

An aerial, top-down view of a city street intersection. The street is filled with cars, including several yellow taxis and white sedans. Buildings with many windows line both sides of the street. The overall scene is in a dark, muted color palette, with the text overlaid in white.

DRIVING BUSINESS VALUE THROUGH CLIMATE SCENARIO ANALYSIS

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climate risk & opportunity

Driving Business Value through Climate Scenario Analysis

Companies can prepare for future business disruptions and market shifts by undertaking scenario analysis on various climate outcomes, an action encouraged by investors looking for improved disclosure. At most corporations, the concept of climate-related scenario analysis needs to be championed internally in order to allocate the necessary resources. This primer is intended to aid the process by providing an overview of tangible outcomes and resulting benefits.

Public companies have begun to see investor requests to adopt the recommendations for voluntary climate-related financial disclosures issued by the Financial Stability Board (FSB's) Task Force on Climate-Related Financial Disclosure (TCFD) back in 2017. One of the key TCFD recommendations was that companies understand and disclose the resiliency of their individual, forward-looking strategies under various climate-related contexts, including an increase in global temperatures of up to 2°C.

Dozens of shareholder resolutions filed in 2019 mentioned the TCFD recommendations with 12 resolutions focused specifically requesting climate scenario analysis. According to the TCFD, only a minority of companies currently disclose forward-looking climate targets or the “resilience of their strategies under different climate-related scenarios, including a 2°C or lower scenario, which is a key area of focus for the Task Force.” Results from this type of scenario analysis identify information crucial to understanding corporate performance, including risks and opportunities according to investors. This information will also provide direct internal benefits—the resulting insights and data can improve company decision-making from budgeting to staff training. Additionally, companies that establish a reporting practice now will be prepared for the likely development that the [TCFD's recommendations are adopted by regulatory bodies in the G20](#).

To make the business case for undertaking a climate-related scenario analysis, this briefing:

- Clarifies the business benefits gained from climate scenario analysis for non-sustainability groups.
- Provides guidance on how resulting insights and information can inform business processes (project management, capital expenditure planning and resource allocation, identification of business development and product development opportunities, as well as enterprise risk management).

TCFD: A G20 driven initiative for the global financial market

Established in 2015 by the FSB, the international body charged with monitoring and advising the G20 on the global financial system, the TCFD developed recommendations for corporate disclosure of “decision-useful information which will enable financial markets to better understand climate-related financial risks and opportunities.” Driven by concerns that exposure to climate related risks are not captured in current corporate valuations, a roster of influential investors (BlackRock, Fidelity, State Street, Vanguard, and Wellington Asset Management) have publicly signed on to support this recent guidance for improved transparency. Currently over 700 major companies with market capitalization of over \$9 trillion, including financial firms with over \$110 trillion of assets under management or advisement, have publicly supported these recommendations.¹

¹ [TCFD: 2019 Status Report \(May 2018\)](#)

TCFD’s recommendations center on a corporation’s fundamental operational elements—governance, strategy, risk management, and metrics and targets. Key disclosures include:

- Business, strategy and financial planning implications from current and possible climate-related risks and opportunities,
- Process for climate related risk identification and evaluation, and
- The metrics and targets associated with the management of material climate-related risks and opportunities.

Recommendations and Supporting Recommended Disclosures

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

Source: TCFD Recommendations, June 2017, Recommendations and Guidance, Figure 4

Climate-Related Scenario Analysis: A key step to meeting TCFD’s guidance

Scenario analysis is uniquely suited to help companies understand the complexity of climate change impacts on their business and prioritize the relevant issues that need managing and disclosing. Climate change is a difficult subject for business to discuss in financially relevant terms such as in a cost-benefit analysis because:

- *‘Adding on’ climate risk does not work:* Climate change impacts tend to enhance existing risks and opportunities rather than being independent and are thus inter-connected with other issues;
- *Reliance on the past is misleading:* Climate change is rendering historic data and experiences unreliable when looking ahead to the future; and

- *Details are still uncertain:* The shift toward a lower-carbon economy has been credibly substantiated, but uncertainty remains in the exact timing, magnitude and pathway of reaching this shift

Scenario analysis provides a solution—a way for a company to explore what its business environment might look like under different climate scenarios and integrate this information (without being a climate expert) into company functions from operations to strategy. Scenario analysis allows for:

- Different pathways under different climate scenarios, informing the company about potential regulations, industry standards, technology, and other changes,
- Integrated analysis of climate impact in the economy and multiple sectors with feedback loops, and
- A more sophisticated analysis than simple stress testing over longer timeframes.

Though scenario analysis does not provide predictions, it does provide foresight, which is much broader and potentially more valuable to a company's climate resiliency and flexibility.

We recommend that companies tailor scenario analysis by applying their knowledge about the market and technology to determine possible future operational contexts. This approach can be parallel to corporate strategy setting but should address longer timeframes and use a broader scope. There are several off-the-shelf climate scenarios available, but most were made for different purposes such as policy setting for economic outcomes or for specific sectors.

How Climate-Related Scenario Analysis Results in Benefits Across Business Functions

Often organizations shy away from making the investment in climate change scenario analysis because the complexity and resources needed are perceived to outweigh the value. TCFD's recommendations are flexible in order to account for the range of resources available across public corporations. Therefore, this does not need to be an arduous task completed overnight—some companies may choose to phase-in scenario planning. On the other hand, a superficial, check-the-box approach will likely not satisfy investors and regulators. Investors want to be confident that the disclosed outcomes are a result of a reasonable process.

To gain internal buy-in for implementation, a sustainability champion can demonstrate how the results of a climate-related scenario analysis can strengthen business planning, project management, and capital investment management.

One approach is to articulate the distinct value proposition by function—how the results, in the form of insights or information gained, benefit specific individual teams and departments.

The charts below are starting points for these discussions. They provide examples in a corporate function role or within the corporate value chain of where the scenario outputs can influence value creation, help to translate complex scientific concepts and facts into business relevant information and inform key financial activities of the company.

Chart: Benefits of Climate-Related Scenario Analysis by Corporate Functions

Corporate Function	Potential Impacts of Scenario Analysis	Examples of Insights Delivered by Scenario Analysis	Examples of Benefits
<p>Finance</p> <p><i>(capital budgets, operating budgets, capital and debt raising)</i></p>	<p>Risk avoidance</p> <p>Cost savings</p> <p>Appeal to more investors/creditors</p>	<p>Sources of increased costs (higher maintenance needs due to weather, resource scarcity)</p> <p>Risks to capital expenditures (problems with infrastructure location sites such as sea level rise, unforeseen energy requirements)</p> <p>Project opportunities for green bonds (capital improvements that increase climate resiliency)</p> <p>Corporate advantages in a low-carbon economy that increase valuation (i.e., adaptable under a changing economy)</p> <p>Current or future direct financial/liquidity implications</p> <p>Risks to current and potential assets (e.g., from sea-level rise and increased inclement weather)</p>	<p>Ability to prepare for and decrease the impact of future costs through informed budget setting and management of liquidity</p> <p>Inform company leadership of stronger valuation arguments</p> <p>Green bond issuance—increase access to capital from investors/creditors looking for climate-friendly opportunities</p>

Corporate Function	Potential Impacts of Scenario Analysis	Examples of Insights Delivered by Scenario Analysis	Examples of Benefits
<p>Corporate Affairs</p> <p><i>(government affairs, investor relations, client/customer communications)</i></p>	<p>Strengthen reputation</p> <p>Risk avoidance</p>	<p>Foresight into emerging regulations and their risks and opportunities</p> <p>Informed understanding of the impact (+/-) regionally and globally from various regulatory scenarios</p> <p>Identify key issues that may concern stakeholders and that intersect with company's footprint (resource scarcity, water issues in target geographies)</p>	<p>Improve ability to meet emerging and likely regulations</p> <p>Improve ability to deliver content & messaging that builds goodwill with key external stakeholders including government officials and shareholders</p> <p>Proactive identification of potential risks and opportunities to improve operational impacts in regard to communities</p>
<p>Research & Development</p>	<p>Growth opportunities</p>	<p>Gaps in the market (adaptation or mitigation opportunities in regions or sectors)</p>	<p>Identify potential areas of innovation to improve the effectiveness of R&D expenditure</p> <p>Identify future potential market needs</p>

Chart: Value Chain Benefits Delivered by Climate Related Scenario Analysis

Value Chain	Potential Impact of Scenario Analysis	Examples of Insights Delivered by Scenario Analysis	Examples of Benefits
Supply Chain & Sourcing	Risk avoidance	Resiliency of the supply chain given likely physical climate change impacts (resource scarcity, increased costs, decreased quality, weak links in transportation chain)	<p>Maintain market share in times of business disruptions</p> <p>Avoid increased supply costs due to resource constraints or disruptions</p> <p>Increase reliability of supply chain</p> <p>Stronger partnerships with suppliers</p>
Production	Risk avoidance	Resiliency of operational assets key to production	<p>Avoid increased costs due to disruptions</p> <p>Increase reliability of product delivery</p>

<p>Marketing & Sales</p>	<p>Growth opportunities</p>	<p>Pain points for clients (new challenges in a low- or high-carbon world)</p> <p>Position of company’s products and services in a changing economy (increase in demand in a low-carbon economy)</p> <p>Possible market entries and opportunities (demand for new services or new regions for existing product/services)</p> <p>Areas for product differentiation or innovation needs (adaptation or mitigation challenges)</p> <p>Gaps in corporate offerings (understanding challenges current client base will face in a low- or high-carbon world)</p>	<p>Identification of client needs – decision-makers will be able to position products/services in the market</p> <p>Revenue growth and market access</p> <p>Business expansion and development</p> <p>Improve or gain a license to operate in certain regions</p>
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Authors

Sonal Mahida is the founder of Verability, an ESG advisory firm. She has nearly 20 years of experience working in ESG investing and sustainability issues at institutional investors, Fortune 100 companies and industry initiatives. Her background includes senior and founding positions in the ESG investing field. She was the first Head of North America for the Principles for Responsible Investment (PRI), TIAA-CREF’s first Senior Governance Analyst on environmental and social issues, as well as the head of CDP USA where she oversaw the organization’s U.S. activities.

Joy Williams is a senior analyst at Mantle314, a boutique consulting firm focused on translating the complexity of climate change into context for their clients. She is a professional engineer and a CAIA holder with over 15 years of experience climate change, the last 10 of which have been in finance. With this multi-disciplinary approach, she has worked with government, policy, management, and corporate and investment strategy, most recently with the Ontario Teachers’ Pension Plan and chairing the Decarbonization Advisory Panel for the New York State Common Retirement Fund.