% among disclosers in these industries. All other industry categories are below 10%. While up to 2021, we observed that most cases of disclosures in the remuneration reports were in climate-sensitive industries, we can see that, in 2022, such disclosures are spreading across more, including non-climate-sensitive industries.

Entities can report climate-related information when discussing incentives, performance assessment and strategy in their remuneration reports. In 2022, 29 out of 67 remuneration reports highlight climate-related considerations in their entity strategies, which impact the remuneration plans. Further, 41 of those remuneration reports contain climate-related measures when discussing incentives and/or performance assessment. This includes both implemented and planned incentives. Climate-related incentives and performance outcomes consider commitments to climate actions primarily by reducing greenhouse gas emissions, improving reporting of climate-related performance and progressing towards the entity's climate-related strategic objectives. For example, BlueScope Steel Ltd have disclosed a reduction in carbon emissions as one of their short-term incentive plans in the years 2019 to 2022.[6]

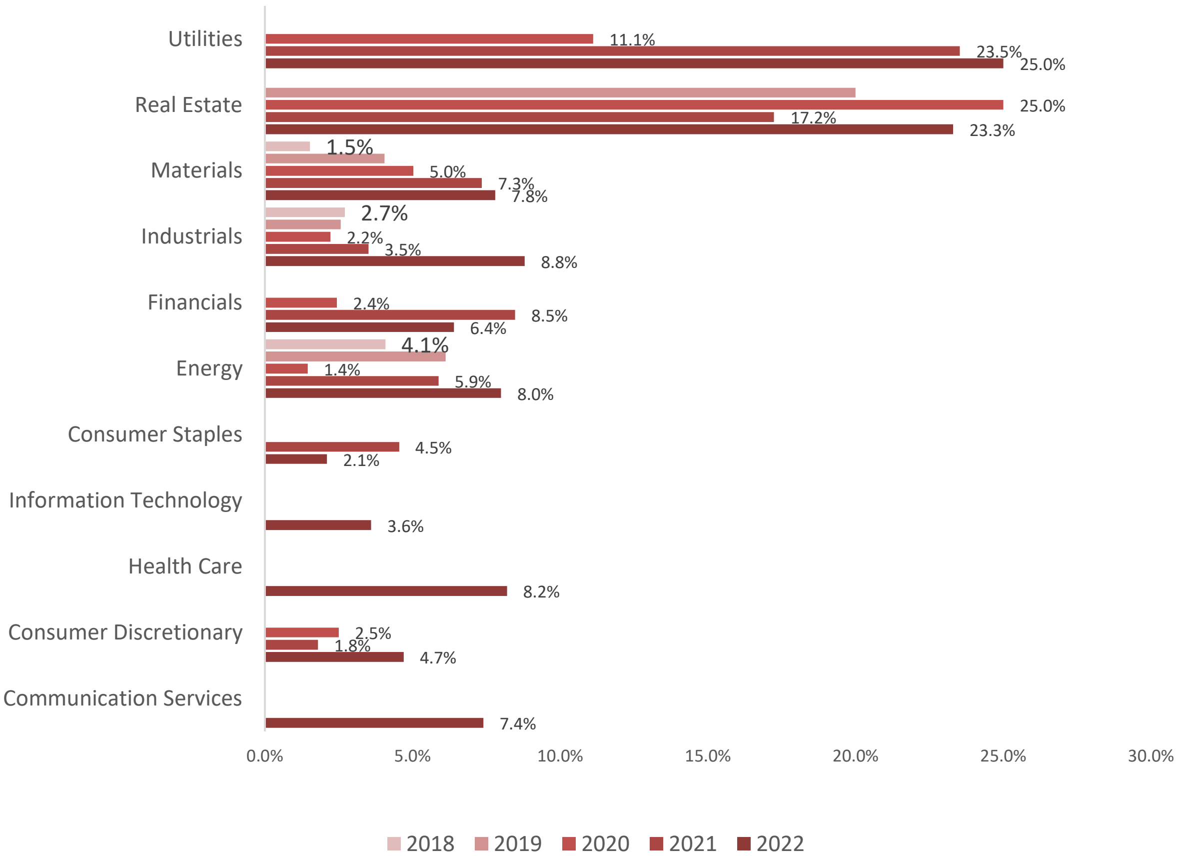
6 The short-term incentive on the climate-related target in 2022 remuneration report is showcased in Appendix 3.

Figure 5A: Disclosure rate in the remuneration reports among disclosers of climate-related information by company size



Note: (1) Others include listed entities that are not in the ASX 500, delisted, and suspended; (2) the percentage is based on the number of disclosers in the corresponding group.

Figure 5B: Disclosure rate in the remuneration reports among disclosers of climate-related information by industry



Note: the percentage is based on the number of disclosers in the corresponding industry.

4. Climate-related disclosures in Annual Reports: Alignment of disclosures with TCFD

As the IFRS S2 requirements of climate-related disclosures are built upon TCFD recommendations (IFRS S2 2023), we identify references to voluntary adoption and alignment with the TCFD reporting framework in Annual Reports. In terms of reporting quality, we focus on entities' alignment with the TCFD recommended reporting structure, which was available at the time of reporting and refers to the following four pillars: governance, strategy, risk management, and metrics and targets. We also consider it as an alignment with the TCFD recommendations if the entity provides an index mapping the TCFD recommended items to sections in the Annual Report.

Table 3 reports a steady increase in adopting and aligning with the TCFD recommendations among climate-related information disclosers. Despite our focus on the TCFD, it is noteworthy that entities might apply the TCFD framework together with other reporting frameworks. The number of disclosers referencing the TCFD recommendations continually increases from 61 of 1,914 (3.2%) in 2018 to 181 of 1,930 (9.4%) in 2021 and further to 211 of 2,004 (10.5%) in 2022. The number of entities reporting following the four pillars of the TCFD reporting structure increases from 17 of 1,914 (0.9%) in 2018 to 62 of 1,930 (3.2%) in 2021, and further to 69 of 2,004 (3.4%) in 2022.

Table 3: Disclosure of adoption and alignment with TCFD

	2018		2019		2020		2021		2022	
	No.	%	No.	%	No.	%	No.	%	No.	%
Entities with climate-related disclosures	364	19.0%	416	21.9%	527	28.7%	696	36.1%	857	42.8%
Entities referencing the TCFD recommendations	61	3.2%	85	4.5%	133	7.2%	181	9.4%	211	10.5%
Entities with the explicit four sections of the TCFD reporting structure	17	0.9%	29	1.5%	38	2.1%	62	3.2%	69	3.4%

Note: the percentage is based on the population of entities in the Annual Report in the corresponding year, as disclosed in Figure 1.

For example, QBE Insurance group[7] discusses their approach to climate change in alignment with the TCFD structure in their 2022 Annual Report. We also observe that some entities, such as Australia and New Zealand Banking Group Ltd (2022)[8], summarise their progress on each section of TCFD in the Annual Report. However, they also have a stand-alone climate change statement.

While some adopters may not explicitly demonstrate their alignment in their Annual Reports, an increasing number of entities have adopted the TCFD reporting framework since 2018 and voluntarily reported using its structure before the publication of the ISSB's initiatives on sustainability and climate-related financial disclosures. Our results support the TCFD's contention (2022) that, at least as evidenced by Australian entities, both the availability and quality of TCFD-aligned disclosures have been improving.

7 See Appendix 1.
8 See Appendix 2.

5. Climate-related impact on Financial Report audits

With greater awareness of climate-related risks by management, auditors should also consider the climate-related risks of a client as they can lead to higher inherent risk and risk of material misstatement. This report considers the climate-related impacts on Financial Report audits from a reporting perspective. It focuses on the auditors' reports, mainly the Key Audit Matters (KAMs) in the auditor's report.

As listed in Table 4, climate-related content in KAMs increased from none in 2018, 1 in 2019, 5 in 2020, 9 in 2021, to 14 in 2022. The climate-related KAMs are often sticky and commonly repeated in the subsequent years. The KAMs also detail that climate impacts the auditor's risk assessment and/or factors affecting the auditor's procedure to address their identified risk.

Table 4: KAMs with climate-related content

Panel A: The number of entities with KAMs mentioning climate-related content

	2018	2019	2020	2021	2022
The number of entities with KAM(s) mentioning climate-related content	0	1	5	9	14

Panel B: Details KAMs with climate-related content

Entity	GICS sector	Years	KAM topic	Risk or Procedure
AGL Energy Ltd	Utilities	2022[9]	(1) Potential financial reporting impact of climate change (2) Carrying value of property, plant and equipment and intangible assets	(1) Risk & Procedure (2) Procedure
Australia and New Zealand Banking Group Ltd	Financials	2020 2021	Allowance for expected credit losses	Procedure
Alumina Ltd	Materials	2021	Impairment indicator assessment for Alumina Limited's equity accounted investment in AWAC	Risk
Aurizon Holdings Ltd	Industrials	2021 2022	Assessment of useful lives of assets	Procedure Risk
BHP Group Ltd	Materials	2020 2021	Assessment of the carrying value of long-lived assets	Risk
		2022	(1) Assessment of the carrying value of property, plant and equipment (2) Closure and rehabilitation provisions	(1) Risk & Procedure (2) Risk
BlueScope Steel Ltd	Materials	2022	Carrying value of property, plant & equipment (PPE) and intangible assets (including goodwill)	Procedure
Commonwealth Bank of Australia	Financials	2022	Loan impairment provisions	Risk
Cooper Energy Ltd	Energy	2022	Restoration obligations	Procedure
Genesis Energy Ltd	Utilities	2021 2022	Valuation of generation assets	Risk
Incitec Pivot Ltd	Materials	2022	Carrying value of goodwill and non-current assets	Risk & Procedure

[9] See Appendix 4.

Mount Gibson Iron Ltd	Materials	2021 2022	Provision for rehabilitation	Procedure
National Australia Bank Ltd	Financials	2019 2020 2021 2022[10]	Provision for credit impairment	Procedure
Origin Energy Ltd	Utilities	2022	Carrying Value of APLNG Equity Accounted Investment	Procedure
Rio Tinto Ltd	Materials	2020	(1) Evaluation of indicators of impairment or impairment reversal of intangible assets and property, plant and equipment in specific cash generating units (2) Evaluation of provisions for close-down, restoration and environmental obligations	(1) Risk & Procedure (2) Risk
		2021	Evaluation of impairment assessments of property, plant and equipment in specific cash generating units ('CGU')	Procedure
Stockland	Real Estate	2022	Valuation of Investment Properties – Commercial Property Carrying value of inventory and costs of property developments sold	Procedure
Santos Ltd	Energy	2021 2022	Carrying values of exploration and evaluation, oil and gas assets and goodwill	Procedure
		2022	Accounting for Restoration Obligations	Procedure
Tulla Resources plc	Materials	2022	Rehabilitation provision	Procedure
Woodside Petroleum Ltd	Energy	2020 2021	Carrying value of oil and gas properties	Procedure

With insights into industries, we notice that all of these KAMs that are included in the auditor's reports are for entities in climate-sensitive industries. For instance, KAMs with climate-related content are likely related to credit losses or impairment for banks, and asset evaluation for entities in Utilities, Industries, Energy and Materials. For entities in Financials and Energy, we observe more instances where auditors consider climate-related impacts in their procedures to address KAMs, whereas auditors are more likely to consider climate as a factor when identifying the risk of material misstatement for their clients in the Materials industry.

Besides KAMs, we note one instance where auditors raise climate change for audit planning in the auditor's report. KPMG UK and KPMG Australia, in their joint audit, have highlighted the impacts of climate change on the business, Financial Report and the planning for the audit in their auditor's report issued to Rio Tinto since 2020.[11]

10 See Appendix 5.
11 See Appendix 6.

6. Reference in the Annual Report to voluntary assurance engagements on climate-related information

Disclosures in the Annual Report can include a summary of separate stand-alone reporting engagements undertaken against the various available reporting criteria. The credibility of such information is enhanced by being subject to audit if this information is included in the Financial Report, or subject to ASA 720 requirements if it is contained in other information in the Annual Report outside the Financial Report. The credibility of disclosures in the Annual Report can further be enhanced by referencing any additional external assurance of climate-related information contained in these stand-alone reports, along with the reporting of this information. Thus, this section considers entities' disclosure in the Annual Reports of independent assurance associated with these stand-alone reporting engagements.[12] As shown in Table 5, around 5% of disclosers reference additional third-party assurance in their Annual Report. Due in part to the voluntary nature of these additional assurance engagements, entities have various practices towards revealing their purchase of third-party assurance. With the focus on what information related to these separate assurance engagements is disclosed in the Annual Report, we report in Table 5 the entities stating their purchase of external assurance of climate-related information, as well as the number that include the related assurance reports in the Annual Report.

Table 5: Voluntary assurance engagements on climate-related information

	2018		2019		2020		2021		2022	
	No.	%	No.	%	No.	%	No.	%	No.	%
Reference to the existence of such assurance engagements	18	4.9%	23	5.5%	27	5.1%	36	5.2%	40	4.7%
Of those referencing, assurance report is disclosed in the Annual Report	9	2.5%	8	1.9%	12	2.3%	16	2.3%	21	2.5%
Limited assurance reports	9		8		11		13		18	
Both reasonable and limited assurance report	0		0		1		3		3	

Note: the percentage is based on the number of disclosers in the corresponding year

Table 5 shows an increasing number of entities referring in their Annual Report to the existence of third-party assurance on climate-related disclosures (the proportion across years is stable due to the increase in the number of entities with climate-related disclosures). Across 2018-2022, we find an increase in the independent assurance reports contained in the Annual Reports in addition to the auditor's report, but again, not an increasing proportion. With our examination of these assurance reports, we identify some attributes of the assurance practices, including assurers, assurance level, assurance standards and disclosure of reporting framework. First, all of the assurance reports are issued by Big 4 auditors in 2022. Of the assurance firms, 76.2% are also the incumbent Financial Report auditor of the entity.

Second, limited assurance is the dominant assurance level. We notice assurance engagements with both limited and reasonable levels have emerged in recent years, with in both 2021 and 2022, three assurance reports contained both limited and reasonable

[12] We acknowledge that some companies which had their stand-alone climate-related information assured might include no reference to this in their Annual Report.

assurance; limited assurance on sustainability information or scope 3 greenhouse gas emissions and reasonable assurance specifically on scope 1 and 2 greenhouse gas emissions. As the Australian Treasury (2023) points out the assurance roadmap, with, for example the expectation that by 2026, reasonable assurance will be provided for scope 1 and 2 emissions and limited assurance for scope 3 emissions, scenario analysis and transition plans, very few entities are currently reporting in their annual reports assurance at this level.

Third, regarding assurance standards, all assurers applied ISAE/ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* and/or ISAE/ASAE 3410 *Assurance Engagements on Greenhouse Gas Statement*s.

Lastly, we continue to observe a great variety of reporting frameworks against which assurance is provided. Unlike Financial Report auditors where the reporting framework is required to be accounting standards and appropriate legislation, one engagement can provide assurance against one or multiple reporting frameworks, showcased by BHP Group Ltd (2022) in Appendix 7. In our sample, the applied reporting frameworks include GRI, Greenhouse Gas Protocol, TCFD, climate-related ISO standards[13], the International Integrated Reporting Framework, the Sustainability Accounting Standards Board standards, as well as national legislation, such as the *National Greenhouse and Energy Reporting Act 2007* in Australia. Mining entities can also be subject to the industry-specific guidelines of the International Council of Mining and Metals (ICMM). We also notice that, in nine assurance reports in 2022, the assurers also reference “management’s selected reporting criteria” as one of the reporting frameworks against which assurance is provided. As distinct from well-recognised reporting criteria, it is harder for the report users to judge performance unless these selected criteria are clearly outlined.

13 It specifically refers to ISO 14064-1:2018 *Greenhouse gases* for climate-related information.

7. Appendices: Good practice examples

List of Appendices:

1. TCFD structure: QBE Insurance Group Ltd (ASX: QBE) (2022)
2. TCFD progress: ANZ bank (ASX: ANZ) (2022)
3. Remuneration Report (STI Scoreboard): BlueScope Steel Ltd (ASX: BSL) (2022)
4. Extract from auditor’s report issued to AGL Energy Ltd (ASX: AGL) (2022): KAM topic
5. Extract from auditor’s report issued to National Australia Bank Ltd (ASX: NAB) (2022): KAM procedure
6. Extract from auditor’s report issued to Rio Tinto (ASX: RIO) (2022)
7. Assurance report issued to BHP Group Ltd (ASX: BHP) (2022)

Appendix 1: TCFD structure: QBE Insurance Group Ltd (ASX: QBE) (2022)

Climate change – our approach to risks and opportunities

QBE's approach to climate change is being embedded into our strategic priorities and risk management framework and supports our purpose of enabling a more resilient future. One of our three sustainability strategy focus areas is to foster an orderly and inclusive transition to a net-zero economy which directly supports our climate activities. We continue to develop our metrics, taking data availability and reliability into account, as well as set targets and make progress against our commitments.

Governance

The Board approves QBE's strategic priorities, which includes consideration of climate risks and opportunities. The Group Executive Committee (GEC) is accountable for developing and implementing the strategy.

The Board and the GEC receive regular reporting on sustainability issues and our progress towards our sustainability and climate-related goals and targets, as outlined in our 2022 Sustainability Scorecard. The GEC is supported by the Environmental and Social GEC Sub-Committee which focuses on environmental and social strategic issues including climate change. The Sub-Committee is chaired by our Group Executive, Corporate Affairs and Sustainability and meets at least every two months.

As part of the oversight of the Group's Risk Management Strategy, the Board Risk & Capital Committee (BRCC) and the Executive Risk Committee (ERC) receive regular reports on environmental, social and governance (ESG) risks, including deep dives on climate change risk, QBE's approach to managing this risk, and our scenario analysis for 2022. The ESG Risk Committee continues to play a key role in supporting the ERC in its identification and management of ESG risks, including climate change. The ESG Risk Committee is chaired by the Group Chief Risk Officer and has oversight of the Environmental and Social Risk Framework and its implementation, as well as climate scenario analysis and climate disclosures.

Our Board and Executives participate in regular training to enhance climate change capability. In 2022, the BRCC and ERC joined externally facilitated education sessions covering the evolving and accelerating liability landscape, board and management duties and exposures, reporting and disclosure, and regulatory expectations.

Strategy

QBE has committed to be a net-zero emissions organisation across our operations by 2030, and across our underwriting and investment portfolios by 2050. Addressing the risks and opportunities associated with climate change is a priority for QBE and our stakeholders.

In 2022, climate change was a key consideration in the evolution of our sustainability strategy and is highly relevant to our three areas of focus:

1. Foster an orderly and inclusive transition to a net-zero economy
2. Enable a sustainable and resilient workforce
3. Partner for growth through innovative, sustainable and impactful solutions

We recognise the importance of addressing climate change and incorporating climate-related risks and opportunities into our strategic priorities, business planning and decision-making to meet our environmental and social commitments and enable a resilient future for our business and our customers.

To underpin our understanding of climate risks and opportunities, we have continued to undertake physical and transition scenario analysis. Understanding the changing nature of weather-related risks is critical to considering how we can help our customers manage their physical risks and how we price for and manage the accumulation of this risk.

This year, we have undertaken a global, economy-wide transition scenario analysis which has highlighted the risks and opportunities associated with the pathways to achieving net-zero emissions. While there is more work to be done to deepen our understanding and response to the decarbonisation journey, current data indicates QBE is broadly resilient. There are environmental and social benefits to an orderly transition to 1.5°C through greater economic stability and lower physical risks of climate change. As a global insurer and reinsurer, we have the ability to support the transition across many industries and regions through the products and partners we work with across our insurance portfolio, investment portfolio and own operations.

QBE's sustainability commitments in relation to these focus areas for 2023+ are detailed in our 2022 Sustainability Report.

QBE Foundation

This year, QBE announced a three-year extension to its global disaster relief and climate resilience partnership with two of the world's leading humanitarian agencies, Red Cross and Save the Children.

This partnership enables rapid mobilisation of funds for relief activities during disasters and supports preparedness and climate adaptation initiatives for communities around the world. We work together with communities to build resilience and save lives by improving their capacity to prepare, anticipate, respond and recover from disasters.

To date, the partnership has been activated in 19 of the 27 countries in which QBE operates and has reached over 490,000 people through the deployment of $2.7 million in funding and a further $2 million in investments through the Save the Children Impact Investment Fund. Our strategic framework outlines four key pillars: Disaster Preparedness and Risk Reduction, Anticipatory Action and Mitigation, Disaster Response and Disaster Recovery, underpinned by the Sendai Framework for Disaster Risk Reduction, UN Sustainable Development Goals and our organisational policies and frameworks.

Our strategy seeks to address:

Building community resilience

Local communities facing increased risk of natural disasters and emergencies are supported to effectively implement systems and practice

Disaster financing

By developing forecast-based funding models, we can minimise impact and reduce human suffering and losses from disasters

Underinsurance

Supporting customers to prepare for disasters and avoid significant impacts

Responding to disasters

Communities across 27 countries are supported to respond to disasters effectively

Scenario **analysis**

Physical	Transition

Scope of portfolios

Physical	Transition
Underwriting (property) Investment (unlisted property funds)	Underwriting (casualty, financial lines) Investment (fixed income)

Scenarios

Physical:

less than 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

Transition:

Network for Greening the Financial System

Orderly	Net zero 2050	1.5°C
	Below 2°C	1.7°C
Disorderly	Divergent net zero	1.5°C
	Delayed transition	1.8°C
Hot house world	Nationally Determined Contributions	2.4°C
	Current policies	3.0°C+

Timeframe

Physical	Transition
2030, 2050 and 2090	2025, 2030, 2040 and 2050

Scope of assessment

Physical:

Hurricane/ cyclone/ typhoon	Australia, North America, Japan
Convective storm/hail	Australia, North America
Windstorm	Europe
Flood	Australia, Europe
Bushfire	Australia
Wildfire	North America

Transition:

The impact of climate change on sectoral profit at a global level.

Climate scenario analysis

Catastrophe models
Business planning
Portfolio optimisation
NZIA target setting

Capital models and planning

Reinsurance programs

Physical risks and opportunities

QBE's property exposures most impacted by shorter-term physical risks of climate change are typically driven by exposure to North American hurricanes, and perils such as floods, bushfires and convective storms. The evaluation of the impact is supported by our accumulations management process, including regularly updated natural perils models, monitoring of property accumulations across the portfolio to simulate weather-related loss potential, budgeting, price setting, and the use of reinsurance to protect capital and reduce earnings volatility.

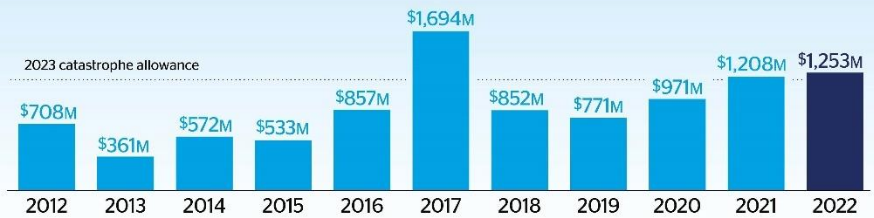
Our analysis concludes that the impact of climate change will differ significantly across both regions and the type of catastrophes. From the perils and regions studied so far, flood claims in Europe and Australia potentially could be the most impacted, while cyclones and convective storms in North America and Australia may take a little longer (mid-century) before the impact of climate change becomes more significant.

As part of our portfolio optimisation, we have reduced our exposure to North American hurricane given its significance in terms of its exposure to physical climate risk and driving potential losses for our business.

We expect climate change will increasingly impact the frequency and severity of weather-related natural catastrophes over the long term. In the short term, it is often difficult to distinguish the impact of climate change versus the normal short-term variability in weather and natural catastrophes. QBE looks to manage for natural catastrophe volatility by considering a wide range of event frequency and severity scenarios in our capital planning. We also purchase a comprehensive Group catastrophe reinsurance program. Our catastrophe allowance in 2023 has been established at well above the long-term average of our modelled catastrophe costs. We effectively planned for the elevated level of catastrophe activity experienced in recent years.

2023 catastrophe allowance 'as-if' analysis

Annual catastrophe claims restated using 2023 reinsurance program



Transition risks and opportunities

In 2022, we refreshed our climate transition scenario analysis to align with six of the latest Network for Greening the Financial System scenarios [1].

We then overlayed QBE's exposure, where data allowed, to better understand which segments of our insurance and investment portfolios may be exposed to high growth or contraction sectors as a result of the transition to a net-zero economy.

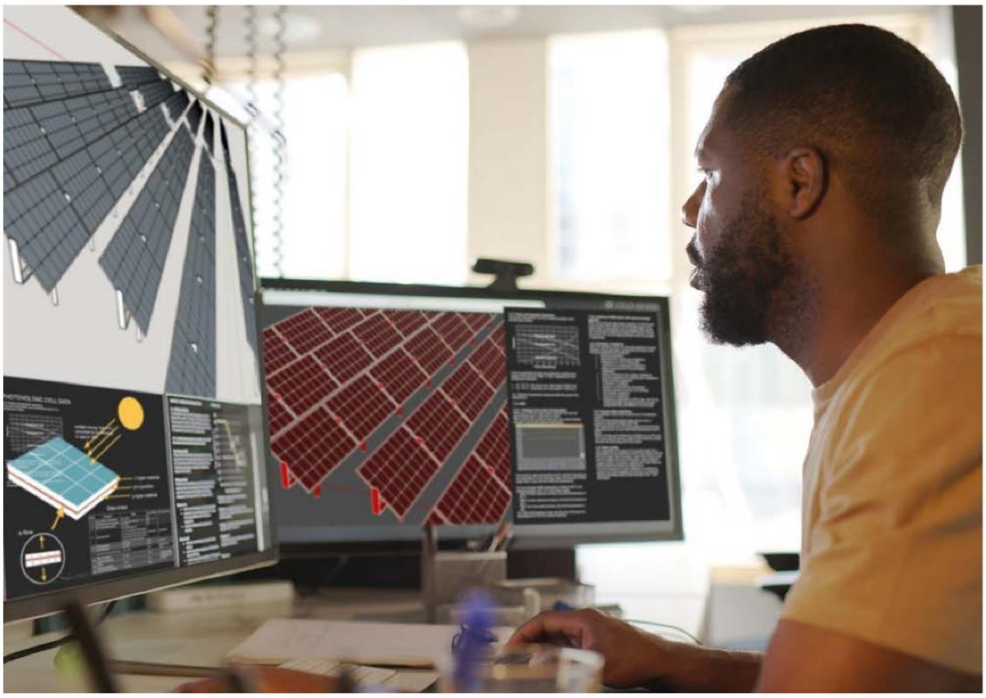
For investment, this was the fixed income (core fixed income (ex cash and cash equivalents), high yield, emerging market debt and private credit) portfolio and for underwriting it was the casualty and financial lines portfolios. The portfolios initially covered represent the material proportion of the underwriting portfolio that is likely to be affected by transition risk. Our property portfolio is more exposed to physical risk and we assess that separately, as outlined in this report.

In 2022, we have made a significant investment in data, people and systems to allow us to better understand our underwriting exposure at a sectoral level.

This work is ongoing as it supports our insurance-associated emissions baseline and target setting. We expect that data coverage and reliability will improve over time.

QBE has a diverse portfolio and operates in many industry sectors and geographies. In relation to the in-scope portfolios, QBE continues to be resilient with respect to climate transition risks as both our investment and underwriting portfolios broadly have limited exposure to highly impacted sectors.

There is an expectation that governments will follow through on their own commitments under the Paris Agreement and the transition will require insurance capacity to support activities essential to the global economy and society. We need to work with the most impacted industry sectors to transition in an orderly and inclusive manner to achieve a net-zero economy.



1 Further details on the scenarios is available here: www.ngfs.net/ngfs-scenarios-portal/

Underwriting

In January 2022, we announced the commitment to transition our insurance and reinsurance underwriting portfolios to net-zero GHG emissions by 2050. We also became the first listed Australian insurer to join the NZIA, a group of leading insurers and reinsurers that have pledged to help accelerate the transition to net zero within insurance and reinsurance underwriting portfolios.

This cemented our ongoing commitment to help support the transition of our customers, encouraging businesses to decarbonise and adopt more sustainable business models. NZIA's key objective is to set a common global standard to assess, understand and disclose the emissions intensity for underwriting, and a protocol based on science-based targets. This establishes a foundation and enables the insurance industry to set interim decarbonisation-related targets every five years, with the first interim target being 2030, and begin the process of annual reporting.

Our involvement in the NZIA has enabled participation within the working groups centred around delivering the NZIA's key objectives. QBE has been part of the collaborative working group between PCAF and NZIA to develop the first GHG gas accounting and reporting standard to measure and disclose insurance-associated emissions for specific commercial lines classes of business and private motor, published in November 2022. QBE led the reporting and metrics sub-working group on the methodology work, is a member of the NZIA target-setting protocol working group that commenced in September 2022 and was co-lead for the focus group on setting the overall emissions target for the NZIA Target-Setting Protocol. In January 2023, the NZIA published the Protocol and QBE is expecting to develop and disclose interim targets in line with this Protocol.

This is uncharted territory for the insurance industry, and we recognise that there is a material gap in emissions data reported, especially by private corporations and small to medium enterprises. Despite these challenges, we expect, with appropriate engagement and changes in government policy, this should improve over time.

We are also cognisant that the world needs a sustained shift in energy supply away from fossil fuels and towards low carbon. The situation in Ukraine and its impact on energy supply further underlines the need to find alternative, sustainable sources of energy. Our net-zero re/insurance strategies consider the social consequences, aligned to our sustainability focus area of fostering an orderly and inclusive transition to a net-zero economy. We recognise that not all countries or communities can be expected to transition at the same pace. Our internal target setting strategies will seek to look to minimise these disparities and achieve overall emissions reductions in line with our commitment.

Refer to the 2022 Sustainability Report for more information.

Insuring the transition

In 2022, QBE launched a Sustainable Energy unit to support customers as they transition to lower carbon energy. The unit aligns QBE underwriting capabilities with the growing range of companies and energy systems that form part of a rapidly changing energy mix throughout the world.

Helping our customers adapt

As a business, we continually explore new ways to support our customers on their mitigation and adaptation journeys.

To encourage green home ownership and increase affordability of green home ownership, this year we launched a new benefit for lenders' mortgage insurance (LMI) customers. Customers who purchase or refinance a home with a green mortgage (through our participating partners) receive a premium reduction for their LMI. 100% of the LMI premiums for green mortgages are contributed to our Premiums4Good initiative.

Operations

In 2022, we continued to deliver on our net-zero roadmap and broaden our focus, extending our 2030 commitment to net zero for our global operations to include material Scope 3 emissions (in addition to Scope 1 and 2 emissions). We have also committed to commencing engagement on net-zero progress with large suppliers in our global supply chain, with the goal of setting targets for those large suppliers by 2025 and developing our approach for 2023 to 2025.

Further details on our approach to net zero within our operations is available in the 2022 Sustainability Report.

ICA climate change roadmap

To support broader action across the Australian general insurance sector, QBE has, through our role as co-chair of the Insurance Council of Australia's (ICA) Net-Zero Working Group, worked with our peers and the ICA to develop a climate change roadmap for the sector. The roadmap provides guidance for ICA members on the role they can play in the decarbonisation of the Australian economy and is aligned with our broader global commitments, including our commitments through the NZAOA and NZIA.

Strategy continued

Investments

Net-Zero Asset Owner Alliance

Aligned with our broader climate strategy and our commitment to impact and responsible investments, QBE was the first Australian-headquartered insurance company to become a member of the NZAOA in 2020, joining a growing group of institutional investors committed to transitioning their investment portfolios to net-zero emissions by 2050. As asset owners, we have a unique role at the top of the investment value chain, and we acknowledge both the responsibilities and opportunities that come with this role. In 2022, we have continued to utilise guidance, tools and support of the NZAOA, as well as collaborated with other members, both one on one, and in the relevant NZAOA working groups with which QBE is involved. In 2021, to deliver on our commitment to transition our investment portfolio to net zero by 2050 and set our initial intermediate targets, we established cross functional working groups. In 2022, these working groups continued this work with a key focus on implementation.

Engagement

All external managers

across our investment portfolio

20 highest emitters

in our investment grade corporate credit portfolio

Financing the transition

5% by 2025

of assets under management in climate solutions investments

Carbon intensity reduction

25% by 2025

of our Scope 1 and 2 emissions in our equity portfolio

Engagement

We believe that having meaningful dialogue on climate change is a critical component of our responsibility as an asset owner and in ensuring sustainable financial outcomes. We have been engaging with our external managers on climate-related issues since 2019 and each year we evolve the conversation by improving, expanding and tailoring the questions we ask. In 2021, as part of our target setting work, we engaged all our external managers across our investment portfolio and our 20 highest emitters in investment grade corporate credit, providing a baseline for us to monitor progress. In 2022, we have further enhanced our engagement approach by including asset class specific climate due diligence questions. Each year, we will engage with all of our external managers to continue to track progress across key climate-related issues, including net-zero commitments and emissions target setting. For our top 20 highest emitters in our investment grade corporate credit portfolio, we enhanced our engagement approach to be more tailored, identifying material areas of focus per issuer and directing targeted questions to each company allowing for more meaningful and relevant dialogue.

Financing the transition

We have set a target to increase our exposure to climate solution investments that will finance the transition. These investments will directly contribute to climate change mitigation and/or adaptation and follows guidance from the NZAOA Target Setting Protocol. In 2022, this has increased to 4.8% from 3% at the end of 2021. Notably, in 2022 we added $134 million in green bonds. Green bonds fund projects that have positive environmental benefits and support the transition to a net-zero economy. We will continue to actively invest in green bonds as well as search for additional opportunities that support the transition to a net-zero economy including negative emissions investments.

Carbon intensity reduction

QBE has set the target of 25% reduction in the carbon intensity of our developed market equity portfolio by 2025, relative to a 2019 baseline. Over the course of 2022, we worked towards developing a more resilient portfolio by changing the way we will primarily invest in developed market equity by moving from passive strategies via exchange traded funds to tailored mandates with external equity managers. As part of our due diligence, we considered prospective managers' commitments to net zero and decarbonising the real economy as well as their ability to incorporate our emissions reduction targets into the investment management agreements. We expect to make this transition of our investment approach in 2023. Over the course of 2023 we will continue to progress and expect to set additional asset class emissions reduction targets in line with the NZAOA Target Setting Protocol.

Data, monitoring and reporting

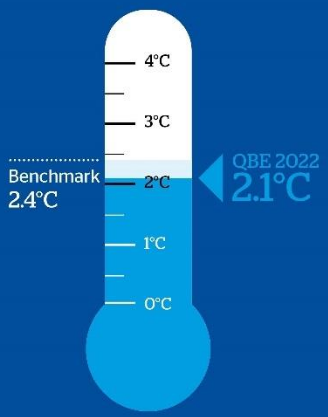
As part of our learnings from the work we undertook in 2021, we also introduced a new working group, to deliver our data, monitoring and reporting requirements. The working group is focused on the sourcing and gathering of relevant data as well as implementing system solutions for monitoring and reporting to support decision making and progress tracking to achieve our goals. A key output for the working group this year has been the development of tools to provide attribution, monitoring and overall tracking of emissions across the developed market equity portfolio. We are also in the process of implementing a new investment system, which will provide enhanced data capabilities, consistency of reporting and ongoing accuracy to improve the way we incorporate climate-related considerations into our investment process to achieve our commitment to decarbonisation.

Climate scenario analysis

We have continued to undertake climate-related analysis of our investments portfolio, such as scenario analysis, temperature alignment and carbon footprinting to assess our overall exposure to climate risks and opportunities.

Temperature alignment

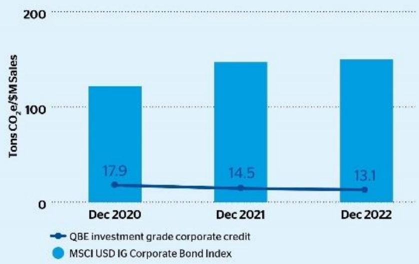
We have commenced implementation of a new investment system which has allowed us to undertake a new temperature alignment assessment of the investment grade corporate credit portfolio. This forward-looking analysis was undertaken utilising the temperature alignment metric[1] which shows how well aligned an issuer's, and also a portfolio's, emission projections are to the Paris Agreement. This level of analysis will allow us to target our engagement to those companies that are not aligned and work with them to decarbonise. Our investment grade corporate credit temperature alignment is 2.1°C, against a benchmark of 2.4°C. We will continue to engage with our highest emitters in pursuit of 1.5°C alignment.



Carbon footprinting

We assessed the carbon footprint of our investment grade corporate credit portfolio, which constitutes over 50% of assets under management, and remains in line with our commitment to maintaining a low carbon risk rating[2]. We use weighted average carbon intensity[3] (WACI) as a measure of our portfolio's exposure to carbon-related potential market and regulatory risks. The WACI is significantly below the MSCI USD Investment Grade Corporate Bond Index, given our low exposure to high emitting sectors.

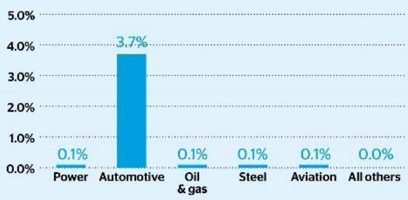
Weighted average carbon intensity



High emitting sectors

To assess our transition risk, we have looked at the exposure of our investment grade corporate credit, high yield debt and emerging market debt portfolios (approximately 53% of our total assets under management) to high emitting sectors using the Paris Agreement Capital Transition Assessment (PACTA) tool. Collectively, these sectors account for about 75% of global emissions and understanding our exposure to these industries will enable us to continue to target our engagement strategies. Our transition risk remains low, with less than 5% of our portfolio exposed to these high emitting sectors.

High emitting sector exposures (PACTA)[4]



1 Temperature alignment is calculated as the weighted average of each portfolio company's individual contribution to rising temperatures.
2 Carbon risk rating measures exposure to carbon intensive companies. MSCI Carbon Risk is categorised as Very Low (0 to <15), Low (15 to <70), Moderate (70 to <250), High (250 to <525) and Very High (>=525).
3 WACI is calculated as the sum product of the portfolio companies' carbon intensities and weights (tCO_2-e/$M sales).
4 Data sourced as of 30 September 2022.

Risk management

The risk of inaction on climate change continues to be a significant global risk. QBE manages climate risk through integration into decision-making and our processes and frameworks.

Managing climate risk is integrated into our assessment of natural perils modelling, our management of exposure accumulations, the design of our reinsurance program and our portfolio optimisation and sustainable growth strategic priorities. Further, managing the risks and opportunities of climate is integrated into the three focus areas of our sustainability strategy.

The sustained increase in the frequency and severity of natural catastrophes represents a challenge where we provide cover for physical loss or damage to assets. It also increases the potential for third party injury and/or damage. Given this, we have spent considerable time over the past two years analysing what the potential impacts of climate change may be from a physical, liability and transition risk perspective, and we have used this analysis to assess the resilience of our strategic responses, improve our underwriting, pricing and business planning, and to set our risk appetite.

QBE has a Risk Management Strategy to ensure we achieve our strategic priorities while also establishing effective governance and fundamental principles for the management of risk across all levels of the organisation. Climate change is part of ESG risk, which is classified as a strategic risk sub-class in our Strategic Risk Policy and Risk Management Strategy. Climate-related risks are also considered across our other risk classes such as insurance, credit, market and operational risk.

Our approach to identifying and managing ESG risks, including climate-related risks, is outlined in our Group ESG Risk Standard. Climate change continued to be our top ESG risk in 2022, alongside modern slavery and human rights, biodiversity, and sustainable procurement.

One of the ways we can identify and assess ESG risks is through the Group Risk and Control Self-Assessment (RCSA) process. QBE's Group RCSA Standard sets minimum requirements for identifying, documenting, and assessing key risks that QBE faces in delivering our strategic and business objectives. The Standard is also used to assess the effectiveness of the controls in place to manage those risks.

Training

This year, training modules were developed and rolled out Group-wide on ESG risk and climate change. These are voluntary and available to all employees with the aim of improving the understanding of what are ESG and climate risks, and QBE's approach to identifying and managing these risks.

Environmental and Social Risk Framework

Our Environmental and Social Risk Framework came into effect on 1 January 2022. Through our positions in the Framework, we have committed to reduce our exposure to higher transition risks in the energy sector. QBE has no direct investments in coal, oil or gas and will no longer directly invest in these sectors. We no longer underwrite new coal and oil sands projects, and only support oil sands and Arctic drilling where the company is on a pathway consistent with achieving the Paris Agreement objectives.

Metrics and targets

We continue to set relevant targets and assess our progress and performance against them.

More details on QBE's Sustainability Framework and our performance and progress are available in QBE's 2022 Sustainability Report.

MEASURE	TARGET	2022	2021	STATUS
Operations				
Energy use (GJ)	25% reduction by 2025 [1] *2019 baseline*	**192,429** ↓ *20%*	180,004	On track
Renewable electricity use (MWh)	100% by 2025 [2]	**18,513** *100%*	20,199	Achieved
Scope 1 and 2 emissions (1.5°C trajectory aligned science-based target) (tCO_2e)	30% reduction by 2025 [3] *2018 baseline*	**7,732** ↓ *75%*	6,880	Achieved
Scope 1 and 2 emissions	Net-zero emissions (Scope 1 and 2) across operations by 2030 [4] *2019 baseline*	**7,732** ↓ *45%*	6,880	On track
Operational Scope 3 emissions	Net-zero emissions on material Scope 3 by 2030 [5]	**15,896**	2022 baseline	New target
Underwriting				
Underwriting portfolio emissions	Net-zero emissions (Scope 1 and 2) in underwriting portfolio by 2050	**N/A**	N/A	Interim targets to be set
Investments				
Engagement	• All external managers across our investment portfolio • 20 highest emitters in investment grade corporate credit portfolio	**Achieved**	N/A	Ongoing
Financing the transition	Increase our climate solutions investments to 5% of assets under management by 2025	**4.8%**	N/A	On track
Carbon intensity reduction	25% reduction by 2025 of Scope 1 and 2 emissions in equity portfolio [6]	**In progress**	N/A	Ongoing
Impact investing ambition	$2 billion by 2025	**$1.6 billion**	$1.4 billion	On track

1 In 2022, we broadened our energy use indicator to include company vehicle fuel consumption, in addition to electricity and gas usage. As a result, the 2019 baseline has been restated to include 86,228 GJ of company vehicle fuel consumption.
2 Based on RE100 Materiality Threshold guidance and excludes electricity use from countries with small electricity loads (<100 MWh/year) up to a total of 500 MWh/year and where it is not feasible to source renewable electricity.
3 In 2022, we reclassified previously reported Scope 3 – indirect gas to Scope 2 – heat for disclosure purposes. The 2018 baseline has been restated to include 1,186 tCO_2e of Scope 2 – heat.
4 In 2022, we reclassified previously reported Scope 3 – indirect gas to Scope 2 – heat for disclosure purposes. The 2019 baseline has been restated to include 1,274 tCO_2e of Scope 2 – heat.
5 Net-zero emissions on material Scope 3 includes emissions related to business travel, fuel-and energy-related activities and capital goods. Refer to the 2022 Sustainability Data Book – Metrics Criteria for details.
6 We have worked with preferred managers to ensure these are considered in mandate design and implementation, and will continue to track and monitor.

Appendix 2: TCFD progress: ANZ bank (2022) (ASX: ANZ)

Our progress on the task force on Climate-related Financial Disclosures

Disclosures on our ESG Targets are outlined in our ESG Supplement and our detailed 2022 Climate-related Financial Disclosures will be released prior to our AGM and will be available at anz.com/annualreport

	OUR PROGRESS TO DATE	FOCUS AREAS – 2022/23
Governance	• Board Risk Committee oversees management of climate-related risks • Board Ethics, Environment, Social and Governance (EESG) Committee approves climate-related objectives, policy and targets • Ethics and Responsible Business Committee (ERBC) consisting of executive management oversees our approach to climate-related risks and opportunities • Climate Advisory Forum, chaired by our Group Executive Institutional, supports execution of our climate-related policy, opportunities and disclosures, subject to approval by ERBC and EESG	• Enhance alignment with Australian Prudential Regulation Authority (APRA) CPG229 guidance on Climate Change Financial Risks and the *New Zealand Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021*
Strategy	• ANZ's Environmental Sustainability Strategy and Climate Change Commitment (available at **anz.com.au/about-us/esg/environmental-sustainability/climate-change/**) confirms our support for the Paris Agreement goals, our priority sectors, technologies and financing opportunities via products and services to help achieve our ambition and our focus in supporting customers' transition to net zero emissions by 2050	• Continue to engage with 100 of our largest emitting business customers to support them to, by end 2024: – implement and strengthen their low carbon transition plans and – enhance their efforts to protect biodiversity. • Continue to enhance banker capability to identify climate risks and opportunities • Extend transition plan engagement with other large emitting business customers into our regular customer assessments • Pilot the Taskforce on Nature-related Financial Disclosures (TNFD)
Risk management	• Included climate risk in our Risk Appetite Statements for Institutional bank, and lending criteria in the Australian Retail, Commercial and New Zealand portfolios • Enhanced credit approval process applied to new Agribusiness customers and agricultural property purchases in regions of low average rainfall or measured variability • Reviewed and assessed current and emerging regulatory requirements across the jurisdictions in which we operate • Developed and piloted Climate Change Risk Assessment methodology in our Project Finance business (Australia) • Participated in the Australia Prudential Regulation Authority's (APRA) climate vulnerability assessment which assessed the potential impact of transition and physical risks to parts of our portfolio • Completed analysis of physical and financial risks of flooding for home loan customers in a major regional location of Australia and of coastal flooding (nationwide) and inland flooding (Auckland) for the Reserve Bank of New Zealand's climate sensitivity analysis (New Zealand)	• Prepare a set of climate risk standards, based on regulatory obligations to be applied across all jurisdictions where ANZ operates • Extend our Climate Change Risk Assessment methodology beyond our Project Finance business, starting with Institutional customers in higher emitting sectors such as resources and energy • Develop a data strategy to inform our approach to sourcing and integrating climate data into sectoral pathways, scenario analysis, stress testing and analytics. This will include learning from the New Zealand climate risk program • Enhance risk assessment capability for our bankers through extending our Climate Change Risk Assessment • Extend analysis of physical climate risks of fire and flood to segments of Australian retail customers • Conduct scenario analysis for key New Zealand sectors • Conduct analysis of drought vulnerability for our Agricultural portfolio (Australia and New Zealand) and the impacts of a change in carbon price (New Zealand)
Metrics and targets	• Transition Risk: Continued engaging 100 of our largest emitting business customers, to support them towards a 'well developed' or 'advanced' stage of transition planning; and enhance their efforts to protect biodiversity, by end 2024 • Capital Deployment: $50 billion target to fund and facilitate sustainable solutions by 2025, $40.04 billion achieved to date • Greenhouse gas (GHG) emissions: Develop metrics, pathways and targets to enable progress tracking as we reduce 'financed emissions[1]'. Announced targets for large-scale commercial property and power generation (November 2021) in line with our commitment to the Net Zero Banking Alliance • GHG emissions: Target to procure 100% renewable electricity for ANZ's operations by 2025[2], and reduce emissions in line with Paris Agreement goals • Management incentives for delivering our climate change strategy are in place at the most senior levels of the organisation including our Group Executive Committee and senior leaders. Our Group Performance Framework incorporates whether we have: Strengthened our position as a leading Sustainability bank in the region, and our performance against the S&P Global corporate sustainability assessment. Refer to page 79 of the Remuneration Report	• Expand our metrics, pathways and targets for 'financed emissions' to other key sectors • Develop financed emissions reporting across majority of the New Zealand portfolio • Consider the use of emerging metrics to track our progress in helping to minimise biodiversity loss

1. Scope 3 emissions attributable to lending. **2.** Self-generated renewable electricity, direct procurement from offsite grid-connected generators e.g. Power Purchase Agreement (PPA) and default delivered renewable electricity from the grid, supported by credible attributes in accordance with RE100 technical guidelines.

Appendix 3: Remuneration Report: BlueScope Steel Ltd (ASX: BSL) 2022

3. Environmental, Social & Governance		**15%** *(0-30%)*					
Reduce steelmaking GHG emissions intensity by 1% YoY from FY18 to FY30	Drives focus on sustained climate action in Steelmaking activity	5%	3.15%	3.94%	4.68%	 4.1%	• GHG emissions reduction was 3.64% impacted by reduction in lower intensity production outputs and increase in higher integrated works output relative to FY18 production levels

Appendix 4: Extract from auditor's report issued to AGL Energy Ltd (ASX: AGL) (2022): KAM on potential financial reporting impact of climate change

Key Audit Matter	How the scope of our audit responded to the Key Audit Matter
Potential financial reporting impact of climate change The potential financial reporting impact of climate change affects AGL in a number of ways, as set out in the operating and financial review section within the annual report and in Note 15, Note 16 and Note 19 to the financial statements of the financial report. The associated audit risks we have identified include: • Forecast assumptions used in assessing the recoverable amount of property, plant and equipment and intangible assets. In particular, forecast price and volume assumptions and their interrelationship with forecast emissions costs and energy procurement costs may not appropriately reflect actual changes in supply and demand due to the potential impact of climate change. • As disclosed in Section 3.2.4 of the operating & financial review within the annual report and Note 15 to the financial statements, management has brought forward the closure dates of thermal coal power stations in line with AGL's climate commitments announced in February 2022. The forecast useful lives of the thermal coal power stations may be further reduced as Australian federal and state governments move towards 'net zero' emissions targets. As a consequence, the depreciation expense may be materially increased, a material impairment of property, plant and equipment may be required in the future and the provision for environmental rehabilitation may need to be materially increased due to the potential acceleration of timing of performing rehabilitation. As disclosed in Section 3.2.4 of the operating and financial review within the annual report, AGL has not produced a stand-alone Task Force on Climate-related Financial Disclosure (TCFD) report this year. AGL will release updated TCFD scenario analysis of different decarbonisation pathways for the National Electricity Market following the review of strategic direction which AGL is currently completing. The	We held discussions with management and a group of internal specialists with specific climate change, audit and accounting specialisation to identify how the potential financial reporting impact of climate change affects the financial statements. In respect of forecast assumptions used by management in assessing the recoverable amount of property, plant and equipment and intangible assets, our procedures included, but were not limited to: • in conjunction with our valuation specialists assessing and challenging the key assumptions for forecast price and volume assumptions used in the forecast cash flows, by comparing these assumptions to historical results, economic data and industry forecasts, considering the potential impact of climate change, where applicable. In doing this, we obtained third party reports and information assessing the National Electricity Market, which included information related to energy pricing, emissions costs, procurement costs, supply, demand, government policy and estimated plant closure dates. This included the Australian Energy Market Operator's 2022 Integrated System Plan and other third-party National Electricity Market outlook reports. In respect of the forecast useful lives adopted by management, our procedures included, but were not limited to: • assessing and challenging management's changes to useful lives during the year, including the impact to the financial statements, and assessing and challenging management's assertion as at 30 June 2022 that no further changes were required to useful lives as a consequence of the potential impact of climate change. In doing this, we obtained third party reports and information assessing the National Electricity Market, which included information related to energy pricing, emissions costs, procurement costs, supply, demand, government policy and estimated plant closure dates. This included the Australian Energy Market Operator's 2022 Integrated System Plan and other third-party National Electricity Market outlook reports.
results of the review of strategic direction, including different decarbonisation pathways, may have a further impact on forecast assumptions used in assessing the recoverable amount of property, plant and equipment and intangible assets and forecast useful lives of thermal coal power stations as disclosed in Note 16.	We have also assessed the appropriateness of the disclosures included in Note 15, Note 16 and Note 19 to the financial statements and consistency with the operating and financial review section of the Annual Report.

Appendix 5: Extract from auditor's report issued to National Australia Bank Ltd (ASX: NAB) (2022): KAM procedures

Why significant	How our audit addressed the key audit matter
Provision for credit impairment	
As disclosed in Note 17 *Provision for credit impairment on loans at amortised cost* and Note 19 *Financial risk management*, the provision for credit impairment is in accordance with Australian Accounting Standard – AASB 9 *Financial Instruments* (AASB 9). Key areas of significant judgment included: ▶ the application of the impairment requirements of AASB 9 within the expected credit loss methodology; ▶ the identification of exposures with a significant increase in credit risk; ▶ assumptions used in the expected credit loss model (for exposures assessed on an individual or collective basis); and ▶ the incorporation of forward-looking information to reflect current and anticipated future external factors, both in the multiple economic scenarios and the probability weighting determined for each of these scenarios. This was a key audit matter due to the value of the provision, and the degree of judgment and estimation uncertainty associated with the provision calculation.	We assessed the alignment of the Group's expected credit loss model and its underlying methodology against the requirements of AASB 9. We assessed the following for exposures evaluated on a collective basis: ▶ significant modelling and macroeconomic assumptions, including the reasonableness of forward-looking information and scenarios; ▶ the determination and assessment of significant increase in credit risk; ▶ sensitivity of collective provisions to changes in modelling assumptions; and ▶ the basis for and data used to determine forward looking adjustments. We involved our actuarial specialists to test the mathematical accuracy of the model and to consider key assumptions and significant judgments. We assessed a sample of exposures on an individual basis by: ▶ assessing the reasonableness and timeliness of internal credit quality assessments based on the borrowers' particular circumstances; and ▶ evaluating the associated provisions by assessing the reasonableness of key inputs into the credit impairment calculation, with particular focus on high-risk industries, work out strategies, collateral values, and the value and timing of recoveries. In conjunction with our IT specialists, we assessed the effectiveness of relevant controls relating to the: ▶ capture of data, including loan origination and transactional data, ongoing internal credit quality assessments, storage of data in data warehouses, and interfaces with the models; and ▶ expected credit loss models, including functionality, ongoing monitoring/validation and model governance. We assessed the processes used to identify and evaluate climate-related risks associated with the provision for credit impairment. We assessed the adequacy and appropriateness of the disclosures related to credit impairment within the Notes to the Financial Report.

Appendix 6: Extract from auditor's report issued to Rio Tinto (ASX: RIO) (2022)

2. OVERVIEW OF OUR AUDITS (CONT'D)

The impact of climate change on our audits	**Our audit response (cont'd)** As part of our risk assessment, we made specific enquiries to assess risk of material misstatement arising from the Group's progress on its stated climate strategy. Our enquiries with Group personnel and other risk assessment procedures included: • whether the solar power plant commissioned at Gudai-Darri has affected associated energy contracts or useful lives of power infrastructure in the Pilbara; • the status of the Group's plan to electrify its existing fleet, including locomotives in the Pilbara and considerations for asset obsolescence or re-estimation of useful lives; • the status of the plans relating to renewable energy solutions for Queensland Aluminium assets including expectations of timing compared to the current economic life of related assets. We also assessed these expectations against our understanding of the industry with the assistance of our sustainability specialists; • understanding the Group's process to continue assessing the impact of climate change on physical risk to its operations and accounting impact, if any. This included understanding whether physical risk had impacted the Group's judgement on the useful economic life of its water rights in Quebec (currently indefinite); and • understanding the indicators which led to the impairment of the Boyne Smelters and its relevance to other assets of the Group. As a result of our risk assessment procedures, taking into account factors such as the stage of development and expected timing of asset replacement projects compared to existing useful economic lives, we have not identified a risk of material misstatement to these financial statements relating to the group's progress on its stated climate strategy. As the Group continues implementing its climate strategy, there may be material accounting considerations and consequences in the future, including impact on recoverable amounts of key assets as well re-estimation of useful economic lives. Other audit procedures During the course of our audits, we carried out the following additional audit procedures: • we evaluated the Group's processes for disclosures related to climate change in the financial statements; • we have evaluated certain material closure provisions of the Group, cost estimates of which consider impact of climate change. This consideration was not so significant as to warrant separate discussion in our KAM on evaluation of specific provisions for close-down, restoration and environmental; • we evaluated the Group's disclosure on coal royalties, disclosed in note 24; • we read the disclosures related to climate change in the Directors' Report and Strategic Report, including the TCFD recommended disclosures, and considered its consistency with the financial statements and our audit knowledge; and • we assessed the consistency between the Group's estimate of the capital expenditure planned for decarbonisation of US$7.5 billion with the cash flows used in its going concern and viability assessments.

Appendix 7: Assurance Report issued to BHP Group Ltd (2022)

7.19 Independent Assurance Report to the Management and Directors of BHP Group Limited (BHP)

EY
Building a better working world

What we assured

Ernst & Young (EY) was engaged by BHP to provide limited assurance over certain sustainability data and disclosures in BHP's Annual Report and ESG Standards and Databook and online for the year ended 30 June 2022 in accordance with the noted Criteria, as defined in the following table:

What we assured (Limited Assurance Subject Matter)	What we assured it against (Criteria)
BHP's qualitative disclosures in sections 6 and 7 of the Operating and Financial Review within BHP's Annual Report 2022	– Management's own publicly disclosed criteria
BHP's sustainability policies and standards as disclosed in the ICMM tab in BHP's ESG Standards and Databook at *bhp.com/sustainability*	– International Council on Mining and Metals (ICMM) Mining Principles and relevant Performance Expectations (PE) (2020) and mandatory Position Statements (Subject Matter 1)
BHP's identification and reporting of its material sustainability issues, risks and opportunities described within the BHP Annual Report 2022 and online at *bhp.com/sustainability/approach*	– ICMM Subject Matter 2 – Global Reporting Initiative (GRI) Principles for defining report content
BHP's implementation of systems and approaches to manage its material sustainability risks and opportunities	– ICMM Subject Matter 3
BHP's reported performance of its material sustainability issues, risks and opportunities in sections 6 and 7 of the Operating and Financial Review within BHP's Annual Report 2022 and ESG Standards and Databook, referenced above.	– ICMM Subject Matter 4 – Management's own publicly disclosed criteria including GRI Topic Specific Standards and Sustainability Accounting Standards Board (SASB) Mining and Metals Standard – World Resource Institute/World Business Council for Sustainable Development (WRI/WBCSD) Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard – BHP Scope 1, 2, and 3 GHG emissions calculation methodology 2022
Water stewardship reporting, at an operated asset level, in the BHP Annual Report 2022, ESG Standards and Databook, referenced above, and supporting disclosures included online at *bhp.com/sustainability/environment/water*	– ICMM guidance and minimum disclosure Standards: Water Reporting: Good practice guide (2nd edition), 2021

In addition, we were engaged by BHP to provide reasonable assurance over the following information (Reasonable Assurance Subject Matter) in accordance with the noted criteria:

What we assured (Reasonable Assurance Subject Matter)	What we assured it against (Criteria)
Scope 1 and Scope 2 greenhouse gas emissions as reported in section 7 of the Operating and Financial Review within BHP's Annual Report 2022 and ESG Standards and Databook, referenced above.	– World Resource Institute/World Business Council for Sustainable Development (WRI/WBCSD) Greenhouse Gas Protocol – BHP's Scope 1, 2 and 3 GHG emissions calculation methodology 2022

Our Conclusions

- **Limited Assurance**
  Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that suggests the Limited Assurance Subject Matter has not been prepared, in all material respects, in accordance with the Criteria defined above.
- **Reasonable Assurance**
  In our opinion, the Reasonable Assurance Subject Matter is prepared, in all material respects, in accordance with the Criteria defined above.

Emphasis of Matter

We draw attention to section 7 of the Operating and Financial Review within BHP's Annual Report 2022 and related disclosures online at bhp.com/water in which BHP describes the uncertainty associated with water modelling techniques, and consequent process improvements that have been undertaken throughout the reporting period and are proposed going forward. Our conclusion is not modified in respect of this matter.

Key responsibilities

EY's responsibility and independence

Our responsibility was to express limited and reasonable assurance conclusions on the noted subject matter as defined in the 'what we assured' column in the tables above (Subject Matter).

We were also responsible for maintaining our independence and confirm that we have met the requirements of the APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* and have the required competencies and experience to conduct this assurance engagement.

BHP's responsibility

BHP's management was responsible for selecting the Criteria and ensuring the Subject Matter was appropriately prepared to present its content fairly, in all material respects in accordance with that Criteria. This responsibility includes establishing and maintaining internal controls, adequate records and making estimates that are reasonable in the circumstances.

Our approach to conducting the Review

We conducted our procedures in accordance with *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* (ISAE 3000), the *Standard for Assurance on Greenhouse Gas Statements* (ISAE 3410) and the terms of reference for this engagement as agreed with BHP on 27 January 2022.

We adapted our approach to undertaking our procedures in response to COVID-19 travel restrictions and social distancing requirements. 'Site visits' were undertaken virtually by video-conference. The performance of the year end corporate review procedures at head office was also conducted remotely and was supported through the use of collaboration platforms for discussions and delivery of requested evidence.

The procedures we performed were based on our professional judgement and included, but were not limited to:

- Interviewing select corporate and site personnel to understand the reporting process at group, business, asset and site level, including management's processes to identify BHP's material issues
- Reviewing BHP policies and management standards to determine alignment with the ICMM's 10 Sustainable Development principles and position statements
- Checking BHP's Annual Report 2022 to understand how BHP's identified material issues, risks and opportunities are reflected within the qualitative disclosures
- Evaluating whether the information disclosed in the Subject Matter is consistent with our understanding of sustainability management and performance at BHP
- Evaluating the suitability and application of the Criteria and that the Criteria have been applied appropriately to the Subject Matter
- Conducting virtual site procedures at seven BHP locations to evidence site level data collection and reporting to Group as well as to identify completeness of reported water and greenhouse gas emission sources
- Undertaking analytical procedures of the quantitative disclosures in the Subject Matter
- Reviewing data, information or explanation about the sustainability performance data and statements included in the Subject Matter
- Reviewing other information within the BHP Annual Report 2022 for consistency and alignment with the Subject Matter
- On a judgemental sample basis, re-performing calculations to check accuracy of claims in the Subject Matter
- Checking the water balance for each operated asset and judgementally selecting a sample of water streams for further testing
- On a sample basis, based on our professional judgement, agreeing claims and underlying data to source information to check accuracy and completeness of claims, which included invoices, incident reports, meter calibration records, and meter data
- For our reasonable assurance of Scope 1 and Scope 2 greenhouse gas emissions, selecting key items and representative sampling based on statistical audit sampling tables and agreeing to source information to check accuracy and completeness of performance data, which included invoices, metre calibration records and metre data.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our reasonable and limited assurance conclusions.

Other Matters

We have not performed assurance procedures in respect of any information relating to prior reporting periods, including those presented in the Subject Matter. Our report does not extend to any disclosures or assertions made by BHP relating to future performance plans and/or strategies disclosed in BHP's Annual Report 2022, ESG Standards and Databook, and supporting disclosures online.

While we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

Limited and Reasonable Assurance

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

While our procedures performed for our reasonable assurance engagement are of a higher level of assurance, due to the use of sampling techniques, it is not a guarantee that it will always detect material misstatements.

Use of our Assurance Statement

We disclaim any assumption of responsibility for any reliance on this assurance report to any persons other than management and the directors of BHP, or for any purpose other than that for which it was prepared.

Ernst & Young

Ernst & Young
Melbourne, Australia
2 September 2022

Mathew Nelson
Partner

References

Australian Accounting Standards Board [AASB]. 2023. *Climate-related Financial Disclosure Project*. Available from https://aasb.gov.au/media/eoefjirp/ps_climate_02-23.pdf.

Australian Accounting Standards Board [AASB], and Auditing and Assurance Standards Board [AUASB]. 2019. *Climate-related and other emerging risks disclosures: assessing financial statement materiality using AASB/IASB Practice Statement 2*. Available from < https://www.auasb.gov.au/admin/file/content102/c3/AASB_AUASB_Joint_Bulletin_May2019.pdf>.

Australian Auditing and Assurance Standards Board [AUASB]. 2023. *AUASB Releases Consultation Paper on the IAASB's Proposed ISSA 5000 General Requirements for Sustainability Assurance Engagements.* Available from https://auasb.gov.au/news/auasb-releases-consultation-paper-on-the-iaasb-s-proposed-issa-5000-general-requirements-for-sustainability-assurance-engagements/.

Australian Securities and Investments Commission [ASIC]. 2018. *REP 593 Climate risk disclosure by Australia's listed companies.* Available from < https://asic.gov.au/regulatory-resources/find-a-document/reports/rep-593-climate-risk-disclosure-by-australia-s-listed-companies/>.

Australian Securities Exchange (ASX). 2019. *ASX Listing Rules Guidance Note 9: Disclosure of Corporate Governance practices*. Available from https://www.asx.com.au/documents/rules/gn09_disclosure_corporate_governance_practices.pdf.

Australian Treasury. 2023. Climate-related financial disclosure Consultation paper. Available from https://treasury.gov.au/sites/default/files/2023-06/c2023-402245.pdf.

International Financial Reporting Standards Board (IFRS). 2023. *IFRS S2 Climate-related Disclosures*, Available from < https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures.>.

KPMG. 2022. *Sustainability Reporting Survey 2022 Insights into sustainability and ESG reporting from ASX100 and G250 companies.*, Available from < https://home.kpmg/au/en/home/insights/2022/10/sustainability-reporting-survey-2022.html>.

McWilliams, K. 2023. What does 2023 hold for Sustainability and Climate-related Disclosure? Available from <https://www.charteredaccountantsanz.com/news-and-analysis/insights/opinion/what-does-2023-hold-for-sustainability-and-climate-related-disclosure>.

Task Force on Climate-related Financial Disclosures [TCFD]. 2017. Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017), Available from < https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf>.

———. 2021. 2021 Status Report, Available from < https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Status_Report.pdf>.

———. 2022. 2022 Status Report Available from < https://assets.bbhub.io/company/sites/60/2022/10/2022-TCFD-Status-Report.pdf>.

You J. and R. Simnett. 2022 Climate-related disclosures and assurance in the Annual Reports of ASX-listed companies. AASB-AUASB Research Report No 10 (December). Available from: https://www.auasb.gov.au/media/3tsbowik/aasb-auasb_rr_climaterelateddisclosures_12-22.pdf.