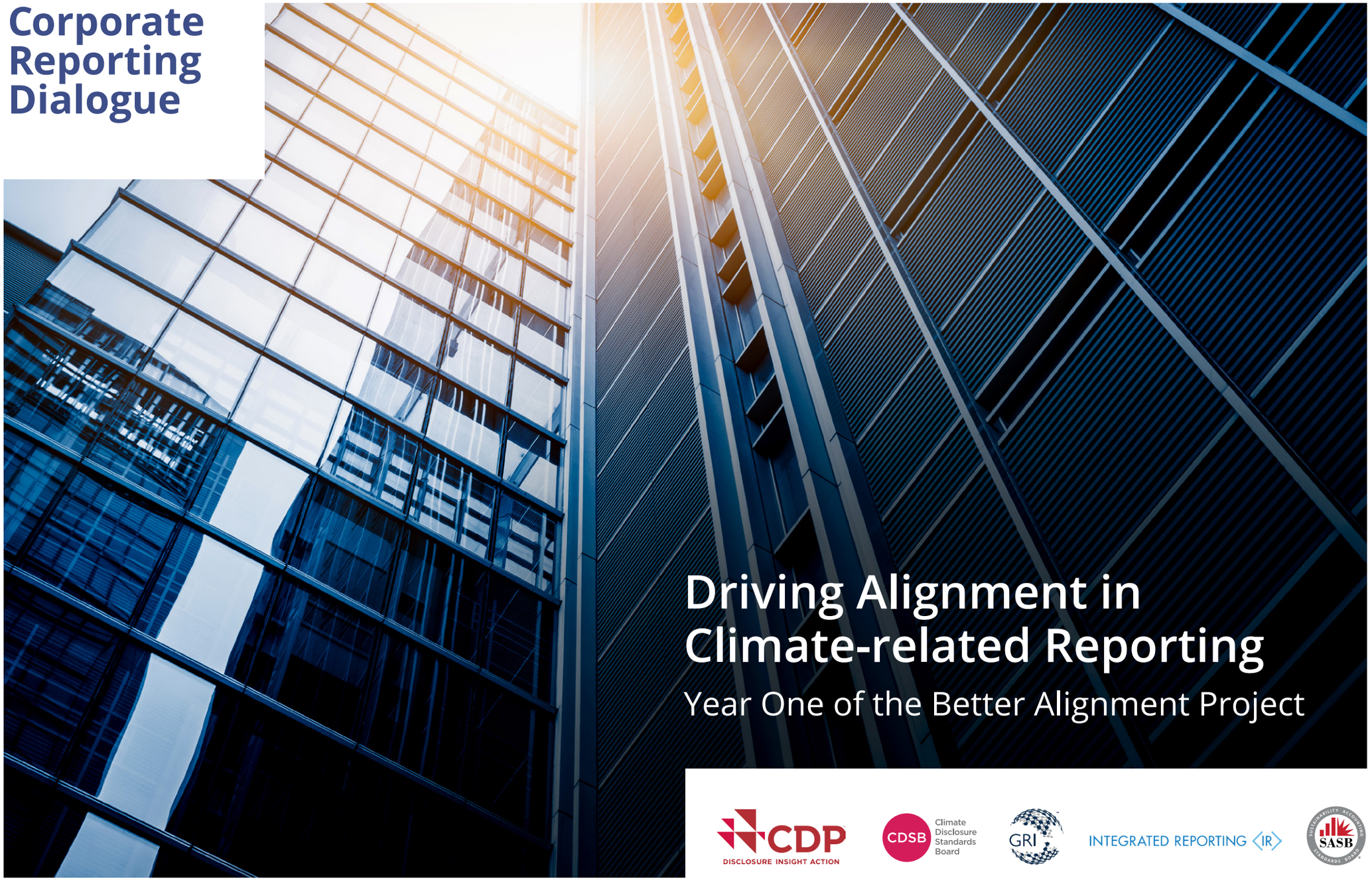
Corporate Reporting Dialogue



Driving Alignment in Climate-related Reporting

Year One of the Better Alignment Project

CDP DISCLOSURE INSIGHT ACTION

CDSB Climate Disclosure Standards Board

GRI

INTEGRATED REPORTING <IR>

SASB

Contents

Foreword

When I stepped into the Chair's role at the Corporate Reporting Dialogue in early 2017, I could not have imagined what we would have achieved as a group of global standard setters. At that time, we were a dialogue in a literal sense and so I was excited to see the willingness of the participants to work together towards greater alignment in a joint project. The Better Alignment Project, started in 2018, is the result of the joint view of the Corporate Reporting Dialogue participants that it was desirable to further the alignment between their frameworks and standards.

This report is the first deliverable of the project and I am delighted with the results presented. As you will see, the actual alignment of the frameworks and standards against the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and between one another is much higher than envisaged prior to the start of the project.

Moreover, the Better Alignment Project has strengthened the Corporate Reporting Dialogue in a number of ways. The Corporate Reporting Dialogue's profile has increased significantly. We have been invited at increased frequency to share insights and provide inputs, and relationships with critical senior stakeholders have intensified. The connections and cooperation between the operational teams of the global standard setters have also further developed significantly. This has not only led to a much deeper understanding of each other's frameworks and standards, but has proven to be a strong basis for future work. The Better Alignment Project has set the ground for a long-lasting change in the reporting landscape.

But greater alignment is needed, and it will not be easy – it will be a long-term process. Each organisation has its own governance and due process in place to fulfil its purpose, serving its stakeholders' needs. This will have to be taken into account in harmonising the reporting landscape.

Whilst we have met good understanding of the different purposes and audiences of the frameworks, we also have had consistent feedback from a number of our constituents that what is really needed is one strong, internationally-recognised and used set of standards for environmental, social and governance (ESG) reporting. The Better Alignment Project may not be able to resolve this issue in its present form. The participants, however, are committed to contribute where possible within the remit of the Corporate Reporting Dialogue to a better understood and user-friendly reporting landscape on the basis of their global frameworks and standards. I look forward to continuing that work in the second year of the Better Alignment Project.

Ian Mackintosh
Chair, Corporate Reporting Dialogue

Executive Summary

The Better Alignment Project, an initiative of the Corporate Reporting Dialogue (CRD), brings together CDP, CDSB, GRI, IIRC and SASB[1] (the Participants) to explore how these framework and standards setters can work together more to better support organisations in preparing environmental, social and governance (ESG) disclosures. The two-year project seeks to improve the coherence, consistency and comparability of the Participants' frameworks and standards.

In response to market demands, the project's initial year focused on climate change reporting, with the Participants mapping the alignment between their frameworks and standards to the disclosure principles, recommended disclosures and illustrative example metrics of the Task Force on Climate-related Financial Disclosures (TCFD).

The mapping showed strong alignment between the Participants' frameworks and standards and the TCFD, and also between each other:

- **The TCFD's seven principles for effective disclosure are harmonious and complementary with those of the Participants' frameworks and standards, with the mapping showing no sources of conflict;**
- **The Participants are well aligned with the TCFD's 11 recommended disclosures, which are comprehensively covered by the frameworks and standards;**
- **There are high levels of alignment between CDP, GRI and SASB for the TCFD's illustrative example metrics, with 70% of the TCFD's 50 metrics showing no substantive difference between the three participants' indicators; and**
- **Overall, 80% of the TCFD's 50 metrics are fully or reasonably covered by the three participants' indicators.**

[1] *CDP, the Climate Disclosure Standards Board (CDSB); the Global Reporting Initiative (GRI); the International Integrated Reporting Council (IIRC); and the Sustainability Accounting Standards Board (SASB).*

The results of the technical mapping serve as a practical guide to assist organisations in understanding and implementing the TCFD recommendations when using the Participants' well-established and globally applicable frameworks and standards. Also, the work has resulted in a brief exploration of how ESG information can be integrated in mainstream reporting by applying the CDSB and IIRC frameworks, and how ESG information links to financial information. Therefore, the report and detailed annexes can be of value to report preparers in preparing climate-related financial disclosures in coming reporting cycles.

Concurrent to the technical work, the Participants consulted with stakeholders through online surveys and a global series of roundtables. Stakeholders provided opinions on the TCFD recommendations, the current state and future of ESG disclosure, trends towards the integration of ESG information, and challenges for report preparers and users. They also shared their views on what the Participants could do to better serve stakeholders' needs.

It was clear that stakeholders struggle to understand how the Participants' frameworks and standards fit together to support efficient and effective disclosures. In response, the Participants produced a set of Frequently Asked Questions (FAQs), which are presented in Section 3.

Furthermore, stakeholders expressed that the connections between ESG and financial information need stronger articulation and that the market would benefit from greater alignment of terminologies and methodologies in the Participants' frameworks and standards.

Along with the results of the technical mapping, stakeholder feedback was intrinsic to scoping possible next steps for the second year of the Better Alignment Project. The challenges identified by stakeholders were inconsistent with the levels of alignment shown in the project's technical mapping. This disconnect demonstrates a need for the Participants to more clearly communicate how their respective frameworks and standards are interconnected and harmonious. In addition, though stakeholders appreciated that the frameworks and standards were only part of a complex landscape, they reiterated their desire for action from the CRD to remedy market confusion – be it through establishing a single framework/standard or making the interconnections between existing ones clearer.

In response to these findings and taking into account other strategic considerations, such as the CRD's remit and organisational internal governance processes that prohibit quick fixes, the Participants identified three expectedly valuable areas of future work for the project:

- Developing a taxonomy to guide users on the meaning of different terminologies and methods used within the Participants' frameworks and standards, including articulating commonalities and interrelationships;
- Building an online, interactive tool that brings together the frameworks and standards, allowing users to understand how they can be used individually and/or together effectively for different reporting purposes; and
- Convening a formal technical forum for the Participants to benefit from further exchange of developments, ideas and plans between and across technical teams, therein promoting greater long-term alignment.

These areas will be further discussed and agreed upon by the Participants after the publication of this report.

The Better Alignment Project aims to make it easier for organisations to prepare effective and coherent disclosures that meet the information needs of capital markets and society. The results presented in this report can benefit and assist preparers in making effective climate-related financial disclosures through use of the Participants' frameworks and standards. The FAQs show how the frameworks and standards can be used individually and complementarily to efficiently meet varied ESG reporting ambitions. The results from the technical mapping provide detailed information on using the frameworks and standards in conjunction with reporting against the TCFD recommendations.

The potential areas of work identified for the project's second year (i.e. the detailed taxonomy; interactive, online tool; and collaborative technical forum) build on what has been achieved so far and the Participants will progress this.

1. Introduction

The Better Alignment Project (the Project) brings together five members of the Corporate Reporting Dialogue (CRD) with globally important sustainability-related frameworks and standards[2] (the Participants) to explore how they can more effectively support organisations in preparing climate-related and broader environmental, social and governance (ESG) disclosures.

Initiated in 2018, the two-year project responds to market demand, adopting an initial focus on climate-related reporting. To create a defined scope, the alignment work focused on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This first year's report is the first output of the Project.

The subject of this report focused on mapping the Participants' frameworks and standards against the TCFD's disclosure principles, recommended disclosures and illustrative example metrics, and determining the respective levels of alignment.[3] Concurrently, report preparers, report users and wider stakeholders were consulted through online surveys and a global series of roundtables. This report presents the results of the extensive technical mapping and further explains how the frameworks and standards can be used together to support high-quality disclosures on climate and other ESG[4] related matters. Finally, the report offers potential areas of future work for the Project.

1.1 Background to the Better Alignment Project

1.1.1 The Corporate Reporting Dialogue

The CRD was first convened in June 2014 in response to market calls for greater coherence, consistency and comparability across corporate reporting frameworks and standards. There are eight participants in the CRD:

CDP

Financial Accounting Standards Board (FASB)
Observer

International Accounting Standards Board (IASB)

International Organisation for Standardisation (ISO)

Climate Disclosure Standards Board (CDSB)

Global Reporting Initiative (GRI)

International Integrated Reporting Council (IIRC)

The Sustainability Accounting Standards Board (SASB)

[2] *Sustainability-related frameworks and standards in this context also refers to the International <IR> Framework, which is not a sustainability reporting framework per se, but is well-suited to reporting on sustainability issues, such as climate change, on the basis of its multi-capital approach.*

[3] *For the purpose of the Project, alignment was looked at by answering the question 'to what extent can the information provided under one framework also be used to meet the requirements of another framework, when differences that would not impact the content of such information (such as terminology, structure, level of detail and guidance) are disregarded?'*

[4] *ESG information is commonly used to evaluate organisations on how far advanced they are with sustainability. In this report, we use 'ESG' for the most part, but do use 'sustainability' in an interchangeable manner.*

The CRD participants are all committed to ensuring that the corporate reporting landscape is easily navigable and responds to the needs of report preparers and users, thereby facilitating efficient and effective reporting. The CRD brings together the major international actors in the corporate reporting field, across financial, value creation and sustainability-related spheres. It acts as the central point for key discussions regarding developments in reporting, and allows participants to speak with a common voice to the market on areas of mutual interest.

The CRD aims to identify practical means by which the frameworks, standards and related requirements can be aligned and rationalised. This in turn helps to drive allocations of financial and other capitals, and align markets to long-term and more sustainable investments.

1.1.2 The Task Force on Climate-related Financial Disclosures

To help identify the information needed by investors, lenders, and credit and insurance underwriters to appropriately assess and price climate-related risks and opportunities, the G20's Financial Stability Board established an industry-led task force, the TCFD.

The TCFD was tasked with developing voluntary, consistent climate-related financial disclosures, building on existing disclosure regimes to develop a singular, accessible framework.

The TCFD developed four widely adoptable core recommendations on climate-related financial disclosures of universal applicability to organisations across sectors and jurisdictions. Importantly, the TCFD's recommendations apply also to financial-sector organisations, including banks, insurance companies, asset managers and asset owners. Large asset owners and asset managers sit at the top of the investment chain and, therefore, they have an important role to play in influencing the organisations in which they invest to provide enhanced climate-related financial disclosures.

The four TCFD recommendations are structured around core elements of how organisations operate: Governance; Strategy; Risk Management; and Metrics and Targets. The TCFD makes 11 detailed recommended disclosures. It also calls for the reporting of decision-useful information in mainstream (i.e. annual financial) filings. The TCFD has produced general and sector-specific guidance, and a technical supplement on scenario analysis. The 11 recommended disclosures are underpinned by a set of seven principles for effective disclosure.

Since their release in June 2017, the TCFD recommendations have received public support from over 800 organisations.[5] Supporters span industries, financial organisations, trade associations, regulators, central banks and governments worldwide. The investors, banks and other financial institutions that are supporters are responsible for more than US$100 trillion in assets. The TCFD recommendations have been catalytic in changing the conversation for organisations and investors, bringing conversations around climate-related risks and opportunities to the fore globally.

1.2 The Better Alignment Project

1.2.1 Objectives of the Project

The Project looks to ensure that the reporting landscape works effectively to support organisations in preparing climate and broader ESG disclosures that meet the evolving information needs of capital markets and society. The Project seeks five outcomes, as detailed in Figure 1. This report, the key output of the Project's first year, addresses the first three outcomes. The fourth and fifth outcome will be addressed with stakeholders acting on the results of the Project's first year, as well as through the considered potential areas of future work, as identified in Section 5 of this report.

The Project brings together CDP, CDSB, GRI, IIRC and SASB to drive better alignment across their reporting frameworks and standards.[6] These Participants are working together to refine overlapping principles, disclosure requirements and indicators, subject to the due process considerations of each Participant's governance procedures. The aim is to ensure coherence, consistency and comparability of disclosures.

Five outcomes sought through the Better Alignment Project

1. Visible and demonstrable improvement in coherence, consistency and comparability amongst the corporate reporting frameworks and standards represented in the CRD.
2. Better awareness in the market of efforts to align frameworks and the extent to which different reporting frameworks differ and are complementary.
3. Expedited disclosure of the four core elements of climate-related financial disclosures (i.e. Strategy; Governance; Risk Management; and Metrics and Targets) in mainstream financial reports, as recommended by the TCFD within the paradigm shift towards the integration of financial and non-financial information.
4. Contributing to better pricing-in of ESG-related externalities by financial markets, essential for the long-term efficient allocation of capital and alignment of capital markets with the risks and opportunities of climate change.
5. Aligned information with respect to companies' impact on a sustainable economy.

Figure 1: The key outcomes of the Better Alignment Project.

[5] *Source, accessed 30/08/19: https://www.fsb-tcfd.org/tcfd-supporters/*

[6] *FASB, IASB and ISO are not actively engaged in the Project beyond the roles of observing and advising as their primary focus lies outside of sustainability issues.*

1.2.2 Focus of the first year of the Project

In the first year, the Participants have focused on exploring the alignment of their frameworks and standards with the TCFD recommendations, and on communicating areas of overlap, consistency and degrees of alignment. In future, the Participants will build on the findings and lessons of this technical mapping to enhance alignment efforts, as appropriate for each Participant.

As part of the Project, the Participants have mapped relevant components of their reporting frameworks and standards against the disclosure principles and recommended disclosures of the TCFD recommendations. Additionally, three of the Participants – CDP, GRI and SASB – have mapped their relevant indicators against the 50 illustrative example metrics of the TCFD and against each other, and determined levels of alignment. This is set out further in Section 4. The mapping exercise also identified potential areas where future alignment might be possible.

The results of the technical analysis should support organisations in understanding how they can make climate-related financial disclosures aligned with the TCFD recommendations. By clearly describing how each of the frameworks and standards can enable organisations to meet the TCFD recommendations, report preparers may be able to more effectively use the Participants' resources to enable more consistent, comprehensive and comparable climate-related reporting.

Concurrent with the Participants' technical mapping, the Project has extensively engaged with stakeholders, as summarised in Section 2. Through online surveys and global roundtables, the Participants sought to ensure that their collaborative efforts are grounded in and reflect the needs of business, investors and other key stakeholders. The engagement also sought opinions from key stakeholders on the direction and ambition of the next phase of the Project, as set out in Section 5.2.

1.3 Participants' frameworks and standards

The Participants' frameworks and standards are the resources most often employed by organisations seeking to report on ESG issues (e.g. climate change) and to integrate financial and non-financial risks and opportunities into their reporting.

Each of the five Participants has a unique outlook and ambition when it comes to reporting, with each serving different user needs. Notwithstanding these differences, the frameworks and standards can be used together to prepare effective and high-quality disclosures. An overview of the outlook and ambition of each Participant and how its standards or framework support(s) the achievement of these ambitions is presented below. Given the Project's focus on alignment with the TCFD recommendations, the following section also explains how climate-related issues are considered.

Building on this overview, the Participants have developed a series of Frequently Asked Questions (FAQs) that set out how the different frameworks and standards can be used to fulfil varied and differing reporting ambitions, as presented in Section 3.

CDP DISCLOSURE INSIGHT ACTION

CDP wants to see a thriving economy that works for people and planet in the long term. To achieve this, it focuses investors, policymakers, companies, cities, states and regions on taking urgent action to build a truly sustainable economy.

CDP runs a global disclosure system[7] that enables companies, cities, states and regions to measure and manage their environmental risks, opportunities and impacts. More than 7,000 companies respond to CDP's climate change, water security and forests questionnaires annually at the request of more than 525 investors with US$96 trillion in assets and 125 large purchasing organisations. CDP provides data users with critical financial and non-financial information to integrate sustainability into their investment and decision-making processes.

CDP's questionnaires gather both qualitative and quantitative information from across governance, strategy, risk, impact and performance. To aid comparability and ensure comprehensiveness, CDP includes sector-specific questions and data points; for example, the climate change questionnaire incorporates sector-specific questions for high-impact sectors, such as agricultural commodities, oil and gas, cement, and transport services. In 2018, CDP aligned its climate change questionnaire with the TCFD.

CDSB Climate Disclosure Standards Board

CDSB's mission is to create the enabling conditions for material climate change and environmental information to be integrated into mainstream reports. This facilitates the assessment of the relationship between specific environmental matters and the organisation's strategy and financial performance for the benefit of investors.

CDSB does this by offering companies the CDSB Framework[8] for reporting natural capital and environmental information with the same rigour as financial information. The CDSB Framework helps companies to provide investors with decision-useful environmental information via mainstream corporate reports, enhancing the efficient allocation of financial capital in support of sustainable and climate-resilient economies. Regulators also benefit from the compliance-ready materials that CDSB produces.

The CDSB Framework is composed of seven guiding principles and 12 reporting requirements. These set out the how and the what, respectively, for reporting relevant and material environmental and climate-related information in mainstream annual reports.

[7] *Available online: https://www.cdp.net/en/guidance*

[8] *Available online: https://www.cdsb.net/sites/default/files/cdsb_framework_2.1.pdf*

GRI

GRI, an independent, international organisation, helps businesses and governments worldwide understand and communicate their impact on critical sustainability issues, such as climate change, human rights, governance and social wellbeing. This enables real action to create social, environmental and economic benefits for everyone.

GRI Sustainability Reporting Standards[9] (GRI Standards) are the most widely adopted global standards for sustainability reporting. Sustainability reporting, as promoted by the GRI Standards, is an organisation's practice of reporting publicly on its contributions – positive or negative – towards sustainable development. The Standards are designed to enhance the global comparability and quality of information on these impacts, thereby enabling greater organisational transparency and accountability.

The GRI Standards are structured as a set of interrelated, modular standards. Three universal Standards apply to every organisation preparing a sustainability report. An organisation further selects from the set of topic-specific standards for reporting on its material topics. These standards are organised into three series – economic, environmental and social.

The GRI Standards contain several topic-specific standards for organisations to use to report climate change where they identify it as a material topic, i.e. GRI 305: Emissions 2016; GRI 302: Energy 2016; GRI 303: Water and Effluents 2018; and GRI 201: Economic Performance 2016, Disclosure 201-2 (related to financial implications and other risks and opportunities due to climate change).

INTEGRATED REPORTING <IR>

The IIRC is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. Its mission is to establish integrated thinking and reporting within mainstream business practice as the norm in the public and private sectors. Its vision is to align capital allocation and corporate behaviour to wider goals of financial stability and sustainable development through the cycle of integrated thinking and reporting.

An integrated report is a concise communication about how an organisation's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term. The International <IR> Framework[10] sets out seven guiding principles and eight content elements to govern the overall content of an integrated report, as well as providing organisations with additional general guidance relating to fundamental concepts of integrated reporting.

The IIRC recognises the increasing importance of climate change to the ability of all organisations to create value over time and, therefore, the need to address climate-related risks and opportunities in an integrated report.

SASB

The mission of the SASB Foundation is to establish industry-specific disclosure standards across environmental, social, and governance topics that facilitate communication between companies and investors about financially material, decision-useful information. Such information should be relevant, reliable and comparable across companies on a global basis.

The SASB Foundation envisions an investment universe where a shared understanding of companies' sustainability performance enables companies and investors to make informed decisions that drive improved sustainability outcomes and thereby lead to improved long-term value creation.

The SASB Foundation has established an independent standard-setting arm, the Sustainability Accounting Standards Board, that sets sustainability disclosure standards that are industry-specific and tied to the concept of materiality to investors. The standards are intended to capture sustainability matters that are financially material–reasonably likely to have a material impact on financial performance or condition.

Climate risk is nearly ubiquitous, appearing in 69 of the 77 SASB Standards,[11] but it manifests in industry-specific ways. SASB Standards enable TCFD disclosure by providing industry-specific metrics to evaluate company exposure to and management of climate-related risks and opportunities.

[9] *Available online: https://www.globalreporting.org/standards/*

[10] *Available online: http://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf*

[11] *Available online: https://www.sasb.org/standards-overview/*

1.4 Structure of this report

This report is made up of five sections plus annexes. In the next section, the findings of the stakeholder engagement are presented. The results from the online consultation (Section 2.1) and key takeaways from the global roundtables (Section 2.2) are then discussed and contextualised. In Section 3, Participants offer a set of FAQs for understanding, navigating and using their frameworks and standards.

The following section details the results of the mapping of the TCFD's principles for effective disclosure (Section 4.2.2), recommended disclosures (Section 4.2.3) and illustrative example metrics (Section 4.2.4) with the Participants' reporting frameworks and standards. These sections show where the frameworks and standards align with the TCFD and, for the 50 illustrative example metrics, with each other. Section 4.2 explores where, how and why there is lesser alignment, and where there are key opportunities for future alignment. Section 4 further sets out how to use the Participants' frameworks and standards in a complementary manner to disclose against the TCFD recommendations.

Finally, Section 5 summarises the key findings, reflects on the future of the Project, and identifies opportunities for future work.

The Annexes to this report provide readers with the detailed outputs of the technical mapping exercise for the 11 recommended disclosures and the 50 illustrative example metrics of the TCFD, as well as the Participants' responses to the key findings from the stakeholder engagement.

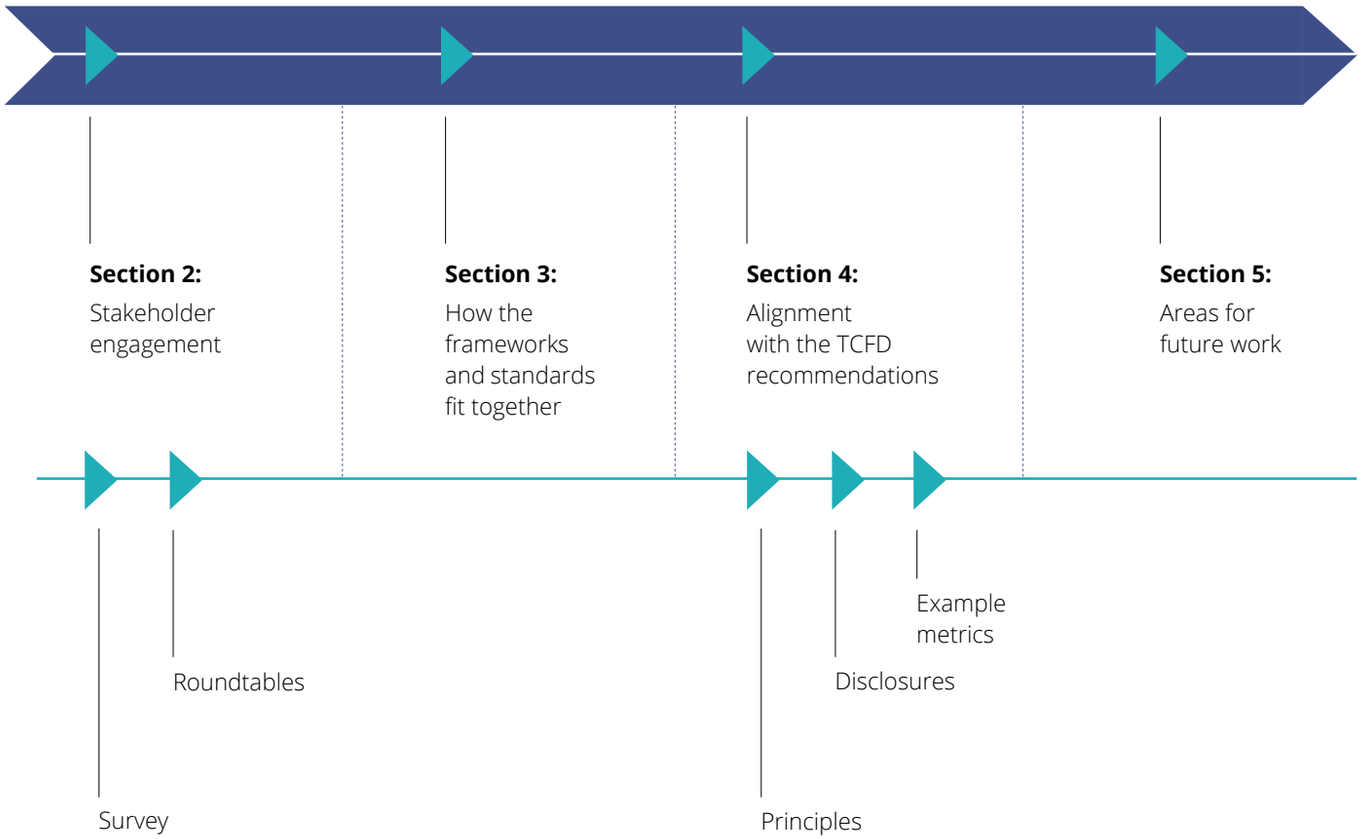


Figure 2: A summary of the structure of this report.

2. Stakeholder Engagement

The Participants have undertaken extensive stakeholder engagement through the Project. Through online surveys and a global series of roundtables, the Participants have sought to ensure that their collaborative efforts are grounded in and reflect the demands and needs of business, investors and other key stakeholders. The engagement sought opinions from key stakeholders on the issues that exist in corporate reporting and on the Project's direction and ambitions, including potential areas for future work.

2.1 Results from the stakeholder survey

2.1.1 Introduction to the survey

For six weeks, from 21 March to 1 May 2019, the Project held an online consultation to gather stakeholder input, primarily from report preparers and report users. The consultation garnered views on the levels of alignment between the Participants' frameworks and standards, the crucial challenges faced when using the frameworks and standards, and the key areas where further alignment would be beneficial from the perspective of preparers and users.

Questionnaires were prepared to consider TCFD disclosures, ESG reporting and integration into mainstream filings.

For these two stakeholder groups, similar but separate questionnaires were prepared to consider TCFD disclosures, ESG reporting and integration into mainstream filings. The questionnaires were responsive to the Project's year one ambitions and its focus on TCFD alignment. They were also designed to inform the Project as a whole and its possible next steps. Given the Project's initial focus on the TCFD recommendations, which focus on providing information needed by investors, lenders and insurers, the questionnaires adopted an investor-focused perspective to corporate disclosure.

2.1.2 Survey response

The Project received over 50 survey responses, with a higher representation from report preparers than users. The report preparers who contributed were found to support the Project's focus, i.e. on investors and lenders that are the primary audience of the TCFD recommended disclosures, underscoring the value of their responses to informing the Participants' alignment efforts in this project phase.

While the participation levels and respondents' outlook were informative, the consultation did not provide a fully representative picture of report preparers' and users' views. Given the nature of the survey and the Project, it is likely there is a skew in the respondents towards those already interested or engaged in alignment and ESG disclosures. In addition to the number of responses received, it is possible that the respondents include those that had specific interests or concerns. We remind the reader of this report to read the results with this in mind.

2.1.3 Survey results

Market confusion

Overall, the surveys found a diverse range of views amongst preparers on whether the differences between the Participants' frameworks and standards were justified given their differing focus and audience. The results suggest that a significant number of preparers were unaware of the purpose and function of the different frameworks and standards, and how they may complement one another to facilitate effective reporting. The consultation also found that more report preparers did not believe that the Participants' frameworks and standards are a complementary means of guiding ESG disclosure for effective decision-making than did believe they are.

Report users highlighted several technical issues, such as differences in terminologies and measurement methodologies.

In general, report users were slightly more positive than the report preparers on the alignment of the Participants' frameworks and standards. However, report users highlighted several technical issues, such as differences in terminologies

and measurement methodologies, where greater alignment between the frameworks and standards would enhance their ability to make effective investment decisions.

These results suggest that some degree of confusion exists in the market regarding the interconnection and complementarity of the Participants' frameworks and standards, both conceptually and practically. As one preparer noted, the Participants 'need to make clear where there is reciprocity between them, so that companies know whether and when information prepared according to one member will be accepted by one or more others.'

To a vast majority of the preparers, it was unclear how the Participant frameworks and standards could be used in a complementary manner with the TCFD's recommendations.

TCFD alignment

Results from the surveys showed that nearly half of report preparer organisations currently disclose against the TCFD, the majority to a limited extent, with around a quarter intending to start reporting in the next two years. A large majority of report users responded that they use the TCFD recommended disclosures to inform some investment decisions.

To a vast majority of the preparers, it was unclear how the Participant frameworks and standards could be used in a complementary manner with the TCFD's recommendations. According to the respondents, this somewhat affects their ability to effectively disclose against all four TCFD core elements. Relatedly, no report preparers believe that perceived misalignment between the frameworks and standards seriously inhibits their reporting for any of the four core elements.

That said, the preparers' responses also show that the majority perceived that the Participants' frameworks and standards collectively lack information across the 11 TCFD recommended disclosures. One preparer noted that the Participants' frameworks and standards, for the most part, do not provide sufficient guidance 'in respect of future-oriented information' and that more support around scenario analysis could prove beneficial.

Responses from users show that they believe additional information about and greater alignment between the Participants' frameworks and standards and the TCFD would enhance their ability to make effective investment decisions. This was especially true for the metrics and targets element of the TCFD, echoing the results noted below around metrics and methodologies for ESG disclosures.

ESG and financial information, terminologies, and metrics

Both preparers and users highlighted that the differing and inconsistent emphasis on the interconnection between ESG information to financial performance by the Participants inhibits the efficient and effective application of the frameworks and standards. Overall, both preparers and users believed the Participants' reporting resources, when taken together, lacked sufficient information on how disclosures connect to financial issues and outcomes. One preparer underscored its importance: 'Explaining in mainstream reports how non-financial risks transform into financial risks and ultimately into financial impacts is critical to effective communication.' Investors, in particular, indicated that they would like to see better guidance on how ESG information should be integrated with financial information.

The perceived differences in the application of the concept of materiality employed by the different frameworks and standards was noted by preparers and users to be a challenge for effective disclosure. Investors signalled that they would like to see further harmonisation of the technical terminologies used by the Participants in their frameworks and standards. As one respondent put it, 'all approaches would benefit if information reporters and users would ultimately be able to make use of consistent "atoms and molecules" of ESG reporting.'

In addition to better linking of ESG information with financial information and aligning terminologies, the survey responses underscored that both preparers and users believe the different metrics and methodologies employed by the Participants' frameworks and standards and the wider reporting ecosystem pose a hinderance to effective reporting. One respondent from the investor community believed ensuring the availability of 'data that is consistent in definition to allow meaningful analysis and comparisons across companies and sectors' was a 'key challenge to making ESG and other forms on non-financial reporting more widely adopted by investors.' Report users also highlighted insufficient information on metrics and methodologies in the reporting frameworks and standards.

The survey also highlighted that preparers believe the Participants' frameworks and standards collectively lack adequate information on the connection between ESG and corporate strategy, as well as connections to the UN Sustainable Development Goals (SDGs). One respondent believed the latter offered a 'common language agreed upon at [an] international level to address the sustainability challenges the world faces.'

Priority areas for better alignment

Respondents also provided opinions on which specific ESG reporting topics would most benefit from further alignment between the Participants' frameworks and standards. Preparers highlighted human rights, supply chain, resource use and efficiency, climate change/greenhouse gas (GHG) emissions and water as priority areas for better alignment.

Report users believed greater alignment between the frameworks and standards across multiple ESG subjects would be necessary to better factor ESG information into decision-making processes. Users identified several ESG areas, notably climate change and GHG emissions, water, supply chain, health and safety, and human rights where they thought the Participants' frameworks and standards collectively lack adequate information.

2.2 Results from the stakeholder roundtables

2.2.1 Introduction to the roundtables

Between April and June 2019, the Participants and other associated organisations convened 13 roundtables in 12 cities across six continents, as shown in Figure 3.

Figure 3: Map showing the location of each of the roundtables.

The roundtables brought together close to 200 delegates, which included report preparers and users, regulators, and representatives of business, the audit profession, and NGOs. The delegates engaged in an open conversation about the Participants' frameworks and standards and the state and future of corporate reporting. They covered four key topics:

- The current levels of alignment between the Participants' frameworks and standards, including how this may affect effective disclosure, and potential actions that could be taken to improve alignment to enhance disclosure effectiveness;
- The connectivity of reported financial and ESG information, the current state of the use and integration of such ESG information to analyse financial performance, and how conducive the Participants' frameworks and standards are to achieving such goals;
- The complementary nature of the Participants' reporting frameworks and standards to supporting TCFD disclosures; and
- Next steps, i.e. the key areas of work and development for the Project and, more broadly, the CRD in the coming years.

2.2.2 Roundtable results

Implementing the TCFD

While some delegates in the Bogota and Johannesburg roundtables acknowledged that they were unaware of the developments, the roundtables, for the most part, highlighted a clear appreciation for the importance of the TCFD. Report preparers and users emphasised that they view the TCFD as a catalytic driver to change and enhance climate-related reporting. These results also show that the market appreciates the initial focus of the Project on the TCFD and climate reporting. Some delegates expressed the view that the TCFD was the ultimate framework for climate disclosure and, therefore, did not see the need for Participants' frameworks and standards for supporting TCFD implementation, while others saw the TCFD as complementary and a unifier to these existing resources.

Many roundtable delegates had faced or observed difficulties with reporting against the TCFD recommendations. Most significantly, delegates highlighted challenges in valuing climate-related risks and opportunities and in using scenario analysis to test organisational strategy resilience. The absence of a standardised approach to scenario analysis was identified as an issue where both additional guidance and regulatory support could prove beneficial. It was proposed at several roundtables that Participants produce a guide to demonstrate how scenario analysis could be used with their frameworks and standards.

Many report preparers and users alike expressed their perception that the relationships, interconnections and alignment between the Participants' frameworks and standards are not well articulated to the market.

Communicating the interconnections between the frameworks and standards

Each roundtable delivered a consistent message: Delegates are, to varying degrees, confused and frustrated by the current state of the reporting landscape. Many report preparers and users alike expressed their perception that the relationships, interconnections and alignment between the Participants' frameworks and standards are not well-articulated to the market. This potentially impedes a report preparer's ability to use the frameworks and standards in a complementary and mutually reinforcing manner. At the same time, report users are left with the task of deciphering how complete and coherent disclosures are across the frameworks and standards. In summary, the roundtable feedback shows a pressing need for improved communication from the Participants in these areas, at least as an interim measure while closer alignment in substance is being pursued.

In this respect, to better articulate the interrelationship between the Participants' reporting frameworks and standards, delegates suggested the CRD should develop an illustrative diagram, decision tree, taxonomy or interactive tool to convey the scope and ambition of each organisation and their framework and standards, and how these can be used together effectively and efficiently. Moreover, a 'starter's guide' explaining how the Participants' frameworks and standards can be implemented together for ESG disclosure was proposed.

Considering the wider corporate reporting ecosystem

Delegates also raised challenges existing within the wider ecosystem of corporate reporting. Many felt that the proliferation of indexes, questionnaires, surveys and frameworks for the disclosure of ESG data and information is overwhelming. Given the scale and complexity of these information requests, it was queried how impactful the actions of the Participants will be in practice in reducing the burden and confusion for report preparers. For some, the systemic nature of the issues around corporate disclosure required action that was far more drastic than the current efforts of the CRD through the Better Alignment Project. Others, though, encouraged the CRD participants to work collaboratively with the other key organisations (such as governments, rating agencies and stock exchanges) to streamline, align and improve the current reporting landscape.

Feasibility of a single framework?

In response to market confusion around the corporate reporting of ESG data and information, it was raised at several roundtables that the market could benefit from a single, all-encompassing framework. One delegate advocating such a development called it a potential 'central point of truth' for report preparers and users. That said, many delegates recognised the challenges and complexity associated with establishing one framework to meet the needs of multiple stakeholders and understood that each of the Participants' frameworks and standards serve different reporting audiences and needs and, therefore, could not be coalesced into a single reporting framework for all organisations to follow in all circumstances.

Opportunities for harmonisation in language and concepts

The roundtables presented several common means of improving the harmony of the Participants' frameworks and standards. Creating an agreed and shared language and taxonomy between the Participants was brought up at several roundtables. Similarly, ensuring harmonisation of the disclosure principles of the Participants' frameworks and standards was highlighted by both report preparers and users. Harmonising, where possible, the language and underlying concepts of the Participants' frameworks and standards should enable the reuse and repurposing of information between them.

Providing greater clarity on materiality

Differing definitions of materiality between the Participants' frameworks and standards was considered a hinderance by many. The conflict often centred on whether ESG reporting should be investor or stakeholder-focused. A few delegates noted that the construct of double materiality, as advocated by the European Commission, might prove a beneficial development to the market and reporters.[12]

Connecting non-financial information with financial information

Roundtable delegates perceived that ESG information and financials are treated separately at most organisations, with a prevalence of departmental silos. With growing understanding of the financial impacts of ESG risks and opportunities, in part due to initiatives such as the TCFD, this trend may change. For the time being, delegates stated that the Participants' frameworks and standards were insufficient in assisting them to understand and report on the financial implications of ESG risks and opportunities.

This issue of the need for better articulation of the financial value of ESG impacts was deemed applicable to the whole reporting landscape, which extends beyond the Participants' frameworks and standards. Some added that this issue could in part be the result of differences in timeframes between financial and ESG reporting, i.e. short and long-term, respectively. Some at the roundtables called on the Participants to further develop financially-aligned ESG indicators.

Adopting a sectoral lens

A number of the roundtables highlighted that more attention was required on sector-specific reporting. Sectoral reporting can be a means of achieving specificity and improved in-sector comparability. It was also acknowledged that there is a growing number of reporting requirements and resources for specific sectors and industries, which is both time consuming and confusing for report preparers. It was suggested that the Participants work to improve this reporting area and alleviate some of the burden for preparers.

A focus on SMEs

Another area of reporting that was identified as requiring attention regarded small and medium-sized enterprises (SMEs). It was noted that smaller companies make up a large proportion of economic activity and employment, but initiatives such as the TCFD and the Project speak little to them. Some recommended that SMEs are considered more thoroughly in the processes of developing the Participants' reporting frameworks and standards as 'one size does not fit all.'

Capacity development, internal resourcing and engagement

Delegates expressed the opinion that more training and development was required internally to ensure key departments understand the importance and intricacies of ESG and its salience to business. Similarly, language barriers between different departments, such as investor relations, sustainability and the board, can pose further difficulties. It was also noted that more resourcing was required to keep pace with technical developments. A number of delegates noted that the highest governance and management levels should drive this.

Regulatory developments

As well as the Participants and other reporting organisations, roundtable delegates felt that regulators could be acting more decisively to improve the quality of ESG disclosure. It was felt that the voluntary frameworks and standards, such as the Participants', were a temporary fix to a problem that required a more comprehensive regulatory solution. Mandatory reporting requirements for organisations would better ensure there are no informational or data gaps, resulting in more consistent and comparable disclosures. Similarly, some delegates contended that firmer regulation of ESG reporting would counter attempts at 'greenwashing.' Delegates encouraged the Participants to work more closely with regulators along these lines.

The roundtables were not unanimous in their support for mandatory reporting regulation, with some believing that enforcing regulation would result in issues that presently exist within reporting, some of which have been noted above.

[12] *European Commission (2019), Guidelines on reporting climate-related information. Accessed online: https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf*

2.3 Key takeaways for the Project

The online surveys and roundtables provide the Project with several key takeaways to consider and respond to, both at this stage of the Project and going forward:

The market would benefit from greater clarity on the interconnection and complementarity of the Participants' frameworks and standards;

The Participants could better support TCFD reporting with further alignment, as well as guidance for specific issues, such as scenario analysis;

The connection between ESG and financial information needs to be better articulated;

The market would benefit from greater alignment of terminologies and methodologies in the Participants' frameworks and standards;

The Participants should align efforts on specific ESG topics, such as climate change, water and human rights;

The Participants should collaborate and work towards greater alignment with the wider reporting ecosystem (e.g. other voluntary frameworks, indexes and survey providers);

The Participants should explore the feasibility of a single reporting framework that meets the Participant framework stakeholders' needs relative to the complementary use of their current standards and frameworks;

The Participants should adopt a more sector-focused lens for specificity and comparability;

Greater consideration should be paid to the applicability of the Project outputs to SMEs; and

The Participants should work more closely with regulators to improve the ESG reporting landscape.

In Annex 1 of this report, the Participants respond to each of the key messages from the stakeholders, setting out what they have done so far and what they hope to achieve in the future, as well as explaining their limitations and what they cannot do.

3. FAQs for using the Participants' frameworks and standards

3.1 Introduction

The Participants have been asked frequently to explain which frameworks and standards should be used in specific circumstances and how the frameworks and standards could work together. For that purpose, the Participants have taken the perspective of report preparers and formulated some typically asked questions answering these from their perspective. 'We', therefore, refers to the organisation that the preparer works with. Whenever the Participants use 'sustainability', it refers equally to similar terms – such as ESG, corporate responsibility and social responsibility.

The questions largely follow the evolution of reporting on sustainability-related topics:

- How to start with sustainability reporting;
- Seeking to understand the key nature of the different frameworks and standards;
- Reporting in a sustainability report to stakeholders;
- Reporting to investors on financial impacts;
- Reporting on sustainability alongside financial performance in an annual report;
- Reporting on the basis of the concept of value creation; and
- Reporting on climate change more specifically, both the risks and opportunities, and the impact by and on the organisation.

The FAQs' objective is to communicate in a plain manner the structure, nature and complementarity of the frameworks and standards of CDP, CDSB, GRI, IIRC, ISO[13] and SASB. A summary of each is provided in Figure 4. The FAQs focus on the key objectives and audiences of the frameworks and standards, without suggesting that these are the only way that the they can be used. For a full understanding of the frameworks and standards, readers are referred to the complete frameworks, standards and additional materials developed by Participants.

CDP issues a questionnaire-based framework that collects information on climate change, water security and forest commodities via an online platform. The data collected may be used as content for sustainability, annual or integrated reports. The main users of the information collected and scores given by CDP are institutional investors, purchasing organisations and policymakers.	**The CDSB Framework provides guidance on how and what to report on climate, natural capital and other environmental issues in a mainstream annual report. It contains both principles and content elements (i.e. requirements) and is developed to serve reporting to investors primarily.**
The GRI Standards outline how and what to report regarding the material economic, social and environmental impacts of an organisation on sustainable development. For 33 potentially material sustainability topics, the Standards contain disclosure requirements. The GRI Standards can be used in sustainability reports, as well as in annual or integrated reports. It is oriented at a broad range of stakeholders.	**The IIRC has developed the International <IR> Framework. This Framework explains how an organisation can report on the value it creates for itself and others. The International <IR> Framework is based on six capitals, which include sustainability topics. Reporting on the basis of the International <IR> Framework results in an integrated annual report or in a separate integrated report. The main audience is providers of financial capital.**
ISO has developed the standard ISO 26000 on social responsibility. This standard provides a conceptual framework and guidance that covers seven core subjects of organisational sustainability. It can be used in both sustainability reports and annual or integrated reports. Reporting on the basis of ISO 26000 can address a broad range of stakeholders.	**SASB's Standards guide reporting on financially material environmental, social and governance issues by means of indicators (called metrics) and disclosures for 77 industries. Its main use is intended to be in the communications to investors, such as the annual report. It has the objective to inform financial stakeholders.**

Figure 4: A summary of each of the reporting organisations and the frameworks or standards included in the FAQs.

[13] *Whereas ISO is not a participant in the Project, the ISO26000 standard is used by organisations for disclosure. For that reason, ISO is included in this section.*

3.2 We have never reported on sustainability, and we are receiving increasing requests from investors and other stakeholders to do so. Where do we start?

The Participants recommend to:

- Develop a general understanding of the key frameworks and standards for non-financial information – those of CDP, CDSB, GRI, IIRC, ISO and SASB. The frameworks and standards serve different purposes, topics, channels of disclosure and audiences. A simplified overview for each of these aspects is contained in Figure 4.
- Identify and prioritise your target audiences, and your objectives for communicating to each audience: Is your objective to inform about the impact of the social and natural environment on the organisation (also in terms of financial risks and opportunities), telling your value creation story and/or explaining the positive and negative impacts of your organisation on sustainable development? See the other FAQs for further information.
- Where possible, talk with your target audiences to gain insight into how they use and source sustainability information and what they find material (the content of the frameworks and standards can be used to inform that process).
- Determine which framework(s) or standard(s) best meet the needs of your target audience(s), taking into account which framework(s) or standard(s) best align to your existing internal (management) reporting. See the other FAQs for further guidance.
- Decide what channel (e.g. mainstream, integrated, sustainability, specialist) you will use to report to your target audiences. Do you want to meet the needs of all audiences with one report, or will you segment delivery of information?

3.3 We hear that some frameworks are 'principles-based' and some are 'standards.' What does this mean?

- 'Principles-based' frameworks generally provide high-level guidance, such as the principles that should underpin the preparation of the report and what content the organisation should look to include, but generally they do not suggest detailed disclosure topics or indicators. For example, a principles-based framework may suggest that organisations report on human capital and provide general guidance on what this information could entail, but it does not prescribe specific human capital disclosures or indicators.
- 'Standards' frameworks explain how to specifically report for certain categories (topics, indicators or sectors, for example). It should be noted that a framework is not necessarily only one of the above – some frameworks are a hybrid of a principles and standards.
- The existing frameworks and standards complement each other. The IIRC and CDSB frameworks provide guidance without prescribed disclosure requirements and so are principles-based frameworks. GRI provides both a principles framework, as well as specific disclosure standards. SASB provides more detailed disclosure topics and indicators (metrics) and are seen as standards. CDP also asks for standardised and specified information. ISO 26000 provides both high-level guidance and specific actions and expectations for the conduct of organisations on how to address specific sustainability topics and is therefore a hybrid of a framework and a standard.

3.4 We believe that a stand-alone sustainability report best serves the needs of all our stakeholders. How could we apply the relevant frameworks/standards in a coherent manner?

- GRI Standards are the most relevant for developing a separate sustainability report serving the needs of multiple stakeholders, including customers, investors, employees, communities, policymakers and NGOs.
- Some organisations that prepare GRI-based sustainability reports include a SASB reference table in the sustainability report, so that investors can easily find the information suggested by the SASB Standards.
- Many organisations find the data that they collect for the CDP disclosure can be repurposed for their sustainability reports and vice versa.

3.5 We want to report to our investors on the key sustainability topics that can have a financially material impact on our business in our annual report. Which frameworks fit our needs?

- The sustainability frameworks and standards designed solely for communication of financially material issues to investors are CDSB and SASB. Both of these are aligned with conventional financial reporting. They can be used together: CDSB explains how and what to report on climate-related and other environmental issues through the mainstream annual report; and SASB provides indicators (metrics) for financially material sustainability topics for 77 industries.
- GRI selected disclosures can be used as part of the annual report to express performance on key sustainability topics. This is common practice in a rising number of jurisdictions.
- Likewise, CDP disclosures are requested by investors and data collected for a CDP disclosure is used by investors to assess the financial materiality of sustainability issues and can be used for an annual report. As desired, the more detailed information in a CDP disclosure can be referred to in the annual report.

3.6 We want to report on our sustainability performance and impacts alongside our financial and business performance in our annual report. Which frameworks or standards should we use and how do they fit together?

- For a comprehensive report that addresses both financial/business performance and sustainability performance/impacts, each of the frameworks and standards can be used in combination with the financial reporting requirements.
- The International <IR> Framework addresses multiple capitals and can be used as a guide on how to report on multiple values created. It could therefore be used as a basis for a comprehensive report targeting multiple audiences. Then, the CDSB Framework can be used as a guide on how to report material climate and environmental information in the annual report. The SASB Standards provide guidance for reporting on financially material sustainability topics by providing specific disclosures and metrics. The CDP framework sets out what information is relevant in this regard for climate change, water security and forests. The GRI Standards provide detailed guidance for 33 sustainability topics and their economic, social and environmental impacts. You can also use the guidance on actions and expectations for the conduct of organisations provided in ISO 26000 to disclose relevant sustainability topics in the annual report.
- If you decide not to use the International <IR> Framework, but rather issue a common annual report (based on applicable regulations), still the frameworks and standards of CDP, CDSB, SASB, GRI and ISO can be used in the same manner as described above.

3.7 We see value creation according to the International <IR> Framework as a fundamental concept for our reporting. How could we apply the different frameworks and standards to develop our annual report in line with this concept?

- The International <IR> Framework is a good starting point for considering value creation as a key principle to apply to the business, and takes value creation over the short, medium and long term as the key concept for reporting. It focuses on informing providers of financial capital. It distinguishes six capitals, which include the sustainability topics that are material for a company's value creation over time. The International <IR> Framework provides high-level guidance on the key principles to be applied and the key content elements of an integrated report. It does not provide detailed requirements for disclosures or indicators.
- For reporting on sustainability topics and the impact you have on society in the context of value creation, the GRI Standards, the ISO 26000 Standards and the SASB Standards can be used to identify report content.
- If the impacts of an organisation on sustainability issues or conversely the impacts of environment or social issues on the organisation are material for the organisation's value creation (in the short, medium or long term), these should be included in an integrated report according to the International <IR> Framework. In those cases, the GRI and SASB Standards and the CDP questionnaires provide detailed disclosures and indicators. The CDSB Framework can be used in this case to report on the environmental impacts to the organisation as part of financial value creation.

3.8 We want to report on climate change, both on the risks and opportunities to our business and on our organisation's contribution to achieving the Paris Agreement. Which frameworks and standards could we use and how would they complement each other?

- The TCFD recommendations address the financial risks and opportunities from climate change. The frameworks and standards mentioned below fit well with the TCFD recommendations and therefore can be used to build a report that conforms with the TCFD recommended disclosures.
- As the global disclosure platform for corporate environmental data, you can provide your climate-related risks and opportunities information directly to CDP via the online response system. For progress against the Paris Agreement, it is designed to enable the aggregation of GHG emission data across sectors and indices, and also allows companies to report on progress against science-based GHG emissions targets.
- For reporting on sustainability risks/opportunities related to financial performance, the CDSB Framework and SASB Standards are specifically designed to serve this purpose in the mainstream report of your organisation. They can be used together: the CDSB Framework explains how and what to report on environmental and climate issues in a mainstream annual report; and the SASB Standards provide metrics for financially material sustainability topics. For GHG emissions, the CDSB Framework advises that all companies disclose Scope 1 and 2 emissions, and disclose Scope 3 emissions where financially material.
- For reporting on progress related to the Paris Agreement, use the CDP questionnaires and GRI Standards; specifically targets and metrics indicators regarding Scope 1, 2 and 3 GHG emissions. To report on your organisational actions in this regard, CDP, GRI Standard 103 and ISO 26000 provide guidance for management actions that you can use to disclose.

4. How the frameworks and standards align to the TCFD

Central to the first year of the Project was the Participants mapping the relevant components of their reporting frameworks and standards against the disclosure principles, recommended disclosures, and illustrative example metrics of the TCFD recommendations.

The mapping highlights the degree of the alignment and linkages that exist between their frameworks and standards and the TCFD. In addition, the mapping shows how the relevant indicators of CDP, GRI and SASB for the TCFD illustrative example metrics align with each other. The results describe how each of the frameworks and standards enables companies to meet the TCFD recommendations.

Section 4.1 provides an overview on the changing nature of risk and the financial implications of ESG factors. The following section presents the results of the mapping against TCFD's disclosure principles (Section 4.2.2), recommended disclosures (Section 4.2.3) and illustrative example metrics (Section 4.2.4), and explains the analytical approach taken for the mapping (Section 4.2.1). Finally, Section 4.3 describes how TCFD disclosures can be disclosed in the mainstream annual report using the CDSB Framework and/or the International <IR> Framework.

4.1 How ESG information links to financial information

Several ESG issues, once considered by many to be 'non-financial,' are increasingly affecting the financial performance of organisations. They are crucial to all organisations' abilities to create long-term value. For these financially material ESG factors, conversations within organisations are moving beyond corporate social responsibility (CSR) or sustainability departments to include core business functions, such as finance, risk, and operations. Moreover, issues such as climate change, cyber security, biodiversity, human rights, water security, diversity and resource sourcing represent concrete business risks and opportunities.

The World Economic Forum's annual Global Risks Report illustrates how financial and 'non-financial' information have become increasingly interconnected in the context of key global risks facing the world economy.[14] In the last decade, the risk survey shows that environmental and societal issues, such as involuntary migration and water crises, are increasingly prominent in terms of severity and likelihood, as shown in Figure 5. Concurrently, traditional economic risks have dropped from the top five issues for both likelihood and severity in the most recent surveys. However, risks associated with climate change, which did not feature 10 years ago, are coming to the fore for organisations and investors as awareness and understanding heightens.

Regulators are also increasingly recognising the financial implications of ESG factors. The International Organisation of Securities Commissions (IOSCO) notes, in its 2019 ESG statement, that: 'ESG matters, though sometimes characterised as non-financial, may have a material short-term and long-term impact on the business operations of the issuers as well as on risks and returns for investors and their investment and voting decisions.'[15]

Research shows that organisations reap financial benefits if they understand and proactively incorporate these 'non-financial' risks and opportunities into their strategies. For example, research from the University of Oxford and Arabesque Partners concluded that in over 90% of studies surveyed, there was a positive correlation between effective management of ESG risks and lower costs of capital.[16] They further found that 80% of studies surveyed show good management of ESG risks and opportunities positively influences stock price performance. Similarly, other researchers found organisations with top ESG ratings consistently have higher returns on investment than the market average.[17]

[14] *World Economic Forum (2019), The Global Risks Report 2019. Accessed online: http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf*

[15] *International Organisation of Securities Commissions (2019), Statement on disclosure of ESG matters by issuers. Accessed online: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD619.pdf*

[16] *Clark, GL, et al (2015), From the Stockholder to the Stakeholder. Accessed online: https://arabesque.com/research/From_the_stockholder_to_the_stakeholder_web.pdf*

[17] *Nordea Equity Research (2017), Cracking the ESG Code. Accessed online: https://nordeamarkets.com/wp-content/uploads/2017/09/Strategy-and-quant_executive-summary_050917.pdf*

	2009	2014	2019
1.	Asset price collapse	Income disparity	Extreme weather events
2.	Slowing Chinese economy	Extreme weather events	Failure of climate-change mitigation and adaptation
3.	Chronic disease	Unemployment and underemployment	Natural disasters
4.	Global governance gaps	Climate change	Data fraud or theft
5.	Retrenchment from globalisation	Cyber attacks	Cyber attacks
1.	Asset price collapse	Fiscal crisis	Weapons of mass destruction
2.	Retrenchment from globalisation	Climate change	Failure of climate-change mitigation and adaptation
3.	Oil and gas price spike	Water crisis	Extreme weather events
4.	Chronic disease	Unemployment and underemployment	Water crises
5.	Fiscal crisis	Critical information infrastructure breakdown	Natural disasters

Economic Environmental Geopolitical Societal Technological

Figure 5: Top 5 global risks in terms of likelihood (top) and impact (bottom) for 2009, 2014 and 2019, according to the World Economic Forum, depicting the changing nature of risk. Source: World Economic Forum (2019), The Global Risks Report 2019.

Though these trends highlight that organisations are responding to ESG issues and are accruing benefits, further work is needed to make the corporate reporting landscape more conducive for organisations to report on ESG risks and opportunities. In encouraging collaboration between corporate reporting frameworks and standards from across financial and sustainability-related spheres, the CRD is well-positioned to address the challenges that report users face with producing effective disclosures (e.g. complexity and inconsistency within the reporting landscape) by providing helpful tools to the market. The CRD serves as an important forum for ensuring that frameworks and standards can respond to trends and developments.

One such development is the reporting of financial impacts of climate risks and opportunities, as advocated by the TCFD. The TCFD, and many investors, regard climate-related risks as non-diversifiable and affecting nearly all sectors. It is therefore important to provide report users with the information they need to appropriately assess and price these climate-related risks and opportunities.[18] It also offers a clear example of the links between specific ESG information and financial information.

4.2 Levels of alignment

4.2.1 Analytical approach

The technical mapping undertaken by the Participants centred on three key components to reporting against the TCFD recommendations:

The seven principles for effective disclosure;

The 11 recommended disclosures; and

The 50 illustrative example metrics.

For each, the Participants mapped and determined the level of alignment (i) between their own framework or standards and the TCFD, and (ii) between each other's frameworks and standards.

Principles for effective disclosure

For the TCFD's principles, the Participants individually considered the key content elements of the principles of their framework or standards and mapped these against each of the TCFD's principles. The Participants noted any aspects of each TCFD principle not covered by their framework or standards as well as content differences. Following this process, each participant determined the level of alignment according to a five-step scale – *full, reasonable, moderate, very limited* or *none*[19] – that the principles of their framework or standards has to each of the seven TCFD disclosure principles based on their professional judgement. The Project Lead verified all classifications and comments for accuracy and consistency.

Finally, the Participants' technical teams collectively decided on the overall level of alignment between the key content elements of the principles of their frameworks and standards and those of the TCFD.

Recommended disclosures

The Participants individually decided on the key content elements of their frameworks or standards in terms of scope relevant to the TCFD recommendations and mapped these against each of the TCFD's 11 recommended disclosures. Each participant noted any aspects of each of the TCFD recommended disclosures not covered by their framework or standards, and any content differences. Second, each participant determined the level of alignment of their framework or standards to each of the recommended disclosures. Each participant classified the result, exercising their professional judgement according to the same five-step scale – *full, reasonable, moderate, very limited* or *none*. The Project Lead verified all classifications and comments for accuracy and consistency.

Illustrative example metrics

The three participants that comprehensively offer indicators – CDP, GRI and SASB – each selected the most applicable indicator(s) from their framework or standards for each of the 50 illustrative example metrics offered by the TCFD. They then individually assessed how well-aligned their indicators were to those of the TCFD, using their professional judgement and the same five-step scale – *full, reasonable, moderate, very limited* or *none*.

Following this, for each of the illustrative example metrics, the three participants worked collaboratively to determine the level of alignment between each of their own relevant indicators and the other participants' relevant indicators. They assessed the extent to which the information collected for the indicator(s) of one participant's framework or standards could be used to report against the reciprocating indicator of another participant's framework or standards. The three participants classified the extent of alignment using three possible outcomes for a particular TCFD metric:

1. The most applicable indicator(s) from their framework or standards are *aligned*, i.e. information gathered for one is valid for reporting against the other;
2. The most applicable indicator(s) from their framework or standards are *not fully aligned*, i.e. minor differences exist in information gathered by the two; and
3. There is *substantive difference* between the most applicable indicator(s) from their framework or standards, i.e. information gathered for one could not be used to report against the other.

[18] *TCFD (2017), Final Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf*

[19] *The classification of none encompasses those components of the Participants' frameworks and standards that show no alignment or result in a contrary outcome, as well as the instances where the frameworks or standards do not include any relevant components for the particular disclosure principle, recommended disclosure or illustrative example metric of the TCFD.*

Where it was found that the indicators were not *fully aligned*, the three participants decided upon the variances and explained how one may go further than or fall short of the other. In instances of *substantive difference*, the three participants determined the differences and explained how the two diverge.

4.2.2 How the frameworks and standards align with the TCFD's principles for effective disclosure

Principles underpin the preparation of corporate disclosures, whether in respect of financial, integrated or broader ESG reporting. Principles inform the content of disclosures, the quality of information disclosed, and how, where and when it is presented in the relevant report. Significant differences in reporting principles can result in confusion for report preparers and may inhibit the utility of such information for users if these differences are not well-founded, clearly articulated or well understood.

The TCFD offers seven principles for effective disclosure, recommending that climate-related financial disclosures should:

1. Present relevant information;
2. Be specific and complete;
3. Be clear, balanced, and understandable;
4. Be consistent over time;
5. Be comparable among organisations within a sector, industry, or portfolio;
6. Be reliable, verifiable, and objective; and
7. Be provided on a timely basis

The TCFD explicitly and intentionally drafted these disclosure principles to be 'largely consistent with other mainstream, internationally accepted frameworks.'[20] It is unsurprising, then, that the reporting principles of the Participants' frameworks and standards are broadly harmonised with those of the TCFD.

The mapping found that the Participants' frameworks and standards request organisations to disclose complete, balanced, comparable and verifiable information annually, consistent with the TCFD disclosure principles.

The differences in each participant's alignment with the TCFD disclosure principles reflects the distinct but complementary outlook of each framework and standard, e.g. intended audience, reporting channel, scope and definitions of materiality. Some frameworks and standards adopt principles not explicitly covered in the TCFD disclosure principles. For example, the GRI Standards require that organisations apply additional principles such as 'Stakeholder Inclusiveness' and 'Sustainability Context.' Similarly, the International <IR> Framework offers an additional principle, 'Stakeholder Relationships,' whereby preparers should provide insights into the nature and quality of its relationships with its key stakeholders. These differences do not prevent an organisation accomplishing its reporting objectives, but preparers should be alive to them to ensure they achieve their ambitions.

The mapping found that the Participants' frameworks and standards request organisations to disclose complete, balanced, comparable and verifiable information annually, consistent with the TCFD disclosure principles. Though the mapping identified areas for the Participants to work collaboratively to better and fully align their principles and those of the TCFD, there were no pronounced contradictions between the principles. The areas of perceived limited alignment are largely due to issues of clarity with a principle being implied or assumed in some frameworks and standards.

Explicitness and further finetuning

CDP's disclosure framework refers explicitly to the principles of the GHG Protocol,[21] and by its design and methodologies, it is implicitly underpinned by principles consistent with the TCFD. For example, the TCFD third disclosure principle (i.e. that disclosures should be 'clear, balanced, and understandable') is not covered by the principles of the GHG Protocol, but CDP's scoring methodologies incentivise responses that demonstrate this and therefore there is implicit alignment.

The fifth TCFD disclosure principle (i.e. that disclosures should be 'comparable among organisations within a sector, industry, or portfolio') showed slight differences in its application across the Participants' frameworks and standards. For example, although CDP does not provide an explicit principle around comparability, the design of CDP's questionnaires and disclosure framework is centred on providing comparable data across sectors and industries, therefore demonstrating de facto alignment with this disclosure principle. For the other frameworks and standards, none were found to contradict one another or the TCFD for this disclosure principle. However, the analysis identified opportunities for enhancing alignment where the Participants' frameworks and standards did not fully incorporate all aspects of the TCFD's definition for comparability. This is potentially resolvable by Participants finetuning their principles around comparability to achieve full alignment.

Finally, on the seventh TCFD disclosure principle of making timely disclosures, two participants were not explicit about this. CDP's annual reporting system provides investors and other stakeholders with climate-related data and information,

[20] *TCFD (2017), Final Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf*

[21] *Available online: https://ghgprotocol.org/*

based on the latest year end information, therefore showing alignment is clear. For the IIRC, reporting at least annually is an implicit rather than an explicit feature in their International <IR> Framework.

While the mapping found practical alignment and no contradictions between the Participants' frameworks and standards, there are three areas for collaborative work to both communicate and achieve full alignment for the benefit of report preparers and users:

1. Language and terminology: Further alignment of the language and terminology used in the principles, where feasible, would prove beneficial to avoid potential misinterpretation.
2. Explicit communication: For the frameworks and standards with only implicit alignment around one or more of the disclosure principles, making it explicit would facilitate better understanding by report preparers and users, reducing any confusion.
3. Further finetuning: Further alignment of the principles of the different frameworks and standards, where feasible, at a more granular level to eliminate differing details that could be misconstrued as a misalignment of principles, e.g. timing of reporting and scope of comparability.

The Participants commit to exploring how greater alignment can be taken forward in practice across the frameworks and standards in the context of the TCFD.

In response to the findings of the technical mapping, CDP intends to adopt a set of reporting principles, aligned with the seven TCFD disclosure principles and the seven CDSB principles as they are considered as fully applicable to disclosure through its framework. The terminology and supportive text will be adapted, where needed, to align with the thematic scope of its framework, to ensure they have meaning and application for the full range of its disclosing organisations (corporates, suppliers, and cities, states and regions), and to reflect all of its data users (including the investor community, disclosing companies, purchasing companies, policymakers and others). The CDP reporting principles, to be published in time for disclosure in 2020, will provide clarity to CDP stakeholders on how CDP achieves high-quality, decision-useful disclosure. At the time of writing, GRI are reviewing their universal Standards, which may result in further alignment of their principles with those of other frameworks and standards.

Key results

Overall, the mapping exercise showed no sources of conflict between the Participants' disclosure principles. The analysis showed slight differences in terminology and detail. The Participants are encouraged to eliminate or reduce such differences through the actions proposed, and thereby collectively enhance the utility of the frameworks and standards to the market.

The harmony and consensus that exists between the Participants' reporting principles and those of the TCFD is a positive result for the market. Despite differences in intended audiences, channel and scope of reporting, the broad agreement by the Participants on the TCFD's seven disclosure principles brings clarity to organisations as to how they should be reporting, whether that is on climate-related financial risks and opportunities, as with the TCFD recommendations, or on other ESG topics.

What this means for Report Preparers

The mapping shows there to be no conflict and considerable agreement between the TCFD's seven principles and the reporting principles of the Participants' frameworks and standards. This offers clarity to report preparers by underscoring commonalities between the purposes of the frameworks and standards, individually and collectively, to reporting against the TCFD at the most fundamental level.

What this means for Report Users

The results of the mapping, i.e. no conflict and considerable agreement between the TCFD's seven principles and the Participants' reporting principles, offer report users confidence in the complementarity of the Participants' different frameworks and standards to report against the TCFD recommendations.

4.2.3 How the frameworks and standards align with the TCFD's Recommended Disclosures

The 11 TCFD recommended disclosures cover four core elements:

- **Governance: The organisation's governance around climate-related risks and opportunities;**
- **Strategy: The actual and potential impacts of climate-related risks and opportunities on the organisation's business, strategy, and financial information;**
- **Risk Management: How the organisation identifies, assesses, and manages climate-related risks; and**
- **Metrics and Targets: The various metrics and targets used to assess and manage relevant climate-related risks and opportunities.**

Each element has two or three specific disclosures (as shown in Figure 6) to be made in the organisation's mainstream report (i.e. annual financial filings). These are meant to generate comparable, consistent and decision-useful information on climate-related risks and opportunities. The TCFD provides both general and, in some cases, sector-specific guidance for each disclosure, frames the context for disclosure, and offers suggestions of what to disclose and how to do so in the mainstream report.

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organisation's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material.	Disclose how the organisation identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
(a) Describe the board's oversight of climate-related risks and opportunities.	(a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	(a) Describe the organisation's processes for identifying and assessing climate-related risks.	(a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.
(b) Describe management's role in assessing and managing climate-related risks and opportunities.	(b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	(b) Describe the organisation's processes for managing climate-related risks.	(b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	(c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	(c) Describe how processes for identifying and assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	(c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Figure 6: The TCFD's four core elements and 11 recommended disclosures. Source: TCFD (2017), Final Report.

The Project's mapping showed that the current level of alignment across the 11 recommended disclosures and the Participants' frameworks and standards is pronounced, with each of the TCFD's recommended disclosures being fully aligned with at least one of the frameworks and standards. While some of the Participants' frameworks and standards do not speak to or cover some of the TCFD's 11 recommended disclosures, the mapping found there to be few instances of misalignment and no conflict. In this respect, the Participants' frameworks and standards can largely be seen as complementary. Therefore, together they contain the content required to effectively meet the TCFD recommended disclosures in the mainstream report when used interdependently.

The results of the mapping into the nature of alignment are explored in more detail below, providing report preparers and users with a practical overview as to how the frameworks and standards fit together with the TCFD recommended disclosures. The mapping identifies areas for continued collaboration among Participants to achieve greater alignment. For a more in-depth examination of the mapping results, see Annex 2.

In 2018, CDP updated its questionnaires to align with the TCFD recommendations. Specifically, the CDP climate change questionnaire included, for example, more detailed requirements on risk identification and management, a new requirement around climate scenario analysis, and additional detail in a number of sector-specific questions. The mapping found CDP achieved nearly full alignment across the 11 recommended disclosures. Unlike the recommendation for Metrics and Targets (b), CDP does not prescribe how emissions are to be calculated, but does suggest companies use the GHG Protocol as standard; and while CDP does not require historical records of Scope 3 emissions to be reported, yearly updates are provided as part of the annual disclosure cycle. The alignment of CDP questions was agreed with the TCFD's secretariat prior to its release in 2018 and therefore organisations providing a complete response to CDP's climate change questionnaire are likely to fully meet the content requirements of the TCFD recommendations.

The CDSB Framework achieves nearly full alignment across the 11 recommended disclosures. This is to be expected given the complementary focus and outlook of CDSB and the TCFD, i.e. investor-focused reporting around environmental, natural capital and climate-related risks and opportunities. In 2018, CDSB updated its framework to further signpost the harmony that exists with both the TCFD recommended disclosures and its underpinning disclosure principles. The mapping shows the CDSB Framework could achieve better alignment with the TCFD's two recommended disclosures Metrics and Targets (a) and (b). This difference is attributable to the CDSB Framework taking a less prescriptive approach to the disclosure of indicators and other metrics. Note, however, that the CDSB Framework already signposts to metrics and targets in the other four participants' frameworks and standards.

Report preparers who adopt the GRI Standards and who identify climate change as a material topic, will be able to meet most of the TCFD recommended disclosures across the four core elements. GRI has a wider audience and subject scope than the TCFD, and for this reason some of the TCFD's recommended disclosures are not fully covered by the GRI Standards. For the recommended disclosures around the resilience of the organisational strategy to different plausible futures considering climate scenarios (Strategy (c)), the GRI Standards do not align with the TCFD. In addition, the GRI Standards do not fully align with the disclosure regarding integration of climate-related risk management into overall risk management processes (Risk Management (c)). Organisations using the GRI Standards could supplement the GRI Standards with other reporting frameworks and standards. GRI could offer wider guidance and signpost to the other four participants' disclosure requirements to be able to facilitate full alignment of the TCFD by report preparers using the GRI Standards.

The IIRC's International <IR> Framework has a broad outlook focused on 'six capitals' and multiple timeframes. The framework shows good alignment with many aspects of the TCFD recommended disclosures. If climate change is assessed to be material by the organisation, the framework can be applied to meet many of the TCFD's recommended disclosures across Governance, Strategy and Risk Management. Like the GRI Standards, the International <IR> Framework does not specifically require disclosure of the resilience of organisational strategy considering different climate scenarios, i.e. Strategy (c). In addition, the International <IR> Framework does not require specific climate-related indicators or targets, and therefore report preparers would need to supplement the International <IR> Framework with other reporting resources to fully meet the TCFD recommended disclosures on Metrics and Targets. IIRC could signpost to other participants' disclosure requirements in this regard.

For those organisations identifying climate change as material, the SASB Standards are well-aligned with the TCFD recommendations for Metrics and Targets. The SASB Standards are complementary with the other core elements of the TCFD recommendations, i.e. Governance, Strategy and Risk Management, as indicated by the guidance provided by SASB in its Application Guidance.[22] The SASB Standards are designed to work alongside and complement the other four participants' reporting frameworks and standards, allowing organisations to fully meet the TCFD recommendations with the SASB Standards. For example, in 2019, SASB and CDSB produced the TCFD Implementation Guide[23] showing how both the SASB Standards and CDSB Framework can be used by report preparers to make the 11 recommended disclosures of the TCFD. As with other Participants, SASB may wish to signpost to other frameworks and standards as appropriate.

Overall, the Participants' frameworks and standards align well with the TCFD's 11 recommended disclosures.

Key results

Overall, the Participants' frameworks and standards align well with the TCFD's 11 recommended disclosures, as further detailed in Annex 2. This is especially true for the Governance and Risk Management recommended disclosures, which the TCFD advocates all organisations comply with regardless of whether climate-related issues are assessed to be material. The TCFD's 2019 Status Report shows that, with the exception of Strategy (c), the five recommended Governance and Risk Management disclosures are those that organisations report least against presently.[24] The Participants' well-aligned frameworks and standards can ensure organisations make effective Governance and Risk Management disclosures and enhance their climate-related financial disclosures in general.

[22] *Available online: https://www.sasb.org/wp-content/uploads/2018/11/SASB-Standards-Application-Guidance-2018-10.pdf*

[23] *Available online: https://www.cdsb.net/sites/default/files/sasb_cdsb-tcfd-implementation-guide-a4-size-cdsb.pdf*

[24] *TCFD (2019), 2019 Status Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf*

The mapping analysis shows that the Participants' frameworks and standards show the least alignment and convergence for TCFD's recommended disclosure for resilience of the organisation's strategy with the use of scenario analysis as a tool for considering different plausible future states, i.e. Strategy (c). Given that scenario analysis is an emergent technique for many organisations and is recognised by the TCFD as challenging to implement, it is unsurprising that not all frameworks and standards require it presently. However, two participants, CDP and CDSB, require disclosures for the resilience of strategy that are fully aligned to the recommended disclosure of Strategy (c) in their frameworks. The SASB Standards also include some specific metrics related to the use of scenario analysis. To achieve better alignment around resilience of strategy to climate-related risks and opportunities, the other three participants' frameworks and standards may cross-reference and explain how the fully aligned reporting resources of CDP and CDSB are complementary and meet the TCFD's recommendations, and also signpost to external knowledge resources such as those gathered on the TCFD Knowledge Hub.[25] This may be an area where the Participants wish to work together to produce unified guidance on using scenario analysis.

With the exception of the IIRC's International <IR> Framework, which does not require any specific metrics or targets, and to a similar extent the CDSB Framework, the Participants' frameworks and standards are reasonably well-aligned with the TCFD's recommended disclosures around Metrics and Targets. Better aligning these elements of the Participants' frameworks and standards would not conflict with the unique characteristics of each and could be achievable with cooperation going forward.

What this means for Report Preparers

The mapping shows that for each of the TCFD's 11 recommended disclosures at least one of the five Participants' frameworks and standards are fully aligned, with CDP and CDSB's frameworks achieving near full across the board. The results confirm to report preparers that employing the frameworks and standards in a manner that is sophisticated and complementary will allow organisations to comply with the TCFD disclosures effectively and efficiently. The alignment mapping also highlights to report preparers where climate-related financial disclosures can be repurposed between the different frameworks and standards. In those instances where the Participants' frameworks and standards do not fully overlap with the TCFD's 11 recommended disclosures, they are often complementary, as they can be utilised as effective reporting tools when combined with the TCFD's guidance.

What this means for Report Users

The mapping demonstrates that at least one of the five Participants' frameworks and standards are fully aligned with each of the TCFD's 11 recommended disclosures. The results show that the Participants' frameworks and standards provide a reporting organisation with a means of disclosing its climate-related risks and opportunities in a comprehensive and complete manner to report users.

4.2.4 How the frameworks and standards align with the TCFD's illustrative example metrics

It is important for investors and other stakeholders to be able to understand how an organisation measures and monitors its key risks and opportunities. In the case of the TCFD and material climate-related risks and opportunities, access to the metrics and targets employed by organisations allows report users to assess risk-adjusted returns, exposure to climate-related issues and progress in managing or adapting to them, as well as to compare performance across organisations within a sector or industry.

The fourth core element of the TCFD recommendations is concerned with the disclosure of the metrics and targets used by organisations to assess and manage relevant and material climate-related risks and opportunities. Metrics and Targets (b) mandates organisations to disclose their Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions. Subject to this exception, the TCFD recommendations do not prescribe which metrics and targets organisations should use and disclose against. Instead, the TCFD's Annex Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures[26] offers common and illustrative example metrics that could be used by report preparers to further assist them in considering appropriate metrics for their organisation.

For the financial sector, the TCFD presents five carbon footprinting and exposure metrics that banks, insurance companies, asset owners and asset managers can use in their TCFD disclosures. For each of the four non-financial sector groups, the TCFD provides climate-related financial illustrative example metrics, with the relevance of each metric signposted for the 18 different sectors which make up the TCFD's four non-financial groups (Figure 7).

[25] *Available online: https://www.tcfdhub.org/*

[26] *Available online: https://www.fsb-tcfd.org/wp-content/uploads/2017/12/FINAL-TCFD-Annex-Amended-121517.pdf*

Energy	Transportation	Materials and Building	Agriculture, Food and Forest Products
Oil and Gas	Air Freight	Metals and Mining	Beverages
Coal	Passenger Air Transportation	Chemicals	Agriculture
Electric Utilities	Maritime Transportation	Construction Materials	Packaged Foods and Meats
	Rail Transportation	Capital Goods	Paper and Forest Products
	Trucking Services	Real Estate Management and Development	
	Automobiles and Components		

Figure 7: The TCFD's four non-financial groups and associated sectors. Source: TCFD (2017), Final Report.

As part of the Project, CDP, GRI and SASB assessed how aligned their indicators were to each of TCFD's illustrative example metrics, using a *full, reasonable, moderate, very limited* or *none* classification. Additionally, the level of alignment between each other's indicators was assessed using a classification of *aligned, not fully aligned* and *substantively different* (for further detail, see Section 4.2.1).

Levels of alignment

Overall, it was found that there was a high level of alignment in content between the three participants' indicators and the 50 illustrative example metrics included in the TCFD's Annex, as shown in Figure 8 and further detailed in Annex 3. The mapping showed that the three participants' indicators cover 80% of the TCFD's illustrative example metrics either fully or reasonably. The results of the mapping against the TCFD illustrative example metrics illustrate that their frameworks and standards are an effective means for an organisation to report on how it is measuring and monitoring its climate-related risks and opportunities. The mapping also underscores the applicability of using the three participants' frameworks and standards in a complementary manner.

Between the three participants, 15 of the 50 TCFD metrics (i.e. 30%) were classified as being *substantively different*, meaning that information gathered for one framework or standard could not be repurposed to report against the other.

There are a few important drivers that explain the 15 instances where there is a *substantive difference*. A key source is the different sectoral classification systems employed by the three participants and the TCFD. For example, the majority of the substantive differences between the indicators of the CDP framework and SASB Standards are a result of CDP and SASB using similar, but not identical classifications of specific sectors and industries. To take an example, both the TCFD and CDP split the energy group into oil and gas, coal and electric utilities sectors, while SASB classifications for the energy group are more granular (e.g. the SASB classification splits oil and gas into four categories: exploration and production; midstream; refining and marketing; and services). The examples of substantive differences that do not fall into this category primarily relate to technical differences in the indicators recommended by each participant's framework or standards for a particular climate-related risk or opportunity. As an example, the SASB Standards request organisations disclose direct energy usage or other industry-specific indicators instead of Scope 2 and 3 GHG emissions, in contrast to CDP and GRI.

It should be noted that there are differences in the language used by the three participants for their indicators. These variances in terminology can be frustrating to report preparers and can be misconstrued as conflicting. These differences, though, do not constitute substantive differences as they result in the disclosure of the same information. As is emphasised in this report, navigating and implementing the Participants' frameworks and standards requires due consideration, but preparers should be reassured by the results of the technical mapping.

Omissions

While the three participants' frameworks and standards covered the majority of the TCFD's illustrative example metrics with considerable alignment, there are a handful of instances where this was found to be not the case. Given that the illustrative example metrics were offered by the TCFD to help organisations consider appropriate metrics, it is not expected that the three participants' frameworks and standards would each include applicable indicators for all 50 illustrative examples.

A key finding of the mapping was that the three participants' frameworks and standards do not include applicable indicators around those offered by the TCFD to the financial sector. For example, for three of the five carbon footprinting and exposure metrics, the three participants did not identify aspects of their frameworks or standards that were aligned with the illustrative example metrics. For the other two illustrative example metrics – weighted average carbon intensity of portfolio; and amount or percentage of carbon-related assets in portfolio – the CDP climate change questionnaire includes fully-aligned indicators to disclose against. At the time of writing this report, CDP is developing sector-specific questions for organisations in the financial services sector responding to the climate change questionnaire for use in 2020.

The other key source of notable omission from the three participants was in relation to the TCFD's illustrative example metrics for the Materials and Buildings group. The mapping showed that for five of the 13 illustrative example metrics relevant to the group, at least two participants did not possess appropriate indicators in their frameworks or standards, with one not covered by any of the frameworks or standards. Of the five illustrative example metrics with little coverage, three were offered by the TCFD for the real estate management and development sector. SASB's Standard for the real estate industry included the highest number of mapped indicators. It should also be noted that CDP will introduce sector-specific questions in 2020 for companies in the real estate, construction, and capital goods sectors, which will complete CDP's coverage of these illustrative example metrics.

Estimated Scope (Energy)	**Vehicle Sales** (Transportation)	**GHG Emissions** (Materials and Buildings)	**Mechanical Emissions** (Agriculture, Food and Forest Products)	**Fuel Consumption** (Transportation) *CDP-SASB*
Revenues (Energy)	**EEDI** (Transportation)	**Area of Buildings** (Materials and Buildings)	**Average Carbon** (Financial Services)	**Life Cycle** (Transportation) *SASB-CDP*
Proportion (Energy)	**Expenditures** (Transportation)	**Reserve Breakdown** (Materials and Buildings)	**Absolute Carbon Emissions** (Financial Services)	**Expenditures** (Materials and Buildings) *CDP-GRI, CDP-SASB, SASB-CDP*
Gross Amount (Energy)	**Road Vehicles** (Transportation)	**Percentage Certified** (Materials and Buildings)	**Portfolio Carbon Emissions** (Financial Services)	**Energy Intensity** (Materials and Buildings) *CDP-GRI, CDP-SASB, SASB-CDP*
Indicative Costs (Energy)	**Investment** (Transportation)	**Revenues** (Agriculture, Food and Forest Products)	**Volume of Portfolio Carbon** (Financial Services)	**Fresh Water Percentage** (Materials and Buildings) *CDP-SASB, SASB-CDP*
Assets (Energy)	**Revenues** (Materials and Buildings)	**Water Withdrawn** (Agriculture, Food and Forest Products)	**GHG Emissions** (All) *CDP-SASB, GRI-SASB, SASB-CDP, SASB-GRI*	**Investment** (Materials and Buildings) *CDP-GRI, CDP-SASB, SASB-CDP*
Reserves Breakdown (Energy)	**Energy Consumption** (Materials and Buildings)	**Water Percentage** (Agriculture, Food and Forest Products)	**Carbon Prices** (Energy) *SASB-CDP*	**Expenditures** (Agriculture, Food and Forest Products) *CDP-GRI, GRI-CDP*
Capital Payback (Energy)	**Fuel Consumption** (Materials and Buildings)	**Assets** (Agriculture, Food and Forest Products)	**Expenditure Low Carbon** (Energy) *CDP-SASB, SASB-CDP*	**Purchased Energy** (Agriculture, Food and Forest Products) *CDP-SASB, SASB_CDP, SASB-GRI*
Average Fleet Fuel (Transportation)	**Building** (Materials and Buildings)	**Non-mechanical Emissions** (Agriculture, Food and Forest Products)	**Percentage of Water** (Energy) *CDP-SASB, SASB-CDP*	**Investment** (Agriculture, Food and Forest Products) *CDP-GRI, GRI-CDP*
Revenues (Transportation)	**Water Intensity** (Materials and Buildings)	**Land Use** (Agriculture, Food and Forest Products)	**Investments** (Energy) *SASB-CDP*	**Percentage Carbon** (Financial Services) *SASB-CDP*

Figure 8: Alignment with the TCFD illustrative example metrics, and between CDP, GRI and SASB

For each of the 50 TCFD illustrative example metrics, the figure shows the level of alignment (i.e. full, reasonable, moderate, very limited or no alignment) with the relevant indicator(s) of each of the three participants, as indicated by the colouring of the CDP, GRI and SASB boxes. The figure also shows the level of alignment between the three participants' relevant indicators. Where there is substantive difference it is shaded pink and the nature of that difference is indicated, i.e. SASB-CDP denotes that information collected by the SASB indicator is not applicable for reporting with CDP's framework.

The name of each of the 50 TCFD illustrative example metrics is given in bold with the applicable sectors indicated in brackets.

Key results

The results of the mapping against the TCFD's 50 illustrative example metrics by CDP, GRI and SASB shows broad alignment around indicators for reporting on climate-related risks and opportunities, as shown in Figure 8 and further explained in Annex 3.

The instances of *substantive difference* between the three participants' frameworks and standards are mainly due to different approaches to sector-specificity, as well as a few specific and different approaches to indicators or methodologies, such as around GHG emissions or water. That said, where there are instances of *substantive difference*, a report preparer can use the frameworks and standards complementarily, with knowledge of the ways in which they align, to achieve the organisation's reporting objectives.

In addition to the value of the technical mapping exercise to reporting organisations, the results provide a valuable platform upon which the three participants can analyse the differences between their frameworks and standards to move towards jointly refining and continuously improving overlapping indicators to achieve better alignment, taking into account the different foci, audiences and governance processes.

The results of the mapping against the TCFD's 50 illustrative example metrics by CDP, GRI and SASB shows broad alignment around indicators for reporting on climate-related risks and opportunities.

What this means for Report Preparers

The results provide report preparers with a tool for navigating the well-aligned indicators that CDP, GRI and SASB offer for climate-related risks and opportunities. The detailed mapping shows how their different frameworks and standards can be used together to efficiently and effectively measure and report on the most relevant and material metrics and targets in line with the TCFD. Further, the results illustrate for report preparers how data points can be reused and repurposed between the different reporting frameworks and standards and the TCFD's illustrative example metrics.

What this means for Report Users

For report users, the broad essential alignment between the three participants and the TCFD underscores the fact that the frameworks and standards can be used together to produce consistent and comparable quantitative and qualitative disclosures for key climate-related metrics and targets.

4.3 Integrating TCFD disclosures into the mainstream report

Its Final Report, the TCFD is unequivocal 'that organisations provide climate-related financial disclosures in their mainstream (i.e., public) annual financial filings.'[27] The TCFD emphasises that public companies and other organisations around the world are obliged to disclose material information in their annual financial filings. It can be understood, therefore, that the TCFD's recommended disclosures provide additional guidance to those organisations in order to meet existing disclosure obligations more effectively.

As climate-related risks are non-diversifiable affecting nearly all industries (although not necessarily equal in terms of impact and scope), the TCFD and a growing number of investors argue that these risks require special attention. For this reason, the TCFD recommends that all organisations disclose against its five recommended disclosures information on governance and risk management policies and processes for climate-related risks and opportunities.[28] For those organisations that find climate-related issues to be material to their operations and strategy, the TCFD suggests that the organisations report in line with the six recommended disclosures for Strategy and Metrics and Targets.[29]

To support organisations in meeting the full suite of recommended disclosures in their annual mainstream reports, the TCFD envisages that its seven disclosure principles for effective disclosure will 'assist organisations in making clear the linkages and connections between climate-related issues and their governance, strategy, risk management, and metrics and targets.'[30]

The 2019 Status Report from the TCFD concluded that organisations are disclosing information aligned with the recommended disclosures in multiple types of reports. The results of a survey conducted for this second status report show that more organisations in 2018 are disclosing against the TCFD recommendations in sustainability reports than in financial filings, annual reports or integrated reports.[31] Notwithstanding this, there is an increase in the TCFD recommended disclosures being made in the mainstream report, as advocated by the TFCD.

[27] *TCFD (2017), Final Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf*

[28] *Ibid.*

[29] *Ibid.*

[30] *Ibid.*

[31] *TCFD (2019), 2019 Status Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf*

As the results from the mapping show, the Participants' frameworks and standards collectively possess all the key content elements to disclose against the TCFD efficiently and effectively. Building on this, the reporting frameworks of CDSB and IIRC offer further instruction and guidance to report preparers on how to disclose the climate-related financial data and information of the TCFD recommendations in their annual reports.

4.3.1 CDSB Framework

The CDSB Framework is fully aligned with the TCFD's seven disclosure principles and achieves near full alignment with the 11 recommended disclosures. These results reflect the commonality that exists between the TCFD and CDSB in terms of reporting outlook and focus. The CDSB Framework aims to 'align with, and complement, the objectives of financial reporting,' thereby providing investors with material climate and wider environmental information and how it relates to financial information.[32] For this reason, the CDSB Framework advocates that the reporting organisation's 'mainstream report should be adapted, rather than expanded.'[33]

In seeking to adapt the conventions and structures of the mainstream annual report, the CDSB Framework suggests a report preparer intersperse and position the relevant and material environmental, including climate-related, information and data in the appropriate sections of the report 'in such a way as to explain the links between the organisation's strategy and environmental performance.'[34] In terms of adhering to the TCFD recommendations, the CDSB Framework would advise organisations to make these 11 recommended disclosures alongside their existing disclosures for the four core areas of the TCFD recommendations, i.e. Governance, Strategy, Risk Management, and Metrics and Targets. In other words, the two recommended disclosures for governance of climate-related risks and opportunities, for example, should be integrated with and connected to the existing disclosures about the organisation's governance.

The third principle of the CDSB Framework further advises organisations to adopt an interconnected approach to reporting, so that relevant and material environmental disclosures, such as those of the TCFD recommendations, complement and supplement financial statements, management commentary and governance disclosures.[35] In disclosing against the TCFD, this would mean that an organisation seeks to articulate the 'narrative' or its story of climate-related issues in a manner that allows investors to understand the connections between the four different core areas and how each affects one another. For example, useful disclosures will allow investors to see how the results of an organisation's risk management processes feed into the development of their climate strategy and, resultingly, what targets will be used to measure progress. In their guide, Communicating Climate Change in Mainstream Reports, CDSB suggests that report preparers employ the seven-step good disclosures checklist to ensure the goals of climate-related disclosure are met.[36]

4.3.2 International <IR> Framework

The purpose of an integrated report is to explain to providers of financial capital, primarily, how an organisation creates value over time, taking into account the interdependencies between a range of factors including how the organisation tailors its business model and strategy to respond to its external environment and the risks and opportunities it faces.[37] The International <IR> Framework encourages organisations to consider six capitals, including financial and natural, and their interconnection as the lens through which to look at creation of value over the short, medium and long term.

If climate change is assessed as material, the International <IR> Framework can be applied by an organisation to report on the TCFD's recommended disclosures for Governance, Strategy and Risk Management, which are three of the eight content elements of the International <IR> Framework, and for Metrics and Targets, which is closely aligned to the content elements of performance and outlook, respectively.

Key to an integrated report is the connectivity of information, the second guiding principle of the International <IR> Framework, by which organisations report in a way that provides insight into 'how the organisation's strategy is tailored when, for instance, new risks and opportunities', such as climate-related, 'are identified', and how the organisation is adapting its 'strategy and business model with changes in its external environment.'[38]

Reporting on the TCFD recommendations through an integrated report therefore relies upon the organisation building on current disclosures to incorporate new, TCFD-aligned information. The organisation needs to ensure that climate-related disclosures are interconnected with other disclosures and are specific to the organisation's unique circumstances, including its strategy, business model and external environment.

[32] *CDSB (2018), CDSB Framework for reporting environmental information, natural capital and associated business impacts. Accessed online: https://www.cdsb.net/sites/default/files/cdsb_framework_2.1.pdf*

[33] *Ibid.*

[34] *Ibid.*

[35] *Ibid.*

[36] *CDSB (2013), Communicating Climate Change in Mainstream Reports. Accessed online: https://www.cdsb.net/sites/cdsbnet/files/cdsbframeworkguidev1_0_2.pdf*

[37] *IIRC (2013), The International <IR> Framework. Accessed online: http://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf*

[38] *Ibid.*

4.3.3 Complementarity

Both the CDSB Framework and the International <IR> Framework can aid report preparers in making the crucial connection between climate-related and financial information and disclosing such information in the mainstream annual report. This was highlighted as a key area requiring improvement in the TCFD's 2019 Status Report.[39] The two frameworks show pronounced alignment with one another's and the TCFD's disclosure principles, which underscores the complementarity of the two frameworks for making climate-related financial disclosures. Importantly, both the CDSB Framework and the International <IR> Framework emphasise the importance of connection and integration of climate, governance, financial and other information for the benefit of report users.

[39] *TCFD (2019), 2019 Status Report. Accessed online: https://www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf*

5. Conclusions and areas for future work

Building on the work of the CRD, the Project is a clear indication of the shared ambitions and intentions of the Participants to better serve the market. This report brings together the key results and findings from the first year of the Project. The technical mapping highlights the strong levels and areas of alignment that exist between the Participants and the TCFD, offering the market and other stakeholders further assistance in reporting on climate-related and by extension wider ESG issues.

These results, together with the feedback received from stakeholders globally, present the Participants with many key areas and issues to consider in guiding their work going forward.

5.1 What the Participants have learnt

Results from the technical mapping were positive and provide practical and useful insights into the complementary nature of the Participants' frameworks and standards for report preparers and users on climate-related issues. While the mapping showed strong alignment between the frameworks and standards and the TCFD as well as between each other, there remains gaps and points of difference between the five Participants' frameworks and standards. The Participants acknowledge that the differences in language, terminology and methodology can result in difficulties navigating the frameworks and standards and can give the impression that they are difficult to use in conjunction with each other. The Participants' stakeholder engagement found similar conclusions, with report preparers and users highlighting issues around differing definitions of materiality.

The mapping against the TCFD's illustrative example metrics has shown there to be a minority of instances where the three relevant participants' frameworks and standards (i.e. CDP, GRI and SASB) substantively diverge. The mapping has also shown that the three participant indicators do not overlap as extensively with the TCFD illustrative example metrics for the finance and real estate management sectors. The three participants are taking steps to begin to better align and expect to build upon these findings individually and collectively in future.

The stakeholder engagement showed that the pronounced alignment that exists between the frameworks and standards, which the mapping extensively illustrates, is not well appreciated or understood.

Through the online surveys and global roundtables, a number of stakeholders have stated that the Participants' frameworks and standards are part of the perceived confusion in the reporting landscape. There is a large and stultifying ecosystem of regulation, voluntary frameworks and standards, and surveys and questionnaires seeking the disclosure of ESG information. It is clear from the stakeholder engagement that report preparers lack the resources to effectively navigate and respond to these reporting requests, leaving report users with disclosures that are not as comprehensive, consistent or comparable as desired. Having said this, the Participants' are regarded as the most mature, respected and utilised frameworks and standards and therefore have a keen role to play in driving efficiency and value from ESG disclosure.

The Participants' frameworks and standards are an important part of this ecosystem, but their efforts alone will not transform corporate reporting. However, the Participants are working together to build on the substantial alignment that already exists between their frameworks and standards.

Whereas the stakeholders would desire a quick solution, the important and different due processes and governance systems that support each framework and standard mean that further alignment of content will not be instantaneous, but a longer-term ambition. Such due processes and governance systems are designed to promote transparency, inclusiveness and rigour in updates. The Participants are encouraged by the level of stakeholder engagement in the Project and look forward to integrating such engagement into their processes to update their respective frameworks and standards.

The stakeholder engagement showed that the pronounced alignment that exists between the frameworks and standards, which the mapping extensively illustrates, is not well appreciated or understood. The Participants, therefore, believe that greater effort is required to communicate to report preparers, report users and other stakeholders to explain and illustrate how well their frameworks and standards connect and align, as well as how they can be used together to report effectively and efficiently on climate and wider ESG issues. Efforts such as these would offer substantive benefit to the market in the short term. The explanation of the connections and alignment as included in Section 3 by means of FAQs is a first effort in this regard and others will follow as part of our continued work in the second year of the Better Alignment Project.

5.2 Areas for future work

The technical work conducted in this first year of the Project has demonstrated the many benefits of the Participants' frameworks and standards, as summarised above and in greater detail throughout this report and accompanying annexes. The actual levels of technical alignment between the frameworks and standards is higher than they are perceived by the market and other stakeholders, attesting to the importance of better and allied communications to facilitate more effective use of the Participants' frameworks and standards by report preparers. Significantly, the Project has further strengthened the mutual understanding and cooperation between the Participants' technical and communications teams, the effects of which will be long-lasting.

The Participants have carefully considered the results of the technical work and stakeholder feedback, including a number of investor organisations and report preparers looking for higher ambitions for alignment, in deciding the most effective options for future collaboration to achieve greater alignment. Below explains the Participants initially considered areas for future work that need further discussion and agreement, as well as detailing other options considered.

5.2.1 Three areas for future work

Developing a taxonomy

Emerging from the technical work and stakeholder engagement, there is a great need for a better explanation and enhanced understanding of the common elements and approaches of the Participants' frameworks and standards. The mapping shows that the essence of the content of the different frameworks and standards is well-aligned, but differences exist in both terminology and determination methodologies. This can result in confusion and misunderstanding amongst report preparers, report users and other stakeholders.

For this reason, the Participants consider it is a high priority to build a taxonomy that can guide report preparers, report users and other stakeholders on the meanings of different terminologies and determination methodologies, articulating the commonalities and interrelations. Such a taxonomy listens to the needs of stakeholders by offering a responsive means of making it clearer how the frameworks and standards align and can be used together to report efficiently and effectively.

The Participants therefore believe that building a taxonomy should be considered the highest priority for future work of the Project. It would require clear scoping, dedicated resources, a clearly defined deliverable and a detailed project plan to realise this ambition, which the Participants are determined to further explore.

Building an online, interactive tool

The formats and level of detail in the Participants' frameworks and standards can result in difficulties comparing them and, therefore, in employing them effectively together. The Participants believe an online, interactive tool that brings the frameworks and standards together in a manner that allows preparers to understand how they may be used together for different reporting purposes would be of great benefit to the market. It is envisioned that such a tool would significantly improve the efficiency of reporting by reducing confusion and misunderstanding. The taxonomy described above will provide an essential underpinning to such an online, interactive tool. Therefore, the Participants see these two areas of work as acting together to create greater accessibility and understanding of the alignment and complementarity that exists between and across the Participants' frameworks and standards.

The Participants therefore believe that building an interactive tool, based on the taxonomy considered above, which assists users of their frameworks and standards to navigate their content and common approaches, should be considered the second priority of future work. Like the taxonomy, it would require clear scoping, dedicated resources, a clearly defined deliverable and a detailed project plan to realise this ambition.

Forum for technical development

Building on the forum of the CRD, the Project has further established and reinforced connections between the technical and communication teams of the five Participants. While there have been many such connections between the technical and communication teams on a bilateral level, the Project has brought them all to the table and allowed for a greater exchange of developments, ideas and plans.

Going forward, the Participants see value in continuing this collective exchange to promote alignment and achieve greater comparability, consistency and comprehensiveness in their frameworks and standards.

The Participants therefore see value in further structuring their exchanges of knowledge, challenges and ambitions between their technical teams and will initiate the formalisation in the near future.

5.2.2 Other considerations

The Participants considered other potential options for future work that did not result in proposed next steps. The potential options and reasons why they are not proposed next steps are explained below.

One global solution

A number of stakeholders expressed their support for a single, global reporting framework or standard for ESG information to resolve issues of misalignment and confusion. The Participants' discussions around this idea included consideration of how more formal alliances could benefit report preparers and users, but it was concluded that such a trajectory could not be completed within the CRD given its composition and remit. Indeed, the complexity and cross-jurisdictional nature of the idea should not be underappreciated. Besides, the Participants believe in the complementarity of their frameworks and standards and see highest value in better explaining how they work together.

Aligning principles

A key component of the first year of the Project has been to map the Participants' reporting principles in order to identify any areas of fundamental difference and therefore conflict between the frameworks and standards. The mapping work has shown there to be no such conflicts – the frameworks and standards are unified on the TCFD's seven disclosure principles for effective disclosure.

In reflecting on the most effective next steps for the Project, the Participants considered aligning their reporting principles around those of the TCFD. However, it was concluded that this would not be the most impactful course of action. Instead of working through the rigorous and lengthy governance processes of each Participant to make such changes, it was felt that strategic communication of the Participants' essential alignment on reporting principles was a more effective option for the short term.

Aligning beyond the TCFD

The first year of the Project deliberately focused on climate change, with the TCFD recommendations providing a frame of reference and concrete lens for analysis. This allowed the Participants to learn and develop an effective approach to mapping and alignment. In discussions on the next steps for the Project, widening the scope of the mapping to other ESG disclosures was considered in depth by the Participants.

It was concluded by the Participants not to broaden the scope of the mapping for two key reasons. First, feedback from stakeholders and observations of societal and regulatory developments show climate change remains at the top of the agenda for investors and companies. Secondly, the Participants have learnt from listening to stakeholders and completing the technical work that greater effort is needed to communicate and explain the pronounced alignment and collaboration that already exists, especially considering the longer timescales of instigating and achieving further alignment due to important governance and due diligence processes.

Joint, structural approach to updating frameworks and standards

As has been mentioned throughout this report, the Participants each have their own purpose, audience and governance structures. It has been suggested that there could be better alignment in how the Participants work together, which in itself could result in greater harmonisation of the content of their frameworks and standards. For instance,

an agreed timeline on updating different content elements between the Participants could ensure aligned conclusions. The Participants have discussed and considered these opportunities at considerable length.

In these discussions, it was clear that different audiences and ambitions of the Participants result in differing stakeholder expectations on the response and urgency in amending and updating the frameworks and standards for individual topics. For instance, stakeholders of a certain participant may demand slow, deliberative process with regard to a certain ESG issue, while the stakeholders of another participant may demand a speedy response for the same issue. The governance processes of each participant are designed to meet their unique ambitions and stakeholder demands, meaning that they would not allow the Participants to commit to any alignment independently from these deliberative processes.

Annex 1

Responses from the Participants to key messages from stakeholder engagement

In the table below, the Participants respond to each of the key messages from the stakeholders gathered from the online surveys and roundtables. For each key message, the Participants set out what they have done so far and what they hope to achieve with the Project in the future, as well as explaining their limitations and what they cannot do.

Key message from stakeholders	Response from the Participants
The market would benefit from greater clarity on the interconnections and complementarity of the Participants' frameworks and standards.	The detailed results of the mapping show how the Participants' frameworks and standards interconnect and complement one another in relation to the TCFD recommendations. More broadly, the FAQs developed and included in this report set out how the frameworks and standards can be used together in various reporting scenarios. Going forward, the Participants have identified developing a taxonomy and an online, interactive tool as key areas for future work to better explain how their frameworks and standards interconnect and harmonise.
The Participants' could better support TCFD reporting with further alignment as well as guidance for specific issues, such as scenario analysis.	The mapping shows that the Participants' frameworks and standards are well-aligned with the disclosure principles, recommended disclosures and illustrative example metrics of the TCFD. These results and the further guidance provided in this report additionally offer a means of understanding how the frameworks and standards can be used complementarily to report on climate-related financial risks and opportunities effectively and efficiently in the mainstream annual report. In addition, the Participants have individually and collaboratively produced further TCFD guidance, such as CDSB and SASB's TCFD Implementation Guide or CDP's Technical Note on Scenario Analysis.
The connection between ESG and financial information needs to be better articulated.	The report offers a concise overview of the connection between ESG and financial information. In addition, the mapping shows how each of the frameworks and standards covers the reporting of climate-related financial information, in line with the TCFD. The report also details how such information can be included alongside other corporate disclosures in the mainstream annual report with use of CDSB and IIRC's frameworks.
The market would benefit from greater alignment of the terminologies and methodologies in the Participants' frameworks and standards.	The technical mapping offers stakeholders with a means of better understanding the differences that exist in terminology and methodology, and whether these differences are substantive to reporting. The Participants have identified developing a taxonomy and building an interactive, online tool to more clearly articulate and explain the connections that exist between the frameworks and standards in terms of terminology, methods and approaches as areas of future work for the Project.
The Participants should align efforts on specific ESG topics, such as climate change, water and human rights.	Participants have noted the areas highlighted by stakeholders and will take these into their considerations going forward. It should be noted that the Participants' frameworks and standards, individually, cover many of these identified areas. In addition, a number of these topics are already addressed in co-operation between the Participants. For example, regarding water, where CDP and GRI work together. It is noted by the Participants that better communication about such joint efforts and wider collaboration is needed.

Key message from stakeholders	Response from the Participants
The Participants should collaborate and work towards greater alignment with the wider reporting ecosystem (e.g. other voluntary frameworks, indexes and survey providers).	The Participants agree that their frameworks and standards are part of a wider issue of complexity within the reporting landscape, with the Project responding to such demands. The results show the significant alignment that exists between the Participants' frameworks and standards. As an initiative of the CRD, though, the Project does not have the remit to explore better alignment with the many other voluntary reporting frameworks, standards, indexes and surveys.
The Participants should explore the feasibility of a single reporting framework that meets the Participant framework stakeholders' needs relative to the complementary use of their current standards and frameworks.	The Participants discussed the idea of a single framework as part of considering key areas for future work for the Project. The Participants considered how more formal alliances could benefit report preparers and users, but it was concluded that such a trajectory could not be completed within the CRD given its composition and remit.
The Participants should adopt a more sector-focused lens for specificity and comparability.	Given the differing nature of the frameworks and standards, some of which are sector-specific while others are not, the Participants do not believe that sector-specific alignment is an appropriate ambition for the Project. Both CDP and SASB offer sector-specific means of reporting on climate-related and broader ESG information. In 2019, GRI launched a Sector Program in which sector standards will be developed that identify and describe a sector's impacts and stakeholder concerns from a sustainable development perspective.
Greater consideration should be paid to the applicability of the Project's outputs to SMEs.	The first year of the Project centred on mapping and understanding the alignment between the Participants' frameworks and standards and the TCFD recommendations, which are focused, primarily, towards large, listed companies. That said, the results of the mapping are relevant to the wide range of organisations that use different frameworks and standards. Similarly, the areas of future work identified for the potential next phase of the Project would be relevant for the broad range of organisations that use the Participants' frameworks and standards.
The Participants should work more closely with regulators to improve the ESG reporting landscape.	All the Participants, alone or in collaboration when appropriate, work with and offer opinion and advice to regulators in the ESG reporting space. The purpose of the Project is on promoting the coherence, consistency and comparability between the Participants' reporting frameworks and standards, and is not, therefore, focused on improving alignment beyond the Participants.

Annex 2

Mapping of CDP, CDSB, GRI, IIRC and SASB frameworks and standards to the TCFD recommended disclosures

Legend – Alignment to TCFD

Full | Reasonable | Moderate | Very limited | None

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance a. Describe the board's oversight of climate-related risks and opportunities.	C1.1b F4.2b W6.2b	C1 Governance – Board oversight (C1.1b) Provide further details on the board's oversight of climate-related issues. F4 Governance – Board oversight (F4.2b) Provide further details on the board's oversight of forests-related issues. W6 Governance – Board oversight (W6.2b) Provide further details on the board's oversights of water-related issues.	Omissions None. Content difference(s) None.	Full
Governance b. Describe management's role in assessing and managing climate-related risks and opportunities.	C1.2 C1.2a F4.3 W6.3	C1 Governance – Management responsibility (C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues. (C1.2a) Describe where in the organisational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored. F4 Governance – Management responsibility (F4.3) Provide the highest management-level position(s) or committee(s) with responsibility for forests-related issues. W6 Governance; Management responsibility (W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues.	Omissions None. Content difference(s) None.	Full

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	C2.1 C2.2b C2.2c C2.3 C2.3a C2.4 C2.4a F3.1a F3.2a W4.2 W4.2a W4.3a	C2 Risks and opportunities – Time horizons (C2.1) Describe what your organisation considers to be short-, medium- and long-term horizons. C2 Risks and opportunities – Management processes (C2.2b) Provide further details on your organisation's process(es) for identifying and assessing climate-related risks. (C2.2c) Which of the following risk types are considered in your organisation's climate-related risk assessments? C2 Risks and opportunities – Risk disclosure. (C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business? (C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business. C2 Risks and opportunities – Opportunity disclosure (C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business? (C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business. F3 Risks and opportunities; Descriptions of forests-related risks and opportunities (F3.1b) For your disclosed forest risk commodity(ies), provide details of risks identified with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (F3.2a) For your selected forest risk commodity(ies), provide details of the identified opportunities with the potential to have a substantive financial or strategic impact on your business. W4 Risks and opportunities – Descriptions of water-related risks and opportunities (W4.2) Provide details of identified risks in you direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (W4.2a) Provide details of identified risks within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (W4.3a) Provide details of opportunities currently being realised that could have a substantive financial or strategic impact on your business.	Omissions None. Content difference(s) None.	Full

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	C2.3a C2.4a C2.5 C2.6 C3.1 F3.1b F3.2a F5.1 W4.2 W4.2a W4.3a W7.1	C2 Risks and opportunities – Risk disclosure (C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business. C2 Risks and opportunities – Opportunity disclosure (C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business. C2 Risks and opportunities – Business impact assessment (C2.5) Describe where and how the identified risks and opportunities have impacted your business. C2 Risks and opportunities – Financial planning assessment. (C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process. C3 Business strategy – Business strategy (C3.1) Are climate-related issues integrated into your business strategy? (C3.1a) Does your organisation use climate-related scenario analysis to inform your business strategy? (C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy. (C3.1d) Provide details of your organisation's use of climate-related scenario analysis. F3 Risks and opportunities – Description of impacts of forests-related risks and opportunities (F3.1b) For your disclosed forest risk commodity(ies), provide details of risks identified with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (F3.2a) For your selected forest risk commodity(ies), provide details of the identified opportunities with the potential to have a substantive financial or strategic impact on your business. F5 Business strategy – Integration of forests-related issues in the long-term strategic business planning (F5.1) Are forests-related issues integrated into any aspect of your long-term strategic business plan, and if so how? W4 Risks and opportunities – Description of impacts of water-related risks and opportunities (W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks. (W4.3a) Provide details of opportunities currently being realised that could have a substantive financial or strategic impact on your business. W7 Business strategy – Integration of water-related issues in the long-term strategic business planning. (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?	Omissions None. Content difference(s) None.	Full

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	C3.1a C3.1d W7.3	C3 Business strategy – Business strategy (C3.1a) Does your organisation use climate-related scenario analysis to inform your business strategy? (C3.1d) Provide details of your organisation's use of climate-related scenario analysis. W7 Business strategy – Water-related outcomes of climate-related scenario analysis (W7.3) Does your organisation use climate-related scenario analyses to inform its business strategy?	Omissions None. Content difference(s) None.	Full
Risk Management a. Describe the organisation's processes for identifying and assessing climate-related risks.	C2.2b C2.2c W3.3a F2.1a	C2 Risks and opportunities – Management processes (C2.2b) Provide further details on your organisation's process(es) for identifying and assessing climate-related risks. (C2.2c) Which of the following risk types are considered in your organisation's climate-related risk assessments? W3 Procedures; Processes and procedures for identifying and assessing water-related risks (W3.3a-d) F2 Procedures; Processes and procedures for identifying and assessing water-related risks. (F2.1a-c)	Omissions None. Content difference(s) None.	Full
Risk Management b. Describe the organisation's processes for managing climate-related risks.	C2.2b C2.2d W3.3d	C2 Risks and opportunities – Management processes (C2.2b) Provide further details on your organisation's process(es) for identifying and assessing climate-related risks. (C2.2d) Describe your process(es) for managing climate-related risks and opportunities. W3 Procedures; Processes and procedures for responding to water-related risks (W3.3d) Describe your organisation's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.	Omissions None. Content difference(s) None.	Full
Risk Management c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	C2.2 F2.1a W3.3a	C2 Risks and opportunities – Management processes (C2.2) Select the option that best describes how your organisation's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management. F2 Procedures; Procedures for identifying and assessing water-related risks (F2.1a) Select the options that best describe your procedures for identifying and assessing forests-related risks. W3 Procedures – Procedures for identifying and assessing water-related risks (W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.	Omissions None. Content difference(s) CDP (C2.2) has additional guidance for the financial sector that is not included in the TCFD Supplementary Guidance for financial sectors.	Full

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets a. Describe the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	C1.3a C4.2 C4.5a C9.1 C11.3a F4.4a F6.2a W1.2 W4.1a W-FB6.4a/ W-CH6.4a/ W-EU6.4a/ W-OG6.4a/ W-MM6.4a W7.4 W8.1a	C1 Governance – Employee incentives (C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals). C4 Targets and performance – Other climate-related targets (C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b. C4 Targets and performance – Low-carbon products (C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions. C9 Additional metrics – Other climate-related metrics (C9.1) Provide any additional climate-related metrics relevant to your business. C11 Carbon pricing systems – Internal price on carbon (C11.3a) Provide details of how your organisation uses an internal price on carbon. F4 Governance – Incentives for management of forests-related issues (F4.4a) What incentives are provided to C-Suite employees or board members for the management of forests-related issues? F6 Implementation – Descriptions of targets for increasing sustainable production/consumption of forests risk commodities (F6.2a) Provide details of your target(s) for increasing sustainable production and/or consumption of the disclosed commodity(ies), and progress made. W1 Current State (W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored? W4 Risk and Opportunities (W4.1a) How does your organisation define substantive financial or strategic impact on your business? W6 Governance – Incentives for management of water-related issues (W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) Do you provide incentives to C-suite employees or board members for the management of water-related issues? W7 Business strategy – Use of an internal price on water (W7.4) Does your company use an internal price on water? W8 Targets – Descriptions of targets and metrics monitored at the corporate level (W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.	Omissions None. Content difference(s) CDP requests information on specific metrics whereas TCFD Recommendations do not specify which metrics companies should use. The TCFD simply requests to disclose metrics that are used by the organisation to assess climate-related risks and opportunities. CDP requests information on how management of climate-related issues is incentivised. CDP (C11.3) has additional guidance for the financial sector that is not included in the TCFD Supplementary Guidance for financial sectors.	Full

CDP 2019				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	C2.3a C5.1 C6.1 C6.2 C6.3 C6.5 C6.10 C7.1 C7.1a C-CO7.1b/ C-EU7.1b/ C-OG7.1b	C5 Emissions methodology – Base year emissions (C5.1) Provide your base year and base year emissions (Scopes 1 and 2). C6 Emissions data – Scope 1 emissions data (C6.1) What were your organisation's gross global Scope 1 emissions in metric tons CO2e C6 Emissions data – Scope 2 emissions reporting (C6.2) Describe your organisation's approach to reporting Scope 2 emissions. C6 Emissions data – Scope 2 emissions data (C6.3) What were your organisation's gross global Scope 2 emissions in metric tons CO2e? C6 Emissions data – Scope 3 emissions data (C6.5) Account for your organisation's Scope 3 emissions, disclosing and explaining any exclusions. C6 Emissions data – Emissions intensities (C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations. C7 Emissions breakdown – Scope 1 breakdown: GHGs (C7.1) Does your organisation break down its Scope 1 emissions by greenhouse gas type? (C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used global warming potential (GWP). (C-CO7.1b/ C-EU7.1b/ C-OG7.1b) Break down your total gross global Scope 1 emissions in the reporting year by greenhouse gas type.	Omissions None. Content difference(s) The TCFD Supplementary Guidance for this disclosure requests GHG emissions to be calculated in line with the GHG Protocol methodology. CDP does not prescribe how GHG emissions are calculated, but does recommend that they should be calculated in line with the GHG Protocol methodology. The TCFD Recommendations determine that Scope 1, 2, and 3 GHG emissions and associated metrics should be provided for historical periods. CDP requests that organisations disclose GHG emissions and associated metrics for historical periods for Scope 1 and 2 emissions, but not Scope 3. However, historical emissions disclosure is implicit in the consistent annual disclosure expected by CDP.	Full
Metrics and Targets c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	C4.1 C4.1a C4.1b C4.2 F6.2a W8.1a	C4 Targets and performance – Targets (C4.1) Did you have an emissions target that was active in the reporting year? (C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets. (C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s). C4 Targets and performance – Other climate-related targets (C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b. F6 Implementation – Descriptions of targets for increasing sustainable production/consumption of forests risk commodities (F6.2a) Provide details of your target(s) for increasing sustainable production and/or consumption of the disclosed commodity(ies), and progress made. W8 Targets – Descriptions of targets and metrics monitored at the corporate level (W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.	Omissions None. Content difference(s) CDP (C4.1) and (C4.1a) have additional guidance for the financial sector that is not included in the TCFD Supplementary Guidance for financial sectors.	Full

General comment to make regarding CDP – in introduction to alignment for disclosures.

- The TCFD does not explicitly refer to forests and water security issues in any disclosure recommendation. Companies dependent on, or impacting on, water resources or forest products will have an associated exposure to climate-related risks and opportunities. As CDP's Climate questionnaire focuses largely on carbon emissions and use of energy, for some companies providing additional information through CDP's Water security and Forests questionnaires facilitates more comprehensive climate-related disclosure.
- CDP C2.3a has specific guidance for the financial sector that is not included in the TCFD Supplementary Guidance for financial sectors.

CDSB Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance a. Describe the board's oversight of climate-related risks and opportunities.	REQ-01	REQ-01 Governance Disclosures shall describe the governance of environmental policies, strategy and information.	Omissions None. Content difference(s) None.	Full
Governance b. Describe management's role in assessing and managing climate-related risks and opportunities.	REQ-01	REQ-01 Governance Disclosures shall describe how responsibility for environmental policies, strategy and information is delegated to management-level staff and how progress is reported back to the highest governing body. Consideration of REQ-02 will be beneficial to disclosures.	Omissions None. Content difference(s) None.	Full
Strategy a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	REQ-03	REQ-03 Risks and opportunities Disclosures shall explain the current and anticipated material environmental risks and opportunities affecting the organisation as well as how those are managed. Disclosures will benefit from the consideration of the reporting requirements of REQ-02 and REQ-06.	Omissions None. Content difference(s) None.	Full
Strategy b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	REQ-03 REQ-06	REQ-03 Risks and opportunities Disclosures shall explain the current and anticipated material environmental risks and opportunities affecting the organisation as well as how those are managed. REQ-06 Outlook Management shall summarise their conclusions about the effect of environmental impacts, risks, opportunities and policy outcomes on the organisation's future performance and position.	Omissions None. Content difference(s) In contrary to TCFD Recommendations, the CDSB Framework recommends companies to disclose details about whether and to what extent their policies and strategies are aligned with the organisation's lobbying, advocacy, memberships and related policy engagement strategies.	Full

CDSB Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	REQ-03 REQ-06	REQ-06 Outlook Disclosures shall explain how the organisation's main environmental impacts, risks and opportunities affect its capacity to innovate, execute its strategy and create long-term value. Organisations should consider how resilient their strategies are to environmental risks and opportunities, taking into consideration a transition to a lower carbon economy consistent with a 2°C or lower scenario.	Omissions None. Content difference(s) None.	Full
Risk Management a. Describe the organisation's processes for identifying and assessing climate-related risks.	REQ-03	REQ-03 Risks and opportunities Disclosures shall explain how the organisation's material environmental risks and opportunities are identified, assessed, and integrated into existing risk management processes.	Omissions None. Content difference(s) None.	Full
Risk Management b. Describe the organisation's processes for managing climate-related risks.	REQ-03	REQ-03 Risks and opportunities Disclosures shall explain how environmental risks and opportunities are prioritised. Disclosures shall explain how and the extent to which the organisation is able to mitigate, transfer, accept or control risks and maximise opportunities. Consideration of REQ-02 and REQ-06 will benefit disclosures.	Omissions None. Content difference(s) None.	Full
Risk Management c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	REQ-03	REQ-03 Risks and opportunities Disclosures shall explain how environmental risks and opportunities are integrated into risk management processes and financial planning processes, the time periods used, and how these risks and opportunities are prioritised.	Omissions None. Content difference(s) None.	Full

CDSB Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets a. Describe the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	REQ-02 REQ-04	REQ-02 Management's environmental policies, strategy and targets Disclosures shall report the targets, timelines and key performance indicators against which delivery of environmental strategy and policies are measures and resourced. REQ-04 Sources of environmental impacts Based on the outcome of the organisation's materiality assessment, measures, indicators and other metrics should be calculated according to recognised methodologies and reported with explanatory narrative text where necessary.	Omissions In their Guidance for this disclosure, the TCFD determines that, where relevant, organisations should provide their internal carbon prices. Content difference(s) TCFD Recommendations determine that organisations, where relevant, should provide an internal carbon price. The CDSB Framework does not prescribe reporting of an internal carbon price. TCFD Recommendations recommend companies disclose whether and how performance metrics for material, climate-related issues are incorporated into remuneration policies but do not cover wider incentives or accountabilities. The CDSB Framework recommends companies disclose how management-level staff are held accountable and incentivised for addressing environmental, including climate-related, issues.	Reasonable

CDSB Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	REQ-04 REQ-05	REQ-04 Sources of environmental impacts Disclosures shall report quantitative and qualitative results and cite the methodologies used for preparation of results, that reflect material sources of environmental impact. The CDSB Framework treats GHG emissions as material for all companies. Consideration of the reporting requirements of REQ-02 and REQ-05 will be beneficial in disclosure. REQ-05 Performance and comparative analysis Disclosures shall include an analysis of the information disclosed in REQ-04 compared with any performance targets set and with results reported in previous periods.	Omissions None. Content difference(s) TCFD Recommendations determine that GHG emissions should be calculated in line with the GHG Protocol methodology. The CDSB Framework does not prescribe reporting provisions to be used for the preparation of quantitative environmental results. CDSB recommends the GHG Protocol as 'one of the existing globally recognised reporting provisions for preparing measures, indicators, and other information'.	Reasonable
Metrics and Targets c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	REQ-02 REQ-05	REQ-02 Management's environmental policies, strategy and targets Disclosures shall report information about the targets, time horizons and key performance indicators against which delivery of environmental strategy and policies are measured and resourced. REQ-05 Performance and comparative analysis Disclosures shall include an analysis of the information disclosed in REQ-04 compared with results reported in previous period to support comparative analysis.	Omissions None. Content difference(s) None.	Full

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance a. Describe the board's oversight of climate-related risks and opportunities.	GRI 102-18	Disclosure 102-18 – Governance structure a. Governance structure of the organisation, including committees of the highest governance body. b. Committees responsible for decision-making on economic, environmental, and social topics.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable
	GRI 102-19	Disclosure 102-19 – Delegating authority a. Process for delegating authority for economic, environmental, and social topics from the highest governance body to senior executives and other employees.		
	GRI 102-20	Disclosure 102-20 – Executive-level responsibility for economic, environmental, and social topics a. Whether the organisation has appointed an executive-level position or positions with responsibility for economic, environmental, and social topics. b. Whether post holders report directly to the highest governance body.		
	GRI 102-26	Disclosure 102-26 – Role of highest governance body in setting purpose, values, and strategy a. Highest governance body's and senior executives' roles in the development, approval, and updating of the organisation's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental, and social topics.		
	GRI 102-27	Disclosure 102-27 – Collective knowledge of highest governance body a. Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental, and social topics.		
	GRI 102-29	Disclosure 102-29 – Identifying and managing economic, environmental, and social impacts a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities – including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities.		
	GRI 102-31	Disclosure 102-31 – Review of economic, environmental, and social topics a. Frequency of the highest governance body's review of economic, environmental, and social topics and their impacts, risks, and opportunities.		
	GRI 102-32	Disclosure 102-32 – Highest governance body's role in sustainability reporting a. The highest committee or position that formally reviews and approves the organisation's sustainability report and ensures that all material topics are covered.		

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance b. Describe management's role in assessing and managing climate-related risks and opportunities.	GRI 102-20 GRI 102-29 GRI 102-31 GRI 102-32 GRI 103-2 with GRI 201-2 and GRI 305	Disclosure 102-20 – Executive-level responsibility for economic, environmental, and social topics a. Whether the organisation has appointed an executive-level position or positions with responsibility for economic, environmental, and social topics. b. Whether post holders report directly to the highest governance body. Disclosure 102-29 – Identifying and managing economic, environmental, and social impacts a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities – including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities. Disclosure 102-31– Review of economic, environmental, and social topics a. Frequency of the highest governance body's review of economic, environmental, and social topics and their impacts, risks, and opportunities. Disclosure 102-32 – Highest governance body's role in sustainability reporting a. The highest committee or position that formally reviews and approves the organisation's sustainability report and ensures that all material topics are covered. GRI 103: Management Approach used with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change and GRI 305: Emissions Disclosure 103-2 – The management approach and its components For each material topic, the reporting organisation shall report the following information: a. An explanation of how the organisation manages the topic; [...] c. A description of the following, if the management approach includes that component [...Policies [...] Commitments...].	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	GRI 102-14	Disclosure 102-14 – Statement from senior decision-maker a. A statement from the most senior decision-maker of the organisation (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organisation and its strategy for addressing sustainability, plus reporting recommendations: 2.1.1: the overall vision and strategy for the short-term, medium-term, and long-term, with respect to managing the significant economic, environmental, and social impacts that the organisation causes, contributes to, or that are directly linked to its activities, products or services as a result of relationships with others [...]; 2.1.2: strategic priorities and key topics for the short and medium-term with respect to sustainability, including observance of internationally-recognised standards and how such standards relate to long-term organisational strategy and success.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable
	GRI 102-15	Disclosure 102-15 – Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities, plus reporting recommendations: 2.2.1: a description of its significant economic, environmental and social impacts, and associated challenges and opportunities. This includes the effects on stakeholders and their rights as defined by national laws and relevant internationally-recognised standards; 2.2.6: the impact of sustainability trends, risks, and opportunities on the long-term prospects and financial performance of the organisation.		
	GRI 103 with GRI 201-2	GRI 103: Management Approach, used with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: i. a description of the risk or opportunity and its classification as either physical, regulatory, or other; ii. a description of the impact associated with the risk or opportunity; iii. the financial implications of the risk or opportunity before action is taken; iv. the methods used to manage the risk or opportunity; v. the costs of actions taken to manage the risk or opportunity.		

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	GRI 102-15 GRI 103 with GRI 201-2	Disclosure 102-15 – Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities, plus reporting recommendation 2.2.6: the impact of sustainability trends, risks, and opportunities on the long-term prospects and financial performance of the organisation. GRI 103: Management Approach, used with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: i. a description of the risk or opportunity and its classification as either physical, regulatory, or other; ii. a description of the impact associated with the risk or opportunity; iii. the financial implications of the risk or opportunity before action is taken; iv. the methods used to manage the risk or opportunity; v. the costs of actions taken to manage the risk or opportunity.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable
Strategy c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.			Omissions Scenario analysis and resilience could be reported as part of the management approach (using GRI 103) for climate-related topics, but are not explicitly covered by the GRI Standards.	None

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Risk Management a. Describe the organisation's processes for identifying and assessing climate-related risks.	GRI 102-15	Disclosure 102-15 – Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities, plus reporting recommendations: 2.2.6: the impact of sustainability trends, risks, and opportunities on the long-term prospects and financial performance of the organisation; 2.2.7: information relevant to financial stakeholders or that could become so in the future.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable
	GRI 102-29	Disclosure 102-29 – Identifying and managing economic, environmental, and social impacts a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities – including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities.		
	GRI 102-30	Disclosure 102-30 – Effectiveness of risk management processes a. Highest governance body's role in reviewing the effectiveness of the organisation's risk management processes for economic, environmental, and social topics.		
	GRI 102-31	Disclosure 102-31 – Review of economic, environmental, and social topics a. Frequency of the highest governance body's review of economic, environmental, and social topics and their impacts, risks, and opportunities.		
		GRI 103: Management Approach, used with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change and GRI 305: Emissions For each material topic, the reporting organisation shall report the following information:		
	GRI 103-1 and	Disclosure 103-1 – Explanation of the material topic and its Boundary, Disclosure 103-1-a: a. An explanation of why the topic is material [...] including per Guidance: '...a description of the process, such as due diligence, that the organisation used to identify the impacts related to the topic.'		
	GRI 103-2 with GRI 201-2 and GRI 305	Disclosure 103-2 – The management approach and its components, Disclosure 103-2-c: c. A description of the following, if the management approach includes that component [...Policies [...] Commitments...].		

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Risk Management b. Describe the organisation's processes for managing climate-related risks.	GRI 102-15	**Disclosure 102-15 – Key impacts, risks, and opportunities** a. A description of key impacts, risks, and opportunities, plus reporting recommendations: 2.2.3: an explanation of the approach to prioritising these challenges and opportunities; 2.2.9: prioritisation of key economic, environmental, and social topics as risks and opportunities according to their relevance for long-term organisational strategy, competitive position, qualitative, and, if possible, quantitative financial value drivers.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable
	GRI 102-29	**Disclosure 102-29 – Identifying and managing economic, environmental, and social impacts** a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities – including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities.		
	GRI 103-2 with GRI 201-2 and GRI 305	**GRI 103: Management Approach, used with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change and GRI 305: Emissions** **Disclosure 103-2 – The management approach and its components** For each material topic, the reporting organisation shall report the following information: a. An explanation of how the organisation manages the topic; [...] c. A description of the following, if the management approach includes that component [...Policies [...] Commitments...]		

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Risk Management c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	GRI 102-15 GRI 103 with GRI 201-2 and GRI 305	Disclosure 102-15 – Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities, plus reporting recommendation 2.2.12: A description of governance mechanisms in place specifically to manage these risks and opportunities, and identification of other related risks and opportunities. **GRI 103: Management Approach with GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change.** Guidance to GRI 103-1-a provides that disclosing 103-1-a can include a description of the process, such as due diligence, that the organisation used to identify the material topic. See GRI disclosures mapped to TCFD Recommended Disclosure Risk Management b) for details of GRI 103-2. Guidance to GRI 103-3-a-iii provides that disclosing 103-3-a-iii can include changes in the allocation of resources, goals, or targets; and specific actions aimed at improving performance.	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Moderate

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets a. Describe the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	GRI 102-30 GRI 103 with GRI 201-2 GRI 302 GRI 303 GRI 305 and GRI 306	Disclosure 102-30 – Effectiveness of risk management processes a. Highest governance body's role in reviewing the effectiveness of the organisation's risk management processes for economic, environmental, and social topics. **GRI 103: Management Approach,** when used with **GRI 201: Economic Performance, Disclosure 201-2; GRI 302: Energy; GRI 303: Water and Effluents; GRI 305: Emissions; and GRI 306: Effluents and Waste;** along with the topic-specific disclosures from each of these Standards.	Omissions The GRI Standards do not have specific disclosures for reporting land use. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Reasonable

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	GRI 103 with GRI 305 GRI 103 with GRI 201-2	**GRI 103: Management Approach used with GRI 305: Emissions** Disclosure 305-1 – Direct (Scope 1) GHG emissions Disclosure 305-2 – Energy indirect (Scope 2) GHG emissions Disclosure 305-3 – Other indirect (Scope 3) GHG emissions Disclosure 305-4 – GHG emissions intensity **GRI 103: Management Approach** used with **GRI 201: Economic Performance, Disclosure 201-2 Financial implications and other risks and opportunities due to climate change**	**Omissions** None. **Content difference(s)** GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Full

GRI Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	GRI 101, 2.7.1 GRI 102-15	Disclosure 102-15 – Key impacts, risks, and opportunities a. A description of key impacts, risks, and opportunities, plus reporting recommendations: 2.2.10 table(s) summarising targets, performance against targets, and lessons learned for the current reporting period; 2.2.11 table(s) summarising targets for the next reporting period and medium-term objectives and goals (i.e., 3–5 years) related to key risks and opportunities. **GRI 103: Management Approach,** when applied with **GRI 201: Economic Performance, Disclosure 201-2, GRI 302: Energy, GRI 303: Water and Effluents, GRI 305: Emissions,** and **GRI 306: Effluents and Waste;** in particular, with **GRI 103-2:**	Omissions None. Content difference(s) GRI Standards require reporting organisations to cover topics that reflect the reporting organisation's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders ('material topics'). An 'impact' can refer to positive, negative, actual, potential, direct, indirect, short-term, long-term, intended, or unintended impacts. The TCFD recommends reporting information specific to the potential impact of climate-related risks and opportunities on the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows (Principle 1). Reporting against the mapped GRI disclosures will likely provide the information sought by the TCFD, since an organisation's impacts reported about climate-related material topics can capture risks and opportunities that affect the organisation's markets, businesses, corporate or investment strategy, financial statements, and future cash flows and will capture additional information. However, users must be aware that reporting with the GRI Standards may not necessarily capture all of the information sought by the TCFD recommended disclosure. In the GRI Standards, 'stakeholders' is wider than the TCFD's target groups of investors and other financial sector users.	Moderate
	GRI 103-2 with GRI 201-2, GRI 302, GRI 303, GRI 305 and GRI 306	Disclosure 103-2 – The management approach and its components For each material topic, the reporting organisation shall report the following information: [...] c. A description of the following, if the management approach includes that component [...Goals and targets...]. Reporting on performance against these targets is covered by the topic-specific disclosures reported for each material topic related to climate change (e.g. Emissions), and the following recommendation from **GRI 101: Foundation:** 2.7.1: present information for the current reporting period and at least two previous periods, as well as future short and medium-term targets if they have been established.		

International <IR> Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance a. Describe the board's oversight of climate-related risks and opportunities.	4.8	4B Governance 4.8. An integrated report should disclose how the organisation's governance structure supports its ability to create value in the short, medium and/or long term.	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, governance oversight of them may not be mentioned in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Reasonable
Governance b. Describe management's role in assessing and managing climate-related risks and opportunities.	4.50 & 4.25 4.42	Disclosure of material matters 4.50. Disclosures would include actions to manage material matters, including the specific steps being taken to mitigate or manage key risks or to create value from key opportunities (4.25). Summary of materiality determination process 4.42. Disclosures would include identification of key personnel (management) in identification and prioritisation of material matters.	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, management's role in assessing and managing them may not be mentioned in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value. TCFD Recommendations specifically ask for management's role. Since an integrated report is at a high level, the actions and steps refereed to in paras 4.25 and 4.50 of the International <IR> Framework could be assumed to be the responsibility of senior management and those charged with governance.	Moderate
Strategy a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	4.23	4D Risks and opportunities 4.23. An integrated report should disclose the specific risks and opportunities that affect the organisation's ability to create value over the short, medium and/or long term.	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, they may not be mentioned in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Reasonable
Strategy b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	4.50 4.25 4.7 & 4.29	4D Risks and opportunities 4.50. An integrated report should disclose the effect of material matters on the organisation's strategy, business model or the capitals. 4.25. Disclosures can include the organisation's assessment of the likelihood that identified risks or opportunities will come to fruition and the magnitude of their effects if they do. Disclosures would include how the organisation's strategy is influenced by/responds to: (a) the external environment, including climate change (4.7), and (b) identified risks and opportunities (4.29).	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, their impact may not be mentioned in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Reasonable

International <IR> Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	4.37 & 4.38	4G Outlook Disclosures would cover an analysis of how climate change (if material) could affect the achievement of strategic objectives and the availability, quality and affordability of capitals the organisation uses or affects (4.37); it may include sensitivity analysis and a summary of assumptions related to forecasts and projections (4.38).	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, the organisation's resilience to them may not be mentioned in the integrated report. Elements of disclosure relate to resilience, but there is no specific requirement related to scenario analysis. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Very limited
Risk Management a. Describe the organisation's processes for identifying and assessing climate-related risks.	4.42	Summary of materiality determination process 4.42. An integrated report includes a summary of the organisation's materiality determination process and may also include a link to where a more detailed description can be found.	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, the process for identifying and assessing them may not be included in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Reasonable
Risk Management b. Describe the organisation's processes for managing climate-related risks.	4.23	4D Risks and opportunities 4.23. An integrated report should disclose how the organisation is dealing with risks and opportunities that affect its ability to create value over the short, medium and/or long term	Omissions If climate-related risks and opportunities are not considered material to creating, preserving or diminishing value, either for the organisation or for others, how they are managed may not be mentioned in the integrated report. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value.	Reasonable
Risk Management c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	3B Connectivity of information 2.26 & 4.25 4.56	3B Connectivity Taking an 'integrated' approach is pervasive in the <IR> Framework, particularly in the principle of 'connectivity'. 4D Risks and opportunities Regarding risks/opportunities in particular, 2.26 notes that the continuous monitoring and analysis of the external environment (including climate change) … identifies risks and opportunities relevant to the organisation, and 4.25 notes that external sources of risks and opportunities include those stemming from the external environment. 4.56 notes the importance of considering trade-offs between capitals (e.g., creating employment through an activity that negatively affects the environment).	Omissions While integration is pervasive, and a summary of the materiality determination process is a required disclosure, there is no specific requirement to describe how climate-related matters are integrated into overall risk management. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value. TCFD Recommendations specifically require integration of climate risks/opportunities. In the International <IR> Framework integration is pervasive.	Moderate

International <IR> Framework				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets a. Describe the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Various elements of guidance, but no requirements	While many paras (e.g., 1.11, 3.8, 4.31 and 4.53) provide guidance about quantitative indicators (metrics), the <IR> Framework does not require description of specific metrics as required here.	Omissions While many paras (e.g., 1.11, 3.8, 4.31 and 4.53) provides guidance about quantitative indicators (metrics), the <IR> Framework does not require description of specific metrics as required here. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value. In contrary to the TCFD Recommendations, the International <IR> Framework does not require description of specific metrics.	Very limited
Metrics and Targets b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Various elements of guidance, but no requirements	While many paras (e.g., 1.11, 3.8, 4.31 and 4.53) provide guidance about quantitative indicators (metrics), the <IR> Framework does not require disclosure of specific metrics as required here.	Omissions While many paras (e.g., 1.11, 3.8, 4.31 and 4.53) provides guidance about quantitative indicators (metrics), the <IR> Framework does not require disclosure of specific metrics as required here. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value. In contrary to the TCFD Recommendations, the International <IR> Framework does not require description of specific metrics.	Very limited
Metrics and Targets c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Various elements of guidance, but no requirements	While many paras (e.g., 3.8. 3.45, 4.25, 4.28, 4.31, 4.50 and 4.53) provide guidance about disclosing targets, the <IR> Framework does not require description of specific targets as required here.	Omissions While many paras (e.g., 3.8. 3.45, 4.25, 4.28, 4.31, 4.50 and 4.53) provides guidance about disclosing targets, the <IR> Framework does not require description of specific targets as required here. Content difference(s) TCFD Recommendations are specific to climate-related risks and opportunities. The International <IR> Framework recommends companies to disclose anything that affects the organisation's ability to create value. In contrary to the TCFD Recommendations, the International <IR> Framework does not require description of specific targets.	Very limited

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Governance a. Describe the board's oversight of climate-related risks and opportunities.	SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards Application Guidance, Section. 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: a. The entity's governance around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.	Omissions SASB Standards do not include specific guidance or requirements related to the process or frequency by which the board and/or board committees are informed about climate-related issues, whether the board and/or board committees consider climate-related issues when reviewing or guiding strategy, or how the board monitors and oversees progress against goals and targets for addressing climate-related issues. Content difference(s) None.	Very limited
Governance b. Describe management's role in assessing and managing climate-related risks and opportunities.	SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards Application Guidance, Section. 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: a. The entity's governance around the risks and opportunities related to the topic, including board oversight of and management's role in assessing and managing such risks and opportunities.	Omissions SASB Standards do not include specific guidance related to the assignment of climate-related responsibilities within the organisation, organisational structure(s), the process by which management is informed of climate-related issues, and how management monitors such issues. Content difference(s) None.	Very limited
Strategy a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	SASB Standards	**SASB Standards – Disclosure Topics** Each industry-specific SASB Standard includes climate-related risks and opportunities that are likely to be material in a given industry. As such, an organisation may utilise the Standard to identify and describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term.	Omissions SASB Standards do not include generalised guidance related to the identification of short-, medium-, and long-term horizons for climate risks as well as the process to determine such risks beyond that which is included in the previous column. Rather, the SASB Standards provide industry-specific climate-related topics and associated metrics to facilitate disclosure. In addition, SASB Standards include specific qualitative metrics in some instances to address specific aspects of climate risk, which have been included in column C. Content difference(s) SASB Standards provide climate-related industry-specific topics and associated metrics to support the TCFD's strategy-related recommended disclosures.	Moderate

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	SASB Standards SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards – Disclosure Topics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. **SASB Standards Application Guidance, Section. 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: b. The entity's strategic approach regarding actual and potential impacts of topic-related risks and opportunities on the organisation's businesses, strategy, and financial planning, over the short, medium, and long term. **SASB Standards – Accounting Metrics** The general guidance from the Standards Application Guidance may be applied to industry-specific metrics associated with the scope of the Recommended Disclosure. Industry-specific metrics that cover the associated TCFD Strategy disclosure for the four non-financial groups have been included below. EM-EP, EM-CO: Discussion of how price and demand for hydrocarbons/coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets IF-EN-410b.1. Amount of backlog for (1) hydrocarbon-related projects and (2) renewable energy projects IF-EN-410b.2. Amount of backlog cancellations associated with hydrocarbon-related projects IF-EN-410b.3. Amount of backlog for non-energy projects associated with climate change mitigation IF-EU, IF-RE, RT-CH, FB-AB, FB-NB, FB-AG, FB-PF RR-PP: Description of water management risks and discussion of strategies and practices to mitigate those risks	Omissions The SASB Standards do not include generalised guidance related to the types of impacts or associated financial impacts, but instead include industry-specific Standards that include climate-related topics and metrics that are likely to be material. Content difference(s) None.	Moderate

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Strategy c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	SASB Standards SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards – Disclosure Topics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. **SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: b. The entity's strategic approach regarding actual and potential impacts of topic-related risks and opportunities on the organisation's businesses, strategy, and financial planning, over the short, medium, and long term. **SASB Standards – Accounting Metrics** This general guidance may be applied to industry-specific metrics associated with the scope of the Recommended Disclosure that relate to testing the resilience of the organisation's strategy to climate-related scenarios. Industry-specific metrics that cover the associated TCFD Strategy disclosure for the four non-financial groups have been included below: EM-CO, EM-EP: Sensitivity of hydrocarbon/coal reserve levels to future price projection scenarios that account for a price on carbon emissions EM-CO, EM-EP: Estimated carbon dioxide emissions embedded in proven hydrocarbon/coal reserves EM-EP-420a.3. Amount invested in renewable energy, revenue generated by renewable energy sales EM-RM-410a.1. Percentage of Renewable Volume Obligation (RVO) met through: (1) production of renewable fuels, (2) purchase of 'separated' renewable identification numbers (RIN) EM-RM-410a.2. Total addressable market and share of market for advanced biofuels and associated infrastructure IF-EU-110a.4. (1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market IF-EU-420a.1. Percentage of electric utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM) IF-EU-420a.2. Percentage of electric load served by smart grid technology TR-AU-410a.1. Sales-weighted average passenger fleet fuel economy, by region TR-AU-410a.2. Number of (1) zero emission vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold TR-CL, TR-MT: Average Energy Efficiency Design Index (EEDI) for new ships RT-AE-410a.1. Revenue from alternative energy-related products	Omissions The SASB Standards do not include generalised guidance related to the consideration of climate-related scenarios and the resiliency of strategies under 2C or lower scenarios. Rather, they include industry-specific guidance for how to perform scenario analysis in certain industries where such analysis supports useful, comparable disclosure on associated material topics. In addition, they include climate-related topics and metrics that may be used as part of the application of scenario analysis to measure and disclose performance on material climate-related risks and opportunities. Content difference(s) The SASB Standards include industry-specific climate-related topics and metrics that are likely to be material based on industry-specific exposures. In some cases, such topics and metrics include the consideration of scenario analysis and industry-specific impacts that may support effective disclosures related to the application of climate-related scenarios. In column C example have been disclosed. The TCFD provides guidance related to how organisations should describe the resiliency of strategies considering climate-related scenarios, does not include industry-specific topics and metrics to facilitate such disclosures in a standardised and comparable manner.	Moderate

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
		RT-EE-410a.3. Revenue from renewable energy-related and energy efficiency related products RT-IG-410a.1. Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles RT-IG-410a.2. Sales-weighted fuel efficiency for non-road equipment RT-IG-410a.3. Sales-weighted fuel efficiency for stationary generators IF-RE-450a.1. Area of properties located in 100-year flood zones, by property subsector FB-NB-440a.1. Percentage of beverage ingredients sourced from regions with High or Extremely High Baseline Water Stress FB-PF-440a.1. Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress FB-MP-440a.1. Percentage of animal feed sourced from regions with High or Extremely High Baseline Water Stress FB-MP-440a.2. Percentage of contracts with producers located in regions with High or Extremely High Baseline Water Stress		
Risk Management a. Describe the organisation's processes for identifying and assessing climate-related risks.	SASB Standards SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards – Disclosure Topics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. **SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: c. The entity's process to identify, assess, and manage topic-related risks, and how these risks are integrated into the entity's overall risk management process.	Omissions The SASB Standards do not include specific guidance related to how organisations should determine and disclose the relative significance of climate-related risks, the process for assessing the potential size and scope of climate-related risks, or the definitions of risk terminology used. Content difference(s) None.	Moderate

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Risk Management b. Describe the organisation's processes for managing climate-related risks.	SASB Standards SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards – Disclosure Topics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. **SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: c. The entity's process to identify, assess, and manage topic-related risks, and how these risks are integrated into the entity's overall risk management process. **SASB Standards – Accounting Metrics** In some industries (among those for which the TCFD provided supplemental guidance in their implementation Annex), SASB metrics include the consideration of how companies manage specific aspects of climate-risk, including: IF-EU, IF-RE, RT-CH, FB-AB, FB-NB, FB-AG, FB-PF, FB-MP, RR-PP: Description of water management risks and discussion of strategies and practices to mitigate those risks. TR-AU-410a.3. Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities. RT-AE-410a.2. Description of approach and discussion of strategy to address fuel economy and greenhouse gas (GHG) emissions of products. IF-EN-410a.2. Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design. RR-FM-450a.1. Description of strategy to manage opportunities for and risks to forest management and timber production presented by climate change.	Omissions The SASB Standards do not include detailed guidance related to how organisations should disclose their process to manage climate-related risks, including how materiality determinations are made within their organisations. Content difference(s) The SASB Standards include industry-specific climate-related topics and metrics that are likely to be material based on industry-specific exposures. In addition, the SASB Standards Application includes general guidance related to the disclosure of the reporting entity's risk management of sustainability topics included in the SASB Standards. The TCFD provides a generalised list of climate-related risks and opportunities (Tables 1 and 2), but does not provide industry-specific disclosure guidance with respect to the relative materiality of such risks in a given industry based on industry-specific exposures.	Reasonable
Risk Management c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	SASB Standards SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance	**SASB Standards – Disclosure Topics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. **SASB Standards Application Guidance; 5.0 Governance, Internal Control, and Assurance** When disclosing information related to a disclosure topic identified by the standards, entities should consider including a narrative description of material factors necessary to ensure completeness, accuracy, and comparability of the data reported, as appropriate. Such a description may provide context to quantitative information. The narrative description may include a discussion of the following: c. The entity's process to identify, assess, and manage topic-related risks, and how these risks are integrated into the entity's overall risk management process.	Omissions None. Content difference(s) To the extent climate-related risks or opportunities are included in a given SASB industry Standard (as likely to be material), the Standards Application Guidance provides guidance that entities should consider disclosing their 'process to identify, assess, and manage topic-related risks, and how these risks are integrated into the entity's overall risk management process.'	Full

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets a. Describe the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	SASB Standards	**SASB Standards – Disclosure Topics and Accounting Metrics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry, each with associated Accounting Metrics to measure and communicate topic-level performance. **SASB Standards – Introduction – Use of the Standards** The introduction to the Standard additionally states, 'A company determines which standard(s) is relevant to the company, which disclosure topics are financially material to its business, and which associated metrics to report, taking relevant legal requirements into account.'	Omissions None. Content difference(s) None.	Reasonable
Metrics and Targets b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	SASB Standards	**SASB Standards – Disclosure Topics and Accounting Metrics** SASB Standards include a metric for Scope 1 Greenhouse Gas Emissions in 22 of 77 industries for which this topic is likely to be material. SASB Standards include a metric for energy consumption in lieu of Scope 2 emissions in 35 of 77 industries for which this topic is likely to be material. SASB Standards include metrics related to the indirect (Scope 3) emissions associated with a company's value chain (including upstream and downstream impacts) Such metrics may relate to SASB's General Issue Categories including Product Design & Lifecycle Management, Supply Chain Management, and Materials Sourcing & Efficiency. **SASB Standards – Introduction – Use of the Standards** A company determines which standard(s) is relevant to the company, which disclosure topics are financially material to its business, and which associated metrics to report, taking relevant legal requirements into account.	Omissions SASB Standards do not include a metric for Scope 1 emissions in 55 Standards, where SASB's standards development process suggested that such emissions are not likely to rise to the level of financial materiality. Per the TCFD's Recommendation, disclosure of such emissions is subject to a materiality assessment. SASB Standards do not include metrics related to Scope 2 emissions, but rather include a metric for direct energy consumption in lieu of Scope 2 emissions. SASB Standards do not include metrics related to Scope 3 emissions; however, indirect impacts are accounted for via other general issue categories and associated metrics. SASB Standards do not include guidance related to the extent to which climate-related metrics are incorporated into remuneration policies. Content difference(s) None.	Moderate

SASB Standards				
Recommended Disclosures (TCFD Framework)	**Related code/ paragraph**	**Description**	**Omissions and/or content difference(s)**	**Level of alignment**
Metrics and Targets c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	SASB Standards	**SASB Standards – Disclosure Topics and Accounting Metrics** The disclosure topics in the SASB Standards include climate-related risks and opportunities that are likely to be material in a given industry. Table 1 includes the Accounting Metrics for each industry Standard. In some industries (among those for which the TCFD provided supplemental guidance in their implementation Annex), SASB metrics include the consideration of targets related to climate-related risks and opportunities. Specifically, the metric "Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets" is included in the following industries from those groups for with the TCFD provided supplemental guidance: EM-CO, EM-EP, EM-MD, EM-RM, IF-EU, TR-AL, TR-AF, TR-CL, TR-MT, TR-RA, TR-RO, EM-MM, RT-CH, EM-CM, FB-MP, RR-PP Additional relevant metrics include: IF-RE-130a.5. Description of how building energy management considerations are integrated into property investment analysis and operational strategy. FB-AB, FB-NB, FB-AG, FB-PF, FB-MP, RR-PP: Description of water management risks and discussion of strategies and practices to mitigate those risks.	Omissions SASB Standards do not include general disclosure guidance related to the establishment of targets. However, several industry-specific standards include topics and metrics that address the establishment of targets related to an entity's management of climate-related risk (where material and relevant). Content difference(s) In industries for which disclosures related to the establishment of targets was included in the SASB Standards, the technical protocol associated with such metrics was generally aligned with the Guidance for All Sectors provided in the TCFD Report.	Reasonable

Annex 3
Mapping between TCFD-relevant indicators of CDP, GRI, and SASB

Introduction

This Annex contains the mapping sheets which aided the analysis of the degree of alignment between CDP's, GRI's, and SASB's indicators (referred to as 'questions' in CDP's disclosure framework, 'disclosures' in the GRI Standards, and 'accounting metrics' in the SASB Standards) and the illustrative example metrics of the TCFD. Any substantive difference between each of these frameworks and standards in the context of the TCFD illustrative example metrics was identified using these sheets.

This Annex is provided for reference only and is not an exhaustive list of indicators that could be relevant to the TCFD. It is not intended to be used as a linkage document or as a basis for reporting. It cannot substitute research by reporting companies as they apply each framework or standards as required and/or intended.

Methodology

Each of the three participants first assessed the alignment of their own framework or standards with the TCFD metrics. They then assessed how the information collected by reporting organisations for their framework or standards and which meets the TCFD metric compares with the information collected for the other frameworks or standards for the same TCFD metric.

Our starting question was: Relating to the TCFD metric, **to what extent can data collected for Framework X be used for reporting against Framework Y?**

Consider for example:

- Company A wishes to disclose against a particular TCFD illustrative example metric.
- It already discloses this data through Framework X and would also like to report against Framework Y.
- It would like to know if the data it collects for Framework X can be repurposed for use in Framework Y.

There are three possible outcomes:

a. The frameworks are aligned.
This is the case where, for reporting against the TCFD metric, a company is able to use the information it already collects for Framework X, and that information is also valid (and fully sufficient) for reporting against Framework Y.

In these cases, we did not note the 'alignment' between the frameworks, i.e., alignment was assumed unless indicated otherwise.

b. The frameworks are not fully aligned.
For the specified TCFD metric, there may be minor differences in the data collected for Framework X that can be used compared to the data that is collected for Framework Y.

The data collected for Framework X may be closer aligned with the TCFD metric – but that the data can be used to report against Framework Y.

- This was noted as 'Framework X goes further…'
- The mapping tables, in this case, do not include a statement to the effect that 'Framework Y falls short compared to Framework X'

c. There is a 'substantive difference' between the frameworks.
For the specified TCFD metric, the data collected for Framework X is so different from the data collected for Framework Y that it could not be used to report against Framework Y. With respect to the specific TCFD illustrative example metric, a company could use either framework to disclose in line with the TCFD metric, but it would not be able to repurpose the data collected for Framework X in Framework Y. This was noted as 'substantive difference.'

Note that in some cases, Framework X may have a higher level of alignment with the TCFD metric than Framework Y, yet Framework Y requires more detail than X. This does not imply that there is a substantive difference between the information required for the frameworks; in which case this is noted in the table as Y 'goes further' than X (as in b) above).

Description of framework structures

CDP

CDP's questionnaires comprise a set of datapoints in the form of questions which are in turn organised into modules around a particular aspect of risk management, governance or performance etc. Thematically, these cover three priority areas of focus for CDP (climate change, water security and forests). In 2018, CDP introduced new questions to align with the TCFD recommended disclosures, including sector-specific questions for organisations with activities in high-impact industrial sectors.

In the sheets presented in this Annex, CDP has indicated the questions that contain datapoints requesting information that aligns with the TCFD example illustrative metrics. Accompanying the question number and question text is a short description detailing how the CDP framework aligns with the TCFD metric.

Note that all question numbers relate to the 2019 CDP questionnaires and are subject to change in future years. Changes to CDP's questions and question numbering year on year are documented in the annual 'CDP Question Changes and Map' available at cdp.net.

GRI

The GRI Standards are structured as a set of interrelated, modular standards. There are three universal Standards with basic principles and rules that apply to every organisation preparing a sustainability report *(GRI 101: Foundation 2016; GRI 102: General Disclosures 2016; GRI 103: Management Approach 2016).* An organisation then selects from the set of 33 topic-specific GRI Standards for reporting on its material topics. An organisation preparing a report in accordance with the GRI Standards uses a topic-specific Standard if it relates to one of its material topics.

In the sheets presented in this Annex, each title of each relevant GRI Standard is included in bold capitals. Each disclosure title is included in bold. Compilation instructions, which are reporting requirements, are indicated with 'compilation instruction'. Recommendations are indicated with 'reporting recommendation' and guidance is indicated with 'guidance'. Unless otherwise indicated, the GRI contents included are reporting requirements. When using the GRI Standards for reporting, readers should refer to all of the GRI Standards, particularly the universal Standards (GRI 101, 102 and 103).

Unless otherwise indicated, the GRI Standards content included in the mapping is from the GRI Standards published in 2016.

SASB

The SASB Standards provide a set of 77 globally applicable industry-specific standards that identify the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry. A company determines which SASB Standard(s) is relevant to the company, which disclosure topics are financially material to its business, and which associated metrics to report. SASB Standards are intended for use in communications to investors regarding sustainability issues that are likely to impact corporate ability to create value over the long term.

In the sheets presented in this Annex, each metric is represented by its metric code in bold letters, as well as an associated metric description. For each TCFD industry group, only those SASB Standards that are aligned with the associated TCFD industry/sub-industry were considered for the purposes of mapping relevant metrics. As such, each relevant metric from each applicable industry standard is separately listed. Metric codes include the sector, industry, sustainability topic, and metric number within a given industry standard, noted as: [Sector Code]-[Industry Code]-[Topic Code]. [Metric Number]. When utilising the SASB Standards to make disclosures, readers should refer to the full SASB Standard and the technical protocol associated the metric. Technical protocols provide the full details of the scope of disclosure for each metric.

The materials in the Annex represents the October 2018 codification, noted on the SASB Standards as 'Version 2018-10.'

Legend – Alignment to TCFD

Full | Reasonable | Moderate | Very limited | None

Legend – Mapping between frameworks

No substantive difference | Substantive difference

GHG Emissions (Scope 1, 2 and 3) — All

	CDP	GRI	SASB
CDP	These indicators sit within three questions. • 'C6.1. What were your organisation's gross global Scope 1 emissions in metric tons CO2e?' • 'C6.3. What were your organisation's gross global Scope 2 emissions in metric tons CO2e?' • 'C6.5. Account for your organisation's Scope 3 emissions, disclosing and explaining any exclusions.'	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics include source-specific emissions for some sectors, which CDP requests from all organisations in a separate indicator (C7.1a). • SASB includes additional metrics for certain sectors, including: % methane; % covered by emissions-limiting regulations; % covered by emissions-reporting regulations. **Substantive difference between SASB and CDP?** • Scope 2 and Scope 3 emissions are not part of the recommended disclosures included in the SASB Standards. Rather, the SASB Standards recommend disclosure of direct energy usage or industry-specific metrics measuring indirect impacts.
GRI	**CDP goes further than GRI, in that...** • CDP requests specifically that Scope 3 emissions are split by GHG Protocol source categories, which is only in the GRI reporting recommendations and guidance. • CDP requests disclosure of any exclusions in relation to Scope 3. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent.[...] • 305-2-a. Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent. [...] • 305-3-a. Gross other indirect (Scope 3) GHG emissions in metric tons of CO2 equivalent. [...] • 305-4-a. GHG emissions intensity ratio for the organisation.	**SASB goes further than GRI, in that...** • SASB metrics specifically require reporting of gross global Scope 1 emissions from the sources given in the TCFD indicator, for some sectors, which is only in the GRI Reporting recommendations and Guidance. • SASB metrics require reporting percentage methane for certain sector organisations. • SASB metrics require reporting percentage covered under emissions-limiting regulations for certain sector organisations. **Substantive difference between SASB and GRI?** • Scope 2 and Scope 3 emissions are not part of the recommended disclosures included in the SASB Standards. Rather, the SASB Standards recommend disclosure of direct energy usage or industry-specific metrics measuring indirect impacts.
SASB	**CDP goes further than SASB, in that...** • CDP requests that all organisations disclose their Scope 1, 2, and 3 emissions. This is aligned with the TCFD indicator, which recommends that all organisations in all sectors disclose their Scope 1, 2, and 3 emissions. • CDP requests specifically that Scope 3 emissions are split by GHG Protocol source categories. • CDP requests disclosure of any exclusions in relation to Scope 3. **Substantive difference between CDP and SASB?** • Unlike CDP, there is no Scope 2 and Scope 3 emissions reporting for SASB metrics.	**GRI goes further than SASB, in that...** • GRI requires reporting of Scope 1, Scope 2, and Scope 3 GHG emissions. This is aligned with the TCFD indicator, which recommends that all organisations in all sectors disclose their Scope 1 and 2 GHG emissions, and, if appropriate, Scope 3 emissions. **Substantive difference between GRI and SASB?** • Unlike GRI, there is no Scope 2 and Scope 3 emissions reporting for SASB metrics.	• EM-EP-110a.2. Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions • EM-EP-110a.1. Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations • EM-CO-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • EM-MD-110a.1. Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations • EM-RM-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • IF-EU-110a.1. (1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations, and (3) emissions-reporting regulations • TR-RO/AL/AF/CL/MT/RA-110a.1. Gross global Scope 1 emissions • EM-CM-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • EM-MM-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • RT-CH-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • FB-AG/MP/AG-110a.1. Gross global Scope 1 emissions • RR-PP-110a.1. Gross global Scope 1 emissions

<<< Back to Figure 8

Estimated Scope 3 emissions, including methodologies and emission factors used — Energy

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C6.5. "Account for your organisation's Scope 3 emissions, disclosing and explaining any exclusions." These indicators provide the estimated Scope 3 emissions in metric tons CO2e and a qualitative explanation of the methodologies used (including emissions factors).	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests specifically that Scope 3 emissions are split by GHG Protocol source categories, which is only in the GRI Guidance. • CDP requests disclosure of any exclusions in relation to Scope 3. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-3-a. Gross other indirect (Scope 3) GHG emissions in metric tons of CO2 equivalent. [...] • 305-3-f. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. • 305-3-g. Standards, methodologies, assumptions, and/or calculation tools used.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP indicators provide the estimated Scope 3 emissions in metric tons CO2e and a qualitative explanation of the methodologies used (including emissions factors). **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI requires reporting of Scope 3 GHG emissions in metric tons CO2e and an explanation of the source of the emission factors, the global warming potential (GWP) rates used (or a reference to the GWP source) and standards, methodologies, assumptions, and/or calculation tools used. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Revenues/savings from investments in low-carbon — Energy

	CDP	GRI	SASB
CDP	These indicators sit within two questions. • C4.5a. 'Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.' This indicator provides a percentage figure referring to an actual gain. • C2.4a. 'Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.' This indicator provides a potential monetary value associated with an opportunity.	**GRI goes further than CDP, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP specifically requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: […][r]reporting organisation can […] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) […]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: […] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: […] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further than GRI, in that…** • SASB metric specifically requires reporting amount invested in and revenue derived from renewable energy; the GRI guidance provides that renewable energy is one method of managing a risk or opportunity posed by climate change. • SASB metric requires reporting investment in relation to RVO. • SASB metric requires reporting total addressable market and share of market for advanced biofuels and associated infrastructure. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and SASB?** None.	**GRI goes further than CDP, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.3 Amount invested in renewable energy, revenue generated by renewable energy sales • EM-RM-410a.1 Percentage of Renewable Volume Obligation (RVO) met through: (1) production of renewable fuels, (2) purchase of 'separated' renewable identification numbers (RIN) • EM-RM-410a.2 Total addressable market and share of market for advanced biofuels and associated infrastructure.

<<< Back to Figure 8

Describe current carbon price or range of prices used

Energy

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C11.3a: 'Provide details of how your organisation uses an internal price on carbon.' These indicators provide a description of the organisation's carbon price.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further, in that…** • SASB requires that organisations should disclose the sensitivity of hydrocarbon/ coal reserves to future price projections accounting for a price on carbon emissions. **Substantive difference between SASB and CDP?** • Information collected for CDP describing the current carbon price(s) used by the organisation is not valid for SASB metrics (other than EM-EP-420a.1 and EM-CO-420a.1, where such information may be utilised).
GRI	**CDP goes further than GRI, in that…** • CDP requests that disclosers provide a description of how their organisation uses an internal price on carbon, including the Scope (1, 2, 3), price (currency/metric ton), price variance, and rationale for implementation. • CDP also requests that organisations identify the 'type' of internal carbon price and the impact of its implementation. **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that…** • SASB metrics specifically require reporting sensitivity of hydrocarbon or coal reserve levels to future price projection scenarios that account for a price on carbon emissions. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests that disclosers provide a description of how their organisation uses an internal price on carbon, including the Scope (1, 2, 3), price (currency/metric ton), price variance, and rationale for implementation. • CDP also requests that organisations identify the 'type' of internal carbon price and the impact of its implementation. • CDP has a focus on carbon prices that are used for capital allocation internally. **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.1 Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions • EM-CO-420a.1 Sensitivity of coal reserve levels to future price projection scenarios that account for a price on carbon emissions.

<<< Back to Figure 8

Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, equipment, products, or services) — Energy

	CDP	GRI	SASB
CDP	This indicator sits within one question: • C-CO9.6/C-EU9.6/C-OG9.6. 'Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.' This indicator provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services.	**GRI goes further than CDP , in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that…** • SASB requires revenue generated from sales in (in addition to the amount invested in) renewable energy specifically. • SASB requires an expenditures indicator focusing on Renewable Volume Obligation (RVO). **Substantive difference between SASB and CDP?** • Information collected by EU/CO organisations for CDP (which satisfies the TCFD indicator) is not a recommended disclosure for SASB (EM-EP; EM-RM).
GRI	**CDP goes further than GRI, in that…** • This CDP indicator specifically provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: […][r]reporting organisation can […] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) […]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: […] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: […] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further than GRI, in that…** • SASB metric specifically requires reporting amount invested in and revenue derived from renewable energy; the GRI guidance provides that renewable energy is one method of managing a risk or opportunity posed by climate change. • SASB metric requires reporting investment in relation to RVO. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests a monetary figure associated with an investment in low-carbon equipment, products or services. • Requests information about the which low-carbon alternative(s) have been invested in. **Substantive difference between CDP and SASB?** • Information collected for SASB metrics on the proportion of Renewable Volume Obligation (RVO) met (which satisfies the TCFD indicator) is not valid for disclosure in CDP's information request.	**GRI goes further than SASB, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity, which is broader that SASB's 'amount invested in renewable energy'. **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.3 Amount invested in renewable energy, revenue generated by renewable energy sales • EM-RM-410a.1 Percentage of Renewable Volume Obligation (RVO) met through: (1) production of renewable fuels, (2) purchase of 'separated' renewable identification numbers (RIN).

<<< Back to Figure 8

Proportion of capital allocation to long-lived assets versus short-term assets — Energy

	CDP	GRI	SASB
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics require strategy-based disclosures related to capital allocation. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics require reporting discussion of how price and demand for hydrocarbons or coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.4. Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets • EM-CO-420a.3 Discussion of how price and demand for coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets.

<<< Back to Figure 8

Percent water withdrawn in regions with high or extremely high baseline water stress — Energy

	CDP	GRI	SASB
CDP	This indicator sits within one question: • W1.2d. 'Provide the proportion of your total withdrawals sourced from water stressed areas.' This indicator provides a % figure relative to the organisation's total water withdrawals during the reporting year.	**GRI goes further than CDP, in that…** • Note that GRI requires reporting of volumetric data of total water withdrawal and total water withdrawal from all areas with water stress, which data can be used to calculate the proportion (%). Reporting organisations can use the total reported with GRI 303-3-a. and the total reported at GRI 303-3-b. to derive this % figure. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that…** • CDP uses the term stressed areas rather than stressed regions and requests that a water stressed area be at the catchment level as a minimum. • Electric utilities are required to report the TCFD indicator. In addition to this they should disclose the percent of their total water consumed in water stressed areas. • Exploration & production, coal operations, and refining & marketing organisations are required to disclose on fresh water specifically, along with other metrics (% recycled, volume consumed). **Substantive difference between SASB and CDP?** • The information collected by OG/CO organisations for CDP (which satisfies the TCFD indicator) will not satisfy SASB metrics, as W1.2d does not request freshwater specifically.
GRI	**CDP goes further than GRI, in that…** • CDP requests the proportion (%) of total withdrawals sourced from water stressed areas. • CDP provides guidance on how to calculate the proportion. • CDP requests a qualitative description of the change in the indicator from the previous reporting year. **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • 303-3-a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. • 303-3-b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. • 303-3-c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids) […].	**SASB goes further than GRI, in that…** • SASB metrics require reporting of the proportion (%) of total water (IF-EU) or fresh water (EM-EP, EM-CO, EM-RM) withdrawals in regions with High or Extremely High Baseline Water Stress. However, it is noted that, in the GRI Standards, 'water consumed' is reported with disclosure GRI 303-5. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP uses the term stressed areas rather than stressed regions and requests that a water stressed area be at the catchment level as a minimum. • CDP requests this same indicator for all organisations, whereas for three energy sector indicators the SASB metrics refers specifically to fresh water. • CDP does not prescribe a method for identifying water stressed regions. **Substantive difference between CDP and SASB?** • Information collected for SASB metrics by oil & gas and coal organisations regarding withdrawals from stressed regions is not sufficient for disclosure in CDP's information request. This is because SASB asks about freshwater only whereas CDP requests information about all types water.	**GRI goes further than SASB, in that…** • GRI requires reporting of various sources of water, including but not limited to freshwater, which aligns with the TCFD indicator request for 'percent water withdrawn'. • Note that GRI requires reporting of volumetric data of total water withdrawal and total water withdrawal from all areas with water stress, which data can be used to calculate the proportion (%). Reporting organisations can use the total reported with GRI 303-3-a. and the total reported at GRI 303-3-b. to derive this % figure. In the GRI Standards, 'water consumed' is reported with disclosure GRI 303-5. **Substantive difference between GRI and SASB?** None.	• EM-EP-140a.1. (1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • EM-CO-140a.1 .(1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress • IF-EU-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • EM-RM-140a.1. (1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress.

<<< Back to Figure 8

Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks — Energy

	CDP	GRI	SASB
CDP	**This indicator sits within one question:** • C-OG7.1b. 'Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.' This indicator provides total gross global Scope 1 emissions separated by TCFD source categories.	**GRI goes further than CDP, in that...** • GRI explicitly requires reporting metric tons of C02e, which aligns with the TCFD indicator. • GRI guidance provides explicitly that Direct (Scope 1) GHG emissions can come from combustion processes such as flaring and fugitive emissions/leaks; and less explicitly that Direct (Scope 1) GHG emissions can come from process emissions and directly vented releases. • GRI recommends reporting breakdown by source and types of source, some of which align with the sources in the TCFD indicator, where it aids transparency and comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • Exploration & production organisations are required to report the % of their gross global Scope 2 emissions covered by emissions-limiting regulations. • Coal operations, electric utilities, and OG (refining & marketing) organisations should disclose the % of their gross global Scope 1 emissions covered by emissions-limiting regulations or emissions-reporting regulations. **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • TCFD's indicator is for OG organisations only. CDP has Scope 1 questions for OG and other energy sector organisations. • CDP requests that gross global Scope 1 emissions are reported from sector-specific sources in addition to the OG-specific sources given in the TCFD indicator. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent. [...] • Reporting recommendation 2.2.5: [...] where it aids transparency or comparability over time, provide a breakdown of the direct (Scope 1) GHG emissions by: [...] 2.2.5.3 type of source (stationary combustion, process, fugitive). • Guidance: Direct (Scope 1) GHG emissions can come from the following sources owned or controlled by an organisation: [...] combustion processes such as flaring; Physical or chemical processing [...]; Fugitive emissions: these are emissions that are not physically controlled but result from intentional or unintentional releases of GHGs. These can include equipment leaks from joints, seals, packing, and gaskets [...].	**SASB goes further than GRI, in that...** • SASB metrics specifically require reporting of gross global Scope 1 emissions from the sources given in the TCFD indicator. • SASB metrics require reporting percentage methane for EM-EP and EM-MD organisations. • SASB metrics require reporting percentage covered under emissions-limiting regulations for EM-EP, EM-CO, EM-MD and EM-RM organisations. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • TCFD's indicator is for OG organisations only. CDP has Scope 1 questions for OG and other energy sector organisations. • CDP requests that gross global Scope 1 emissions are reported from sector-specific sources in addition to the OG-specific sources given in the TCFD indicator. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides explicitly that Direct (Scope 1) GHG emissions can come from combustion processes such as flaring and fugitive emissions/leaks; and less explicitly that Direct (Scope 1) GHG emissions can come from process emissions and directly vented releases. • GRI recommends reporting breakdown by source and types of source, some of which align with the sources in the TCFD indicator, where it aids transparency and comparability over time. **Substantive difference between GRI and SASB?** None.	• EM-EP-110a.2. Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions • EM-EP-110a.1. Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations • EM-CO-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • EM-MD-110a.1. Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations • EM-RM-110a.1. Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations • IF-EU-110a.1. (1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations, and (3) emissions-reporting regulations.

<<< Back to Figure 8

Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset or geography) Energy

	CDP	GRI	SASB
CDP	None	**GRI goes further than CDP, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies and services (as well as products) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB requires that coal/hydrocarbon reserves' resiliency is tested against future climate scenarios. • SASB requires that organisations provide their general approach (qualitative) to capital allocation strategy, including consideration of costs of supply **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further than GRI, in that...** • SASB metrics specifically require reporting sensitivity of hydrocarbon or coal reserve levels to future price projection scenarios that account for a price on carbon emissions. • SASB metrics specifically require reporting discussion of price and demand for hydrocarbons or coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies and services (as well as products) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.1. Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions • EM-EP-420a.4. Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets • EM-CO-420a.1. Sensitivity of coal reserve levels to future price projection scenarios that account for a price on carbon emissions • EM-CO-420a.3. Discussion of how price and demand for coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets.

<<< Back to Figure 8

Assets committed in regions with high or extremely high baseline water stress — Energy

	CDP	GRI	SASB
CDP	These indicators sit within two questions: • W4.1c. 'By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?' These indicators provide information about facilities judged to be exposed to water risk. • W5.1. 'For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.' This indicator provides the geolocation data for facilities judged to be exposed to water risk.	**GRI goes further than CDP, in that...** • GRI recommends reporting water withdrawal and consumption at each facility in areas with water stress. The example template (Table 2) in GRI 303 shows how this information can be presented, by facility in area with water stress. The information requested by the TCFD indicator could be derived from the information provided in this Table. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests geolocation data for facilities (fixed buildings/factories or other types of business operations) judged to be exposed to water risk which could substantively impact the organisation. This includes, but is not limited to, assets committed in regions with high or extremely high baseline water stress, whereas GRI only recommends reporting water consumption and withdrawal at each facility in areas with water stress. • CDP requests water accounting data for facilities exposed to water risk. **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • 303-3, Reporting recommendation 2.2.1: A breakdown of total water withdrawal in megaliters by withdrawal source categories listed in Disclosure 303-3, at each facility in areas with water stress; [...]. • 303-5, Reporting recommendation 2.5.1: Total water consumption in megaliters at each facility in areas with water stress; [...].	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP requests geolocation data for facilities (fixed buildings/factories or other types of business operations) judged to be exposed to water risk which could substantively impact the organisation. This includes assets committed in regions with high or extremely high baseline water stress. • CDP requests water accounting data specifically for facilities exposed to water risk. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting water withdrawal and consumption at each facility in areas with water stress. The example template (Table 2) in GRI 303 shows how this information can be presented, by facility in area with water stress. The information requested by the TCFD indicator could be derived from the information provided in this Table. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Investment (CapEx) in low carbon alternatives (e.g., capital equipment or assets) — Energy

	CDP	GRI	SASB
CDP	These indicators sit within three questions: • C-EU9.5a. 'Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation' This indicator provides a monetary figure relating to a selected primary power generation source. • C-EU9.5b. 'Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalisation, etc.).' This indicator provides a monetary figure relating to a selected product/service. • C-CO9.6/C-EU9.6/C-OG9.6. 'Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.' This indicator provides a monetary figure associated with a low-carbon investment.	**GRI goes further than CDP, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that…** • SASB specifically requires amount invested and revenue derived from renewable energy. • SASB requires an investment indicator focusing on RVO. **Substantive difference between SASB and CDP?** • Current and planned CAPEX information collected by EU organisations for CDP (which satisfies the TCFD indicator) is not valid for SASB metrics (although discussion of capital allocational strategy is included in SASB metric EM-EP.420a.4) • Information collected by CO/EU organisations about their investment in low-carbon alternatives (which satisfies the TCFD indicator) is not valid for SASB metrics.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests a monetary figure relating to planned CAPEX for power generation broken down by source (including low carbon) • CDP specifically requests a monetary figure relating to planned CAPEX for products/services broken down by type (including low carbon). • CDP specifically requests a monetary figure relating to low carbon investments. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: […][r]reporting organisation can […] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) […]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: […] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: […] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further than GRI, in that…** • SASB metrics specifically requires reporting amount invested in and revenue derived from renewable energy; the GRI guidance provides that renewable energy is one method of managing a risk or opportunity posed by climate change. • SASB requires an investment indicator focusing on RVO. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests a monetary figure relating to planned CAPEX for power generation broken down by source (including low carbon) • CDP requests a monetary figure relating to planned CAPEX for products/services broken down by type (including low carbon). • CDP requests a monetary figure relating to all low carbon investments, not just renewable energy. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity, which is broader that SASB's 'amount invested in renewable energy'. **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.3. Amount invested in renewable energy, revenue generated by renewable energy sales • EM-RM-410a.1. Percentage of Renewable Volume Obligation (RVO) met through: (1) production of renewable fuels, (2) purchase of 'separated' renewable identification numbers (RIN)."

<<< Back to Figure 8

A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions — Energy

	CDP	GRI	SASB
CDP	These indicators are within three questions: • C-CO9.2a. 'Disclose coal reserves and production by coal type attributable to your organisation in the reporting year.' • C-OG9.2d. 'Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.' • C-OG9.2e. 'Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.'	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB ask that emissions factors are provided for oil & gas (exploration & production) companies. • SASB asks that companies provide estimates of future carbon dioxide emissions in their proved hydrocarbon reserves. **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests that organisations disclose coal and hydrocarbon reserves broken down by type. • CDP requests that emissions factors are provided for coal production. **Substantive difference between CDP and GRI?** None.	None	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that ...** • CDP requests that organisations disclose coal and hydrocarbon reserves by 'reserve classification' (proven, probable, possible). Reporting with SASB only requires disclosure of proven reserves only. **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• EM-CO-420a.2. Estimated carbon dioxide emissions embedded in proven coal reserves • EM-EP-420a.2. Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves.

<<< Back to Figure 8

Capital payback periods or return on capital deployed — Energy

	CDP	GRI	SASB
CDP	This indicator sits within one question: • C-CO9.6/C-EU9.6/C-OG9.6. 'Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.' The guidance for this indicator requests that organisation's include pertinent information including expected capital payback periods or return on capital deployed.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB recommends the disclosure of the impact of climate-related factors on the resiliency of hydrocarbon reserves, which implicitly considers capital payback periods on capital deployed. **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP Requests that organisations include pertinent information which may include the expected capital payback periods or return on capital deployed. This question applies to energy sector companies only (CO, EU, OG). **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics require reporting how price and demand and/or climate regulation influence the capital expenditure strategy. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP asks for a description of low-carbon investments, their trend, and any other pertinent information (i.e. expected capital payback period or return on capital deployed) relating to the investment. **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• EM-EP-420a.4. Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets • EM-CO-420a.3. Discussion of how price and demand for coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets.

<<< Back to Figure 8

Sales-weighted average fleet fuel economy, by region and weight/number of people transported

Transportation

	CDP	GRI	SASB
CDP	None	**GRI goes further than CDP, in that...** • GRI recommends reporting a breakdown of energy consumption data by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics specifically require reporting sales-weighted average passenger fleet fuel economy, by region. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 302: ENERGY** GRI 302-1 Energy consumption within the organisation • Reporting recommendation 2.2: When compiling the information specified in Disclosure 302-1, the reporting organisation should: [...] • 2.2.6 where it aids transparency or comparability over time, provide a breakdown of energy consumption data by: • 2.2.6.1 business unit or facility; 2.2.6.2 country; 2.2.6.3 type of source (see definitions for the listing of non-renewable sources and renewable sources); 2.2.6.4 type of activity.	**SASB goes further than GRI, in that...** • SASB metrics specifically require reporting sales-weighted average passenger fleet fuel economy, by region. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting a breakdown of energy consumption data by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	• TR-AU-410a.1. Sales-weighted average passenger fleet fuel economy, by region.

<<< Back to Figure 8

Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services) — **Transportation**

	CDP	GRI	SASB
CDP	These indicators sit within two questions: • C4.5a. 'Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.' This indicator provides a percentage figure referring to an actual gain. • C2.4a. 'Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business'. This indicator provides a potential monetary value associated with an opportunity.	**GRI goes further than CDP, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP specifically requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: […][r]reporting organisation can […] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) […]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: […] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: […] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further, in that…** • SASB metrics specifically require reporting revenue from products designed to increase fuel efficiency and/or reduce emissions. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• TR-AP-410a.1. Revenue from products designed to increase fuel efficiency and/or reduce emissions.

<<< Back to Figure 8

Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air) — Transportation

	CDP	GRI	SASB
CDP	These indicators sit within one questions: • C-TO9.3/C-TS9.3. 'Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.' These indicators provide data on the production/sales of transportation technology by TCFD category.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests vehicle production/sales. • CDP specifically requests breakdown by TCFD transportation technology category. **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that…** • SASB metrics specifically require reporting number of zero emission vehicles, hybrid vehicles, and plug-in hybrid vehicles sold and total number of vehicles sold. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP specifically requests breakdown by TCFD transportation technology category. **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• TR-AU-410a.2. Number of (1) zero emission vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold • TR-AU-000.B. Number of vehicles sold

<<< Back to Figure 8

Energy Efficiency Design Index (EEDI) for new ships — Transportation

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C-TS8.4. 'Provide any efficiency metrics that are appropriate for your organisation's transport products and/or services.' These indicators provide the EEDI Attainment Ratio (i.e. proportion of ships in fleet to have achieved minimum EEDI).	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB requests a ship-based metric, rather than a fleet-based metric. **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests that efficiency metrics are provided by all transport organisations for products and/or services. **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics require reporting the EEDI for new ships. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	• TR-CL-110a.4. Average Energy Efficiency Design Index (EEDI) for new ships • TR-MT-110a.4. Average Energy Efficiency Design Index (EEDI) for new ships.

<<< Back to Figure 8

Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services — Transportation

	CDP	GRI	SASB
CDP	These indicators sit within two questions: • C-TO9.3/C-TS9.3. 'Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.' These indicators provide data on the yearly purchase/fleet adoption of low-carbon transportation technology. • C-TO9.6/C-TS9.6. 'What is your investment in research and development (R&D), equipment, products and services and which part of it would you consider a direct investment in the low-carbon transition?' This indicator provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services.	**GRI goes further than CDP, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB goes not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • This CDP indicator provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** • This CDP indicator provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Total fuel consumed and percent renewable for road, airlines, marine, rail — Transportation

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C8.2a. 'Report your organisation's energy consumption totals (excluding feedstocks) in MWh.' These indicators provide the total energy consumed by the organisation during the reporting year, as well as the proportion of this which was renewable. • C8.2c. 'State how much fuel in MWh your organisation has consumed (excluding feedstocks) by fuel type.' This indicator provides fuel consumption for all organisations broken down by source.	**GRI goes further than CDP, in that...** • GRI recommends reporting a breakdown of energy consumption data by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • Requires rail, road, air freight, and airline organisations to disclose their total fuel consumed (as opposed to total energy consumed, which CDP requests). • Requires rail and road transport organisations to disclose their % fuel consumption from renewable sources (as opposed to % renewable energy, which CDP requests) **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 302: ENERGY** • 302-1-a. Total fuel consumption within the organisation from non-renewable sources, in joules or multiples, and including fuel types used. • 302-1-b. Total fuel consumption within the organisation from renewable sources, in joules or multiples, and including fuel types used. [...] • Compilation instruction 2.1.2: [...] report fuel consumption separately for non-renewable and renewable fuel sources. [...] • Reporting recommendation 2.2.6: [...] where it aids transparency or comparability over time, provide a breakdown of energy consumption data by: 2.2.6.1 business unit or facility; 2.2.6.2 country; 2.2.6.3 type of source (see definitions for the listing of non-renewable sources and renewable sources); 2.2.6.4 type of activity.	**SASB goes further than GRI, in that...** • SASB metrics specifically require reporting total fuel consumed, with percentage alternative/natural gas/heavy fuel oil and percentage sustainable/renewable for various transportation industries. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP requests all organisations to report the proportion of their energy consumption which was from renewable sources (SASB does not require this of air freight/airline organisations, which should instead report the % 'sustainable'). **Substantive difference between CDP and SASB?** • Aggregate fuel consumption information collected for SASB metrics is not valid for disclosure in CDP information request.	**GRI goes further than SASB, in that...** • GRI requires reporting % total fuel consumption from renewable sources, whereas the SASB metrics require reporting 'sustainable' sources for some industries. • GRI recommends reporting a breakdown of energy consumption data by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	• TR-AL-110a.3. (1) Total fuel consumed, (2) percentage alternative, (3) percentage sustainable • TR-AF-110a.3. Fuel consumed by (1) road transport, percentage (a) natural gas and (b) renewable, and (2) air transport, percentage (a) alternative and (b) sustainable • TR-CL-110a.3. (1) Total energy consumed, (2) percentage heavy fuel oil, (3) percentage onshore power supply (OPS), (4) percentage renewable • TR-MT-110a.3. (1) Total energy consumed, (2) percentage heavy fuel oil, (3) percentage renewable • TR-RA-110a.3. Total fuel consumed, percentage renewable • TR-RO-110a.3. (1) Total fuel consumed, (2) percentage natural gas, (3) percentage renewable

<<< Back to Figure 8

Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets			Transportation
	CDP	**GRI**	**SASB**
CDP	None	**GRI goes further than CDP, in that...** • GRI requires reporting direct (Scope 1) GHG emissions in metric tons of CO2 equivalent. • GRI recommends reporting a breakdown of the direct (Scope 1) GHG emissions by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. • GRI requires reporting the GHG emissions intensity ratio for the organisation. • GRI recommends reporting a breakdown of GHG emissions intensity ratio by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB recommends companies disclose their gross global Scope 1 emissions, as well as production figures per accompanying activity metrics. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent [...]. • Reporting recommendation 2.2.5: [...] where it aids transparency or comparability over time, provide a breakdown of the direct (Scope 1) GHG emissions by: 2.2.5.1 business unit or facility; 2.2.5.2 country; 2.2.5.3 type of source (stationary combustion, process, fugitive); 2.2.5.4 type of activity. • 305-4-a. GHG emissions intensity ratio for the organisation [...]. • Reporting recommendation 2.8: [...] where it aids transparency or comparability over time, provide a breakdown of the GHG emissions intensity ratio by: 2.8.1 business unit or facility; 2.8.2 country; 2.8.3 type of source; 2.8.4 type of activity.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting a breakdown of the direct (Scope 1) GHG emissions by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. • GRI requires reporting the GHG emissions intensity ratio for the organisation. • GRI recommends reporting a breakdown of GHG emissions intensity ratio by business unit or facility, country, type of source, type of activity, where it aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	• TR-RO-110a.1. Gross global Scope 1 emissions.

<<< Back to Figure 8

Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto) — Transportation

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C-TO8.4. 'Provide any efficiency metrics that are appropriate for your organisation's transport products and/or services.' These indicators provide the emissions or energy consumed per transportation product life cycle.	**GRI goes further than CDP, in that…** • GRI guidance provides that GHG emissions intensity ratios can be provided for products. (According to the GHG Protocol Product Life Cycle Accounting and Reporting Standard, GHG emissions-intensive products should be selected for life cycle analysis). **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that…** • SASB provides industry-specific activity metrics designed to measure the magnitude of products and/or services provided by a company that may be relevant to normalising a company's direct and/or indirect emissions. **Substantive difference between SASB and CDP?** • Indirect emissions data collected for disclosure in CDP information request would not be valid for reporting with SASB standards.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests emissions and/or energy consumed per transportation product life cycle. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • GRI 305-4-a. GHG emissions intensity ratio for the organisation.[…] • Guidance: Intensity ratios can be provided for, among others: • products (such as metric tons of CO2 emissions per unit produced); • services (such as metric tons of CO2 emissions per function or per service); • sales (such as metric tons of CO2 emissions per sales). Organisation-specific metrics (denominators) can include: • units of product; • production volume (such as metric tons, liters, or MWh); • size (such as m2 floor space); • number of full-time employees; • monetary units (such as revenue or sales).	**SASB goes further than GRI, in that…** • SASB provides industry-specific activity metrics designed to measure the magnitude of products and/or services provided by a company that may be relevant to normalising a company's direct and/or indirect emissions. **Substantive difference between SASB and GRI?** • None. GRI requires reporting direct (Scope 1) GHG emissions in GRI 305-1.
SASB	**CDP goes further than SASB, in that…** • CDP specifically requests emissions and/or energy consumed per transportation product life cycle. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that…** • GRI guidance provides that GHG emissions intensity ratios can be provided for products. (According to the GHG Protocol Product Life Cycle Accounting and Reporting Standard, GHG emissions-intensive products should be selected for life cycle analysis). • Note that GRI requires reporting direct (Scope 1) GHG emissions in GRI 305-1. **Substantive difference between GRI and SASB?** None.	• TR-AP-130.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • TR-AP-000.A Number of parts produced • TR-AP-000.B Weight of parts produced • TR-RO-110a.1. Gross global Scope 1 emissions • TR-RO-000.A Revenue ton miles (RTM) • TR-RO-000.B Load factor • TR-AL-110a.1. Gross global Scope 1 emissions • TR-AL-000.A Available seat kilometers • TR-AL-000.B Passenger load factor • TR-AL-000.C Revenue passenger kilometers • TR-AL-000.D Revenue ton kilometers • TR-AF-110a.1. Gross global Scope 1 emissions • TR-AF-430a.2. Total greenhouse gas (GHG) footprint across transport modes • TR-AF-000.A Revenue ton kilometers (RTK) for: (1) road transport and (2) air transport • TR-AF-000.B Load factor for: (1) road transport and (2) air transport • TR-CL-110a.1. Gross global Scope 1 emissions • TR-CL-000.A Available lower berth kilometers • TR-CL-000.B Average passenger cruise days (APCD) • TR-CL-000.C Number of shipboard employees • TR-CL-000.D Cruise passengers • TR-CL-000.E Number of vessel port calls • TR-MT-110a.1. Gross global Scope 1 emissions • TR-MT-000.A Number of shipboard employees • TR-MT-000.B Total distance traveled by vessels • TR-MT-000.C Operating days • TR-MT-000.D Deadweight tonnage • TR-MT-000.E Number of vessels in total shipping fleet • TR-MT-000.F Number of vessel port calls • TR-MT-000.G Twenty-foot equivalent unit (TEU) capacity • TR-RA-110a.1 .Gross global Scope 1 emissions • TR-RA-000.A Number of carloads transported • TR-RA-000.B Number of intermodal units transported • TR-RA-000.D Revenue ton miles

<<< Back to Figure 8

Investments (CapEx) in low-carbon transportation equipment or transportation services — Transportation

	CDP	GRI	SASB
CDP	**These indicators sit within two questions:** • C-TO9.3/C-TS9.3 Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year. These indicators provide the yearly purchase/fleet adoption of low-carbon transportation technology. • C-TO9.6/C-TS9.6. What is your investment in research and development (R&D), equipment, products and services and which part of it would you consider a direct investment in the low-carbon transition? This indicator provides a monetary figure associated with a low-carbon investment.	**GRI goes further than CDP, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies and products (as well as services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that…** • CDP specifically requests information from Transportation sector organisations on the yearly purchase/fleet adoption of low carbon transportation technology • CDP specifically requests a monetary figure relating to low-carbon investments **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: […][r]reporting organisation can […] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) […]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: […] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: […] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behaviour. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that…** • CDP requests information from Transportation sector organisations on the yearly purchase/fleet adoption of low carbon transportation technology • CDP requests a monetary figure relating to low-carbon investments. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that…** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies and products (as well as services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services) — Materials and Buildings

	CDP	GRI	SASB
CDP	**These indicators sit within two questions:** • C4.5a. Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions. This indicator provides a percentage figure referring to an actual gain. • C2.4a. Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business. This indicator provides a potential monetary value associated with an opportunity.	**GRI does not go further than CDP in relation to this TCFD indicator** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB goes further, in that it...** • SASB provides industry-specific metrics related to revenue generated from alternative, renewable, or low-carbon related products and services in certain sectors, based on industry-specific products or services applicable to companies in a given industry **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting Recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behaviour. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB goes further, in that...** • SASB provides industry-specific metrics related to revenue generated from alternative, renewable, or low-carbon related products and services in certain industries. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• RT-AE-410a.1. Revenue from alternative energy-related products • IF-EN-410a.1. Number of (1) commissioned projects certified to a third-party multi-attribute sustainability standard and (2) active projects seeking such certification • RT-EE-410a.3. Revenue from renewable energy-related and energy efficiency-related products • RT-EE-410a.2. Percentage of eligible products, by revenue, that meet ENERGY STAR® criteria • RT-CH-410a.1. Revenue from products designed for use-phase resource efficiency • EM-CM-410a.1. Percentage of products that qualify for credits in sustainable building design and construction certifications • EM-CM-410a.2. Total addressable market and share of market for products that reduce energy, water, and/or material impacts during usage and/or production

<<< Back to Figure 8

Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, equipment, products, or services) — Materials and Buildings

	CDP	GRI	SASB
CDP	**This indicator provides a monetary figure associated with an investment in low-carbon R&D, equipment, products, or services. This indicator sits within four questions:** • C-CE9.6. "Disclose your organisation's low-carbon investments for cement production activities" • C-CH9.6. 'Disclose your organisation's low-carbon investments for chemical production activities' • C-MM9.6. 'Disclose your organisation's low-carbon investments for metals and mining production activities' • C-ST9.6. 'Disclose your organisation's low-carbon investments for steel production activities'	**GRI goes further than CDP, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP ?** • Monetary information associated with low-carbon investments in R&D, equipment, products, or services which is collected by chemicals, steel, cement, and metals & mining organisations for disclosure in the CDP information request is not valid for disclosure using this SASB standard metric.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests a monetary figure associated with an investment in low-carbon R&D, equipment, products or services associated with steel, cement, and chemicals production sector activities, as well as metals & mining sector activities. **Substantive difference between CDP and GRI?** • Information collected by real estate or capital goods organisations using the GRI Standards cannot be used to report through CDP, because CDP does not request this information from organisations in these particular sectors."	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r] reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting Recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • This CDP indicator specifically provides a monetary figure associated with an investment in low-carbon R&D, equipment, products or services associated with steel, cement, and chemicals production sector activities, as well as metals & mining sector activities. **Substantive difference between CDP and SASB?** • Information collected by engineering and construction services organisations for SASB metrics cannot be used to report through CDP, because CDP does not request this information from organisations in these particular sectors."	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• IF-EN-410a.2. Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design.

<<< Back to Figure 8

Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources) — Materials and Buildings

	CDP	GRI	SASB
CDP	**These indicators provide total energy consumption broken down by source for sector production activities and for all organisations. These indicators sits within five questions:** • C-CE8.2a. "Report your organisation's energy consumption totals (excluding feedstocks) for cement production activities in MWh" • C-CH8.2a. 'Report your organisation's energy consumption totals (excluding feedstocks) for chemical production activities in MWh' • C-MM8.2a. 'Report your organisation's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.' • C-ST8.2a. 'Report your organisation's energy consumption totals (excluding feedstocks) for steel production activities in MWh' • C8.2a. 'Report your organisation's energy consumption totals (excluding feedstocks) in MWh.'	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests energy consumption broken down by source, whereas GRI recommends this is reported where it aids transparency and comparability over time. **Substantive difference between CDP and GRI?** None.	**GRI 302: ENERGY** • 302-1- a. Total fuel consumption within the organisation from non-renewable sources, in joules or multiples, and including fuel types used. • 302-1-b. Total fuel consumption within the organisation from renewable sources, in joules or multiples, and including fuel types used. • 302-1-c. In joules, watt-hours or multiples, the total: i. electricity consumption, ii. heating consumption, iii. cooling consumption, iv. steam consumption • 302-1-d. In joules, watt-hours or multiples, the total: i. electricity sold, ii. heating sold, iii. cooling sold, iv. steam sold • 302-1-e. Total energy consumption within the organisation, in joules or multiples. [...] Reporting recommendation 2.2.6: [...] where it aids transparency or comparability over time, provide a breakdown of energy consumption data by: [...] 2.2.6.3: type of source (see definitions for the listing of non-renewable sources and renewable sources).] • 302-2-a. Energy consumption outside of the organisation, in joules or multiples. [...]"	**SASB goes further than GRI, in that...** • SASB metrics specifically request energy consumption broken down by percentage grid electricity, percentage renewable, and (for some industries) percentage alternative, whereas GRI recommends source is reported where it aids transparency and comparability over time. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• EM-CM-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage alternative, (4) percentage renewable • EM-MM-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RT-AE-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RT-CH-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy • RT-EE-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RT-IG-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • CG-BF-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • IF-RE-130a.2. (1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector."

<<< Back to Figure 8

Total fuel consumed–percentage from coal, natural gas, oil, and renewable sources — Materials and Buildings

	CDP	GRI	SASB
CDP	**These indicators provide total fuel consumption by cement sector production activities, as well as fuel consumption broken down by source. These indicators sit within six questions:** • C8.2c. 'State how much fuel in MWh your organisation has consumed (excluding feedstocks) by fuel type.' This indicator provides fuel consumption for all organisations broken down by source. • C-CE8.2. 'State how much fuel in MWh your organisation has consumed (excluding feedstocks) by fuel for cement production activities.' This indicator provides fuel consumption for cement production activities broken down by source.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests fuel consumption to be separated by source, whereas GRI requires reporting of fuel consumption by renewable and non-renewable sources, and recommends a breakdown of sources where this aids transparency or comparability over time. **Substantive difference between CDP and GRI?** None.	**GRI 302: ENERGY** • 302-1- a. Total fuel consumption within the organisation from non-renewable sources, in joules or multiples, and including fuel types used. • 302-1-b. Total fuel consumption within the organisation from renewable sources, in joules or multiples, and including fuel types used. • 302-1-c. In joules, watt-hours or multiples, the total: i. electricity consumption, ii. heating consumption, iii. cooling consumption, iv. steam consumption • 302-1-d. In joules, watt-hours or multiples, the total: i. electricity sold, ii. heating sold, iii. cooling sold, iv. steam sold • 302-1-e. Total energy consumption within the organisation, in joules or multiples. [...]. Compilation instruction 2.1.2: [...] report fuel consumption separately for renewable and non-renewable sources. • Reporting recommendation 2.2.6: [...] where it aids transparency or comparability over time, provide a breakdown of energy consumption data by: [...] 2.2.6.3: type of source (see definitions for the listing of non-renewable sources and renewable sources). • 302-2-a. Energy consumption outside of the organisation, in joules or multiples. [...]"	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests fuel consumption from renewable and non-renewable sources. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI requires reporting fuel consumption from renewable and non-renewable sources. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Total energy intensity–by tons of product, amount of sales, number of products depending on informational value

	CDP	GRI	SASB
CDP	**This indicator sits within one question:** • C-CH9.3a. 'Provide details on your organisation's chemical products.' This indicator provides the electricity intensity for a chemical produced by the organisation. • C-ST6.14. 'State your organisation's emissions and energy intensities by steel production process route.'	**GRI goes further than CDP, in that...** • GRI requires reporting the energy intensity ratio for the organisation as a whole. • GRI guidance provides that organisations can report intensity ratios for products, services, and sales. • All organisations can use the GRI Standards to report this information, not only steel/ chemicals producers. • The GRI Standards do not specify electricity alone for the energy intensity metric **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB requires this information from Industrial Machinery and Goods (capital goods) organisations, which CDP does not. **Substantive difference between SASB and CDP ?** • Information collected by chemicals producers and steel producers for disclosure through CDP is not valid using these SASB metrics as they only apply to capital goods (industrial machinery) organisations.
GRI	**CDP goes further than GRI, in that...** • CDP specifies that electricity intensity data should be given by ton of chemical product. • CDP specifies that energy intensity should be given by metric ton of crude steel production. **Substantive difference between CDP and GRI?** • Information collected by real estate, capital goods, or metals and mining organisations using the GRI Standards cannot be used to report through CDP, because CDP does not request this information from organisations in these particular sectors.	**GRI 302: ENERGY** • 302-3-a. Energy intensity ratio for the organisation. • 302-3-b. Organisation-specific metric (the denominator) chosen to calculate the ratio. • 302-3-c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. • 302-3-d. Whether the ratio uses energy consumption within the organisation, outside of it, or both. • Guidance: Intensity ratios can be provided for, among others: • Products (such as energy consumed per unit produced); • Services (such as energy consumed per function or per service); • Sales (such as energy consumed per monetary unit of sales).	**SASB goes further than GRI, in that...** • SASB includes metrics for aggregate energy usage as well as industry-specific activity metrics to normalise such energy usage by appropriate measures of production volumes for industries in this sector. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP requests this information from chemicals and steel producers, which SASB does not. **Substantive difference between CDP and SASB?** • Information collected by capital goods (industrial machinery) organisations for SASB metrics is not valid for disclsoure through CDP, because CDP does not request this information from organisations in this particular sector."	**GRI goes further than SASB, in that...** • GRI requires reporting the energy intensity ratio for the organisation. • GRI guidance provides that organisations can report intensity ratios for products, services, and sales. • All organisations can use the GRI Standards to report this information, not only transport organisations. • The GRI Standards do not specify fuel efficiency alone for the energy intensity metric. **Substantive difference between GRI and SASB?** None.	• EM-IS-130a.1 (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • EM-IS-000.A Raw steel production, percentage from: (1) basic oxygen furnace processes, (2) electric arc furnace processes • EM-IS-000.B Total iron ore production • EM-IS-000.C Total coking coal production • EM-CM-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage alternative, (4) percentage renewable • EM-CM-000.A Production by major product line • EM-MM-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • EM-MM-000.a. Production of (1) metal ores and (2) finished metal products • RT-AE-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RT-AE-000.A Production by reportable segment • RT-CH-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy • RT-CH-000.A Production by reportable segment. RT-EE-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable` • RT-EE-000.A Number of units produced by product category • RT-IG-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RT-IG-000.A Number of units produced by product category • RT-IG-410a.1. Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles • RT-IG-410a.2. Sales-weighted fuel efficiency for non-road equipment • RT-IG-410a.3. Sales-weighted fuel efficiency for stationary generators • CG-BF-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • CG-BF-000.A Annual production • IF-RE-130a.2. (1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector • IF-RE-000.A Number of assets, by property subsector • IF-RE-000.B Leasable floor area, by property subsector • IF-RE-000.C Percentage of indirectly managed assets, by property subsector • IF-RE-000.D Average occupancy rate, by property subsector."

<<< Back to Figure 8

Building energy intensity (by occupants or square area)

	CDP	GRI	SASB
CDP	None	**GRI goes further than CDP, in that...** • GRI requires reporting of the energy intensity ratio for the organisation, broken down by business unit or facility where this aids transparency or comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB goes further, in that...** • SASB metrics specifically require reporting energy consumption data by floor area, as well as like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector. **Substantive difference between SASB and CDP?** None.

GRI	**CDP does not go further than GRI in relation to this TCFD indicator**
	Substantive difference between CDP and GRI?
	None.
		GRI 302: ENERGY
		• 302-3-a. Energy intensity ratio for the organisation.
		• 302-3-b. Organisation-specific metric (the denominator) chosen to calculate the ratio.
		• 302-3-c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all.
		• 302-3-d. Whether the ratio uses energy consumption within the organisation, outside of it, or both.
		• Reporting recommendation 2.6: [...] where it aids transparency or comparability over time, provide a breakdown of the energy intensity ratio by: [...] 2.6.1 business unit or facility [...].
		• Guidance: Intensity ratios can be provided for, among others:
		  • products (such as energy consumed per unit produced);
		  • services (such as energy consumed per function or per service);
		  • sales (such as energy consumed per monetary unit of sales)."
			SASB goes further, in that...
			• SASB metrics specifically require reporting energy consumption data by floor area, as well as like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector.
			Substantive difference between SASB and GRI?
			None.

SASB	**CDP does not go further than SASB in relation this indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation this indicator.** **Substantive difference between GRI and SASB?** None.	• IF-RE-130a.1. Energy consumption data coverage as a percentage of total floor area, by property subsector • IF-RE-130a.2. (1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector • IF-RE-000.B Leasable floor area, by property subsector • IF-RE-130a.3. Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector"

<<< Back to Figure 8

Percent of fresh water withdrawn in regions with high or extremely high baseline water stress — Materials and Buildings

	CDP	GRI	SASB
CDP	This indicator sits within one question: • W1.2d. 'Provide the proportion of your total withdrawals sourced from water stressed areas'. This indicator provides a % figure relative to the organisation's total water withdrawals during the reporting year.	**GRI goes further than CDP, in that...** • GRI requires reporting freshwater withdrawals from areas with water stress as a distinct category (CDP does not make this distinction from the total). • GRI requires reporting of volumetric data of total water withdrawal from all areas with water stress and a breakdown of this by freshwater and other water, which data can be used to calculate the proportion (%). • Note that reporting organisations can use the total reported with GRI 303-3-b. and the total reported at GRI 303-3-c-i. to derive this % figure. **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • For organisations with construction materials/metals & mining sector activities, SASB identifies freshwater withdrawals from water stressed areas as a distinct category (CDP does not make this distinction from the total). **Substantive difference between SASB and CDP?** • Total withdrawal data collected by construction materials organisations or metals & mining organisations for disclosure in CDP's information request would not be sufficient using SASB metrics for these sectors.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • 303-3-a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. • 303-3-b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. • 303-3-c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids) [...].	**SASB goes further than GRI, in that...** • SASB metrics require reporting of the proportion (%) of total water with High or Extremely High Baseline Water Stress. In the GRI Standards, 'water consumed' is reported with disclosure GRI 303-5. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation this indicator.** **Substantive difference between CDP and SASB?** • Information collected for SASB metrics by metals & mining and construction materials organisations regarding withdrawals from stressed regions (which satisfies the TCFD indicator) is not sufficient for disclosure in CDP's information request. This is because, in some industries, the SASB metric inlcudes freshwater only whereas CDP requests information about all types of water.	**GRI goes further than SASB, in that...** • GRI requires reporting of volumetric data of total water withdrawal and total water withdrawal from all areas with water stress, which data can be used to calculate the proportion (%). • Note that reporting organisations can use the total reported with GRI 303-3-b. and the total reported at GRI 303-3-c-i. to derive this % figure. In the GRI Standards, 'water consumed' is reported with disclosure GRI 303-5. **Substantive difference between GRI and SASB?** None.	• IF-RE-140a.1 .Water withdrawal data coverage as a percentage of (1) total floor area and (2) floor area in regions with High or Extremely High Baseline Water Stress, by property subsector • IF-RE-140a.2. (1) Total water withdrawn by portfolio area with data coverage and (2) percentage in regions with High or Extremely High Baseline Water Stress, by property subsector • IF-RE-140a.3. Like-for-like percentage change in water withdrawn for portfolio area with data coverage, by property subsector • RT-CH-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • EM-MM-140a.1. (1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • EM-CM-140a.1. (1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress

<<< Back to Figure 8

Building water intensity (by occupants or square area) — Materials and Buildings

	CDP	GRI	SASB
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics require reporting water withdrawal data, either by floor area or portfolio area, and by property subsector. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics require reporting water withdrawal data, either by floor area or portfolio area, and by property subsector. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• IF-RE-140a.1. Water withdrawal data coverage as a percentage of (1) total floor area and (2) floor area in regions with High or Extremely High Baseline Water Stress, by property subsector • IF-RE-140a.2. (1) Total water withdrawn by portfolio area with data coverage and (2) percentage in regions with High or Extremely High Baseline Water Stress, by property subsector • IF-RE-140a.3. Like-for-like percentage change in water withdrawn for portfolio area with data coverage, by property subsector

<<< Back to Figure 8

GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment — Materials and Buildings

	CDP	GRI	SASB
CDP	None	**GRI goes further than CDP, in that...** • GRI requires reporting of the GHG emissions intensity ratio for the organisation, broken down by business unit or facility where this aids transparency or comparability over time. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-4-a. GHG emissions intensity ratio for the organisation. [...] • Reporting recommendation 2.8: [...] where it aids transparency or comparability over time, provide a breakdown of the GHG emissions intensity ratio by: 2.8.1 business unit or facility; [...]. • Guidance: Intensity ratios can be provided for, among others: • products (such as metric tons of CO2 emissions per unit produced); • services (such as metric tons of CO2 emissions per function or per service); • sales (such as metric tons of CO2 emissions per sales). Organisation-specific metrics (denominators) can include: • units of product; • production volume (such as metric tons, liters, or MWh); • size (such as m2 floor space); • number of full-time employees; • monetary units (such as revenue or sales).	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI requires reporting of the GHG emissions intensity ratio for the organisation, broken down by business unit or facility where this aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Area of buildings, plants or properties located in designated flood hazard areas			Materials and Buildings
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics requires reporting of area of properties located in 100-year flood zones, by property subsector. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics requires reporting of area of properties located in 100-year flood zones, by property subsector **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• IF-RE-450a.1. Area of properties located in 100-year flood zones, by property subsector.

<<< Back to Figure 8

A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions			Materials and Buildings
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

For each property type, the percentage certified as sustainable			Materials and Buildings
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB metrics requires reporting the percentage of eligible portfolio that has an energy rating and is certified to ENERGY STAR. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • SASB metrics requires reporting the percentage of eligible portfolio that has an energy rating and is certified to ENERGY STAR. **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• IF-RE-130a.4. Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector.

<<< Back to Figure 8

Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets) — Materials and Buildings

	CDP	GRI	SASB
CDP	This indicator provides a monetary figure associated with a low-carbon investment. This indicator sits within four questions: • C-CE9.6. 'Disclose your organisation's low-carbon investments for cement production activities' • C-CH9.6. 'Disclose your organisation's low-carbon investments for chemical production activities' • C-MM9.6. 'Disclose your organisation's low-carbon investments for metals and mining production activities' • C-ST9.6. 'Disclose your organisation's low-carbon investments for steel production activities'	**GRI goes further than CDP, in that...** • GRI requires reporting climate-related risks and opportunities, and guidance provides that organisations can report expenditure on treatment of emissions, which can include low-carbon/low-water CAPEX. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** • Monetary information associated with low-carbon investments in R&D, equipment, products, or services which is collected by chemicals, steel, cement, and metals & mining organisations for disclosure in the CDP information request is not valid for disclosure using this SASB standard sector metric.
GRI	**CDP goes further, in that...** • CDP specifically requests monetary figures relating to low-carbon investments associated with steel, cement, and chemicals production sector activities, as well as metals & mining sector activities. **Substantive difference between CDP and GRI?** • Information collected by real estate, capital goods organisations using the GRI Standards cannot be used to report with CDP, because CDP does not request this information from these types of organisations.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests monetary figures relating to low-carbon investments associated with steel, cement, and chemicals production sector activities, as well as metals & mining sector activities. **Substantive difference between CDP and SASB?** • Data collected by organisations with engineering & construction services sector activities for disclosure with the SASB metric cannot be used to report with CDP, because CDP does not request this information from these types of organisations.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	• IF-EN-410a.2. Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design.

<<< Back to Figure 8

Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)		Agriculture, Food and Forest Products
CDP	**GRI**	**SASB**
CDP These indicators sit within two questions: • C4.5a. 'Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.' This indicator provides a percentage figure referring to an actual gain. • C2.4a. 'Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business'. This indicator provides a potential monetary value associated with an opportunity.	**GRI goes further than CDP, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI **CDP goes further than GRI, in that...** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r] reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB **CDP goes further than SASB, in that...** • CDP requests that organisations provide the % of their total revenue that comes from products/services classified as low carbon (or which help a third party to avoid GHG emissions). • CDP requests that organisations provide a monetary figure (or range) associated with a climate-related opportunity driver. Disclosers must specify the type of financial impact associated with the climate-related opportunity driver, such as increased revenue or reduced costs linked to low carbon products/services. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies (as well as products and services) to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Expenditures (OpEx) for low-carbon/water alternatives (e.g., R&D, equipment, products, or services) — Agriculture, Food and Forest Products

	CDP	GRI	SASB
CDP	These indicators sit within one question: • W7.2. 'What is the trend in your organisation's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?' These indicators provide the direction and magnitude of change in water-related OPEX during the reporting year and projected.	**GRI goes further than CDP, in that...** • GRI requires reporting climate-related risks and opportunities, and guidance provides that organisations can report expenditure on treatment of emissions, which can include low-carbon/low-water OPEX. • GRI disclosures can include a monetary figure related to expenditures (OPEX) in low-carbon/water alternatives, which CDP cannot. **Substantive difference between GRI and CDP?** • GRI does not specifically require information about projected trends in water-related OPEX.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests the direction and magnitude of changes in water-related OPEX during the reporting year, as well as the projected trends. **Substantive difference between CDP and GRI?** • CDP does not request data related to expenditures on low-carbon alternatives or emissions treatments, so any such information collected for a GRI report cannot be disclosed through CDP.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** **GRI 201-2 Financial implications and other risks and opportunities due to climate change** • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission reduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests the direction and magnitude of changes in water-related OPEX during the reporting year, as well as the projected trends. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Total water withdrawn and total water consumed — Agriculture, Food and Forest Products

	CDP	GRI	SASB
CDP	This indicator sits within one question: • W1.2b. 'What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?' This indicator requests data for multiple water aspects, including total withdrawals and total consumption.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB also requires the % of each volume from regions with High or Extremely High baseline water stress. **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • 303-3-a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. • 303-3-b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. • 303-3-c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). [...] • 303-4-a. Total water discharge to all areas in megaliters, and a breakdown of this total by the following types of destination, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and the volume of this total sent for use to other organisations, if applicable. • 303-4-b. A breakdown of total water discharge to all areas in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). • 303-4-c. Total water discharge to all areas with water stress in megaliters, and a breakdown of this total by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). [...] • 303-5-a. Total water consumption from all areas in megaliters. • 303-5-b. Total water consumption from all area with water stress in megaliters. [...].	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• FB-AG-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-AB-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-MP-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-NB-140a.1 .(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-PF-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • RR-PP-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress

<<< Back to Figure 8

Percent of water withdrawn and consumed in regions with high or extremely high baseline water stress		Agriculture, Food and Forest Products
CDP	**GRI**	**SASB**
CDP This indicator sits within one question: • W1.2d. 'Provide the proportion of your total withdrawals sourced from water stressed areas.' This indicator provides a % figure relative to the organisation's total water withdrawals during the reporting year.	**GRI goes further than CDP, in that...** • GRI requires reporting total consumption volumes from water stressed areas, whereas CDP requests only the proportion of total withdrawals from water stressed areas. • Note that GRI requires reporting of volumetric data of total water withdrawal (GRI 303-3-a.) and total water withdrawal from all areas with water stress (GRI 303-3-b.), and volumetric data of total water consumption (GRI 303-5-a.) and total water consumption from all areas with water stress (GRI-303-5-b.), which data can be used to calculate the proportions (%). **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • SASB specifically requires the proportion of total water consumed in regions with high or extremely high baseline water stress, whereas CDP requests only the proportion of total withdrawals from water stressed areas. **Substantive difference between SASB and CDP?** None.
GRI **CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • 303-3-a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. • 303-3-b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. • 303-3-c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). [...] • 303-5-a. Total water consumption from all areas in megaliters. • 303-5-b. Total water consumption from all areas with water stress in megaliters. [...]	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB **CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • Note that GRI requires reporting of volumetric data of total water withdrawal (GRI 303-3-a.) and total water withdrawal from all areas with water stress (GRI 303-3-b.), and volumetric data of total water consumption (GRI 303-5-a.) and total water consumption from all areas with water stress (GRI-303-5-b.), which data can be used to calculate the proportions (%). **Substantive difference between GRI and SASB?** None.	• FB-AG-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-AB-140a.1 .(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-MP-140a.1 .(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-NB-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • FB-PF-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress • RR-PP-140a.1. (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress

<<< Back to Figure 8

Amount of assets committed in regions with high or extremely high baseline water stress — Agriculture, Food and Forest Products

	CDP	GRI	SASB
CDP	These indicators sit within two questions: • W4.1c. 'By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?' These indicators provide information about facilities judged to be exposed to water risk. • W5.1. 'For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.' This indicator provides the geolocation data for facilities judged to be exposed to water risk.	**GRI goes further than CDP, in that...** • GRI recommends reporting water withdrawal and consumption at each facility in areas with water stress. The example template (Table 2) in GRI 303 shows how this information can be presented, by facility in area with water stress. The information requested by the TCFD indicator could be derived from the information provided in this Table. **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP requests geolocation data for facilities (fixed buildings/factories or other types of business operations) judged to be exposed to water risk which could substantively impact the organisation. This includes, but is not limited to, assets committed in regions with high or extremely high baseline water stress, whereas GRI only recommends reporting water consumption and withdrawal at each facility in areas with water stress. • CDP requests water accounting data for facilities exposed to water risk. **Substantive difference between CDP and GRI?** None.	**GRI 303: WATER AND EFFLUENTS 2018** • GRI 303-3, Reporting recommendation 2.2.1: A breakdown of total water withdrawal in megaliters by withdrawal source categories listed in Disclosure 303-3, at each facility in areas with water stress; [...]. • GRI 303-5, Reporting recommendation 2.5.1: Total water consumption in megaliters at each facility in areas with water stress; [...].	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP requests geolocation data for facilities (fixed buildings/factories or other types of business operations) judged to be exposed to water risk which could substantively impact the organisation. This includes assets committed in regions with high or extremely high baseline water stress. • CDP requests water accounting data specifically for facilities exposed to water risk. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting water withdrawal and consumption at each facility in areas with water stress. The example template (Table 2) in GRI 303 shows how this information can be presented, by facility in area with water stress. The information requested by the TCFD indicator could be derived from the information provided in this Table. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Non-mechanical (Scope 1): Emissions from biological processes		Agriculture, Food and Forest Products
CDP	**GRI**	**SASB**
CDP This indicator sits within one question: • C-AC7.4b/C-FB7.4b/C-PF7.4b. 'Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.' This indicator provides a numerical value associated with an emissions category.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI **CDP goes further than GRI, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO_2 equivalent. • Compilation instruction 2.1.2: [...] report biogenic emissions of CO_2 from the combustion or biodegradation of biomass separately from the gross direct (Scope 1) GHG emissions. Exclude biogenic emissions of other types of GHG (such as CH_4 and N_2O), and biogenic emissions of CO_2 that occur in the life cycle of biomass other than from combustion or biodegradation (such as GHG emissions from processing or transporting biomass).	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB **CDP goes further than SASB, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI requires reporting biogenic emissions of CO_2 from the combustion or biodegredation of biomass separately from the gross direct (Scope 1) GHG emissions. **Substantive difference between GRI and SASB?** None.	• FB-AG-110a.1. Gross global Scope 1 emissions • FB-MP-110a.1. Gross global Scope 1 emissions • RR-PP-110a.1. Gross global Scope 1 emissions

<<< Back to Figure 8

Land use change (Scope 1): Changes of carbon stocks as a result of land use and land use changes (e.g., from the conversion of native habitats into farmlands)		Agriculture, Food and Forest Products
CDP	**GRI**	**SASB**
CDP This indicator sits within one question: • C-AC7.4b/C-FB7.4b/C-PF7.4b. 'Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.' This indicator provides a numerical value associated with an emissions category.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI **CDP goes further than GRI, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent. • Reporting recommendation 2.2.5: [...] where it aids transparency or comparability over time, provide a breakdown of the direct (Scope 1) GHG emissions by: 2.2.5.1 business unit or facility; 2.2.5.2 country; 2.2.5.3 type of source (stationary combustion, process, fugitive); 2.2.5.4 type of activity.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB **CDP goes further than SASB, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting a breakdown of the direct (Scope 1) GHG emissions by type of source and type of activity, amongst others, where this aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	• FB-AG-110a.1. Gross global Scope 1 emissions • FB-MP-110a.1. Gross global Scope 1 emissions • RR-PP-110a.1. Gross global Scope 1 emissions

<<< Back to Figure 8

Mechanical (Scope 1): Emissions from equipment or machinery operated on farms/plants

Agriculture, Food and Forest Products

	CDP	GRI	SASB
CDP	This indicator sits within one question: • C-AC7.4b/C-FB7.4b/C-PF7.4b. 'Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.' This indicator provides a numerical value associated with an emissions category.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further, in that...** • SASB recommends reporting of fleet fuel consumed in some industries in addition to gross GHG emissions. **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-1-a. Gross direct (Scope 1) GHG emissions in metric tons of CO_2 equivalent. • Reporting recommendation 2.2.5: [...] where it aids transparency or comparability over time, provide a breakdown of the direct (Scope 1) GHG emissions by: 2.2.5.1 business unit or facility; 2.2.5.2 country; 2.2.5.3 type of source (stationary combustion, process, fugitive); 2.2.5.4 type of activity.	**SASB goes further than GRI, in that...** • SASB recommends reporting of fleet fuel consumed in some industries in addition to gross GHG emissions. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests a breakdown of Scope 1 emissions from mechanical, non-mechanical, and land-use change sources in addition to the total from the organisation's sector activities. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI recommends reporting a breakdown of the direct (Scope 1) GHG emissions by type of source and type of activity, amongst others, where this aids transparency or comparability over time. **Substantive difference between GRI and SASB?** None.	• FB-AG-110a.1. Gross global Scope 1 emissions • FB-MP-110a.1. Gross global Scope 1 emissions • RR-PP-110a.1. Gross global Scope 1 emissions • FB-AG-110a.3. Fleet fuel consumed, percentage renewable • FB-NB-110a.1. Fleet fuel consumed, percentage renewable.

<<< Back to Figure 8

Purchased energy (Scope 2): Emissions from purchased heat, steam, and electricity consumed on the farm /plant — **Agriculture, Food and Forest Products**

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C6.3. 'What were your organisation's gross global Scope 2 emissions in metric tons CO2e?' These indicators provide the Scope 2 emissions for the whole organisation.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** • Emissions data collected for disclosure through CDP's information request is not valid for disclosure with SASB standards, as they require energy consumption rather than emissions.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests that emissions from purchased heat, steam, and electricity are disclosed, whereas GRI only recommends reporting a breakdown of energy indirect (Scope 2) GHG emissions, including by type of source (electricity, heating, cooling, and steam), where this aids transparency or comparability over time. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** • 305-2-a. Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent [...]. • Reporting recommendation 2.4.5: [...] where it aids transparency or comparability over time, provide a breakdown of the energy indirect (Scope 2) GHG emissions by: 2.4.5.1 business unit or facility; 2.4.5.2 country; 2.4.5.3 type of source (electricity, heating, cooling, and steam); 2.4.5.4 type of activity.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** • Scope 2 and Scope 3 emissions are not part of the recommended disclosures included in the SASB Standards. Rather, the SASB Standards recommend disclosure of direct energy usage or industry-specific metrics measuring indirect impacts. • Energy consumption data collected for disclosure with SASB standards cannot be used to report GRI 305: Emissions, as both GRI 305 and the TCFD indicator request emissions data (in metric tons of CO2 equivalent).
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests Scope 2 emissions, including from purchased heat, steam, and electricity. **Substantive difference between CDP and SASB?** • Energy consumption data collected for disclosure with SASB standards is not valid for disclosure in CDP's information request, as both CDP and the TCFD indicator request emissions data.	**GRI goes further than SASB, in that...** • GRI requires reporting energy indirect (Scope 2) GHG emissions. • GRI recommends reporting a breakdown of energy indirect (Scope 2) GHG emissions, including by type of source (electricity, heating, cooling, and steam). **Substantive difference between GRI and SASB?** None.	• FB-AG-130a.1. (1) Operational energy consumed, (2) percentage grid electricity, (3) percentage renewable • FB-AB-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • FB-MP-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • FB-NB-130a.1. (1) Operational energy consumed, (2) percentage grid electricity, (3) percentage renewable • FB-PF-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable • RR-PP-130a.1. (1) Total energy consumed, (2) percentage grid electricity, (3) percentage from biomass, (4) percentage from other renewable energy, (5) total self-generated energy

<<< Back to Figure 8

Investment (CapEx) in low-carbon/water alternatives (e.g., capital equipment or assets)		Agriculture, Food and Forest Products
CDP	**GRI**	**SASB**
CDP These indicators sit within one question: • W7.2: 'What is the trend in your organisation's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?' These indicators provide the direction and magnitude of change in water-related CAPEX during the reporting year and projected.	**GRI goes further than CDP, in that...** • GRI disclosures can include a monetary figure related to investment (CAPEX) in low-carbon/water alternatives, which CDP cannot. **Substantive difference between GRI and CDP?** • GRI does not specifically require, recommend, or provide guidance to report trends in water-related CAPEX. GRI requires reporting climate-related risks and opportunities, and guidance provides that organisations can report expenditure on treatment of emissions, which can include low-carbon/low-water CAPEX.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI **CDP goes further than GRI, in that...** • CDP specifically requests the direction and magnitude of changes in water-related CAPEX during the reporting year, as well as the projected trends. **Substantive difference between CDP and GRI?** • CDP does not request data related to expenditures on low-carbon alternatives or emissions treatments, so any such information collected for a GRI report cannot be disclosed through CDP.	**GRI 305: EMISSIONS** • Management approach disclosures, Guidance: [...][r]reporting organisation can [...] disclose expenditures on treatment of emissions (such as expenditures for filters, agents) [...]. **GRI 201: ECONOMIC PERFORMANCE** GRI 201-2 Financial implications and other risks and opportunities due to climate change • 201-2-a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: [...] iii. the financial implications of the risk or opportunity before action is taken; v. the costs of actions taken to manage the risk or opportunity. • Reporting recommendation 2.3.4: The potential impacts generally, including increased or decreased: 2.3.4.1 capital and operational costs; 2.3.4.2 demand for products and services; 2.3.4.3 capital availability and investment opportunities. • Guidance: [...] risks and opportunities can include the availability of new technologies, products, or services to address challenges related to climate change, as well as changes in customer behavior. Methods used to manage the risk or opportunity can include: • carbon capture and storage; • fuel switching; • use of renewable and lower carbon footprint energy; • improving energy efficiency; • flaring, venting, and fugitive emission eduction; • renewable energy certificates; • use of carbon offsets.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB **CDP goes further than SASB, in that...** • CDP specifically requests the direction and magnitude of changes in water-related CAPEX during the reporting year, as well as the projected trends. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that...** • GRI guidance provides that organisations can report expenditure on treatment of emissions. • GRI requires reporting the financial implications of risks and opportunities posed by climate change, with potential to generate substantive operations, revenue, or expenditure changes. • GRI requires reporting the costs of actions taken to manage the risk or opportunity. • GRI recommends reporting increased or decreased capital and operational costs; demand for products and services; capital availability and investment opportunities. • GRI guidance provides that organisations can report in relation to new technologies, products, and services to address challenges related to climate change. • GRI guidance provides a non-exhaustive list of technologies and other things that can be a method of managing the risk or opportunity. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Weighted average carbon intensity of investment portfolio (financial sector), expressed in tons Co2e/$ Million revenues			Financial Services
	CDP	**GRI**	**SASB**
CDP	This indicator sits within one question: • C6.5. 'Account for your organisation's Scope 3 emissions, disclosing and explaining any exclusions.' This indicator provides a qualitative response in which certain financial sector organisations are requested to provide their weighted average carbon intensity for each fund or investment strategy.	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests financial sector organisations to disclose the weighted average carbon intensity of their investment portfolio in accordance with the TCFD indicator. **Substantive difference between CDP and GRI?** None.	**GRI 305: EMISSIONS** 305-4-a. GHG emissions intensity ratio for the organisation.	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP Requests financial sector organisations to disclose the weighted average carbon intensity of their investment portfolio. **Substantive difference between CDP and SASB?** None.	**GRI goes further than SASB, in that....** • GRI requires reporting the GHG emissions intensity ratio for the organisation. **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Total absolute carbon emissions associated with a portfolio			Financial Services
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Total portfolio carbon emissions normalised by market value of the portfolio			Financial Services
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Volume of portfolio carbon emissions per million dollars of revenues			Financial Services
	CDP	**GRI**	**SASB**
CDP	None	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between SASB and CDP?** None.
GRI	**CDP does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between CDP and GRI?** None.	None	**SASB does not go further than GRI in relation to this TCFD indicator.** **Substantive difference between SASB and GRI?** None.
SASB	**CDP does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	None

<<< Back to Figure 8

Amount or percentage of carbon-related assets in portfolio — Financial Services

	CDP	GRI	SASB
CDP	These indicators sit within one question: • C9.1. 'Provide any additional climate-related metrics relevant to your business.'	**GRI does not go further than CDP in relation to this TCFD indicator.** **Substantive difference between GRI and CDP?** None.	**SASB goes further than CDP, in that...** • Related to the TCFD indicator, SASB recommends reporting of company exposure by industry (through credit, investment, or revenue exposure), as well as the company's approach to incorporating ESG factors into associated management processes, strategies, and/or activities. **Substantive difference** • The data collected for reporting under the SASB Standard would not be valid for disclosure per the CDP indicator.
GRI	**CDP goes further than GRI, in that...** • CDP specifically requests both the amount and percentage of carbon-related assets in the portfolio., as well as the amount of lending and other financing connected with climate-related opportunities. **Substantive difference between CDP and GRI?** None.	None	**SASB goes further than GRI, in that...** • Related to the TCFD indicator, SASB recommends reporting of company exposure by industry (through credit, investment, or revenue exposure), as well as the company's approach to incorporating ESG factors into associated management processes, strategies, and/or activities. **Substantive difference between SASB and GRI?** None.
SASB	**CDP goes further than SASB, in that...** • CDP specifically requests both the amount and percentage of carbon-related assets in the portfolio., as well as the amount of lending and other financing connected with climate-related opportunities. **Substantive difference between CDP and SASB?** None.	**GRI does not go further than SASB in relation to this TCFD indicator.** **Substantive difference between GRI and SASB?** None.	• FN-AC-410a.1. Description of approach to incorporation of environmental, social, and governance (ESG) factors in investment and/or wealth management processes and strategies • FN-CB-410a.1. Commercial and industrial credit exposure, by industry • FN-CB-410a.2. Description of approach to incorporation of environmental, social, and governance (ESG) factors in credit analysis • FN-IN-410a.1. Total invested assets, by industry and asset class • FN-IN-410a.2. Description of approach to incorporation of environmental, social, and governance (ESG) factors in investment management processes and strategies • FN-IB-410a.1. Revenue from (1) underwriting, (2) advisory, and (3) securitisation transactions incorporating integration of environmental, social, and governance (ESG) factors, by industry • FN-IB-410a.2. (1) Number and (2) total value of investments and loans incorporating integration of environmental, social, and governance (ESG) factors, by industry • FN-IB-410a.3. Description of approach to incorporation of environmental, social, and governance (ESG) factors in investment banking and brokerage activities"

<<< Back to Figure 8

Prepared in partnership with

SMART MEDIA
The ANNUAL REPORT Company

www.SmartAnnualReport.com