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Disclosures of Carbon Credits in Australia

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ABSTRACT

The paper contributes to understanding the complexity of carbon credit disclosures and the recognition landscape in Australia. Carbon accounting and disclosure of carbon credits are subject to complex political and technical factors. Through detailing various policy initiatives and market mechanisms that have evolved in Australia, the paper highlights the need to create coherent links between the acquisition and use of carbon offsets financial statements and sustainability reports. A review of the reporting practices of 100 ASX entities highlights the increasing importance of carbon offsets and credits in corporate disclosures, reflecting their growing prominence in climate-related strategies and reporting frameworks aligned with the agenda of global standard setters. However, standardisation of disclosure, which enhances alignment between financial and non-financial reporting, could better meet the needs of stakeholders by providing a cohesive narrative that integrates sustainability-related considerations into the broader corporate decision-making process. Importantly, there is a lack of specificity around the 'use' of carbon credits, an ambiguity that could be particularly problematic given the growing demand for transparency in carbon markets. The paper further identifies and highlights future research opportunities and calls for more research to inform the IASB's decision-making process regarding pollutant pricing mechanisms.

Keywords: carbon credit, carbon market, standard setting, IASB, ISSB

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1. INTRODUCTION

The development of carbon credits in Australia reflects a complex and evolving landscape shaped by various policy initiatives and market mechanisms aimed at reducing greenhouse gas emissions. Carbon accounting requires financial consideration of priced carbon allowances that permit participants in a market to emit a certain amount of greenhouse gas emissions or pollutants (Yang et al. 2024). Carbon accounting of such carbon credits depends on pollutants being made equivalent for disclosure and trading on carbon markets which involves complex global and local political and technical factors (Kolk et al. 2008; Wang 2023; Yang et al. 2024).

The journey in Australia began with the introduction of the Carbon Pricing Mechanism (CPM) in 2012. The CPM was a cap-and-trade system designed to impose a direct cost on carbon emissions, thereby incentivising entities to lower their carbon footprint. However, CPM was repealed in 2014 and replaced by the Emissions Reduction Fund (ERF). Under the ERF, participants can earn Australian Carbon Credit Units (ACCUs) for implementing projects that reduce or store carbon emissions, such as reforestation, improving energy efficiency, or managing waste. The government purchases these carbon credits through competitive auctions, providing a financial reward for emissions reduction activities and supporting Australia's climate change mitigation efforts.[1]

Regardless of the specific schemes or policies implemented, entities participating in such initiatives are expected to consider their accounting and disclosure implications for financial and sustainability reporting. Because such disclosure depends on commensuration and different pollutants being made equivalent for reporting and trading, research has noted the ongoing challenges of achieving consensus amongst approaches, in particular, the lack of technical detail available externally (Bebbington and Larrinaga-González 2008; Cotter et al. 2011; Boiral 2013; Yang et al. 2024). Previous studies have tested the value relevance of carbon information disclosed by firms, but they have mainly focused on voluntary disclosures (Choi and Luo 2020; Griffin et al. 2017; Matsumura et al. 2014).

[1] Other countries have different schemes and policies to incentivise the reduction of carbon emissions. For example, the European Union (EU) has its own emissions trading system which is a cap-and-trade system designed to reduce greenhouse gas emissions from various sectors.

The discussion in both the literature and applied work on accounting and disclosures implications from emissions trading schemes is not new (see Zhou 2022). In Australia, the Australian Accounting Standards Board (AASB) deliberated on the financial reporting impacts when the CPM was introduced in 2012. On a global scale, the International Accounting Standards Board (IASB) recognised the need for comprehensive guidance on emissions trading scheme accounting as early as 2005, adding it to their project agenda.

However, the project evolved over the years, and in 2015, it was renamed from "Emission trading schemes" to "Pollutant pricing mechanisms" to broaden its scope by including considerations of various emissions allowance schemes. Following the IASB's Third Agenda Consultation in July 2022, the IASB added the project to its reserve list. During the June 2024 meeting, the Board decided not to prioritise the project as there are other higher-priority projects to be completed. Nevertheless, the IASB continues to monitor developments in pollutant pricing mechanisms and potential accounting and disclosure issues and may address the related problems in the future.

While the IASB's efforts on pollutant pricing mechanisms have been put on hold, the US Financial Accounting Standards Board (FASB) has made significant progress in addressing related accounting issues, albeit with a narrower focus. In December 2024, the FASB issued an Exposure Draft titled "*Environmental Credits and Environmental Credit Obligations* (Topic 818)".[2] This proposed standard aims to provide specific guidance on recognising, measuring, presenting, and disclosing environmental credits and related obligations. Unlike the IASB's approach, the FASB's project targets a more defined set of transactions, potentially offering more immediate practical guidance for US companies involved in environmental credit schemes. This development highlights the ongoing challenges in standardising accounting practices for emerging environmental financial instruments across different jurisdictions.

Pollutant pricing mechanisms impact not just financial reporting, but also sustainability reporting. The concept of connectivity between financial and sustainability reporting has gained prominence in recent years (Bui and Fowler 2019; Zhou 2022; Tingey-Holyoak et al. 2024). Standard setters like EFRAG and the ISSB are increasingly focusing on creating coherent links between financial statements and sustainability reports,

[2] FASB (2024)

recognising that environmental factors have material implications across both domains. The expanding reporting requirements, such as those in IFRS S2, now demand comprehensive disclosure of climate-related targets, carbon credit strategies, and emissions goals, reflecting a holistic approach to corporate environmental accountability.[3]

The IASB's limited progress on the pollutant pricing mechanism project is understandable given the complex and evolving nature of these mechanisms globally. The challenge lies in creating a standard that can address the diverse range of schemes across different jurisdictions, many of which are still in the early stages of implementation or have yet to be established. This lack of uniformity makes it difficult for the IASB to develop a comprehensive standard that would be universally applicable. Moreover, the extent to which entities complying with IASB Accounting Standards are involved in these mechanisms, and the materiality of related transactions to their financial reports, is not yet clear. The types and scope of mechanisms entities participate in also vary widely, further complicating the standard-setting process.

The rapid evolution of corporate approaches to emissions reduction and carbon credits adds another layer of complexity. For instance, Telstra's 2024 announcement to move away from carbon credits in favour of direct decarbonisation investments illustrates the shifting strategies in this space.[4] Given these uncertainties and the dynamic nature of pollutant pricing mechanisms, the IASB's current approach of continued monitoring appears prudent. This allows the Board to gather more information and wait for greater stability in global practices before committing to a specific standard-setting direction. Typically, to determine its priority, the IASB considers relevant evidence to support some questions, such as:

a. How prevalent pollutant pricing mechanisms are;

[3] IFRS S2 requires that an entity needs to disclose the quantitative and qualitative climate-related targets that it has set either strategically or required by law, including GHG emission targets (S33). This includes the metric used to set the target, the objective of the target (for example, mitigation, adaptation or conformance with science-based initiatives), if the target is quantitative, whether it is an absolute target or an intensity target; how the latest international agreement on climate change, including jurisdictional commitments that arise from that agreement, has informed the target, the entity's planned use of carbon credits to offset greenhouse gas emissions to achieve any net greenhouse gas emissions target, including the extent to which, and how, achieving any net greenhouse gas emissions target relies on the use of carbon credits; which third-party scheme(s) will verify or certify the carbon credits; the type of carbon credit, including whether the underlying offset will be nature-based or based on technological carbon removals, and whether the underlying offset is achieved through carbon reduction or removal.

[4] Telstra (2024)

b. How significant the financial effects of these mechanisms are to the financial statements; and
c. Whether there are diversities in practice or other deficiencies in the accounting for these mechanisms.

Given the issues raised here and the above criteria, research is crucial to inform the IASB's decision-making process regarding pollutant pricing mechanisms. This paper aims to contribute to this understanding by examining carbon credit disclosures and recognition in the Australian landscape. To achieve this, we provide an overview of the pollutant pricing mechanism landscape in Australia followed by an analysis of the 2024 financial and sustainability reports of 100 ASX-listed entities.

2. Background

Carbon credit schemes in Australia

The landscape of carbon markets in Australia has evolved significantly. For entities and their value chains to reduce emissions, entities need to take extra steps which will often require them to engage in carbon market trading. Carbon markets can help support climate change targets and reduce biodiversity loss, and the use of carbon credits has evolved beyond their role as a tool for neutrality offsetting (CMI 2024). Alignment with global standards and frameworks arising out of the Paris Agreement has meant fresh approaches to corporate decarbonisation strategies, including design and operation of carbon projects, and the use of carbon credits (Dwyer and Enright 2024).

The ecosystem has changed considerably over the past 10 years, since the repeal of the carbon pricing legislation. Australia's carbon credit market operates through both mandatory and voluntary systems, each serving distinct purposes with specific types of credits. In the mandatory compliance market, regulated entities—mainly large emitters under the Safeguard Mechanism—are legally required to reduce emissions or purchase credits like ACCUs to meet their obligations. The introduction of the Safeguard Mechanism in 2016 marked a pivotal shift. The Safeguard Mechanism was introduced as a regulatory framework to complement the ERF, ensuring that the voluntary emissions reductions achieved through the ERF were not offset by increases in emissions from Australia's largest industrial facilities. The mechanism specifically targeted major emitters—facilities emitting more than 100,000 tonnes of carbon dioxide equivalent

(CO_2-e) annually—including sectors such as mining, oil and gas production, manufacturing, transport, and waste management. Under the 2016 framework, the Safeguard Mechanism set baselines that acted as emissions caps for each facility, based on historical emissions data or industry standards. Facilities were required to keep their emissions within these baselines or purchase ACCUs to offset any excess emissions.

However, criticisms arose regarding the mechanism's flexibility, which allowed facilities to negotiate higher baselines, potentially enabling emissions growth instead of reductions. In response, comprehensive reforms were introduced in 2023, making the Safeguard Mechanism more stringent and mandatory. Key changes included the implementation of declining baselines that decrease by 4.9% annually until 2030, ensuring facilities progressively reduce their emissions intensity (CER 2024). By 2030, all facilities will adhere to industry-average emissions intensity baselines. Additionally, facilities using ACCUs to offset over 30% of their emissions must now justify why further on-site reductions are not feasible. This requirement enhances transparency and accountability in emissions management. The reforms also introduced flexibility mechanisms, allowing facilities to borrow up to 10% of their credits against their baselines each year, strengthening a transition to lower emissions while maintaining pressure for investment in abatement technologies (CER 2024). In 2025, the new Safeguard Mechanism has been in operation for a year and is emerging as a potential tool to create and connect markets to technology, finance, and community (Katheklakis 2024).

The voluntary market, on the other hand, allows companies and individuals to purchase credits to offset emissions beyond what is required by regulation. ACCUs play a significant role in this segment, offering flexibility for businesses to demonstrate their environmental responsibility and meet corporate sustainability goals. Blue Carbon Credits also fit within the voluntary market, focusing on carbon sequestration in coastal ecosystems such as mangroves and seagrasses, appealing to those who seek broader ecological benefits alongside carbon reduction.

The Clean Energy Regulator[5], an Australian government agency, which oversees the ERF, has reported substantial growth in the issuance of ACCUs, with 17 million credits

[5] The Clean Energy Regulator was established in 2012 under the Clean Energy Regulator Act 2011 and operates as an independent statutory authority. The agency is responsible for administering legislation that supports

issued in 2021 alone.[6] This record issuance highlighted the growing commitment of Australian entities to reducing their emissions, driven by both government incentives and voluntary corporate sustainability efforts. Entities obtain these credits through various approved activities. ACCUs are earned through certified projects such as reforestation, sustainable agriculture, or waste management, all regulated by the Clean Energy Regulator to ensure environmental integrity. Credits are retired at the point of claiming their environmental benefit, ensuring the reductions are not counted more than once, which is fundamental to maintaining the integrity of the carbon credit system. This one-time use ensures that the credits genuinely reflect an actual reduction in emissions, supporting Australia's broader efforts to reduce greenhouse gases and promote sustainable environmental practices across both mandatory and voluntary sectors. The value of carbon credits, including ACCUs and SMCs, is influenced by market demand, project type, and regulatory factors, and their purchase and use can be reported in a number of ways.

Financial and sustainability reporting

As the use of carbon credits becomes increasingly prevalent across various jurisdictions, it is essential for entities to understand the financial and sustainability reporting implications associated with their utilisation of carbon credits. This consideration is crucial for ensuring transparency and accountability in corporate practices, which is meeting their stakeholder information needs.

While carbon credits are intended to help reduce greenhouse gas emissions, concerns have emerged regarding their potential misuse (Bui and Fowler 2019; Yang et al. 2024). Reports indicate that some entities may purchase carbon credits to offset their emissions without making substantial efforts to reduce them, leading to accusations of greenwashing (Rankin et al. 2011; Ranjan 2024; Trouwloon et al. 2023). This practice undermines the credibility of carbon markets and raises questions about the integrity of sustainability claims.

emissions reduction and clean energy initiatives, including the Emissions Reduction Fund (ERF), the Safeguard Mechanism, the Renewable Energy Target, and the Australian National Registry of Emissions Units.

[6] Australian Government, Clean Energy Regulator (2022).

Additionally, fluctuations in the value of carbon credits can have a material impact on an entity's financial position and performance (Wang 2023). Significant changes in credit values could affect both reported earnings and asset valuations. As such, such information is critical to investors and other users of financial statements.

Standard-setters have been actively discussing various accounting issues related to pollutant pricing mechanisms. Key questions include:

- What elements should entities recognise in their financial statements concerning emissions trading or other similar mechanisms?
- What obligations and liabilities arise within these schemes, and when do they occur?
- Are allowances considered assets, and if so, what type (intangible, financial instruments, inventory)?
- When should these assets and liabilities be recognised, and how should they be measured?
- What income or expenses arise from these transactions, and when should gains or losses be recognised?
- How should these elements be presented in financial statements? Should they appear gross or net?

In addition to financial reporting implications, as jurisdictions adopt or consider adopting ISSB Standards, the connectivity between sustainability and financial information becomes increasingly important. Specifically, understanding how an entity's involvement in carbon credits relates to its sustainability planning and performance is critical for many stakeholders' decision making.

Despite the growing importance of carbon credits, there remains a lack of evidence regarding current reporting practices related to their use in financial and sustainability disclosures (Wang 2023). Therefore, this paper aims to explore evidence on how Australian entities report their involvement with carbon credits, providing insights into existing practices.

3. Methods

In order to contribute to understanding of the carbon credit disclosure landscape in Australia, it was necessary to explore the carbon credit current disclosure practices in

Australian companies. This study focuses on 100 ASX-listed entities in the year 2024. These companies are deemed representative of broader business practice in Australia, across a variety of industries, who are often important in relation to highly visible social and environmental impacts (Lodhia et al. 2020). The 100 entities are selected based on their market capitalisation as of 30 June 2024, excluding those with financial year ending in December.[7] Largest companies are the focus for efficient and effective sampling in addition to those who are likely to publish more comprehensive annual reports to inform stakeholders (Miklosik and Evans 2021). For the purpose of this commentary, the most current reporting year is relevant given the intervention of the Safeguard Mechanism, but also linking to discourse on preparedness for mandatory climate reporting (e.g., Simnett et al. 2024).

For the purpose of this study, we analyse annual reports (AR), which may also include sustainability reports (SR) within the report and integrated reports, as well as separate sustainability or climate-related reports, if any, disclosed by the entities. Reporting data is manually collected by going through the reports produced by the entities (Simnett et al. 2024). An initial high-level coding was undertaken in order to develop counts in an efficient number of categories which represent the same meaning (Krippendorff 2004). A manual search of the terms "carbon", "carbon offset", and "carbon credit" was undertaken and an unweighted count of observation applied. Exploration of types of reports, where disclosure was occurring in, was also recorded, in addition to a systematic content analysis of the discussion around each of the high-level terms identified above (Lodhia et al. 2020). Lastly, the lenses of industry and size were applied to the analysis to examine any effects across the sample.

4. Results

Disclosure count summary

Of the entities examined, 77 percent disclosed information related to "carbon offset" or "carbon credit" in either their AR or their SR (including climate-related disclosures) (Table 1), highlighting the increasing importance of carbon offsets and carbon credits as key components of corporate reporting. Among these, 40 entities incorporated such

[7] Our sample consists of the Top 124 entities based on market capitalization as of 30 June 2024, for which 24 entities have December year-end. The full list of samples observed is provided in an appendix.

disclosures in both the AR and SR, suggesting an interconnection between disclosures that bridges financial and sustainability information. Other 14 companies limited their discussion to the AR only, while 23 entities addressed them within their SR only. Notably, 23 companies, representing 23 percent of the sample, did not reference carbon offsets or carbon credits in any of their reports.[8]

Table 1. Sample distribution

Mention 'carbon offset' and/or 'carbon credit' in disclosures	No of observations	Disclosures	No of observations
YES	77	Mention in AR and SR	40
		Mention in AR only	14
		Mention in SR only	23
NO	23		

Report type

One of the prominent characteristics observed is whether the entity has produced a separate SR. Among the total of 100 entities reviewed, 81 entities have a separate SR, and 81 percent (i.e., 66 out of the 81) specify the use of carbon credit or carbon offsets in their disclosures. In comparison, only 57 percent (n = 11) of those incorporating sustainability disclosures within the AR (i.e., do not have a separate SR) contain such disclosures (Table 2). This result suggests that entities that prioritise sustainability reporting on top of regular AR may also demonstrate greater awareness and willingness to disclose the carbon-related topics.

Table 2. Entities with a separate SR and their disclosures

Have a separate SR	No of observations	Mention 'carbon offset' and/or 'carbon credit' in disclosures	No of observations
YES	81	YES	66
		NO	15
NO	19	YES	11
		NO	8

In contrast, the lower rate of discussing the use of carbon credit and carbon offset strategy among entities that integrate SR into the AR indicates a potential gap in their communication strategies related to carbon and sustainability.

[8] Among these entities are those who mentioned their climate-related mitigation efforts but did not specifically mention carbon offset or the use of carbon credits.

Content analysis

The content analysis of the key terms reported in Table 3, reveals interesting patterns in how entities approach the matter. While "carbon offset" often refers to the process of compensating for emissions by funding equivalent carbon reductions elsewhere, "carbon credit" serves as a broader term encompassing tradable permits that represent the right to emit a certain amount of carbon dioxide. Among the observed entities, a significant portion (45 out of 66, or 68%) mentioned both "carbon offset" and "carbon credit" in their disclosures.

Table 3. Discussion topics and the specification of carbon credit used among entities with a separate SR

Discussion Topic	No of observations	Specifying the Carbon Credit Used	No of observations
Carbon Offset	16	Yes	0
		No	16
Carbon Credit	5	Yes	3
		No	2
Both	45	Yes	30
		No	15

However, other entities have approached this issue differently. Specifically, there are 16 entities (24%) that focused exclusively on carbon offsets. For example, some entities indicated that they are going to implement tools to achieve net-zero targets and offset the remaining emissions – but there is no specific indication that they are going to rely on carbon credits as the emission mitigation strategy.

The remaining 5 entities (8%) solely mentioned the use of carbon credits, which mostly used as part of their forecasting and planning strategy, without specifying that the carbon credits are used to offset carbon emissions produced. Entities that adopt these strategies tend to have a broader discussion on their emission reduction strategy while mentioning 'carbon credit' as part of their assumption and planning.

Carbon credit used

Specificity of carbon credit used is critical in ensuring the credibility and integrity of carbon-related disclosures. It allows stakeholders to evaluate the quality and legitimacy of carbon credits based on recognised standards. Each standards imposes strict criteria for the certification of carbon credits, ensuring that they represent real, additional, and

permanent emissions reductions. Reporting the source and certification status of carbon credits provides assurance that the credits are legitimate and aligned with broader carbon emission reduction goals.

While the inclusion of both "carbon offset" and "carbon credit" in disclosures demonstrates a more comprehensive narrative, the lack of specificity regarding the type of carbon credits used raises concerns on the details of these discussions. Among the 66 observations analysed, specificity is relatively low, with many entities failing to provide critical details about the origin, type, or certification of the carbon credits involved. Among those that addressed both terms as well as 'carbon credit' only, only 66% (33 out of 50) of entities provided such specifics.

The industry effect

Differences in disclosure approach can arise related to the industry that they are operating in.[9] The results reveal that the Financials and Materials sectors have the highest number of entities mentioning "carbon offset" and/or "carbon credit" in their disclosures, with 18 out of 20 entities (90%) in Financials and 13 out of 16 entities (81%) in Materials doing so. Financials' strong performance is likely influenced by their unique regulatory environment, including oversight by the Australian Prudential Regulation Authority (APRA), and their role in carbon credit trading markets. These factors drive higher disclosure rates among the sample entities as they face significant scrutiny from various stakeholders. Similarly, Materials, an emissions-intensive sector, operates under heavy stakeholder pressure to address its environmental impact, resulting in greater attention to carbon-related disclosures. While these sectors appear to be leaders in carbon-related disclosures, this can partly be attributed to their high representation in the sample. Together, these two sectors account for 36 of the 100 entities analysed, highlighting the need to consider proportional representation when interpreting these results.

Table 4. Industry sector analysis

Industry Sector	Mention 'carbon offset' and/or 'carbon credit' in disclosures	Sample Size	Percentage
Real Estate	7	7	100%

[9] In this analysis, we are focusing on 'Industry Sector' to simplify the discussion. For the purpose of completeness, we have also provided details breakdown at the 'Industry Group' level as appendix 2.

Communication Services	6	6	100%
Information Technology	4	4	100%
Utilities	3	3	100%
Energy	2	2	100%
Financials	18	20	90%
Industrials	12	14	86%
Materials	13	16	81%
Consumer Staples	4	6	67%
Health Care	5	9	56%
Consumer Discretionary	3	13	23%
TOTAL	**77**	**100**	

Further analysis shows that five sectors, including Real Estate, Communication Services, Information Technology, Utilities, and Energy, achieved 100% disclosure rates, meaning all sample entities within these sectors mentioned either or both "carbon offset" and "carbon credit" in their disclosures. This result is notable because it reflects a universal acknowledgment of the importance of these concepts, even among sectors with smaller sample sizes. While the focus is mainly directed towards "green" sectors, this situation seems to be aligned with the focus of most standard setters on "climate first" and potentially indicates the readiness of Australian entities in approaching the climate-related disclosure requirements.

The size effect

One of the characteristics that often being associated with disclosures is the size, given that larger firms tend to be under the spotlight and radar of various key stakeholders. Analysis based on size (market capitalisation) reveal a clear trend: larger entities are more likely to disclose information about "carbon offset" and/or "carbon credit" in their reports. Entities in the upper 50 of the market capitalisations ranking (ranked 1 to 50) demonstrate the highest disclosure rate, with 37 out of 41 entities (90%) including these concepts in their disclosures. This is followed by the middle 50 (ranked 51 to 100), where 28 out of 39 entities (72%) made carbon-related disclosures. Entities in the lower 50 (ranked 101 to 150) show the lowest rate of disclosure, with only 12 out of 20 entities (60%) addressing these concepts.

Table 5. Size analysis

Size (Market Capitalisation) Ranking	**Mention 'carbon offset' and/or 'carbon credit' in disclosures**	**Sample Size**	**Percentage**

Upper 50 (1 to 50)	37	41	90%
Middle 50 (51 to 100)	28	39	72%
Lower 50 (101 to 150)	12	20	60%

This trend suggests that larger companies are more likely to engage in carbon-related reporting, possibly due to greater stakeholder expectations, regulatory pressures, and resource availability. Larger firms are often more visible and subject to scrutiny from investors, regulators, and the public, which may drive them to adopt more robust sustainability reporting practices. Additionally, larger companies are more likely to have dedicated sustainability teams and the financial capacity to invest in carbon accounting and offset programs, enabling them to provide detailed disclosures. In contrast, smaller companies may face resource constraints that limit their ability to address carbon-related topics comprehensively. However, this trend also highlights a potential gap in readiness among smaller entities to meet evolving climate-related disclosure requirements, which could pose challenges as regulatory standards continue to evolve.

5. Conclusion

The paper demonstrates the complexity of the carbon credit disclosures and recognition landscape in Australia. Carbon credit and offset disclosure has been recognised by standard setters as being in need of comprehensive guidance for some time and through detailing various policy initiatives and market mechanisms that have evolved in Australia, the paper highlights the complex pressures disclosure practice has been subject to. This situation is now further challenged by the changing sustainability reporting landscape, and the need to create coherent links between financial statements and sustainability reports. This is very important to an area like carbon credit disclosure which is inexorably linked to both reporting types.

A review of reporting practice in Australia provides support for the complexity of the setting. Amongst Australia's top companies, more than two thirds are disclosing information related to carbon credits and nearly half of entities incorporated such disclosures in both the AR and SR, suggesting an interconnection between disclosures that bridges financial and sustainability information. These findings highlight the increasing importance of carbon offsets and credits in corporate disclosures, reflecting their growing prominence in climate-related strategies and reporting frameworks aligned with the agenda of global standard setters. Particularly, the inclusion of either or both of

these terms in the AR by more than half of the sample firms indicates that there is an emerging trend toward interconnections among disclosures, whereby entities aim to connect financial performance and non-financial (or sustainability-related) commitments. However, the decision by nearly one third of entities to limit such disclosures to the SR only may also indicate that many entities still see these carbon-related topics as predominantly environmental with immaterial financial implications.

The various reporting practices, with some entities prioritising disclosures in either the AR or SR only, reflect the absence of standardisation of carbon-related disclosures. As mentioned above, this variation in disclosure practices presents an opportunity for global standard setters to propose a standardisation to harmonise the reporting framework, ensuring consistent, comparable, and transparent carbon mitigation-related disclosures. Standardisation of disclosure, which enhances alignment between financial and non-financial reporting, could better meet the needs of stakeholders by providing a cohesive narrative that integrates sustainability-related considerations into the broader corporate decision-making process.

Furthermore, it was noted that entities that prioritise sustainability reporting on top of regular AR may also demonstrate greater awareness and willingness to disclose the carbon-related topics. A separate SR likely provide a better structured medium for the entities to discuss and address carbon-related issues and concerns more comprehensively. The lower rate of discussing the use of carbon credit and carbon offset strategy among entities that integrate SR into the AR indicates a potential gap in their communication strategies related to carbon and sustainability. These entities might integrate the sustainability, especially carbon-related matter, into broader corporate reporting, but the conciseness of discussion within the report possibly diluting the focus on carbon-related efforts. This difference could also reflect differences due to entities commitments to sustainability as different entities may have different environmental impact, resources, regulatory pressure or stakeholder demand for such disclosures.

Further analysis of key terms revealed a majority of entities likely recognise the importance and interconnectedness of these carbon credits and carbon offsets and the need to provide a comprehensive discussion around their carbon mitigation strategies. This approach of discussions may reflect the increasing complexity of corporate

sustainability practices, but entities can use this approach to demonstrate a holistic strategy to emissions reduction, incorporating both internal strategies (e.g., energy efficiency or renewable energy adoption) and external mechanisms (e.g., purchasing credits). A portion of entities however, indicated their emissions reductions plans with no link to carbon credits. This situation can be triggered by negative perceptions on the use of "carbon credits" by entities as an emission mitigation strategy. As a consequence, some entities would prefer to discuss other approaches adopted to reduce emissions that results from their direct actions rather than mentioning the purchase and usage of carbon credits (if any). However, a small portion of entities that only mention carbon credits as part of planning without identification of the way these will be used, Since stakeholders, including investors, regulators, and the public, increasingly demand greater clarity in how entities utilise offsets and credits to achieve their sustainability goals, vague or generalised discussions that fail to differentiate between these mechanisms may create confusion or scepticism about the credibility of reported emissions reductions. Regardless, isolated discussions of these topics are less commonly observed among the 100 entities.

Whilst these narratives are generally positive, the lack of evidence of "use" of carbon credits or offsets and any specificity, was notable. This lack of specificity could be caused by limitations in entities capacity or expertise in carbon credit accounting or strategic decisions to avoid scrutiny by relying on generalised claims (i.e., without providing any specification). However, this ambiguity is particularly problematic given the growing demand for transparency in carbon markets.

This paper aims to contribute to the understanding of carbon credit disclosures and recognition in the Australian landscape through an overview of the pollutant pricing mechanisms, followed by an analysis of the 2024 financial and sustainability reports of 100 ASX-listed entities. Whilst the paper is limited by a limited sample of 100 companies in a single year, in addition to use of count and content analysis to assess the level of corporate carbon credit disclosure in Australia, it still has several practical implications. It shows that potentially without improved guidance and specification, entities in Australia will not be ready to invest capacity or expertise in carbon credit accounting and instead rely on generalised claims and activity. This can guide regulators and standard setters when considering supportive guidance and when to pull a trigger amongst alternatives,

such as whether a higher level of disclosure is required in sustainability reports, or whether standards should support financial accounting disclosure, or potentially climate-related financial reporting. This research brings to the fore the role of standards and guidance in carbon accounting and reiterates the debate for increased transparency in carbon markets which is crucial to inform the IASB's decision-making process regarding pollutant pricing mechanisms. Some suggested research topics include:

- How prevalent pollutant pricing mechanisms are and what reporting requirements accompany them – there has been a growth of pricing schemes in many countries, yet voluntary reporting frameworks have been largely adopted.
- Linking the financial effects of carbon credit disclosures to significance in financial statements – despite growth of new schemes and frameworks, research into carbon disclosure remains very stable.
- Whether there are diversities in practice or other deficiencies in the accounting for these mechanisms – going deeper in analysis through a larger sample of companies and data points.
- How carbon disclosures affect an entities risk profile including financial and supply chain.
- Stakeholder perceptions and pressures as a mediating role in the relationship between carbon credits and disclosure and financial consequences.

Appendix 1

1. Commonwealth Bank of Australia (ASX:CBA)
2. BHP Group Limited (ASX:BHP)
3. CSL Limited (ASX:CSL)
4. National Australia Bank Limited (ASX:NAB)
5. Westpac Banking Corporation (ASX:WBC)
6. ANZ Group Holdings Limited (ASX:ANZ)
7. Macquarie Group Limited (ASX:MQG)
8. Wesfarmers Limited (ASX:WES)
9. Goodman Group (ASX:GMG)
10. Block, Inc. (NYSE:SQ)
11. Fortescue Ltd (ASX:FMG)
12. ResMed Inc. (NYSE:RMD)
13. Telstra Group Limited (ASX:TLS)
14. WiseTech Global Limited (ASX:WTC)
15. Transurban Group (ASX:TCL)
16. Woolworths Group Limited (ASX:WOW)
17. Aristocrat Leisure Limited (ASX:ALL)
18. REA Group Limited (ASX:REA)
19. Brambles Limited (ASX:BXB)
20. Coles Group Limited (ASX:COL)
21. Amcor plc (NYSE:AMCR)
22. Suncorp Group Limited (ASX:SUN)
23. James Hardie Industries plc (ASX:JHX)
24. Xero Limited (ASX:XRO)
25. News Corporation (NASDAQGS:NWSA)
26. Pro Medicus Limited (ASX:PME)
27. Fisher & Paykel Healthcare Corporation Limited (NZSE:FPH)
28. Cochlear Limited (ASX:COH)
29. Northern Star Resources Limited (ASX:NST)
30. Insurance Australia Group Limited (ASX:IAG)
31. Seven Group Holdings Limited (ASX:SVW)
32. Origin Energy Limited (ASX:ORG)
33. Reece Limited (ASX:REH)
34. South32 Limited (ASX:S32)
35. Computershare Limited (ASX:CPU)
36. CAR Group Limited (ASX:CAR)
37. Sonic Healthcare Limited (ASX:SHL)
38. Washington H. Soul Pattinson and Company Limited (ASX:SOL)
39. ASX Limited (ASX:ASX)
40. Stockland (ASX:SGP)
41. NEXTDC Limited (ASX:NXT)
42. The Lottery Corporation Limited (ASX:TLC)
43. Auckland International Airport Limited (NZSE:AIA)
44. Qantas Airways Limited (ASX:QAN)
45. Infratil Limited (NZSE:IFT)
46. Vicinity Centres (ASX:VCX)
47. Medibank Private Limited (ASX:MPL)
48. APA Group (ASX:APA)
49. Treasury Wine Estates Limited (ASX:TWE)
50. Ramsay Health Care Limited (ASX:RHC)
51. BlueScope Steel Limited (ASX:BSL)
52. Evolution Mining Limited (ASX:EVN)
53. SEEK Limited (ASX:SEK)
54. JB Hi-Fi Limited (ASX:JBH)
55. Endeavour Group Limited (ASX:EDV)
56. Pilbara Minerals Limited (ASX:PLS)
57. Orica Limited (ASX:ORI)
58. Mirvac Group (ASX:MGR)
59. DEXUS (ASX:DXS)
60. Technology One Limited (ASX:TNE)
61. AGL Energy Limited (ASX:AGL)
62. Worley Limited (ASX:WOR)

63. Charter Hall Group (ASX:CHC)
64. Lynas Rare Earths Limited (ASX:LYC)
65. ALS Limited (ASX:ALQ)
66. Qube Holdings Limited (ASX:QUB)
67. Netwealth Group Limited (ASX:NWL)
68. Bendigo and Adelaide Bank Limited (ASX:BEN)
69. Cleanaway Waste Management Limited (ASX:CWY)
70. EBOS Group Limited (NZSE:EBO)
71. Aurizon Holdings Limited (ASX:AZJ)
72. Steadfast Group Limited (ASX:SDF)
73. Harvey Norman Holdings Limited (ASX:HVN)
74. Whitehaven Coal Limited (ASX:WHC)
75. Incitec Pivot Limited (ASX:IPL)
76. HUB24 Limited (ASX:HUB)
77. Spark New Zealand Limited (NZSE:SPK)
78. Breville Group Limited (ASX:BRG)
79. Premier Investments Limited (ASX:PMV)
80. Sandfire Resources Limited (ASX:SFR)
81. Flight Centre Travel Group Limited (ASX:FLT)
82. Lendlease Group (ASX:LLC)
83. The a2 Milk Company Limited (NZSE:ATM)
84. Ansell Limited (ASX:ANN)
85. Challenger Limited (ASX:CGF)
86. Reliance Worldwide Corporation Limited (ASX:RWC)
87. Brickworks Limited (ASX:BKW)
88. New Hope Corporation Limited (ASX:NHC)
89. IDP Education Limited (ASX:IEL)
90. Super Retail Group Limited (ASX:SUL)
91. IGO Limited (ASX:IGO)
92. Bank of Queensland Limited (ASX:BOQ)
93. Lovisa Holdings Limited (ASX:LOV)
94. Guzman y Gomez Limited (ASX:GYG)
95. Zip Co Limited (ASX:ZIP)
96. Metcash Limited (ASX:MTS)
97. Pinnacle Investment Management Group Limited (ASX:PNI)
98. ARB Corporation Limited (ASX:ARB)
99. Downer EDI Limited (ASX:DOW)
100. Perseus Mining Limited (ASX:PRU)

Appendix 2

Industry Sector	Mention 'carbon offset' and/or 'carbon credit' in disclosures	Sample Size	Percentage
Banks	6	6	100%
Equity Real Estate Investment Trusts (REITs)	6	6	100%
Commercial and Professional Services	5	5	100%
Media and Entertainment	4	4	100%
Insurance	4	4	100%
Utilities	3	3	100%
Energy	2	2	100%
Real Estate Management and Development	1	1	100%
Materials	14	17	82%
Transportation	4	5	80%
Financial Services	7	9	78%
Health Care Equipment and Services	6	8	75%
Software and Services	3	4	75%
Capital Goods	3	4	75%
Consumer Staples Distribution and Retail	3	4	75%
Consumer Services	3	5	60%
Telecommunication Services	1	2	50%
Food, Beverage and Tobacco	1	2	50%
Consumer Discretionary Distribution and Retail	1	6	17%
Automobiles and Components	0	1	0%
Pharmaceuticals, Biotechnology and Life Sciences	0	1	0%
Consumer Durables and Apparel	0	1	0%
TOTAL	**77**		

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