

D. Supplemental Guidance for the Financial Sector

A key element of the FSB’s proposal for the Task Force was the development of climate-related disclosures that “would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks.”³⁶ The FSB’s proposal also noted that disclosures by the financial sector would:

- “foster an early assessment of [climate-related] risks” and “facilitate market discipline” and
- “provide a source of data that can be analyzed at a systemic level, to facilitate authorities’ assessments of the materiality of any risks posed by climate change to the financial sector, and the channels through which this is most likely to be transmitted.”

The Task Force organized the financial sector into four major industries, largely based on activities performed, as follows: banks (lending), insurance companies (underwriting), asset managers (asset management), and asset owners, which include public- and private-sector pension plans, endowments, and foundations (investing). Given the important role of the financial sector as preparers of climate-related financial disclosures described in the FSB’s proposal, the Task Force identified certain areas where supplemental guidance was warranted, as shown in Figure 7. This supplemental guidance is intended to provide additional context for the financial sector when preparing disclosures consistent with the Task Force’s recommendations.

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Figure 7

Supplemental Guidance for the Financial Sector

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

³⁶ FSB, “Proposal for a Disclosure Task Force on Climate-Related Risks,” November 9, 2015.

1. Banks

Banks are exposed to climate-related risks and opportunities through their lending and other financial intermediary activities as well as through their own operations. As financial intermediaries, banks may assume exposure to material climate-related risks through their borrowers, customers, or counterparties. Banks that provide loans or trade the securities of companies with direct exposure to climate-related risks (e.g., fossil fuel producers, intensive fossil fuel consumers, real property owners, or agricultural/food companies) may accumulate climate-related risks via their credit and equity holdings. In particular, asset-specific credit or equity exposure to large fossil fuel producers or users could present risks that merit disclosure or discussion in a bank's financial filings. In addition, as the markets for lower-carbon and energy-efficient alternatives grow, banks may assume material exposures in their lending and investment businesses. Banks could also become subject to litigation related to their financing activities or via parties seeking damages or other legal recourse. Investors, lenders, insurance underwriters, and other stakeholders need to be able to distinguish among banks' exposures and risk profiles so that they can make informed financial decisions.

Governance

Disclose the organization's governance around climate-related risks and opportunities.

Recommended Disclosure a)
Describe the board's oversight of climate-related risks and opportunities.

Guidance for All Sectors

In describing the board's oversight of climate-related issues, organizations should consider including a discussion of the following:

- processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues;
- whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and
- how the board monitors and oversees progress against goals and targets for addressing climate-related issues.

Recommended Disclosure b)
Describe management's role in assessing and managing climate-related risks and opportunities.

Guidance for All Sectors

In describing management's role related to the assessment and management of climate-related issues, organizations should consider including the following information:

- whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues;
- a description of the associated organizational structure(s);
- processes by which management is informed about climate-related issues; and
- how management (through specific positions and/or management committees) monitors climate-related issues.

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Strategy

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

Recommended Disclosure a)
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Guidance for All Sectors

Organizations should provide the following information:

- a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms;
- a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization; and
- a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.

Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to [Tables A1.1](#) and [A1.2](#) (pp. 75–76).

Supplemental Guidance for Banks

Banks should describe significant concentrations of credit exposure to carbon-related assets.³⁷ Additionally, banks should consider disclosing their climate-related risks (transition and physical) in their lending and other financial intermediary business activities.

Recommended Disclosure b)
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Guidance for All Sectors

Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.

Organizations should consider including the impact on their businesses, strategy, and financial planning in the following areas:

- Products and services
- Supply chain and/or value chain
- Adaptation and mitigation activities
- Investment in research and development
- Operations (including types of operations and location of facilities)
- Acquisitions or divestments
- Access to capital

Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time.

Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities).³⁸

If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

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³⁷ Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages banks to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit exposure to carbon-related assets under this framework, the Task Force suggests banks define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 report (see [Table 4](#), p. 56). There may be industries or sub-industries that are appropriate to exclude, such as water utilities and independent power and renewable electricity producer industries. Banks should describe which industries they include.

³⁸ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

Strategy

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

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, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.³⁹

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

Guidance for All Sectors

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.⁴⁰

Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities;
- how their strategies might change to address such potential risks and opportunities;
- the potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities);⁴¹ and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to Section D in the [Task Force's report](#) for information on applying scenarios to forward-looking analysis.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure a)
Describe the organization's processes for identifying and assessing climate-related risks.

Guidance for All Sectors

Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.

Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered.

Organizations should also consider disclosing the following:

- processes for assessing the potential size and scope of identified climate-related risks and
- definitions of risk terminology used or references to existing risk classification frameworks used.

Supplemental Guidance for Banks

Banks should consider characterizing their climate-related risks in the context of traditional banking industry risk categories such as credit risk, market risk, liquidity risk, and operational risk.

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³⁹ Organizations may agree to meet investor expectations regarding GHG emissions reductions for various reasons, including concerns about access to or the cost of capital if they fail to do so.

⁴⁰ In interpreting the phrase "2°C or lower," organizations should consider aligning their scenario analysis with Article Two of the 2015 [Paris Agreement](#) which 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."

⁴¹ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

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Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

	Banks should also consider describing any risk classification frameworks used (e.g., the Enhanced Disclosure Task Force's framework for defining "Top and Emerging Risks"). ⁴²
Recommended Disclosure b) Describe the organization's processes for managing climate-related risks.	Guidance for All Sectors Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations. In describing their processes for managing climate-related risks, organizations should address the risks included in Tables A1.1 and A1.2 (pp. 75–76), as appropriate.
Recommended Disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Guidance for All Sectors Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

Metrics and Targets

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

Recommended Disclosure a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Guidance for All Sectors Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in Tables A1.1 and A1.2 (pp. 75–76), as well as metrics consistent with the cross-industry, climate-related metric categories described in Table A2.1 (p. 79). ⁴³ Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies. Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy. Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in Table A2.1 (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.
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⁴² The Enhanced Disclosure Task Force was established by the FSB in to make recommendations on financial risk disclosures for banks. It defined a top risk as "a current, emerged risk which has, across a risk category, business area or geographical area, the potential to have a material impact on the financial results, reputation or sustainability or the business and which may crystallise within a short, perhaps one year, time horizon." An emerging risk was defined as "one which has large uncertain outcomes which may become certain in the longer term (perhaps beyond one year) and which could have a material effect on the business strategy if it were to occur."

⁴³ Financial organizations may find it more difficult to quantify exposure to climate-related risks because of challenges related to portfolio aggregation and data availability. The Task Force suggests financial organizations provide qualitative and quantitative information, where data and methodologies allow.

Metrics and Targets

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

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Banks should provide the metrics used to assess the impact of (transition and physical) climate-related risks on their lending and other financial intermediary business activities in the short, medium, and long term. Metrics provided may relate to credit exposure, equity and debt holdings, or trading positions, broken down by:

- Industry⁴⁴
- Geography
- Credit quality (e.g., investment grade or non-investment grade, internal rating system)
- Average tenor

Banks should also provide the amount and percentage of carbon-related assets relative to total assets as well as the amount of lending and other financing connected with climate-related opportunities.⁴⁵

Banks should describe the extent to which their lending and other financial intermediary business activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.⁴⁶

Banks should also indicate which financial intermediary business activities (e.g., loans to specific sectors or industries) are included.

Recommended Disclosure b)

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Guidance for All Sectors

Organizations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.⁴⁷ All organizations should consider disclosing Scope 3 GHG emissions.^{48, 49}

GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.⁵⁰ As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁵¹

GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.

Supplemental Guidance for Banks

Banks should disclose GHG emissions for their lending and other financial intermediary business activities where data and methodologies allow. These emissions should be calculated in line with the *Global GHG Accounting and Reporting Standard for the Financial Industry* developed by the Partnership for Carbon Accounting Financials (PCAF Standard) or a comparable methodology (See [Table 2](#), p. 50).⁵²

⁴⁴ Industry should be based on the Global Industry Classification Standard or national classification systems aligned with financial filing requirements.

⁴⁵ Recognizing that the term “carbon-related assets” is not well defined, the Task Force encourages banks to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit exposure to carbon-related assets under this framework, the Task Force suggests banks define carbon-related assets as those assets tied to four non-financial groups identified by the Task Force in its 2017 report (see [Table 4](#), p. 56). There may be industries or sub-industries that are appropriate to exclude, such as water utilities and independent power and renewable electricity producer industries. Banks should describe which industries they include.

⁴⁶ This could include forward-looking metrics, GHG emissions targets and progress against them, reducing emissions in their operations and value chains, and working with customers to support their transition to a low-carbon economy. The Task Force acknowledges that there are challenges to implementing portfolio alignment methodologies, including the resources involved, and encourages organizations to disclose qualitative and quantitative information given existing data and methodologies. The Portfolio Alignment Team’s, *Measuring Portfolio Alignment*, October 2021 outlines potential approaches and associated design decisions for portfolio alignment tools.

⁴⁷ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.

⁴⁸ The Task Force strongly encourages all organizations to disclose Scope 3 GHG emissions. While the Task Force recognizes the data and methodological challenges associated with calculating Scope 3 GHG emissions, it believes such emissions are an important metric reflecting

Metrics and Targets

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

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Guidance for All Sectors

Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., consistent with the cross-industry, climate-related metric categories in [Table A2.1](#) (p. 79), where relevant, and in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a low-carbon economy.

In describing their targets, organizations should consider including the following:

- whether the target is absolute or intensity based;
- time frames over which the target applies;
- base year from which progress is measured; and
- key performance indicators used to assess progress against targets.

Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available.

Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.

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an organization's exposure to climate-related risks and opportunities. For guidance on reporting Scope 3 GHG emissions, see the GHG Protocol's *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

⁴⁹ When considering whether to disclose Scope 3 GHG emissions, organizations should consider whether such emissions are a significant portion of their total GHG emissions. For example, see discussion of 40% threshold in the Science Based Targets initiative's (SBTi's) paper *SBTi Criteria and Recommendations*, Version 4.2, April 2021, Section V, p. 10.

⁵⁰ While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.

⁵¹ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.

⁵² The Task Force recognizes 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. The PCAF notes "guidance on such financial products will be considered and published in later editions of the Standard" (PCAF Standard, p. 44). The Task Force encourages banks to disclose GHG emissions for additional financial products, where data are available or can be reasonably estimated, as methodologies are published.

2. Insurance Companies⁵³

For insurance companies, climate-related risks and opportunities constitute a key topic affecting the industry's core business (e.g., weather-related risk transfer business). The scientific consensus is that a continued rise in average global temperatures will have a significant effect on weather-related natural catastrophes and will account for an increasingly large share of natural catastrophe losses.⁵⁴

Users of climate-related financial disclosures are specifically interested in how insurance companies are evaluating and managing climate-related risks and opportunities in their underwriting and investment activities. Such disclosure will support users in understanding how insurance companies are incorporating climate-related risks into their strategy, risk management, underwriting processes, and investment decisions. This guidance applies to the liability (underwriting) side of insurance activities. For insurance companies' investment activities, refer to the supplemental guidance for asset owners.

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Governance

Disclose the organization's governance around climate-related risks and opportunities.

Recommended Disclosure a)

Describe the board's oversight of climate-related risks and opportunities.

Guidance for All Sectors

In describing the board's oversight of climate-related issues, organizations should consider including a discussion of the following:

- processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues;
- whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and
- how the board monitors and oversees progress against goals and targets for addressing climate-related issues.

Recommended Disclosure b)

Describe management's role in assessing and managing climate-related risks and opportunities.

Guidance for All Sectors

In describing management's role related to the assessment and management of climate-related issues, organizations should consider including the following information:

- whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues;
- a description of the associated organizational structure(s);
- processes by which management is informed about climate-related issues; and
- how management (through specific positions and/or management committees) monitors climate-related issues.

⁵³ Insurance companies include both insurers and re-insurers.

⁵⁴ Intergovernmental Panel on Climate Change, *Fifth Assessment Report (AR5)*, Cambridge University Press, 2014.

Strategy

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

Recommended Disclosure a)

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Guidance for All Sectors

Organizations should provide the following information:

- a description of what they consider to be the relevant short-, medium-, and long-term horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms;
- a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization; and
- a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.

Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to [Tables A1.1](#) and [A1.2](#) (pp. 75–76).

Recommended Disclosure b)

Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Guidance for All Sectors

Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.

Organizations should consider including the impact on their businesses, strategy, and financial planning in the following areas:

- Products and services
- Supply chain and/or value chain
- Adaptation and mitigation activities
- Investment in research and development
- Operations (including types of operations and location of facilities)
- Acquisitions or divestments
- Access to capital

Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time.

Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities).⁵⁵

If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

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, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.⁵⁶

Supplemental Guidance for Insurance Companies

Insurance companies should describe the potential impacts of climate-related risks and opportunities as well as provide supporting quantitative information where available, on their core businesses, products, and services, including:

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⁵⁵ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

⁵⁶ Organizations may agree to meet investor expectations regarding GHG emissions reductions for various reasons, including concerns about access to or the cost of capital if they fail to do so.

Strategy

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

- information at the business division, sector, or geography levels;
- how the potential impacts influence client or broker selection; and
- whether specific climate-related products or competencies are under development, such as insurance of green infrastructure, specialty climate-related risk advisory services, and climate-related client engagement.

Recommended Disclosure c)

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

Guidance for All Sectors

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.⁵⁷

Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities;
- how their strategies might change to address such potential risks and opportunities;
- the potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities);⁵⁸ and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to Section D in the [Task Force's report](#) for information on applying scenarios to forward-looking analysis.

Supplemental Guidance for Insurance Companies

Insurance companies that perform climate-related scenario analysis on their underwriting activities should provide the following information:

- description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, and analytical choices. In addition to a 2°C scenario, insurance companies with substantial exposure to weather-related perils should consider using a greater than 2°C scenario to account for physical effects of climate change and
- time frames used for the climate-related scenarios, including short-, medium-, and long-term milestones.

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Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure a)

Describe the organization's processes for identifying and assessing climate-related risks.

Guidance for All Sectors

Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.

Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered.

⁵⁷ In interpreting the phrase "2°C or lower," organizations should consider aligning their scenario analysis with Article Two of the 2015 [Paris Agreement](#) which 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."

⁵⁸ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

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Organizations should also consider disclosing the following:

- processes for assessing the potential size and scope of identified climate-related risks and
- definitions of risk terminology used or references to existing risk classification frameworks used.

Supplemental Guidance for Insurance Companies

Insurance companies should describe the processes for identifying and assessing climate-related risks on re-/insurance portfolios by geography, business division, or product segments, including the following risks:

- physical risks from changing frequencies and intensities of weather-related perils;
- transition risks resulting from a reduction in insurable interest due to a decline in value, changing energy costs, or implementation of carbon regulation; and
- liability risks that could intensify due to a possible increase in litigation.

Recommended Disclosure b)

Describe the organization's processes for managing climate-related risks.

Guidance for All Sectors

Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations.

In describing their processes for managing climate-related risks, organizations should address the risks included in [Tables A1.1](#) and [A1.2](#) (pp. 75–76), as appropriate.

Supplemental Guidance for Insurance Companies

Insurance companies should describe key tools or instruments, such as risk models, used to manage climate-related risks in relation to product development and pricing.

Insurance companies should also describe the range of climate-related events considered and how the risks generated by the rising propensity and severity of such events are managed.

Recommended Disclosure c)

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Guidance for All Sectors

Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

Metrics and Targets

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

Recommended Disclosure a)

Disclose the metrics used by the organization to assess climate-

Guidance for All Sectors

Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in [Tables A1.1](#) and [A1.2](#) (pp. 75–76), as well as metrics consistent with the cross-industry, climate-related metric categories described in [Table A2.1](#) (p. 79).⁵⁹ Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management

⁵⁹ Financial organizations may find it more difficult to quantify exposure to climate-related risks because of challenges related to portfolio aggregation and data availability. The Task Force suggests financial organizations provide qualitative and quantitative information, where data and methodologies allow.

Metrics and Targets

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

<p>related risks and opportunities in line with its strategy and risk management process.</p>	<p>where relevant and applicable.</p> <p>Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies.</p> <p>Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy.</p> <p>Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in Table A2.1 (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.</p> <hr/> <p>Supplemental Guidance for Insurance Companies</p> <p>Insurance companies should provide aggregated risk exposure to weather-related catastrophes of their property business (i.e., annual aggregated expected losses from weather-related catastrophes) by relevant jurisdiction.</p> <p>Insurance companies should describe the extent to which their insurance underwriting activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.⁶⁰ Insurance companies should also indicate which insurance underwriting activities (e.g., lines of business) are included.</p>
<p>Recommended Disclosure b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</p>	<p>Guidance for All Sectors</p> <p>Organizations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.⁶¹ All organizations should consider disclosing Scope 3 GHG emissions.^{62, 63}</p> <p>GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.⁶⁴ As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁶⁵</p> <p>GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.</p>

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⁶⁰ This could include forward-looking metrics, GHG emissions targets and progress against them, reducing emissions in their operations and value chains, or working with clients and brokers to support their transition to a low-carbon economy. The Task Force acknowledges that there are challenges to implementing portfolio alignment methodologies, including the resources involved, and encourages organizations to disclose qualitative and quantitative information given existing data and methodologies. The Portfolio Alignment Team's, [Measuring Portfolio Alignment](#), October 2021 outlines potential approaches and associated design decisions for portfolio alignment tools.

⁶¹ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.

⁶² The Task Force strongly encourages all organizations to disclose Scope 3 GHG emissions. While the Task Force recognizes the data and methodological challenges associated with calculating Scope 3 GHG emissions, it believes such emissions are an important metric reflecting an organization's exposure to climate-related risks and opportunities. For guidance on reporting Scope 3 GHG emissions, see the GHG Protocol's [The Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#).

⁶³ When considering whether to disclose Scope 3 GHG emissions, organizations should consider whether such emissions are a significant portion of their total GHG emissions. For example, see discussion of 40% threshold in the Science Based Targets initiative's (SBTi's) paper [SBTi Criteria and Recommendations](#), Version 4.2, April 2021, Section V, p. 10.

⁶⁴ While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.

⁶⁵ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.

Metrics and Targets

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

Supplemental Guidance for Insurance Companies

Insurance companies should disclose weighted average carbon intensity or GHG emissions associated with commercial property and specialty lines of business where data and methodologies allow.⁶⁶

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Guidance for All Sectors

Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., consistent with the cross-industry, climate-related metric categories in [Table A2.1](#) (p. 79), where relevant, and in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a low-carbon economy.

In describing their targets, organizations should consider including the following:

- whether the target is absolute or intensity based;
- time frames over which the target applies;
- base year from which progress is measured; and
- key performance indicators used to assess progress against targets.

Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available.

Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.

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⁶⁶ The CRO Forum's 2020 [Carbon Footprinting Methodology for Underwriting Portfolios](#) provides a methodology for adapting WACI for insurance underwriting activities (See [Table 3](#) (p. 52) for a description of the methodology). The Partnership for Carbon Accounting Financials (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. Insurance companies should follow these or other comparable industry guidance as they become available.

3. Asset Owners

Asset owners are a diverse group that include public- and private-sector pension plans, re-/insurance companies, endowments, and foundations and invest assets on their own behalf or on behalf of their beneficiaries. Asset owners invest according to a mandate or investment strategy set out by their oversight body or their beneficiaries. Asset owners have various investment horizons that influence their risk tolerance and investment strategies. Many asset owners have broadly diversified investment portfolios across investment strategies, asset classes, and regions and portfolios with thousands of underlying individual company and government exposures. Asset owners may hire asset managers to invest on their behalf.⁶⁷

Whether asset owners invest directly or through asset managers, asset owners bear the potential transition and physical risks to which their investments are exposed. Similarly, asset owners can benefit from the potential returns on the investment opportunities associated with climate change.

Asset owners sit at the top of the investment chain and, therefore, have an important role to play in influencing the organizations in which they invest to provide better climate-related financial disclosures. Disclosure of climate-related risks and opportunities by asset owners—to the extent possible given existing data and methodology constraints—allows beneficiaries and other audiences to assess the asset owner’s investment considerations and approach to climate change. This may include an assessment of the asset owner’s integration of appropriate climate-related financial information into its investment activities in various ways, for example, in setting investment strategy, making new investment decisions, and managing its existing portfolio. By encouraging climate-related financial disclosures by asset owners, beneficiaries and other stakeholders will be in a position to better understand exposures to climate-related risks and opportunities. Further, climate-related financial disclosures by asset owners may encourage better disclosures across the investment chain—from asset owners to asset managers to underlying companies—thus enabling all organizations and individuals to make better-informed investment decisions.

Asset owners have contributed to the success of the TCFD in many ways, including by voluntarily publishing their own “TCFD reports.” In these reports, asset owners have highlighted GHG emissions data from their respective portfolios and how their governance structures have developed to manage climate-related risk. Governance structures have developed to collect and analyze GHG emissions data as a proxy for climate-related risk from investee companies, either directly or via third party asset managers and data analytics specialists. The Task Force recognizes asset owners often issue reports, including ones containing climate-related information, directly to their beneficiaries or members rather than making them available publicly as would generally be the case with public companies. As a result, some of the cross-industry, climate-related metrics described in Appendix 2 may be less relevant for asset owners than for other organizations, particularly where flexibility is needed on the specific metrics and methodologies used.⁶⁸ Nevertheless, the Task Force believes the cross-industry, climate-related metrics have some applicability to asset owners because, by asking for this standardized information, asset owners encourage all organizations to publish TCFD-aligned information.

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⁶⁷ In this role, asset managers also act as fiduciaries. Asset managers invest within the guidelines specified by the asset owner for a given mandate set out in the investment management agreement or the product specification.

⁶⁸ The Task Force also understands asset owners may need several years to implement relevant cross-industry, climate-related metrics, particularly where assets are held through third party mandates such as pooled funds. The data and methodologies for some of these metrics, such as the impact of climate change on investment income or asset valuations, are very much in the early stages of development; and it may take time before methodologies have been developed and can be applied in practice. The Task Force also recognizes the methodological challenges of calculating GHG emissions associated with certain asset classes (e.g., sovereign bonds) and accepts research is ongoing. In determining whether a particular category of metric is relevant, asset owners should consider whether the information is used as part of the management of climate-related risks or investment decision-making processes.

Governance

Disclose the organization's governance around climate-related risks and opportunities.

Recommended Disclosure a)

Describe the board's oversight of climate-related risks and opportunities.

Guidance for All Sectors

In describing the board's oversight of climate-related issues, organizations should consider including a discussion of the following:

- processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues;
- whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and
- how the board monitors and oversees progress against goals and targets for addressing climate-related issues.

Recommended Disclosure b)

Describe management's role in assessing and managing climate-related risks and opportunities.

Guidance for All Sectors

In describing management's role related to the assessment and management of climate-related issues, organizations should consider including the following information:

- whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues;
- a description of the associated organizational structure(s);
- processes by which management is informed about climate-related issues; and
- how management (through specific positions and/or management committees) monitors climate-related issues.

Strategy

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

Recommended Disclosure a)

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Guidance for All Sectors

Organizations should provide the following information:

- a description of what they consider to be the relevant short-, medium-, and long-term horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms;
- a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization; and
- a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.

Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to [Tables A1.1](#) and [A1.2](#) (pp. 75–76).

Recommended Disclosure b)

Describe the impact of climate-related risks and opportunities on the organization's businesses,

Guidance for All Sectors

Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.

Organizations should consider including the impact on their businesses, strategy, and financial planning in the following areas:

- Products and services
- Supply chain and/or value chain
- Adaptation and mitigation activities

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Strategy

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

strategy, and financial planning.

- Investment in research and development
- Operations (including types of operations and location of facilities)
- Acquisitions or divestments
- Access to capital

Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time.

Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities).⁶⁹

If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

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, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.⁷⁰

Supplemental Guidance for Asset Owners

Asset owners should describe how climate-related risks and opportunities are factored into relevant investment strategies. This could be described from the perspective of the total fund or investment strategy or individual investment strategies for various asset classes.

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

Guidance for All Sectors

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.⁷¹

Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities;
- how their strategies might change to address such potential risks and opportunities;
- the potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities);⁷² and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to Section D in the [Task Force's report](#) for information on applying scenarios to forward-looking analysis.

Supplemental Guidance for Asset Owners

Asset owners that perform scenario analysis should consider providing a discussion of how climate-related scenarios are used, such as to inform investments in specific assets.

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⁶⁹ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

⁷⁰ Organizations may agree to meet investor expectations regarding GHG emissions reductions for various reasons, including concerns about access to or the cost of capital if they fail to do so.

⁷¹ In interpreting the phrase "2°C or lower," organizations should consider aligning their scenario analysis with Article Two of the 2015 [Paris Agreement](#) which 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."

⁷² These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended

Disclosure a)

Describe the organization's processes for identifying and assessing climate-related risks.

Guidance for All Sectors

Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.

Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered.

Organizations should also consider disclosing the following:

- processes for assessing the potential size and scope of identified climate-related risks and
- definitions of risk terminology used or references to existing risk classification frameworks used.

Supplemental Guidance for Asset Owners

Asset owners should describe, where appropriate, engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks to improve data availability and asset owners' ability to assess climate-related risks.

Recommended

Disclosure b)

Describe the organization's processes for managing climate-related risks.

Guidance for All Sectors

Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations.

In describing their processes for managing climate-related risks, organizations should address the risks included in [Tables A.1](#) and [A.2](#) (pp. 75–76), as appropriate.

Supplemental Guidance for Asset Owners

Asset owners should describe how they consider the positioning of their total portfolio with respect to the transition to a low-carbon energy supply, production, and use. This could include explaining how asset owners actively manage their portfolios' positioning in relation to this transition.

Recommended

Disclosure c)

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Guidance for All Sectors

Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

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Metrics and Targets

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

Recommended Disclosure a)

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Guidance for All Sectors

Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in [Tables A1.1](#) and [A1.2](#) (pp. 75–76), as well as metrics consistent with the cross-industry, climate-related metric categories described in [Table A2.1](#) (p. 79).⁷³ Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable.

Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies.

Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy.

Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in [Table A2.1](#) (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.

Supplemental Guidance for Asset Owners

Asset owners should describe metrics used to assess climate-related risks and opportunities in each fund or investment strategy. Where relevant, asset owners should also describe how these metrics have changed over time.

Where appropriate, asset owners should provide metrics considered in investment decisions and monitoring.

Asset owners should describe the extent to which assets they own and their funds and investment strategies, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.^{74, 75} Asset owners should also indicate which asset classes are included.

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⁷³ Financial organizations may find it more difficult to quantify exposure to climate-related risks because of challenges related to portfolio aggregation and data availability. The Task Force suggests financial organizations provide qualitative and quantitative information, where data and methodologies allow.

⁷⁴ This could include forward-looking metrics, GHG emissions targets and progress against them, reducing emissions in their operations and value chains, oversight of asset managers, and engagement with investee companies on their transition to a low-carbon economy. The Task Force acknowledges that there are challenges to implementing portfolio alignment methodologies, including the resources involved, and encourages organizations to disclose qualitative and quantitative information given existing data and methodologies. The Portfolio Alignment Team's, [Measuring Portfolio Alignment](#), October 2021 outlines potential approaches and associated design decisions for portfolio alignment tools.

⁷⁵ While the Task Force's supplemental guidance for asset owners addresses considerations when reporting to beneficiaries, the Task Force believes an asset owners' disclosure of the extent to which their assets are aligned with a well below 2°C scenario may also be of interest to a wider range of stakeholders. As such, the Task Force encourages asset owners to disclose this information publicly, where appropriate.

Metrics and Targets

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

Recommended Disclosure b)

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Guidance for All Sectors

Organizations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.⁷⁶ All organizations should consider disclosing Scope 3 GHG emissions.^{77, 78}

GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.⁷⁹ As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁸⁰

GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.

Supplemental Guidance for Asset Owners

Asset owners should disclose GHG emissions for assets they own and the weighted average carbon intensity (WACI) for each fund or investment strategy, where data and methodologies allow. These emissions should be calculated in line with the *Global GHG Accounting and Reporting Standard* for the Financial Industry developed by the Partnership for Carbon Accounting Financials (PCAF Standard) or a comparable methodology (See [Table 2](#), p. 50).⁸¹

In addition to WACI, asset owners should consider providing other carbon footprinting metrics they believe are useful for decision-making. See [Table 3](#) (p. 52) for additional common carbon footprinting and exposure metrics.⁸²

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Guidance for All Sectors

Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., consistent with the cross-industry, climate-related metric categories in [Table A2.1](#) (p. 79), where relevant, and in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a low-carbon economy.

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⁷⁶ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.

⁷⁷ The Task Force strongly encourages all organizations to disclose Scope 3 GHG emissions. While the Task Force recognizes the data and methodological challenges associated with calculating Scope 3 GHG emissions, it believes such emissions are an important metric reflecting an organization's exposure to climate-related risks and opportunities. For guidance on reporting Scope 3 GHG emissions, see the GHG Protocol's *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

⁷⁸ When considering whether to disclose Scope 3 GHG emissions, organizations should consider whether such emissions are a significant portion of their total GHG emissions. For example, see discussion of 40% threshold in the Science Based Targets initiative's (SBTi's) paper *SBTi Criteria and Recommendations*, Version 4.2, April 2021, Section V, p. 10.

⁷⁹ While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.

⁸⁰ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.

⁸¹ The Task Force recognizes 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. The PCAF notes "guidance on such financial products will be considered and published in later editions of the Standard" (*PCAF Standard*, p. 44). The Task Force encourages asset owners to disclose GHG emissions for additional financial products, where data are available or can be reasonably estimated, as methodologies are published.

⁸² The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. The Task Force recognizes that some asset owners may be able to report weighted average carbon intensity or GHG emissions for only a portion of their investments given data availability and methodological issues.

Metrics and Targets

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

In describing their targets, organizations should consider including the following:

- whether the target is absolute or intensity based;
- time frames over which the target applies;
- base year from which progress is measured; and
- key performance indicators used to assess progress against targets.

Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available.

Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.

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4. Asset Managers

Asset managers, also known as investment managers, are hired by clients to invest assets on their behalf. In this role, asset managers act as fiduciaries. Asset managers invest within the guidelines specified by their clients for a given mandate set out in an investment management agreement or product specification. Importantly, the investment results, whether positive or negative, belong to the client.⁸³

Asset managers’ clients, as owners of the underlying assets, bear the major portion of the potential transition and physical risks to which their investments are exposed. Similarly, asset managers’ clients will benefit from the potential returns on the investment opportunities associated with the transition to a low-carbon economy. The relevance of climate-related risks and opportunities to an asset manager and its asset owner clients will depend on a number of variables, including its investment styles and objectives, the asset classes in which it invests, the investment mandates, as well as other factors.

In the case where an asset manager is a public company, it has two distinct audiences for its climate-related financial disclosures. The first audience is its shareholders, who need to understand enterprise-level risks and opportunities and how these are managed. The second is its clients, for whom product-, investment strategy-, or client-specific disclosures are more relevant.

Asset managers’ clients rely on reporting from asset managers to understand how climate-related risks and opportunities are managed within each of their portfolios. The guidance provided below addresses considerations for asset managers when reporting to their clients.

Governance	
Disclose the organization’s governance around climate-related risks and opportunities.	
Recommended Disclosure a) Describe the board’s oversight of climate-related risks and opportunities.	Guidance for All Sectors In describing the board’s oversight of climate-related issues, organizations should consider including a discussion of the following: <ul style="list-style-type: none">– processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues;– whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization’s performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and– how the board monitors and oversees progress against goals and targets for addressing climate-related issues.
Recommended Disclosure b) Describe management’s role in assessing and managing climate-related risks and opportunities.	Guidance for All Sectors In describing management’s role related to the assessment and management of climate-related issues, organizations should consider including the following information: <ul style="list-style-type: none">– whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues;– a description of the associated organizational structure(s);– processes by which management is informed about climate-related issues, and– how management (through specific positions and/or management committees) monitors climate-related issues.

⁸³ Introductory language sourced from Blackrock, “BlackRock Worldwide Leader in Asset and Risk Management,” February 2019.

Strategy

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

Recommended Disclosure a)

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Guidance for All Sectors

Organizations should provide the following information:

- a description of what they consider to be the relevant short-, medium-, and long-term horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms;
- a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization; and
- a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.

Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to [Tables A1.1](#) and [A1.2](#) (pp. 75–76).

Recommended Disclosure b)

Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Guidance for All Sectors

Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.

Organizations should consider including the impact on their businesses, strategy, and financial planning in the following areas:

- Products and services
- Supply chain and/or value chain
- Adaptation and mitigation activities
- Investment in research and development
- Operations (including types of operations and location of facilities)
- Acquisitions or divestments
- Access to capital

Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time.

Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities).⁸⁴

If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

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, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.⁸⁵

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⁸⁴ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

⁸⁵ Organizations may agree to meet investor expectations regarding GHG emissions reductions for various reasons, including concerns about access to or the cost of capital if they fail to do so.

Strategy

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

Supplemental Guidance for Asset Managers

Asset managers should describe how climate-related risks and opportunities are factored into relevant products or investment strategies.

Asset managers should also describe how each product or investment strategy might be affected by the transition to a low-carbon economy.

Recommended Disclosure c)

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

Guidance for All Sectors

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.⁸⁶

Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities;
- how their strategies might change to address such potential risks and opportunities;
- the potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities);⁸⁷ and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to Section D in the [Task Force's report](#) for information on applying scenarios to forward-looking analysis.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure a)

Describe the organization's processes for identifying and assessing climate-related risks.

Guidance for All Sectors

Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.

Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered.

Organizations should also consider disclosing the following:

- processes for assessing the potential size and scope of identified climate-related risks and
- definitions of risk terminology used or references to existing risk classification frameworks used.

Supplemental Guidance for Asset Managers

Asset managers should describe, where appropriate, engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks in order to improve data availability and asset managers' ability to assess climate-related risks.

Asset managers should also describe how they identify and assess material climate-related risks for each product or investment strategy. This might include a description of the resources and tools used in the process.

⁸⁶ In interpreting the phrase "2°C or lower," organizations should consider aligning their scenario analysis with Article Two of the 2015 [Paris Agreement](#) which 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."

⁸⁷ These impacts may be described in qualitative, quantitative, or a combination of both qualitative and quantitative terms. The Task Force encourages organizations to include quantitative information, where data and methodologies allow.

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Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure b)

Describe the organization's processes for managing climate-related risks.

Guidance for All Sectors

Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations.

In describing their processes for managing climate-related risks, organizations should address the risks included in [Tables A1.1](#) and [A1.2](#) (pp. 75–76), as appropriate.

Supplemental Guidance for Asset Managers

Asset managers should describe how they manage material climate-related risks for each product or investment strategy.

Recommended Disclosure c)

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Guidance for All Sectors

Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

Metrics and Targets

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

Recommended Disclosure a)

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Guidance for All Sectors

Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in [Tables A1.1](#) and [A1.2](#) (pp. 75–76), as well as metrics consistent with the cross-industry, climate-related metric categories described in [Table A2.1](#) (p. 79).⁸⁸ Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable.

Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies.

Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy.

Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in [Table A2.1](#) (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.

Supplemental Guidance for Asset Managers

Asset managers should describe metrics used to assess climate-related risks and opportunities in each product or investment strategy. Where relevant, asset managers should also describe how these metrics have changed over time.

⁸⁸ Financial organizations may find it more difficult to quantify exposure to climate-related risks because of challenges related to portfolio aggregation and data availability. The Task Force suggests financial organizations provide qualitative and quantitative information, where data and methodologies allow.

Metrics and Targets

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

Where appropriate, asset managers should provide metrics considered in investment decisions and monitoring.

Asset managers should describe the extent to which their assets under management and products and investment strategies, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.^{89, 90} Asset managers should also indicate which asset classes are included.

Recommended Disclosure b)
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Guidance for All Sectors

Organizations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.⁹¹ All organizations should consider disclosing Scope 3 GHG emissions.^{92, 93}

GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.⁹⁴ As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁹⁵

GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.

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⁸⁹ This could include forward-looking metrics, GHG emissions targets and progress against them, reducing emissions in their operations and value chains, and engagement with investee companies on their transition to a low-carbon economy. The Task Force acknowledges that there are challenges to implementing portfolio alignment methodologies, including the resources involved, and encourages organizations to disclose qualitative and quantitative information given existing data and methodologies. The Portfolio Alignment Team's, Measuring Portfolio Alignment, October 2021 outlines potential approaches and associated design decisions for portfolio alignment tools.

⁹⁰ While the Task Force's supplemental guidance for asset managers addresses considerations when reporting to clients, the Task Force believes an asset managers' disclosure of the extent to which their assets under management are aligned with a well below 2°C scenario may also be of interest to a wider range of stakeholders. As such, the Task Force encourages asset managers to disclose this information publicly, where appropriate.

⁹¹ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.

⁹² The Task Force strongly encourages all organizations to disclose Scope 3 GHG emissions. While the Task Force recognizes the data and methodological challenges associated with calculating Scope 3 GHG emissions, it believes such emissions are an important metric reflecting an organization's exposure to climate-related risks and opportunities. For guidance on reporting Scope 3 GHG emissions, see the GHG Protocol's *The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

⁹³ When considering whether to disclose Scope 3 GHG emissions, organizations should consider whether such emissions are a significant portion of their total GHG emissions. For example, see discussion of 40% threshold in the Science Based Targets initiative's (SBTi's) paper *SBTi Criteria and Recommendations*, Version 4.2, April 2021, Section V, p. 10.

⁹⁴ While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.

⁹⁵ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.

Metrics and Targets

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

Supplemental Guidance for Asset Managers

Asset managers should disclose GHG emissions for their assets under management and the weighted average carbon intensity (WACI) for each product or investment strategy, where data and methodologies allow. These emissions should be calculated in line with the *Global GHG Accounting and Reporting Standard for the Financial Industry* developed by the Partnership for Carbon Accounting Financials (PCAF Standard) or a comparable methodology (See [Table 2](#), p. 50).⁹⁶

In addition to WACI, asset managers should consider providing other carbon footprinting metrics they believe are useful for decision-making. See [Table 3](#) (p. 52) for additional carbon footprinting and exposure metrics.⁹⁷

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Guidance for All Sectors

Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., consistent with the cross-industry, climate-related metric categories in [Table A2.1](#) (p. 79), where relevant, and in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a low-carbon economy.

In describing their targets, organizations should consider including the following:

- whether the target is absolute or intensity based;
- time frames over which the target applies;
- base year from which progress is measured; and
- key performance indicators used to assess progress against targets.

Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available.

Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.

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⁹⁶ The Task Force recognizes 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. The PCAF notes “guidance on such financial products will be considered and published in later editions of the Standard” (*PCAF Standard*, p. 44). The Task Force encourages asset managers to disclose GHG emissions for additional financial products, where data are available or can be reasonably estimated, as methodologies are published.

⁹⁷ The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. The Task Force recognizes that some asset managers may be able to report weighted average carbon intensity or GHG emissions for only a portion of the assets they manage given data availability and methodological issues.

5. Carbon Footprinting and Exposure Metrics

The tables below provide descriptions, formulas, and additional information for common carbon footprinting and exposure metrics. [Table 2](#) provides details on GHG emissions metrics for banks, asset owners, and asset managers. [Table 3](#) (p. 52) provides carbon footprinting metrics that organizations may find useful to report, including weighted average carbon intensity for both investing and insurance underwriting activities.

Table 2

GHG Emissions Metrics for Banks, Asset Owners, and Asset Managers

Asset Class	Description	Formula	Activities	
			Lending	Investing
Listed Equity	Equity that is traded on a stock exchange or another securities exchange and is on the balance sheet of the financial institution.	$\sum_c \left(\frac{\text{Outstanding amount}_c}{EVIC_c} \times \text{Company emissions}_c \right)$ <p>EVIC = enterprise value including cash⁹⁸</p> <p>Note: the value of outstanding listed equity is defined based on its market value (i.e., market price times number of shares). See page 49 of the PCAF Standard.</p>	--	✓
Listed Corporate Bonds	Listed corporate bonds that are traded on a market and are on the balance sheet of the financial institution.	<p>To private companies:</p> $\sum_c \left(\frac{\text{Outstanding amount}_c}{\text{Total equity} + \text{debt}_c} \times \text{Company emissions}_c \right)$ <p>c = borrower or investee company</p> <p>To listed companies:</p> $\sum_c \left(\frac{\text{Outstanding amount}_c}{EVIC_c} \times \text{Company emissions}_c \right)$ <p>EVIC = enterprise value including cash c = borrower or investee company</p> <p>Note: the value of outstanding corporate bonds is defined based on the book value of the debt that the borrower owes to the lender. See page 49 of the PCAF Standard.</p>	--	✓
Business Loans	All loans and lines of credit for general corporate purposes to businesses, nonprofits, and any other structure of organization that are not traded on a market and are on the balance of the financial institution.	<p>To listed companies:</p> $\sum_c \left(\frac{\text{Outstanding amount}_c}{EVIC_c} \times \text{Company emissions}_c \right)$ <p>To private companies:</p> $\sum_c \left(\frac{\text{Outstanding amount}_c}{\text{Total equity} + \text{debt}_c} \times \text{Company emissions}_c \right)$ <p>EVIC = enterprise value including cash c = borrower or investee company</p>	✓	--

⁹⁸ PCAF Standard aligns with the definition of EVIC as provided by the EU Technical Expert Group on Sustainable Finance's [Handbook on Climate Benchmarks and benchmarks' ESG disclosures](#), defined as: "The sum of the market capitalization of ordinary shares at fiscal year-end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values" ([PCAF Standard](#), p. 62).

Table 2

GHG Emissions Metrics for Banks, Asset Owners, and Asset Managers (continued)

Asset Class	Description	Formula	Activities	
			Lending	Investing
Unlisted Equity	All equity investments for general corporate purposes to businesses, nonprofits, and any other structure of organization that are not traded on a market and are on the balance sheet of the financial institution.	$\sum_c \left(\frac{\text{Outstanding amount}_c}{\text{Total equity} + \text{debt}_c} \times \text{Company emissions}_c \right)$ <p>c = borrower or investee company</p> <p>Note: the outstanding amount is the outstanding value of equity that the financial institution holds in the private company. It is calculated by multiplying the relative share of the financial institution in the respective investee by the total equity of the respective investee according to its balance sheet. See pp. 61-62 of the PCAF Standard.</p>	--	✓
Project Finance	All loans or equities to projects for specific purposes that are on the balance sheet of the financial institution.	$\sum_p \left(\frac{\text{Outstanding amount}_p}{\text{Total equity} + \text{debt}_p} \times \text{Project emissions}_p \right)$ <p>p = project</p>	✓	✓
Commercial Real Estate (CRE)	On-balance sheet loans and investments for the purchase and refinance of commercial real estate (CRE).	$\sum_b \left(\frac{\text{Outstanding amount}_b}{\text{Property value at origination}_b} \times \text{Energy consumption}_{b,e} \times \text{Emission factor}_e \right)$ <p>b = building e = energy source</p>	✓	✓
Mortgages	On-balance sheet loans for the purchase and refinance of residential property, including individual homes and multifamily homes with a small number of units.	$\sum_b \left(\frac{\text{Outstanding amount}_b}{\text{Property value at origination}_b} \times \text{Energy consumption}_{b,e} \times \text{Emission factor}_e \right)$ <p>b = building e = energy source</p>	✓	--
Motor Vehicle Loans	On-balance sheet loans and lines of credit to businesses and consumers that are used to finance one or several motor vehicles.	$\sum_{v,f} \left(\frac{\text{Outstanding amount}_v}{\text{Total value at origination}_v} \times \text{Distance traveled}_v \times \text{Efficiency}_{v,f} \times \text{Emission factor}_f \right)$ <p>v = vehicle or vehicle fleet f = fuel type</p>	✓	--

Note: PCAF continues to add asset classes. Financial organizations (referred to as financial institutions by PCAF) should refer to the [PCAF Standard](#) for the latest guidance on measuring GHG emissions.⁹⁹

⁹⁹ For further details on these metrics, see PCAF, *The Global GHG Accounting and Reporting Standard for the Financial Industry*, November 2020.

Table 3

Common Carbon Footprinting and Exposure Metrics

Metric	Supporting Information	
Weighted Average Carbon Intensity: Investments	<i>Description</i>	Portfolio's exposure to carbon-intensive companies, expressed in tons CO ₂ e/\$M revenue.
	<i>Formula</i>	$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i} \right)$
	<i>Methodology</i>	Scope 1 and Scope 2 GHG emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value), rather than the equity ownership approach (as described under methodology for Total Carbon Emissions). Gross values should be used.
	<i>Key Points + / -</i>	<ul style="list-style-type: none"> + Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. + The calculation of this metric is fairly simple and easy to communicate to investors. + Metric allows for portfolio decomposition and attribution analysis. - Metric is sensitive to outliers. - Using revenue (instead of physical or other metrics) to normalize the data tends to favor companies with higher pricing levels relative to their peers.
Weighted Average Carbon Intensity: Insurance Premiums ¹⁰⁰	<i>Description</i>	Portfolio of insurance transactions' exposure to carbon-intensive companies, expressed in tons CO ₂ e/\$M revenue.
	<i>Formula</i>	$\sum_n^i \left(\frac{\text{gross written premium of insurance transaction}}{\text{total GWP volume of insurance portfolio}} \times \frac{\text{insured's Scope 1 and Scope 2 GHG emissions}_i}{\text{insured's \$M revenue}_i} \right)$
	<i>Methodology</i>	The methodology measures the intensity of a portfolio of insurance transactions using carbon intensity information for each legal entity or company (commercial insurance) or individual insured (personal lines insurance) should be used. Where GHG emissions on a company level are not available, industry or country information can be used. Where gross written premium information is not available, information on capital required, capacity, or expected loss can be used.
	<i>Key Points + / -</i>	<ul style="list-style-type: none"> + Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. - Using revenue to normalize the data tends to favor companies with higher pricing levels relative to their peers.
Total Carbon Emissions	<i>Description</i>	The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO ₂ e.
	<i>Formula</i>	$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)$
	<i>Methodology</i>	Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach. Under this approach, if an investor owns 5 percent of a company's total market capitalization, then the investor owns 5 percent of the company as well as 5 percent of the company's GHG (or carbon) emissions. While this metric is generally used for public equities, it can be used for other asset classes by allocating GHG emissions across the total capital structure of the investee (debt and equity).

¹⁰⁰ Source: CRO Forum, "Carbon footprinting methodology for underwriting portfolios," May 1 2020.

Table 3

Common Carbon Footprinting and Exposure Metrics (continued)

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

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Table 3

Common Carbon Footprinting and Exposure Metrics (continued)

Metric	Supporting Information	
Exposure to Carbon-Related Assets	<i>Description</i>	The amount or percentage of carbon-related assets ¹⁰¹ in the portfolio, expressed in \$M or percentage of the current portfolio value.
	<i>Formula for Amount</i>	$\sum \$M \text{ current value of investments in carbon-related assets}$
	<i>Formula for Percentage</i>	$\frac{\sum \text{current value of investments in carbon-related assets}}{\text{current portfolio value}} \times 100$
	<i>Methodology</i>	This metric focuses on a portfolio's exposure to sectors and industries considered the most GHG emissions intensive. Gross values should be used.
	<i>Key Points + / -</i>	<ul style="list-style-type: none"> + Metric can be applied across asset classes and does not rely on underlying companies' Scope 1 and Scope 2 GHG emissions. – Metric does not provide information on sectors or industries other than those included in the definition of carbon-related assets (i.e., energy and utilities sectors under the Global Industry Classification Standard excluding water utilities and independent power and renewable electricity producer industries).

Note: The term "portfolio" used in the table above is defined as "fund or investment strategy" for asset owners, "product or investment strategy" for asset managers, and "lending and other financial intermediary business activities" for banks.

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¹⁰¹ Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages banks to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit exposure to carbon-related assets under this framework, the Task Force suggests banks define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 report (see [Table 4](#), p. 56). There may be industries or sub-industries that are appropriate to exclude, such as water utilities and independent power and renewable electricity producer industries. Banks should describe which industries they include.