

f. What should preparers do if they choose to omit a recommended disclosure?

If a recommended disclosure is not made, preparers should provide their rationale for omitting the disclosure.

g. What reporting period should preparers use?

Preparers should report information for the same period covered by their mainstream financial filings.

h. How should preparers define short, medium, and long term?

The Task Force is not specifying time frames for short, medium, and long term given that the timing of climate-related impacts on businesses will vary. Instead, the Task Force recommends preparers define time frames according to the life of their assets, the profile of the climate-related risks they face, and the sectors and geographies in which they operate.

i. What if certain disclosures are incompatible with national disclosure requirements?

Organizations need to make financial disclosures in accordance with their national disclosure requirements. If certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, organizations are encouraged to disclose those elements through other reports.

A
Introduction

B
Recommendations

C
Guidance for All Sectors

D
Supplemental Guidance
for the Financial Sector

E
Supplemental Guidance
for Non-Financial Groups

F
Fundamental Principles
for Effective Disclosure

Appendices

4. Assessing Financial Impacts of Climate-Related Risks and Opportunities

While climate change affects nearly all economic sectors, the level of exposure and the impact of climate-related risks differ by sector, industry, geography, and organization.⁵ Furthermore, the financial impacts of climate-related issues on organizations are not always clear or direct, and, for many organizations, identifying the issues, assessing potential impacts, and ensuring the material issues are reflected in financial filings may be challenging. Key reasons for this are likely because of (1) limited knowledge of climate-related issues within organizations, which may inhibit the identification of such risks; (2) the tendency to focus mainly on near-term risks without paying adequate attention to risks that may arise in the longer term; and (3) the difficulty in quantifying climate-related risks.⁶

Better disclosure of the financial impacts of climate-related risks and opportunities on an organization is a key goal of the Task Force's work. In order to make more informed financial decisions, investors, lenders, and insurance underwriters need to understand how climate-related issues are likely to affect an organization's future financial position as reflected in its income statement, cash flow statement, and balance sheet.

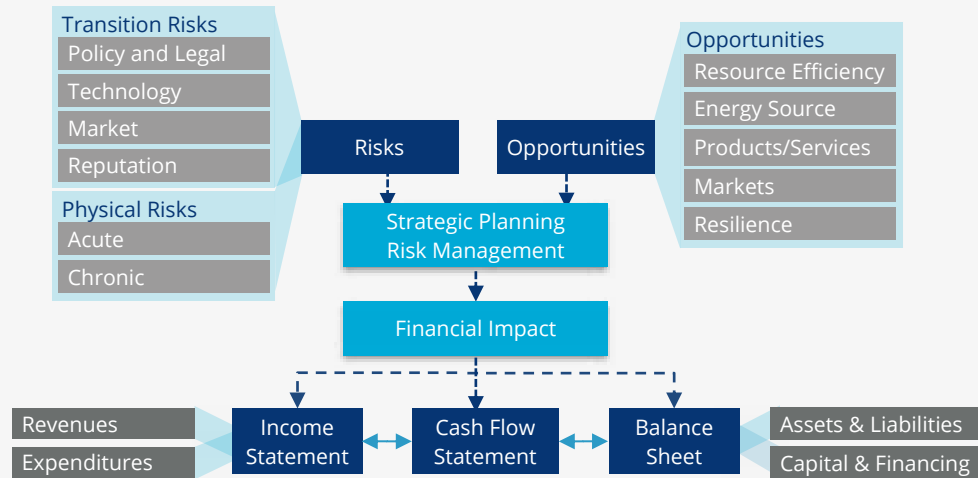
Fundamentally, the financial impacts of climate-related issues on an organization are driven by the specific climate-related risks and opportunities to which the organization is exposed and its strategic and risk management decisions on seizing those opportunities and managing those risks (i.e., through mitigation, transfer, acceptance, or control). Once an organization assesses its climate-related issues and determines its response to those issues, it can then consider actual and potential financial impacts on revenues, expenditures, assets and liabilities, and capital and financing. [Figure 3](#) (p. 5) outlines the main climate-related risks (transition and physical) and opportunities organizations should consider as part of their strategic planning or risk management to determine potential financial implications. In addition, [Appendix 1](#) provides tables with examples of (1) climate-related risks and their potential financial impacts and (2) climate-related opportunities and their potential financial impacts.

⁵ SASB research demonstrates that 72 out of 79 Sustainable Industry Classification System (SICS™) industries are significantly affected in some way by climate-related risk, as described in SASB's Climate Risk Technical Bulletin.

⁶ World Business Council for Sustainable Development, "Sustainability and enterprise risk management: The first step towards integration," January 18, 2017.

Figure 3

Climate-Related Risks, Opportunities, and Financial Impact



- A Introduction
- B Recommendations
- C Guidance for All Sectors
- D Supplemental Guidance for the Financial Sector
- E Supplemental Guidance for Non-Financial Groups
- F Fundamental Principles for Effective Disclosure
- Appendices

Climate-related issues can affect several important aspects of an organization’s financial position, both now and in the future. For example, climate-related issues may have implications for an organization’s businesses and capital expenditures. In turn, capital expenditures will determine the nature and amount of long-lived assets and the proportion of debt and equity to be funded on an organization’s balance sheet. Climate-related issues may also carry implications for future cash flows (operating, investing, and financing activities). An organization, therefore, should consider how climate-related issues affect its current financial position and may potentially affect its future financial positions in terms of four major categories of financial impact, as described in Figure 4.

Figure 4

Major Categories of Financial Impact

Income Statement	Balance Sheet
<p>Revenues. Transition and physical risks may affect demand for products and services. Organizations should consider the potential impact on revenues and identify potential opportunities for enhancing or developing new revenues. In particular, given the emergence and likely growth of carbon pricing as a mechanism to regulate emissions, it is important for affected industries to consider the potential impacts of such pricing on business revenues.</p> <p>Expenditures. An organization’s response to climate-related risks and opportunities may depend, in part, on the organization’s cost structure. Lower-cost suppliers may be more resilient to changes in cost resulting from climate-related issues and more flexible in their ability to address such issues. By providing an indication of their cost structure and flexibility to adapt, organizations can better inform investors about their investment potential.</p> <p>It is also helpful for investors to understand capital expenditure plans and the level of debt or equity needed to fund these plans. The resilience of such plans should be considered bearing in mind organizations’ flexibility to shift capital and the willingness of capital markets to fund organizations exposed to significant levels of climate-related risks. Transparency of these plans may provide greater access to capital markets or improved financing terms.</p>	<p>Assets and Liabilities. Supply and demand changes from changes in policies, technology, and market dynamics related to climate change could affect the valuation of organizations’ assets and liabilities. Use of long-lived assets and, where relevant, reserves may be affected by climate-related issues. It is important for organizations to provide an indication of the potential impact on their assets and liabilities, especially long-lived assets. This should focus on existing and committed future activities and decisions requiring new investment, restructuring, write-downs, or impairment.</p> <p>Capital and Financing. Climate-related risks and opportunities may change the profile of an organization’s debt and equity structure, either by increasing debt levels to compensate for reduced operating cash flows or for new capital expenditures or research and development (R&D). It may also affect the ability to raise new debt or refinance existing debt, or reduce the tenor of borrowing available to the organization. There could also be changes to capital and reserves from operating losses, asset write-downs, or the need to raise new equity to meet investment.</p>

To assist organizations in understanding which financial impacts are likely to be most relevant to them, [Figure 5](#) provides a high-level overview of four areas—revenues, expenditures, assets and liabilities, and capital and financing—where organizations in the financial sector and non-financial groups may be affected.⁷ Whether an individual organization is or may be affected financially by climate-related issues usually depends on:

- the organization’s exposure to, and anticipated effects of, specific climate-related risks and opportunities;
- the organization’s planned responses to manage (i.e., mitigate, transfer, accept, or control) its risks or seize opportunities; and
- the implications of the organization’s planned responses on its income statement, cash flow statement, and balance sheet.

Figure 5
Evidence of Financial Impact

Groups and Industries		Revenues	Expenditures	Assets and Liabilities	Capital and Financing
Financial	Banks	■		■	
	Insurers	■	■	■	
	Asset Owners	■		■	
	Asset Managers	■		■	
Energy	Oil and Gas	■	■	■	■
	Coal		■	■	■
	Electric Utilities	■	■		■
Transportation	Air Freight		■		■
	Passenger Air Transportation		■		■
	Maritime Transportation		■		■
	Rail Transportation		■		■
	Trucking Services		■		■
	Automobiles and Components	■	■		■
Materials and Buildings	Metals and Mining		■		■
	Chemicals	■	■		■
	Construction Materials	■	■		■
	Capital Goods	■	■		■
	Real Estate Management and Development	■	■	■	■
Ag. Food, and Forest	Beverages		■		■
	Agriculture	■	■	■	■
	Packaged Foods and Meats		■	■	■
	Paper and Forest Products	■	■	■	■

A Introduction

B Recommendations

C Guidance for All Sectors

D Supplemental Guidance for the Financial Sector

E Supplemental Guidance for Non-Financial Groups

F Fundamental Principles for Effective Disclosure

Appendices

⁷ [Figure 5](#) is largely, but not solely, based on select content from the Sustainability Accounting Standards Board (SASB) “Financial Impacts of Climate Risk” table in its Climate Risk Technical Bulletin. SASB also prepares detailed industry research briefs (see [Appendix 3](#)).

a. Exposure to Climate-Related Risks and Opportunities

Exposure, in this context, refers to an organization's vulnerability to negative impacts or capability of realizing positive impacts from the transition to a lower-carbon economy and/or the physical aspects of climate change. When considering its exposure to climate-related risks and opportunities, an organization should consider the exposure of its value chain as well.

The complexity and uncertainty associated with climate change make it difficult to identify the specific touchpoints and time frames in which climate change may affect an organization. As a starting point, an organization should assess its value chain over a reasonable time frame as it relates to the following:⁸

- climate-related risks including (1) transition risks such as policy constraints on emissions, imposition of carbon tax, water restrictions, land use restrictions or incentives, and market demand and supply shifts and (2) physical risks such as the disruption of operations or destruction of property and
- climate-related opportunities such as access to new markets and new technology (e.g., carbon capture and storage technology).

Importantly, an organization should assess its climate-related risks and opportunities within the context of its businesses, operations, and physical locations in order to determine potential financial implications. In making such an assessment, an organization should consider (1) current and anticipated policy constraints and incentives in relevant jurisdictions, technology changes and availability, and market changes and (2) whether an organization's physical locations or suppliers are particularly vulnerable to physical impacts from climate change. For example, an organization may have high emissions, but if anticipated policy in the organization's jurisdiction fails to constrain emissions in a binding manner, the organization may determine financial impacts are minimal over its planning horizon.

Table 1 (p. 8) shows six broad categories of metrics that may help an organization understand its vulnerability or resilience to various transition and physical risks. For example, organizations with high emissions in their operations and supply chains, high water use, unsustainable land use practices, or facilities in geographically "at-risk" areas, such as coastal zone locations, may be more vulnerable to transition and physical risks. Alternatively, organizations that are energy and water efficient, have low emissions, or use sustainable land practices may be less vulnerable to climate-related risks, depending on the policy, technological, and geographic constraints that they face.

b. Responses to Climate-Related Risks and Opportunities

After assessing its exposure to climate-related risks and opportunities, an organization needs to choose how to respond to the identified risks and opportunities, including the following:

- the risk management actions it plans to undertake (i.e., mitigate, transfer, accept, or control);
- capital expenditures (CapEx) on new technology or facilities that may be warranted; and
- R&D expenditures that may be necessary.

These are largely strategic and financial planning decisions around the operating and capital expenditures the organization plans to undertake in response to climate-related risks and opportunities. In some cases, these responses may be directly motivated by specific climate-related issues, and in other cases, climate-related issues may be an additional, but not exclusive, motivational factor around other business drivers. It is important for an organization to recognize that accepting

⁸ An important aspect for organizations to consider is the time horizon for assessing exposures. While the common perception is that climate-related risks are "long term," arising in 10, 20, or 30 years, this may not be the case. Policies, technology innovation, and markets are likely to adjust and shift in advance of many foreseeable climate trends. Likewise, more frequent and severe storms, floods, and droughts are occurring today. Organizations, therefore, should carefully consider the time horizon they use to evaluate their exposures and possibly assess them over a range of time horizons to capture potential exposures arising in the short, medium, and longer term.

A
Introduction

B
Recommendations

C
Guidance for All Sectors

D
Supplemental Guidance
for the Financial Sector

E
Supplemental Guidance
for Non-Financial Groups

F
Fundamental Principles
for Effective Disclosure

Appendices

climate-related risks (i.e., “no response”) may also carry potential financial implications, such as a loss in revenue, reduced asset valuations or write-offs, or increased costs.

Table 1

Categories of Climate-Related Metrics and Associated Risk Types

Category	Subcategory	Risk Type	Description of Metric
Greenhouse Gas (GHG) Emissions	Emission Level	Transition	Total emissions (by type of GHG, by source, by Scope)
	Emission Intensity	Transition	Emissions per output scaling factor (e.g., revenues, sales, units produced)
	Embedded Emissions	Transition	Emissions per unit of fossil fuel reserves
Energy/ Fuel	Energy Usage	Transition	Total energy consumption (megawatt hour [MWh] or gigajoules [GJ] per year)
	Energy Intensity	Transition	Total energy consumed per output scaling factor (e.g., revenues, sales, units produced, floor area)
	Energy Mix	Transition	Percent of energy by type of energy source (e.g., renewable, hydro, coal, oil, natural gas) (MWh or GJ)
Water	Water Usage	Physical	Total freshwater withdrawn (cubic meters)
	Water Intensity	Physical	Amount used per output scaling factor (e.g., revenues, sales, units produced) (cubic meters)
	Water Source	Physical	Amount withdrawn from areas of high baseline water stress (cubic meters) Amount treated and recycled (cubic meters)
Land Use	Land Cover	Physical	Percent of land by cover type (e.g., grassland, forest, cultivated, pasture, urban) Annual change in cover type
	Land Use Practices	Transition	Percent of land used for agriculture tillage, grazing practices, sustainability practices, or conservation practices
Location	Coastal Zone	Physical	Locations within a coastal zone
	Flood Zone	Physical	Locations within a designated flood zone
Risk Adaptation & Mitigation	R&D	—	Amount invested in developing low-carbon products, services and/or technology
	CapEx	—	Amount invested in deployment of low-carbon technology, energy efficiencies, etc. Amount invested in resiliency capabilities

A
Introduction

B
Recommendations

C
Guidance for All Sectors

D
Supplemental Guidance for the Financial Sector

E
Supplemental Guidance for Non-Financial Groups

F
Fundamental Principles for Effective Disclosure

Appendices

c. Effectiveness of Responses

Financial impacts associated with climate-related risks and opportunities depend on not only an organization’s level of exposure and planned responses, but also on how effective its responses are in realizing targeted opportunities and mitigating or otherwise managing risks. An organization, therefore, should monitor implementation of its responses against both internal targets and external factors to assess their effectiveness from a financial perspective (e.g., the impact on future revenues, expenditures, assets and liabilities, and capital and financing).

d. Linking It All Together

Determining the financial impacts of climate-related risks and opportunities generally involves an organization assessing (1) its exposures, (2) its planned responses, and (3) its response effectiveness. Analyses should focus on the following:

- the exposure and potential financial impact if no action is undertaken and

- the financial implications of mitigating risks and maximizing opportunities in the context of an organization's overall business strategy and environment.

Forward-looking analyses are especially important, but challenging. Efforts to mitigate and adapt to climate change are without historical precedent, and many aspects about the timing and magnitude of climate change in specific contexts are uncertain. For these reasons, the Task Force believes scenario analysis is an important tool for organizations to use in their strategic planning processes. Scenario analysis and other strategic planning tools can help organizations consider a broader range of assumptions, uncertainties, and potential future states when assessing financial implications of climate change.

A
Introduction

B
Recommendations

C
Guidance for All Sectors

D
Supplemental Guidance
for the Financial Sector

E
Supplemental Guidance
for Non-Financial Groups

F
Fundamental Principles
for Effective Disclosure

Appendices