

Executive Summary

We, the Department of Accounting and Corporate Governance at Macquarie University, are pleased to submit our comprehensive recommendations and insights on the proposed legislation concerning Australian Sustainability Reporting Standards—Disclosure of Climate-related Financial Information. Our submission addresses key aspects of the draft legislation, focusing on enhancing transparency, comparability, and accuracy in reporting practices to align with international standards and best practices for sustainable reporting. We summarise the key points made in the submission below.

1. Double Materiality Principle

We advocate for the adoption of the double materiality principle in climate-related financial disclosures to encompass both the financial impact of climate change on organisations and the impact of organisations on the environment. This principle is crucial for fostering a transformative shift towards a low-carbon global economy, ensuring a comprehensive understanding of climate-related risks and opportunities in line with international best practices.

2. Determination of Immaterial Climate-Related Risks and Opportunities

We support disclosing when entities assess climate-related risks and opportunities as immaterial, as this transparency offers valuable insights into management's risk assessment capabilities. Such disclosures facilitate benchmarking across entities and industries, providing clarity on industry standards and expectations regarding materiality assessments concerning climate-related risks and opportunities.

3. Detailed Reporting of Firms' Material Climate-Related Risks and Opportunities

While welcoming the initiative requiring entities to disclose relevant climate-related risks and opportunities, we express concerns about potential greenwashing risks within the current reporting framework. We recommend providing precise industry-specific guidelines, clarifying reporting criteria, and ensuring detailed disclosure of financial implications associated with climate-related risks and opportunities.

4. Converting Greenhouse Gases into CO2 Equivalent Value

We acknowledge the practicality of aligning with the NGER Scheme legislation for converting greenhouse gases into CO2 equivalent values. However, we emphasise the importance of balancing local regulatory requirements with evolving global standards to ensure international comparability and alignment with the latest scientific research on climate change.

5. Market-based Scope 2 Emissions

Endorsing the inclusion of Market-based (MB) Scope 2 GHG emissions alongside Location-based (LB) emissions, we support this approach as it provides a more accurate assessment of an entity's climate change impact and sustainability practices. Our recommendations include enhancing guidance on LB approaches for improved accuracy and reliability in reporting standards.

6. Cross-industry Remuneration Disclosure

We support mandating cross-industry disclosure of remuneration practices, particularly regarding the influence of climate considerations on executive compensation. To mitigate greenwashing risks, we propose optional/supplementary disclosures regarding climate governance and carbon accounting systems to ensure transparency and accountability in climate-related reporting.

7. Assurance Adoption

We recommend implementing mandatory assurance requirements in sustainability reporting to verify the accuracy of disclosed information. Drawing on academic literature, it underscores the positive impact of external carbon assurance on credibility, financial performance, and reporting quality, promoting enhanced sustainability performance and investor confidence.

8. Assurance Provider

We recommend amending the legislation to allow entities flexibility in engaging assurance providers beyond financial auditors, emphasising expertise in environmental and climate-related matters. We propose developing and implementing criteria for providers to ensure integrity and suggest enhanced oversight and guidance materials to maintain high standards in climate-related financial disclosures.

Thank you for considering our submission. We are committed to contributing to the development of robust and effective climate-related financial disclosure regulations in Australia. We also welcome the opportunity to make an oral presentation to the AASB as part of the ongoing consultation process.

On behalf of the Department of Accounting and Corporate Governance, Macquarie Business School, Macquarie University

1. Double Materiality Principle

The current legislation in Australia adopts a narrow view of the sustainability information provided by large entities— single materiality. It follows the IFRS position on sustainability, not the wider GRI and EU interpretation of sustainability disclosure (see below). We advocate for the double materiality principle in climate-related financial disclosures in Australia. The enforcement of double materiality is argued as necessary for a transformative shift towards a low-carbon global economy, recognising the importance of reflecting both the financial impact of climate change on organisations and the impact of organisations on the environment in sustainability reporting standards (Busch et al. 2024). This dual perspective thus ensures a comprehensive understanding of climate-related risks and opportunities, aligning with international best practices and contributing to more informed decision-making by not only investors but also a wide range of stakeholders.

Examining the global institutions involved in ongoing efforts to establish international guidelines and standards for sustainability disclosure. Two different perspectives on the concept of sustainability accountability and disclosures: A) a financial perspective that focuses on how corporations generate and respond to financial value (corporate sustainability) (the IFRS), and B) a broader perspective that considers the impact of corporations on the natural environment and society (environmental and societal sustainability) (GRI and EU sustainability standards) - these two main approaches to sustainability standards and guidelines. Firstly, there is a focus on financial maximisation (IFRS). This approach, influenced and funded by proponents of stakeholder capitalism, prioritises information that aligns with a financial interpretation of sustainability. Organisations such as the International Sustainability Standards Board (ISSB), which has absorbed several other organisations, emphasise creating financial value and disclosing climate change impacts. Secondly, there is a perspective that considers the natural environment and society (GRI and EU). This approach to sustainability aims to understand the impact of corporations on their external environments, including the sustainability of the natural environment and the well-being of humanity. This approach is driven by global environmental and social concerns and criticisms of public and private organisations' lack of adequate action and information.

Therefore, the current government's reliance on the first approach led to several observations.

- 1) The proposed draft legislation incorporating IFRS sustainability standards into Australian law contains significant faults that may negatively affect Australia's international reputation if approved by the Federal parliament. One major flaw is the mischaracterisation of sustainability reporting as an extension of financial reporting, which is an inaccurate representation. A distinct framework for sustainability reporting should encompass environmental, social and corporate governance performance (ESG). This distinction has been recognised and developed through various non-financial reporting frameworks over four decades (Christ, Burritt, Guthrie, and Evans 2018).

The limits of quantifying and incorporating sustainability reporting within financial reporting are reported in Borghei, Linnenluecke, and Bui (2023) study. Using FTSE 100's financial statements, they find that despite the growing trend of disclosures, the level of climate-related disclosures in the back half of financial statements is inadequate, and the quality is inconsistent

across different items.¹ The selective reporting within financial carbon disclosure may limit the usefulness of sustainability/carbon information to financial stakeholders.

- 2) The Global Reporting Initiative (GRI) has a range of standards that cover various topics, including financial matters, energy, carbon, biodiversity, employment, labour relations, training and education, diversity and equal opportunity, freedom of association, forced labour, rights of Indigenous peoples, and health and safety.

Using a sample of large international companies, Luo and Tang (2023) provide empirical evidence that a general form of ESG reporting is not associated with carbon mitigation. However, after controlling for ESG reporting, firms that follow GRI standards when preparing their ESG reports are more likely to achieve greater carbon mitigation. They find that GRI-aligned firms tend to set more proactive carbon strategies and policies, make environmental investments, and actively engage with stakeholders. Therefore, the legislation should consider recognising the role played by GRI as a potential standard in promoting climate action.

- 3) The proposed amendments by the Treasury extend the financial reporting regime. Therefore, the proposed amendments and accompanying memorandum should be described as such. Additionally, a discrepancy in the Treasury's material is the suggestion that sustainability standards will provide 'financial information' within the objectives of the ASIC Act 2001, which already addresses financial reporting standards. Sustainability standards intend to provide non-financial information that enhances understanding of the entity's activities.
- 4) The draft Bill and its explanatory memorandum should include non-financial information to align with accounting standards and ensure coherence for both domestic and international audiences. There needs to be a discussion mentioning the relationship between sustainability standards and climate action and reporting, which is vital given its global priority. This is missing as the proposal has a narrow framing of the sustainability of large organisations.

2. Determination of Immaterial Climate-Related Risks and Opportunities

We support the position that when an entity assesses climate-related risks and opportunities as immaterial, disclosing this fact is not only relevant but also significantly useful to users and investors. Knowing that an entity has deemed certain climate-related factors to be immaterial—and understanding the reasoning behind it—can offer insights into management's foresight and risk management capabilities. Such disclosures also allow for benchmarking across entities and industries, providing a clearer picture of industry standards and expectations regarding materiality assessments concerning climate-related risks and opportunities.

A study by Schiemann and Sakhel (2019) underscores the value of disclosing climate-related risks, particularly physical risks. It demonstrates that transparency in reporting physical risks reduces information asymmetry, especially under stringent regulatory environments like the EU Emissions Trading Scheme. This evidence highlights the broader implications of such

¹ Particularly, disclosures associated with fixed assets and provisions, contingent liabilities and contingent assets were the most frequently reported, irrespective of industry, while inventories, income taxes and revenue from contracts were the least disclosed items (Borghesi et al. 2023).

transparency: reducing information gaps between firms and investors and affirming the materiality of climate-related risks, which can influence investment decisions and risk management perceptions. In addition, the findings from Jiang, Luo, Xu, and Shao (2021) reinforce the arguments that investors value the binary disclosure of specific climate-related risks and opportunities, seeing such transparency as a positive indicator that can offset the negative valuation impact of carbon emissions.

Similarly, Borghei et al. (2023) show the disparities in the level of disclosures between material risks, such as fixed assets, provisions, and contingent liabilities, while less/non-material risks, such as climate-related risks related to inventories and revenue accounts, are rarely disclosed. This would result in an incomplete picture of the disclosure and cause hindrance to effective investor decision-making. Further, they note a lack of detailed, consistent disclosures on progress towards the goals of the Paris Agreement, particularly regarding quantifying their investments and reporting transition planning towards a low-carbon economy. A long-term view is missing from the current approach to climate-related disclosures in annual reports.

Overall, existing evidence echoes the broader perspective that disclosing immaterial climate-related factors not only clarifies an entity's risk management strategy and commitment to net zero but also can influence investor behaviour positively, emphasising the importance of detailed reporting in the assessment of firm value and sustainability efforts.

3. Detailed Reporting of Firms' Material Climate-related Risks and Opportunities

We welcome the initiative set forth in the exposure draft, which requires entities to disclose relevant climate-related risks and opportunities, recognising their materiality and significance for investors' decision-making. However, we have a substantial concern about the susceptibility of the current reporting framework, as detailed in paragraphs 30 and 31, to potential greenwashing. Greenwashing occurs when entities provide disclosures that are overly optimistic, lack specificity, or are selectively reported to create an environmentally responsible public image without substantively addressing the underlying risks or actual climate impact.

Our first concern revolves around the requirement to specify short-, medium-, and long-term horizons for climate-related risks and opportunities (Paragraph 30b). This could lead to inconsistencies across disclosures, potentially obscuring the true time frame of risks and opportunities and hindering comparability among reporting entities. This lack of standardisation might allow firms to present an overly optimistic view of their climate-related initiatives or downplay the severity and immediacy of risks. Second, the directive to describe climate-related risks and opportunities (Paragraph 30a) may result in subjective reporting, with entities potentially emphasising opportunities over risks or vice versa, depending on their strategic interests. A recent study Borghei et al. (2023) substantiates these concerns, documenting how high-emitting industries emphasise risks in their climate-related disclosures while low-emitting industries favour opportunity-driven disclosures in their annual reports. Without stringent guidelines, firms could selectively disclose information that portrays their actions more favourably, contributing to greenwashing. Third, while Paragraph 31 acknowledges the variability of planning horizons across industries, it does not mandate a clear explanation of how these horizons align with the entity's strategic decision-making processes. This lack of clarity could lead to ambiguity about why certain risks may be deemed relevant only in the long term, potentially becoming a means to defer responsibility.

We outline our key recommendations.

First, we suggest crafting industry-specific guidelines with precision to define ‘short,’ ‘medium,’ and ‘long-term’ time horizons. The rationale for this is twofold. First, it ensures that disclosures are consistent and can be reliably compared across different reporting entities within the same industry. Second, this approach recognises the unique nature of each industry, acknowledging the substantial variability in the impact and immediacy of climate-related risks from one sector to another. By tailoring guidelines to specific industries, stakeholders can more accurately assess and compare the climate resilience of entities within the same industry. To illustrate the effectiveness of such tailored guidelines, we reference the Sustainability Accounting Standards Board (SASB), which has successfully developed industry-specific standards for reporting material sustainability issues. As demonstrated by Khan, Serafeim, and Yoon (2016), who use SASB’s industry guidance to classify sustainability issues as material or immaterial for each industry, this approach assists investors in identifying companies that make value-enhancing sustainability investments. Consequently, this study concludes that companies should focus on addressing the sustainability issues most relevant to their specific industry. More specifically, Borghei et al. (2023) provide evidence of inter-industry differences in climate-related disclosures in annual reports. Firms in non-carbon-intensive industries take an opportunity-focused approach with mainly descriptive disclosure practices, while those in carbon-intensive industries take a risk-focused approach, applying qualitative and quantitative disclosure practices. These examples provide a compelling case for the adoption of industry-specific guidelines, enhancing the precision and relevance of climate-related disclosures within diverse sectors.

Second, the term ‘reasonably expected’ requires further clarification to prevent entities from leveraging its ambiguity to omit pertinent information. Clear criteria should be established to delineate which impacts are to be considered ‘reasonably expected,’ closing any loopholes that may allow for selective reporting.

Third, we believe that entities should be obligated to provide a table listing the financial implications of climate-related risks and opportunities. This should include not just a narrative description but a quantifiable analysis detailing potential costs, revenue impacts, and broader financial repercussions. Accurately estimating and reporting these financial implications will enable investors and stakeholders to make more informed assessments of the entity’s financial health and long-term viability in the context of a changing climate.

4. Converting greenhouse gases into a CO₂ equivalent value

The AASB’s decision to require Australian entities to convert greenhouse gases using GWP values from the IPCC’s 5th assessment report (AR5), aligning with the NGER Scheme legislation, can be viewed as a practical decision. Aligning with NGER Scheme requirements serves to eliminate potential conflicts in reporting standards for Australian entities, fostering consistency and easing compliance efforts. Such alignment minimises the complexity and reduces the likelihood of errors in reporting. In addition, by allowing the use of AR5 GWP values, the AASB mitigates the regulatory burden on entities already subject to the NGER Scheme, sparing them from adjusting reporting mechanisms to adhere to the more recent IPCC 6th assessment report (AR6) for IFRS S2 reporting. This pragmatic approach acknowledges the practicalities of business operations, where adhering to different reporting requirements can

require significant adjustments and incur additional compliance costs. Furthermore, the use of AR5 GWP values provides a transitional period for entities to acclimate to potential updates in global warming potentials anticipated in future reporting periods. Given the periodic updates to IPCC's assessments, entities require sufficient time to adapt to emerging scientific findings and evolving reporting requirements.

While consistency with local legislation is beneficial, there is a concern regarding international comparability. Entities operating globally may encounter the need to report using AR6 values in other jurisdictions, introducing the possibility of discrepancies in the reporting and comparison of GHG emissions internationally. This dual requirement has the potential to complicate assessments for global investors and stakeholders. AR6, including updated GWP values, reflects the latest scientific understanding of climate change impacts. By not requiring the use of the latest GWP values, there is a risk that reported emissions data might not fully represent the most current understanding of their impact on global warming, potentially undermining efforts to gauge and mitigate climate change risks accurately.

In conclusion, while the AASB's approach aims to reduce regulatory burdens and maintain consistency with local legislation, it is essential to align local regulatory requirements with evolving global standards and the latest scientific research on climate change for long-term sustainability and international harmonisation.

5. Market-based Scope 2 emissions

This response addresses the draft IFRS S2 paragraph 29(a)(v) and the proposed disclosure requirements for Scope 2 Greenhouse Gas (GHG) emissions. GHG emissions are categorised into direct (Scope 1) and indirect (Scope 2), with two recommended approaches for Scope 2 disclosure: location-based (LB) and market-based (MB). Since 2015, the amendment to the GHG Protocol has introduced both LB and MB methodologies for reporting Scope 2 emissions. The LB approach relies on the utilisation of average grid emission factors, as recommended by regional or national authorities. These factors reflect the spectrum of energy sources used to produce electricity in a particular geographic region. In contrast, the MB method considers individually purchased electricity, incorporating elements such as renewable energy credits and other market mechanisms. In terms of regulatory guidance, bodies like the SEC and ISSB propose flexibility in choosing LB, MB, or both approaches. In contrast, the European Financial Reporting Advisory Group (EFRAG) advocates for reporting Scope 2 emissions under both LB and MB approaches.

We support the proposal to require entities to disclose MB Scope 2 GHG emissions alongside LB emissions. This form of reporting requirement serves as an incentive for entities to invest in cleaner energy sources, leveraging the benchmarking effect. It also provides investors with a more accurate assessment of an entity's climate change impact and sustainability practices. A study by Baboukardos, Schiemann, and She (2022) on US companies reveals a negative association between Scope 2 emissions and market value under both LB and MB approaches. Significantly, the MB approach exhibits a stronger negative impact, indicating investor sensitivity to MB Scope 2 emissions. The study suggests that the MB approach provides more company-specific information and better reflects companies' commitment to climate change mitigation than the LB approach.

In addition, we recommend incorporating more detailed guidance on the LB approach to enhance its accuracy and reliability. An example of such guidance is adopting a ‘state-based’ weighting methodology for companies with operations across diverse geographical regions, such as different Australian states, where the fuel source combinations for electricity generation vary significantly. This approach would allow for a more precise estimation of emissions tailored to the specific energy profiles of each location (Wong and Zhang 2022).

Overall, we endorse the inclusion of MB Scope 2 GHG emissions in reporting standards aligns with international best practices and empirical evidence. This approach enhances transparency, facilitates informed decision-making by investors, and promotes environmental sustainability in corporate practices.

6. Cross-industry Remuneration disclosure

We support the initiative to mandate cross-industry disclosure of remuneration practices, as outlined in the draft of ASRS 2, especially regarding the influence of climate considerations on executive compensation. This move toward transparency and accountability is well-founded in academic research. Flammer, Hong, and Minor (2019) demonstrate the growing prevalence of integrating social and environmental performance criteria into executive compensation. Their study reveals the positive effects of CSR contracting on various company outcomes, such as innovation, sales growth, profitability, and stock returns. Similarly, Luo, Wu, and Zhang (2021) establish a positive association between sustainability-linked executive compensation structures and corporate carbon transparency. This implies that CEOs with sustainability-linked compensation have stronger incentives to disclose carbon information and reduce GHG emissions.

The adoption of sustainability-linked contracting is argued to shift management focus towards stakeholders that, while less immediately visible, are financially significant over the long term, thus bolstering corporate governance (Flammer et al. 2019). The evidence suggests that CSR contracting can enhance long-term orientation, company value, social and environmental initiatives, and green innovations while contributing to a decrease in emissions. Furthermore, Cohen, Kadach, Ormazabal, and Reichelstein (2023) emphasise that companies incorporating sustainability metrics into executive pay, especially those using environmental metrics, witness increased stakeholder engagement, such as higher voting support by institutional investors. Bui, Houqe, and Zahir-ul-Hassan (2022) and Tang and Luo (2014) offer empirical evidence demonstrating companies with high-quality carbon accounting and management systems, which integrate carbon measures into executive remuneration structures, experience better carbon performance. This includes notable outcomes such as significant carbon savings and emissions reductions. Bui, Truong, and Chapple (2021) show how carbon accounting systems indirectly influence financial performance via non-financial performance benefits. Overall, aligning executive pay with climate goals is seen as a way to enhance the effectiveness of climate action, making such data invaluable to investors and stakeholders.

However, it is crucial to acknowledge the potential for compensation structures to inadvertently encourage greenwashing, particularly in firms where ESG incentives constitute only a minor portion of overall compensation. In such cases, an emphasis on financial performance might overshadow genuine climate change mitigation efforts, leading firms to obfuscate climate-related information to evade external demands for transparency. To prevent greenwashing, the

legislation can consider optional/supplementary disclosures regarding climate governance and carbon accounting systems. Specifically, firms can disclose whether a comprehensive carbon accounting system is present and used, and that includes not only climate-linked remuneration but also project management, budgets, targets, and strategic planning systems that work as a whole to support financial performance and achievement of climate-related objectives (Bui et al. 2022). At the senior management level, Bui, Houqe, and Zaman (2020) document the important role played by climate governance, including executive incentives, board-level environmental committee, frequency and time horizon of reporting climate-related risks at the board level. This climate governance reduces managerial discretion in carbon disclosure by curbing the tendency to over-acclaim high performance via extensive disclosure and avoiding responsibility for poor performance via minimal disclosure. Consequently, the proposed legislation can consider voluntary disclosure of these components of climate governance as a way to reduce the potential for greenwashing.

In conclusion, while the integration of climate considerations into executive remuneration holds promise for advancing corporate sustainability efforts, careful implementation and ongoing monitoring are essential to mitigate the risk of greenwashing and ensure the intended positive outcomes are realised.

7. Assurance Adoption

We emphasise the critical importance of mandatory assurance requirements, which serve as a cornerstone for verifying the accuracy and reliability of disclosed information. Independent verification plays a pivotal role in enhancing the confidence of stakeholders, including investors, regulators, and the wider community. Fan, Tang, and Pan (2021) highlight that resolving carbon information asymmetry requires carbon assurance, which cannot be substituted for by financial auditing.

The value of assurance in sustainability/carbon reporting is well-documented in academic literature. For instance, Simnett, Vanstraelen, and Chua (2009) provide empirical evidence indicating that sustainability reports, when assured, are perceived as significantly more credible and trustworthy by stakeholders. This perception stems from the rigorous external verification process that these reports undergo, ensuring that the disclosed information is not only accurate but also comprehensive and fair. Shrestha, Choi, and Luo (2023) empirically confirm that external carbon assurance contributes an incremental positive impact on financial performance. Hoang and Phang (2020) document that ‘combined assurance,’ a technique coordinating the assurance roles of management and internal and external providers, effectively restores investor confidence in the reliability of reported information under various reporting reliability risks. This practice is shown to increase investors’ willingness to invest, especially when facing negative news or key audit matters related to estimation uncertainty and risks of manipulated reporting. Bui, Houqe, and Zaman (2021) find voluntary adoption of carbon assurance (level), carbon disclosure and gender-diverse boards are negatively associated with earnings management. This indicates firms that adopt carbon assurance demonstrate higher financial reporting quality. A recent study by Luo, Tang, Fan, and Ayers (2023) further substantiates the benefits of assurance practices, highlighting that firms engaging in these practices tend to exhibit higher-quality carbon disclosures. This improvement in disclosure quality is crucial for informed decision-making by investors and can lead to enhanced sustainability performance and increased investor confidence.

8. Assurance Provider

The draft legislation mandates that material-sized organisations obtain an assurance report on their climate-related financial disclosures from their financial auditor. This requirement is intended to align with existing assurance practices under the Corporations Act for financial reports, with specific assurance standards for climate disclosures to be developed by the Australian Auditing and Assurance Standards Board (AUASB).

We have a few concerns arising from this. First, the requirement for entities to obtain an assurance report exclusively from their financial auditor potentially exacerbates the concentration of power and influence within the Big Four accounting firms. As these firms currently audit 98% of the top 200 listed companies, along with other significant entities such as superfunds and private equity, the draft law may inadvertently entrench their dominant position in the market further. Second, this provision could limit the diversity of thought and approach in the assurance of climate disclosures. By restricting the pool of assurance providers to financial auditors, primarily the Big Four, there is a risk of a homogenised perspective on what constitutes effective climate disclosure, potentially stifling innovation and critical evaluation in this increasingly crucial field. Third, there are firms and organisations that specialise in environmental, social, and governance (ESG) matters, including climate risk. Datt, Prasad, Vitale, and Prasad (2022) analyse a sample of the 8,425 firm-year observations that had their carbon emissions disclosures assured, 4,035 (47.9%) chose specialist providers and 2,982 (35.4%) chose audit and assurance services providers. The trend from 2010 to 2017 indicates that accounting firms are becoming hired increasingly more often; however, specialist firms still dominate the market. The draft provision may create barriers for these specialised entities, which possess deep expertise in assuring sustainability and climate-related issues, from contributing their knowledge and insights to the assurance process.

We thus make the following three recommendations. First, we recommend amending the draft legislation to allow entities the flexibility to engage assurance providers beyond their financial auditors. This could include firms with specialised expertise in environmental and climate-related matters, thereby enriching the quality and depth of assurance practices. The evidence from the study Datt, Luo, and Tang (2020) underscores the importance of this flexibility, highlighting how it can contribute to more effective and targeted assurance practices that align with a firm's specific needs and goals in managing climate-related risks and responsibilities. Second, to ensure the integrity and effectiveness of assurance processes, we suggest the development and implementation of criteria for assurance providers. These criteria should emphasise not only auditing and assurance expertise but also specialised knowledge in climate and sustainability matters. Third, to support this expanded pool of assurance providers, we advocate for enhanced oversight by relevant regulatory bodies, alongside the development of guidance materials by the AUASB, to ensure that all assurance providers meet the high standards required for climate-related financial disclosures.

In conclusion, while we support the initiative to mandate assurance for climate-related financial disclosures, we believe that expanding the scope of eligible assurance providers will better serve the objectives of transparency, accountability, and thoroughness in reporting on climate-related risks and opportunities.

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