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# Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans

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## A. Background and Purpose

## A. Background and Purpose

In 2017, the Financial Stability Board's (FSB's) Task Force on Climate-related Financial Disclosures (the Task Force or TCFD) provided three recommended disclosures regarding climate-related metrics and targets (Figure A1) as well as guidance for all sectors and supplemental guidance for specific sectors supporting implementation of these recommended disclosures.<sup>1</sup>

When the Task Force issued its *Final Recommendations* (2017 TCFD final report), it was aware of the limitations of reporting certain metrics as well as the nascent nature of climate-related reporting at the time, and anticipated that metric disclosure would evolve as climate-related financial reporting matured.<sup>2</sup>

Disclosure practices and the use of disclosures by financial and non-financial organizations have continued to progress since 2017 through new research and the development of new tools and resources, as well as in response to the growing magnitude of climate-related impacts (see summary of market and industry developments in Box A1).

In response to the developments described below, the TCFD has developed this document to serve two purposes:

- Provides **general guidance** for organizations seeking to establish relevant metrics, targets, and transition plans around their climate-related risks and opportunities, similar to the TCFD's 2020 guidance documents on scenario analysis and risk management
- Proposes **specific changes to the Guidance for All Sectors and Supplemental Guidance** in the 2017 TCFD *Final Report* and *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures* (2017 TCFD annex)

The TCFD has developed a set of questions for public consultation to solicit feedback on whether this proposed guidance, including the proposed changes to the Guidance for All Sectors and Supplemental Guidance for certain sectors, is responsive to market participants' needs. **The Task Force will take the consultation responses into consideration when releasing final guidance in the fall of 2021.**

**Figure A1**  
**Task Force Recommendation**

Metrics and Targets		
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.		
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

<sup>1</sup> See 2017 *TCFD Final Report*, June 15, 2017, pp. 13–23 and 2017 *TCFD Annex*, June 29, 2017, pp. 17–20, Sections D and E.

<sup>2</sup> See 2017 *TCFD Final Report*, which states “as understanding, data analytics, and modeling of climate-related issues becomes more widespread, disclosures can mature accordingly” (pp. 41) and notes as an area of future work that the Task Force will “improve data quality and further develop standardized metrics for the financial sector, including better defining carbon-related assets and developing metrics that address a broader range of climate-related risks and opportunities” (p. 32).



The Task Force envisions the fall 2021 guidance to include two distinct publications: (1) a standalone Metrics, Targets, and Transition Planning document (comprising the final language from [Sections A, B, C, D, and E](#) of this report) and (2) a separate document updating TCFD's Implementation Guidelines (comprising the changes found in Appendix 1: Proposed Changes to Guidance and Supplemental Guidance).

A number of developments around climate-related metrics (Box A1) and areas warranting further guidance motivated the proposed guidance laid out in this document, including:

- **Progress around certain metrics.** Since the TCFD issued its Final Report in 2017, there has been significant progress in several areas of disclosure, particularly related to transition risks.
  - **Scope 3 emissions.** Interest in Scope 3 emissions and the risks they pose to the value chains of companies and for investors has increased, including developments that inform the circumstances in which Scope 3 emissions disclosures are appropriate.

– **Financed emissions.** Disclosure of Scope 3 emissions also supports and advances the calculation of financed emissions by financial institutions. The Global Carbon Accounting Standard, developed by the Partnership for Carbon Accounting Financials (PCAF), has proposed a set of financed emissions metrics, by asset class, in line with the GHG Protocol.<sup>3</sup>

– **Definition of carbon-related assets.** While the Task Force identified a number of non-financial groups as being more likely to face increasing financial risk from climate-related issues, it initially defined carbon-related assets as only those in the energy sector group.<sup>4</sup> A number of important developments have identified a wider group of sectors subject to material climate-related risks.<sup>5</sup>

<sup>3</sup> See PCAF, *The Global Carbon Accounting Standard for The Financial Industry*, November 2020. This industry-led initiative seeks to address the “Areas for Further Work” identified in the 2017 TCFD final report.

<sup>4</sup> See 2017 *TCFD Final Report*, June 15, 2017, pp. 2 and 15.

<sup>5</sup> See *Climate Action 100+, EU Taxonomy*.

- **Areas warranting additional guidance.**

- **Clarity and comparability.** In the survey conducted by the Task Force in 2019, 75% of organizations surveyed indicated that the Metrics and Targets recommendation is somewhat or very difficult to implement. The top implementation issue for the Metrics and Targets recommendation identified by preparers was the lack of standardized industry metrics; and one of the top disclosure improvements requested by users was the disclosure of standard, industry-specific, climate-related metrics. In its February 2021 Board meeting, the International Organization of Securities Commissions (IOSCO) reiterated the “urgent need to improve the consistency, comparability, and reliability of sustainability reporting, with an initial focus on climate change-related risks and opportunities, which would subsequently be broadened to other sustainability issues.” In that press release, IOSCO specifically called out the need for comparable metrics and narratives as a priority improvement area.<sup>6</sup>

- **Estimation of financial impact.** Given continued low levels of disclosure of climate-related financial impacts, the Task Force believes it is important to provide additional guidance on estimating these impacts, including use of climate-related metrics as key inputs to estimation.<sup>7</sup> This proposed guidance is intended to encourage better alignment between climate-related metrics and targets and the elements of financial reporting specified in the 2017 TCFD final report (revenues, expenditures, assets, liabilities, capital, and financing).<sup>8</sup>

- **Transition planning and portfolio alignment.**

As many countries, jurisdictions, and companies set GHG reduction targets, including those around net-zero emissions, both users and preparers are looking for more clarity on how to measure the impact of potential decarbonization pathways, assess portfolio alignment, and track progress over time.<sup>9</sup>

The TCFD believes additional guidance on climate-related metrics and targets will encourage a more systematic approach to their selection and disclosure and further align the Metrics and Targets pillar with the other TCFD pillars of Governance, Strategy, and Risk Management.

Additionally, many organizations are making emissions reduction commitments, are domiciled in jurisdictions that have done so, or are increasingly subject to investor and stakeholder pressure that materially impacts their cost of and access to capital. In this environment, the TCFD believes guidance around transition planning and its relation to metrics and targets would be helpful.

The Task Force also conducted [a public consultation](#) from October 29, 2020–January 28, 2021, to gather feedback on potential forward-looking metrics for financial institutions. The Task Force solicited views on decision-useful, forward-looking metrics to be disclosed by financial institutions, both requesting feedback on a specific set of metrics that have gained interest from the financial sector in recent years and on the usefulness of forward-looking financial metrics more broadly.

A summary of the [consultation responses was published](#) in March 2021. While most respondents indicated they use some form of metrics that they consider to be forward-looking, fewer respondents said that they disclose the forward-looking financial metrics specifically considered in the consultation. In addition, respondents generally agreed that forward-looking metrics could be useful with improvements in methodology. They pointed to transparency, comparability, standardization, and improved emissions data as the highest priority changes needed to improve methodologies.

The Task Force is also engaging with a number of ongoing initiatives focused on climate-related metrics, including efforts of the European Commission, the Group of Five,<sup>10</sup> IOSCO, and the IFRS Foundation, in order to develop guidance that would be supportive of, and aligned with, these efforts.

<sup>6</sup> See IOSCO, “[IOSCO sees an urgent need for globally consistent, comparable, and reliable sustainability disclosure standards and announces its priorities and vision for a Sustainability Standards Board under the IFRS Foundation](#),” February 2021.

<sup>7</sup> See [TCFD 2020 Status Report](#), September 22, 2020, pp. 4, 8, and 12.

<sup>8</sup> [TCFD Final Report](#), June 15, 2017, Figures 1 and 2, pp. 8–9; International Financial Reporting Standards (IFRS), [Conceptual Framework for Financial Reporting](#) (issued September 2010 and revised March 2018), paragraph 4.1 and Chapter 4.

<sup>9</sup> See [Climate Action 100+](#).

<sup>10</sup> The Group of Five refers to a group of sustainability reporting organizations (CDP, CDSB, GRI, IIRC, and SASB) who collectively developed a prototype for climate-related financial disclosures. See CDP, CDSB, GRI, IIRC, and SASB, [Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard](#), December 2020.

### Box A1

## Market and Industry Developments

### Global Standard Convergence

A coalition of global standard setters have made headway in the development of a comprehensive reporting system for climate-related financial disclosures. In December 2020, a group of sustainability reporting organizations—the Carbon Disclosure Project (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), also known as the “Group of Five”—published a [prototype](#) climate-related financial disclosure standard. The prototype outlines a shared vision that integrates both financial accounting and sustainability disclosure and builds on the TCFD recommendations.

As part of the work on global standards convergence, the IFRS Foundation Trustees [announced plans](#) in February 2021 to establish an International Sustainability Standards Board (ISSB) that will work next to the International Accounting Standards Board (IASB) to clarify sustainability accounting standards, building on the “well-established work” of both the TCFD and the Group of Five. In February 2021, IOSCO, an international body recognized as the global standard setter for the securities sector, [welcomed the announcement](#) from the IFRS Foundation and further welcomed the Group of Five prototype “as a potential basis for the [ISSB] to develop climate-related reporting standards.” IOSCO announced plans to work with the IFRS Foundation in developing the ISSB framework and [noted](#) “strong support” for this work coming out of its stakeholder roundtable sessions in May.

In March 2021, the Trustees announced their [strategic direction](#) and established a [working group](#) to drive these proposals forward to accelerate convergence in global sustainability reporting standards. The working group is chaired by the IFRS Foundation and includes participation from CDSB, IIRC, SASB, TCFD, and the World Economic Forum (WEF).

### Other Notable Developments

- [FSB’s 2021 Work Programme](#), which includes reporting to the “G20 Finance Ministers and Central Bank Governors meeting on progress in the area of the financial implications of climate change and sustainable finance in July 2021”
- The [EU Taxonomy](#) and [Corporate Sustainability Reporting Directive](#)
- Network for Greening the Financial System’s (NGFS’s) technical document on [Sustainable Finance Market Dynamics](#), which recognizes a “need for financial authorities to support: (i) global disclosures frameworks and efforts to establish a comprehensive corporate disclosure standard aligned with the TCFD recommendations; (ii) the development of a global set of sustainability reporting standards” (Section 2.2, Takeaway 1)
- [Launch](#) of the UN-convened [Glasgow Financial Alliance for Net Zero](#) (GFANZ) to bring together industry-led alliances on net-zero banks, asset owners, and asset managers. GFANZ will also include an insurers alliance to be launched this year
- Work by the [Corporate Reporting Dialogue](#) to align metrics
- PCAF’s [Global Carbon Accounting Standard for the Financial Industry](#)
- The Science Based Targets initiative (SBTi) [Approach to Financed Emissions](#)
- The CRO Forum’s [Carbon Footprinting Methodology for Underwriting Portfolios](#)
- The United Nations Environment Programme Finance Initiative (UNEP-FI) and Institute of International Finance’s (IIF’s) [TCFD Report Playbook](#)
- U.S. Securities and Exchange Commission [public consultation](#) on climate change disclosures

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## B. Introduction

## B. Introduction

This section summarizes the relationship between climate-related metrics, climate-related financial impacts, climate-related targets, transition planning, and broader climate-related decision-making associated with the Governance, Strategy, and Risk Management pillars. Metrics and targets are essential tools for tracking progress on climate-related strategies, managing risks, and measuring the impact of opportunities. They are an integral component in communicating an organization's climate-related transition plan. See Box B1 for the definitions of a climate-related metric, financial impact, target, and transition plan.

### Box B1 Defining Key Terms

- A **climate-related metric** is a quantity indicative of the level of historical, current, and forward-looking climate-related risks and opportunities for a given organization. These indicators are used to track climate-related risks and opportunities and can also be used to measure progress against climate-related targets over the duration of the period for which a target is set.
- A **climate-related financial impact** is a historical or current quantity or forward-looking quantitative outlook (estimate, projection, or forecast) regarding the financial impact of climate-related risks and opportunities on an organization's financial performance or position.
- A **climate-related target** is a specific level, threshold, or quantity of a metric that the organization wishes to meet over a defined time horizon in order to achieve the organization's overall climate-related ambition and strategy.
- A **transition plan** is an aspect of an organization's overall business strategy that lays out how an organization aims to minimize climate-related risks and increase opportunities as the world transitions toward a low-carbon economy, including by reducing emissions of its own balance sheet and that of its value chain.

Organizations tend to undertake some common steps when defining, monitoring, and disclosing climate-related metrics, climate-related financial impacts, climate-related targets, and transition plans. An illustrative implementation journey is described below although the precise order in which these steps are taken will differ by industry and organization. This pathway is an iterative process with each step providing a feedback loop to others. Furthermore, organizations do not always begin work at the first step of this pathway, but rather

**Figure B1**  
**Illustrative**  
**Implementation Journey**



start where there is enough organizational buy-in and expertise. The remaining document sections are framed around this implementation journey.

Organizations tend to start by seeking to understand and diagnose their **climate-related risks and opportunities**. Some because they are already experiencing physical or transition risks and opportunities, while others seek to understand *potential* impacts. All organizations are encouraged to begin by

reading the 2017 TCFD *Final Report*, which describes common climate-related risks and opportunities in more detail. Organizations can also find training programs and case studies on TCFD's [Knowledge Hub](#).

Organizations next tend to set a **climate ambition** based on specific climate risks a given organization seeks to reduce or climate opportunities it wishes to pursue. This ambition can also be driven by regulatory mandates, industry commitments, or shareholder actions. The most common type of climate ambition undertaken by organizations is to reduce GHG emissions. In order to achieve practical results, this climate ambition must be accompanied by a **high-level climate strategy**. This strategy provides direction for the execution of mitigation, adaptation, and transition plans. Climate ambition and climate strategy are expected to align with an organization's broader business strategy.

Organizations then identify **climate-related metrics** indicative of their level of climate risks and opportunities. These metrics help inform aspects of the organizations' governance, strategy, and risk management (see Box B2), and include those required by regulators, industry bodies, or other external stakeholders as well as metrics that support business decision-making specific to an organization's particular risk profile and business context. These climate-related metrics inform the inputs through which organizations can estimate actual or potential **climate-related financial impact**. Given their relationship to measuring and disclosing climate-related risks and opportunities, climate-related metrics and financial impacts are discussed together in [Section C. Climate-Related Metrics and Financial Impacts](#). That section also provides guidance on metrics selection, including a view on a set of metrics that all organizations should disclose.

Once climate-related metrics have been selected, organizations define **climate-related targets** that allow them to operationalize their high-level climate strategy to achieve their climate ambition. The process of setting targets should be supported by climate-related scenario analysis in order to understand the organization's performance under multiple potential futures. Organizations can also use climate-related targets to define and prioritize specific climate-related initiatives in line with their existing operating and financial plans. [Section D. Climate-Related Targets](#) provides guidance on selecting climate-related targets as well as details on the role of scenario analysis.

#### Box B2

### Climate-Related Metrics and Targets in the Context of the TCFD Pillars

Climate-related metrics and targets should inform and be informed by the **organization's governance, strategy, and risk management** processes and create a feedback loop over time in the same way that other Key Performance Indicators (KPIs) and Key Risk Indicators (KRIs) are used to inform business management processes. As a result, climate-related metrics and targets provide the "connective tissue" between the other TCFD recommendations and an organization's disclosure of its climate-related plans, performance, and position.

- **Governance.** Climate-related metrics and targets enable an organization's board and management to effectively direct the business by measuring and describing the impact of climate-related risks and opportunities on the organization, and are essential to informing investors, lenders, underwriters, and other market participants. Climate-related metrics are an integral part of the information flows and feedbacks that govern an organization's processes and operations (recommended disclosures *Governance a* and *b*). Climate-related metrics and targets also show how directors and managers are incentivized to achieve climate-related objectives.

- **Strategy.** Climate-related metrics and targets are critical to measuring and describing the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning (recommended disclosure *Strategy b*); and an organization's strategic resilience in different climate-related scenarios (recommended disclosure *Strategy c*).

- **Risk Management.** In conjunction with the organization's risk management processes, climate-related metrics support the measurement of risk exposures and levels. In conjunction with risk management targets, such as risk tolerances, risk appetites, and risk thresholds, climate-related metrics inform the degree of risk that the organization is prepared to accept and its risk responses (e.g., accept, avoid, pursue, reduce, share) (recommended disclosures *Risk Management a* and *b*). Additional information is provided in TCFD's *Guidance on Risk Management Integration and Disclosure*, published in 2020.

As part of its climate strategy, an organization may also provide additional details on its **transition plan** in order to outline its approach to achieving its goals in relation to the transition to a low-carbon economy, such as GHG emission reductions. [Section E. Climate-Related Transition Plan](#) provides proposed guidance on integrating transition planning into an organization's existing climate strategy.

Organizations should **disclose** climate-related metrics, climate-related financial impacts, climate-related targets, and aspects of its transition plan. Though some information may be most useful for internal decision-making, organizations should be mindful to not overly restrict market access to information. A company should carefully consider and support any reason for avoiding disclosure. In determining where to draw the line, organizations, as a matter of principle, should look to disclose more rather than less so that disclosures may be clearly understood and sufficiently comprehensive for users. Climate-related metrics and targets that are key to measuring and reporting material financial risk, such as those noted as cross-industry, climate-related metrics in [Section C. Climate-Related Metrics and Financial Impacts](#),

should be disclosed in annual reports or publicly available investor meetings.<sup>11</sup> Key aspects of communication and disclosure of climate-related metrics, climate-related financial impacts, climate-related targets, and transition planning are included in their respective sections.

Qualitative and quantitative **scenario analysis** is crucial to designing and testing many aspects of the steps described above, in particular understanding how a range of plausible uncertainties might affect the resilience of the company's strategy (see *Strategy recommended disclosure c*) in the 2017 TCFD *Final Report*). Scenario analysis can also be used to develop climate ambitions that are more flexible or robust to a range of future states; to estimate climate-related metrics and financial impacts under different plausible scenarios; and to identify key dependencies to hitting company targets. The role of scenario analysis is discussed in [Section D. Climate-Related Targets](#) as well as described in more detail in TCFD's *Technical Supplement on Scenario Analysis*, published in 2017, and *Guidance on Scenario Analysis for Non-Financial Companies*, published in 2020.

<sup>11</sup> As stated in the 2017 TCFD Final Report, "For disclosures related to the Strategy and Metrics and Targets recommendations, the Task Force believes organizations should provide such information in annual financial filings when the information is deemed material. Certain organization—those in the four non-financial groups that have more than one billion U.S. dollar equivalent (USDE) in annual revenue—should consider disclosing such information in other reports when the information is not deemed material and not included in financial filings" (p. 17).

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C.

## Climate-Related Metrics and Financial Impacts

## C. Climate-Related Metrics and Financial Impacts

Climate-related information comes in a variety of different forms and is used for different purposes throughout an organization. This information can be both qualitative and quantitative and encompass disclosures across all four of the TCFD pillars. This section focuses on the relationship between two types of quantitative climate-related information: climate-related metrics and climate-related financial impacts.

- **Climate-related metrics.** Quantities indicative of the level of historical, current, and forward-looking climate-related risks and opportunities for a given organization. These climate-related metrics—such as greenhouse gas emissions, carbon price, and proportion of exposed assets—are typically what comes to mind first when thinking of climate-related information and form the input data on which to base determinations of historical, current, and forward-looking financial impacts.
- **Climate-related financial impacts.** Historical or current quantity or forward-looking quantitative outlook (estimate, projection, or forecast) regarding the financial impact of climate-related risks and opportunities on an organization's financial performance or position.

It is also important for disclosures to clearly identify the time horizon over which climate-related information is measured. Climate-related metrics and financial impacts are most effective when the same item is reported across all time periods as shown in Figure C1. Measuring the same metrics and impacts over time also provides a way to track progress.

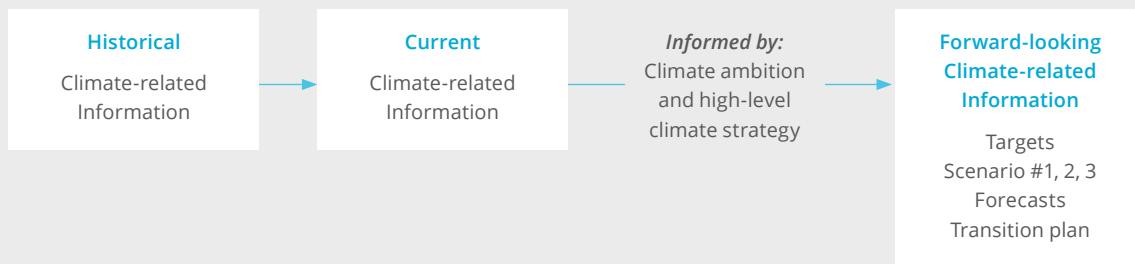
• **Historical:** Prior period data, covering at a minimum the same period as in the organization's comparative financial statements.<sup>12</sup>

• **Current:** Current period data, outlining most recent reporting period (e.g., 12 months year to date as compared to prior 12 months).

Historical and current period climate-related financial impacts, such as write-downs of obsolete inventories, are calculated and reported according to financial reporting standards (e.g., FASB, IASB). Such standards, and many regulatory regimes, also provide the ability for an organization to disclose forward-looking information. Organizations should aim to provide estimates, or ranges, of the potential financial impacts of climate-related developments likely to affect the organization (e.g., financial implications of an organization's climate-related plans).

Historical and current climate-related financial impacts may be impacts that the organization incorporates into business planning, such as increased revenues from the sale of a lower-emission product or impairment loss considering forward-looking assumptions and estimates. Or, historical and current climate-related financial impacts may be impacts that occurred irrespective of the organization's business and financial plans and are reflected in the organization's performance and position, such as the cost of business interruption from storm-related damages.

**Figure C1**  
**Time Horizon**



<sup>12</sup> TCFD recommends at least three years of historical data in order to provide a basis for tracking progress, but organizations are encouraged to provide a longer historical period for key climate-related metrics, if available.

- **Forward-looking:** Future periods, covering short-, medium-, and long-term time horizons. Forward-looking information may be based on methodologies such as scenario analysis, forecasts, trend analysis, sensitivity analysis, and simulations, as well as commitments and climate-related targets. Unlike historical and current data, forward-looking information is more appropriately reported as ranges or numbers tied to specific assumptions about the future state of the world, often tied to one or more plausible climate scenarios (see Box C1 and Figure C2).<sup>13</sup>

Disclosure of GHG emissions, for example, would include data on the organization's previous GHG emission levels, the amount of emissions in the organization's current reporting period—including an indication of progress against GHG-specific targets—and a forecasted range for future emissions.

#### Box C1

#### **Forward-Looking Information and Uncertainty**

Even with perfect historical information and mature, widely accepted, and transparent methodologies, assessing potential future outcomes remains an uncertain exercise. It is important to note that forward-looking disclosures are intended to provide a view of an organization's range of plausible risks and opportunities in a variety of future business contexts, not a prediction of outcomes. Hence, to limit its exposure to litigation risk in disclosing forward-looking information, an organization should take necessary precautions in preparing their disclosures, such as meaningful cautionary statements, ensuring information is not misleading or inaccurate, no material omissions, and compliance with any fiduciary requirements.<sup>14</sup> A number of jurisdictions also provide for safe-harbor protections for forward-looking disclosures made in good faith using the best information reasonably available at the time.<sup>15, 16</sup>

Figure C2

#### Example Disclosure of Forward-Looking Information



Source: HPE, *2019 Living Progress Report*, p. 94

<sup>13</sup> Forward-looking disclosure refers to current plans and future forecasts that enable investors and other users to assess a company's future financial performance. Forward-looking disclosure involves both financial and non-financial information.

<sup>14</sup> See TCFD, *Guidance on Scenario Analysis for Non-Financial Companies*, October 2020, Section E.3.5, for more details.

<sup>15</sup> Staker, Garton and Barker, Commonwealth Climate and Law Institute, *Concerns misplaced: Will compliance with the TCFD recommendations really expose companies and directors to liability risk?* September 2017, pp. 10-11.

<sup>16</sup> As noted in the 2017 *TCFD Final Report*, "The Task Force's recommendations were developed to apply broadly across sectors and jurisdictions and should not be seen as superseding national disclosure requirements. Importantly, organizations should make financial disclosures in accordance with their national disclosure requirements. If certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements in other official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting" (p. 17).

## 1. PRINCIPLES FOR SELECTING CLIMATE-RELATED METRICS

Many sources offer guidance on how to select metrics more generally.<sup>17</sup> In addition to considerations that are common across all metrics, there are six fundamental principles that are particularly important for climate-related metrics:

**Decision-useful.** Climate-related metrics help organizations understand potential impacts of climate risks and opportunities over a specified time period, including financial impacts and the operational consequences. To be decision-useful, these metrics must be relevant to the organization's risks and opportunities.

**Understandable.** Climate-related metrics should be presented in a manner that aids understanding (e.g., both aggregated and disaggregated, where useful, clear labeling), and any limitations and cautions should be explicitly stated. Climate-related metrics should provide important context around such points as management's thinking in terms of goal setting, internal process management, and communication objectives, and should be supported by contextual and supporting narrative information on items such as organizational boundaries, governance, methodologies, and basis of preparation.

**Verifiable.**<sup>18</sup> Climate-related metrics are capable of supporting effective internal controls for the purposes of data verification and assurance.

**Objective.**<sup>18</sup> Metrics are free from bias and value judgement so that they yield an objective disclosure of performance that users can leverage regardless of their worldview or outlook.

**Trackable over time and consistent.** Climate-related metrics should be calculated and disclosed consistently from year to year in order to facilitate comparative analysis and analysis of trends.

**Aligned to the other TCFD pillars.** Climate-related metrics should be linked to organization processes such as governance, strategy, and risk management, and support effective disclosure aligned with the TCFD recommendations. In particular, such metrics should show how an organization's climate-related risks and opportunities are being assessed, managed, and linked to an organization's strategy and risk management processes.

## 2. COMMUNICATING AND DISCLOSING CLIMATE-RELATED METRICS AND FINANCIAL IMPACTS

As noted previously, climate-related metrics and financial impacts should be presented in a clear and understandable manner. Effective presentation and communication of such quantitative climate-related information is not limited to a table of numbers. Contextual and supporting narrative is essential and helps users understand the meaning and purpose of climate-related metrics, the basis on which they have been prepared, and how they link to climate-related financial impacts.

In presenting climate-related metrics and financial impacts and associated contextual information in their disclosures,<sup>19</sup> an organization should provide the following:

- **Types of measurements used**, including whether information comes from direct measurements, estimates, proxy indicators, or financial and management accounting processes and standards.
- **Methodologies used**, such as the GHG Protocol for greenhouse gas emissions. Methodology discussion for GHG emissions should include emissions factors, scope, and boundary. Methodology discussions should also provide key business assumptions and which qualitative or quantitative climate scenarios were used (see Box C2).
- **Changes in absolute and relative amounts over time**, including whether acquisitions, divestments, or policies have affected results.
- **How results are connected** with business units, company strategy, and financial results. Where it aids understanding, organizations should consider disaggregating information by such categories as geographic area, business unit, asset, type, upstream and downstream activities, source, and vulnerability of area.
- **The criteria and indicators used to assess both the level and impact of actual and potential climate change risks and opportunities** on operational and financial performance and position in the reporting period and beyond (where the impact may affect planning, risk management, and opportunity optimization in future reporting periods). Climate-

<sup>17</sup> For example: SASB, *Conceptual Framework*, February 2017, p. 19; van Oudenhoven, A. P. E., et al., *Key criteria for developing ecosystem service indicators to inform decision making*, August 14, 2018; Dharmesh, S., "Measuring What Matters: How to Pick A Good Metric," March 29, 2013; Eckerson, W., "12 Characteristics of Effective Metrics," April 19, 2010; Weber, C., et al., *Exploring Metrics to Measure the Climate Progress of Banks*, 2018; and Hoffmann, V. H. and T. Busch, "Corporate Carbon Performance Indicators: Carbon Intensity, Dependency, Exposure, and Risk," November 11, 2008.

<sup>18</sup> Adapted from SASB, *Conceptual Framework*, February 2017, p. 19.

<sup>19</sup> See 2017 *TCFD Annex*, Section A, for location of recommended disclosures.

#### Box C2

#### **Importance of Disclosing Details on Climate Scenario Analysis**

As noted in the 2020 TCFD *Scenario Analysis Guidance*, investors desire greater transparency into the types of scenarios preparers are using and their impact on the organization's strategy. In particular, preparers should "describe processes used for scenario analysis; the range and assumptions of scenarios used; key findings; whether it is a standalone analysis or integrated with company's risk management and strategy processes" (p. 45, Table E1).

Using a common set of scenarios and inputs (e.g., parameters, timelines, industry-specific metrics, methodologies) increases comparability across companies, provides greater reliability and relevance, and can help reduce the resources required by preparers to develop scenarios in-house. On the other hand, using a common set of scenarios across organizations may reduce their ability to assess their individual situations and how climate-related risks may uniquely affect them, and thus could increase concentration of risk.

The World Business Council for Sustainable Development (WBCSD) has organized a forum on climate reference scenarios, focusing on scenarios relevant for the energy system. This forum aims to increase the usability of climate scenarios and access to a common set of scenarios from which non-financial companies can build on and tailor for their scenario analysis.

related risk metrics should be integrated into an organization's overall risk management approach, connecting with existing risk classification, risk factor, and severity measures.<sup>20</sup>

- **How supply chains will be affected over time**, including life cycle GHG emissions reporting.
- **How climate-related transition and physical risks might affect the organization's inputs and outputs over time**, including sensitivity to particular variables affecting availability, quality, or cost of inputs and outputs over time.

Climate-related metrics and financial impacts, and associated narrative, should be integrated with a

company's other disclosures to provide a coherent set of information on the company's risks, financial effects, and outlook.<sup>21</sup> Companies should also consider which information is best expressed as a point estimate or result and which is best expressed as ranges and, in the case of estimates, whether to include a level of confidence indicator.

### **3. PROPOSED UPDATES TO ALL SECTOR GUIDANCE AND SUPPLEMENTAL GUIDANCE**

To aid comparability and reflect progress since the release of the 2017 TCFD *Annex*, the TCFD is proposing a number of updates to its Guidance for All Sectors on Strategy and Metrics and Targets and its Supplemental Guidance for the Financial Sector, including a set of cross-industry, climate-related metrics and climate-related financial impacts that all companies should disclose and a set of financial sector metrics that banks, asset managers, asset owners, and insurers should disclose.

#### **Updates to Guidance for All Sectors**

##### **Cross-Industry, Climate-Related Metrics and Climate-Related Financial Impacts**

###### ***Cross-Industry, Climate-Related Metrics***

As noted in *Section A. Background and Purpose*, there is considerable demand for more comparable and standard climate-related metrics. Some climate-related metrics are increasingly reported by organizations and commonly reflected in regional and national disclosure requirements, forming an initial basis for climate-related metrics that are common across non-financial companies and financial institutions, in other words cross-industry, climate-related metrics (see Box C3).

Cross-industry, climate-related metrics are a subset of climate-related metrics, which also include industry-specific and company-specific climate-related metrics. **While the proposed guidance focuses primarily on cross-industry metrics, it is important for organizations to also measure and disclose key industry- and company-specific climate-related metrics.<sup>22</sup>**

<sup>20</sup> See TCFD, *Guidance on Risk Management Integration and Disclosure*, October 2020.

<sup>21</sup> See, for example, Section 3.5 Key Performance Indicators within the European Commission, "*Guidelines on non-financial reporting: Supplement on reporting climate-related information*," June 2019.

<sup>22</sup> See SASB, *Climate Risk Technical Bulletin*, 2021, p. 21, for further discussion of the distinction between cross-industry and industry-specific disclosures.

**Box C3**  
**Defining Key Term**

**Cross-industry, climate-related metrics** are metrics that apply equally to all financial and non-financial organizations, though they may be implemented or reported slightly differently in line with different best practices for each jurisdiction, sector, or geography.<sup>23</sup>

To further support comparability across climate-related disclosures, the Task Force is proposing to amend its Guidance for All Sectors to include a discrete set of cross-industry, climate-related metrics that all organizations should disclose. The Task Force believes these disclosures are:

- indicative of many basic aspects and drivers of climate-related risks and opportunities;
- useful for managing an organization's climate-related risks and opportunities;
- useful for estimating and understanding the financial impacts of climate change on organizations, including for users looking to analyze risk-adjusted returns and ability to meet financial obligations;
- requested by climate reporting frameworks, widely used by investors, lenders, insurance underwriters, and others, increasingly reported by organizations across sectors, and reflected in regional and national disclosure requirements; and
- useful for understanding the aggregate effects of climate-related risks and opportunities across investment activities and financial systems.

**The Task Force has defined cross-industry, climate-related metrics broadly in order to allow for flexibility as organizations become more familiar with implementation and industries and jurisdictions adapt climate-related metrics to suit their needs.**

The TCFD believes, however, that standardization is valuable for both preparers and users of climate-related information and encourages the IFRS Foundation and others to provide further guidance on operationalizing

these metrics and for preparers to use common taxonomies, where available.

**(1) GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)**

GHG emissions are the critical starting point for any discussion of cross-industry, climate-related metrics and are a component to estimating many other climate-related metrics used by both preparers and users. The absolute and intensity level of emissions is indicative of an organization's exposure and vulnerability to changes in policies and technology aimed at a transition to a low-carbon economy.

As a best practice, organizations should consider disclosing both GHG emissions by relevant business line, as well as those split out by the seven gases covered by the Kyoto Protocol.<sup>24</sup> Organizations that have set GHG emission reduction targets should also consider disclosing cumulative GHG emissions relative to the baseline year used for their target in order to understand potential overshoot dynamics.

TCFD encourages all financial and non-financial organizations to disclose relevant, material categories of Scope 3 emissions, including financed emissions. As discussed in more detail in the section below on [Scope 3 Emissions](#) and in [Appendix 3 Inclusion of Scope 3 and Financed Emissions](#), data and methodologies have matured sufficiently such that disclosure of relevant, material categories of Scope 3 emissions is now appropriate for all sectors. Disclosure is particularly important for organizations for which Scope 3 emissions account for 40% or more of the total emissions of the organization or for which Scope 3 emissions have been deemed a significant risk in their value chain.<sup>25</sup>

Organizations should disclose Scope 3 emissions in line with the methodology in the GHG Protocol's [Scope 3 Standard](#), which covers 15 categories of Scope 3 emissions. The Standard's reporting guidance notes that "companies shall publicly report...[a] list of scope 3 categories and activities included in the inventory. A list of scope 3 categories or activities excluded from the inventory with justification of their exclusion."<sup>26</sup>

<sup>23</sup> A number of Task force members have noted that these categories of metrics may be less applicable to asset owners given the types of assets they hold. The TCFD invites readers to please consider and review as part of the consultation. For more details on the proposed Asset Owner guidance, see [Appendix 1: Proposed Changes to 2017 TCFD Annex Section D. Supplemental Guidance for the Financial Sector](#).

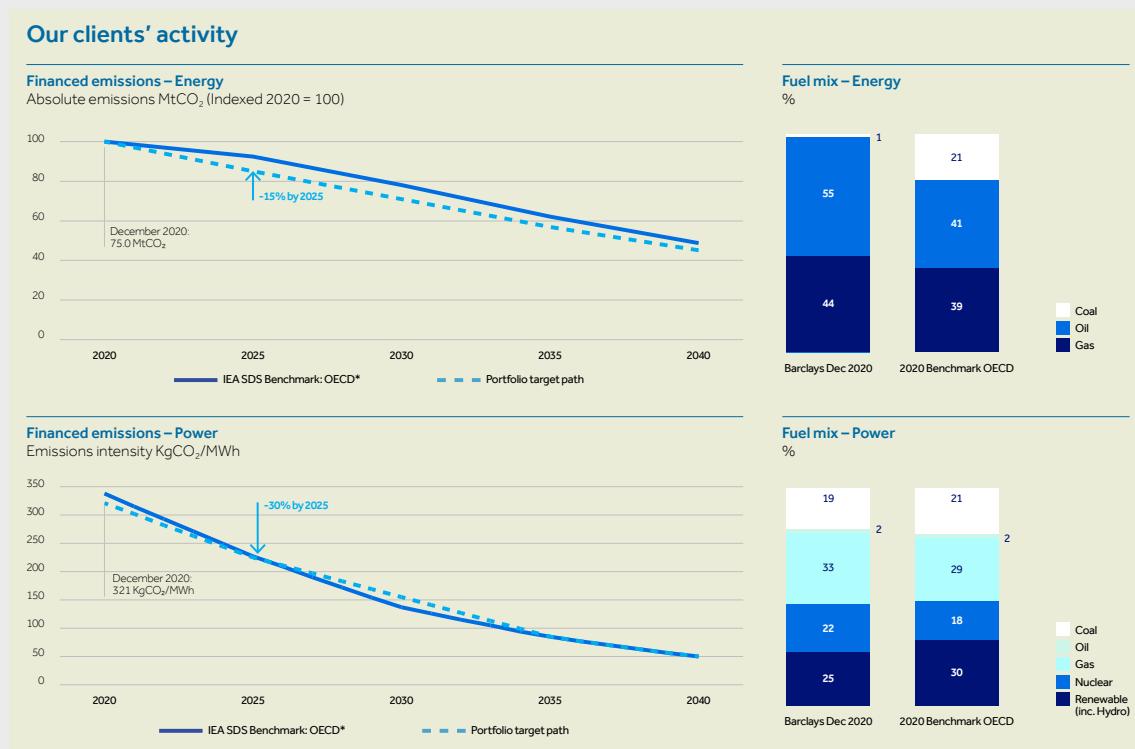
<sup>24</sup> The GHG Protocol Corporate Standard "covers the accounting and reporting of seven greenhouse gases covered by the Kyoto Protocol – carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>)."

See <https://ghgprotocol.org/corporate-standard>.

<sup>25</sup> See discussion of 40% threshold in SBTi's paper [SBTi Criteria and Recommendations](#), Version 4.2, April 2021, Section V, p. 10.

<sup>26</sup> GHG Protocol, [Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#), September 2011, p. 119.

## Figure C3 Example Disclosure: Barclays



Source: Barclays PLC, *ESG Report 2020*, p. 16

As with all TCFD recommendations, organizations should take account of their regional or national disclosure requirements when disclosing Scope 3 emissions.<sup>27</sup> For instance, the EU Technical Expert Group on Sustainable Finance's *Report on Benchmarks* recommends inclusion of "Scope 3 emissions data in the index construction methodology in an incremental way," with requirements implemented on a sector-by-sector basis over a four-year period.<sup>28</sup>

### (2) Carbon price(s) (external and shadow/internal)

Carbon prices are an essential component for analyzing and assessing economic impacts of carbon-related risks and opportunities, such as those affecting the valuation of an organization's key assets or potential changes in input or output prices, and provides investors with an understanding of the reasonableness of a key assumption in an organization's risk and opportunity assessment.

<sup>27</sup> As noted in the 2017 *TCFD Final Report*, "The Task Force's recommendations were developed to apply broadly across sectors and jurisdictions and should not be seen as superseding national disclosure requirements. Importantly, organizations should make financial disclosures in accordance with their national disclosure requirements. If certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements in other official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting" (p. 17).

<sup>28</sup> EU Technical Expert Group on Sustainable Finance, *Report on Benchmarks*, September 2019, p. 41.

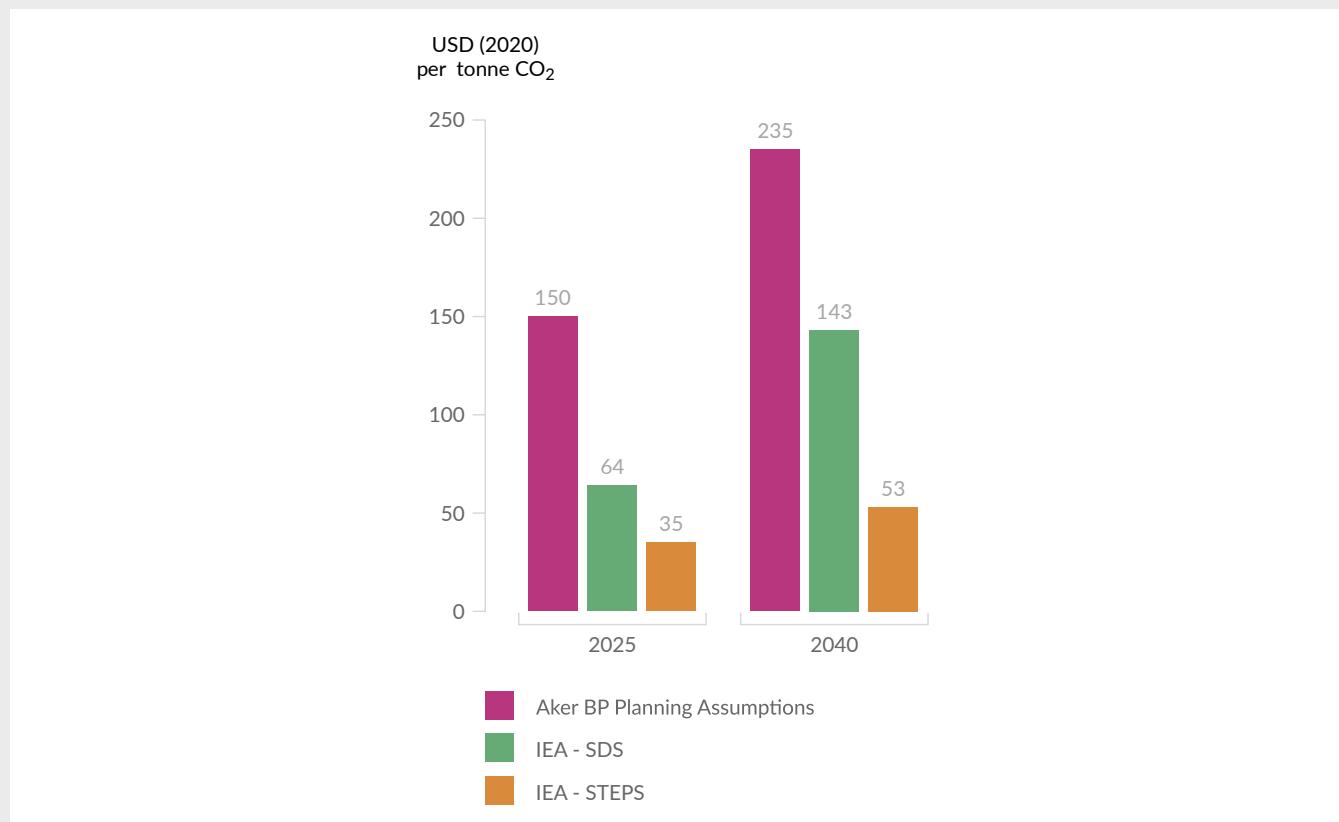
Organizations should implement a shadow carbon price, or prices, in order to assess potential climate-related financial impacts that could arise from carbon pricing or restrictions. Shadow carbon prices have been implemented at a range of financial and non-financial organizations (see [Appendix 2: Further Rationale for Proposed Revisions](#) for example language) and can take a variety of forms, from a range of estimates used in scenario and sensitivity analysis to shadow carbon prices assessed on internal activities to incentivize GHG reductions.

Effective shadow carbon prices should:

- be sourced from **credible, reputable scientific research** on the carbon price necessary to meet climate goals. At a minimum, organizations should consider a carbon price that is aligned to a 2°C or lower pathway;

- be **consistent with prices implied by the organization's climate-related targets** (e.g., net-zero by 2050, Paris-aligned);
- **increase over time** to reflect diminishing carbon budget;
- be **recalculated frequently** to account for climate action, or lack thereof, that may signal sharper price increases that will be needed to maintain the given carbon budget implied by the chosen temperature pathway; and
- **incorporate geographic or sectoral granularity** where the organization judges such granularity will have a significant impact on the carbon price level and a credible source for differentiated pricing can be found.

**Figure C4**  
**Example Disclosure: Aker BP**



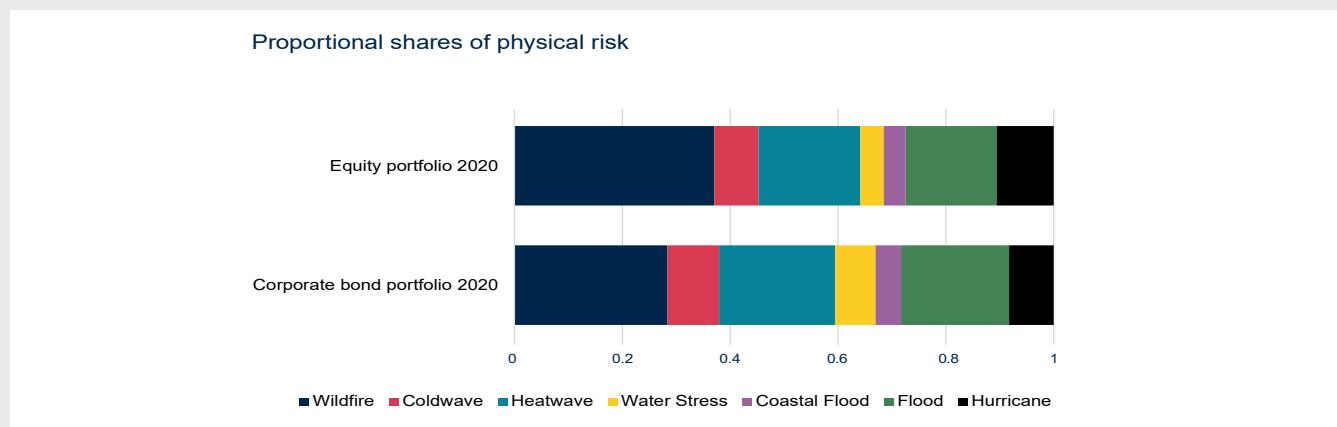
Source and notes: Aker BP, *Sustainability Report 2020*, p. 25; figure notes "Aker BP's assumed carbon price reaches USD 235/tCO<sub>2</sub> in 2030, assumed flat thereafter."

**(3) Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks<sup>29</sup>**

Disclosure of proportion of an organization's assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) exposed to material climate-related physical risks allows preparers and users to better understand, track, and estimate potential financial exposure regarding such issues as impairment or stranding of assets, value of assets and liabilities, and changes in cost of business interruptions.

The proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks will be specific to the geography where the assets or activities are located and their likely exposure or vulnerability to the risk. For example, certain assets may be most vulnerable to acute risks from hurricanes or wildfires, while others are more at risk from chronic changes in average temperature, sea-level rise, or drought. Organizations should refer to commonly used taxonomies in developing these metrics (additional details provided in [Appendix 2: Further Rationale for Proposed Revisions](#)).

**Figure C5**  
**Example Disclosure: Ilmarinen**



Source: Ilmarinen, *Annual and Sustainable Report 2020*, p. 50

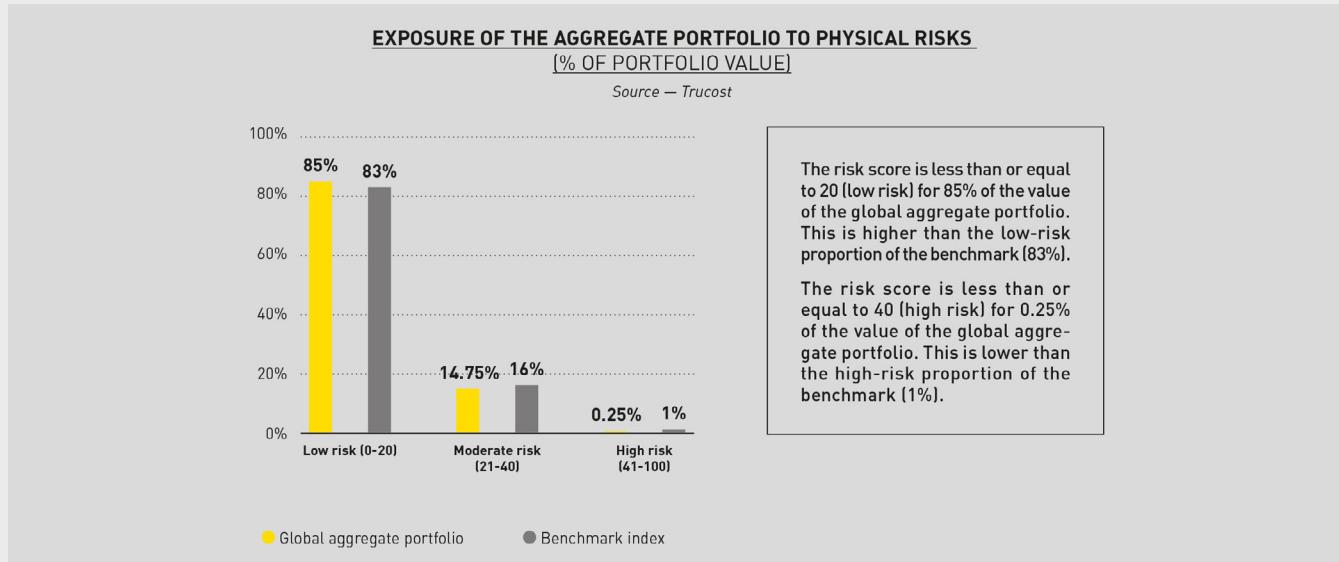
**(4) Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks<sup>29</sup>**

Disclosure of proportion of an organization's assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) materially exposed to climate-related transition risks allows preparers and users to better understand, track, and estimate potential exposure regarding such issues as possible impairment or stranding of assets, value of assets and liabilities, and change in demand for products or services.

The way in which organizations disclose "proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks" will be specific to their company- and industry-specific climate risks. Financial institutions may look at the proportion of their loan book or portfolio materially exposed to carbon-related assets, while non-financial companies may report percent of revenues or production output coming from high-carbon business lines. Organizations should refer to commonly used taxonomies in developing these metrics (additional details provided in [Appendix 2: Further Rationale for Proposed Revisions](#)).

<sup>29</sup> Table 1 (p. 10) of the 2017 *TCFD Final Report* and Tables D2 and D3 (pp. 13–14) of the *2020 Guidance on Risk Management Integration and Disclosure* provide examples of "key categories of commonly accepted risk." Assets and business activities may be directly or indirectly exposed.

Figure C6  
Example Disclosure: ERAFP



Source: ERAFP, *Public Report 2019*, p. 78

Figure C7  
Example Disclosure: BHP



Source: BHP, *Climate Change Report 2020*, p. 4

## Figure C8 Example Disclosure: Citi

CLIMATE RISK HEAT MAP AND CREDIT EXPOSURE								
\$ in Millions	2018		2019		as of September 30, 2020		Climate Risk	
	Total \$ Amount	Total \$ Amount	Total \$ Amount	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
<b>Energy &amp; Commodities<sup>1</sup></b>	<b>49,698</b>	<b>53,317</b>	<b>51,035</b>	<b>6.6%</b>	<b>16,244</b>	<b>4.7%</b>		
Integrated Oil & Gas	13,513	12,883	13,886	1.8%	3,797	1.1%	High	Moderate
Oil & Gas Exploration & Production	12,803	15,682	14,228	1.8%	4,950	1.4%	High	Moderate
Oil & Gas Storage & Transportation	7,005	6,967	7,273	0.9%	1,856	0.5%	High	Moderate
Oil & Gas Refining & Marketing	9,255	9,611	7,409	1.0%	2,988	0.9%	High	Moderate
Oil & Gas Equipment, Services, and Drilling	4,361	5,562	5,285	0.7%	1,156	0.3%	High	Low
Other	2,762	2,611	2,954	0.4%	1,498	0.4%	High	Moderate
<b>Power</b>	<b>27,200</b>	<b>34,347</b>	<b>30,200</b>	<b>7.7%</b>	<b>7,700</b>	<b>2.2%</b>		
Alternative Energy	1,595	2,051						
Electric Utilities	7,655	13,051						
Gas Utilities	1,745	1,661						
Independent Power Producers & Service Operators	2,872	2,671						
Multi-Utilities	11,265	12,941						
Other	2,068	1,952						
<b>Transportation</b>	<b>74,583</b>	<b>78,581</b>						
Autos	48,175	48,616						
Automobile Manufacturers	16,421	15,351						
Auto Parts & Equipment	2,107	2,541						
Auto-Related Financing, Leasing, and Rentals	18,528	17,891						
Other	11,119	12,801						
Aviation	9,726	11,551						
Shipping & Maritime Logistics	10,384	10,581						
Logistics	6,297	7,841						
<b>Industrials</b>	<b>58,974</b>	<b>68,051</b>						
Building Products & Related	8,072	8,881						
Capital Goods	39,432	44,321						
Paper Forest Products & Packaging	6,858	7,281						
Professional Services	4,612	7,561						
<i>continued on next page</i>								
<b>Metals &amp; Mining</b>	<b>16,540</b>	<b>15,891</b>	<b>13,476</b>	<b>1.7%</b>	<b>6,158</b>	<b>1.8%</b>		
Energy Minerals <sup>2</sup>	967	822	765	0.1%	199	0.1%	High	Moderate
Iron, Steel & Aluminum	9,415	8,935	6,715	0.9%	3,708	1.1%	High	Moderate
Other	6,158	6,134	5,996	0.8%	2,250	0.7%	Low	Moderate
<b>Chemicals</b>	<b>20,295</b>	<b>23,721</b>	<b>22,883</b>	<b>3.0%</b>	<b>8,124</b>	<b>2.4%</b>		
<b>Cons Retail &amp; Health</b>	<b>95,607</b>	<b>116,346</b>	<b>112,915</b>	<b>14.6%</b>	<b>43,015</b>	<b>12.5%</b>		
Food Beverage & Tobacco	31,998	36,060	33,403	4.3%	15,487	4.5%	Moderate	High
Other	63,609	80,286	79,511	10.3%	27,529	8.0%	Low	Low
<b>Real Estate</b>	<b>50,883</b>	<b>55,518</b>	<b>62,489</b>	<b>8.1%</b>	<b>42,197</b>	<b>12.3%</b>		
<b>Financial Institutions<sup>3</sup></b>	<b>78,376</b>	<b>94,789</b>	<b>86,172</b>	<b>11.1%</b>	<b>35,750</b>	<b>10.4%</b>		
<b>Insurance</b>	<b>26,020</b>	<b>24,305</b>	<b>25,990</b>	<b>3.4%</b>	<b>2,208</b>	<b>0.6%</b>		
Property & Casualty Insurance	5,607	5,429	6,430	0.8%	1,050	0.3%	Moderate	High
Reinsurance	6,369	6,093	5,874	0.8%	64	0.0%	Moderate	High
Other	14,045	12,784	13,686	1.8%	1,093	0.3%	Moderate	Low
<b>Private Bank</b>	<b>85,392</b>	<b>102,463</b>	<b>107,351</b>	<b>13.9%</b>	<b>70,030</b>	<b>20.4%</b>		
<b>Public Sector<sup>4</sup></b>	<b>30,327</b>	<b>27,194</b>	<b>26,267</b>	<b>3.4%</b>	<b>13,723</b>	<b>4.0%</b>		
<b>Tech, Media &amp; Telecom</b>	<b>81,817</b>	<b>83,199</b>	<b>79,659</b>	<b>10.3%</b>	<b>31,136</b>	<b>9.1%</b>		
<b>Other Industries</b>	<b>17,777</b>	<b>16,842</b>	<b>10,477</b>	<b>1.4%</b>	<b>5,561</b>	<b>1.6%</b>		
<b>Total</b>	<b>713,490</b>	<b>794,576</b>	<b>774,057</b>	<b>100.0%</b>	<b>343,690</b>	<b>100.0%</b>		

1. In addition to this exposure, Citi has energy-related exposure within the public sector (e.g., energy-related state-owned entities) and transportation sector (e.g., offshore drilling under Shipping & Maritime Logistics). Citi's total exposure to these energy-related sectors is approximately \$5.2 billion, of which approximately \$3.1 billion consisted of direct outstanding funded loans, as of December 31, 2018. As of September 30, 2020, this exposure remained largely consistent with December 31, 2019 at approximately \$5.5 billion, of which \$3.2 billion is funded.

2. Based on Citi's Risk Industry Classification, which differs from how Citi defines thermal coal mining companies under its ESRM Policy. Additional reporting on our thermal coal mining exposure is provided on the next page of this report.

3. Includes Banks, Finance Companies, Securities Firms, Asset Managers and Funds, and Financial Markets Infrastructure.

4. Certain countries may see high transition and physical risks based on commodities exposure and geographic location.

Based on our climate risk heat map, approximately 23% of our total exposure and 20% of our funded exposure are categorized as facing high transition risk while 15% of our total exposure and 18% of our funded exposure are categorized as facing high physical risk as of September 30, 2020. This includes energy-related exposure within the public sector and transportation sector.

**(5) Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities<sup>30</sup>**

Proportion of assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) aligned to climate opportunities of a given industry provides insight into the relative position of organizations and allows users to understand likely transition pathways and potential changes in revenue and profitability over time.

The operationalization of proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities will be specific to each industry's climate opportunities. For example, auto manufacturers might report sales of EVs relative to total vehicle sales, while utilities report renewable generation as a fraction of their total electricity generation. An agricultural company might report revenues received

from the sale of drought-resilient seeds, while an asset manager discloses the percent of resilient infrastructure in its portfolio. Organizations should refer to commonly used taxonomies in developing these metrics (additional details provided in [Appendix 2: Further Rationale for Proposed Revisions](#)).

Existing frameworks already provide some sector-specific guidance for this and other metrics to help preparers. For example, SASB's Construction Materials Standard (SASB EM-CM-410a.1) asks companies to report the percentage of products that qualify for credits in sustainable building design and construction certifications; its Iron and Steel Producers Standard (SASB EM-IS-000.A) refers to percent raw steel production from basic oxygen furnace processes and electric arc furnace processes; and its Investment Banking and Brokerage Standard (SASB FN-IB-410a.2) asks for the number and value of investments and loans incorporating integration of environmental, social, and governance (ESG) factors, by industry.

**Figure C9**  
**Example Disclosure: BASF**



Source: BASF, *BASF 2020 Report*, p. 45

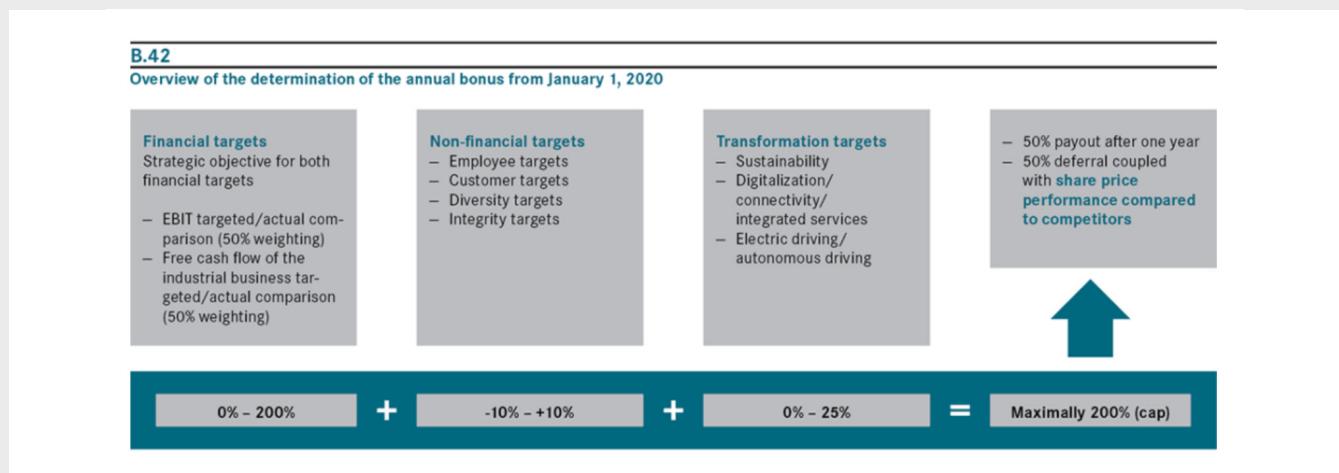
<sup>30</sup> Table 2 (p. 11) of the 2017 *TCFD Final Report* provides examples of "key categories of commonly accepted opportunities" as well as types of investment and financing opportunities and climate-related financial impact.

## (6) Amount of senior management remuneration impacted by climate considerations

Remuneration policies are important incentives for achieving an organization's goals and objectives and signal governance, oversight, and accountability for managing climate-related issues. The ways in which organizations link

executive compensation to climate-related performance will be specific to their company and governance structure. Some organizations choose to report the percentage of the executive's pay linked to climate considerations, while others discuss weighting factors or total amount of compensation that could be impacted.

Figure C10  
Example Disclosure: Daimler



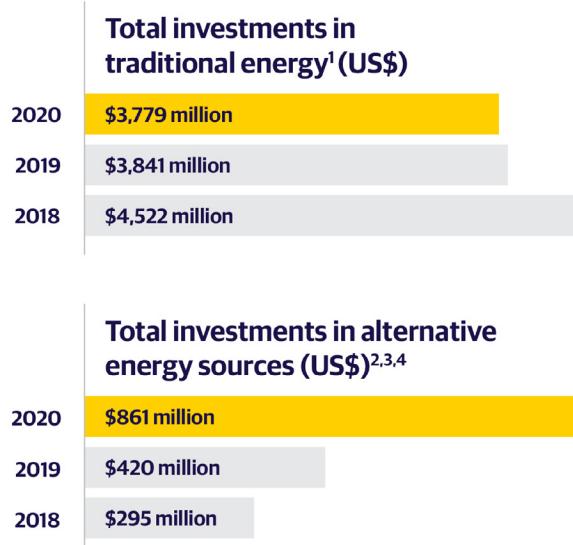
### (7) Amount of expenditure or capital investment deployed toward climate risks and opportunities

Expenditure, capital investment, or financing/lending for new technologies, infrastructure, or products are needed to manage climate-related physical and transition risks and opportunities. Expenditures or capital investment by non-financial preparers or financing, lending, or underwriting by financial preparers provides an

indication of the extent to which future earning capacity might be affected. Expenditure, capital investment, or amount of financing for new technologies, infrastructure, or products can be reported in line with financial reporting standards and commonly used taxonomies for delineating climate risks and opportunities (additional details provided in [Appendix 2: Further Rationale for Proposed Revisions](#)).

Figure C11

### Example Disclosure: Liberty Mutual



<sup>1</sup> Includes unfunded commitments of US\$67 million (2020), US\$119 million (2019) and US\$521 million (2018).

<sup>2</sup> In 2020, Liberty Mutual modified its definition of alternative/renewable energy to only include energy derived from solar, wind and hydro sources.

<sup>3</sup> 2020 Includes LP, LLC and other equity method investments value of US\$288 million, fixed maturities of US\$180 million and unfunded commitments of US\$393 million. 2019 includes LP, LLC and other equity method investments value of US\$254 million, fixed maturities of US\$22 million and unfunded commitments of US\$144 million. 2018 includes LP, LLC and other equity method investments value of US\$226 million, fixed maturities of US\$6 million and unfunded commitments of US\$63 million. 2019 and 2018 figures have also been restated to reflect this new definition of alternative/renewable energy.

<sup>4</sup> The increase in 2020 was primarily driven by: (1) investments in solar asset-backed securities and (2) a combination of solar and hydro investments in LP, LLC and other equity method investments.

The Task Force recommends that all organizations disclose cross-industry, climate-related metrics and climate-related financial impacts. Table C1 provides a summary of the proposed types of information organizations should disclose, and [Appendix 2: Further Rationale for Proposed Revisions](#) provides alignment of this information to existing frameworks as well as additional examples of financial and non-financial organization disclosures. [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) provides the specific proposed changes to the guidance.

In Table C1, TCFD has noted the most common unit of measure. As discussed previously, there are multiple ways

to measure and disclose metrics and different jurisdictions or industries may follow different best practices. For example, some organizations reporting amount of senior remuneration impacted by climate considerations note a percentage of the executive's pay, while others discuss weighting factors or total amount of compensation that could be impacted. For proportion of assets materially exposed to physical risk, some organizations may choose to report the number of assets exposed relative to the total number of assets, while others report the value of assets exposed relative to the total value. The TCFD believes these differences in unit of measure help provide organizations with flexibility and do not impact comparability as long as units are clearly stated.

## Table C1 Summary Table: Cross-Industry, Climate-Related Metrics

Note: Additional context, including alignment with existing frameworks and example disclosures, is provided in [Appendix 2: Further Rationale for Proposed Revisions](#).

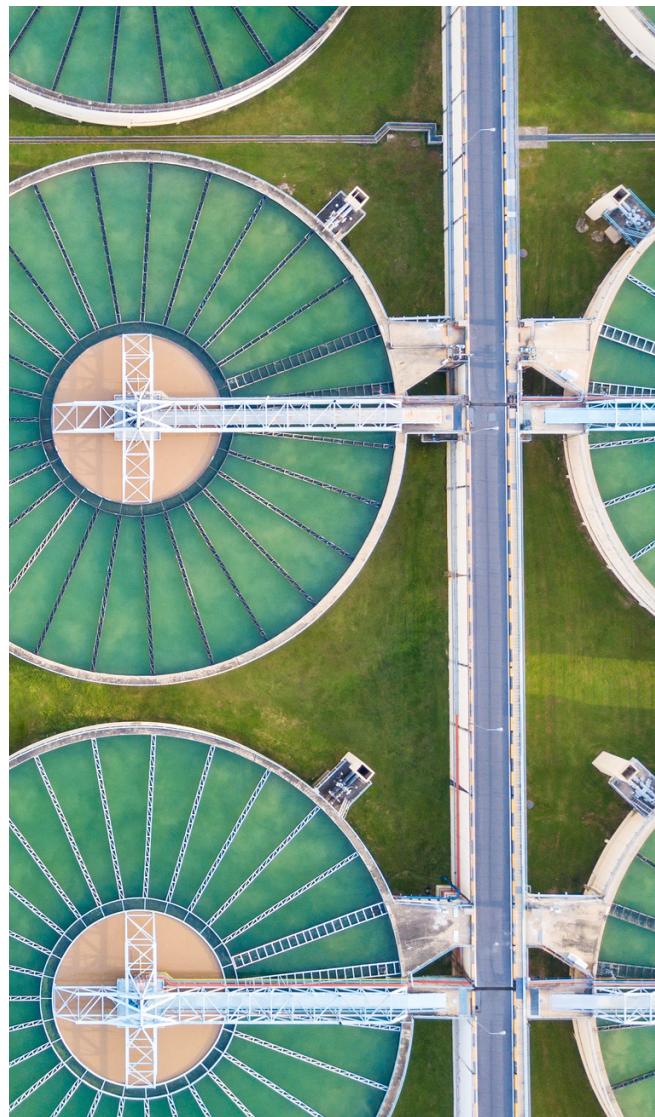
Cross-Industry, Climate-Related Metrics	Example Unit of Measure
GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)	MT of CO <sub>2</sub> e
Carbon price(s) (external and shadow/internal)	Price in local currency, per MT of CO <sub>2</sub> e
Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks	Percentage
Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks	Percentage
Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities	Percentage
Amount of senior management remuneration impacted by climate considerations	Percentage/amount in local currency or weighting
Amount of expenditure or capital investment deployed toward climate risks and opportunities	Local currency

### Climate-Related Financial Impacts

The cross-industry, climate-related metrics not only improve comparability across companies but also are key inputs with which to estimate climate-related financial impacts. Annual assessments of the state of disclosures have shown that organizations have made some progress in disclosing climate-related financial impacts, but that it continues to be one of the lowest areas of disclosure.<sup>31</sup> The *2020 Status Report* noted that “disclosure of TCFD-aligned information increased by six percentage points, on average, between 2017 and 2019...however, companies’ disclosure of the potential financial impact of climate change on their businesses and strategies remains low” (p. 4, original emphasis).

Further detail on challenges to and solutions for estimating climate-related financial impact will be included in the 2021 Status Report as part of FSB’s request that the TCFD “undertake further analysis on the extent to which companies describe the financial impact of climate-related risks and opportunities on their businesses and strategies.”<sup>32</sup>

**Figure C12 illustrates how cross-industry, climate-related metrics inform estimation of climate-related financial impact.** For example, estimating proportion of forward-looking assets and/or operating, investing, or financing activities aligned toward climate opportunities can be applied to an organization’s existing outlook on future revenue to estimate the contribution to overall revenue from climate opportunities. Calculating Scope 1, 2, and 3 emissions and carbon prices can inform the company’s cost-benefit analysis of potential investments and process changes or investments, while scenario analysis for plausible future emissions pathways and implied carbon prices can allow for a range of estimates on forward-looking carbon costs.

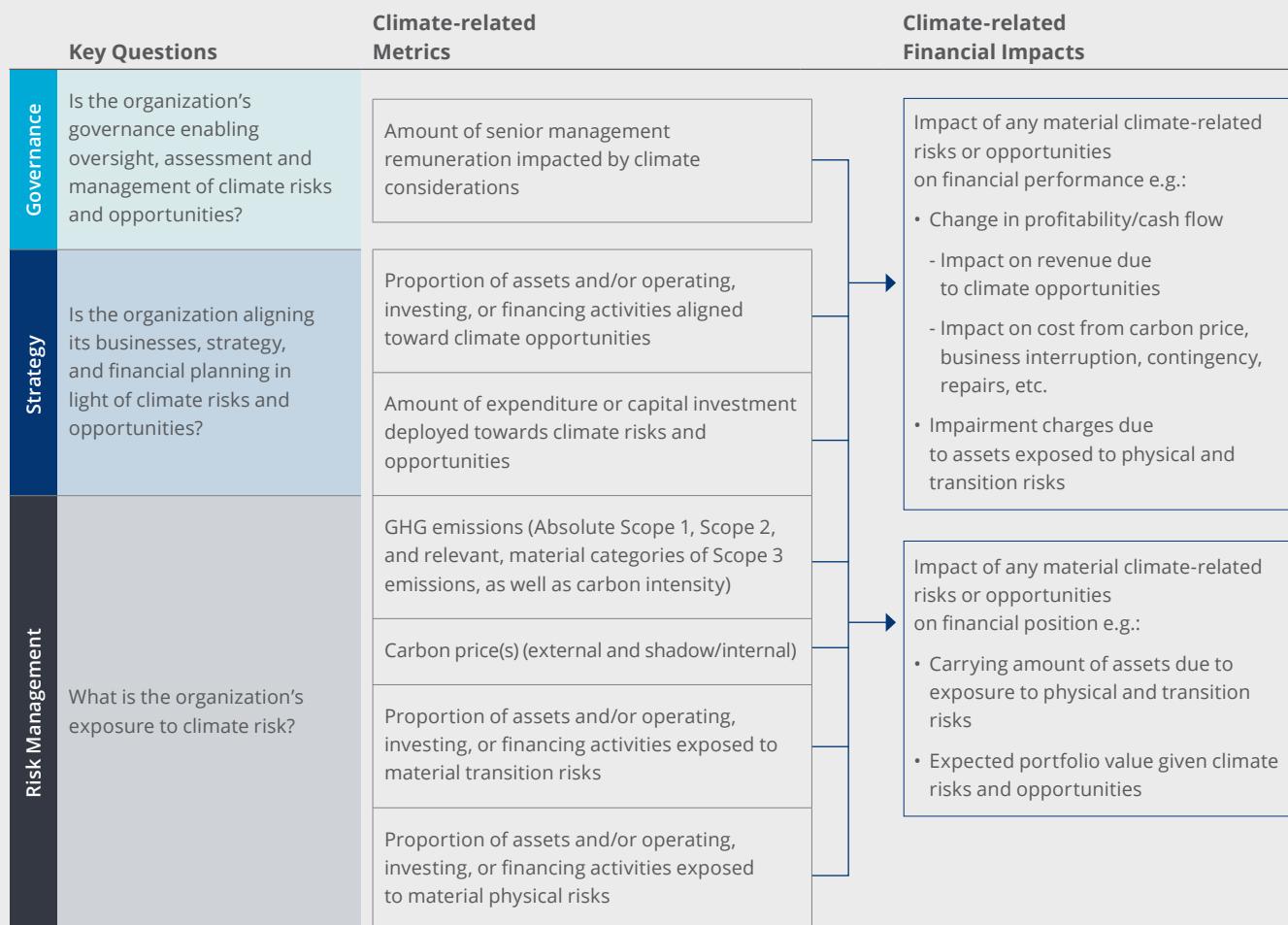


<sup>31</sup> See, for example, *2018 Status Report*, p. 13; *2019 Status Report* pp. iv and 51; and *2020 Status Report*, pp. 4, 8, and 12.

<sup>32</sup> FSB, “FSB welcomes TCFD status report,” October 29, 2020.

Figure C12

## Mapping Climate-Related Metrics and Financial Impacts to the TCFD Pillars



→ Example information flow between foundational and financial metrics

### (1) Impact of any material climate-related risks or opportunities on financial performance (e.g., cost, profitability, operating cash flow, impairment)<sup>33</sup>

Changes to income and cash flow statements or other appropriate financial performance measures as a result of climate-related risks, opportunities, initiatives, or actions provide insight into management priorities and strategic efforts in anticipation of or response to an organization's climate-related risks and opportunities. Impact on financial performance can include, for example:

- increases in revenue from new products or services from climate opportunities;
- increases in cost due to carbon prices, business interruption, contingency, or repairs;
- changes to operating cash flow from changes in upstream costs;
- impairment charges due to assets exposed to physical and transition risks; and
- changes to total expected losses.

<sup>33</sup> Additional details on financial impact, including examples, are provided in the 2017 *TCFD Final Report*, pp. 8–11, and the 2017 *TCFD Annex*, Appendix 1, p. 77.

## Figure C13 Example Disclosure: Meridian Energy

Top Risks		
Risk drivers	 Extreme rainfall in hydro catchments	 Negative demand disruption - emissions intensive industries
Type	Physical	Transition
Scale	Medium	Medium
Likelihood	About as likely as not	About as likely as not
Timeframe	Long-term (30 years)	Long-term (30 years)
Impacts	Increasing intensity of extreme rainfall events in hydro catchments.	Sudden drop in electricity demand as emissions-intensive industries are disrupted by ambitious climate change legislation or shifting consumer preferences for sustainable goods and services.
Financial implications	Increase in intensity of extreme rainfall events may require the lowering of dam water levels (reducing assets' generating capacity) and/or the strengthening of dam structures.	Reduced electricity demand may negatively impact on Meridian's revenue, for example if the dairy industry was curtailed due to climate action policy.
Quantification	-\$11 million	-\$12 to -\$17 million
Methodology	Estimated potential financial impact is an annualised figure over a 30 year time horizon of estimated civil construction costs and negative revenue impacts.	Estimated potential financial impact is an annualized figure over a 30 year time horizon, calculated by modelling the impact of a step-change reduction in demand and comparing it to our Evolution scenario. There is significant uncertainty to this calculation.
Management response	Probable Maximum Flood values are reviewed once every ten years to incorporate climate change.	Meridian supports of climate action policy that would increase electricity demand in other sectors, in particular the use of electricity in the transport and industrial heat sectors of the economy.

Source: Meridian Energy, *Climate Change Disclosures Meridian Energy Limited FY20*, p. 11

### (2) Impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities)<sup>33</sup>

Changes to balance sheet statement, or other appropriate financial position measures, as a result of climate-related risks, opportunities, initiatives, or actions provide insight into management priorities and strategic efforts in anticipation of or response to an organization's climate-related risks and opportunities. Impact on financial position can include, for example:

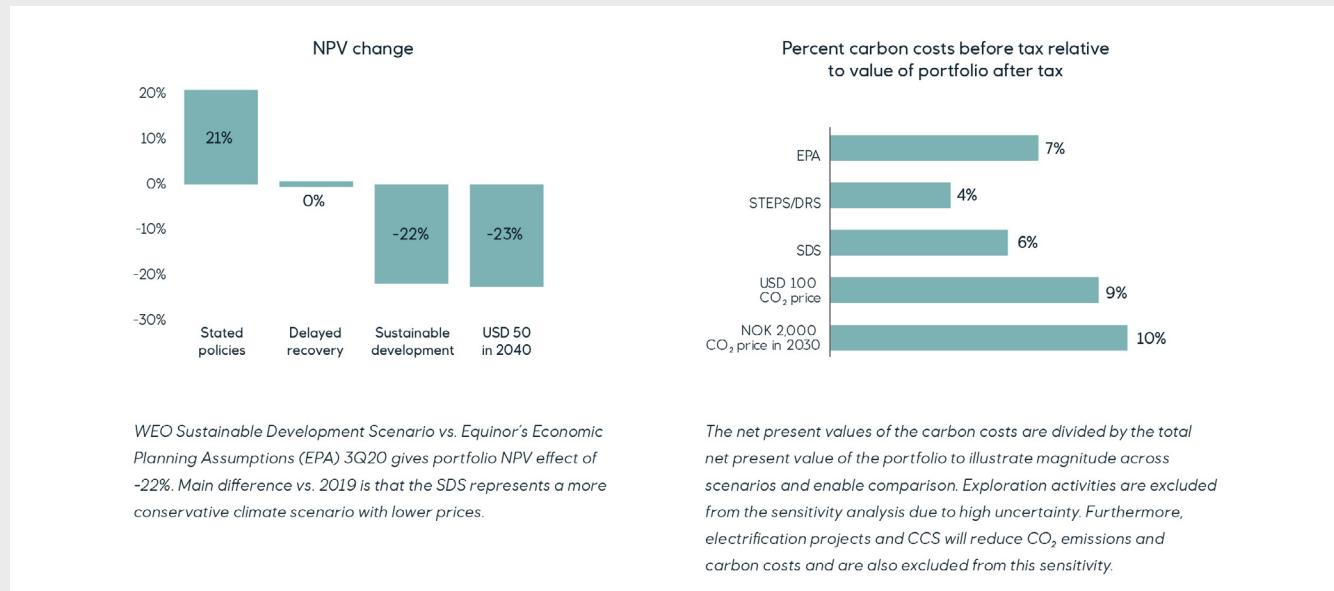
- changes to the carrying amount of assets due to exposure to physical and transition risks and
- changes to the expected portfolio value given climate risks and opportunities.

#### Proposed Update

The Task Force recommends that companies disclose cross-industry, climate-related metrics and climate-related financial impacts for the historical, current, and forward-looking periods, if relevant. In cases in which it is difficult to distinguish the financial impacts of climate

<sup>33</sup> Additional details on financial impact, including examples, are provided in the 2017 *TCFD Final Report*, pp. 8–11, and the 2017 *TCFD Annex*, Appendix 1, p. 77.

## Figure C14 Example Disclosure: Equinor



Source: Equinor, *Sustainability Report 2020*, p. 17

change from a broader set of drivers impacting financial performance or position, organizations should consider disclosing qualitatively (e.g., directionally) the effect of climate change on particular changes in financial position or performance.

**Box C1** provides additional context regarding forward-looking information and uncertainty. Organizations should, at a minimum, disclose forward-looking information for those climate-related metrics and financial impacts against which they have set climate-related targets. **Forward-looking information, particularly information related to the organization's medium- and long-term time horizons, may be more appropriate to report as ranges, qualitative directions, or numbers tied to specific assumptions about the future state of the world, such as those informed by scenario analysis.**

Organizations typically use a wide variety of information internally and externally to manage their operations. These **cross-industry, climate-related metrics and financial impacts are not meant to supplant or replace other information** that organizations track as

part of their business planning or that industries coalesce around in order to track risks or opportunities specific to their industry (for example, see Table 2 in the 2017 *TCFD Annex* for common carbon footprinting and exposure metrics, and Tables 3 through 6 for additional illustrative metrics for the non-financial groups). Rather, the Task Force intends for this discrete set of cross-industry metrics to provide a base of comparability across and within industries and form the set of minimum climate-related metrics that all companies should report.

To support further comparability across climate-related disclosures, **the TCFD encourages organizations to disclose all cross-industry, climate-related metrics for the historical, current, and forward-looking period, if relevant**. These metrics are already widely reported across financial and non-financial organizations, are well aligned with existing disclosure frameworks (both voluntary and regulatory), and are crucial data from which market participants can assess climate risks and opportunities. *Appendix 2: Further Rationale for Proposed Revisions* provides details on alignment with existing frameworks as well as example disclosures by financial and non-financial organizations.

#### Box C4

#### Summary of Proposed Update

The TCFD proposes updating its 2017 Guidance for All Sectors recommended disclosure Metrics and Targets a) to recommend that all organizations should disclose each of the cross-industry, climate-related metrics for the historical, current, and forward-looking periods, if relevant. The Task Force is requesting additional input on whether these cross-industry, climate-related metrics should be subject to a materiality assessment point as part of its consultation.

The proposed changes update the 2017 Guidance for All Sectors recommended disclosures *Strategy b)* and *c)* to clarify that organizations should disclose climate-related financial impacts for the historical, current, and forward-looking periods. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed text changes.

#### Input Requested on Materiality

The cornerstone of many disclosure standards and requirements is a determination of materiality by reporting entities. In its 2017 report, the TCFD did not define materiality but rather deferred to existing reporting standards and legal requirements, stating that “organizations should determine materiality for climate-related issues consistent with how they determine the materiality of other information included in their annual financial filings.”<sup>34</sup>

Currently, the TCFD Governance and Risk Management recommendations are not subject to an assessment of materiality while the Strategy and Metrics and Targets recommendations are subject to an assessment of materiality.<sup>35</sup> However, TCFD did state that certain organizations—those in the four non-financial groups listed in the TCFD report—that have more than one billion U.S. dollar equivalent in annual revenue—should consider disclosing climate-related information even when the information is not deemed material and not included in financial filings.<sup>36</sup>

The TCFD also pointed out in 2020 that companies should be cognizant that materiality is not a static concept. It is evolving over time in terms of what primary users view as material to their decisions, who beyond primary users might be an audience for the disclosure, and what type of information is desired.<sup>37</sup> TCFD expects that definitions of materiality as it relates to climate information will continue to evolve as jurisdictions provide further guidance on materiality, or specific line-item disclosure requirements (without regard to materiality), within their regulations, and as standard setters aim to establish a common baseline of financially material information that could be used by all jurisdictions.<sup>38, 39</sup>

The TCFD is proposing seven cross-industry, climate-related metrics. In the TCFD’s view, these cross-industry, climate-related metrics, particularly GHG emissions, are key to understanding climate-related risks and opportunities both by users assessing individual companies; those aggregating risks across companies within their investing, lending, or underwriting portfolio; and by regulators looking to assess systemic risks.

Given the potential importance and usefulness of these cross-industry metrics, TCFD is requesting input, through its consultation, on the disclosure treatment of these seven cross-industry, climate-related metrics in relation to the concept of materiality. Should these metrics, or a subset, be disclosed independent of a materiality assessment, or should their disclosure be subject to a materiality determination? Alternatively, a potential middle path would be for organizations to disclose material cross-industry, climate-related metrics or provide qualitative explanations as to why the information is not deemed material (i.e., provide or explain).

<sup>34</sup> 2017 [TCFD Final Report](#), June 15, 2017, p. 33.

<sup>35</sup> 2017 [TCFD Annex](#), June 29, 2017, p. 3.

<sup>36</sup> 2017 [TCFD Final Report](#), June 15, 2017, p. 17, footnote 37.

<sup>37</sup> TCFD, [Guidance on Scenario Analysis for Non-Financial Companies](#), October 2020, p. 52.

<sup>38</sup> Guillot and Hales, “Materiality: The Word that Launched a Thousand Debates,” May 14, 2021: “The collaborative work of the ‘Group of Five’ formed the basis for the ‘building blocks’ approach now being embraced by the International Organization of Securities Commissions (IOSCO). This approach recognizes that company operations and investment portfolios span jurisdictions that operate with different legal definitions of materiality, most significantly the US and the European Union. A ‘building blocks’ approach could dramatically reduce the complexity and fragmentation that characterizes the global sustainability disclosure landscape by establishing a common baseline of financially material information that could be used by all jurisdictions. The ‘building blocks’ approach could reduce reporting complexity for preparers, provide global investors a baseline level of financially material, decision-useful information, and maintain the flexibility of jurisdictions to create additional building blocks, as they deem appropriate, based on their own legal frameworks and public policy objectives.”

<sup>39</sup> US SEC Commissioner Allison Lee, [“Living in a Material World: Myths and Misconceptions about ‘Materiality’”](#), May 24 2021: “In practice Regulation S-K has, from the outset, required periodic reports to include information that is important to investors but may or may not be material in every respect to every company making the disclosure. We have done this, for example, with respect to disclosures of related party transactions, environmental proceedings, share repurchases, and executive compensation...Moreover, if SEC disclosure rulemaking authority were artificially circumscribed by both an item-by-item, and company-by-company, analysis of materiality, comparability would be sacrificed almost completely. Indeed such an approach would be at odds with modern capital markets which have become increasingly comparative in nature thus requiring at least some specific metrics in order to make appropriate comparisons.”

### Scope 3 Emissions

GHG emissions are included as one of the proposed cross-industry, climate-related metrics discussed above but given the additional guidance on GHG emissions in recommended disclosure *Metrics and Targets b*), it is worth discussing the proposed updates regarding Scope 3 and financed emissions in more detail.

The most well-known and widely referenced classification of greenhouse gases is the GHG Protocol Corporate Standard,<sup>40</sup> which defines the three Scopes of emissions from the perspective of the reporting company as follows:<sup>41</sup>

- **Scope 1 emissions** are direct emissions from owned or controlled sources. Note that one company's Scope 1 (direct) emissions are Scope 3 (indirect) emissions for a company or consumer who is in the first company's value chain.
- **Scope 2 emissions** are indirect emissions from the generation of purchased energy.
- **Scope 3 emissions** are all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. The GHG Protocol's Scope 3 schema contains 15 stages, eight of which are upstream, seven downstream.

As noted in the GHG Protocol Corporate Value Chain (Scope 3) Standard, "while a company has control over its direct emissions, it has influence over its indirect emissions."<sup>42</sup>

### Scope 3 Emissions for Non-Financial Groups

Of the three categories of GHG emissions, Scope 3 emissions, including financed emissions, are understudied, underreported, and often difficult to measure and demarcate. Approximately 40% of global GHG emissions are driven or influenced by organizations through their purchases (i.e., purchased goods and services) and through the products they sell.<sup>43</sup> Furthermore, an organization's supply chain emissions are on average 5.5 times larger than its Scope 1 and 2 emissions.<sup>44</sup>

Banks, insurance companies, asset managers, and asset owners will need better disclosure of Scope 3 emissions from preparers to understand their own financed emissions and evaluate how their loan, underwriting, and investment activities may expose them to carbon-related assets and their associated risks.<sup>45</sup> In addition, an increasing number of jurisdictions are formally moving to net-zero targets and, as a result, may require more comprehensive GHG reporting from companies within their borders.

At the same time, the preparers and users of Scope 3 emission information need to understand the current limitations of Scope 3 emissions accounting and reporting. The most well-known and widely referenced Scope 3 reporting methodology is the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, commonly referred to as the Scope 3 Standard. It states: "Use of this standard is intended to enable comparisons of a company's GHG emissions over time. It is not designed to support comparisons between companies based on their Scope 3 emissions. Differences in reported emissions may be a result of differences in inventory methodology or differences in company size or structure."

Therefore, it may be difficult presently to compare Scope 3 emissions reported by different organizations due to the inherent limitation of the Scope 3 Standard methodology. In addition, while in principle the emissions categories defined by the Scope 3 Standard are designed to be mutually exclusive, applying the Scope 3 Standard in practice can cause an overlap in reporting boundaries due to an organization's involvement at multiple points in the life cycle of products and can result in double counting of Scope 3 emissions.<sup>46</sup>

**Notwithstanding these challenges, the TCFD believes that reporting around Scope 3 emissions has matured enough to warrant inclusion in disclosures.** Scope 3 disclosures are an essential component of climate-related risk analysis in commercial and financial markets. Scope 3 emissions are increasingly being demanded by investors and other market participants, the number of companies

<sup>40</sup> The GHG Protocol Corporate Standard, commonly referred to simply as the Corporate Standard, is a methodology developed by the GHG Protocol Initiative and is the methodology explicitly recommended by the Task Force for calculating and reporting emissions (see [2017 TCFD Final Report](#), June 15, 2017, Section C3, p. 22, footnote 40). The first edition of the Corporate Standard was published in 2001 and then updated in 2004 with additional guidance clarifying how companies can measure emissions from electricity and other energy purchases, and account for emissions from throughout their value chains. Building on the Corporate Standard, the GHG Protocol then developed a more detailed approach to Scope 3 emissions, and in 2011 published the *Corporate Value Chain (Scope-3) Accounting and Reporting Standard*, commonly referred to as the Scope 3 Standard. A supplement to the Scope 3 Standard was then published in 2013 providing detailed explanation of how to calculate Scope 3 emissions, namely the *Technical Guidance for Calculating Scope-3 Emissions*. The Scope 3 Standard is the only internationally recognized methodology for companies to report all their value chain emissions.

<sup>41</sup> See GHG Protocol, *Frequently Asked Questions*.

<sup>42</sup> GHG Protocol, *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, September 2011, p. 27.

<sup>43</sup> See CDP, *Global Supply Chain Report 2018*, 2018.

<sup>44</sup> See [We Mean Business Coalition, Climate Action in the Value Chain: Reducing Scope 3 Emissions and Achieving Science-Based Targets](#), April 9, 2020.

<sup>45</sup> 2017 *TCFD Final Report*, June 15, 2017, p. 36. As part of the Task Force's public consultation as well as in discussions with preparers, some asset owners and asset managers expressed concern about reporting on GHG emissions related to their own or their clients' investments given the current data challenges and existing accounting guidance on how to measure and report GHG emissions associated with investments. In particular, they voiced concerns about the accuracy and completeness of the reported data.

<sup>46</sup> For further discussion of Scope 3 limitations, see Rocky Mountain Institute, *The Next Frontier of Carbon Accounting*, June 2020.

disclosing Scope 3 emissions is growing, and companies are improving their determination of Scope 3 emissions. See [Appendix 2: Further Rationale for Proposed Revisions](#) for additional context on TCFD's proposed change.

### **Scope 3 Emissions for the Financial Sector: Financed Emissions**

According to the GHG Protocol, "investments" count as a form of Scope 3 emissions "applicable to investors...and companies that provide financial services. Investments are categorized as a downstream Scope 3 category because the provision of capital or financing is a service provided by the reporting company."<sup>47</sup>

For financial institutions, financed emissions provide a view on the organization's exposure to climate-related risks and opportunities and can be used by regulators and authorities to assess aggregate risk across the economy. According to a 2020 report by CDP, though only 25% of financial institutions report financed emissions, these reported emissions are over 700 times larger than reported operational emissions.<sup>48</sup>

In November 2020, PCAF issued the first edition of the *PCAF Global GHG Accounting and Reporting Standard for the Financial Industry*. PCAF's Standard builds on the GHG Protocol's accounting rules for Scope 3, category

Figure C15

## Financed Emissions Metrics and Comparability

Measuring financed emissions in absolute terms (i.e., absolute emissions) provides financial institutions with the necessary baseline for climate action to align with the Paris Agreement. When banks and investors aim to benchmark or compare companies, sectors, or portfolios to each other, normalization is required. Absolute financed emissions at a portfolio level is not a good instrument to compare or benchmark financial institutions on their performance due to the potential differences between financial institutions in terms of size, product portfolio, exposure to sectors and regions, etc. For comparability and benchmarking, the absolute financed emissions need to be translated into an emissions intensity metric (emissions per a specific unit).<sup>169</sup>

A wide array of intensity metrics is applied in the market and each has its own merits. The table below includes a list of the most common metrics.

Metric	Purpose	Description
<b>Absolute emissions</b>	To understand the climate impact of loans and investments, and set a baseline for climate action	The total GHG emissions of an asset class or portfolio
<b>Economic emissions intensity</b>	To understand how the emissions intensity of different portfolios (or parts of portfolios) compare to each other per monetary unit	Absolute emissions divided by the loan and investment volume, expressed as e.g. tCO <sub>2</sub> e/€M invested
<b>Physical emissions intensity</b>	To understand the efficiency of a portfolio (or parts of a portfolio) in terms of total carbon emissions per unit of a common output	Absolute emissions divided by an output value, expressed as e.g. tCO <sub>2</sub> e/MWh, tCO <sub>2</sub> e/ton product produced
<b>Weighted Average Carbon Intensity (WACI)</b>	To understand exposure to carbon-intensive companies	Portfolio's exposure to carbon-intensive companies, expressed as tCO <sub>2</sub> e/€M company revenue

Source: PCAF, *Global GHG Standard*, p. 102

<sup>47</sup> See GHG Protocol, *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, September 2011, p. 51.

<sup>48</sup> CDP, *The Time to Green Finance*, 2020, p. 33.

15 (Investments) by providing detailed methodological guidance to assist in the measurement and disclosure of GHG emissions associated with six asset classes: (1) listed equity and corporate bonds, (2) business loans and unlisted equity, (3) project finance, (4) commercial real estate, (5) mortgages, and (6) motor vehicle loans. PCAF notes, “The initiative, with guidance from PCAF participants and users, intends to both update the methodologies over time and add additional ones.”<sup>49</sup>

PCAF’s Standard recognizes the difficulties inherent in the comparability, coverage, transparency, and reliability of Scope 3 data when attempting to capture the Scope 3 dimension of financed emissions, but states that “by requiring Scope 3 reporting for selected sectors, PCAF seeks to make Scope 3 emissions reporting more common practice by improving data availability and quality over time.”

SBTi and the CRO Forum have also worked on clarifying financed emissions. These efforts are discussed in [Appendix 2: Further Rationale for Proposed Revisions](#).

Note that insurance companies are currently out of scope of the PCAF Global Standard. As a result, TCFD proposes insurance underwriters disclose Weighted Average Carbon Intensity (WACI), particularly for commercial property and specialty lines that cover tangible properties and goods. The CRO Forum’s [Carbon Footprinting Methodology for Underwriting Portfolios](#) is currently the most advanced adaptation of WACI to insurance portfolios and is referenced in the proposed guidance. The to-be-launched Net Zero Insurance Alliance may provide additional discussion appropriate for insurance underwriting.<sup>50</sup> (Re)insurers should follow latest industry guidance.

#### ***Proposed Update***

The 2017 [TCFD Final Report](#) provides guidance on recommended disclosure Metrics and Targets b), stating, “Organizations should provide their Scope 1 and Scope 2 GHG emissions and, if appropriate, Scope 3 GHG emissions and the related risks. GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.”

#### **Box C5 Summary of Proposed Update**

TCFD is proposing to update its Guidance for All Sectors to include disclosure of relevant, material categories of Scope 3 emissions. TCFD has determined that data and methodologies have matured sufficiently such that Scope 3 disclosure is appropriate for all financial and non-financial sectors. Disclosure is particularly important for organizations for which Scope 3 emissions account for 40% or more of the total emissions of the organization or for which Scope 3 emissions have been deemed a significant risk in their value chain.<sup>51</sup>

The TCFD is also proposing to update its Supplemental Guidance for the Financial Sector to clarify that banks, asset owners, asset managers, and the asset management side of insurers should disclose financed emissions in line with PCAF’s methodology and WACI, if relevant, or a comparable methodology. If a comparable methodology is used, the TCFD recommends the details of such methodology be made publicly available.

This proposal will replace the current “should disclose” guidance around WACI for asset managers and asset owners, with WACI and other carbon footprint metrics in the 2017 TCFD annex remaining as “should consider” metrics.

Because PCAF does not yet cover insurance underwriting, TCFD is proposing that (re)insurance underwriters should disclose WACI for their commercial property and specialty lines of business that cover tangible properties and goods for which data and some methodologies are available. More complex commercial and retail lines may be addressed at a later stage. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed text changes.

When the 2017 TCFD final report was published, there were a number of unresolved issues regarding when and how to calculate Scope 3 and financed emissions, resulting in the insertion of the phrase “if appropriate” for the Scope 3 disclosure recommendation. The intent was to provide flexibility for reporting entities. As mentioned previously, the discussion around Scope 3 emissions and financed emissions has evolved since 2017.<sup>52</sup>

<sup>49</sup> See [PCAF Global Standards 2020](#), November 18, 2020.

<sup>50</sup> The anticipated launch of the Net Zero Insurance Alliance was referenced in the GFANZ [press release](#) in April 2021.

<sup>51</sup> See discussion of 40% threshold in SBTi’s paper [SBTi Criteria and Recommendations](#), Version 4.2, April 2021, Section V, p. 10.

<sup>52</sup> 2017 [TCFD Final Report](#), June 15, 2017, p. 3. “The Task Force expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed.”

In particular, the international dialogue on climate change has shifted from a focus on carbon budgets consistent with the Paris Agreement to a focus on achieving net-zero emissions by 2050.<sup>53</sup> This shift signals an increasing urgency on reducing emissions—both direct and indirect—to zero by all economic sectors. To help identify carbon-related assets and potential climate-related risk, governments and investors are increasingly focusing on the full value chain of emissions.

### Updates to Supplemental Guidance for Financial Sector

In addition to the proposed changes to Guidance for All Sectors, the Task Force is recommending updating guidance around carbon-related asset metrics and forward-looking metrics for financial institutions, including portfolio alignment metrics.

#### Carbon-Related Asset Metrics

The TCFD is proposing to update its supplemental guidance for the financial sector on exposure to carbon-related assets. This will help financial institutions implement the cross-industry, climate-related metric on “proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks.”

The TCFD’s [2017 final report](#) describes its FSB remit “to develop climate-related disclosures that could promote more informed investment, credit or lending and insurance underwriting decisions and in turn [would] enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposure to climate-related risks” (p. 2). The TCFD recognized in its 2017 final report that “the term carbon-related assets is not well defined, but is generally considered to refer to assets or organizations with relatively high direct or indirect GHG emissions” (footnote 17). Section E of the TCFD’s 2017 final report identified “better defining carbon-related assets” as one of the key areas for further work (p. 32).

#### Box C6 Summary of Proposed Update

The Task Force proposes expanding the Supplemental Guidance on recommended disclosure *Strategy a)* on carbon-related assets to insurance companies, asset managers, and asset owners, in addition to banks. The proposed changes also expand the definition of exposure to carbon-related assets from the energy sector group to all non-financial sector groups identified in the 2017 TCFD *Annex*. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed text changes.

#### Forward-Looking Metrics for Financial Sector

Financial institutions have begun to develop forward-looking metrics to disclose the alignment of their portfolios with particular policy objectives (e.g., net-zero, Paris-aligned, 1.5°C) or to assess the overall climate-related risks in their portfolios, such as aggregate unpriced carbon risks.

To further understand these developments, the Task Force conducted a [public consultation](#) from October 29, 2020–January 28, 2021, to gather feedback on potential forward-looking metrics for financial institutions.<sup>54, 55</sup> In conjunction with this consultation, the Portfolio Alignment Team (PAT) issued a report in 2020 titled [Measuring Portfolio Alignment: Assessing the Position of Companies and Portfolios on the Path to Net Zero](#).<sup>56</sup> This report provided a critical assessment of the strengths and trade-offs of the options available to measure the alignment of investments with climate goals and on the methodology for implementing implied temperature rise (ITR) for those institutions wishing to do so.

Responses to the consultation suggested that some organizations are actively using such metrics, with more expecting them to be useful going forward, but that many were looking for more clarity on methodology and standardization (Box C8).

<sup>53</sup> This shift of emphasis was the direct result of the Intergovernmental Panel on Climate Change’s (IPCC’s) special report *Global Warming of 1.5°C*, published in October 2018.

<sup>54</sup> See TCFD, [Forward-Looking Finance Sector Metrics Consultation](#), October 2020, for original consultation.

<sup>55</sup> Additional metrics considered in the consultation responses were the proportion of underlying investments aligned with EU Taxonomy, a forward-looking estimate of carbon-related exposures, unpriced carbon cost, carbon earnings at risk, and amount of apportion emissions over/under a 1.5°C alignment trajectory. See TCFD, [Summary of Forward-Looking Financial Metrics Consultation](#), March 2021, for more details.

<sup>56</sup> The PAT consisted of technical representatives of seven major investment firms and other organizations. The PAT report provided important technical context for the TCFD consultation.

### Box C7

#### Key Takeaways from Consultation<sup>57</sup>

##### Use and Disclosure

- **Three-quarters of respondents report using some form of “forward-looking metrics,” a category that includes not only the universe of metrics specifically considered in the consultation**—for example, implied temperature rise, climate Value-at-Risk, and portfolio alignment estimates—but also a broader range of metrics that include measures of emissions, carbon intensity, environmental resources, and screening criteria.
- This broad set of metrics supports many uses including risk management, portfolio allocation, and communication and engagement. **Roughly half to three-quarters of respondents at financial organizations report using at least one of these metrics**, with asset managers reporting the highest use.
- **Fewer report using the metrics described in the consultation.** When used, these metrics are more likely to be used for monitoring than to support financial decision-making. Only a tenth of those that use these metrics currently disclose them, though an additional third plan to do so in the future.

##### Methodology Considerations

- Respondents agree there are challenges using and disclosing the metrics described in the consultation, with roughly three-quarters particularly concerned with reliance on assumptions to derive future emissions, future uncertainty, and opaque or difficult methodologies.
- Despite the challenges raised, respondents agree that the consultation metrics could be useful with improvements to methodology, with roughly three-quarters pointing to the need for more transparency, comparability, and standardization across methodologies, as well as improved emissions data.
- Almost all would like the methodology for forward-looking metrics to cover Scope 1 and 2 emissions, with many interested in Scope 3 as well, though many also noted the challenges around Scope 3 disclosures including inconsistent reporting and difficulty in accurate measurement.

In light of the findings of the Forward-Looking Metrics consultation, the Task Force commissioned the PAT to conduct further analysis and to (1) develop technical guidance on emerging best practice as it relates to building portfolio alignment tools and producing forward-looking measurements of financial portfolio alignment with the goals of the Paris Agreement, and (2) identify future research priorities where the field is not yet mature enough to identify best practice.<sup>58, 59</sup> This section provides a summary of that report, which can be read in full via TCFD’s [publications page](#).

##### Portfolio Alignment Technical Supplement

To mitigate climate-related risks and opportunities and meet their climate ambitions, financial institutions must not only reduce emissions in line with the goals of the Paris Agreement but also keep global cumulative emissions within a defined carbon budget. The way in which individual financial portfolios will reduce emissions on the path to zero to align with the goals of the Paris Agreement depends on the composition of that portfolio, as different sectors and geographies all must decarbonize at different rates. Portfolio alignment tools can inform portfolio-level target setting frameworks and help financial institutions measure and manage toward the achievement of climate-related targets. The Portfolio Alignment Technical Supplement (the technical supplement) focuses on multiple ways in which financial institutions can align their portfolios with a net-zero-by-2050 ambition.

The purpose of the technical supplement is to identify emerging best practices in portfolio alignment tool construction and use to promote more widespread adoption of consistent, robust, and decision-useful approaches. Attaining some degree of common practice related to portfolio alignment is important not only to facilitate comparability and transparency within and across financial institutions, but to provide further clarity and consistency for companies on how their behavior related to the net-zero transition may impact their interactions with investors and lenders.

The technical supplement identifies a number of potential portfolio alignment methods (Figure C16). Financial institutions can capture a binary categorization of the number of companies with and without GHG reduction targets (e.g., net-zero). Others may choose to use ITR

<sup>57</sup> See TCFD, *Summary of Forward-Looking Financial Metrics Consultation*, March 2021, for more details.

<sup>58</sup> The PAT was established by Mark Carney in his capacity as UN Special Envoy for Climate and Finance and is led by David Blood of Generation Capital. The team comprises participants from the following institutions: Bank of America, BBVA, BlackRock Investment Management, Generation Investment Management, Goldman Sachs, HSBC, McKinsey & Company, and the COP26 Private Finance Hub.

<sup>59</sup> The PAT draws on surveys of, and in-person discussions with, 11 global portfolio alignment method providers, in addition to eight weeks of synthesis and conceptual problem solving by an expanded working group of participants drawn from ten institutions. It expands substantially on the initial findings, following roughly the same organizational structure.

Figure C16

## Types of Portfolio Alignment Tools

### Example Types of Portfolio Alignment Tools

#### Binary Target Measurement

- Percent of investments or counterparties with declared net-zero targets
- Primary issue: incentivizes target setting, but does not provide temperature alignment assessment

#### Benchmark Divergence Models

- Measures forward-looking performance against normative benchmarks
- Primary issue: poorly constructed methods can lead to additional unintended consequences

#### Implied Temperature Rise Models (ITR)

- Translates degree of alignment into impact in the form of a temperature score
- Primary issue: complex and opaque regarding influence of key assumptions

models, which measure company alignment against industry- and geography-level benchmarks and translate the alignment or misalignment of each company to a temperature score.

The PAT technical supplement introduces seven evaluation criteria to help financial institutions select among these tools. It finds, in general, that advancing along the spectrum of sophistication improves tool performance across scientific robustness and incentive optimality but can reduce transparency into key assumptions and ease of use. Task Force members noted that those tools characterized as “least sophisticated” are useful inputs into decision-making and have decided not to include the recommendation to move along the spectrum of sophistication in its proposed updates.

The supplement finds that ITR tools provide the ability to translate degree of misalignment of a given company with a benchmark into consequences for a desired climate goal, which is an important functionality for financial institutions managing their portfolios toward Paris alignment (e.g., from a scientific perspective, what matters to achieving global climate goals is not that an organization or portfolio eventually lines up with a benchmark, but for how long and to what degree it was misaligned with that benchmark). However, as noted in the *Forward-Looking Financial Sector Metrics Consultation*,

ITR tools currently have limitations including variation in approaches and outcomes that results in scores that may not be directly comparable or may over- or underestimate implied temperature rise.

#### The Portfolio Alignment Team sets out four key recommendations for financial institutions:

- Financial institutions should measure and disclose the alignment of their portfolios with the goals of the Paris Agreement using forward-looking metrics.
- Financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities but should consider advancing along the spectrum of sophistication of approaches over time as tools improve in robustness, transparency, and ease of use.
- Portfolio-alignment tools should be developed and used alongside existing approaches to setting emissions reduction targets. This suite of tools should also support management and engagement decisions concerning emissions reductions.
- Institutions should use portfolio-alignment tools alongside other purpose-built tools for quantifying transition risks.

**Table C2**

## Key Steps and Design Judgements for Portfolio Alignment Implementation

<b>Methodological Step</b>	<b>Design Judgement</b>
<b>Step 1:</b> Translating scenario-based carbon budgets into benchmarks	Judgement 1: What type of benchmark should you build?  Judgement 2: How granular should your benchmark be?  Judgement 3: Should you use absolute emissions, production capacity, or emissions intensity units?
<b>Step 2:</b> Assessing company-level alignment	Judgement 4: What scope of emissions should be included?  Judgement 5: How do you measure company performance?  Judgement 6: How do you project company performance?  Judgement 7: How do you measure alignment?
<b>Step 3:</b> Assessing portfolio-level alignment	Judgement 8: How do you express alignment as a metric?  Judgement 9: How do you aggregate company-level scores?

These four recommendations are supplemented by additional recommendations organized around nine key design judgements that financial institutions must make when designing portfolio alignment methods (Table C2).<sup>60</sup>

Finally, the Portfolio Alignment Technical Supplement details some of the data and implementation challenges facing portfolio alignment tools to support financial institutions considering these tools and highlights areas of future work to support implementation.

### Box C8 Summary of Proposed Update

Based on the recommendations of the Portfolio Alignment Team, the Task Force proposes amending the existing Supplemental Guidance for Banks, Insurance Companies, Asset Owners, and Asset Managers on recommended disclosure Metrics and Targets a) to recommend that financial institutions should measure and disclose the alignment of their portfolios consistent with a 2°C or lower temperature pathway (e.g., Paris-aligned), and incorporate forward-looking alignment metrics into their target-setting frameworks and management processes.<sup>61</sup>

The proposed updates note that portfolio alignment tools are useful inputs to quantifying transition risk and that financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed text changes.

<sup>60</sup> The first PAT report introduced nine key design judgments for financial institutions to consider when implementing portfolio alignment tools.

<sup>61</sup> (Re)insurance underwriters are at an earlier stage on portfolio alignment relative to other financial institutions, TCFD encourages (re)insurance underwriters to begin with forward-looking metrics and then move to measuring and disclosing the alignment of their underwriting portfolios as methodologies progress.

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D.

## Climate-Related Targets

## D. Climate-Related Targets

This section provides an overview of principles for setting targets aligned with climate ambition, including illustrative examples of targets based on cross-industry, climate-related metrics. Additionally, it outlines the importance of tracking and disclosing progress against climate-related targets. Finally, it provides a stylized example of how this translates in practice.

When organizations select metrics, they should consider whether there is an associated target against which to track progress. Though not all metrics will require a target, all targets should be supported by appropriate metrics.

And while the terms “goals” and “targets” are often used interchangeably, they have important differences. As defined for purposes of this guidance, business goals are written parts of a long-term vision laying out objectives for what results an organization aims to accomplish and by what ultimate deadline. Targets are similar but typically have a numerical value assigned, are often more specific and concrete, provide the steps needed to accomplish a goal, and hence are aligned with the intended outcomes and deadlines of larger goals. For example, an organization may set a goal to increase the proportion of their facilities upgraded against extreme heat. Climate-related targets supporting that goal may specify that 30% of facilities be upgraded by 2020 and 50% by 2030. As individuals and teams within the organization reach their targets, the organization makes progress toward goals.

In setting climate-related targets, an organization needs to consider its overall climate ambition and climate strategy in light of:

- where the organization currently is;
- where it is going; and
- how it will get there.

### 1. PRINCIPLES FOR SETTING CLIMATE-RELATED TARGETS

Organizations should set climate-related targets based on the following principles:

**Based on recognized metrics.** Climate-related targets should be based on a set of recognized metrics, including cross-industry, climate-related metrics, sector-specific metrics, and organization-specific metrics.

**Quantified and granular.** Climate-related targets should be quantified, where possible, especially for metrics that are fully in the organization’s control, such as amount of investment in physical risk reduction. Climate-related targets should also be granular enough to enable tracking. Table D1 provides illustrative examples of quantitative, granular targets across all cross-industry, climate-related metrics.

**Designed in consideration of an organization’s strategy and forecasting, and informed notably by scenario analysis and climate science.** Climate-related targets should be aligned with, and supportive of, an organization’s strategy and strategic goals, and informed by company forecasting and climate science (see Box D2). Organizations should consider providing a description of how climate scenario analysis influenced the determination of targets and broader climate strategy. For GHG reduction targets, organizations should specify which temperature pathway their target is expected to align to. Organizations should consider summarizing the role of scenario analysis in developing climate-related targets and testing their resilience under various outcomes (e.g., choosing business-relevant time horizons, testing achievability, determining contribution to business resilience).

**Clearly specified over time.**<sup>62</sup> Climate-related targets should be defined clearly over time and specify:

- **Baseline:** Clear definition of baseline time period against which progress will be tracked with a consistent base year across targets;
- **Time horizon:** Defined time horizon by which targets are intended to be achieved; should be consistent across targets and, if feasible, consistent with key dates tracked by climate-related organizations or regulators<sup>63</sup> (see Figure D1); and

<sup>62</sup> This principle is adapted from SBTi’s *Criteria and Recommendations for Financial Institutions* Section 2 and SBTi’s *Science-Based Target Setting Manual*, Version 4.1. In its target setting manual, SBTi recommends that “Companies should set a target that covers a minimum of 5 years and a maximum of 15 years from the date the target is submitted for approval. It is also recommended to set long-term targets beyond this interval and set interim milestones at five-year intervals” (p. 30).

<sup>63</sup> 2030 and 2050 have become key target dates following the publication of the *Special Report on Global Warming of 1.5°C Summary for Policymakers* by the IPCC. This report noted that in order to limit global warming to 1.5°C “global net human-caused emissions of carbon dioxide (CO<sub>2</sub>) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.” For example, the *Net-Zero Banking Alliance*, announced April 2021, requires members to “Within 18 months of joining, set 2030 targets (or sooner) and a 2050 target, with intermediary targets to be set every 5 years from 2030 onwards” (original emphasis).

- **Interim targets:** Any mid-term and long-term targets should have interim targets at appropriate, granular intervals (e.g., 5–10 years) covering the full mid-term or long-term target time horizon.

#### Box D1 Defining Key Terms

- An **interim target** is a short-term milestone between the organization's mid- or long-term target and current period.

#### Reviewed and updated, when appropriate.

Organizations should have a clear process for reviewing climate-related targets, at least every five years, and updating if necessary. Considerations when determining whether or not to adjust targets may include changes to an organization's climate ambition or climate strategy, as well as any developments related to progress against targets (e.g., either outpacing previously set target trajectory or providing transparency on underperformance).

**Reported annually.** Progress against climate-related targets should be reported annually.

#### Box D2

#### Role of Scenario Analysis in Setting Achievable Climate-Related Targets

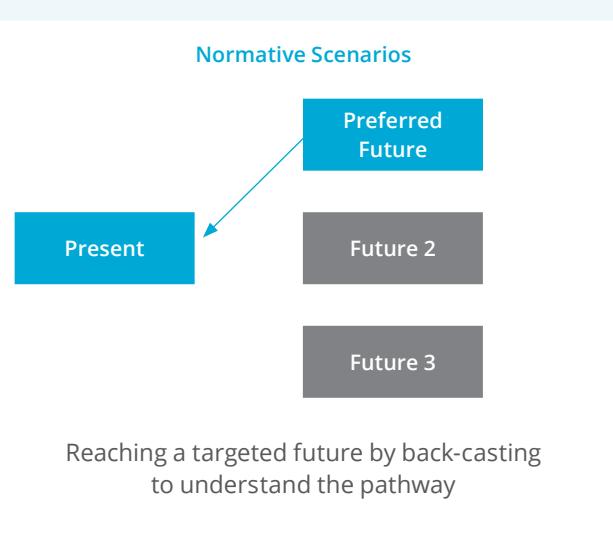
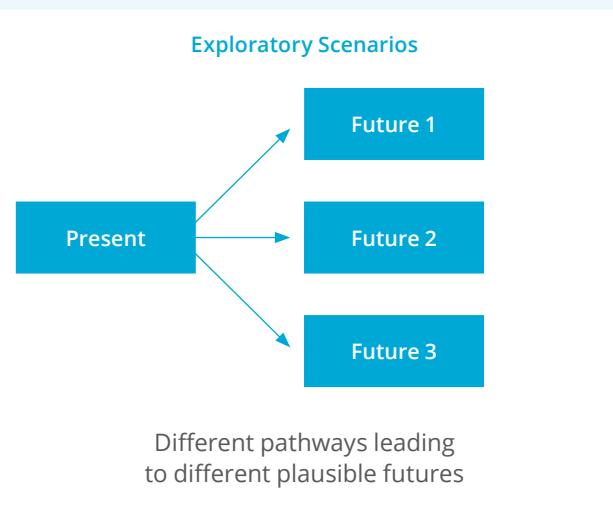
Excerpt from *2020 Scenario Analysis Guidance for Non-Financial Companies*, pp. 15–16

"The two main types of scenarios are (1) exploratory scenarios used to explore a range of different possible futures and (2) normative scenarios used to plan for a preferred future...For normative scenarios, scenario analysis starts with a preferred or desired future outcome and then back-casts plausible pathways from the preferred future to the present in order to inform decisions on what is needed to achieve that preferred future. Examples of normative climate-related scenarios are those targeting net-zero emissions in 2050. Normative scenarios are typically used for assessment and setting of specific targets and implementation plans, rather than assessment of climate-related risks and uncertainties.

Exploratory scenarios describe a diverse set of plausible future states. These scenarios are then used to assess potential climate-related risks and uncertainties and test the resiliency of various strategies to a wide range of future conditions.

Some companies use both approaches—the exploratory approach when testing their strategies for resilience, and the normative approach for setting specific targets such as net-zero emission."

#### Exploratory versus Normative Scenarios



## Figure D1 Disclosing Business-Relevant Time Horizons

As stated in the 2017 TCFD annex, “The Task Force is not specifying time frames for short, medium, and long term given that the timing of climate-related financial impacts on business will vary. Instead, the Task Force recommends preparer define time frames according to the life of their assets, the profile of the climate-related risk they face, and the sectors and geographies in which they operate” (p. 4).

The 2020 Scenario Guidance provided the following diagram for the types of financial implications across various time horizons to assist organizations in thinking about time horizons. Organizations should think about their climate-related targets in the same manner.



**Table D1**  
**Illustrative, Quantified Targets**

Cross-Industry, Climate-Related Metrics	Quantified, Climate-Related Targets (Illustrative)
GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)	<ul style="list-style-type: none"> <li>Reduce net Scope 1, 2, and 3 emissions to zero by 2050, with an interim target to cut emissions by 70% relative to a 2015 baseline by 2035</li> </ul>
Carbon price(s) (external and shadow/internal)	<ul style="list-style-type: none"> <li>Increase shadow carbon price to \$150 by 2030 to reflect potential changes in policy</li> <li><i>Not applicable for external carbon price</i></li> </ul>
Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks	<ul style="list-style-type: none"> <li>Reduce percentage of asset value exposed to acute and chronic physical climate-related risks to 50% by 2050</li> <li>Ensure at least 60% of flood-exposed assets have risk mitigation in place in line with the 2060 projected 100-year floodplain</li> </ul>
Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks	<ul style="list-style-type: none"> <li>Reduce percentage of asset value exposed to transition risks by 30% by 2030, relative to a 2019 baseline</li> </ul>
Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities	<ul style="list-style-type: none"> <li>Increase net installed renewable capacity so that it comprises 85% of total capacity by 2035</li> </ul>
Amount of senior management remuneration impacted by climate considerations	<ul style="list-style-type: none"> <li>Increase amount of senior management remuneration impacted by climate considerations to 50% by 2025</li> </ul>
Amount of expenditure or capital investment deployed toward climate risks and opportunities	<ul style="list-style-type: none"> <li>Invest at least 25% of annual capital expenditure into renewable energy</li> <li>Lend at least 10% of portfolio to projects focused primarily on physical climate-related risk mitigation</li> </ul>

## 2. COMMUNICATING AND DISCLOSING CLIMATE-RELATED TARGETS

Organizations should disclose their key climate-related targets in their strategy and supporting operational and financial plans as well as annual progress against those targets in order to improve transparency and communication with market participants. Consistent disclosure over time allows organizations to see how they compare to their peers and allow for appropriate adjustment. For example, Figure D2 shows current progress against long-term GHG targets for select oil and gas companies and shows the importance of interim targets for promoting transparency and enhancing credibility.

As countries, non-financial companies, and financial institutions set net-zero targets, it is particularly important for disclosures to incorporate GHG targets based on the target-setting principles described previously in order to assess the achievability and credibility of organizations' net-zero ambition. Figure D3 provides a stylized example of implementation of principles for setting a net-zero target.

Organizations should describe the qualitative goals that encompass climate-related targets and reflect longer-term changes to an organization's business or expected direction of travel. These qualitative goals are more

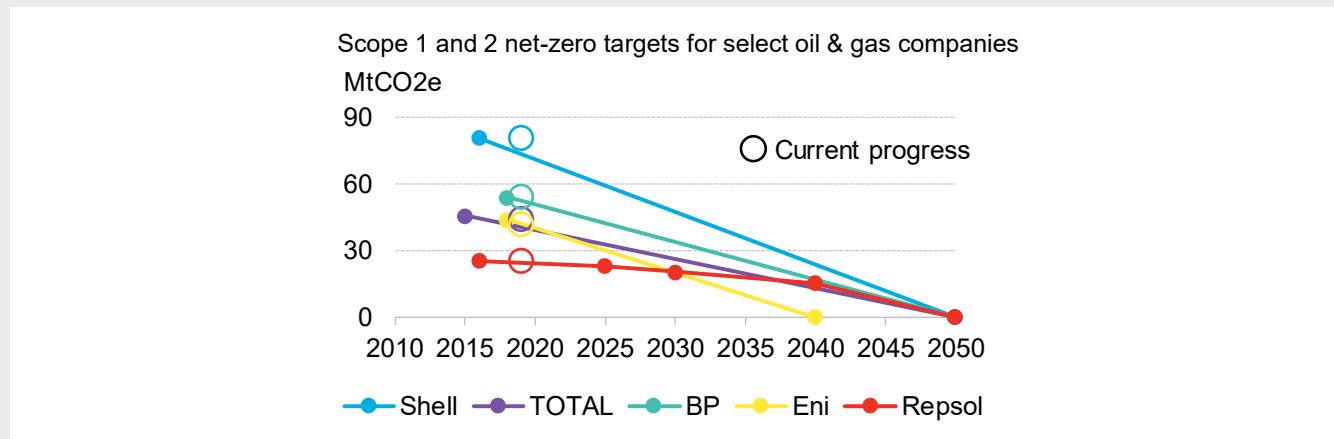
appropriately thought of as part of the organizations strategy but can be useful for describing what the management of risk and pursuit of climate-related opportunities might mean for the business and provide the context for specific targets.

In addition to climate-related targets, which are disclosed externally, there are some targets that are primarily useful for managing internal processes and are not intended for disclosure to external stakeholders. For example, a business line may find it useful to develop more detailed climate-related targets to enable tracking progress at a more granular level and aligning internal resources.

In considering whether particular climate-related targets constitute confidential business information, a company should carefully assess the case for not disclosing a particular target. In other words, **a company should not default to business confidentiality as a reason for avoiding disclosure. In determining the appropriate level of disclosure, organizations, as a matter of principle, should look to disclose more rather than less so that disclosures may be clearly understood and sufficiently comprehensive for users.** However, if a company determines a particular climate-related target is confidential, the relevant information may be provided in broader terms that still convey useful information about the organization's plans.<sup>64</sup>

Figure D2

### Illustrative Comparison of Progress Against Long-Term Targets



Source: BloombergNEF, *BNEF Oil and Gas Business Model Transition Scores*, December 18, 2020

Data is from December 2020 and may have been subsequently updated by the organizations. Chart is for Scope 1 and 2 emissions only. In the absence of publicly disclosed interim milestones, a linear extrapolation was created between baseline and target date.

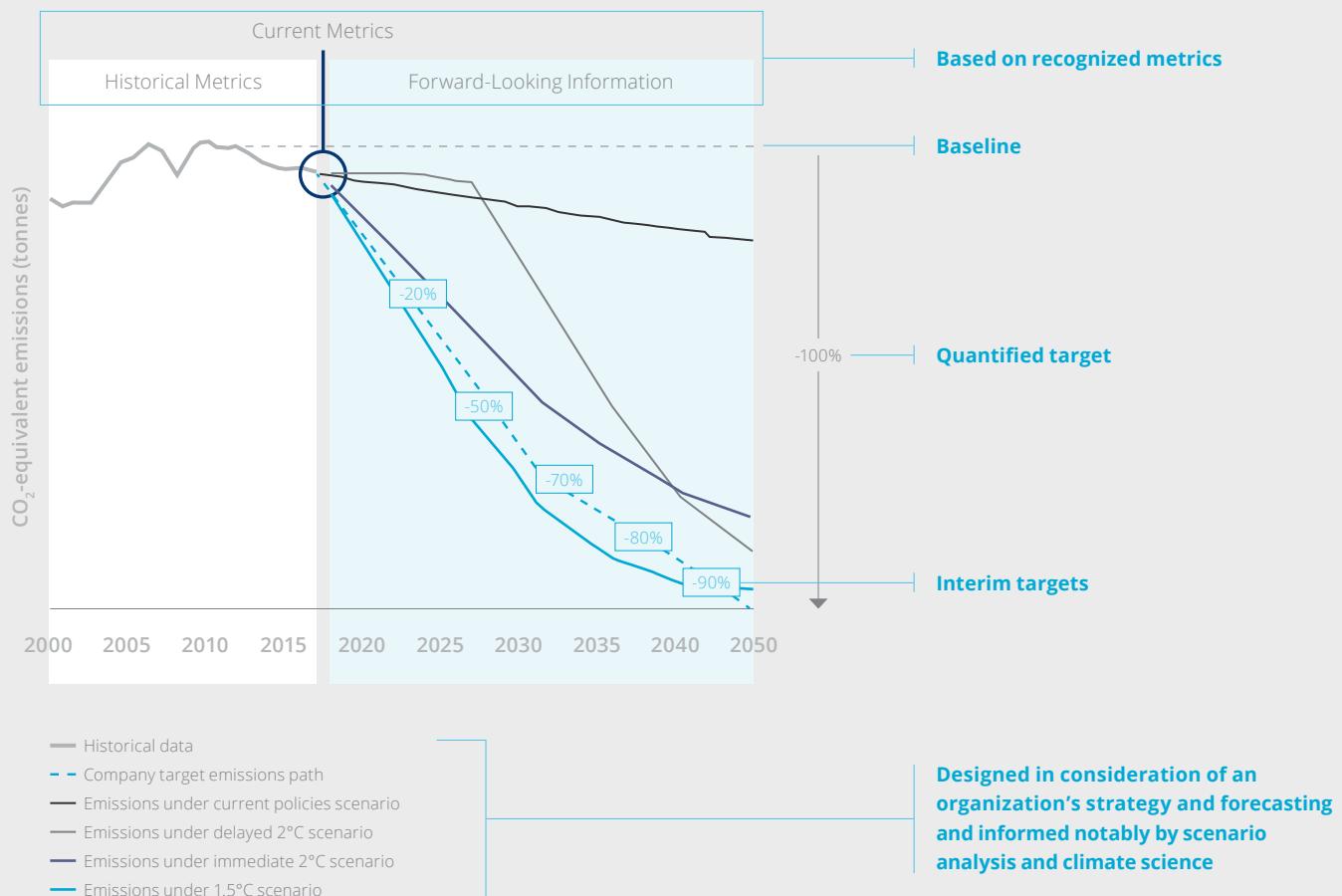
<sup>64</sup> Based on footnote 10 from the European Commission *Guidelines on non-financial reporting: Supplement on reporting climate-related information*.

**Figure D3**

## Example of Implementation of Principles for Setting Climate-Related Targets

**Example climate ambition:** Our firm commits to reducing net scope 1 and 2 emissions — as defined by the GHG Protocol — to zero by 2050, with an interim target to cut scope 1 and 2 emissions by 50% relative to a 2015 baseline by 2030. We are working with suppliers to reduce scope 3 emissions.

Clearly articulated **climate ambition**, scope and extent of emissions covered, methodology, baseline, and an interim target.



Source: Emissions pathways were adapted from NGFS scenario data

Note: Illustrative emissions pathways for immediate and delayed 2°C scenarios and 1.5°C scenarios are aligned with economy-wide emissions reductions for Kyoto gases under the REMIND limited Carbon Dioxide Removal (CDR) scenarios. The illustrative current policies scenario extends the short-term trend.

### **3. PROPOSED UPDATES TO GUIDANCE FOR ALL SECTORS**

The proposed updates to Guidance for All Sectors for recommended disclosure *Metrics and Targets c)* will align the current language with the principles for setting climate-related targets described previously, in particular clarifying the expectation that targets should be quantified and that mid- and long-term targets should include interim targets.

#### **Box D3**

#### **Summary of Proposed Update**

TCFD proposes updating Guidance for All Sectors for recommended disclosure *Metrics and Targets c)* to align it with the principles articulated previously. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed wording changes.

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E.

## Climate-Related Transition Plans

## E. Climate-Related Transition Plans

An organization's strategy to address its climate-related risks and opportunities often includes at least two components: (1) a transition component that lays out how an organization aims to minimize risks and increase opportunities as the world transitions toward a low-carbon economy and (2) an adaptation component that lays out how an organization aims to minimize risks and capture opportunities associated with physical climate changes faced by the organization (see Figure E1).

Both the transition component and adaptation component form part of the climate-related planning process that an organization undertakes to develop a strategy that will help it reduce its climate-related risks and increase its climate-related opportunities.<sup>65</sup> This section describes how organizations should further articulate their existing strategy to highlight aspects of their transition plan. Further guidance on adaptation planning is not included in this draft but is noted in the consultation.

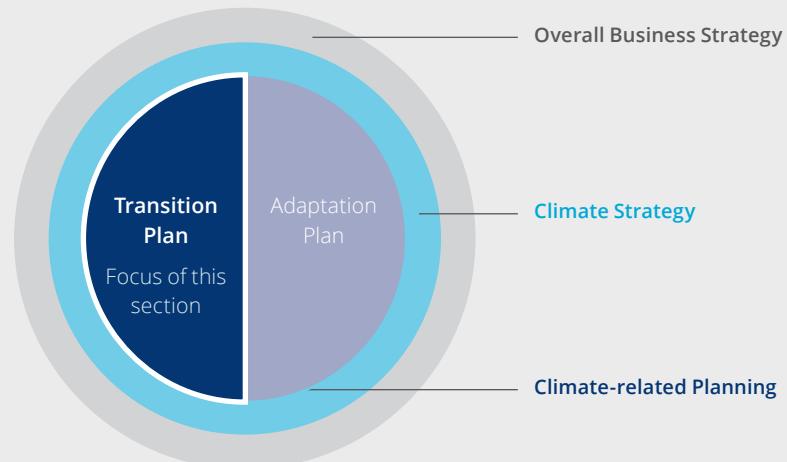
An organization's transition plan:

- provides a view of how risks will be reduced and opportunities captured as the company, and its business environment, transitions, allowing users to **assess likely transmission of risks**;
- is an integral input with which market participants can **appropriately assess and price climate-related risks and opportunities** and understand **concentrations of carbon-related assets over time**; and
- provides comparability across organizations to allow regulators to **assess systemic risks**.

As mentioned in [Section B. Introduction](#), a **transition plan** is an aspect of an organization's overall business strategy that lays out how an organization aims to minimize climate-related risks and increase opportunities

Figure E1

### Relationship Between Business Strategy, Climate Strategy, and Climate-Related Planning



<sup>65</sup> In the context of this guidance, the use of terms such as "transition plan" and "climate strategy" are not meant to imply a separate set of strategies or plans apart from an organization's overall strategy, but rather important components of that overall strategy.

as the world transitions toward a low-carbon economy, including by reducing emissions of its own balance sheet and that of its value chain.

Transition plans help an organization deliver on its climate-related strategy and conveys how it plans to achieve its climate-related targets. Organizations can set a number of climate-related targets that help align the organization's strategy with a transition to a low-carbon economy (see Box E1). For instance, some organizations, such as those in high-emitting sectors, may choose to focus their reductions on Scope 1 and Scope 2 emissions; others, such as financial institutions or auto manufacturers, may choose to spend more time reducing Scope 3 emissions. In addition to efforts to meet reduction targets, organizations can articulate how they aim to reduce their risks and increase their opportunities in a low-carbon world.

A specific type of transition planning that has gained attention recently focuses on organizations aiming to deliver on a net-zero target. Attention around net-zero planning began primarily in response to the IPCC's *Special Report on Global Warming of 1.5°C* released in October 2018, which found:<sup>66</sup>

*"In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range)" (emphasis added).*

The report highlighted that the impact of 2°C of warming would be significantly worse than 1.5°C and brought renewed urgency to the effort to limit the global temperature increase to 1.5°C. In turn, the report has shifted the language used in the international dialogue on climate change. Today, there is less focus on the carbon budget that is consistent with the Paris Agreement goals, and more focus on achieving net-zero emissions by 2050, in keeping with the IPCC modeling of how to limit warming to 1.5°C.<sup>67</sup>

Since the publication of the IPCC special report, the concept of net-zero targets has entered mainstream corporate and political debate, with many leading companies,<sup>68</sup> financial institutions,<sup>69</sup> and a growing number of governments<sup>70</sup> setting net-zero targets for midcentury. In June 2020,

#### BoxE1

### Examples of Different Types of Climate-Related Targets

The commitments driving transition plans may vary between companies and may be determined in part, or in whole, by regulatory or industry requirements. These targets should specify which emission scopes are included.

- **Net-zero target.** According to the IPCC, in order to keep warming to 1.5°C, emissions must reach "net-zero" by 2050. The "net" in net-zero means any residual emissions from hard-to-abate industries need to be removed from the atmosphere through technology or nature-based solutions.
- **Carbon-neutral target.** Carbon-neutral means that while some emissions are still being generated by an organization, these emissions are being offset somewhere else making the overall net emissions zero.
- **Zero-carbon target.** Zero-carbon means that no carbon emissions are being produced from a product/service (e.g., zero-carbon electricity could be provided by a 100% renewable energy supplier).
- **Paris-aligned target.** Paris-aligned means a commitment in line with the Paris Agreement goal to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C.

As noted in [Section C. Climate-Related Metrics and Financial Impacts](#), portfolio alignment metrics are important tools for financial institutions to measure, manage, and disclose transition risk and opportunity. Current and forward-looking estimates of portfolio alignment supports financial institutions in measuring progress against their stated climate targets.

the United Nations Framework Convention on Climate Change (UNFCCC) announced the launch of the [Race to Zero](#) campaign to build momentum toward net-zero GHG emissions by midcentury in the run up to COP26.<sup>71</sup>

A report released in March 2021 by the Energy and Climate Intelligence Unit and Oxford Net Zero found that "61% of countries, 9% of states & regions in the largest emitting countries and 13% of cities over 500k in population have now committed to net zero. Of the

<sup>66</sup> IPCC, *Special Report: Global Warming of 1.5°C*, October 2018.

<sup>67</sup> IPCC, *Headline Statements from the Summary for Policymakers*, IPCC Special Report on Global Warming of 1.5°C, October 2018.

<sup>68</sup> See, for example, the UN-convened [Business Ambition for 1.5°C](#), an initiative that commits corporate signatories to a 1.5°C target through the Science Based Targets initiative. As of June 5, 2020, 237 companies with a combined market capitalization of over \$3.6trn have committed to the Business Ambition for 1.5°C.

<sup>69</sup> See, for example, the [Glasgow Financial Alliance for Net Zero](#) and CDP, *The Time to Green Finance*, 2020, p. 22.

<sup>70</sup> See, for example, commitments by the EU, China, New Zealand, and United States.

<sup>71</sup> See <https://unfccc.int/news/cities-regions-and-businesses-race-to-zero-emissions>.



world's 2,000 largest public companies, at least one-fifth (21%) now have net zero commitments, representing annual sales of nearly \$14 trillion.<sup>72</sup>

In addition, CA100+ was launched in December 2017 at the One Planet Summit in Paris and is an investor initiative designed to ensure that the world's largest GHG emitters align their business models with the Paris Agreement. CA100+ now counts 575 investors globally among its members with more than \$54 trillion in assets under management (AUM).<sup>73</sup> In March 2021, CA100+ and the Transition Pathway Initiative released the first *Net Zero Company Benchmark* to assess the transition of carbon-intensive businesses.

In April 2021, the UN launched GFANZ, an industry-led alliance that brings together over 160 firms, together responsible for assets in excess of \$70 trillion, from the leading net-zero initiatives across the financial system to accelerate the transition to net-zero emissions by 2050, at the latest. GFANZ comprises the Net-Zero Banking Alliance, Net-Zero Asset Owner Alliance, and Net Zero Asset Managers Initiative and will soon be joined by the Net-Zero Insurance Alliance.

## 1. PRINCIPLES FOR DISCLOSING TRANSITION PLANS

A number of organizations have released guidance on recommended items to include as part of an organization's transition planning (see Table E1). The TCFD's goal in describing these various approaches is to identify the key principles emerging from these initiatives.

In light of these efforts, the TCFD is proposing the following principles for disclosing a transition plan:

**Disclosed as part of the broader organization strategy.** Transition plans should be part of and aligned

with an organization's broader strategy to address climate-related risks and opportunities. The climate components of an organization's strategy are part of and aligned with the organization's overall business strategy.

**Anchored in quantitative elements, including climate-related metrics and targets.** Transition plans should be designed in consideration of, and in order to, achieve targets. Progress should be regularly tracked against these targets as well as any other metrics. The transition plans should be based in climate science and consistent with a transition to a low-carbon economy.

**Approved and overseen by the Board.** The transition plan should be approved by the highest executive level and appropriate committee of the Board or the full Board. Transition plans should be subject to regular oversight by the Board and senior management with relevant climate expertise.

**Actionable and linked to specific initiatives.** The transition plan should articulate specific actions the organization will take that are based in science and provide steps for the organization to effectively execute the transition plan, including near-term initiatives that allow for accountability. Initiatives should specify how the organization plans to decrease climate-related risks and increase climate-related opportunities. For example, the aspects of an organization's strategy that are related to transition plans may articulate how the organization plans to reduce Scope 1 GHG emissions by investing in emission-reducing technology and processes, to reduce its Scope 3 emissions by moving into new business lines, or to reduce its transition risk by increasing its shadow carbon price over time.

**Detailed and verifiable.** Transition plan disclosures should comprise sufficient detail to enable verification by external stakeholders.

<sup>72</sup> Black, Cullen, Fay, Hale, Lang, Mahmood, and Smith, *Taking Stock: A global assessment of net zero targets*, 2021.

<sup>73</sup> Climate Action 100+.

**Table E1**  
**Sample of Recommendations on Transition Plans**

	Climate Prototype <sup>74</sup>	CA100+ <sup>75</sup>	TPI <sup>76</sup>	UN Race to Zero <sup>77</sup> SBTi <sup>80</sup>	GFANZ <sup>81</sup>	IIGCC <sup>78</sup>	Investor Agenda <sup>79</sup>
Aligned to TCFD reporting	█	█	█	█	█	█	█
Disclosed as part of the broader organization strategy	█	█	█	█	█	█	█
Anchored in quantitative elements, including climate-related metrics and targets	█	█	█	█	█	█	█
Approved and overseen by the Board	█	█	█	█	█	█	█
Actionable and linked to specific initiatives	█	█	█	█	█	█	█
Detailed and verifiable	█	█	█	█	█	█	█

## 2. COMMUNICATING AND DISCLOSING TRANSITION ASPECTS OF STRATEGY

There are several elements around transition plans that organizations should consider disclosing as part of their disclosure related to the organization's broader strategy. The elements are shown here in reference to the TCFD reporting framework in order to promote consistency and comparability and highlight which aspects of the

organization's existing TCFD disclosures have specific transition plan elements. The tables also show potential alignment with the cross-industry, climate-related metrics and climate-related financial impacts described in [Section C. Climate-Related Metrics and Financial Impacts](#).

<sup>74</sup> CDP, CDSB, GRI, IIRC, and SASB, *Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard*, December 2020.

<sup>75</sup> Climate Action 100+, *Net-Zero Company Benchmark*, accessed April 30, 2021.

<sup>76</sup> Transition Pathway Initiative (TPI), *Methodology and Indicators Report*, version 3.0, June 2019 and TPI Sectors Tool.

<sup>77</sup> The UN-Convened Race to Zero Campaign covers transition planning across non-financial and financial organizations. Non-financial organizations report using SBTi, while financial organizations must be members of one of the GFANZ groups. See *Interpretation Guide*, Version 1.0, April 2021, for more details.

<sup>78</sup> Institutional Investors Group on Climate Change (IIGCC), *Net Zero Investment Framework*, March 2021. Note: IIGCC are the Secretariat for both the Net Zero Asset Managers Initiative and Paris Aligned Investment Initiative.

<sup>79</sup> The Investor Agenda, *Investor Climate Action Plans (ICAPs): Expectations Ladder*, May 20 2021.

<sup>80</sup> SBTi, *Science-Based Target Setting Manual*, Version 4.1, April 2020; *Foundations for Science-Based Net Zero Target Setting in the Corporate Sector*, Version 1.0, September 2020; and *Financial Sector Science-Based Targets Guidance*, Pilot Version, October 2020.

<sup>81</sup> GFANZ comprises the NZ Banking Alliance, NZ Asset Managers Initiative, NZ Asset Owner Alliance, Paris Aligned Investment Initiative, and the to-be-launched NZ Insurance Alliance. See example transition planning language from the Net-Zero Asset Owner Alliance, *Inaugural 2025 Target Setting Protocol*, March 2021.

Table E2

## Alignment of Transition Plan Elements with TCFD Pillars

	<b>Recommended Disclosure</b>	<b>Transition Plan Element</b> ( <i>associated climate-related information</i> )
Governance	a) Describe the board's oversight of climate-related risks and opportunities.	<ul style="list-style-type: none"> <li>• <b>Approval:</b> Transition plan and climate-related targets are approved by senior management and/or appropriate committee of the board as part of the organization's strategy to address climate-related risks and opportunities</li> <li>• <b>Oversight:</b> Development and execution of transition plan is subject to the regular oversight of the organization's strategy by the board and senior management <ul style="list-style-type: none"> <li>– Description of any assessment of organizational expertise and training provided</li> </ul> </li> </ul>
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	<ul style="list-style-type: none"> <li>• <b>Accountability:</b> Responsibility for execution of the transition plan elements of the organization's strategy is clearly assigned at a senior level. Accountable parties have adequate authority and access to resources to ensure effective implementation</li> <li>• <b>Incentives:</b> Compensation, and other incentives, are aligned with goals of transition plan <ul style="list-style-type: none"> <li>– Progress against climate-related targets outlining amount of senior management remuneration impacted by climate considerations</li> </ul> </li> <li>• <b>Monitoring and reporting:</b> Progress is monitored and regularly reported by accountable parties to the board and senior management <ul style="list-style-type: none"> <li>– Description of internal tracking and reporting process, cadence, and escalation protocols</li> </ul> </li> <li>• <b>Transparency:</b> The company provides transparency around transition planning goals and performance to external stakeholders, including financial aspects, performance against targets, and impacts on the company's business and financial results</li> </ul>
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<ul style="list-style-type: none"> <li>• <b>Alignment with climate ambition and climate strategy:</b> Transition plan is integrated with the organization's high-level climate strategy and articulates how it helps to implement the organization's climate ambition <ul style="list-style-type: none"> <li>– Description of how transition plan helps achieve company targets in defined time horizons</li> <li>– Description of alignment to a global temperature goal (e.g., 1.5°C alignment, any relevant regulatory mandate and/or sectoral decarbonization strategies (e.g., Poseidon, CORSIA)</li> </ul> </li> </ul>
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<ul style="list-style-type: none"> <li>• <b>Description of prioritized opportunities:</b> Transition plan describes how the organization intends to maximize its prioritized climate opportunities as the world transitions to a low-carbon economy (e.g., which high-emitting activities/clients' sectors to prioritize for emissions reduction)</li> <li>• <b>Action plans:</b> Organizations set short-term and medium-term tactical and operating action plans that are aligned with, and support, the strategic elements in its transition planning <ul style="list-style-type: none"> <li>– Overview of current and planned initiatives to reduce climate-related risks and increase climate-related opportunities</li> <li>– Articulation of, and progress against, targets outlining proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities</li> </ul> </li> <li>• <b>Financial plans:</b> Transition plan clearly articulates investments and other financial implications in supporting financial plans and budgets <ul style="list-style-type: none"> <li>– Articulation of, and progress against, climate-related targets outlining amount of expenditure or capital investment deployed toward climate risks and opportunities</li> <li>– Articulation of how expenditure or capital investment supports decarbonization strategy</li> </ul> </li> </ul>

Continued on next page

	<b>Recommended Disclosure</b>	<b>Transition Plan Element (associated climate-related information)</b>
<b>Strategy</b>	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	<ul style="list-style-type: none"> <li>• <b>Scenario analysis:</b> The organization tests achievability of transition plan, and associated targets, using multiple climate scenarios, including one aligned to 2°C or lower <ul style="list-style-type: none"> <li>- Forward-looking financial impacts under multiple scenarios (e.g., amount of investment, impact of material climate-related risks or opportunities on financial performance, financial position)</li> </ul> </li> </ul>
<b>Risk Management</b>	<p>a) Describe the organization's processes for identifying and assessing climate-related risks.</p> <p>b) Describe the organization's processes for managing climate-related risks.</p> <p>c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</p>	<ul style="list-style-type: none"> <li>• <b>Description of risks faced in implementation:</b> Transition plan identifies risks that the organization faces from a transition to a low-carbon economy</li> <li>• <b>Management of risks faced in implementation:</b> Transition plan includes detailed action plans for minimizing risks to a successful implementation of the transition plan</li> <li>• <b>Link to risk management processes:</b> Transition plan articulates how climate risks are incorporated into overall risk management, including who is accountable for reducing climate-related risks throughout the transition</li> </ul>
<b>Metrics and Targets</b>	<p>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</p> <p>b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</p> <p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p>	<ul style="list-style-type: none"> <li>• <b>Metrics supporting transition:</b> Transition plan describes metrics that will be monitored throughout the transition to track progress against plans and targets <ul style="list-style-type: none"> <li>- This includes disclosure of cross-industry, climate-related metrics</li> <li>- Additionally, disclosure of any sector-specific or company-specific metrics supporting communication and comparability</li> </ul> </li> <li>• <b>Methodology:</b> Transition plan articulates methodology used to collect data and estimate metrics related to transition planning</li> <li>• <b>Tracking:</b> Metrics should be tracked and reported in a consistent and comparable manner, and be calculated using a transparent and disclosed methodology to allow for examination of progress against the organization's transition plan over time</li> <li>• <b>GHG emissions targets and coverage:</b> Transition plan articulates emissions targets in line with principles for setting targets, and includes the type and scope of GHG emissions included as well as extent of emissions across territories, time frames, or activities <ul style="list-style-type: none"> <li>- For financial institutions, transition plan discloses the alignment of the portfolios and incorporation of forward-looking metrics into the management of processes</li> </ul> </li> <li>• <b>Source of GHG reductions:</b> Transition plan is transparent about the extent to which GHG reduction targets are to be met with direct Scope 1, 2, and 3 reductions relative to purchase of carbon offsets</li> <li>• <b>Consistent with principles.</b> Targets are: <ul style="list-style-type: none"> <li>- <b>based on recognized metrics;</b></li> <li>- <b>quantified and granular;</b></li> <li>- <b>designed in consideration of an organization's strategy and forecasting, and informed notably by scenario analysis and climate science;</b></li> <li>- <b>clearly specified over time</b>, including clear baselines, time horizons, and interim targets;</li> <li>- <b>reviewed and updated, when appropriate;</b> and</li> <li>- <b>reported annually.</b></li> </ul> </li> </ul>

### 3. PROPOSED UPDATES TO GUIDANCE FOR ALL SECTORS

In line with the Task Force's remit, the Task Force believes that an organization should disclose a transition plan as part of its existing disclosure under the recommended disclosure Strategy c), if the organization has identified material transition risk, including:<sup>82</sup>

1. if an organization operates in a jurisdiction with an emissions reduction commitment;
2. if an organization has made an emissions reduction commitment (see Box E1 for examples); or
3. if an organization has to meet emissions reduction expectations from stakeholders, especially investors and lenders.

In addition, all other organizations that have set climate-related targets should consider disclosing their transition plan if their business activity generates significant emissions (Scope 1, 2, or 3) or is materially dependent on carbon-related assets.

#### Box E2

##### Summary of Proposed Update

TCFD proposes updating Guidance for All Sectors for recommended disclosure Strategy c) to clarify which types of companies should disclose or should consider disclosing important elements of their transition plan as part of their existing climate strategy. See [Appendix 1: Proposed Changes to Guidance and Supplemental Guidance](#) for proposed wording changes.

<sup>82</sup> Note: Addressing material physical risks are also an important part of an organization's strategy and are covered under the existing language on Guidance for All Sectors Strategy recommended disclosures.

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# Appendix 1: Proposed Changes to Guidance and Supplemental Guidance

# Appendix 1: Proposed Changes to Guidance and Supplemental Guidance

The TCFD is proposing releasing updated Guidance for all Sectors and Supplemental Guidance to align with the changes discussed in [Sections C. Climate-Related Metrics and Financial Impacts](#), [D. Climate-Related Targets](#), and [E. Climate-Related Transition Plans](#) of this document. For ease of review, these proposed changes are presented as redline changes to the 2017 TCFD [Annex](#) and are concentrated in the annex's Metrics and Targets and Strategy subsections of Sections C. Guidance for All Sectors, D. Supplemental Guidance for the Financial Sector, and E. Supplemental Guidance for Non-Financial Groups (see Figure A2-1), with some additional proposed changes in Section A. Introduction to align with the proposed updates in the other sections.

The TCFD is not proposing any changes to the four recommendations or to the eleven recommended disclosures across any of the four pillars, nor is it proposing changes to the guidance provided on governance or risk management.

Readers are invited to comment to these proposed updates by referring to the consultation questions and submitting comments through the public consultation.

Please note that figures and tables within sections that follow refer to their numbering within the 2017 TCFD annex. Footnotes are provided within the main body to avoid confusion with footnote text and numbering throughout this document.

## PROPOSED CHANGES TO 2017 TCFD ANNEX SECTION C. GUIDANCE FOR ALL SECTORS

### Section C.1 Governance

There are no proposed changes to this section.

## Figure A1-1 Recommendations and Guidance

A transition plan should be positioned for the low-carbon economy, financed for the low-carbon economy, and be governed for the low-carbon economy. It should integrate climate issues into decision-making and be flexible enough to adapt.

Recommendations		Recommendations
Recommended Disclosures	Guidance for All Sectors	Recommendations
		<b>Four widely adoptable recommendations tied to: governance, strategy, risk management, and metrics and targets</b>
		<b>Recommended Disclosures</b> Specific recommended disclosures organizations should include in their financial filings to provide decision-useful information
		<b>Guidance for All Sectors</b> Guidance providing context and suggestions for implementing the recommended disclosures for all organizations
		<b>Supplemental Guidance for Certain Sectors</b> Guidance that highlights important considerations for certain sectors and provides a fuller picture of potential climate-related financial impacts in those sectors
		Supplemental guidance is provided for the financial sector and for non-financial sectors potentially most affected by climate change

## Section C.2 Strategy

TCFD proposes updating the guidance on Strategy recommended disclosures in line with the changes in red.

### Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure	Guidance for All Sectors
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<p>Organizations should provide the following information:</p> <ul style="list-style-type: none"><li>• a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms,</li><li>• a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization, and</li><li>• a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.</li></ul> <p>Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to Tables A1 and A2 (pp. <b>[to be updated]</b>).</p>
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<p>Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.</p> <p>Organizations should consider including the impact on their businesses and strategy in the following areas:</p> <ul style="list-style-type: none"><li>• Products and services</li><li>• Supply chain and/or value chain</li><li>• Adaptation and mitigation activities</li><li>• Investment in research and development</li><li>• Operations (including types of operations and location of facilities)</li></ul> <p>Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time. Organizations should also consider including in their disclosures the impact on financial planning in the following areas:</p> <ul style="list-style-type: none"><li>• Operating costs and revenues</li><li>• Capital expenditures and capital allocation</li><li>• Acquisitions or divestments</li><li>• Access to capital</li></ul> <p>If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.</p> <p>Organizations should disclose climate-related financial impacts, estimated in consideration of climate-related metrics, among other factors, and reported for the historical and current period:</p> <ul style="list-style-type: none"><li>• <b>impact of any material climate-related risks or opportunities on financial performance (e.g., cost, profitability, operating cash flow, impairment)</b></li><li>• <b>impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities)</b></li></ul>

*Continued on next page*

c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.

Organizations should disclose climate-related financial impacts, estimated in consideration of climate-related metrics, among other factors, and reported for the forward-looking period.<sup>New footnote</sup>

- impact of any material climate-related risks or opportunities on financial performance (e.g., cost, profitability, operating cash flow, impairment)
- impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities)

Transition planning is emerging as an important component of a company's overall strategy to address climate-related risks and opportunities in the context of a transition to a low-carbon economy consistent with a 2°C or lower scenario.

An organization should release a transition plan component of its strategy if an organization determines it has material climate-related transition risks, including if it operates in a jurisdiction with an emissions reduction commitment, has made an emissions reduction commitment, or seeks to meet emissions reduction expectations from financial market participants.

All other organizations should consider disclosing a transition plan if their business activity includes significant emissions (Scope 1, 2, or 3) or is materially dependent on carbon-related assets.

Transition plans should be disclosed as part of an organization's broader climate-related strategy, be anchored in quantitative elements, including climate-related metrics and targets, be approved and overseen by the board, be actionable and linked to specific initiatives, and be detailed and verifiable to allow for verification of progress and achievement of intended outcomes.

Organizations should consider discussing:

- where they believe their strategies, **including transition plans**, may be affected by climate-related risks and opportunities;
- how their strategies, **including transition plans**, might change to address such potential risks and opportunities; and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to Section D in the [Task Force's report](#) and the [2020 Guidance on Scenario Analysis for Non-Financial Companies](#) for information on applying scenarios to forward-looking analysis.

**New footnote:** Forward-looking information, particularly information related to the organization's medium- and long-term time horizons, may be more appropriate to report as ranges or numbers tied to specific assumptions about the future state of the world, such as those informed by scenario analysis.

### Section C.3 Risk Management

There are no proposed changes to this section.

## Section C.4 Metrics and Targets

TCFD proposes updating the guidance on Metrics and Targets recommended disclosures in line with the changes in red.

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Guidance for All Sectors
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in Tables A1 and A2 (pp. [to be updated]). These metrics should be decision-useful, understandable, verifiable, objective, trackable over time and consistent, and aligned to the other TCFD pillars.</p> <p>At a minimum, organizations should disclose the cross-industry, climate-related metrics noted below and described in more detail in Table 2:</p> <ul style="list-style-type: none"> <li>• GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)—covered in more detail in guidance for recommended disclosure b)</li> <li>• carbon price(s) (external and shadow/internal)</li> <li>• proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks<sup>New footnote 1</sup></li> <li>• proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks<sup>New footnote 1</sup></li> <li>• proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities<sup>New footnote 2</sup></li> <li>• amount of senior management remuneration impacted by climate considerations</li> <li>• amount of expenditure or capital investment deployed toward climate risks and opportunities</li> </ul> <p>Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable.</p> <p><b>Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies.</b></p> <p><b>Where relevant,</b> Organizations should estimate and disclose provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy.</p> <p>Metrics should be provided for historical, current, and forward-looking periods, if relevant, to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.</p> <p><b>New footnote 1:</b> Table 1 (p. 10) of the <i>2017 Final Report</i> and Tables D2 and D3 (pp. 13–14) of the <i>2020 Guidance on Risk Management Integration and Disclosure</i> provide examples of “key categories of commonly accepted risk.”</p> <p><b>New footnote 2:</b> Table 2 (p. 11) of the <i>2017 Final Report</i> provides examples of “key categories of commonly accepted opportunities,” including product changes.</p>
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<p>Organizations should provide disclose their absolute Scope 1 and Scope 2 GHG emissions and, if appropriate, Scope 3 GHG emissions and the related risks.<sup>10, New footnote 11</sup> Disclosures should include methodologies and emission factors used.</p> <p>GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.<sup>11</sup> As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.<sup>12</sup></p> <p>GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. <b>In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.</b></p>

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	<p><b>Footnote 10:</b> Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.</p> <p><b>New footnote:</b> TCFD has determined that data and methodologies have matured sufficiently such that Scope 3 disclosure is appropriate for all sectors. Disclosure is particularly important for organizations for which Scope 3 emissions account for 40% or more of the total emissions of the organization or for which Scope 3 emissions have been deemed a significant risk in their value chain.</p> <p><b>Footnote 11:</b> While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.</p> <p><b>Footnote 12:</b> For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.</p>
c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	<p>Organizations should disclose their climate-related targets, especially those based on the cross-industry, climate-related metrics noted in recommended disclosure a). Organizations should consider targets such as those related to GHG emissions, water usage, energy usage, etc., in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a lower-carbon economy.</p> <p>Targets should be quantified and granular enough to enable tracking and be informed by qualitative or quantitative scenario analysis and company forecasting.</p> <p>In describing their targets, organizations should consider including include the following:</p> <ul style="list-style-type: none"><li>• <b>Unit:</b> The unit of measurement, including whether the target is absolute or intensity based</li><li>• <b>Time horizon:</b> Defined time horizon by which targets are intended to be achieved; should be consistent across targets and, if feasible, consistent with key dates tracked by climate-related organizations or regulators New footnote</li><li>• <b>Baseline:</b> Clear definition of baseline time period against which progress will be tracked with a consistent base year across targets</li><li>• <b>Interim targets:</b> Any mid-term and long-term targets should have interim targets at appropriate, granular intervals (e.g., 5–10 years) covering the full mid-term or long-term target time horizon.</li><li>• <del>time frames over which the target applies;</del></li><li>• <del>base year from which progress is measured; and</del></li><li>• <del>key performance indicators used to assess progress against targets.</del></li></ul> <p>Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.</p> <p>Organizations should report targets annually and have a clear process for reviewing targets at least every five years and updating when appropriate.</p> <p><b>New footnote:</b> 2030 and 2050 have become key target dates following the publication of the <i>Special Report on Global Warming of 1.5°C Summary for Policymakers</i> by the Intergovernmental Panel on Climate Change (IPCC). This report noted that in order to limit global warming to 1.5°C “global net human-caused emissions of carbon dioxide (CO<sub>2</sub>) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.”</p>

The proposed update will include a new Table 2. All subsequent table numbers will be updated.

## New Table 2

# Climate-Related Information

<b>Climate-Related Information</b>	<b>Unit of Measure</b> <i>New footnote</i>	<b>Rationale for Inclusion</b>
<b>Climate-Related Metrics</b>		
GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)	MT of CO <sub>2</sub> e	GHG emissions are the critical starting point for any discussion of cross-industry, climate-related metrics and are a component to estimating many other climate-related metrics used by both preparers and users. The absolute and intensity level of emissions is indicative of an organization's exposure and vulnerability to changes in policies and technology aimed at a transition to a low-carbon economy.
Carbon price(s) (external and shadow/internal)	Price in local currency, per MT of CO <sub>2</sub> e	Carbon prices are an essential component for analyzing and assessing economic impacts of carbon-related risks and opportunities, such as those affecting the valuation of an organization's key assets or potential changes in input or output prices, and provides investors with an understanding of the reasonableness of a key assumption in an organization's risk and opportunity assessment.
Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks	Percentage	Disclosure of proportion of an organization's assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) exposed to material climate-related physical risks allows preparers and users to better understand, track, and estimate potential financial exposure regarding such issues as impairment or stranding of assets, value of assets and liabilities, and changes in cost of business interruptions.
Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks	Percentage	Disclosure of proportion of an organization's assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) materially exposed to climate-related transition risks allows preparers and users to better understand, track, and estimate potential exposure regarding such issues as possible impairment or stranding of assets, value of assets and liabilities, and change in demand for products or services.
Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities	Percentage	Proportion of assets (i.e., tangible and intangible assets) and/or operating, investing, or financing activities (e.g., revenues, product mix, production) aligned to climate opportunities of a given industry provides insight into the relative position of organizations and allows users to understand likely transition pathways and potential changes in revenue and profitability over time.
Amount of senior management remuneration impacted by climate considerations	Percentage/amount in local currency or weighting	Remuneration policies are important incentives for achieving an organization's goals and objectives and signal governance, oversight, and accountability for managing climate-related issues.
Amount of expenditure or capital investment deployed toward climate risks and opportunities	Local currency	Expenditure, capital investment, or financing/lending for new technologies, infrastructure, or products are needed to manage climate-related physical and transition risks and opportunities. Expenditure or capital investment by non-financial preparers or financing, lending, or underwriting by financial preparers provides an indication of the extent to which future earning capacity might be affected.

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Climate-Related Information	Unit of Measure <i>New footnote</i>	Rationale for Inclusion
<b>Climate-related financial impact</b>		
Impact of any material climate-related risks or opportunities on financial performance (e.g., cost, profitability, operating cash flow, impairment)	Local currency	Changes to income and cash flow statements or other appropriate financial performance measures as a result of climate-related risks, opportunities, initiatives, or actions provide insight into management priorities and strategic efforts in anticipation of or response to an organization's climate-related risks and opportunities.
Impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities)	Local currency	Changes to balance sheet statement, or other appropriate financial position measures, as a result of climate-related risks, opportunities, initiatives, or actions provide insight into management priorities and strategic efforts in anticipation of or response to an organization's climate-related risks and opportunities.

**New footnote:** TCFD has noted the most common unit of measure. There are multiple ways to measure and disclose metrics, and different jurisdictions or industries may follow different best practices. For example, some organizations reporting the amount of senior remuneration impacted by climate considerations note a percentage of the executive's pay, while others discuss weighting factors or the total amount of compensation that could be impacted. For proportion of assets materially exposed to physical risk, some organizations may choose to report the number of assets exposed relative to the total number of assets, while others report the value of assets exposed relative to the total value. The TCFD believes these differences in units of measure help provide organizations with flexibility and do not impact comparability as long as units are clearly stated.

### Section C.5 Alignment of Recommended Disclosures with Other Frameworks

There are no proposed changes to this section.

## **PROPOSED CHANGES TO 2017 TCFD ANNEX SECTION D. SUPPLEMENTAL GUIDANCE FOR THE FINANCIAL SECTOR**

The following proposed updates focus only on supplemental guidance specific to financial sector institutions in the TCFD scope: banks, insurance companies, asset owners, and asset managers. The Guidance for All Sectors that is provided within each

section will also be updated in line with the proposed changes previously mentioned.

The proposed updates will revise Figure 8 to reflect the updated guidance scope.

Original Figure 8

### Supplemental Guidance for the Financial Sector

Industries	Governance		Strategy			Risk Management			Metrics and Targets		
	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Banks			■			■			■		
Insurance Companies			■	■	■	■	■		■		
Asset Owners			■	■	■	■	■		■	■	
Asset Managers			■			■	■		■	■	

Updated Figure 8

### Supplemental Guidance for the Financial Sector

Industries	Governance		Strategy			Risk Management			Metrics and Targets		
	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Banks			■			■			■	■	
Insurance Companies			■	■	■	■	■		■	■	
Asset Owners			■	■	■	■	■		■	■	
Asset Managers			■	■		■	■		■	■	

### Section D.1 Banks

Proposed updates to the supplemental guidance are included in red. The proposed updates do not update the Governance or Risk Management aspects of the Supplemental Guidance for Banks.

#### Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure	Supplemental Guidance for Banks
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<p>As part to their disclosure of "proportion of assets and/or operating, investing, or financing activities materially exposed to transition risk" described in Section C.4, recommended disclosure a), banks should describe significant concentrations of credit, <b>investment, and underwriting</b> exposure to carbon-related assets.<sup>14</sup> Additionally, banks should consider disclosing their climate-related risks (transition and physical) in their lending and other financial intermediary business activities.</p> <p><b>Footnote 14:</b> Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages <b>banks financial institutions</b> to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, <b>investment, and underwriting</b> exposure to carbon-related assets under this framework, the Task Force suggests <b>financial institutions banks</b> define carbon-related assets <b>as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations. as those assets tied to the energy and utilities sectors under the Global Industry Classification Standard, excluding water utilities and independent power and renewable electricity producer industries.</b></p> <p>(NOTE: This footnote is repeated on page 44 as footnote 34 and footnote 17 on page 26 of the 2017 TCFD annex and is proposed to be similarly amended.)</p>

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Supplemental Guidance for Banks
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>As part to their disclosure of cross-industry, climate-related metrics described in Section C.4, recommended disclosure a), banks should provide the metrics used to assess the impact of (transition and physical) climate-related risks on their lending and other financial intermediary business activities in the short, medium, and long term. Metrics provided may relate to credit exposure, equity and debt holdings, or trading positions, broken down by:</p> <ul style="list-style-type: none"><li>• Industry<sup>16</sup></li><li>• Geography</li><li>• Credit quality (e.g., investment grade or non-investment grade, internal rating system)</li><li>• Average tenor</li></ul> <p>Banks should also provide the amount and percentage of carbon-related assets relative to total assets as well as the amount of lending and other financing connected with climate-related opportunities.<sup>17</sup></p> <p>Banks should measure and disclose the alignment of their portfolios consistent with a 2°C or lower temperature pathway (e.g., Paris-aligned), and incorporate forward-looking alignment metrics into their target-setting frameworks and management processes.<sup>New footnote</sup></p> <p><b>Footnote 16:</b> Industry should be based on the Global Industry Classification Standard or national classification systems aligned with financial filing requirements.</p> <p><b>Footnote 17:</b> Recognizing that the term carbon-related assets is not well defined, the Task Force encourages banks financial institutions to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, investment, and underwriting exposure to carbon-related assets under this framework, the Task Force suggests financial institutions banks define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations. as those assets tied to the energy and utilities sectors under the Global Industry Classification Standard, excluding water utilities and independent power and renewable electricity producer industries.</p> <p><b>New footnote:</b> Portfolio alignment tools are useful inputs to quantifying transition risk. Financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities.</p>
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<p>Banks should disclose the appropriate financed-emissions metric, based on the Partnership for Carbon Accounting Financials' (PCAF's) methodology and weighted average carbon intensity (WACI), if relevant, or a comparable methodology, for their industry where data are available or can be reasonably estimated. If a comparable methodology is used, the TCFD recommends the details of such methodology be made publicly available. See Table 3A for financed-emissions metrics.</p> <p>In addition, banks should consider providing other carbon-footprinting and exposure metrics they believe are useful for decision-making along with a description of the methodology used. See Table 3C for other suggested common carbon footprinting and exposure metrics, including weighted average carbon intensity.</p>

## Section D.2 Insurance Companies

Proposed updates to the Supplemental Guidance are included in red below. The proposed updates do not update the Governance or Risk Management aspects of the Supplemental Guidance for Insurance Companies.

### Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure	Supplemental Guidance for Insurance Companies
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<p>As part to their disclosure of "proportion of assets and/or operating, investing, or financing activities materially exposed to transition risk" described in Section C.4, recommended disclosure a), insurers should describe significant concentrations of exposure to carbon-related assets.<sup>New footnote</sup></p> <p><b>New footnote:</b> Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages financial institutions to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, investment, and underwriting exposure to carbon-related assets under this framework, the Task Force suggests financial institutions define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations.</p>
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<p>Insurance companies should describe the potential impacts of climate-related risks and opportunities, as well as provide supporting quantitative information where available, on their core businesses, products, and services, including:</p> <ul style="list-style-type: none"><li>information at the business division, sector, or geography levels;</li><li>how the potential impacts influence client, cedent, or broker selection; and</li><li>whether specific climate-related products or competencies are under development, such as insurance of green infrastructure, specialty climate-related risk advisory services, and climate-related client engagement.</li></ul>
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	<p>Insurance companies that perform climate-related scenario analysis on their underwriting activities should provide the following information:</p> <ul style="list-style-type: none"><li>description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, and analytical choices. In addition to a 2°C scenario, insurance companies with substantial exposure to weather-related perils should consider using a greater than 2°C scenario to account for physical effects of climate change and</li><li>time frames used for the climate-related scenarios, including short-, medium-, and long-term milestones.</li></ul>

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Supplemental Guidance for Insurance Companies
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>As part to their disclosure of cross-industry, climate-related metrics described in Section C.4, recommended disclosure c), insurance companies should provide aggregated risk exposure to weather-related catastrophes of their property business (i.e., annual aggregated expected losses from weather-related catastrophes) by relevant jurisdiction.</p> <p>(Re)Insurance underwriters should incorporate forward-looking metrics into their target-setting frameworks and management processes, for example by measuring and disclosing the alignment of their underwriting portfolios consistent with a 2°C or lower temperature pathway (e.g., Paris-aligned).<sup>New footnote</sup></p> <p><b>New footnote:</b> Portfolio alignment tools are useful inputs to quantifying transition risk. Financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities.</p>
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<p>As part to their disclosure of GHG emissions covered in Guidance for All Sectors recommended disclosures Metrics and Targets a) and b), (re)insurance underwriters should disclose WACI for their commercial property and specialty lines of business that cover tangible properties and goods for which data and some methodologies are available. More complex commercial and retail lines may be addressed at a later stage.<sup>New footnote</sup> Table 3B describes one potential methodology.</p> <p><b>New footnote:</b> Note: The CRO Forum's 2020 <i>Carbon Footprinting Methodology for Underwriting Portfolios</i> is currently the most advanced adaptation of WACI to insurance portfolios. (Re)insurers should follow latest industry guidance as it becomes available.</p>

### Section D.3 Asset Owners

Proposed updates to the Supplemental Guidance are included in red. The proposed updates do not update the Governance or Risk Management aspects of the Supplemental Guidance for Asset Owners.

#### Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure	Supplemental Guidance for Asset Owners
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<p>As part to their disclosure of "proportion of assets and/or operating, investing, or financing activities materially exposed to transition risk" described in Section C.4, recommended disclosure a), asset owners should describe significant concentrations of exposure to carbon-related assets.<sup>New footnote</sup></p> <p><b>New footnote:</b> Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages financial institutions to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, investment, and underwriting exposure to carbon-related assets under this framework, the Task Force suggests financial institutions define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations.</p>
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Asset owners should describe how climate-related risks and opportunities are factored into relevant investment strategies. This could be described from the perspective of the total fund or investment strategy or individual investment strategies for various asset classes.
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Asset owners that perform scenario analysis should consider providing a discussion of how climate-related scenarios are used, such as to inform investments in specific assets.

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Supplemental Guidance for Asset Owners
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>As part to their disclosure of cross-industry, climate-related metrics described in Section C.4, <b>recommended disclosure a)</b>, asset owners should describe metrics used to assess climate-related risks and opportunities in each fund or investment strategy. Where relevant, asset owners should also describe how these metrics have changed over time.</p> <p>Where appropriate, asset owners should provide metrics considered in investment decisions and monitoring.</p> <p>Asset owners should measure and disclose the alignment of their portfolios consistent with a 2°C or lower temperature pathway (e.g., Paris-aligned), and incorporate forward-looking alignment metrics into their target-setting frameworks and management processes.<sup>New footnote</sup></p> <p><b>New footnote:</b> Portfolio alignment tools are useful inputs to quantifying transition risk. Financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities.</p>
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<p>Asset owners <u>should</u> disclose the appropriate financed-emissions metric, based on PCAF's methodology and WACI, if relevant, or a comparable methodology, for their industry where data are available or can be reasonably estimated. If a comparable methodology is used, the TCFD recommends the details of such methodology be made publicly available. See Table 3A for financed-emissions metrics.</p> <p>In addition, asset owners <u>should consider</u> providing other carbon footprinting and exposure metrics they believe are useful for decision-making along with a description of the methodology used. See Table 3C for other suggested common carbon footprinting and exposure metrics, including weighted average carbon intensity.</p> <p>Asset owners <u>should</u> provide the weighted average carbon intensity, where data are available or can be reasonably estimated, for each fund or investment strategy.</p> <p>In addition, asset owners should provide other metrics they believe are useful for decision making along with a description of the methodology used. See Table 2 (p. 43) for common carbon footprinting and exposure metrics, including weighted average carbon intensity.</p> <p><i>Note: The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. The Task Force views the reporting of weighted average carbon intensity as a first step and expects disclosure of this information to prompt important advancements in the development of decision-useful, climate-related risk metrics. The Task Force recognizes that some asset owners may be able to report weighted average carbon intensity for only a portion of their investments given data availability and methodological issues.</i></p>

#### Section D.4 Asset Managers

Proposed updates to the Supplemental Guidance are included in red. The proposed updates do not update the Governance or Risk Management aspects of the Supplemental Guidance for Asset Managers.

##### Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure	Supplemental Guidance for Asset Managers
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<p>As part to their disclosure of "proportion of assets and/or operating, investing, or financing activities materially exposed to transition risk" described in Section C.4, recommended disclosure a), asset managers should describe significant concentrations of exposure to carbon-related assets.<sup>New footnote</sup></p> <p><b>New footnote:</b> Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages financial institutions to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, investment, and underwriting exposure to carbon-related assets under this framework, the Task Force suggests financial institutions define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations.</p>
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<p>Asset managers should describe how climate-related risks and opportunities are factored into relevant products or investment strategies.</p> <p>Asset managers should also describe how each product or investment strategy might be affected by the transition to a lower-carbon economy.</p>

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Supplemental Guidance for Asset Managers
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>As part to their disclosure of cross-industry, climate-related metrics described in Section C.4, recommended disclosure a), asset managers should describe metrics used to assess climate-related risks and opportunities in each product or investment strategy. Where relevant, asset managers should also describe how these metrics have changed over time.</p> <p>Where appropriate, asset managers should provide metrics considered in investment decisions and monitoring.</p> <p>Asset managers should measure and disclose the alignment of their portfolios consistent with a 2°C or lower temperature pathway (e.g., Paris-aligned), and incorporate forward-looking alignment metrics into their target-setting frameworks and management processes.<small>New footnote</small></p> <p><b>New footnote:</b> Portfolio alignment tools are useful inputs to quantifying transition risk. Financial institutions should use whichever portfolio alignment tool best suits their institutional context and capabilities.</p>
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<p>Asset managers <u>should</u> disclose the appropriate financed-emissions metric, based on PCAF's methodology and WACI, if relevant, or a comparable methodology, for their industry where data are available or can be reasonably estimated. If a comparable methodology is used, the TCFD recommends the details of such methodology be made publicly available. See Table 3A for financed-emissions metrics.</p> <p>In addition, asset managers <u>should consider</u> providing other carbon footprinting and exposure metrics they believe are useful for decision-making along with a description of the methodology used. See Table 3C for other suggested common carbon footprinting and exposure metrics, including weighted average carbon intensity.</p> <p>Asset managers <u>should provide the weighted-average carbon intensity, where data are available or can be reasonably estimated, for each product or investment strategy.</u></p> <p>In addition, asset managers <u>should provide other metrics they believe are useful for decision-making along with a description of the methodology used.</u> See Table 2 (p. 43) for common carbon footprinting and exposure metrics, including weighted average carbon intensity.</p> <p><i>Note: The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. The Task Force views the reporting of weighted average carbon intensity as a first step and expects disclosure of this information to prompt important advancements in the development of decision-useful, climate-related risk metrics. The Task Force recognizes that some asset managers may be able to report weighted average carbon intensity for only portion of the assets they manage given data availability and methodological issues.</i></p>

### Section D.5 Carbon Footprinting and Exposure Metrics

Proposed updates to this section will add a new Table 3A to provide details on financed emissions metrics for banks, asset owners, and asset managers and Table 3B to provide details on WACI for insurance underwriting. Current Table 2 will be renumbered Table 3C but otherwise remain the same.

#### Proposed New Table 3A for Supplemental Guidance<sup>New Footnote</sup>

##### Financed Emissions (PCAF methodology, as of March 2021)

Note: PCAF is continuing to add asset classes. Financial institutions should refer to the [PCAF Global GHG Standard](#) methodology for the latest guidance on measuring financed emissions.

Metric	Description
Listed Equity and Corporate Bonds	$\frac{\text{Outstanding amount}}{\text{EVIC or Total company equity + debt}} \times \text{Company emissions}$ EVIC = enterprise value including cash
Business Loans and Unlisted Equity	$\frac{\text{Outstanding amount}}{\text{EVIC or Total company equity + debt}} \times \text{Company emissions}$ EVIC = enterprise value including cash
Project Finance	$\frac{\text{Outstanding amount}}{\text{Total project equity + debt}} \times \text{Project emissions}$
Commercial Real Estate	$\frac{\text{Outstanding amount}}{\text{Property value at origination}} \times \text{Building emissions}$
Mortgages	$\frac{\text{Outstanding amount}}{\text{Property value at origination}} \times \text{Building emissions}$
Motor Vehicle Loans	$\frac{\text{Outstanding amount}}{\text{Total value at origination}} \times \text{Vehicle emissions}$

#### Proposed New Table 3B for Supplemental Guidance

##### Insurance Underwriting

Metric	Description
Carbon Emission: Premiums, by business line	$\sum_t \frac{\text{Gross written premium of insurance transaction}}{\text{Total GWP volume of insurance of portfolio}} \times \frac{\text{Company emissions}_c}{\text{Company's \$M revenue}}$ $c = \text{Company}$ Company emissions = Scope 1, Scope 2, and phase-in Scope 3
<b>Supplemental Information</b>	
To determine the value of the transaction relative to the overall size of the insurance portfolio, information on capital required/capacity/expected loss can be used alternatively to gross written premium based on the level of information available.	
See "Carbon footprinting methodology for underwriting portfolios," CRO Forum, April 2020. Guidance for the insurance sector applies to the liability side (underwriting) side of insurance activities; for insurance companies' investment activities, guidance for asset owners applies.	

**New Footnote:** For further details on these metrics, see [The Global GHG Accounting and Reporting Standard for the Financial Industry](#), PCAF, November 2020.

**Table 3C**

## Common Carbon Footprinting and Exposure Metrics

Metric	Supporting Information
Weighted Average Carbon Intensity	<p><i>Description</i> Portfolio's exposure to carbon-intensive companies, expressed in tons CO<sub>2</sub>e/\$M revenue.  <i>Metric recommended by the Task Force.</i></p> <p><i>Formula</i> <math display="block">\sum_i \left( \frac{\text{current value of investment}_i * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{current portfolio value}} \right) / \text{issuer's \\$M revenue}_i</math></p> <p><i>Methodology</i> Unlike the next three metrics, Scope 1 and Scope 2 GHG emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value), rather than the equity ownership approach (as described under methodology for Total Carbon Emissions). Gross values should be used.</p> <p><i>Key Points +/-</i> <ul style="list-style-type: none"> <li>+ Metric can be more easily applied across asset classes since it does not rely on equity ownership approach.</li> <li>+ The calculation of this metric is fairly simple and easy to communicate to investors.</li> <li>+ Metric allows for portfolio decomposition and attribution analysis.</li> <li>- Metric is sensitive to outliers.</li> <li>- Using revenue (instead of physical or other metrics) to normalize the data tends to favor companies with higher pricing levels relative to their peers.</li> </ul> </p>
Total Carbon Emissions	<p><i>Description</i> The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO<sub>2</sub>e.</p> <p><i>Formula</i> <math display="block">\sum_i \left( \frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)</math></p> <p><i>Methodology</i> Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach. Under this approach, if an investor owns 5 percent of a company's total market capitalization, then the investor owns 5 percent of the company as well as 5 percent of the company's GHG (or carbon) emissions.  While this metric is generally used for public equities, it can be used for other asset classes by allocating GHG emissions across the total capital structure of the investee (debt and equity).</p> <p><i>Key Points +/-</i> <ul style="list-style-type: none"> <li>+ Metric may be used to communicate the carbon footprint of a portfolio consistent with the GHG protocol.</li> <li>+ Metric may be used to track changes in GHG emissions in a portfolio.</li> <li>+ Metric allows for portfolio decomposition and attribution analysis.</li> <li>- Metric is generally not used to compare portfolios because the data are not normalized.</li> <li>- Changes in underlying companies' market capitalization can be misinterpreted.</li> </ul> </p>

*Continued on next page*

Metric	Supporting Information
Carbon Footprint	<p><i>Description</i> Total carbon emissions for a portfolio normalized by the market value of the portfolio, expressed in tons CO<sub>2</sub>e/\$M invested.</p> <p><i>Formula</i> <math display="block">\frac{\sum_i^i \left( \frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)}{\text{current portfolio value} (\\$M)}</math></p> <p><i>Methodology</i> Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for Total Carbon Emissions. The current portfolio value is used to normalize the data.</p> <p><i>Key Points +/-</i> <ul style="list-style-type: none"> <li>+ Metric may be used to compare portfolios to one another and/or to a benchmark.</li> <li>+ Using the portfolio market value to normalize data is fairly intuitive to investors.</li> <li>+ Metric allows for portfolio decomposition and attribution analysis.</li> <li>- Metric does not take into account differences in the size of companies (e.g., does not consider the carbon efficiency of companies).</li> <li>- Changes in underlying companies' market capitalization can be misinterpreted.</li> </ul> </p>
Carbon Intensity	<p><i>Description</i> Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio), expressed in tons CO<sub>2</sub>e/\$M revenue.</p> <p><i>Formula</i> <math display="block">\frac{\sum_i^i \left( \frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)}{\sum_i^i \left( \frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's \\$M revenue}_i \right)}</math></p> <p><i>Methodology</i> Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for Total Carbon Emissions. The company's (or issuer's) revenue is used to adjust for company size to provide a measurement of the efficiency of output.</p> <p><i>Key Points +/-</i> <ul style="list-style-type: none"> <li>+ Metric may be used to compare portfolios to one another and/or to a benchmark.</li> <li>+ Metric takes into account differences in the size of companies (e.g., considers the carbon efficiency of companies).</li> <li>+ Metric allows for portfolio decomposition and attribution analysis.</li> <li>- The calculation of this metric is somewhat complex and may be difficult to communicate.</li> <li>- Changes in underlying companies' market capitalization can be misinterpreted.</li> </ul> </p>

*Continued on next page*

Metric	Supporting Information
Exposure to Carbon-Related Assets	<p><i>Description</i> The amount or percentage of carbon-related assets<sup>34</sup> in the portfolio, expressed in \$M or percentage of the current portfolio value.</p>
	<p><i>Formula for Amount</i> <math>\sum \\$M \text{ current value of investments in carbon-related assets}</math></p>
	<p><i>Formula for Percentage</i> <math>\frac{\sum \text{current value of investments in carbon-related assets}}{\text{current portfolio value}} * 100</math></p>
<i>Methodology</i>	This metric focuses on a portfolio's exposure to sectors and industries considered the most GHG emissions intensive. Gross values should be used.
<i>Key Points +/-</i>	<ul style="list-style-type: none"> <li>+ Metric can be applied across asset classes and does not rely on underlying companies' Scope 1 and Scope 2 GHG emissions.</li> <li>- Metric does not provide information on sectors or industries other than those included in the definition of carbon-related assets (i.e., energy and utilities sectors under the Global Industry Classification Standard excluding water utilities and independent power and renewable electricity producer industries).</li> </ul>

Note: The term "portfolio" used in the Table 3C is defined as "fund or investment strategy" for asset owners and "product or investment strategy" for asset managers.

**Footnote 34:** Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages **banks financial institutions** to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit, **investment, and underwriting** exposure to carbon-related assets under this framework, the Task Force suggests **financial institutions banks** define carbon-related assets **as those assets tied to the four non-financial groups identified by the Task Force in its 2017 final recommendations. as those assets tied to the energy and utilities sectors under the Global Industry Classification Standard, excluding water utilities and independent power and renewable electricity producer industries:** In line with changes discussed in footnote 14 in Section D.1 Banks, footnote 34 will be updated to clarify the definition of carbon-related assets.

## PROPOSED CHANGES TO 2017 TCFD ANNEX SECTION E. SUPPLEMENTAL GUIDANCE FOR NON-FINANCIAL GROUPS

The following proposed updates focus only on supplemental guidance specific to non-financial groups within the scope of the TCFD: Energy Group, Transportation Group, Materials and Buildings Group, and Agriculture, Food, and Forest Products Group. The Guidance for All Sectors that is provided within each section will also be updated in line with the proposed changes above.

The proposed updates revise the supplemental guidance but do not add new supplemental guidance. As such, Figure 9 will not be updated.

The proposed updates do not change the Supplemental Guidance for Non-Financial Groups within the Governance, Risk Management, or Strategy pillars. The changes to the Metrics and Targets pillar are shown in red.

Figure 9  
Supplemental Guidance for Non-Financial Groups

Industries and Groups	Governance		Strategy			Risk Management			Metrics and Targets		
	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Energy			■	■					■		
Transportation			■	■					■		
Materials and Buildings			■	■					■		
Ag. Food, and Forest Products			■	■					■		

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure	Supplemental Guidance for Non-Financial Groups
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<p>Non-financial group organizations should disclose cross-industry, climate-related metrics described in Section C.4, recommended disclosure a).</p> <p>For all relevant metrics, organizations should consider providing historical trends and forward-looking projections (by relevant country and/or jurisdiction, business line, or asset type). Organizations should also consider disclosing metrics that support their scenario analysis and strategic planning process and that are used to monitor the organization's business environment from a strategic and risk management perspective.</p> <p>Organizations should consider providing key metrics related to GHG emissions, energy, water, land use, and, if relevant, investments in climate adaptation and mitigation that address potential financial aspects of shifting demand, expenditures, asset valuation, and cost of financing.</p> <p>Illustrative examples of metrics for each of the four non-financial groups are provided in the tables listed below.</p> <ul style="list-style-type: none"><li>• Energy Group: Table 4 (pp. [to be updated])</li><li>• Transportation Group: Table 5 (pp. [to be updated])</li><li>• Materials and Buildings Group: Table 6 (pp. [to be updated])<sup>45</sup></li><li>• Agriculture, Food, and Forest Group: Table 7 (pp. [to be updated])</li></ul> <p><b>Footnote 45:</b> The TCFD Secretariat corrected an error in Table 5 on December 15, 2017. Metric ton (MT) of carbon dioxide emissions (CO<sub>2</sub>e) was shown as an illustrative metric for real estate, but it should have been shown as an illustrative metric for metals and mining.</p>

### Section E.1 Energy Group

There are no proposed changes to this section.

### Section E.2 Transportation Group

There are no proposed changes to this section.

### Section E.3 Materials and Buildings Group

There are no proposed changes to this section.

### Section E.4 Agriculture, Food, and Forest Products Group

There are no proposed changes to this section.

## ADDITIONAL PROPOSED CHANGES TO 2017 TCFD ANNEX

The TCFD proposes a few additional updates to align the document with the updated guidance in Sections C, D, and E of the 2017 TCFD annex.

### Section A.2 Structure of Recommendations

The proposed changes will update Figure 2 to reflect the updated scope.

Original Figure 2

## Supplemental Guidance for Financial Sector and Non-Financial Groups

Industries and Groups	Governance		Strategy			Risk Management			Metrics and Targets		
	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Financial	Banks			■			■		■		
	Insurance Companies			■	■		■	■	■		
	Asset Owners			■	■		■	■	■	■	■
	Asset Managers			■			■	■	■	■	■
Non-Financial	Energy			■	■				■		
	Transportation			■	■				■		
	Materials and Buildings			■	■				■		
	Ag. Food, and Forest Products			■	■				■		

Updated Figure 2

## Supplemental Guidance for Financial Sector and Non-Financial Groups

Industries and Groups	Governance		Strategy			Risk Management			Metrics and Targets		
	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Financial	Banks			■			■		■	■	■
	Insurance Companies			■	■	■	■	■	■	■	■
	Asset Owners			■	■	■	■	■	■	■	■
	Asset Managers			■	■		■	■	■	■	■
Non-Financial	Energy			■	■				■		
	Transportation			■	■				■		
	Materials and Buildings			■	■				■		
	Ag. Food, and Forest Products			■	■				■		

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## Appendix 2: Further Rationale for Proposed Revisions

## Appendix 2: Further Rationale for Proposed Revisions

### INCLUSION OF CROSS-INDUSTRY, CLIMATE-RELATED METRICS AND FINANCIAL IMPACTS

This section provides additional rationale for TCFD's proposed revisions to Guidance for All Sectors Recommended Disclosure a). The cross-industry, climate-related metrics and financial impacts are well aligned both with what framework providers are collecting and what non-financial and financial organizations are disclosing (see Table A3-1).

**Table A3-1**  
Climate-Related Financial Information

Information	Alignment (Non-exhaustive)	Implementation examples	Financial institution examples	Non-financial organization examples
<b>Cross-Industry, Climate-Related Metrics</b>				
GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)	GRI: 102-29, 102-30, 305-1, 305-2, 305-3; CDP: C4.1a, C5.1, C5.2, C6.1, C6.3, C6.5; CDSB: REQ-04, REQ-05; SASB: various sector frameworks  GRI: 102-29, 201-2, 305-4; CDP: C4.1, C6.1, C6.3, C6.5, C6.10; PCAF: Global Standard Table 2-1;  SASB: TR-AF-540a.2 ( <i>Air Freight and Logistics Standard</i> )  ECB Supervisory Expectation: 13.5;  European Commission Guidelines: Section 3.5	<ul style="list-style-type: none"> <li>Absolute Scope 1, 2, 3 emissions</li> <li>GHG emissions intensity</li> <li>Weighted average carbon intensity (WACI)</li> <li>Absolute GHG emissions, across business lines</li> <li>Absolute GHG emissions, by type of gas</li> </ul>	<b>Barclays:</b> <sup>83</sup> "Power portfolio emissions intensity will reduce by 30% by 2025, on the way to alignment with the IEA SDS benchmark by 2035."  <b>Temasek:</b> <sup>84</sup> "We have committed to carbon neutrality in our own operations by 2020 and achieved this target by 31 March 2020 through the purchase and retirement of carbon credits from the voluntary carbon markets."	<b>Dow:</b> <sup>85</sup> "Dow confirmed today it has entered into new renewable power agreements for its manufacturing facilities in Argentina, Brazil, Texas, and Kentucky, securing 338 more megawatts of power capacity from renewable sources, representing an expected reduction of more than 225,000 metric tons of CO <sub>2</sub> e."  <b>EDF:</b> <sup>86</sup> "(EDF group's current trajectory) represents an absolute reduction of direct greenhouse-gas emissions amounting to 25 Mt CO <sub>2</sub> by 2030, equivalent to a carbon intensity of approximately 35 g CO <sub>2</sub> /kWh in 2030."

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<sup>83</sup> Barclays, "Update on Barclay's ambition to be a net zero bank by 2050," February 18, 2021.

<sup>84</sup> Temasek, "Focusing on Climate Change," Accessed May 6, 2021.

<sup>85</sup> Dow, "Dow signs four renewable power agreements to achieve 2025 Goal and lead petrochemical industry," June 17, 2020.

<sup>86</sup> EDF, "Carbon neutrality by 2050," Accessed May 6, 2021.

<b>Information</b>	<b>Alignment (Non-exhaustive)</b>	<b>Implementation examples</b>	<b>Financial institution examples</b>	<b>Non-financial organization examples</b>
Carbon price(s) (external and shadow/internal)	CDP: CC2.2; SASB: NR0101-22, NR0201-16	<ul style="list-style-type: none"> <li>• External carbon tax</li> <li>• Shadow carbon price</li> </ul>	<b>BNP Paribas:</b> <sup>87</sup> "We use a price range between USD25 and USD40 per tonne of CO2... in 2017 and 2018, BNP Paribas developed an internal carbon price methodology... we continue to develop and improve our methodology... the goal of the test of a carbon price was to evaluate the resilience of our clients to the energy transition, to measure and steer carbon risks in the Group's loan book."	<b>Aker BP:</b> <sup>88</sup> "Assumed carbon price reaches USD 235/tCO2 in 2030, assumed flat thereafter... we calculate the NPV of the total future carbon costs under different carbon price assumptions, shown as a percentage share of the NPV of Aker BP's portfolio."
Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks	SASB: IF0402-13 ( <i>Real Estate Standard</i> ); SASB: FN-MF-450a.1 ( <i>Mortgage Finance Standards</i> ); European Commission Guidelines: Section 3.5; ECB Supervisory Expectation: 1.1, 9.1; EBA Guidelines (EBA/GL/2019/02)	<ul style="list-style-type: none"> <li>• Number and value of mortgage loans in 100-year flood zones</li> <li>• Proportion of buildings in wildfire areas</li> <li>• Proportion of substations at risk from sea-level rise by 2050</li> </ul>	<b>HSBC:</b> <sup>89</sup> [Describing pilot test of 97 most critical properties and sites] "By 2050, 15 of the 97 most critical properties will potentially face increased risk from physical hazards under the most severe Hot house climate change scenario of 3°C increase in climate temperature."	<b>ConEdison:</b> <sup>90</sup> "To assess future asset vulnerability to sea level rise and storm surge, the Study team analyzed the exposure of Con Edison's assets to 3 feet of sea level rise...Of the 324 substations...75 would be vulnerable to flooding during a 100-year storm if sea level rose 3 feet. In addition, 32 gas regulators and five steam generation stations would be exposed. Hardening all of these assets would cost approximately \$680 million."
Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks	CDP: C2.3a; European Commission Guidelines: Annex 1.4; European Commission Guidelines: Annex 1.5; EBC Supervisory Expectation: 9.2, 13.5 EBA Guidelines (EBA/GL/11/2017)	<ul style="list-style-type: none"> <li>• Concentration of credit exposure to carbon-related assets</li> <li>• Volume of real estate collaterals highly exposed to transition risk</li> <li>• Percent of revenue from high-carbon business lines</li> <li>• Amount of carbon-related assets in each portfolio</li> </ul>	<b>ING:</b> <sup>91</sup> "Outstanding– upstream oil and gas €4.0 billion." <b>Manulife Investment Management:</b> <sup>92</sup> Provides quantified climate VaR estimates for 1.5°C, 2°C, and 3°C futures across its Canadian and Asian equity portfolios. For example, table estimates: 135.7% in transition risk and 17.2% in tech opportunity from 2°C transition in its Asian equity portfolio.	<b>United Airlines:</b> <sup>93</sup> "Approximately 33% of United's 2019 capacity (including regional partners) was flown between country-pairs that have volunteered for the first phase of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) (2021–23). If additional countries join in subsequent years, this number is expected to increase." ( <i>CDP 2020 Report</i> )

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<sup>87</sup> BNP Paribas, *2019 Climate Change Information Request – Carbon Disclosure Project*, 2019, p. 73.<sup>88</sup> Aker BP, *Sustainability Report 2020*, 2020, p. 25.<sup>89</sup> HSBC, "Powering a greener future for the UK," June 25, 2020.<sup>90</sup> ConEdison, "Climate Change Vulnerability Study," December 2019, p. 5.<sup>91</sup> ING, *Terra progress report*, 2020, p. 22.<sup>92</sup> Manulife Investment Management, *2019 Sustainable and responsible investing report*, October 2020, p. 69.<sup>93</sup> CDP, *United Airlines Holdings Climate Change 2020 report*, Section C.2.a.

Information	Alignment (Non-exhaustive)	Implementation examples	Financial institution examples	Non-financial organization examples
Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities	CDP: C4.2b; SASB: EM-CM-410a.1 (Construction Materials Standard); SASB: EM-SV-000.A, EM-SV-000.B (Oil and Gas Services Standard); European Commission Guidelines: Section 3.5, Annex 1.5; EU Taxonomy: Article 8; EBA Guidelines (EBA/GL/11/2017)	<ul style="list-style-type: none"> <li>• Percent of generation that is renewable</li> <li>• Percent of vehicle sales from electric vehicles</li> <li>• Percent of cropland planted with drought-resilient vs. traditional seeds</li> <li>• Percent of resilient infrastructure in real estate portfolio</li> <li>• Percent of portfolio-aligned bonds</li> <li>• Green bond ratio</li> <li>• Green asset ratio</li> <li>• Percent of products that qualify for credits in sustainable building design and construction certifications</li> <li>• Percent of environmentally sustainable assets</li> </ul>	<b>UBS:</b> <sup>94</sup> "The year 2020 saw very strong momentum in sustainable finance activities, indicated by growth in Core Sustainable Investments (Core SI), which rose by 62%... to become 19% of all client invested assets."  <b>Nordea:</b> <sup>95</sup> Investor presentation includes (1) percentage breakdown of Green Bond Assets by category, including: energy efficiency, clean transportation, pollution prevention and control, green buildings, and renewable energy, and (2) percentage breakdown by sub-category (e.g., renewable energy type).  <b>Ircantec:</b> <sup>96</sup> "The green share of infrastructure assets for renewable energy and low-carbon transport infrastructure comprises 79 assets for €102.2 M. That is 62% of this segment of Ircantec's portfolio."	<b>BMW:</b> <sup>97</sup> Investor presentation includes electric vehicle sales and road map targets "at least 25 electrified models by 2023 including at least 13 fully electric cars" and "25% electrified" new vehicle fleet by 2021.  <b>Enel:</b> <sup>98</sup> "50% net installed renewable capacity" as a percent of total capacity.  <b>BASF:</b> <sup>99</sup> "Accelerator products (products considered to make a 'substantial sustainability contribution in the value chain') account for 30.9% of the evaluated relevant portfolio."

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<sup>94</sup> UBS, "UBS extends sustainability leadership with rapid rise in 2020 invested assets and advances in ambitious climate strategy," March 11, 2021.

<sup>95</sup> Nordea, *Green bond investor presentation*, February 2021, p. 15.

<sup>96</sup> Ircantec, *Climate Action and ESG Report*, 2019, p. 38.

<sup>97</sup> BMW Group, *Investor Presentation*, December 2021, pp. 9 and 25.

<sup>98</sup> Enel, *Sustainability Report 2019*, p. 8.

<sup>99</sup> BASF, *BASF Report 2020*, 2020, p. 45.

Information	Alignment (Non-exhaustive)	Implementation examples	Financial institution examples	Non-financial organization examples
Amount of senior management remuneration impacted by climate considerations	CDP: C1.1a, C1.3a; CDSB: REQ-01, REQ-03; EU Taxonomy: 3.2; IR: 4.9;	<ul style="list-style-type: none"> <li>Percent or weighting of remuneration impacted by climate considerations</li> </ul>	<b>Siemens:</b> <sup>100</sup> "Since fiscal year 2020, the number of Siemens shares (Stock Awards) that are actually transferred depends... 20% on the non-financial performance criterion 'sustainability.' This is assessed on the basis of Siemens internal ESG/sustainability index, determined annually."	<b>Daimler:</b> <sup>101</sup> "Sustainability oriented targets can raise or lower the annual bonus by up to +/-25% and +/-10%, respectively."
Amount of expenditure or capital investment deployed toward climate risks and opportunities	CDP: C2.3a, C2.4a, C3.3, C3.4, C4.2b; CDSB: REQ-03' European Commission Guidelines: Section 3.5; SASB: EM-EP-420a.4 ( <i>Oil and Gas Exploration Standard</i> )	<ul style="list-style-type: none"> <li>Proportion of CapEx deployed for low-carbon solutions</li> <li>Amount of investment in low-carbon R&amp;D</li> <li>Percent of annual revenue invested in low-carbon R&amp;D</li> <li>Amount invested in renewable energy, revenue generated by renewable energy sales</li> </ul>	<b>DBS Bank:</b> <sup>103</sup> "Provided SGD 4.8 billion of green loans...Underwrote SGD 5.3 billion worth of green bonds." <b>Wells Fargo:</b> <sup>104</sup> Has invested a total of \$8.9M to "help communities build capacity to better prepare for and respond to extreme weather and climate-related events." <b>Goldman Sachs:</b> <sup>105</sup> "In 2012, we established a target to deploy \$40 billion of capital to advance the clean energy sector, which we later expanded to \$150 billion by 2025, and is now encompassed in our broader \$750 billion commitment."	<b>BHP:</b> <sup>106</sup> "Our operational expenditures for FY2020 for Low Emissions Technologies (LET) projects, including Research and Development (R&D), is estimated to be US\$28.2M. Part of our estimate was calculated using FY2019 R&D spend data due to differences in reporting time-frames." <b>Equinor:</b> <sup>107</sup> "Our low-carbon and energy efficiency R&D expenditure was around 20% in 2019, which is a small decrease from 2018."

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<sup>100</sup> Siemens, *Annual Report 2020*, p. 54.

<sup>101</sup> Daimler, *Combined Management Report with Non-Financial Declaration*, p. 92.

<sup>102</sup> Unilever, "Statement on the implementation of Unilever's remuneration policy," February 11, 2020, p. 5.

<sup>103</sup> DBS Bank, *Stronger Together: Sustainability Report 2020*, March 2, 2021, p. 5.

<sup>104</sup> National Fish and Wildlife Foundation, "Wells Fargo Foundation and NFWF Announce Release of the Resilient Communities Program 2020 Request for Proposals," January 23, 2020.

<sup>105</sup> Goldman Sachs, *2019 Sustainability Report*, 2020, p. 5.

<sup>106</sup> BHP, *BHP Sustainability and ESG Navigators Databook 2020*, 2020, n.p.

<sup>107</sup> Equinor, *2019 Sustainability Report*, March 16, 2020, p. 30.

Information	Alignment (Non-exhaustive)	Implementation examples	Financial institution examples	Non-financial organization examples
<b>Climate-Related Financial Impact</b>				
Impact of any material climate-related risks or opportunities on financial performance (e.g., cost, profitability, operating cash flow, impairment)	CDP: C2.2a, C2.4a, CC3.2, 3.3, CC6.1; SASB: NR0103-14; CDSB: REQ-03; CDP: C2.3a, C2.4a; CDP: C2.4a, C3.4; CDSB: REQ-03; SASB: TR0101-10; GRI: 307-1; CDP: C2.4a; SASB: RT-AE-410a.1 ( <i>Aerospace, Defense Standard</i> ); SASB: FN-IN-450a.1; European Commission Guidelines: Section 3.5, Annex 1; ECB Supervisory Expectation: 7.2; EU Taxonomy: Article 8	<ul style="list-style-type: none"> <li>Revenue/savings from investments in low-carbon alternatives</li> <li>Direct or indirect costs related to carbon price, business interruption, contingency, repairs, etc.</li> <li>Change in profitability</li> <li>Fines and sanctions for non-compliance with environmental regulations</li> <li>ROI from low-carbon tech or alternative energy products</li> <li>Probable Maximum Loss (PML) of insured products from natural catastrophes</li> </ul>	<b>Citi:</b> <sup>108</sup> "The adjusted probability of default (PD) and credit rating impacts of a global carbon price varied significantly across companies, ranging from a downgrade of 0 to 9 notches at \$50/tCO <sub>2</sub> , with an average of 3.5 notches." <b>Hannon Armstrong:</b> <sup>109</sup> "Under a scenario where a carbon tax drives the price of power up by 10%, our wind equity investments may generate approximately 6% in additional cashflows over their life as compared to the cashflow the investments are expected to generate under the current baseline scenario."	<b>Canadian Railway:</b> <sup>110</sup> "CP initiated a wildfire response program...equipment such as sprinklers and fire retardants were set up...While the fire threat did not materialize into physical network/equipment damage, management and response cost was \$800,000." <b>HPE:</b> <sup>111</sup> "The company took a \$93 million charge in 2017 to pay for (Hurricane Harvey) storm damages not covered by insurance claims." <b>Meridian Energy:</b> <sup>112</sup> "The potential annualised financial impact is \$12 million. This is calculated using the difference between the modelled 'no climate change' scenario and the Evolution scenario and is based on modelling the potential impact on Meridian generation revenues over 30 years and then annualised over the 2020 to 2050 timeframe."

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<sup>108</sup> Citi, *Finance for a Climate-Resilient Future II: Citi's 2020 TCFD Report*, December 17, 2020, p. 23.

<sup>109</sup> Hannon Armstrong, *United States Securities and Exchange Commission Form 10-K*, February 22, 2021, p. 57.

<sup>110</sup> Canadian Pacific, *2019 CDP Climate Change Questionnaire: CP Response*, 2019, p. 23.

<sup>111</sup> Gold, "Companies' Climate Risks Are Often Unknown. Here's How One Opened Up," Wall Street Journal, March 14, 2021.

<sup>112</sup> Meridian Energy, *Climate Change Disclosures Meridian Energy Limited FY20*, August 2020, p. 8.

Information	Alignment (Non-exhaustive)	Implementation examples	Financial institution examples	Non-financial organization examples
Impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities)	CDP: C2.4a, C2.3a, C3.4, C2.2a; CDSB: REQ-03, REQ-06; SASB: EM-EP-420a.1, FN-CB-410a.1;  CDP: C2.2a; CDSB: REQ-03; CDP: 2.3a, C3.4;  CDP: C2.2a; CDSB: REQ-03;  SASB: EM-EP-420a.1 ( <i>Oil and Gas Exploration Standard</i> )  European Commission Guidelines: Annex 1;  ECB Supervisory Expectation: 7.5, 8.3, 8.6, 10, 12;  ECB ILAAP Principle: IV	<ul style="list-style-type: none"> <li>• Fair value of assets due to exposure to physical and transition risks</li> <li>• Transition risk from implementation of carbon regulation</li> <li>• Access to capital from climate risk or opportunities</li> <li>• Risk of stranded, illiquid assets from climate change</li> <li>• Sensitivity of hydrocarbon reserve levels to future carbon price projections</li> </ul>	<b>Invesco:</b> <sup>113</sup> "The carbon-managed portfolio significantly reduces the negative impact of the 1.5°C scenario compared to the former strategy, while keeping the risk characteristics of the UK benchmark." Figure shows a -5% change in valuation under a 1.5°C scenario in the baseline strategy relative to a roughly -3.4% change in the carbon-managed strategy.	<b>BP:</b> <sup>114</sup> "These lower long-term price assumptions are...broadly in line with a range of transition paths consistent with the Paris climate goals...The aggregate second-quarter 2020 non-cash, post-tax PP&E impairment charges and exploration intangible write-offs will be in the range of \$13B to \$17.5B."

<sup>113</sup> Invesco, *2019 Invesco Climate Change Report*, p. 31.

<sup>114</sup> BP, "Progressing strategy development, bp revises long-term price assumptions, reviews intangible assets, and, as a result, expects non-cash impairments and write-offs," June 15, 2020.

<sup>115</sup> Eni, *Annual Report 2019*, February 27, 2020, p. 95.

## INCLUSION OF SCOPE 3 AND FINANCED EMISSIONS

This appendix explains in further detail the basis for the TCFD's conclusions for proposing the changes related to Scope 3 GHG emissions, including financed emissions. The Financial Stability Board's (FSB's) remit to the TCFD, stated in its November 2015 proposal to establish the Task Force, notes:<sup>116</sup>

*'Appropriate disclosure is a prerequisite for both the private sector and authorities to understand and measure the potential effects on the financial sector of climate change, as markets evolve and as the wider economy transitions towards a low-carbon economy.'*

*'For instance, one relevant company disclosure could be information on the size of its carbon footprint<sup>117</sup> and its strategies to manage its transition to a lower-carbon business model. This may assist market participants in making investment, credit, or insurance underwriting decisions that take into account the physical, liability and transition risks associated with climate change, including how those risks may evolve in the future' (emphasis added).*

And in the 2017 TCFD final report (p. 22) the Task Force states:

*'The FSB called on the Task Force to develop climate-related disclosures that 'could promote more informed investment, credit [or lending], and insurance underwriting decisions' and, in turn, 'would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks'" (emphasis added).*

The Task Force believes that consulting on Scope 3 emissions and on financed emissions is now appropriate, and that this is consistent with its remit from the FSB.<sup>118</sup>

Given recent developments around need and demand for Scope 3 reporting, the Task Force is seeking views on the disclosure of Scope 3 emissions, financed emissions, and implications for TCFD guidance.

The first section explains the inclusion of Scope 3 emissions for non-financial groups while the second explains the inclusion of financed emissions for financial sector organizations. They provide more detail on the importance of Scope 3 emissions in understanding companies' total contribution to carbon emissions across their value chain and the key developments in markets, the thinking of governments, and the work of the TCFD itself regarding Scope 3 emissions.

### Scope 3 Emissions

#### The GHG Protocol Categorization of Scope 3 Emissions

The most well-known and widely referenced classification of greenhouse gases is the GHG Protocol Corporate Standard,<sup>119</sup> which defines the three Scopes of emissions from the perspective of the reporting company as follows:<sup>120</sup>

- **Scope 1 emissions** are direct emissions from owned or controlled sources. Note that one company's Scope 1 (direct) emissions are Scope 3 (indirect) emissions for a company or consumer who is in the first company's value chain.
- **Scope 2 emissions** are indirect emissions from the generation of purchased energy.
- **Scope 3 emissions** are all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. The GHG Protocol's Scope 3 schema contains 15 stages, eight of which are upstream, seven downstream.

<sup>116</sup> FSB, *Proposal for a disclosure task force on climate-related risks*, p. 2. Note that a carbon footprint refers to the total amount of greenhouse gases generated by an activity or company.

<sup>117</sup> The term "carbon footprint" is used as a shorthand to refer to an organization's greenhouse gas emissions.

<sup>118</sup> FSB, *Proposal for a disclosure task force on climate-related risks*, p. 4. "The Task Force expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed."

<sup>119</sup> *The GHG Protocol Corporate Standard*, commonly referred to simply as the Corporate Standard, is a methodology developed by the GHG Protocol Initiative and is the methodology explicitly recommended by the Task Force for calculating and reporting emissions (see 2017 *TCFD Final Report*, June 15, 2017, Section C3, p. 22, footnote 40). The first edition of the *Corporate Standard* was published in 2001 and then updated in 2004 with additional guidance clarifying how companies can measure emissions from electricity and other energy purchases and account for emissions from throughout their value chains. Building on the *Corporate Standard*, the GHG Protocol then developed a more detailed approach to Scope 3 emissions, and in 2011 published the *Corporate Value Chain (Scope-3) Accounting and Reporting Standard*, commonly referred to as the *Scope 3 Standard*. A supplement to the *Scope 3 Standard* was then published in 2013 providing detailed explanation of how to calculate Scope 3 emissions, namely the *Technical Guidance for Calculating Scope-3 Emissions*. The *Scope 3 Standard* is the only internationally recognized methodology for companies to report all their value chain emissions.

<sup>120</sup> See GHG Protocol, *Frequently Asked Questions*.

Consider the example of a fertilizer producer that uses natural gas as an input. The fertilizer producer's Scope 1 emissions would include those released in the production of fertilizer as well as any other emissions from sources directly under the control of the producer, such as trucks or generators used on site. If the company sourced electricity through the local grid, its Scope 2 emissions would include a proportion of the emissions of power plants that supplied power to that grid.

Scope 3 upstream emissions would include other value chain emissions emitted before the fertilizer production, such as fugitive methane emissions from natural gas wells, while Scope 3 downstream emissions would include other value chain emissions from consumers using the fertilizer, such as emissions released from trucks or tractors at a farm.

#### Relevant Developments on Scope 3 GHG Emissions Since 2017

When the 2017 TCFD final report was published, there were a number of unresolved issues regarding when and how to calculate Scope 3 and financed emissions, resulting in the insertion of the phrase "if appropriate" for the Scope 3 disclosure recommendation. The intent was to provide flexibility for reporting entities. As discussed previously, the discussion around Scope 3 emissions and financed emissions has evolved since 2017.<sup>121</sup>

In particular, the international dialogue on climate change has shifted from a focus on carbon budgets consistent with the Paris Agreement to a focus on achieving net-zero emissions by 2050.<sup>122</sup> This shift signals an increasing urgency on reducing emissions—both direct and indirect—to zero by all economic sectors. To help identify carbon-related assets and potential climate-related risk, governments and investors are increasingly focusing on the full value chain of emissions.

As legislative and regulatory actions around disclosure increase, companies are also aware that insufficient data for Scope 3 and financed emissions create further uncertainty and added barriers to disclosure. There have been improvements in these areas since the TCFD published its original recommendations and the Task Force hopes that by encouraging more specific disclosure of Scope 3 and financed emissions, it will help support and accelerate these efforts.<sup>123</sup>

Additionally, the financial system's exposure to climate-related risks depends on the effectiveness of the climate-related disclosures of the companies and sectors that are financed by banks and underwritten by insurance companies.

#### Box A3-1 Shift to Net-Zero

With jurisdictions legislating net-zero targets, issuers are increasingly exposed to policy risk. Investors, in response, have added to their portfolio view on climate risk, a more company-specific, value chain lens on climate risk.\*

For example, coal and oil-and-gas companies sell fossil fuels consumed by their customers. If the focus is on a given carbon budget, then fossil fuel companies are satisfying market demand and focus of risk is customer-centric.

However, if the focus is on achieving net-zero emissions by 2050, both the fossil fuel companies and their customers are incentivized to consider their respective carbon footprints (in this example, Scope 3 emissions in the case of the fossil fuel companies, and Scope 1 emissions in the case of their customers).

\*GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard states: "Use of this standard is intended to enable comparisons of a company's GHG emissions over time. It is not designed to support comparisons between companies based on their scope 3 emissions. Differences in reported emissions may be a result of differences in inventory methodology or differences in company size or structure. Additional measures are necessary to enable valid comparisons across companies. Such measures include consistency in methodology and data used to calculate the inventory, and reporting of additional information such as intensity ratios or performance metrics."

However, if the disclosures made by organizations with significant direct and indirect emissions do not include Scope 3 emissions, then the banking and insurance sector's understanding of the concentration of carbon-related assets on their balance sheets may be incomplete, asset owner and asset managers will have limited visibility into risk associated with carbon-intensive issuers, and the collective understanding of the financial system's potential exposure to the systemic risk posed by climate change may be insufficient.

Since the 2017 TCFD final report and annex were published in June 2017, the debate over Scope 3 emissions has moved on significantly across three main areas of relevance to the Task Force's remit: (i) financial markets and civil society; (ii) governments and regulators; and (iii) the work of the Task force itself.

<sup>121</sup> 2017 *TCFD Final Report*, June 15 2017, p. 3. "The Task Force expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed."

<sup>122</sup> This shift of emphasis was the direct result of the IPCC's Special Report *Global Warming of 1.5°C*, published in October 2018.

<sup>123</sup> SBTi, *Value Change in the Value Chain: Best Practices In Scope 3 Greenhouse Gas Management*, 2018, p. 10.

### **Relevant Developments in Financial Markets and Civil Society**

There have been a number of significant developments in financial markets and civil society since June 2017 that have heightened awareness of and increased the focus on Scope 3 emissions. Four of these developments are of particular relevance for the Task Force's guidance on this topic: (1) the IPCC special report on 1.5°C and mainstreaming of the net-zero emissions concept, (2) the launch of the Climate Action 100+ Initiative, (3) the increased prominence of Paris-aligned reporting and analytical frameworks, and (4) increasing focus of academic/NGO research on Scope 3 emissions beyond the energy sector.

**1) The IPCC special report on 1.5°C and mainstreaming of the net-zero emissions concept:** In response to an invitation from policymakers extended at COP21 in Paris, in October 2018 the IPCC released a special report on the impact of global warming of 1.5°C above pre-industrial levels.<sup>124</sup>

The report showed that the impact of 2°C of warming would be significantly worse than 1.5°C. The IPCC report brought renewed urgency to the effort to limit the global temperature increase to 1.5°C. In turn, the report has shifted the language used in the international dialogue on climate change. Today, there is less of a focus on the carbon budget that is consistent with Paris, and more of a focus on achieving net-zero emissions by 2050, in keeping with the IPCC modeling of how to limit warming to 1.5°C.<sup>125</sup>

*"In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), **reaching net zero around 2050 (2045–2055 interquartile range)**" (emphasis added).*

Since the publication of the IPCC special report, the concept of net-zero targets has entered mainstream corporate and political debate, with many leading companies,<sup>126</sup> financial institutions,<sup>127</sup> and a growing number of governments<sup>128</sup> setting net-zero targets for midcentury. In June 2020, the UNFCCC announced the launch of the [Race to Zero](#) campaign to build momentum toward net-zero GHG emissions by midcentury in the run up to COP26.<sup>129</sup>

Net-zero targets, by definition, entail the decarbonization of every aspect of a company's or an economy's activity, which means reducing Scope 3 emissions to zero, as well as Scope 1 and Scope 2 emissions.

### **2) The launch of the Climate Action 100+ Initiative<sup>130</sup>**

**(CA100+):** CA100+ was launched in December 2017 at the One Planet Summit in Paris and is an investor initiative designed to ensure that the world's largest GHG emitters align their business models with the Paris Agreement.

CA100+ now counts 575 investors globally among its members with more than \$54 trillion in assets under management (AUM).<sup>131</sup> CA100+ explicitly states that it engages with the companies regarding the basis of their emissions across the entire value chain, with Scope 3 therefore a key focus.<sup>132</sup> It notes, for example, that "the most material or greatest source of greenhouse gas emissions of an auto manufacturer are those generated during the use of the vehicles it sells (Scope 3). **Value-chain emissions, like those of vehicles, are substantial sources of greenhouse gas emissions. Such value-chain emissions are highly material to reducing emissions.** Transportation emissions account for a quarter of annual emissions. If only Scope 1 and 2 emissions had been used to assess the footprint of companies, transportation emissions would have not been taken into consideration."<sup>133</sup>

<sup>124</sup> IPCC, *Special Report: Global Warming of 1.5°C*, October 2018.

<sup>125</sup> IPCC, *Headline Statements from the Summary for Policymakers*, IPCC Special Report on Global Warming of 1.5°C, October 2018.

<sup>126</sup> See, for example, the UN-convened **Business Ambition for 1.5°C**, an initiative that commits corporate signatories to a 1.5°C target through the Science Based Targets initiative. As of June 5, 2020, 237 companies with a combined market capitalization of over \$3.6tn have committed to the Business Ambition for 1.5°C.

<sup>127</sup> See, for example, the Glasgow Financial Alliance for Net Zero and CDP, *The Time to Green Finance*, 2020, p. 22.

<sup>128</sup> See, for example, commitments by the EU, China, New Zealand, and United States.

<sup>129</sup> See <https://unfccc.int/news/cities-regions-and-businesses-race-to-zero-emissions>.

<sup>130</sup> See [Climate Action 100+](#). CA100+ chose the initial 100 companies to engage with on the basis of their having "the highest combined direct and indirect Scope 1, 2 and 3 emissions (emissions associated with the use of their products) using CDP modelled and reported data."

<sup>131</sup> Climate Action 100+, [Who's Involved](#).

<sup>132</sup> See [Climate Action 100+](#).

<sup>133</sup> Note that the Transportation industry group under the Global Industry Classification Standard (GICS) does not include automobiles, which is under the Consumer Discretionary industry group.

**3) The increased prominence of Paris-aligned reporting and analytical frameworks:** A number of NGO reporting and analytical frameworks exist that use Paris-aligned methodologies intended to accelerate corporate decarbonization in line with the Paris Agreement. These frameworks are increasingly being adopted by corporations across many different industries. Among the most prominent are the Science Based Target initiative<sup>134</sup> (SBTi), the We Mean Business<sup>135</sup> coalition, and the Transition Pathways Initiative<sup>136</sup> (TPI).

The objective of all these initiatives is to help companies align their business models with the Paris Agreement, increasingly understood to mean net-zero emissions by 2050, so these initiatives focus on emissions across all aspects of a given company's activity.

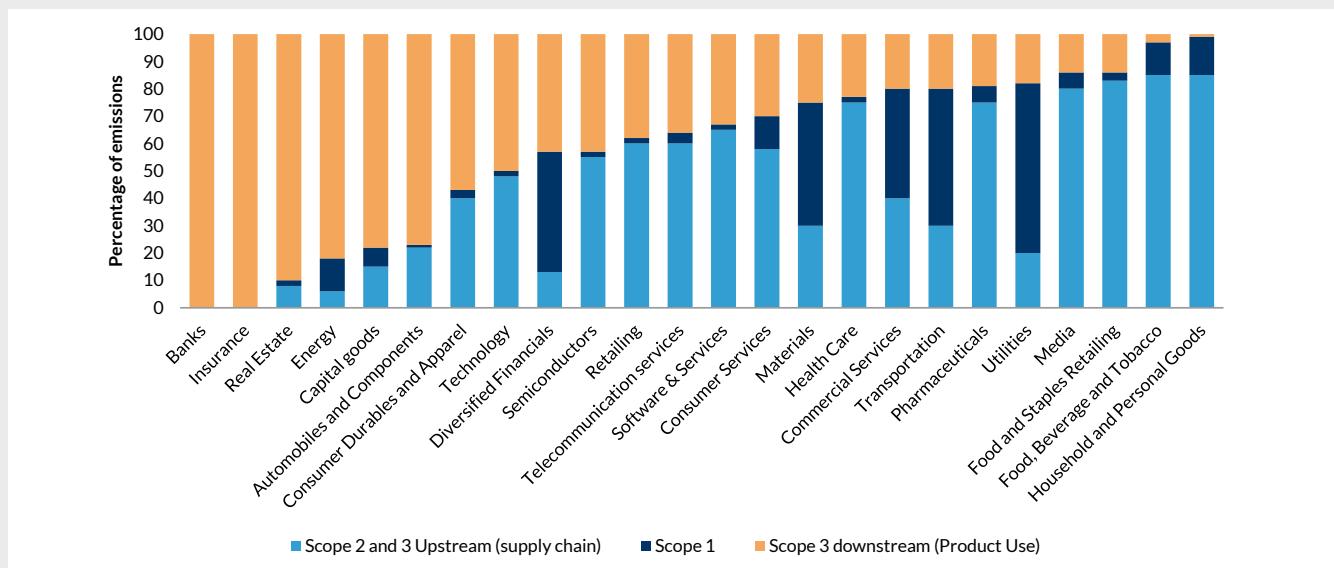
Indeed, in its methodology for awarding science-based targets, the SBTi explicitly states under criteria 16 and 17 that any company seeking the SBTi validation must complete a Scope 3 screening to establish their significance, and, where these Scope 3 emissions account for 40% or more of the total emissions of the company, must then also set a Scope 3 reduction target.<sup>137</sup>

#### 4) Increasing focus of academic/NGO research on Scope 3 emissions beyond the energy sector:

Awareness of other sectors' indirect emissions is increasing as academics and NGOs are increasingly focused on the Scope 3 emissions of sectors other than energy and utility companies (e.g., textiles<sup>138</sup> and auto manufacturers<sup>139</sup>). A growing body of research is showing that for most sectors, Scope 3 emissions are an important

Figure A3-1

### Importance of Scope 3 Emissions in Certain Sectors



Source: Kepler-Cheuvreux, "Carbon Compass," 360 Report, November 23, 2015

<sup>134</sup> The SBTi was established in 2015 but has gained greater traction since the publication of the TCFD final report and annex and the proliferation of other initiatives drawing on its work (e.g., the Business Ambition for 1.5°C referenced above). The SBTi approves science-based targets for companies based on 2°C, well below 2°C, and 1.5°C decarbonization pathways. As of March 2021, the SBTi had approved 643 companies' decarbonization targets as being compatible with the Paris Agreement, and states that a total of 1,310 companies are taking science-based action on climate.

<sup>135</sup> The We Mean Business coalition is an NGO working with businesses to take action on climate change. It was established in 2014 but like the SBTi has gained increased prominence since 2017. As of March 2021, it listed 1,680 companies with a combined market capitalization of \$24.8trn as being committed to one or more of the decarbonization initiatives it helps to coordinate with partner organizations (e.g., on renewable energy, energy efficiency, and electric vehicles).

<sup>136</sup> The TPI was established in 2017 by a group of asset owners and is supported by asset managers. The TPI "evaluates and tracks the quality of companies' management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition." As of March 2021, over 100 investors globally with combined AUM and under advice of \$25trn have pledged support for the TPI.

<sup>137</sup> See the explanation of the SBTi approach in its updated paper *SBTi Criteria and Recommendations*, Version 4.1, April 2020, Section V, p. 10.

<sup>138</sup> In its 2018 report *A New Textiles Economy*, the Ellen MacArthur Foundation estimates total emissions from the global apparel industry at 1.2Gt, with fiber production and yarn production by far the two largest components (1.1Gt combined). In their 2018 report Value Change in the Value Chain: Best Practices in Scope 3 GHG Management, the Science Based Targets SBTi, Gold Standard, and Navigant estimate that of this total 70% is Scope 3 emissions.

<sup>139</sup> As referenced above, CA100+ gives the auto manufacturing industry as an example of one where Scope 3 emissions are significantly greater than Scope 1 and Scope 2 emissions.

part of their carbon emissions, often accounting for several times the impact of a company's Scope 1 and Scope 2 emissions.<sup>140</sup>

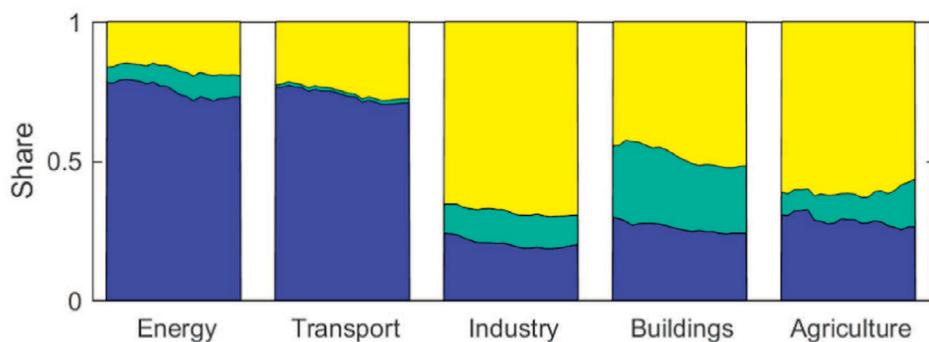
For example, a report by the sell-side investment research house Kepler-Cheuvreux published in 2015 in collaboration with a number of NGOs analyzed the carbon emissions for 24 industry groups under the Global Industry Classification Standard (GICS) (Figure A3-1). It found that 21 industry groups had indirect emissions (Scope 3 emissions upstream and downstream and Scope 2 upstream emissions) greater than 50% of their overall carbon emissions.<sup>141</sup> For eight of these 21 industries, downstream Scope 3 emissions were predominant.<sup>142</sup> For the other 13 industries, upstream emissions were predominant.<sup>143</sup> Just three industry groups had indirect emissions less than 50%—Utilities, Transportation, and Materials.

A 2018 paper by Hertwich and Wood, using the IPCC GHG reporting sectors of Energy, Transport, Industry, Buildings, and Agriculture/Forestry/Other Land Use (AFOLU),<sup>144</sup> found two sectors with Scope 3 emissions greater than 50% of their total carbon emissions—industry and AFOLU. The building sector was close to 50% (Figure A3-2).

The analysis Scope 3 emissions has become more sophisticated, which has aided efforts to report Scope 3 emissions.<sup>145</sup> In short, Scope 3 emissions have become the object of much greater interest in financial markets, civil society, government, and companies since the launch of the TCFD final report and annex in 2017.

**Figure A3-2**

## Scope 1, 2, and 3 Emissions by IPCC Sector (1995–2015)



Source: Hertwich and Wood, "The growing importance of scope 3 greenhouse gas emissions from industry," Environmental Research Letters, October 5, 2018, p. 6. Original content from this work used under the terms of the Creative Commons Attribution 3.0 license.

<sup>140</sup> See SBTi, Gold Standard, and Navigant, *Value Change in the Value Chain: Best Practices in Scope 3 GHG Management*, citing CDP's Global Supply Chain report *Closing the Gap: Scaling Up Sustainable Supply Chains*. The same paragraph in the report by SBTi et al. went on to say (again citing the CDP report): "Indeed, approximately 40% of global GHG emissions are driven or influenced by companies through their purchases (i.e. purchased goods and services) and through the products they sell (i.e. use of sold products)." This is a very important point as far as mapping the materiality of the different steps in the GHG protocol's Scope 3 schema is concerned, and Section D. (Scope and Approach) explores it in greater detail.

<sup>141</sup> See *Carbon Compass: Investor Guide to Carbon Footprinting* and the section titled "Fasten your seat belt," pp. 20–23.

<sup>142</sup> These eight sectors are Banks, Insurance, Real Estate, Energy (i.e., the fossil fuel extraction industries of Mining and Oil & Gas), Capital Goods, Automobiles & Components, Consumer Durables and Apparel, and Technology.

<sup>143</sup> The other 13 industries are Household & Personal Goods, Food, Beverage & Tobacco, Food & Staples Retailing, Media, Pharmaceuticals, Commercial Services, Healthcare, Consumer Services, Software & Services, Telecommunication Services, Retailing, Semi-Conductors, and Diversified Financials.

<sup>144</sup> Hertwich and Wood, "The growing importance of scope 3 greenhouse gas emissions from industry," October 5, 2018; IPCC, *Guidelines for National Greenhouse Gas Inventories*, 2006. The analysis was conducted with the EXIOBASE 3.4 MRIO model, describing the world economy disaggregated into 200 products produced and consumed in 43 countries and six aggregate regions, covering a time series from 1995 to 2015.

<sup>145</sup> This being said, there is one methodological issue unique to Scope 3 emissions when compared with Scope 1 and Scope 2 emissions and that is the overlapping nature of company supply chains and hence the potential for the double-counting of Scope 3 emissions at the aggregated global level. However, while this makes the analysis of and accounting for Scope 3 emissions intrinsically more complicated for banks, insurance companies, asset owners, and asset managers, it also creates possibilities for companies with overlapping supply chains to collaborate on emissions reductions. Given that the financial benefits of reduced emissions could be very significant in carbon-intensive industry supply chains (and companies failing to act on their supply chains, therefore at a potential disadvantage), Financials clearly have a strong incentive in understanding the extent and demarcation of Scope 3 emissions in their loan books, underwriting portfolios, and investment portfolios as markets and civil society bring ever greater scrutiny to bear on supply chain emissions.

### **Increased Reporting of Scope 3 Emissions by Companies**

An analysis by the Carbon Disclosure Project found that from 2017–2019, companies within their sample that were disclosing some form of Scope 3 emissions grew from 1,643 companies in 2017 to 1,728 companies in 2019.<sup>146</sup> This represents about 87% of companies in the CDP reporting sample in 2019. Among the categories of Scope 3 emissions, business travel, purchased goods and services (supply chain), generated waste, fuel- and energy-related activities, and employee commuting were consistently in the top five. While fewer companies are disclosing downstream Scope 3 emissions, the trend is also growing in the disclosure of these categories.

### **Legislative and Regulatory Developments**

Legislative and regulatory pressure has increased in some jurisdictions around emission standards and targets. A report released in March 2021 by the Energy and Climate Intelligence Unit and Oxford Net Zero found that “61% of countries, 9% of states & regions in the largest emitting countries and 13% of cities over 500k in population have now committed to net zero. Of the world’s 2,000 largest public companies, at least one-fifth (21%) now have net zero commitments, representing annual sales of nearly \$14 trillion.”<sup>147</sup>

Many company proposals include articulation of Scope 3 emissions. The EU proposal, for example, states that, from the date of its application, Scope 3 emissions data for the Oil and Gas and Mining sectors will be expected to be provided. Scope 3 data for the Transportation, Construction, Buildings, and Materials sectors will be expected within two years of implementation, and this data for every other sector will be expected within four years.<sup>148</sup>

### **Developments in the Task Force’s Own Work**

The TCFD’s own work, most notably concerning the sector forums organized by the WBCSD on behalf of the TCFD, has also converged on the importance of disclosing Scope 3 emissions. In particular, the WBCSD forum on Materials and Buildings and Chemicals suggested that Scope 3 emissions be disclosed by companies in these sectors. Providing clearer guidance on when Scope 3 emissions should be disclosed (e.g., for certain types of companies, under certain circumstances) may help improve consistency in reporting.

Taking these developments in whole, the updates to recommendations and guidance are designed to encourage more organizations to report Scope 3 GHG

emissions. This is because banks, insurance companies, asset managers, and asset owners will need better disclosure on emissions, particularly Scope 3 emissions, from non-financials to better understand their financed emissions and evaluate how their loan, underwriting, and investment activities may expose them to carbon-related assets and their associated risks. In addition, an increasing number of jurisdictions are formally adopting the Paris Agreement’s temperature objective, and as a result, non-financial companies may have to do much more to measure, manage, and reduce their emissions, particularly Scope 3 emissions.

If disclosures made by organizations with significant direct and indirect emissions do not include Scope 3 emissions, then the financial sector’s understanding of the concentration of carbon-related assets on their balance sheets and portfolios, and hence their understanding of financed emissions, is limited. As a result, the Task Force considers that the time is now right to revisit its original guidance on Scope 3 emissions and financed emissions.

### **Financed Emissions**

Since the TCFD final report and annex were published in June 2017, a number of initiatives have emerged to improve the disclosure and reporting of financial institutions’ financed emissions.

Three of these developments are of particular relevance for the Task Force’s guidance on this topic: (1) the SBTi approach to financed emissions, (2) the methodology on financed emissions for the insurance industry being developed by the CRO Forum, and (3) the Partnership for Carbon Accounting Financials (PCAF).

#### **The SBTi Approach to Financed Emissions<sup>149</sup>**

The SBTi has launched a methodological framework for financial institutions that will enable banks, insurance companies, and asset owners and asset managers to set science-based targets for decarbonizing their portfolios.<sup>150</sup> Financial institutions seeking endorsement from the SBTi will have to set targets not only for their own Scope 1 and Scope 2 emissions but also for their Scope 3 emissions, including their financed emissions. It is not yet clear, though, whether Financials will also have to include the Scope 3 emissions of their investee companies in their financed emissions—for example, the Scope 3 emissions of their loans to/investments in oil-and-gas companies.

<sup>146</sup> From a CDP sample of 1,987 companies that disclosed consistently over the three years: 2019, 2018, 2017.

<sup>147</sup> Black, Cullen, Fay, Hale, Lang, Mahmood, and Smith, *Taking Stock: A global assessment of net zero targets*, 2021.

<sup>148</sup> See [EU climate benchmarks and benchmarks’ ESG disclosures](#).

<sup>149</sup> For the background and more details, see the [SBTi’s approach to financed emissions](#).

<sup>150</sup> See the SBTi paper [Science Based Targets initiative for Financial Institutions Theory of Change and Strategy](#), February 2020.

### The CRO Forum's Approach to Financed Emissions in Underwriting Portfolios<sup>151</sup>

The CRO Forum is an initiative established in 2004 bringing together the Chief Risk Officers of leading insurance companies to advance risk-management practices in the insurance industry. In April 2020, the CRO published a report titled *Carbon Footprinting Methodology for Underwriting Portfolios*,<sup>152</sup> with the aim of summarizing “a range of options, methodologies and barriers for the carbon-footprinting of insurance companies’ underwriting portfolios” (p. 5).

The CRO Forum’s report recommends using WACI metrics as a first step in gauging the financial risks posed to underwriting portfolios by climate change, although it also emphasizes that the WACI methodologies it presents should be viewed as “an exploration of the different carbon-footprinting methodologies that may be applied to underwriting portfolios and the barriers to applying them.”

The CRO Forum’s WACI<sup>153</sup> metrics are calculated on the basis of the insured entities’ Scope 1 and Scope 2 emissions only, with the Scope 3 emissions of entities underwritten excluded from the calculation.

### The PCAF Approach to Financed Emissions

In November 2020, PCAF issued the first edition of the *PCAF Global GHG Accounting and Reporting Standard for the Financial Industry*. PCAF’s Standard builds on the GHG Protocol’s accounting rules for Scope 3, category 15 (Investments) by providing detailed methodological guidance to assist in the measurement and disclosure of GHG emissions associated with six asset classes: (1) listed equity and corporate bonds, (2) business loans and unlisted equity, (3) project finance, (4) commercial real estate, (5) mortgages, and (6) motor vehicle loans. PCAF notes, “The initiative, with guidance from PCAF participants and users, intends to both update the methodologies over time and add additional ones.”<sup>154</sup>

The PCAF global standard for financed emissions requires not only the measuring and disclosure of the Scope 1 and Scope 2 emissions associated with these assets but also the Scope 3 emissions, with the Scope 3 emissions to be phased in on the same time frame as that set out by the EU Technical Experts Group for the low-carbon benchmarks.<sup>155</sup> PCAF’s Standard recognizes the difficulties inherent in the comparability, coverage, transparency, and reliability of Scope 3 data when attempting to capture the Scope 3 dimension of financed emissions, but states that “by requiring Scope 3 reporting for selected sectors, PCAF seeks to make Scope 3 emissions reporting more common practice by improving data availability and quality over time.”

<sup>151</sup> For the background and more details, see the [CRO Forum](#).

<sup>152</sup> See [Carbon Footprinting Methodology for Underwriting Portfolios](#), April 29, 2020.

<sup>153</sup> The CRO report explicitly references the WACI metric for asset owners and asset managers recommended by the TCFD in its 2017 final report as being applicable—with the appropriate changes being made—to underwriting portfolios.

<sup>154</sup> See PCAF’s [The Global Carbon Accounting Standard for the Financial Industry](#), November 18, 2020.

<sup>155</sup> See PCAF’s [The Global Carbon Accounting Standard for the Financial Industry](#), November 18, 2020, p. 49.

### Box A3-2

#### Global Carbon Accounting Standard for the Financial Industry

PCAF is an industry-led initiative, created in 2015 by Dutch financial institutions, extended to North America in 2018, and scaled up globally in 2019. PCAF helps financial institutions assess and disclose greenhouse gas (GHG) emissions from their loans and investments through carbon accounting. These disclosures allow stakeholders to understand how a financial institution’s loans and investments are contributing to, or inhibiting, the transition to a low-carbon economy.

Until now, there has not been a globally accepted methodology for the measurement and disclosure of financed emissions. The absence of harmonized methodologies and reporting rules has led to the poor uptake of carbon accounting of financed emissions and inconsistent disclosures across financial institutions. Responding to industry demand for a global, standardized carbon accounting approach, PCAF developed the Global Carbon Accounting Standard for the financial industry (the Standard). With the GHG Protocol Scope 3 Standard 2 as its foundation, the Standard builds upon the carbon accounting methods that PCAF has been developing since 2015. These methods are widely tested by banks and investors and used to prepare disclosures of financed emissions.

These methods assist in the measurement and disclosure of GHG emissions associated with the following six asset classes: (1) listed equity and corporate bonds, (2) business loans and unlisted equity, (3) project finance, (4) commercial real estate, (5) mortgages, and (6) motor vehicle loans. The Standard provides detailed guidance for each asset class to calculate the emissions resulting from activities in the real economy that are financed through lending and investment portfolios. Emissions are attributed to financial institutions based on accounting rules that are specific for each asset class.

Limited data is often the main challenge in calculating financed emissions; however, data limitations should not deter financial institutions from starting their carbon accounting journeys. Beginning with estimated or proxy data can help identify carbon-intensive hotspots in lending and investment portfolios. The Standard provides guidance on data quality scoring per asset class, facilitating data transparency and encouraging improvements to data quality in the medium and long term. The Standard also provides recommendations and requirements for disclosures, which include a minimum disclosure threshold with flexibility to report beyond this level. Any requirements not fulfilled must be accompanied by an explanation.

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# Appendix 3: Glossary and Abbreviations

## Appendix 3: Glossary and Abbreviations

**ANNUAL OR INTEGRATED REPORTS** refer to reports that describe companies' activities for the preceding year (annual reports) or the broader range of measures that contribute to companies' long-term value and the role they play in society (integrated reports).

**BOARD OF DIRECTORS (OR BOARD)** refers to a body of elected or appointed members who jointly oversee the activities of a company or organization. Some countries use a two-tiered system in which "board" refers to the "supervisory board" and "key executives" refers to the "management board."<sup>156</sup>

**CARBON ACCOUNTING** of financial portfolios is the annual accounting and disclosure of GHG emissions of loans and investments at a fixed point in time in line with financial accounting periods.

**CARBON FOOTPRINTING** is the calculation of the total greenhouse gas emissions caused by an individual, event, organization, service, or product expressed as a carbon dioxide equivalent.

**CARBON INTENSITY** relates to a company's physical carbon performance and describes the extent to which its business activities are based on carbon usage for a defined Scope and fiscal year.

**CLIMATE-RELATED FINANCIAL IMPACT** is a historical or current quantity or forward-looking quantitative outlook (estimate, projection, or forecast) regarding the financial impact of climate-related risks and opportunities on an organization's financial performance or position.

**CLIMATE-RELATED METRIC** is a quantity indicative of the level of historical, current, and forward-looking climate-related risks and opportunities for a given organization. These indicators are used to track climate-related risks and opportunities and can also be used to measure progress against climate-related targets over the duration of the period for which a target is set.

**CLIMATE-RELATED OPPORTUNITY** refers to the potential positive impacts related to climate change on a company or organization. Efforts to mitigate and adapt to climate change can produce opportunities for companies, such as through resource efficiency and cost savings, the adoption and utilization of low-emission energy sources, the development of new products and services, and

building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organization operates.

**CLIMATE-RELATED RISK** refers to the potential negative impacts of climate change on a company or organization. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, fires). They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise). Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relates to policy and legal actions, technology changes, market responses, and reputational considerations.

**CLIMATE-RELATED TARGET** is a specific level, threshold, or quantity of a metric that the organization wishes to meet over a defined time horizon in order to achieve the organization's overall climate-related ambition and strategy.

**CROSS-INDUSTRY, CLIMATE-RELATED METRICS** are metrics that apply equally to all financial and non-financial organizations, though they may be implemented or reported slightly differently in line with different best practices for each jurisdiction, sector, or geography.

**FINANCED EMISSIONS** see Carbon Accounting.

**FINANCIAL FILINGS** refer to the annual reporting packages in which companies are required to deliver their audited financial results under the corporate, compliance, or securities laws of the jurisdictions where they operate. While reporting requirements differ internationally, financial filings generally contain financial statements and other information such as governance statements and management commentary.<sup>157</sup>

**FINANCIAL PLANNING** refers to a company's consideration of how it will achieve and fund its objectives and strategic goals. The process of financial planning allows companies to assess future financial positions and determine how resources can be utilized in pursuit of short- and long-term objectives. As part of financial planning, companies often create "financial plans" that outline the specific actions, assets, and resources (including capital) necessary to achieve these objectives

<sup>156</sup> Organisation for Economic Co-operation and Development (OECD), *G20/OECD Principles of Corporate Governance*, 2015.

<sup>157</sup> Based on Climate Disclosure Standards Board, *CDSB Framework for Reporting Environmental Information, Natural Capital and Associated Business Impacts*, April 2018.

over a one-to-five-year period. However, financial planning is broader than the development of a financial plan as it includes long-term capital allocation and other considerations that may extend beyond the typical three-to-five-year financial plan (e.g., investment, research and development, manufacturing, markets).

**GOVERNANCE** refers to “the system by which an organization is directed and controlled in the interests of shareholders and other stakeholders.”<sup>158</sup> Governance involves a set of relationships between an organization’s management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organization are set, progress against performance is monitored, and results are evaluated.<sup>159</sup>

#### **GREENHOUSE GAS (GHG) EMISSIONS SCOPE LEVELS<sup>160</sup>**

- Scope 1 refers to all direct GHG emissions.
- Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam.
- Scope 3 refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions could include: the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses), outsourced activities, and waste disposal.<sup>161</sup>

**IMPLIED TEMPERATURE RISE (ITR)** refers to an estimate of a global temperature rise associated with the greenhouse gas emissions of a single entity (e.g., a company) or a selection of entities (e.g., those in a given investment portfolio, fund, or investment strategy). Expressed as a numeric degree rating, ITR metrics incorporate current GHG emissions or other data and assumptions to estimate expected future emissions associated with the selected entity or entities. Then the estimate is translated into a projected increase in global average temperature (in °C) above pre-industrial levels that would occur if all companies in corresponding sectors had the same carbon intensity as the selected asset(s).

**INTERIM TARGET** is a short-term milestone between the organization’s mid- or long-term target and current period.

**KEY PERFORMANCE INDICATOR (KPI)** is a measurable value that demonstrates how effectively a company is achieving key business objectives. They are critical (key) indicators of progress toward an intended result. KPIs provide a focus for strategic and operational improvement, create an analytical basis for decision-making, and help focus attention on what matters most.

**KEY RISK INDICATOR (KRI)** is a measure used in management to indicate how risky an activity is. Key risk indicators are metrics used by organizations to provide an early signal of increasing risk exposures in various areas of the enterprise. It differs from a key performance indicator in that the latter is meant as a measure of how well something is being done, while the former is an indicator of the possibility of future adverse impact.

**MANAGEMENT** refers to those positions a company or organization views as executive or senior management positions.

**NET-ZERO** refers to achieving an equal balance between GHG emissions produced and GHG emissions removed from the atmosphere.

**RISK ASSESSMENT** consists of risks identification, risk analysis, and risk evaluation. The essential building blocks for comprehensively assessing risk (and establishing metrics) are hazards, exposure, vulnerability, risk, and impacts.

**RISK** is defined in many ways. For purposes of this guidance, risk is defined as the possibility or likelihood that actual results (operational or financial) deviate from expected results in a manner that has an effect on objectives at different levels (such as strategic, organization-wide, project, product, and process). Risk is often characterized by reference to potential events and consequences, or a combination of these, and expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence. Uncertainty is the state, even partial, of deficiency of information related to understanding or knowledge of an event and its consequence, or likelihood. Risk conceptually equals the probability or likelihood of hazardous events occurring multiplied by the company’s exposure and vulnerability to the event.

<sup>158</sup> Cadbury, *Report of the Committee on the Financial Aspects of Corporate Governance*, 1992.

<sup>159</sup> OECD, *G20/OECD Principles of Corporate Governance*, 2015.

<sup>160</sup> World Resources Institute and World Business Council for Sustainable Development, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*, March 2004.

<sup>161</sup> World Resources Institute and World Business Council for Sustainable Development, *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, April 16, 2014.

**RISK MANAGEMENT** refers to a set of processes that are carried out by a company or organization's board and management to support the achievement of its objectives by addressing its risks and managing the combined potential impact of those risks.

**RISK PROFILE** Each company has a unique risk profile that determines its willingness and ability to withstand risk. A risk profile consists of a company's risk attitude, which may be described as risk-averse, risk-neutral, or risk-seeking, a risk tolerance, which looks at acceptable/unacceptable deviations from what is expected, and a risk appetite, which looks at how much risk one is willing to accept.

**SCENARIO ANALYSIS** is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organization to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time.

**SECTOR** refers to a segment of companies performing similar business activities in an economy. A sector generally refers to a large segment of the economy or grouping of business types, while "industry" is used to describe more specific groupings of companies within a sector.

**STRATEGY** refers to an organization's desired future state. An organization's strategy establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy formulation generally involves establishing the purpose and Scope of the organization's activities and the nature of its businesses, taking into account the risks and opportunities it faces and the environment in which it operates.

**SUSTAINABILITY REPORT** is a report that describes a company or organization's impact on society, often addressing environmental, social, and governance issues.

**TRANSITION PLAN** is an aspect of an organization's overall business strategy that lays out how an organization aims to minimize climate-related risks and increase opportunities as the world transitions toward a low-carbon economy, including by reducing emissions of its own balance sheet and that of its value chain.

**USER**, or **PRIMARY USER**, refers to investors, lenders, and insurance underwriters. The Task Force recognizes that many other organizations, including credit rating agencies, equity analysts, stock exchanges, investment consultants, and proxy advisors also use climate-related financial disclosures, allowing them to push information through the credit and investment chain and contribute to the better pricing of risks by investors, lenders, and insurance underwriters. These organizations, in principle, depend on the same types of information as primary users.<sup>162</sup>

<sup>162</sup> 2017 *TCFD Final Report*, June 15, 2017, pp. 2-3.

## ABBREVIATIONS

<b>1.5°C</b> — 1.5° Celsius	<b>NZAMI</b> — Net Zero Asset Managers Initiative
<b>IIRC</b> — International Integrated Reporting Council	<b>NZIA</b> — Net-Zero Insurance Alliance
<b>2°C</b> — 2° Celsius	<b>PCAF</b> — Partnership for Carbon Accounting Financials
<b>AUM</b> — Assets under management	<b>PRA</b> — Prudential Regulation Authority (Bank of England)
<b>CA100+</b> — Climate Action 100+	<b>PRI</b> — Principles for Responsible Investment
<b>CDP</b> — Carbon Disclosure Project	<b>SASB</b> — Sustainability Accounting Standards Board
<b>CDSB</b> — Climate Disclosure Standards Board	<b>SBTI</b> — Science Based Targets initiative
<b>CO<sub>2</sub>E</b> — Carbon dioxide equivalent	<b>TCFD</b> — Task Force on Climate-related Financial Disclosures
<b>CRD</b> — Corporate Reporting Dialogue	<b>TPI</b> — Transition Pathway Initiative
<b>CSRD</b> — Corporate Sustainability Reporting Directive	<b>UNFCCC</b> — United Nations Framework Convention on Climate Change
<b>ESG</b> — Environmental, social, and governance	<b>UNEP-FI</b> — United Nations Environment Programme Finance Initiative
<b>FASB</b> — Financial Accounting Standards Board	<b>WACI</b> — Weighted average carbon intensity
<b>FSB</b> — Financial Stability Board	<b>WBCSD</b> — World Business Council for Sustainable Development
<b>G20</b> — Group of 20	
<b>GFANZ</b> — Glasgow Financial Alliance for Net Zero	
<b>GHG</b> — Greenhouse gas	
<b>GICS</b> — Global Industry Classification Standard	
<b>GRI</b> — Global Reporting Initiative	
<b>IASB</b> — International Accounting Standards Board	
<b>IFRS</b> — International Financial Reporting Standards	
<b>IIF</b> — Institute of International Finance	
<b>IIGCC</b> — Institutional Investors Group on Climate Change	
<b>IOSCO</b> — International Organization of Securities Commissions	
<b>IPCC</b> — Intergovernmental Panel on Climate Change	
<b>ISSB</b> — International Sustainability Standards Board	
<b>NGFS</b> — Network for Greening the Financial System	
<b>NZBA</b> — Net-Zero Banking Alliance	
<b>NZAOA</b> — Net-Zero Asset Owner Alliance	

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## Appendix 4: References

## Appendix 4: References

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# Appendix 5: Acknowledgments

## Appendix 5: Acknowledgments

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