
E. Transition Plans



E. Transition Plans

This section provides guidance on considerations around the disclosure of transition plans, including example disclosures. The Task Force recognizes that an organization’s transition plan is one component of its strategy to address its climate-related risks and opportunities and believes its recommendations implicitly cover the key aspects of transition plans. However, given the increasing focus on such plans, as described below, the Task Force determined explicit guidance may be useful. Another important component of an organization’s strategy to address climate-related risks and opportunities is its adaptation plan, which is beyond the scope of this guidance.⁷⁷ Both transition and adaptation plans may be components of an organization’s overall business strategy (Figure E1).

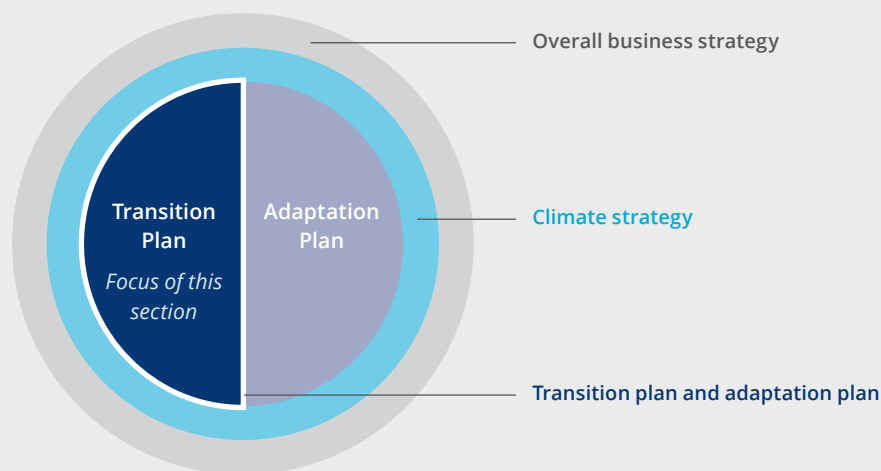
A transition plan is an aspect of an organization’s overall business strategy that lays out a set of targets and actions supporting its transition toward a low-carbon economy, including actions such as reducing its GHG emissions. Many organizations are making GHG emissions

reduction commitments or are domiciled in jurisdictions that have done so. In fact, a recent study found that over 60% of countries and nearly 10% of states and regions in the largest emitting countries have committed to net-zero.⁷⁸ The study also found that of the 2,000 largest public companies, over 20% have net-zero commitments, representing annual sales of nearly \$14 trillion.⁷⁹ These commitments inherently, and in some cases explicitly, require a plan; and many organizations are already preparing such plans. From its consultation on metrics, targets, and transition plans, the Task Force found two-thirds of respondents had either developed a transition plan or planned to do so in the next year, with another 22% reporting they planned to develop a transition plan in the future.⁸⁰

Organizations’ transition plans are of particular interest to users, especially when they are seeking to verify the credibility of organizations’ commitments related to climate change. Users are particularly interested in information on how

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans**
- F. Financial Impacts
- Appendices

Figure E1
Relationship between Business Strategy, Climate Strategy, and Transition Plan



⁷⁷ An adaptation plan lays out how an organization aims to minimize risks and capture opportunities associated with physical climate changes. Though guidance on adaptation planning is not included in this document, the Task Force encourages other frameworks and standard setters to consider developing guidance on designing and disclosing adaptation plans.

⁷⁸ The Energy & Climate Intelligence Unit and Oxford Net Zero, *Taking Stock: A global assessment of net zero targets*, March 2021.

⁷⁹ Ibid.

⁸⁰ TCFD, *Proposed Guidance on Metrics, Targets, and Transition Plans Consultation: Summary of Responses*, October 14, 2021.

organizations will adjust their strategies or business models, including the specific actions they will take to reduce risks and increase opportunities as they transition to a low-carbon economy. As part of the consultation, 96% of users responded that organizations' disclosure of transition plans would be "very useful" or "somewhat useful."⁸¹ As an example of users' interest in transition plans, Climate Action 100+ (CA100+) — an investor group focusing on the largest corporate GHG emitters and their progress in transitioning to a low-carbon economy — recently began assessing those companies' transition plans through its *Net Zero Company Benchmark Indicators*.^{82, 83}

A specific type of transition planning that has gained attention recently focuses on achieving a "net-zero" target. Attention around net-zero transition planning began primarily in response to the IPCC's *Special Report on Global Warming of 1.5°C*, which found that GHG emissions need to decline by about 45% by 2030 and reach net-zero around 2050 in order to achieve a 1.5°C temperature target.⁸⁴ The report also highlights 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. The IPCC report shifted the language used by the public and private sector on climate change from a focus on limiting warming to 2°C to achieving net-zero GHG emissions by 2050.

1. CHARACTERISTICS OF EFFECTIVE TRANSITION PLANS

As part of determining key characteristics of effective transition plans, the Task Force reviewed publicly available materials published by various groups focused on the transition to a low-carbon economy, including Climate Action 100+, Transition Pathway Initiative, the UNFCCC Race to Zero (including SBTi and GFANZ), the Institutional Investors Group on Climate Change, and the Investor Agenda.⁸⁵ Some of the materials describe criteria the groups use to assess an organization's transition to a low-carbon economy while others provide guidance or describe requirements for their members on climate-related metrics and targets, which are core aspects of transition plans. While the materials may not provide explicit guidance on developing a transition plan, they provide information that organizations may find useful in developing and disclosing information from their transition plans. For example, Climate Action 100+'s *Net Zero Company Benchmark Indicators* describes ten indicators and associated sub-indicators it uses to assess an organization's transition to a low-carbon economy, such as sub-indicators on the proportion of GHG emissions to include in GHG emissions reduction commitments and the actions or elements of a decarbonization strategy. The Task Force drew from these materials to identify key characteristics of effective transition plans that are in line with its fundamental principles for effective disclosure.⁸⁶

Aligned with Strategy. A transition plan should be a part of, and aligned with, an organization's broader activities for addressing climate-related risks and opportunities, which in turn should be a part of, and aligned with, the organization's overall business strategy.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

⁸¹ TCFD, *Proposed Guidance on Metrics, Targets, and Transition Plans Consultation: Summary of Responses*, October 14, 2021.

⁸² Climate Action 100+, *Net-Zero Company Benchmark*, accessed April 30, 2021.

⁸³ CA100+, "Blog: Climate Action 100+ Zeroes In On Industry-Wide Decarbonization," August 2021.

⁸⁴ IPCC, *Special Report on Global Warming of 1.5°C*, October 2018.

⁸⁵ Several organizations offer resources that may be useful to organizations in developing transition plans, including: Climate Action 100+, *Climate Action 100+ Net-Zero Company Benchmark Indicators*, March 2021; SBTi, *Science-Based Target Setting Manual*, Version 4.1, April 2020; SBTi, *Foundations for Science-Based Net Zero Target Setting in the Corporate Sector*, Version 1.0, September 2020; SBTi, *Financial Sector Science-Based Targets Guidance*, Pilot Version 1.1, April 2021; and United Nations Framework Convention on Climate Change (UNFCCC)'s Race to Zero Expert Peer Review Group, *Interpretation Guide*, Version 1.0, April 2021. *TCFD Knowledge Hub* provides additional resources.

⁸⁶ TCFD, *2017 report*, pp. 51–53.



A.
Overview and Background

B.
Scope and Approach

C.
Climate-Related Metrics

D.
Climate-Related Targets

E.
Transition Plans

F.
Financial Impacts

Appendices

Anchored in Quantitative Elements, Including Climate-Related Metrics and Targets. A transition plan should be designed to consider and help achieve specific targets in an organization's planned transition to a low-carbon economy. Progress against the organization's targets should be regularly tracked using appropriate metrics. The transition plan should be consistent with broader economy- or sector-wide science-based pathways to a low-carbon economy.⁸⁷

Subject to Effective Governance Processes. A transition plan should describe the approval process and oversight and accountability responsibilities within an organization, including the role of the board and senior management in overseeing the plan.

Actionable, Specific Initiatives. A transition plan should articulate specific initiatives and actions the organization will undertake to effectively execute the transition plan, including regular milestones. For example, the transition plan may articulate how an organization plans to reduce Scope 1 GHG emissions by investing in new technologies and processes or by encouraging suppliers to reduce GHG emissions in their operations.

Credible. A transition plan should contain sufficient information to enable users to assess its credibility. For example, the plan should describe the organization's current capabilities, technologies, transition pathways, and financial plan. Organizations may also want to describe significant limitations, constraints, and uncertainties in the transition plan, such as challenges regarding GHG emissions reductions of hard-to-decarbonize sectors.

Periodically Reviewed and Updated. A transition plan should be reviewed at least every five years and updated if necessary. Organizations should review their transition plans in line with their review process for their climate-related targets in order to ensure continued relevancy and efficacy to an organization's overall strategy planning process.

Reported Annually to Stakeholders. Organizations should report publicly or to stakeholders their initial transition plans and significant updates to the plans. In addition, organizations should report progress against their transition plans annually and include a comparison of completed actions to planned actions in the prior reporting period.

2. TRANSITION PLAN CONSIDERATIONS

The transition plan elements described in this sub-section are meant as high-level guidance to support organizations as they develop transition plans. The guidance is meant to be applicable to a wide range of organizations and, therefore, describes general elements that organizations should consider as part of their transition planning. These elements are shown in [Table E1](#) (p. 42) and are grouped into the four categories of the TCFD recommendations.

Importantly, an organization's transition plan should reflect its individual circumstances, including relevant industry-specific information. The TCFD recognizes the transition to a low-carbon economy will have industry-specific nuances and encourages industry associations and others to develop industry-specific guidance on transition plans as needed.

⁸⁷ These pathways may be nonlinear depending on the specifics of an organization's industry and GHG emissions reduction opportunities.

Table E1
Transition Plan Elements

Elements to Consider

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans**
- F. Financial Impacts
- Appendices

Governance	<ul style="list-style-type: none"> • Approval: The board or appropriate committee of the board approves the transition plan and climate-related targets. • Oversight: The board or appropriate committee of the board oversees execution of the transition plan. • Accountability: Senior management has responsibility for execution of the transition plan, and the responsible parties have adequate authority and access to resources to ensure effective execution. • Incentives: Remuneration and other incentives are aligned with the organization's climate goals, as described in the transition plan. 		<ul style="list-style-type: none"> • Reporting: The board or appropriate committee of the board and senior management receive regular status reports. • Review: The organization periodically reviews and updates its plans, activities, metrics, and targets. • Transparency: The organization reports on its transition planning goals and performance to external stakeholders, including financial aspects, performance against targets, and impacts on the organization's business. • Assurance: The organization's reporting is subject to independent review or third-party assurance. 	
Strategy	<ul style="list-style-type: none"> • Alignment with strategy: The organization aligns its transition plan with its overall strategy; and the transition plan describes the following: <ul style="list-style-type: none"> – Activities – how the organization will achieve targets in defined time horizons – Temperature goal – alignment to a global temperature goal (e.g., 1.5°C), relevant regulatory mandates, and/or sectoral decarbonization strategies • Plan assumptions: The transition plan describes the organization's assumptions, particularly around transition pathway uncertainties and implementation challenges. The assumptions should be consistent with those used by the organization in its financial accounts, capital expenditures, and investment decisions. 		<ul style="list-style-type: none"> • Prioritized opportunities: The transition plan describes how the organization intends to maximize its prioritized climate opportunities as the world transitions to a low-carbon economy. • Action plans: The transition plan outlines short-term and medium-term tactical and operational plans and describes how related actions address material sources of GHG emissions. The plan includes current and planned initiatives to reduce climate-related risks and increase climate-related opportunities. • Financial plans: The transition plan describes the supporting financial plans, budgets, and related financial targets (e.g., amount of capital and other expenditures supporting decarbonization strategy). • Scenario analysis: The organization tests achievability of the transition plan and associated targets using multiple climate-related scenarios. 	
Risk Management	<ul style="list-style-type: none"> • Description of risks: The transition plan describes the risks that the organization faces from a transition to a low-carbon economy. 		<ul style="list-style-type: none"> • Plan challenges and uncertainties: The transition plan describes the assumptions, uncertainties, and challenges the organization faces in successfully executing its transition plan. 	
Metrics and Targets	<ul style="list-style-type: none"> • Metrics: The transition plan describes metrics the organization will monitor to track progress against plans and targets, including related operational and financial performance metrics, metrics aligned with the cross-industry, climate-related metric categories, and industry-specific or organization-specific metrics. • Targets: The transition plan includes quantitative and qualitative targets based on sound climate science. For GHG emissions targets, the plan indicates the type and scope of GHG emissions included as well as the extent of GHG emissions across territories, timeframes, or activities. 		<ul style="list-style-type: none"> • Methodology: Metrics and targets in a transition plan are based on widely recognized and transparent methodologies. • Dates:⁸⁸ The transition plan specifies the dates when targets are intended to be reached and includes targets during the plan's time horizon (e.g., a timetable for the plan's roadmap). • GHG emissions reductions: The transition plan addresses the relative contribution of reductions, removals, and offsets for achieving GHG emissions targets. 	

⁸⁸ Organizations may find it useful to disclose medium- or long-term targets for 2030 and 2050, which have become key target dates following the IPCC's publication of the [Special Report on Global Warming of 1.5°C](#).

3. DISCLOSING TRANSITION PLAN INFORMATION

The Task Force believes organizations that have made GHG emissions reduction commitments, operate in jurisdictions that have made such commitments, or have agreed to meet investor expectations regarding GHG emissions reductions should describe their plans for transitioning to a low-carbon economy. In addition, the Task Force recognizes organizations' transition plans include a wide range of information, all of which may not be appropriate to include in financial filings or other annual corporate reports. As such, the Task Force encourages organizations to disclose key information from their transition plans as part of their disclosure of climate-related financial information, including the following:

- current GHG emissions performance;
- impact on businesses, strategy, and financial planning from a low-carbon transition; and
- actions and activities to support transition, including GHG emissions reduction targets and planned changes to businesses and strategy.

When describing their GHG emissions reduction targets, organization should include the target dates as well as the scope and coverage.

Organizations should also consider describing the assumptions, uncertainties, and key methodologies associated with their transition plans. In addition, organizations should report on their progress in executing the plans on an annual basis.

Provided here are two examples of how an organization might disclose key information from their transition plans. [Figure E2](#) provides a food and beverages company's description of its initiatives to meet its net-zero commitment; and [Figure E3](#) (p. 44) provides an energy company's description of its strategy for decarbonization of its energy generation and operations.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

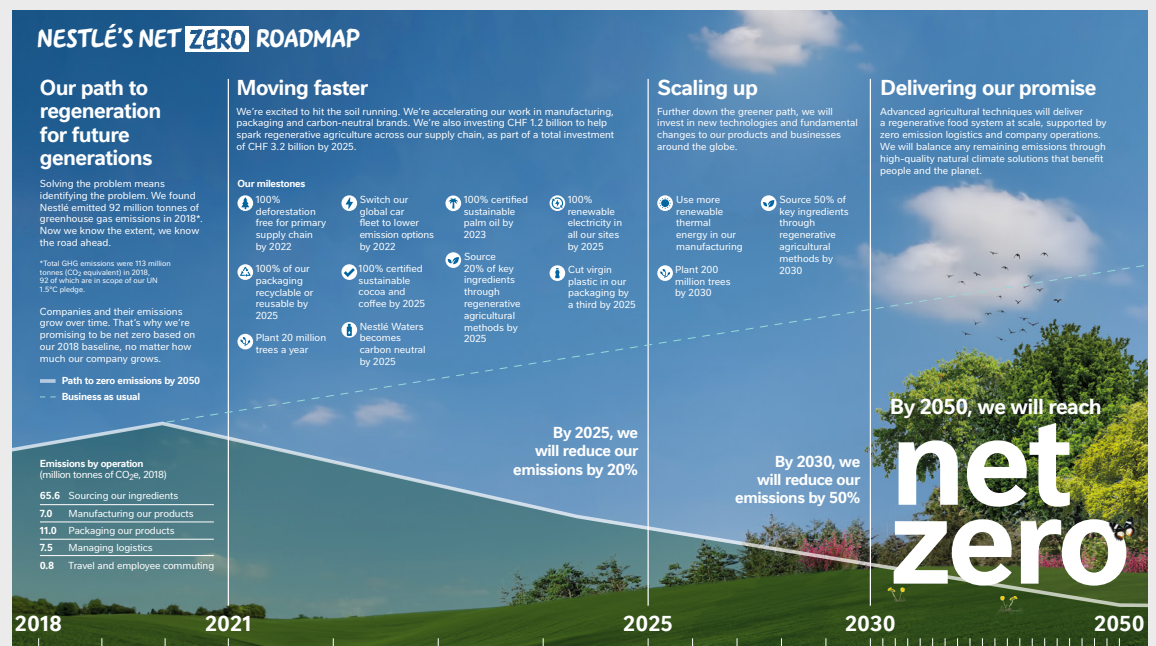
D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

Figure E2
Example Disclosure: Nestlé



Source: Nestlé, [Nestlé's Net Zero Roadmap](#), Feb 2021, p. 4

Figure E3
Example Disclosure: Ørsted

Programme overview	1 Decarbonisation of energy generation and operations																				
Sustainability challenge	Climate action and energy efficiency: As 73% of global carbon emissions come from the use of fossil fuel-based energy, decarbonising energy generation and improving energy efficiency are essential to limit climate change.																				
Our approach	We increase our total share of green energy and work to reduce emissions to achieve carbon neutrality in our energy generation and operations by 2025. This covers the emissions from the generation of heat and power and from our operations and maintenance, including the vessels servicing our wind farms, our vehicles, and our sites (scopes 1 and 2).																				
Our progress	<ul style="list-style-type: none"> • We have reduced the carbon intensity of our energy generation and operations by 87% since 2006, to 58 g CO₂e/kWh in 2020. We are on track to deliver a 98% reduction by 2025. • The build-out of green energy is a key driver, and we have reached a 90% share of green energy generation. • We continue to push for optimised vessel designs and the use of biofuels in our vessel portfolio, including hybrid and battery technology, fuel cells, and offshore charging possibilities. • As of 2021, we will no longer buy or lease fossil-fuelled cars, and, by 2025, our entire fleet of vehicles, including site and operational vehicles, will be fully electric. Currently, we have a 38% share of electric vehicles, including plug-in hybrids) in our fleet. • We cover 100% of our own power consumption with green certificates, mainly from our offshore wind farms. • We have initiated a project to identify options for offsetting any residual emissions we may still have by 2025 (scopes 1 and 2). These solutions must be certified and able to document carbon removal. 																				
Actions to become future-fit	Achieve carbon neutrality in our energy generation and operations (scopes 1 and 2) by 2025.																				
Our governance	Accountability lies with the Executive Committee.																				
Policy and link to more information	<ul style="list-style-type: none"> • Ørsted Sustainability commitment • ESG performance report: Setion 2.7 																				
International frameworks of reference	<ul style="list-style-type: none"> • Paris Agreement • Greenhouse Gas Protocol & Science Based Targets initiative • IPCC Special Report: Global Warming of 1.5°C 																				
Examples of partnerships and collaborations	<ul style="list-style-type: none"> • EVI00, the Climate Group • World Wildlife Foundation DK • Energy Transitions Commission 																				
SDG contribution	13: We will become carbon-neutral to help limit climate change.																				
Targets and indicators	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>GHG intensity (g CO₂e/kWh)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>GHG Intensity (g CO₂e/kWh)</th> </tr> </thead> <tbody> <tr> <td>2006</td> <td>462</td> </tr> <tr> <td>2019</td> <td>65</td> </tr> <tr> <td>2020</td> <td>58</td> </tr> <tr> <td>2025 target</td> <td>10</td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <p>Green energy share (%)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Green Energy Share (%)</th> </tr> </thead> <tbody> <tr> <td>2006</td> <td>17</td> </tr> <tr> <td>2019</td> <td>86</td> </tr> <tr> <td>2020</td> <td>90</td> </tr> <tr> <td>2025 target</td> <td>99</td> </tr> </tbody> </table> </div> </div>	Year	GHG Intensity (g CO ₂ e/kWh)	2006	462	2019	65	2020	58	2025 target	10	Year	Green Energy Share (%)	2006	17	2019	86	2020	90	2025 target	99
Year	GHG Intensity (g CO ₂ e/kWh)																				
2006	462																				
2019	65																				
2020	58																				
2025 target	10																				
Year	Green Energy Share (%)																				
2006	17																				
2019	86																				
2020	90																				
2025 target	99																				

Source: Ørsted, 2020 Sustainability Report, p. 32

Note: Some content was reformatted in order to fit the page.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

F.
Financial
Impacts



F. Financial Impacts

This section provides additional guidance for organizations aiming to assess and disclose the financial impacts of climate-related risks and opportunities.

To make informed financial decisions, investors, lenders, and insurance underwriters need to understand (1) the actual and potential impacts of climate-related risks and opportunities on an organization's financial performance and financial position (Box F1) and (2) how those impacts may affect the organization's enterprise value over the longer term. The financial impacts of climate-related issues on an organization are driven by the specific climate-related risks and opportunities to which the organization is exposed, and its strategic and risk management decisions on seizing those opportunities and managing those risks (Figure F1, p. 47).

The Task Force's recommendations cover a range of disclosures that can inform users' assessments of an organization's financial performance and position over time. Better disclosure of actual and potential financial impacts associated with climate change is a key goal of the Task Force's work as such information enables more effective pricing of climate-related risks and opportunities and allocation of capital.

The Task Force recognizes that disclosing the potential financial impact of climate change may not be consistent with financial filing requirements and encourages organizations to make financial disclosures in accordance with such requirements. If certain elements of the recommendations are incompatible with disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements in other official reports that are issued at least annually, widely distributed and available to users, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting.⁸⁹ Whether an individual organization is or may be affected financially by climate-related issues usually depends on the following:

- the organization's exposure to, and anticipated effects of, specific climate-related risks and opportunities;

Box F1

Actual and Potential Financial Impact

Actual impact refers to financial impact that has already occurred as a result of climate-related risks or opportunities.

Potential impact refers to financial impact that may occur in the future due to climate-related risks or opportunities.

Financial Performance and Position

Financial performance refers to an organization's income and expenses as reflected on its income and cash flow statements (actual) or potential income and expenses under different climate-related scenarios.

Financial position refers to an organization's assets, liabilities, and equity as reflected on its balance sheet (actual) or potential assets, liabilities, and equity under different climate-related scenarios.

- the organization's planned responses to manage (i.e., accept, avoid, pursue, reduce, or share/transfer) its risks or seize opportunities; and
- the implications of the organization's planned responses on its income statement, cash flow statement, and balance sheet.

Financial impact analyses should focus on:

- the exposure and potential financial impact if no action is taken and
- the financial implications of managing risks and maximizing opportunities in the context of an organization's overall business strategy and environment.

Often organizations will use climate-related scenario analysis as a central tool for understanding potential financial impacts.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

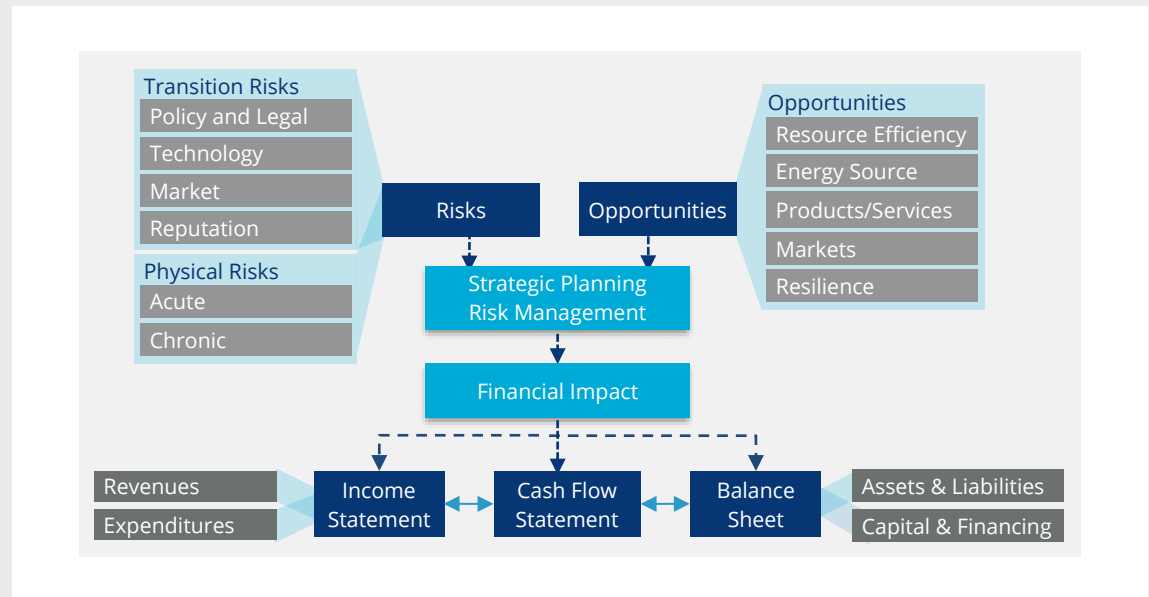
E. Transition Plans

F. Financial Impacts

Appendices

⁸⁹ TCFD, *2017 report*, p. 17.

Figure F1
Climate-Related Risks, Opportunities, and Financial Impact



Source: TCFD, 2017 report, pp. 8-9

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

The Task Force’s annual assessments of the state of disclosures have shown some progress in organizations disclosing potential financial impacts, but that continues to be one of the lowest areas of disclosure.⁹⁰ The 2021 status report notes that “[d]isclosure of the resilience of companies’ strategies under different climate-related scenarios (*Strategy c*), although still the least reported recommended disclosure, encouragingly increased from 5% of companies in 2018 to 13% in 2020. ...[Nonetheless, the] percentage of companies disclosing the resilience of their strategies continues to be the lowest of all recommended disclosures.”⁹¹ Further detail on challenges to, and solutions for, estimating climate-related financial impact is included in Section C. Disclosure of Financial Impact in the 2021 status report.

In the 2021 status report, the Task Force describes several challenges highlighted by preparers around effectively assessing and disclosing the financial impact of their climate-related risks and opportunities. These include challenges around organizational alignment, data, risk evaluation, attribution of impacts in

financial accounts, longer climate horizons as compared to business horizons, and securing approval to publicly disclose the results.

More than 90% of users responding to the consultation on metrics, targets, and transition plans noted that information on the impact of climate-related issues on an organization’s financial performance or position is useful for decision-making.⁹² Additionally, users interviewed for the 2021 status report highlighted that they are increasingly working to incorporate findings from preparer disclosures on financial impacts into their financial decision-making. Several users reported conducting their own financial impact analysis on organizations and comparing the outcomes with those disclosed by the organizations, frequently fostering constructive dialogue between users and preparers.

The remainder of this section provides additional guidance on how climate-related metrics and targets, and information from transition plans, can be used as inputs for estimating financial impact as well as considerations for disclosing financial performance and position.

⁹⁰ TCFD, 2018 status report, p. 13; TCFD, 2019 status report, pp. iv and 51; and 2020 status report, pp. 4, 8, and 12.

⁹¹ TCFD, 2021 status report, p. 31.

⁹² TCFD, Proposed Guidance on Metrics, Targets, and Transition Plans Consultation: Summary of Responses, October 14, 2021.

1. INPUTS FOR ESTIMATING FINANCIAL IMPACTS

Organizations' disclosures of their climate-related metrics — including ones consistent with the cross-industry, climate-related metric categories — and targets as well as information from their transition plans are key inputs for estimating actual or potential financial impacts associated with climate change.⁹³

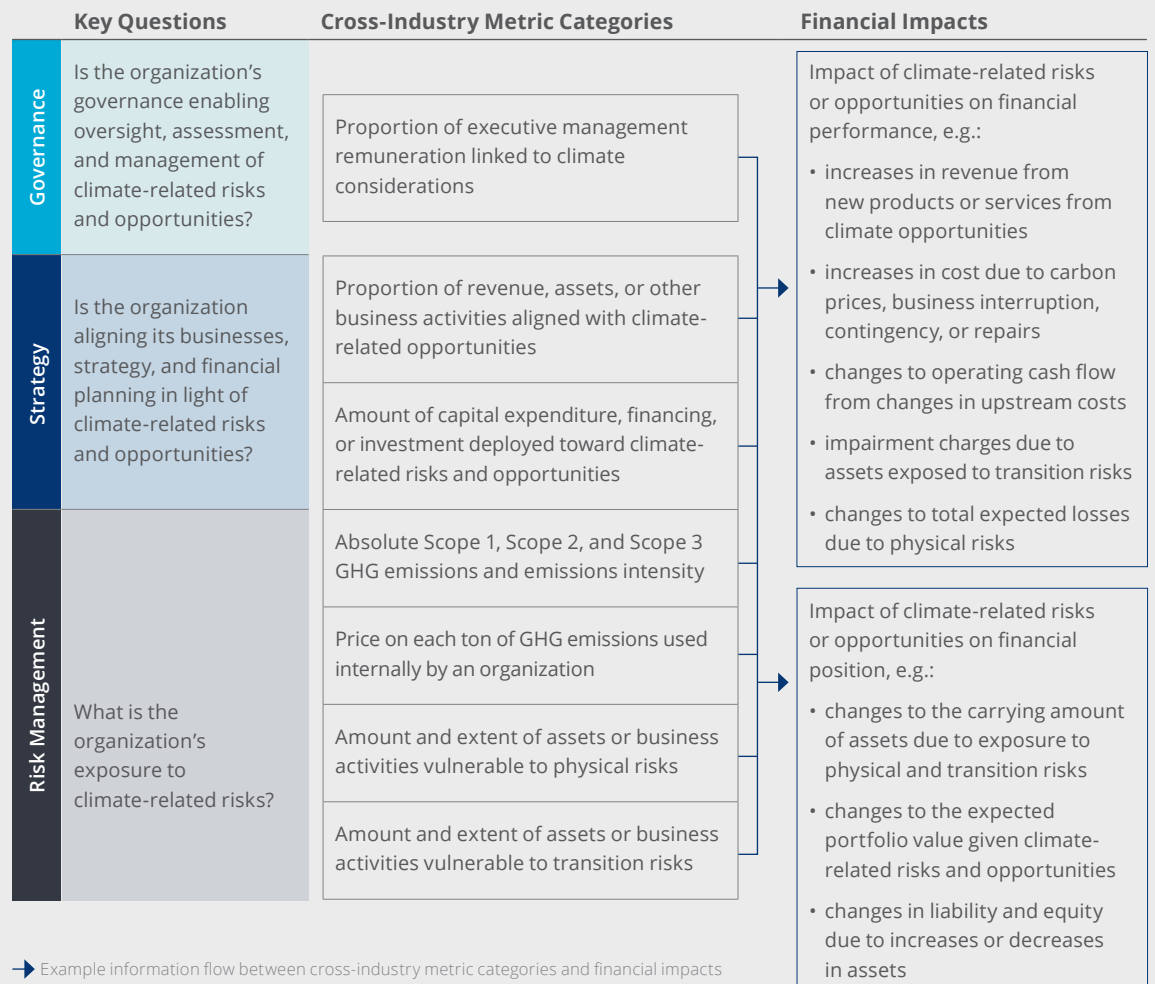
Metrics. Figure F2 illustrates how metrics consistent with the cross-industry, climate-related metric categories inform estimation of financial impact. For example, estimating forward-looking proportion of revenue, assets,

or other business activities aligned with climate-related opportunities can be applied to an organization's existing outlook on future revenue to estimate the contribution to overall revenue from climate-related opportunities. Calculating GHG emissions and carbon prices can inform the organization's cost-benefit analysis of potential investments, while scenario analysis on plausible future emissions pathways and implied carbon prices can allow for a range of estimates on forward-looking carbon costs.

Targets. Targets may also form an input into financial impact assessments. Organizations can analyze the potential financial implications of targets on their overall business. For example,

Figure F2

Relationship between Cross-Industry Metric Categories and Financial Impacts



A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

⁹³ Additional details on financial impact, including examples, are provided in the 2017 report, pp. 8–11, and the 2021 annex, pp. 75–76.

an auto manufacturer may want to set a target to expand its electric vehicle sales to 50% of its total sales by 2030. It could then leverage scenario analysis to understand how various factors and future pathways could impact different elements of its financial performance or position assuming such a target. Similarly, users may explore how a specific organization's targets may impact its financial performance and position. For example, if an organization sets a target to upgrade 75% of its transmission lines by 2030 to reduce wildfire risk, then a user may be able to infer that the organization's future cost of business interruptions may decline.

Transition Plans. Finally, financial impact assessments can also be informed by information included in an organization's transition plan. When an organization develops a transition plan, it may estimate the potential financial impact of planned actions and align its financial plans accordingly. Similarly, users may consider a specific organization's disclosure of key information from transition plans as well as the user's assessment of the plan's viability as a key input into its estimation of that organization's potential financial performance and position. A description of planned initiatives as well as the process for monitoring, assuring, and achieving GHG emissions reductions targets can provide useful inputs for assessing an organization's potential financial impacts, such as expected future revenue streams from renewable energy or capital expenditures to upgrade assets with lower-carbon alternatives.⁹⁴

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

2. DISCLOSING FINANCIAL IMPACTS

The Task Force views disclosures of financial impact of climate-related risks and opportunities as falling under two broad categories, as follows:

- 1) impact of climate-related risks or opportunities on financial performance and
- 2) impact of climate-related risks or opportunities on financial position.

The remainder of this sub-section provides additional details on disclosing these two categories, including example disclosures of financial impact.

(1) Performance: Impact of Climate-Related Risks or Opportunities on Financial Performance

Actual or potential changes to income and cash flow statements or other appropriate financial performance measures as a result of climate-related risks and opportunities provide insight into management priorities and strategic efforts. Impact on financial performance can include the following:

- 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 transition risks; and
- changes to total expected losses due to physical risks.

Figure F3 (p. 50) shows an example disclosure of actual financial impact, including proportion of earnings before interest, taxes, depreciation, and amortization (EBITDA) aligned to low-carbon products, services, and technologies. Figure F4 (p. 51) includes an example of potential impact on financial performance — the long-term impact of extreme rainfall.

⁹⁴ IOSCO, *Report on Sustainability-Related Issuer Disclosures*, June 21, 2021, pp. 22–24.

Figure F3
Example Disclosure: Enel

Main climate change indicators

		2020	2019	2020-2019	
Direct greenhouse gas emissions – Scope 1 ⁽¹⁾	(million/t _{eq})	45.26	69.98	(24.72)	-35.3%
Indirect greenhouse gas emissions – Scope 2 – Purchase of electricity from the grid (location based)	(million/t _{eq})	1.43	1.55	(0.12)	-7.7%
Indirect greenhouse gas emissions – Scope 2 – Purchase of electricity from the grid (market based)	(million/t _{eq})	2.28	2.30	(0.02)	-0.9%
Indirect greenhouse gas emissions – Scope 2 – Distribution grid losses (location based)	(million/t _{eq})	3.56	3.82	(0.26)	-6.8%
Indirect greenhouse gas emissions – Scope 2 – Distribution grid losses (market based)	(million/t _{eq})	5.57	6.00	(0.43)	-7.2%
Indirect greenhouse gas emissions – Scope 3	(million/t _{eq})	47.70	56.92	(9.22)	-16.2%
- of which emissions connected with gas sales	(million/t _{eq})	21.48	23.92	(2.44)	-10.2%
Specific direct greenhouse gas emissions – Scope 1	(gCO _{2eq} /kWh)	214	298	(84)	-28.2%
Specific emissions of SO ₂	(g/kWh)	0.10	0.59	(0.49)	-83.1%
Specific emissions of NO _x	(g/kWh)	0.36	0.60	(0.24)	-40.0%
Specific emissions of particulates	(g/kWh)	0.01	0.12	(0.11)	-91.7%
Zero-emission generation	(% of total)	63.4	54.9	8.5	15.5%
Total direct fuel consumption	(Mtoe)	23.9	30.1	(6.2)	-20.6%
Average efficiency of thermal plants ⁽²⁾	(%)	44.2	42.0	2.2	5.2%
Water withdrawals in water-stressed areas ⁽³⁾	(%)	22.9	25.4	(2.5)	-9.8%
Specific water withdrawals for total generation ⁽⁴⁾	(l/kWh)	0.20	0.33	(0.13)	-39.4%
Reference price of CO ₂	(€)	24.72	24.8	(0.1)	-0.3%
Ordinary EBITDA for low-carbon products, services and technologies ⁽⁵⁾	(millions of €)	15,616	16,241	(625.0)	-3.8%
Capex for low-carbon products, services and technologies	(millions of €)	9,575	9,131	444.0	4.9%
Ratio of capex for low-carbon products, services and technologies to total	(%)	94.0	92.0	2.0	2.2%

- (1) Specific emissions are calculated considering total emissions from thermal generation as a ratio of total renewable, nuclear and thermal generation (including the contribution of heat).
- (2) The calculation does not consider Italian O&G plants being decommissioned or of marginal impact. In addition, the figures do not take account of consumption and generation for cogeneration relating to Russian thermal generation plants. Average efficiency is calculated on the basis of the plant fleet and is weighted by generation.
- (3) The figure for 2019 has been recalculated on the basis of the change in scope of plants in water-stressed areas.
- (4) Specific withdrawals consist of all water withdrawals from sources on the surface (including recovered rainwater), underground, third-party, the sea and wastewater (supplies from third parties) used for generation processes and for closed-cycle cooling, excluding sea water returned to the sea after the desalination process (brine).
- (5) The comparative figure for 2019 has been adjusted to take account of the fact that in South America and Mexico the values relating to large customers managed by the generation companies have been reallocated to the End-user Markets Business Line.

Source: Enel, [Integrated Annual Report 2020](#), p. 113

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics



D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

Figure F4
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

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts**
- Appendices

(2) Position: Impact of Climate-Related Risks or Opportunities on Financial Position

Changes to the balance sheet statement as a result of climate-related risks and opportunities can include the following:

- changes to the carrying amount of assets due to exposure to physical and transition risks;
- changes to the expected portfolio value given climate-related risks and opportunities; and
- changes in liability and equity due to increases or decreases in assets (e.g., due to low-carbon capital investments or to sale or write-offs of stranded assets).

Figure F5 (p. 52) shows an example disclosure highlighting the potential impact of climate-related risks and opportunities on an organization's financial position in terms of fair value of assets under the International Energy Agency's (IEA's) Sustainable Development Scenario.

Figure F6 (p. 52) shows an example of a company disclosing the potential impact of climate-related risks and opportunities on financial position from a change in valuation under a 1.5°C scenario compared to a 3°C scenario.

Figure F5 Example Disclosure: Eni

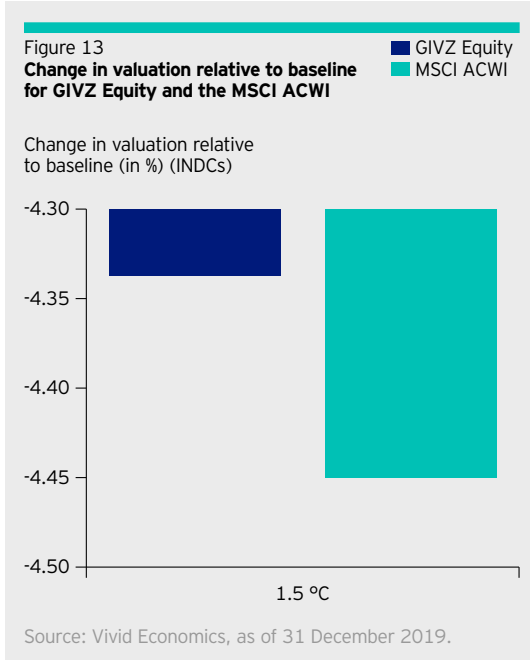
In particular, by adopting the IEA SDS scenario, which envisages the global application of a strongly increasing cost for direct CO₂ emissions, the internal rate of return would decrease by 1.3 percentage points assuming that the cost is not recoverable contractually and for tax purposes. In order to verify the resilience of Eni's asset portfolio, a sensitivity analysis was also carried out on all CGUs (Cash Generating Units) in the upstream sector. The stress test, performed under the IEA SDS scenario, showed that the overall book values of the assets were stable with a reduction in fair value of around 11%, or around 5% in the event of contractual and fiscal recoverability of the costs of direct CO₂ emissions. Analyses carried out on the 3P¹⁰ reserves of the current upstream portfolio confirmed their resilience and flexibility.

Resilience	In terms of resilience, the average Brent break even price, meaning the price that guarantees a return on investment equal to the cost of capital, is around 20 \$/bl, with values ranging from around 10 \$/bl to 35 \$/bl for the most costly reserve.
Flexibility	In terms of flexibility, adopting a sensitivity scenario with a constant Brent equal to 50 \$/bl and a constant gas price (PSV) equal to 5 \$/mmbtu, the result is that 93% of the value and 81% of the volumes of 3P reserves ¹¹ could be produced by 2035. This leaves broad freedom to plan exploration and development campaigns to support future production and to adapt to sudden market changes without incurring in the stranded assets risk.

Source: Eni, *Eni for 2020: Carbon neutrality by 2050*, 2020, p. 20

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts**
- Appendices

Figure F6 Example Disclosure: Invesco



Finding 1
Aggregate valuation impacts are negative in the 1.5 °C and positive in the 4 °C scenario
Analysis of the 1.5 °C versus a 3 °C baseline scenario reveals that the GIVZ Equity portfolio is exposed to climate risk. Under the 1.5 °C scenario, this could reduce investment value by 4%. This lines up with results for the MSCI ACWI.

Source: Invesco, *2019 Invesco Climate Change Report*, p. 31

Appendices



Appendix 1: Further Information on Select Cross-Industry, Climate-Related Metric Categories

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

This appendix provides additional information on select cross-industry, climate-related metric categories. The first sub-section provides an overview of the importance and challenges of Scope 3 GHG emissions disclosure as well as a summary of developments related to Scope 3 GHG emissions reporting for financial institutions. This sub-section focuses on Scope 3 GHG emissions in order to highlight developments on the research and disclosure of these emissions since 2017. It is important to emphasize that organizations should disclose Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, given their importance as an input to calculating Scope 3 GHG emissions and as a critical aspect of understanding climate-related risks and opportunities. The second sub-section provides information to support disclosure of internal carbon prices.

1. SCOPE 3 GHG EMISSIONS

The most well-known and widely referenced classification of greenhouse gases is the GHG Protocol Corporate Standard, which defines the three scopes of GHG emissions from the perspective of the reporting company as follows:^{95, 96}

- **Scope 1 GHG 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 GHG emissions** are indirect emissions from the generation of purchased energy.
- **Scope 3 GHG 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.

The GHG Protocol Scope 3 Standard notes that "while a company has control over its direct emissions, it has influence over its indirect emissions."⁹⁷

⁹⁵ *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 recommended by the Task Force for calculating and reporting GHG emissions (2017 *TCFD Final Report*, Section C3, p. 22, footnote 40). It covers the accounting and reporting of the six greenhouse gases covered by the Kyoto Protocol — carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆). The first edition of the Corporate Standard was published in 2001 and then updated in 2004 with additional guidance clarifying how companies can measure GHG emissions from electricity and other energy purchases, and account for GHG emissions from throughout their value chains. Building on the Corporate Standard, the GHG Protocol then developed a more detailed approach to Scope 3 GHG 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 published in 2013 providing additional details on calculating Scope 3 GHG emissions, namely the *Technical Guidance for Calculating Scope 3 Emissions*.

⁹⁶ For more information, see GHG Protocol, *Frequently Asked Questions*.

⁹⁷ GHG Protocol, *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, September 2011, p. 27.

Since 2017, Scope 3 GHG emissions, including the Scope 3 investment category, have received increasing attention in both the public and private sectors. Scope 3 GHG emissions are becoming an essential component of climate-related risk analysis in commercial and financial markets. As companies' and jurisdictions' commitments to reduce GHG emissions — both direct and indirect — to net-zero continue to grow, investors, lenders, and insurance underwriters want insight into value chain GHG emissions and how they could be affected by such commitments. In response to widespread interest, an increasing number of companies are reporting GHG emissions, including Scope 3 GHG emissions.

A. Importance of Disclosure of Scope 3 GHG Emissions

Scope 3 GHG emissions are an important component of overall GHG emissions for several reasons.

Scope 3 GHG emissions are increasingly understood as an important indicator of risk,

as risk is embedded in buying inputs or selling products that are carbon intensive. A 2017 study by CDP found that of the three GHG emissions scopes, "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" (in other words, through their Scope 3 GHG emissions).⁹⁸

Scope 3 GHG emissions are a critical component of overall GHG emissions.

A growing body of research shows that in certain sectors, Scope 3 GHG emissions can account for several times the impact of a company's Scope 1 and Scope 2 GHG emissions.

For example, a 2015 report by the sell-side investment research house Kepler-Cheuvreux analyzed the GHG emissions for 24 industry groups under the Global Industry Classification Standard (GICS) (Figure A1-1, p. 56). It found that 21 industry groups had indirect GHG emissions (Scope 3 GHG emissions upstream and downstream and Scope 2 upstream GHG emissions) greater than 50% of their overall carbon emissions.⁹⁹ For eight of these 21 industries — Banks, Insurance, Real Estate, Energy, Capital Goods, Automobiles and

Components, Consumer Durables and Apparel, and Technology — downstream Scope 3 GHG emissions were predominant. For 13 industries, upstream GHG emissions were predominant. Only three of the 24 industry groups had indirect emissions less than 50%: Utilities, Transportation, and Materials.

In addition, CDP's 2020 Supply Chain Report, evaluating the state of environmental risks in supply chains for 8,098 suppliers, found that upstream Scope 3 GHG emissions are on average 11.4 times higher than operational emissions across sectors (Figure A1-2, p. 56).

An increasing number of companies are reporting Scope 3 GHG emissions. Task Force analysis of 2,500 organizations within the MSCI All Country World Index (ACWI Index) found that from 2017–2019, organizations disclosing Scope 3 GHG emissions grew from 28% to 34%.¹⁰⁰

Industry and investor initiatives are calling for the disclosure of Scope 3 GHG emissions.

For example, Climate Action 100+ (CA100+), an investor initiative of 615 investors representing \$55 trillion in assets under management, engages with companies to "reduce greenhouse gas emissions across the value chain" in line with the Paris Agreement.¹⁰¹ Necessarily, this engagement includes Scope 3 GHG emissions within its focus. CA100+ also asks companies to enhance their climate-related disclosures in line with the TCFD recommendations.

There is increasing urgency on reducing GHG emissions — both direct and indirect — to zero,

which stems from a shift in international dialogue from a focus on carbon budgets consistent with the Paris Agreement to a focus on achieving net-zero GHG emissions by 2050, with governments and investors increasingly focusing on the full value chain of emissions. As an increasing number of jurisdictions formally move to net-zero targets, they may require more comprehensive GHG reporting from companies within their borders.

Financial organizations require effective disclosure of GHG emissions data, including Scope 3 GHG emissions, to track their GHG emissions reduction commitments and meet their disclosure obligations. Banks, insurance companies, asset managers, and asset owners will need better disclosure of GHG emissions

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

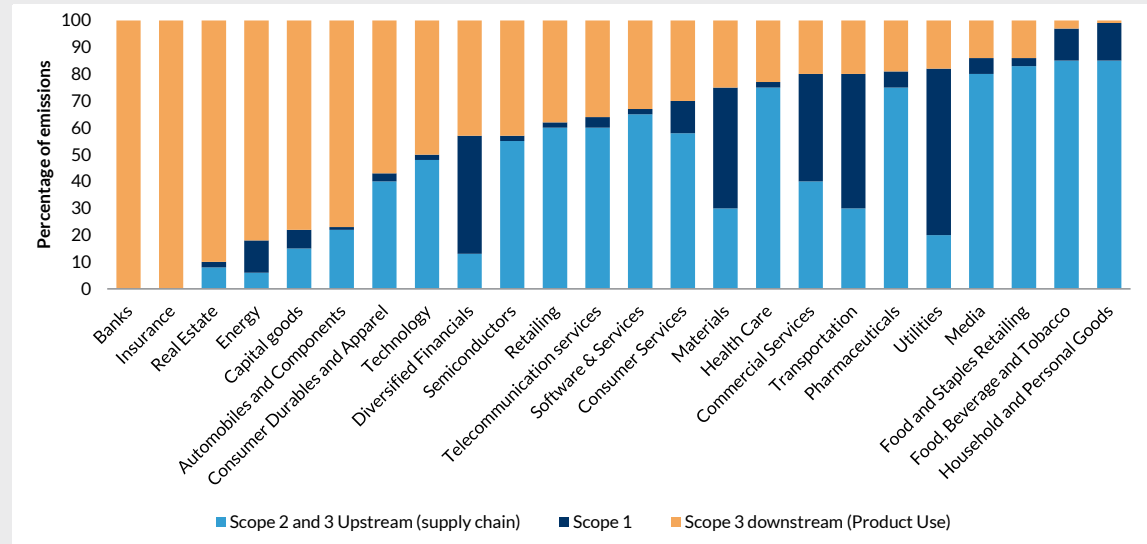
⁹⁸ SBTi, Gold Standard, and Navigant, *Value Change in the Value Chain: Best Practices in Scope 3 GHG Management*, citing CDP's 2017/2018 Global Supply Chain report *Closing the Gap: Scaling Up Sustainable Supply Chains*, November 2018, p. 9.

⁹⁹ For more information, see Kepler Cheuvreux, *Carbon Compass: Investor Guide to Carbon Footprinting* and the section titled "Fasten your seat belt," pp. 19–23.

¹⁰⁰ Task Force analysis of MSCI ACWI Index data.

¹⁰¹ For more information, see *Climate Action 100+*.

Figure A1-1
Importance of Scope 3 GHG Emissions
in Certain Sectors

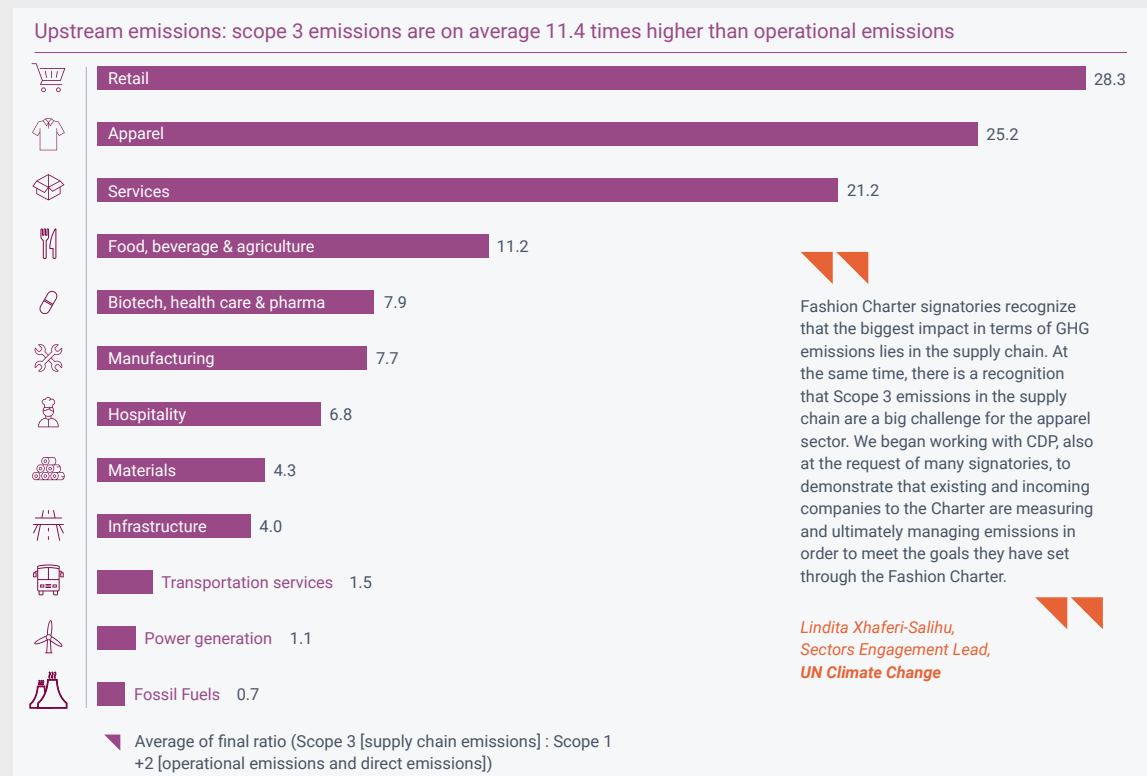


Source: Kepler-Cheuvreux, [Carbon Compass: Investor Guide to Carbon Footprinting](#), 360 Report, November 23, 2015

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

Figure A1-2
Upstream GHG Emissions by CDP Sector



Source: CDP, [Transparency to Transformation: A Chain Reaction](#), CDP Global Supply Chain Report 2020, February 2021, p. 14

Note: Some content was reformatted in order to fit the page.

from preparers to understand GHG emissions from their lending, investing, and insurance underwriting activities and evaluate how these activities may expose them to carbon-related assets and their associated risks.

B. Challenges in Determining Scope 3 GHG Emissions

Despite increased demand and reporting, the disclosure of Scope 3 GHG emissions faces a number of challenges, including:

Data Challenges. Organizations struggle to collect relevant and sufficiently granular primary data and to manage the amount of data needed to determine Scope 3 GHG emissions; this often requires formal data management plans and resources. Using secondary data or industry-average GHG emissions factors also presents issues, such as how to account for uncertainties in industry-average GHG emissions factors around data collection or quality and an uneven distribution of GHG emissions within an industry.

In feedback to the Task Force’s consultation on metrics, targets, and transition plans, several financial sector respondents 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.

Methodology Challenges. Accurately capturing Scope 3 GHG emissions also has methodological challenges, including estimating GHG emissions for suppliers that do not calculate their own emissions, defining an appropriate calculation approach for each Scope 3 category, and recognizing double counting that may occur when GHG emissions are aggregated across multiple organizations. Even when an appropriate methodology is determined, users of an organization’s disclosures must understand sources of uncertainty regarding whether a value accurately represents the activity in the organization’s value chain, whether variation in calculated GHG emissions are due to methodological choices, and whether there are any limitations as a result of the modeling approaches used to reflect the real world.

Boundary Challenges. Establishing clear value chain boundaries when calculating Scope 3 GHG emissions presents another challenge.¹⁰² While in principle the fifteen GHG 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 GHG emissions.

Organizational Challenges. The calculation of Scope 3 GHG emissions requires personnel, resources, expertise, and data management and quality processes.

C. Scope 3 GHG Emissions for Financial Organizations

Category 15 of the GHG Protocol’s Scope 3 Standard relates to investments, which the GHG Protocol notes are a form of Scope 3 GHG 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.”^{103, 104} For financial organizations, Scope 3 GHG emissions, especially category 15, are by far the largest component of their total GHG emissions.¹⁰⁵ However, assessing and pricing exposure to climate-related risks within the financial system depends on the effectiveness of the climate-related disclosures of the companies that are financed by banks, asset owners, and asset managers and underwritten by insurance companies. If the disclosures made by organizations with significant direct and indirect GHG emissions do not include sufficient information on Scope 1, Scope 2, and Scope 3 GHG emissions, then the banking and insurance industries’ understanding of the concentration of carbon-related assets on their balance sheets may be incomplete and asset owner and asset managers will have limited visibility into risk associated with carbon-intensive issuers.

Since the TCFD published its final report in June 2017, a number of initiatives have emerged to improve the disclosure and reporting of financial organizations’ GHG emissions. Two of these developments are of particular relevance for the Task Force’s guidance on this topic: (1) the

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

¹⁰² The GHG Protocol Corporate Standard allows companies flexibility in choosing which, if any, scope 3 activities to include in the GHG inventory when the company defines its operational boundaries.

¹⁰³ GHG Protocol, *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, September 2011, p. 51.

¹⁰⁴ The GHG Protocol’s Category 15: Investments was designed primarily for financial institutions and includes Scope 3 emissions associated with the reporting company’s investments, not already included in Scope 1 or Scope 2. For more information, see GHG Protocol, *Technical Guidance for Calculating Scope 3 Emissions*, p. 136.

¹⁰⁵ For more information, see CDP, *The Time to Green Finance*, April 2021, p. 33.

Partnership for Carbon Accounting Financials (PCAF) and (2) the Climate Risk Officer (CRO) Forum methodology on carbon footprinting for the insurance industry.

The PCAF Global GHG Accounting and Reporting Standard

In November 2020, PCAF issued the first edition of the *Global GHG Accounting and Reporting Standard for the Financial Industry* (the PCAF Standard).¹⁰⁶ The PCAF Standard builds on the GHG Protocol Scope 3 accounting rules, providing 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.

The PCAF Standard provides guidance for each asset class to aid calculation of the GHG emissions resulting from activities in the real economy that are financed through lending and investment portfolios. GHG emissions are attributed to financial organizations based on accounting rules that are specific for each asset class. This approach is used by the SBTi as part of their guidance for financial organizations on setting targets on their GHG emissions.¹⁰⁷

The PCAF Standard currently does not provide explicit guidance on calculating GHG emissions for certain financial products including private equity that refers to investment funds, green bonds, sovereign bonds, loans for securitization, exchange traded funds, derivatives, and initial public offering (IPO) underwriting and notes “guidance on such financial products will be considered and published in later editions of the Standard.”¹⁰⁸ In addition, PCAF is working

in collaboration with members of the Net-Zero Insurance Alliance as well as other insurance companies to develop a methodology for measuring GHG emissions associated with underwriting activities.¹⁰⁹

PCAF recognizes the difficulties inherent in the comparability, coverage, transparency, and reliability of Scope 3 GHG emissions data, but notes that “by requiring Scope 3 reporting for selected sectors, PCAF seeks to make Scope 3 GHG emissions reporting more common practice by improving data availability and quality over time.” To support Scope 3 GHG emissions data challenges, the PCAF Standard provides recommendations and requirements for disclosures, as well as guidance on data quality scoring per asset class to facilitate data transparency and quality in the medium and long term.

The CRO Forum’s Carbon Footprinting Methodology for Underwriting Portfolios

In April 2020, the CRO Forum published *Carbon Footprinting Methodology for Underwriting Portfolios*, a report summarizing “a range of options, methodologies, and barriers for the carbon-footprinting of insurance companies’ underwriting portfolios” (p. 5).^{110, 111, 112}

The CRO report states that the weighted average carbon intensity (WACI) metric for asset owners and asset managers recommended by the TCFD in its 2017 final report is also applicable — with appropriate changes — to underwriting portfolios. The CRO Forum’s report recommends using WACI as a first step in gauging the financial risks posed to underwriting portfolios by climate change. The CRO Forum’s WACI metrics are calculated on the basis of the insured entities’ Scope 1 and Scope 2 GHG emissions only, with the Scope 3 GHG emissions of entities underwritten excluded from the calculation.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

¹⁰⁶ PCAF, *Global GHG Accounting and Reporting Standard for the Financial Industry*, November 18, 2020.

¹⁰⁷ SBTi, *Financial Sector Science-Based Targets Guidance*, Pilot Version 1.1, April 2021.

¹⁰⁸ PCAF, *Global GHG Accounting and Reporting Standard for the Financial Industry*, November 18, 2020, p. 44.

¹⁰⁹ PCAF, “Partnership for Carbon Accounting Financials collaborates with UN-convened Net-Zero Insurance Alliance to develop standard to measure insured emissions,” September 6, 2021.

¹¹⁰ For more information, see *Carbon Footprinting Methodology for Underwriting Portfolios*, April 29, 2020.

¹¹¹ 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.

¹¹² The Net-Zero Insurance Alliance (NZIA), convened by the UN Environment Programme’s Principles for Sustainable Insurance Initiative (PSI) and contributing to the UNFCCC Race to Zero Campaign and the Glasgow Financial Alliance for Net Zero (GFANZ), provides additional guidance and/or requirements for insurance and reinsurance signatory companies. For more information, see the NZIA “Statement of commitment by signatory companies.”

2. INTERNAL CARBON PRICES

This sub-section describes key considerations for how organizations can use and disclose internal carbon prices.

A. Using Internal Carbon Prices

Organizations can use carbon prices to assess the financial implications of changes to investment, production, and consumption patterns, as well as potential technological progress and future emissions abatement costs.

Organizations' internal carbon prices can come in several forms and be used for a range of business applications.¹¹³ There are two types of internal carbon prices commonly used by organizations. The first type is a **shadow price**, which is a theoretical cost or notional amount that the organization does not charge but that can be used in assessing the economic implications or trade-offs for such things as risk impacts, new investments, net present value of projects, and the cost-benefit of various initiatives. The second type is an **internal tax or fee**, which is a carbon price charged to a business activity, product line, or other business unit based on its GHG emissions (these internal taxes or fees are similar to intracompany transfer pricing). Internal revenues from these fees or taxes are often used by an organization to incentivize emissions mitigation and investment in various low-carbon opportunities.

Common uses of internal carbon pricing include:

- **Performance measurement** – For example, determining carbon-adjusted earnings per share, estimating expected profitability, incentivizing energy saving, identifying revenue opportunities and risks, managing procurement and supply chains¹¹⁴
- **Position management** – For example, valuation of assets
- **Investment decisions** – For example, identifying low-carbon, high-return investment opportunities, planning capital investments, determining cost-benefit and net present value of projects

- **Strategy** – For example, assessing future policy responses to climate change such as the potential imposition of explicit or implicit carbon pricing, effects on overall economic growth and sector demand, and technology cost-benefit hurdles

- **Risk Management** – For example, to measure, model, and manage GHG emissions-related transition risks and opportunities and adjust strategy accordingly

To set an internal carbon price(s), an organization should understand how it plans to use the internal carbon price, the appropriate form for different applications of internal carbon pricing, and approaches to determining a price level. Effective carbon prices typically have the following characteristics:

- Prices or methodologies for prices should be based on **credible, reputable scientific research** on reasonable carbon prices in light of societal climate goals.¹¹⁵ At a minimum, organizations should consider a carbon price that is aligned to a temperature pathway well below 2°C.¹¹⁶
- An organization's internal carbon price(s) should be **consistent with prices implied by the organization's climate-related targets** (e.g., net-zero by 2050, Paris-aligned).
- Internal carbon prices should **increase over time** to reflect diminishing carbon budget.
- Organizations should **recalculate their internal carbon prices, as warranted**, to account for climate policy or regulation, 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.
- Internal carbon prices may need to reflect **geographic or sectoral differences** in which the organization determines that such differences will have a significant impact on the carbon price level and a credible source for differentiated pricing can be found.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

¹¹³ For more information, see Center for Climate and Energy Solutions, *The Business of Pricing Carbon: How Companies are Pricing Carbon to Mitigate Risks and Prepare for a Low-Carbon Future*.

¹¹⁴ Carbon Pricing Unlocked, *Internal Carbon Pricing for Future-Proof Supply Chains*, January 2020.

¹¹⁵ For more information, see CDP, We Mean Business, and Carbon Pricing Leadership Coalition, "Carbon Pricing Corridors: The Market View," May 2017, "Carbon Pricing Corridors, 2018," July 2018, and *Report of the High-Level Commission on Carbon Prices*, May 29, 2017.

¹¹⁶ Article two of the 2015 *Paris Agreement* commits parties to "holding the increasing in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels."

Several sources provide more information on setting internal carbon prices, including (1) Carbon Pricing Leadership Coalition's *Construction Industry Value Chain: How Companies Are Using Carbon Pricing to Address Climate Risk and Find New Opportunities*, (2) Carbon Pricing Unlocked Partnership's *How-To Guide to Corporate Internal Carbon Pricing*, (3) Carbon Pricing Unlocked Partnership's *Internal Carbon Pricing for Low-Carbon Finance*, (4) Yale University's *Internal Carbon Pricing: Policy Framework and Case Studies*, and (5) WBCSD's *Emerging Practices in Internal Carbon Pricing: A Practical Guide*.¹¹⁷

B. Disclosure of Internal Carbon Prices

The Task Force encourages organizations for which disclosure of internal carbon prices is relevant to disclose the actual internal carbon price(s) used within the organization, for example, when making investment or strategic planning decisions. Organizations should disclose internal carbon prices that are consistent with those used in determining values of items disclosed publicly, such as asset valuations and retirement obligations.

Organizations may also consider disclosing information about how they use an internal carbon price(s) in their decision-making and to what extent it affects their decisions. To more fully understand an organization's risk management and strategy decisions, many investors are

interested in why and how a firm uses internal carbon pricing. Accordingly, organizations should consider providing the following details related to internal carbon price:

- methodology used to develop internal carbon price(s);
- whether the organization's internal carbon price reflects a proxy of the all-in implicit cost of various climate policies (e.g., performance standards, renewable portfolio standards, efficiency standards, etc.) or an explicit cost of GHG emissions (e.g., market-based price, cap-and-trade, carbon tax);
- type and proportion of the organization's GHG emissions covered by carbon pricing (e.g., Scope 1, Scope 2, Scope 3 GHG emissions; which greenhouse gases);
- assumptions about how the organization's internal carbon price might change over time in response to declining carbon budgets, changing policy, and changing emissions projections;
- the scope of implementation of internal carbon prices (e.g., geographic, business lines);
- whether the carbon price would apply only at the margin or as a base cost; and
- whether the organization uses a common carbon price or differentiated carbon prices.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

¹¹⁷ Carbon Pricing Leadership Coalition, *Construction Industry Value Chain: How Companies Are Using Carbon Pricing to Address Climate Risk and Find New Opportunities*, 2018; Carbon Pricing Unlocked, *How-To Guide to Corporate Internal Carbon Pricing*, December 2017; Carbon Pricing Unlocked, *Internal Carbon Pricing for Low-Carbon Finance*, July 2019; Yale University, *Internal Carbon Pricing: Policy Framework and Case Studies*, February 2019; WBCSD, *Emerging Practices in Internal Carbon Pricing: A Practical Guide*, December 4, 2015.

Appendix 2: Example Disclosures

Table A2-1 provides additional information on the cross-industry, climate-related metric categories and financial impacts, including non-exhaustive alignment with other frameworks, example metrics, and example disclosures from financial and non-financial organizations.

Table A2-1

Information	Alignment (Non-Exhaustive)	Example Metrics	Financial Organization Examples	Non-Financial Organization Examples
Cross-Industry, Climate-Related Metric Categories				
GHG Emissions Absolute Scope 1, Scope 2, and Scope 3; emissions 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: <i>various sector frameworks</i> ; 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: SASB provides industry-specific guidance. Metrics that fall under the SASB disclosure topics “Greenhouse Gas Emissions” or “Energy Management” align with GHG Emissions;” ECB Supervisory Expectation: 13.5; European Commission Guidelines: Section 3.5	<ul style="list-style-type: none"> Absolute Scope 1, Scope 2, Scope 3 GHG emissions Financed emissions by asset class Weighted average carbon intensity GHG emissions per MWh of electricity produced Gross global Scope 1 GHG emissions covered under emissions-limiting regulations 	Temasek: ¹¹⁸ “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.” CPP Investments: ¹¹⁹ Disclosure notes 20.9 million tonnes of CO ₂ e in Long-Term Capital Ownership, 39.8 in Equity Ownership, and 37.7 in Government-Issued Securities.	Dow: ¹²⁰ “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 ₂ e.” EDF: ¹²¹ “(EDF group’s current trajectory) represents an absolute reduction of direct greenhouse-gas emissions amounting to 25 Mt CO ₂ by 2030, equivalent to a carbon intensity of approximately 35 g CO ₂ /kWh in 2030.”
Transition Risks Amount and extent of assets or business activities vulnerable to transition 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"> Volume of real estate collaterals highly exposed to transition risk Concentration of credit exposure to carbon-related assets Percent of revenue from coal mining Percent of revenue passenger kilometers not covered by Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) 	ING: ¹²² “Outstanding– upstream oil and gas €4.0 billion.” BBVA: ¹²³ “BBVA’s Transition Sensitive and Carbon-Related wholesale exposures represent below less than 20% of total wholesale EAD (exposure at default), or well below 10% of the Group’s EAD.”	United Airlines: ¹²⁴ “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.” (CDP 2020 Report)
Physical Risks Amount and extent of assets or business activities vulnerable to physical risks	SASB: IF0402-13 (Real Estate Standard); SASB: FN-MF-450a.1 (Mortgage Finance Standards); 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"> Number and value of mortgage loans in 100-year flood zones Wastewater treatment capacity located in 100-year flood zones Revenue associated with water withdrawn and consumed in regions of high or extremely high baseline water stress Proportion of property, infrastructure, or other alternative asset portfolios in an area subject to flooding, heat stress, or water stress Proportion of real assets exposed to 1:100 or 1:200 climate-related hazards 	HSBC: ¹²⁵ [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.”	ConEdison: ¹²⁶ “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.”

¹¹⁸ Temasek, “*Focusing on Climate Change*,” Accessed May 6, 2021.

¹¹⁹ CPP Investments, *Report on Sustainable Investing 2020*, November 2020.

¹²⁰ Dow, “Dow signs four renewable power agreements to achieve 2025 Goal and lead petrochemical industry,” June 17, 2020.

¹²¹ EDF, “*Corporate social responsibility: Carbon neutrality by 2050*,” Accessed May 6, 2021.

¹²² ING, *Terra progress report*, November 16, 2020, p. 22.

¹²³ BBVA, *BBVA Report on TCFD 2020*, October 2020, p. 27.

¹²⁴ CDP, *United Airlines Holdings Climate Change 2020 report*, 2020, p. 8.

¹²⁵ HSBC, *TCFD Update 2020*, Feb 24, 2021, p. 20.

¹²⁶ ConEdison, “*Climate Change Vulnerability Study*,” December 2019, p. 5. Note: ConEdison utilizes data from its 2019 Climate Change Vulnerability Study to inform its *2020 Climate Change Resilience and Adaptation* report.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

Information	Alignment (Non-Exhaustive)	Example Metrics	Financial Organization Examples	Non-Financial Organization Examples
<p>Climate-Related Opportunities</p> <p>Proportion of revenue, assets, or other business activities aligned with climate-related opportunities</p>	<p>CDP: C4.2b;</p> <p>SASB: EM-CM-410a.1 (<i>Construction Materials Standard</i>);</p> <p>SASB: EM-SV-000.A, EM-SV-000.B (<i>Oil and Gas Services Standard</i>);</p> <p>European Commission Guidelines: Section 3.5, Annex 1.5;</p> <p>EU Taxonomy: Article 8;</p> <p>EBA Guidelines (EBA/GL/11/2017)</p>	<ul style="list-style-type: none"> • Net premiums written related to energy efficiency and low-carbon technology • Number of (1) zero-emissions vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold • Revenues from products or services that support the transition to a low-carbon economy • Proportion of homes delivered certified to a third-party, multiattribute green building standard 	<p>UBS:¹²⁷ “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.”</p> <p>Nordea:¹²⁸ 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).</p>	<p>BMW:¹²⁹ 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.</p> <p>Enel:¹³⁰ “53.6% net efficient installed renewable capacity” as a percent of total capacity.”</p> <p>BASF:¹³¹ “Accelerator products (products considered to make a ‘substantial sustainability contribution in the value chain’) account for 30.9% of the evaluated relevant portfolio.”</p>
<p>Capital Deployment</p> <p>Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities</p>	<p>CDP: C2.3a, C2.4a, C3.3, C3.4, C4.2b; CDSB: REQ-02;</p> <p>European Commission Guidelines: Section 3.5;</p> <p>SASB: EM-EP-420a.4 (Oil and Gas Exploration Standard)</p>	<ul style="list-style-type: none"> • Percentage of annual revenue invested in R&D of low-carbon products/services • Investment in climate adaptation measures (e.g., soil health, irrigation, technology) 	<p>Wells Fargo:¹³² 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.”</p> <p>Goldman Sachs:¹³³ “Goldman Sachs entered 2020 with a new target to deploy \$750 billion in sustainable financing, investing and advisory activity by the beginning of 2030. Over the course of the year, we exceeded our expectations by contributing \$156 billion in such activity.”</p>	<p>BHP:¹³⁴ “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.”</p> <p>Equinor:¹³⁵ “Our low-carbon and energy efficiency R&D expenditure was around 25% in 2020, which is a large increase from 2019.”</p>
<p>Internal Carbon Prices</p> <p>Price on each ton of GHG emissions used internally by an organization</p>	<p>CDP: CC2.2; SASB: NR0101-22, NR0201-16</p>	<ul style="list-style-type: none"> • Internal carbon price • Shadow carbon price, by geography 	<p>DBS Bank:¹³⁶ “Covering over 60% of companies in our five sectors, the bottom-up assessment assumed carbon price increase to USD 75/t CO₂e, holding the financials of our customers constant.”</p>	<p>Aker BP:¹³⁷ “Assumed carbon price reaches USD 235/t CO₂ 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.”</p> <p>SunCor:¹³⁸ “Our 2020 carbon price outlook applies provincial and federal carbon regimes within Canada and a price of \$30 per tonne of CO₂e, assuming a steady increase to approximately \$100 per tonne on an increasing percentage of our emissions by 2040.”</p>

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

¹²⁷ UBS, “UBS extends sustainability leadership with rapid rise in 2020 invested assets and advances in ambitious climate strategy,” March 11, 2021.

¹²⁸ Nordea, *Green bond investor presentation*, February 2021, p. 15.

¹²⁹ BMW Group, *Investor Presentation*, December 2020, pp. 9 and 25.

¹³⁰ Enel, *Sustainability Report 2020*, May 2021, p. 11.

¹³¹ BASF, *BASF Report 2020*, February 26, 2021, p. 45.

¹³² National Fish and Wildlife Foundation, “Wells Fargo Foundation and NFWF Announce Release of the Resilient Communities Program 2020 Request for Proposals,” January 23, 2020.

¹³³ Goldman Sachs, *2020 Sustainability Report*, April 23, 2021, p. 9.

¹³⁴ BHP, *BHP Sustainability and ESG Navigators Databook 2020*, September 15, 2020, n.p.

¹³⁵ Equinor, *2020 Sustainability Report*, March 19, 2021, p. 30.

¹³⁶ DBS Bank, *Sustainability Report 2020*, March 2, 2021, p. 23.

¹³⁷ Aker BP, *Sustainability Report 2020*, March 12, 2021, p. 25.

¹³⁸ SunCor, *Climate Risk and Resilience Report 2020*, July 15, 2020, p. 22.

Information	Alignment (Non-Exhaustive)	Example Metrics	Financial Organization Examples	Non-Financial Organization Examples
Remuneration Proportion of executive management remuneration linked to climate considerations	CDP: C1.1a, C1.3a; CDSB: REQ-01; EU Taxonomy: 3.2; IR: 4.9; ECB Supervisory Expectation: 4.3; EBA Guidelines under Articles 74(3) and 75(2) of Directive 2013/36/EU and Article 450 of Regulation (EU) No 575/201	<ul style="list-style-type: none"> Portion of employee's annual discretionary bonus linked to investments in climate-related products Weighting of climate goals on long-term incentive scorecards for Executive Directors Weighting of performance against operational emissions' targets for remuneration scorecard 	Barclays: ¹³⁹ "The Committee also considered how our ambition to be net zero by 2050 should be reflected in pay for the Executive Directors. The decision was to include a standalone Climate measure within the [Long-Term Incentive Plan (LTIP)], providing clear alignment between the LTIP outcome, up to a maximum of 10%, and progress towards our targets which will help us to become net zero by 2050. To accommodate the addition of the Climate measure, the weighting for the Risk Scorecard and Strategic non-financial measures (excluding Climate) will be reduced to 10% each."	Daimler: ¹⁴⁰ "Sustainability oriented targets can raise or lower the annual bonus by up to +/-25% and +/-10%, respectively." Unilever: ¹⁴¹ "With the introduction of the Sustainability Progress Index as a 25% performance metric in our MCIP in 2017, we have further strengthened the linkage between our remuneration policy and Unilever's identity, values and mission." Siemens: ¹⁴² "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."

Financial Impact

Performance Impact of climate-related risks or opportunities on financial performance	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 (Aerospace, Defense Standard); 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"> 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 transition risks Changes to total expected losses due to physical risks Probable Maximum Loss (PML) of insured products from natural catastrophes 	Citi: ¹⁴³ "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/t CO ₂ , with an average of 3.5 notches." Hannon Armstrong: ¹⁴⁴ "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."	Canadian Railway: ¹⁴⁵ "In 2019, Davenport, Iowa experienced major flooding from the Mississippi River, and in response, CP raised approximately three miles of track by three feet to keep the trains operational during flooding, which cost around \$11M." NextEra Energy: ¹⁴⁶ "Our generation fleet is now one of the cleanest and most efficient in the country, saving customers \$11.3 billion in fuel costs." HPE: ¹⁴⁷ "The company took a \$93 million charge in 2017 to pay for (Hurricane Harvey) storm damages not covered by insurance claims." Meridian Energy: ¹⁴⁸ "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."
---	--	---	---	---

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts
- Appendices

¹³⁹ Barclays PLC, *Annual Report 2020*, February 17, 2021, p. 132.

¹⁴⁰ Daimler, *Annual Report 2020*, February 18, 2021, p. 92.

¹⁴¹ Unilever, "Statement on the implementation of Unilever's remuneration policy," February 11, 2020, p. 5.

¹⁴² Siemens, *Annual Report 2020*, November 27, 2020, p. 54.

¹⁴³ Citi, *Finance for a Climate-Resilient Future II: Citi's 2020 TCFD Report*, December 17, 2020, p. 23.

¹⁴⁴ Hannon Armstrong, *United States Securities and Exchange Commission Form 10-K*, February 22, 2021, p. 57.

¹⁴⁵ Canadian Pacific, *2020 CDP Climate Change Questionnaire: CP Response*, July 23, 2020, p. 18.

¹⁴⁶ NextEra Energy, *Environmental, Social and Governance 2021 Report*, May 20, 2021, p. 21.

¹⁴⁷ Gold, "Companies' Climate Risks Are Often Unknown. Here's How One Opened Up," Wall Street Journal, March 14, 2021.

¹⁴⁸ Meridian Energy, *Climate Change Disclosures Meridian Energy Limited FY20*, August 2020, p. 8.

Information	Alignment (Non-Exhaustive)	Example Metrics	Financial Organization Examples	Non-Financial Organization Examples
<p>Position</p> <p>Impact of climate-related risks or opportunities on financial position</p>	<p>CDP: C2.4a, C2.3a, C3.4, C2.2a; CDSB: REQ-03, REQ-06; SASB: EM-EP-420a.1, FN-CB-410a.1;</p> <p>CDP: C2.2a; CDSB: REQ-03;</p> <p>CDP: 2.3a, C3.4;</p> <p>CDP: C2.2a; CDSB: REQ-03;</p> <p>SASB: EM-EP-420a.1 (Oil and Gas Exploration Standard)</p> <p>European Commission Guidelines: Annex 1;</p> <p>ECB Supervisory Expectation: 7.5, 8.3, 8.6, 10, 12;</p> <p>ECB ILAAP Principle: IV</p>	<ul style="list-style-type: none"> • Changes to the carrying amount of assets due to exposure to physical and transition risks • Changes to the expected portfolio given climate-related risks and opportunities • Changes in liability and equity due to increases or decreases in assets (e.g., due to low-carbon capital investments or to sale or write-offs of stranded assets) 	<p>Aberdeen Standard:¹⁴⁹ “Our MultiAsset Climate Solutions fund, for example, comprises of companies that derive over 50% of their revenues from climate solutions. For this fund we saw that for most scenarios and in our scenario mean, the valuation implication was strongly positive under our mean scenario as well as the tailends of Paris-alignment and a continuation of current policy, at least 64% of equity portfolios show an uplift in value in comparison to the baseline.”</p> <p>Invesco:¹⁵⁰ “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.</p>	<p>BP:¹⁵¹ “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.”</p> <p>Eni:¹⁵² “The stress test, performed under the IEA SDS scenario, showed that the overall book values of the assets were stable with a reduction in fair value of around 11%, or around 5% in the event of contractual and fiscal recoverability of the costs of direct CO₂ emissions. Analyses carried out on the 3P reserves of the current upstream portfolio confirmed their resilience and flexibility.”</p>

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

¹⁴⁹ Aberdeen Standard, *TCFD and Environment Report*, June 3, 2021, p. 23.

¹⁵⁰ Invesco, *2019 Invesco Climate Change Report*, July 27, 2020, p. 31.

¹⁵¹ 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.

¹⁵² Eni, *Eni for 2020: Carbon Neutrality by 2050*, May 12, 2021, p. 20.

Appendix 3: Glossary and Abbreviations

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

ANNUAL OR INTEGRATED REPORTS refers 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."¹⁵³

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

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-emissions 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 where 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.

FINANCIAL FILINGS refers 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.¹⁵⁴

FINANCIAL PERFORMANCE refers to an organization's income and expenses as reflected on its income and cash flow statements (actual) or potential income and expenses under different climate-related scenarios.

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 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).

FINANCIAL POSITION refers to an organization's assets, liabilities, and equity as reflected on its balance sheet (actual) or potential assets, liabilities, and equity under different climate-related scenarios.

GOVERNANCE refers to "the system by which an organization is directed and controlled in the interests of shareholders and other stakeholders."¹⁵⁵ "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."¹⁵⁶

¹⁵³ Organisation for Economic Co-operation and Development (OECD), *G20/OECD Principles of Corporate Governance*, November 30, 2015.

¹⁵⁴ Based on Climate Disclosure Standards Board, *CDSB Framework for Reporting Environmental and Climate Change Information*, December 2019.

¹⁵⁵ Cadbury, *Report of the Committee on the Financial Aspects of Corporate Governance*, December 1992.

¹⁵⁶ OECD, *G20/OECD Principles of Corporate Governance*, November 30, 2015.

GREENHOUSE GAS (GHG) EMISSIONS SCOPE LEVELS¹⁵⁷

- **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 GHG 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.¹⁵⁸

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 refers to a short-term milestone between the organization’s medium- or long-term target and current period.

INTERNAL CARBON PRICE refers to a monetary value on GHG emissions an organization uses internally to guide its decision-making process in relation to climate change impacts, risks, and opportunities.¹⁵⁹

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 refers to 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 can be defined in many ways but 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.

RISK ASSESSMENT refers to a process consisting of risk 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 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.

SCENARIO ANALYSIS refers to 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.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

¹⁵⁷ World Resources Institute and World Business Council for Sustainable Development, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*, March 2004.

¹⁵⁸ World Resources Institute and World Business Council for Sustainable Development, *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, April 16, 2014.

¹⁵⁹ Based on World Bank, “What is Carbon Pricing?” Accessed September 20, 2021.

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 where it operates.

SUSTAINABILITY REPORT refers to a report that describes a company’s or organization’s impact on society, often addressing environmental, social, and governance issues.

TRANSITION PLAN refers to an aspect of an organization’s overall business strategy that lays out a set of targets and actions supporting its transition toward a low-carbon economy, including actions such as reducing its GHG emissions.

ABBREVIATIONS

1.5°C — 1.5° Celsius

2°C — 2° Celsius

CA100+ — Climate Action 100+

CDSB — Climate Disclosure Standards Board

CO₂e — Carbon dioxide equivalent

ESG — Environmental, social, and governance

FSB — Financial Stability Board

G20 — Group of 20

GFANZ — Glasgow Financial Alliance for Net Zero

GHG — Greenhouse gas

GICS — Global Industry Classification Standard

GRI — Global Reporting Initiative

IFRS — International Financial Reporting Standards

IIRC — International Integrated Reporting Council

IOSCO — International Organization of Securities Commissions

IPCC — Intergovernmental Panel on Climate Change

ISSB — International Sustainability Standards Board

NGFS — Network for Greening the Financial System

NZIA — Net-Zero Insurance Alliance

PCAF — Partnership for Carbon Accounting Financials

SASB — Sustainability Accounting Standards Board

SBTi — Science Based Targets initiative

TCFD — Task Force on Climate-related Financial Disclosures

UNFCCC — United Nations Framework Convention on Climate Change

WACI — Weighted average carbon intensity

WBCSD — World Business Council for Sustainable Development

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

Appendix 4: References

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

- Aberdeen Standard. *TCFD and Environment Report*. June 3, 2021. <https://www.aberdeenstandard.com/docs?editionId=8add93e9-5b15-42da-a6f3-bee24b615677>.
- Aker BP. *Sustainability Report 2020*. March 12, 2021. <https://mb.cision.com/Public/1629/3313545/bdef52ed4fde0572.pdf>.
- Aldy, J. and G. Gianfrate. *Future-Proof Your Climate Strategy*. Harvard Business Review. May–June 2019. <https://hbr.org/2019/05/future-proof-your-climate-strategy>.
- The Alliance. *Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard*. December 2020. https://29kjwb3armds2g3gi4lq2sx1-wpengine.netdna-ssl.com/wp-content/uploads/Reporting-on-enterprise-value_climate-prototype_Dec20.pdf.
- Barclays PLC. *Annual Report 2020*. February 17, 2021. <https://home.barclays/content/dam/home-barclays/documents/investor-relations/reports-and-events/annual-reports/2020/Barclays-PLC-Annual-Report-2020.pdf>.
- Barclays PLC. *ESG Report 2020*. February 18, 2021. <https://home.barclays/content/dam/home-barclays/documents/investor-relations/reports-and-events/annual-reports/2020/Barclays-PLC-2020-ESG-Report-2020.pdf>.
- BASF. *BASF Report 2020 (BASF Group)*. February 26, 2021. <https://report.basf.com/2020/en/servicepages/downloads/files/basf-report-2020-basf-ar20.pdf>.
- BBVA. *BBVA Report on TCFD 2020*. October 2020. https://shareholdersandinvestors.bbva.com/wp-content/uploads/2020/10/BBVA-report-on-TCFD_Eng.pdf.
- BHP. *Addressing greenhouse gas emissions beyond our operations: Understanding the 'scope 3' footprint of our value chain*. August 2018. https://www.bhp.com/-/media/documents/media/prospects/180824_prospects_understandingscope3footprintofourvaluechain.pdf?la=en#:~:text=Double%20counting%20between%20companies%20is,the%20simultaneous%20action%20of%20multiple.
- BHP. *BHP Sustainability and ESG Navigators Databook 2020*. September 15, 2020. https://www.bhp.com/-/media/documents/investors/annual-reports/2020/200914_sustainability-and-esg-navigators-and-databook-2020.xlsx?la=en.
- BHP. *Climate Change Report 2020*. September 10, 2020. https://www.bhp.com/-/media/documents/investors/annual-reports/2020/200910_bhplimatechangereport2020.pdf.
- Blanco, Christian, Felipe Caro, and Charles J. Corbett. *The State of Supply Chain Carbon Footprinting: Analysis of CDP Disclosures by US Firms*. May 17, 2016. <http://manuscript.elsevier.com/S0959652616308095/pdf/S0959652616308095.pdf>.
- BMW Group. *Investor Presentation*. December 2020. https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/ir/downloads/en/2020/Investor_Presentation/BMW_Investor_Presentation_2020.pdf.
- 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. <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-revises-long-term-price-assumptions.html>.
- Cadbury, A. *Report of the Committee on the Financial Aspects of Corporate Governance (The Cadbury Report)*. 1992. <http://cadbury.cjbs.archios.info/report>.
- Canadian Pacific. *2020 CDP Climate Change Questionnaire: CP Response*. July 23, 2020. <https://sustainability.cpr.ca/downloads/cdp-program-submission-2020.pdf>.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

Carbon Disclosure Project (CDP). *Carbon Pricing Corridors: The Market View 2017*. May 2017. <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/112/original/Carbon-Pricing-Corridors-the-market-view.pdf?1495638527>.

CDP. *Closing the Gap: Scaling Up Sustainable Supply Chains*. November 2018. <https://www.cdp.net/en/research/global-reports/global-supply-chain-report-2018>.

CDP. *Carbon Pricing Corridors: The Market View 2018*. July 2018. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/003/326/original/Carbon-Pricing-Corridors-2018.pdf?1526464647>.

CDP. *Putting A Price on Carbon: The state of internal carbon pricing by corporates globally*. April 2021. https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/005/651/original/CDP_Global_Carbon_Price_report_2021.pdf?1618938446.

CDP. *The Time to Green Finance: CDP Financial Services Disclosure Report 2020*. April 2020. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/005/741/original/CDP-Financial-Services-Disclosure-Report-2020.pdf?1619537981>.

CDP. *Transparency to Transformation: A Chain Reaction*. February 2021. https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/005/554/original/CDP_SC_Report_2020.pdf?1614160765.

CDP. *United Airlines Holdings Climate Change 2020 Report*. 2020. <https://www.cdp.net/en/responses/19569?>

Carbon Pricing Leadership Coalition. *Construction Industry Value Chain: How Companies Are Using Carbon Pricing to Address Climate Risk and Find New Opportunities*. 2018. <https://openknowledge.worldbank.org/bitstream/handle/10986/31055/132770-WP-Construction-Industry-Value-Chain-PUBLIC.pdf?sequence=1&isAllowed=y>.

Carbon Pricing Leadership Coalition. *Report of the High-Level Commission on Carbon Prices*. May 29, 2017. https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf.

Carbon Pricing Unlocked. *How-To Guide to Corporate Internal Carbon Pricing*. December 2017. <http://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.r81.cf3.rackcdn.com/cms/reports/documents/000/002/740/original/cpu-2017-how-to-guide-to-internal-carbon-pricing.pdf?1521554897>.

Carbon Pricing Unlocked. *Internal Carbon Pricing for Future-Proof Supply Chains*. January 2020. <https://guidehouse.com/-/media/www/site/insights/energy/2020/carbon-pricing-unlocked-2020-icp-supply-chains.pdf>.

Carbon Pricing Unlocked. *Internal Carbon Pricing for Low-Carbon Finance*. July 2019. https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/004/655/original/carbon_pricing_unlocked_internal_carbon_pricing_low-carbon_finance.pdf?1563353352.

Center for Climate and Energy Solutions. *The Business of Pricing Carbon: How Companies are Pricing Carbon to Mitigate Risks and Prepare for a Low-Carbon Future*. September 2017. <https://www.c2es.org/document/the-business-of-pricing-carbon-how-companies-are-pricing-carbon-to-mitigate-risks-and-prepare-for-a-low-carbon-future/>.

Citi. *Finance for a Climate-Resilient Future II: Citi's 2020 TCFD Report*. December 17, 2020. <https://www.citigroup.com/citi/sustainability/data/finance-for-a-climate-resilient-future-2.pdf?ieNocache=90>.

Climate Action 100+. "Blog: Climate Action 100+ Zeroes In On Industry-Wide Decarbonization". August 2021. <https://www.climateaction100.org/news/blog-climate-action-100-zeroes-in-on-industry-wide-decarbonisation/>.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

- Climate Action 100+. "Climate Action 100+." <https://www.climateaction100.org/>.
- Climate Action 100+. "Climate Action 100+ Net Zero Company Benchmark." March 2021. <https://www.climateaction100.org/wp-content/uploads/2021/03/Climate-Action-100-Benchmark-Indicators-FINAL-3.12.pdf>.
- Climate Action 100+. "Net-Zero Company Benchmark." Accessed April 30, 2021. <https://www.climateaction100.org/progress/net-zero-company-benchmark/>.
- Climate Disclosure Standards Board. *CDSB Framework for Reporting Environmental and Climate Change Information*. December 2019. https://www.cdsb.net/sites/default/files/cdsb_framework_2019_v2.2.pdf.
- ConEdison. *Climate Change Vulnerability Study*. December 2019. <https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/climate-change-resiliency-plan/climate-change-vulnerability-study.pdf?la=en>.
- ConEdison. *2020 Climate Change Resilience and Adaptation*. January 2021. <https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/climate-change-resiliency-plan/climate-change-resilience-adaptation-2020.pdf>.
- The Conference Board. *Internal Carbon Pricing: A Key Element of Climate Strategy*. January 2021. <https://conference-board.org/pdfdownload.cfm?masterProductID=23586>.
- Corporate Reporting Dialogue. "Better Alignment Project." <https://corporatereportingdialogue.com/better-alignment-project/#report>.
- CPP Investments. *Report on Sustainable Investing 2020*. November 2020. <https://cdn2.cppinvestments.com/wp-content/uploads/2020/11/ CPP-Investments-2020-SI-Report-EN-Optimized.pdf>.
- CRO Forum. *Carbon footprinting methodology for underwriting portfolios*. April 29, 2020. <https://www.thecroforum.org/wp-content/uploads/2020/05/CRO-Carbon-Foot-Printing-Methodology.pdf>.
- Daimler. *Annual Report 2020*. February 18, 2021. <https://www.daimler.com/documents/investors/reports/annual-report/daimler/daimler-ir-annual-report-2020-incl-combined-management-report-daimler-ag.pdf>.
- DBS Group Holdings Ltd. *Stronger Together: Sustainability Report 2020*. March 2, 2021. https://links.sgx.com/1.0.0/corporate-announcements/02EJ20XRJ2L83UP7/651247_DBS%20Sustainability%20Report%202020.pdf.
- Dharmesh, S. "Measuring What Matters: How to Pick A Good Metric." OnStartUps Blog. March 29, 2013. <https://www.onstartups.com/tabid/3339/bid/96738/Measuring-What-Matters-How-To-Pick-A-Good-Metric.aspx>.
- Dow. "Dow signs four renewable power agreements to achieve 2025 Goal and lead petrochemical industry." June 17, 2020. <https://www.dow.com/en-us/news/dow-signs-four-renewable-power-agreements-to-achieve-2025-goal.html>.
- EBRD and Global Centre of Excellence on Climate Adaptation. *Advancing TCFD Guidance on Physical Climate Risks and Opportunities*. May 2018. https://www.physicalclimaterisk.com/media/EBRD-GCECA_draft_final_report_full.pdf.
- Eckerson, W. "12 Characteristics of Effective Metrics." Transforming Data With Intelligence (TDWI Blog). April 19, 2010. <https://tdwi.org/Blogs/TDWI-Blog/2010/04/Effective-Metrics.aspx?m=1>.
- EDF. "Corporate social responsibility: Carbon neutrality by 2050." <https://www.edf.fr/en/the-edf-group/taking-action-as-a-responsible-company/our-six-corporate-responsibility-goals/doing-even-more-to-reduce-co2-emissions>.
- Enel. *Integrated Annual Report 2020*. https://www.enel.com/content/dam/enel-com/documenti/investitori/informazioni-finanziarie/2020/annuali/en/integrated-annual-report_2020.pdf.
- Enel. *Sustainability Report 2020*. May 2021. https://www.enel.com/content/dam/enel-com/documenti/investitori/sostenibilita/2020/sustainability-report_2020.pdf.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

The Energy & Climate Intelligence Unit and Oxford Net Zero. *Taking Stock: A global assessment of net zero targets*. March 23, 2021. <https://eciu.net/analysis/reports/2021/taking-stock-assessment-net-zero-targets>.

Eni. "Eni for 2020: Carbon neutrality by 2050." 2020. <https://www.eni.com/assets/documents/eng/just-transition/2020/Eni-for-2020-Carbon-neutrality-by-2050.pdf>.

Equinor. *Sustainability Report 2020*. March 19, 2021. <https://www.equinor.com/content/dam/statoil/documents/sustainability-reports/2020/equinor-sustainability-report-2020-LR.pdf>.

ERAFP. *Public Report 2020*. August 3, 2021. https://www.rafp.fr/en/sites/rafp_en/files/publication/file/rafp-ra-2020-uk-web-v2.pdf.

European Commission. "Communication from the Commission: Guidelines on non-financial reporting: Supplement on reporting climate-related information (2019/C 209/01)." June 20, 2019. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620\(01\)&from=GA](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=GA).

European Commission. "Corporate sustainability reporting." September 21, 2021. https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

European Commission. "Corporate Sustainability Reporting Directive." April 21, 2021. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0189>.

European Commission. "Non-Financial Reporting Directive." October 22, 2014. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095>.

European Innovation Council and SMEs Executive Agency (European Commission). *Trade Secrets: Managing Confidential Business Information*. July 2021. <https://op.europa.eu/en/publication-detail/-/publication/5f1c6d8a-f015-11eb-a71c-01aa75ed71a1/language-en/format-PDF/source-227370609>.

EU Technical Expert Group on Sustainable Finance (EU TEG). *Taxonomy Report: Technical Annex*. March 9, 2020. https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf.

EU TEG. *Technical Report*. March 9, 2020. https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf.

Financial Conduct Authority, "Enhancing climate-related disclosures by asset managers, life insurers, and FCA-regulated pension providers: Consultation paper." June 2021. <https://www.fca.org.uk/publication/consultation/cp21-17.pdf>.

GHG Protocol. *A Corporate Accounting and Reporting Standard (Revised Edition)*. March 2004. <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.

GHG Protocol. "Corporate Standard." <https://ghgprotocol.org/corporate-standard>.

GHG Protocol. *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. 2011. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf.

GHG Protocol. "Frequently Asked Questions." <https://ghgprotocol.org/calculationg-tools-faq>.

GHG Protocol. *Land Sector and Removals Initiative*. July 2021. <https://ghgprotocol.org/sites/default/files/GHG%20Protocol%20-%20Land%20Sector%20and%20Removals%20Initiative%20-%20Overview%20%287-21%29%20v2.pdf>.

GHG Protocol. "New Greenhouse Gas Protocol Guidance on Carbon Removals and Land Use." October 15, 2019. <https://ghgprotocol.org/blog/new-greenhouse-gas-protocol-guidance-carbon-removals-and-land-use>.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

GHG Protocol. *Technical Guidance for Calculating Scope 3 Emissions (Version 1)*. 2013. https://ghgprotocol.org/sites/default/files/ghgp/Scope3_Calculation_Guidance.pdf.

Gold, R. "Companies' Climate Risks Are Often Unknown. Here's How One Opened Up." *Wall Street Journal*. March 14, 2021. <https://www.wsj.com/articles/companies-climate-risks-are-often-unknown-heres-how-one-opened-up-11615738526>.

Goldman Sachs. *2020 Sustainability Report*. April 23, 2021. <https://www.goldmansachs.com/our-commitments/sustainability/sustainable-finance/documents/reports/2020-sustainability-report.pdf?source=website>.

Hannon Armstrong Sustainable Infrastructure Capital, Inc. *Form 10-K 2020*. February 22, 2021. <https://d18rn0p25nwr6d.cloudfront.net/CIK-0001561894/e54092ce-7ecd-424c-a1ef-5a3bdb802dbb.html>.

Hoffmann, V. H. and T. Busch. "Corporate Carbon Performance Indicators: Carbon Intensity, Dependency, Exposure, and Risk." *Journal of Industrial Ecology*, Vol. 12, Number 4. November 11, 2008. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1530-9290.2008.00066.x>.

HSBC. *TCFD Update 2020*. Feb 24, 2021. <https://www.hsbc.com/-/files/hsbc/investors/hsbc-results/2020/annual/pdfs/hsbc-holdings-plc/210223-task-force-on-climate-related-financial-disclosures-tcfupdate-2020.pdf?download=1>.

ICMA. "Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds." June 2021. <https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Green-Bond-Principles-June-2021-140621.pdf>.

Ilmarinen. *Annual and Sustainability Report 2020*. March 24, 2021. https://www.ilmarinen.fi/media_global/liitepankki/ilmarinen/taloudellisia-tietoja/vuosikertomus/2020/ilmarinens-annual-and-sustainability-report-2020.pdf.

ING. *Terra progress report*. November 16, 2020. <https://www.ing.com/MediaEditPage/2020-ING-Terra-progress-report.htm>.

Intergovernmental Panel on Climate Change (IPCC). *Global Warming of 1.5°C: Summary for Policymakers*. October 2018. https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_version_stand_alone_LR.pdf.

IPCC. "Special Report: Global warming of 1.5°C Glossary." Accessed September 2, 2021. <https://www.ipcc.ch/sr15/chapter/glossary/>.

IPCC. *Special Report on Global Warming of 1.5°C*. <https://www.ipcc.ch/sr15/>.

IPCC. "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments." October 8, 2018. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>.

IPCC. Oppenheimer, et al. *Emergent risks and key vulnerabilities; Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 2014. pp. 1039–1099. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap19_FINAL.pdf.

International Financial Reporting Standards (IFRS). *Consultation Paper on Sustainability Reporting*. September 2020. <https://www.ifrs.org/content/dam/ifrs/project/sustainability-reporting/consultation-paper-on-sustainability-reporting.pdf>.

IFRS. "IFRS Foundation Trustees announce next steps in response to broad demand for global sustainability standards." February 2, 2021. <https://www.ifrs.org/news-and-events/news/2021/02/trustees-announce-next-steps-in-response-to-broad-demand-for-global-sustainability-standards/>.

IFRS. "IFRS Foundation Trustees announce strategic direction and further steps based on feedback to sustainability reporting consultation." March 8, 2021. <https://www.ifrs.org/news-and-events/news/2021/03/trustees-announce-strategic-direction-based-on-feedback-to-sustainability-reporting-consultation/>.

- IFRS. "IFRS Foundation Trustees announce working group to accelerate convergence in global sustainability reporting standards focused on enterprise value." March 22, 2021. <https://www.ifrs.org/news-and-events/news/2021/03/trustees-announce-working-group/>.
- International Organization of Securities Commissions (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 24, 2021. <https://www.iosco.org/news/pdf/IOSCONEW594.pdf>.
- IOSCO. *Report on Sustainability-related Issuer Disclosures*. June 28, 2021. <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD678.pdf>.
- Invesco. *2019 Invesco Climate Change Report*. <https://www.invesco.com/content/dam/invesco/apac/en/pdf/insights/2020/july-2020/invesco-tcf-task-force-on-climate-related-financial-disclosures-report-jul-2020.pdf>.
- Kepler-Cheuvreux. *Carbon Compass: Investor Guide to Carbon Footprinting. Institutional Investors Group on Climate Change, 2° Investing Initiative, and Deloitte*. November 23, 2015. https://www.longfinance.net/media/documents/Kepler_Cheuvreux_2015_-_Carbon_Compass.pdf.
- Kooroshy, J., et al. *Towards investor-oriented carbon targets data*. FTSE Russell. October 2021. <https://www.ftserussell.com/research/towards-investor-oriented-carbon-targets-data>.
- Liberty Mutual. *Task Force on Climate-Related Financial Disclosures Report*. April 2021. <https://www.libertymutualgroup.com/documents/task-force-climate-financial-disclosures.pdf>.
- Meridian Energy. *Climate Change Disclosures Meridian Energy Limited FY20*. August 2020. <https://www.meridianenergy.co.nz/assets/Sustainability/Meridian-Climate-Change-Disclosures-TCFD-Report-FY20.pdf>.
- Mikolajczyk, et al. *Internal Carbon Pricing and Climate Finance Tracking for Banks*. September 2017. <https://www.climatefocus.com/sites/default/files/Carbon%20Pricing%20and%20Climate%20Finance%20Tracking%20Report%202017.pdf>.
- MSCI. "ACWI Index." Accessed August 30, 2021. <https://www.msci.com/acwi>.
- National Fish and Wildlife Foundation. "Wells Fargo Foundation and NFWF Announce Release of the Resilient Communities Program 2020 Request for Proposals." January 23, 2020. <https://www.nfwf.org/media-center/press-releases/wells-fargo-foundation-and-nfwf-announce-release-resilient-communities-program-2020-request>.
- Nestlé. *Nestlé's Net Zero Roadmap*. February 2021. <https://www.nestle.com/sites/default/files/2020-12/nestle-net-zero-roadmap-en.pdf>.
- Network for Greening the Financial System. *Progress Report on Bridging Data Gaps*. May 26, 2021. https://www.ngfs.net/sites/default/files/medias/documents/progress_report_on_bridging_data_gaps.pdf.
- Net-Zero Asset Owner Alliance. *Inaugural 2025 Target Setting Protocol*. March 2021. <https://www.unepfi.org/wordpress/wp-content/uploads/2021/01/Alliance-Target-Setting-Protocol-2021.pdf>.
- Net-Zero Insurance Alliance. "Statement of commitment by signatory companies." <https://www.unepfi.org/psi/wp-content/uploads/2021/07/NZIA-Commitment.pdf>.
- NextEra Energy. *Environmental, Social and Governance 2021 Report*. May 20, 2021. https://www.nexteraenergy.com/content/dam/nee/us/en/pdf/2021_NEE_ESG_Report.pdf.
- Nordea. *Green bond investor presentation*. February 2021. <https://www.nordea.com/en/doc/nordea-green-bond-investor-presentation-2021.pdf>.
- Organisation for Economic Co-operation and Development. *G20/OECD Principles of Corporate Governance*. 2015. <https://www.oecd.org/daf/ca/Corporate-Governance-Principles-ENG.pdf>.

A. Overview and Background

B. Scope and Approach

C. Climate-Related Metrics

D. Climate-Related Targets

E. Transition Plans

F. Financial Impacts

Appendices

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

Ørsted. *2020 Sustainability Report*. February 2021. <https://orstedcdn.azureedge.net/-/media/annual2020/sustainability-report-2020.ashx?la=en&rev=552cd4dd7bc3499c8bf2311549d-36b94&hash=53664FE832CA1812F310DE35856DA3F4>.

Paris Aligned Investment Initiative. *Net Zero Investment Framework: Implementation Guide*. March 2021. https://www.parisalignedinvestment.org/media/2021/03/PAIL-Net-Zero-Investment-Framework_Implementation-Guide.pdf.

Partnership for Carbon Accounting Financials (PCAF). *Global GHG Accounting and Reporting Standard for the Financial Industry*. First Edition. November 18, 2020. <https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf>.

PCAF. "Partnership for Carbon Accounting Financials collaborates with UN-convened Net-Zero Insurance Alliance to develop standard to measure insured emissions." September 6, 2021. <https://www.unepfi.org/psi/wp-content/uploads/2021/09/PCAF-NZIA-announcement.pdf>.

Portfolio Alignment Team (PAT). *Measuring Portfolio Alignment: Assessing the Position of Companies and Portfolios on the Path to Net Zero*. 2020. <https://www.tcfhub.org/resource/measuring-portfolio-alignment-assessing-the-position-of-companies-and-portfolios-on-the-path-to-net-zero/>.

PAT. *Measuring Portfolio Alignment: Technical Considerations*. October 2021. <https://www.tcfhub.org/resource/measuring-portfolio-alignment-technical-considerations>.

PAT. *Measuring Portfolio Alignment: Technical Supplement*. June 7, 2021. https://assets.bbhub.io/company/sites/60/2021/05/2021-TCFD-Portfolio_Alignment_Technical_Supplement.pdf.

Riahi, K., et al. *The shared socioeconomic pathways and their energy, land use, and greenhouse gas emissions implications: an overview*. January 2017. <https://www.sciencedirect.com/science/article/pii/S0959378016300681>.

Science Based Targets initiative (SBTi). *Criteria and Recommendations*. TWG-INF-002 Version 4.2. April 2021. <https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>.

SBTi. *Financial Sector Science-Based Targets Guidance*. Pilot Version 1.1. April 2021. <https://sciencebasedtargets.org/resources/files/Financial-Sector-Science-Based-Targets-Guidance-Pilot-Version.pdf>.

SBTi. *Science-Based Target Setting Manual*. Version 4.1. April 2020. <https://sciencebasedtargets.org/resources/legacy/2017/04/SBTi-manual.pdf>.

SBTi. *Value Change in the Value Chain: Best Practices in Scope 3 Greenhouse Gas Management*. May 25, 2018. https://sciencebasedtargets.org/resources/files/SBT_Value_Chain_Report-1.pdf.

Siemens. *Annual Report 2020*. November 27, 2020. <https://assets.new.siemens.com/siemens/assets/api/uuid:7e60bb9a-dbad-41ff-8803-a98776d4a1f1/Siemens-AR2020-Compensation-Report.pdf>.

SunCor. *Climate Risk and Resilience Report 2020*. July 15, 2020. <https://sustainability-prd-cdn.suncor.com/-/media/project/ros/shared/documents/climate-reports/2020-climate-risk-and-resilience-report-en.pdf?modified=20201216022313>.

Sustainability Accounting Standards Board (SASB). *Climate Risk Technical Bulletin*. April 13, 2021. <https://www.sasb.org/wp-content/uploads/2021/04/Climate-Risk-Technical-Bulletin2021-041221pm.pdf>.

SASB. *SASB Conceptual Framework*. February 2017. <https://www.sasb.org/wp-content/uploads/2019/05/SASB-Conceptual-Framework.pdf>.

Task Force on Climate-related Financial Disclosures (TCFD). *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures*. June 29, 2017. <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf>.

TCFD. *Forward-Looking Financial Sector Metrics Consultation*. October 29, 2020. <https://assets.bbhub.io/company/sites/60/2021/03/2020-TCFD-Forward-Looking-Financial-Metrics-Consultation.pdf>.

- A. Overview and Background
- B. Scope and Approach
- C. Climate-Related Metrics
- D. Climate-Related Targets
- E. Transition Plans
- F. Financial Impacts

Appendices

TCFD. *Forward-Looking Financial Sector Metrics Consultation: Summary of Responses*. March 2021. <https://assets.bbhub.io/company/sites/60/2021/03/Summary-of-Forward-Looking-Financial-Metrics-Consultation.pdf>.

TCFD. *Guidance on Risk Management Integration and Disclosure*. October 29, 2020. <https://www.fsb.org/wp-content/uploads/P291020-2.pdf>.

TCFD. *Guidance on Scenario Analysis for Non-Financial Companies*. October 29, 2020. https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD_Guidance-Scenario-Analysis-Guidance.pdf.

TCFD. *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (2017 annex)*. June 29, 2017. <https://www.fsb-tcf.org/wp-content/uploads/2017/12/FINAL-TCFD-Annex-Amended-121517.pdf>.

TCFD. *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (2021 annex)*. October 14, 2021. https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf.

TCFD. *Proposed Guidance on Climate-Related Metrics, Targets, and Transition Plans*. June 7, 2021. https://assets.bbhub.io/company/sites/60/2021/05/2021-TCFD-Metrics_Targets_Guidance.pdf.

TCFD. *Proposed Guidance on Metrics, Targets, and Transition Plans Consultation: Summary of Responses*. October 14, 2021. <https://assets.bbhub.io/company/sites/60/2021/08/Summary-of-June-2021-Public-Consultation.pdf>.

TCFD. *2018 Status Report*. September 2018. <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2018-TCFD-Status-Report-092518.pdf>.

TCFD. *2019 Status Report*. June 5, 2019. <https://assets.bbhub.io/company/sites/60/2020/10/2019-TCFD-Status-Report-FINAL-0531191.pdf>.

TCFD. *2020 Status Report*. October 29, 2020. https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD_Status-Report.pdf.

TCFD. *2021 Status Report*. October 14, 2021. https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Status_Report.pdf.

TCFD Knowledge Hub. "Knowledge Hub Home." Accessed September 24, 2021. <https://www.tcfidhub.org/>.

Temasek. "Focusing on Climate Change." Accessed May 6, 2021. <https://www.temasek.com.sg/en/sustainability/focusing-on-climate-change>.

UBS. "UBS extends sustainability leadership with rapid rise in 2020 invested assets and advances in ambitious climate strategy." March 11, 2021. <https://www.ubs.com/global/en/media/display-page-ndp/en-20210311-sustainability-report.html>.

UN Framework Convention on Climate Change (UNFCCC). *COP26 And the Glasgow Financial Alliance for Net Zero (GFANZ)*. April 21, 2021. <https://racetozero.unfccc.int/wp-content/uploads/2021/04/GFANZ.pdf>.

UNFCCC. "Paris Agreement." December 2015. https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

UNFCCC. "Press Release: New Financial Alliance for Net Zero Emissions Launches." April 21, 2021. <https://unfccc.int/news/new-financial-alliance-for-net-zero-emissions-launches>.

UNFCCC. "Race to Zero Campaign." Accessed August 2021. <https://unfccc.int/climate-action/race-to-zero-campaign#eq-1>.

Unilever. "Statement on the implementation of Unilever's remuneration policy." February 11, 2020. https://www.unilever.com/Images/statement-on-the-implementation-of-unilevers-remuneration-policy_tcm244-544072_en.pdf.

van Oudenhoven, A. P. E., et al. *Key criteria for developing ecosystem service indicators to inform decision making*. *Ecological Indicators* 95: 417–426. August 14, 2018. <https://www.sciencedirect.com/science/article/pii/S1470160X18304606>.

Weber, C., et. al. *Exploring Metrics to Measure the Climate Progress of Banks*. World Resources Institute, UNEP Finance Initiative, and 2o Investing Initiative. May 24, 2018. <https://www.wri.org/publication/exploring-metrics-to-measure-the-climate-progress-of-banks>.

World Bank. "What is Carbon Pricing?" Accessed September 20, 2021. <https://carbonpricingdashboard.worldbank.org/what-carbon-pricing>.

World Business Council for Sustainable Development (WBCSD). "Construction and Building Materials share TCFD implementation experience." July 2020. <https://www.wbcsd.org/Programs/Redefining-Value/TCFD/Resources/Construction-and-Building-Materials-share-TCFD-implementation-experience>.

WBCSD. *Emerging Practices in Internal Carbon Pricing: A Practical Guide*. December 4, 2015. <https://www.wbcsd.org/contentwbcsd/download/1367/17733/1>.

WBCSD. *Food, Agriculture and Forest Products TCFD Preparer Forum*. April 2020. <https://docs.wbcsd.org/2020/04/WBCSD-TCFD-Food-Agriculture-and-Forest-Products%C2%AC-Preparer-Fourm-report.pdf>.

WBCSD. "Planning to scale the e-mobility transition: climate-related financial disclosure and the automotive sector." May 2021. <https://www.wbcsd.org/Programs/Redefining-Value/TCFD/Resources/Planning-to-scale-the-e-mobility-transition-climate-related-financial-disclosure-and-the-automotive-sector>.

WBCSD. *TCFD Electric Utilities Preparer Forum*. July 2019. https://docs.wbcsd.org/2019/07/WBCSD_TCFD_Electric_Uilities_Preparer_Forum.pdf.

WBCSD and World Resources Institute. *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*. March 2004. <https://ghgprotocol.org/corporate-standard>.

WWF. *Overcoming Barriers for Corporate Scope 3 Action in the Supply Chain*. November 2019. <https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Overcoming-barriers-for-corporate-scope-3.pdf>.

Yale University. *Internal Carbon Pricing: Policy Framework and Case Studies*. <https://cbey.yale.edu/sites/default/files/2019-09/Internal%20Carbon%20Pricing%20Report%20Feb%202019.pdf>.

A.
Overview and Background

B.
Scope and Approach

C.
Climate-Related Metrics

D.
Climate-Related Targets

E.
Transition Plans

F.
Financial Impacts

Appendices

For more information, please visit [fsb-tcfd.org](https://www.fsb-tcfd.org)

Nothing in this document constitutes an offer or a solicitation of an offer to buy or sell a security or financial instrument or investment advice or recommendation of a security or financial instrument. The Task Force on Climate-related Financial Disclosures believes the information herein was obtained from reliable sources but does not guarantee its accuracy. Copyright 2021 The Task Force on Climate-related Financial Disclosures.