

CADMUS

REDUCE RISK, SEIZE OPPORTUNITY

Steps to Incorporate the Recommendations of the Task Force on Climate-related Financial Disclosures





MEASURING CLIMATE RISKS

THE TIME IS NOW

Billion-dollar climate-related disasters in the United States and across the globe have shown boards, shareholders, investors, and risk managers that climate change impacts, rather than a distant and speculative concern, are already being felt. As a result, [63 Fortune 100 companies](#)¹ have at least one clean energy target. These companies recognize that a thriving planet is necessary for successful business, and—as the driving force of the global economy—the private sector plays a crucial role in the creation and implementation of solutions to mitigate climate change. As companies work to reduce greenhouse gas emissions that cause climate change, they are recognizing the need to address climate impacts currently affecting their bottom lines.

Disclosing climate-related risks and preparing for a new climate future are daunting tasks. To address this challenge, in June 2017 and at the request of the G20 Finance Ministers and Central Bank of Governors, the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#)—chaired by Michael Bloomberg and established by the Financial Stability Board—released its [final recommendations report and supplemental materials](#).² Companies can voluntarily incorporate these recommendations into their annual financial reports. In recent years, companies have become increasingly willing to acknowledge the direct and indirect risks and opportunities resulting from climate change, but the detail and specificity levels of disclosures have varied greatly. TCFD's recommendations intend to encourage and standardize companies' reporting of material climate risks and to help stakeholders make informed investment decisions and evaluations of companies' asset values. Notably, beginning in 2018, CDP (formerly the Carbon Disclosure Project) [plans to integrate TCFD's recommendations into information disclosure requests](#),³ so understanding and taking early action on these recommendations will particularly benefit current and future CDP responders.

KEY TAKEAWAYS FOR COMPANIES

One TCFD primary objective is to enhance the assessment and disclosure of climate-related risks that companies report to ensure financial viability. To accomplish this, the TCFD recommends that companies provide climate-related financial disclosures in mainstream annual financial filings, such as the U.S. Securities and Exchange Commission 10-K filings. Risk Factors—Item 1A in the 10-K filings—serves as a core area in which companies can provide information about the most significant risks facing a company and its securities. Alternately, for companies not filing public financial reports, this information may be included in any external-facing, non-financial reports.

The TCFD recommendations offer a starting point to develop climate-related disclosure information that can meaningfully inform future investment decisions and make companies more resilient to climate shocks (immediate risks), including extreme storms, and to stressors (gradual risks), including seasonal flooding, increased heat waves, warmer temperatures, poor air quality, and changes in the timing of seasons, wildfires, and droughts.

Figure 1 outlines the TCFD’s four core categories and recommendations.

Governance	Determine and disclose your board’s oversight role and your management’s assessment role regarding climate-related risks and opportunities.
Strategy	Describe your risks and opportunities over varied time horizons, and consider a range of climate and economic scenarios, including a 2°C or lower scenario.
Risk Management	Describe in public disclosures your process for managing risks and your integration of climate-risk considerations into an overall risk management approach.
Metrics & Targets	Describe in public disclosures your targets established to manage climate-related risks and opportunities and metrics to determine outcomes against targets.

Figure 1. TCFD Recommendations

Source: Recommendations of the Task Force on Climate-related Financial Disclosures (Rep.). Basel, Switzerland: Task Force on Climate-related Financial Disclosures. 2017.

The TCFD advises companies within the most climate-vulnerable sectors (e.g., energy, transportation, materials/buildings, agriculture, food, and forestry, and/or with annual revenues over \$1 billion) to conduct in-depth scenario analysis. Such analysis should employ climate and economic scenarios, including a scenario reflecting a global commitment to limiting a mean temperature rise to 2 degrees Celsius above pre-industrial levels, and should

demonstrate the scenarios’ range of related impacts, including water scarcity, carbon pricing, and resource shortage. The TCFD also emphasizes adoption of the recommendations for companies with public debt or equity and by asset managers and owners of pension plans, endowments, and foundations due to the large social impacts such organizations can have.

THE BUSINESS CASE FOR INCORPORATING TCFD RECOMMENDATIONS

The TCFD recommendations also aim to guide companies in interpreting climate-related information and relevant financial implications. Though many companies understand that climate change presents direct and indirect risks to operations and revenues, limited resources are available to aid in interpreting climate data and to accurately convey the financial implications of these risks. Furthermore, the quantity of climate-related scenarios and the range of impacts that climate change and extreme weather events will present to different value chains can complicate the application of the findings across sectors.

The TCFD report outlines four core benefits related to aligning practices with the recommendations:

- 1. Increased efficiency
- 2. Improved strategic planning
- 3. Reduced frequency of information requests
- 4. Increased investor and lender confidence

Figure 2 details these four benefits.

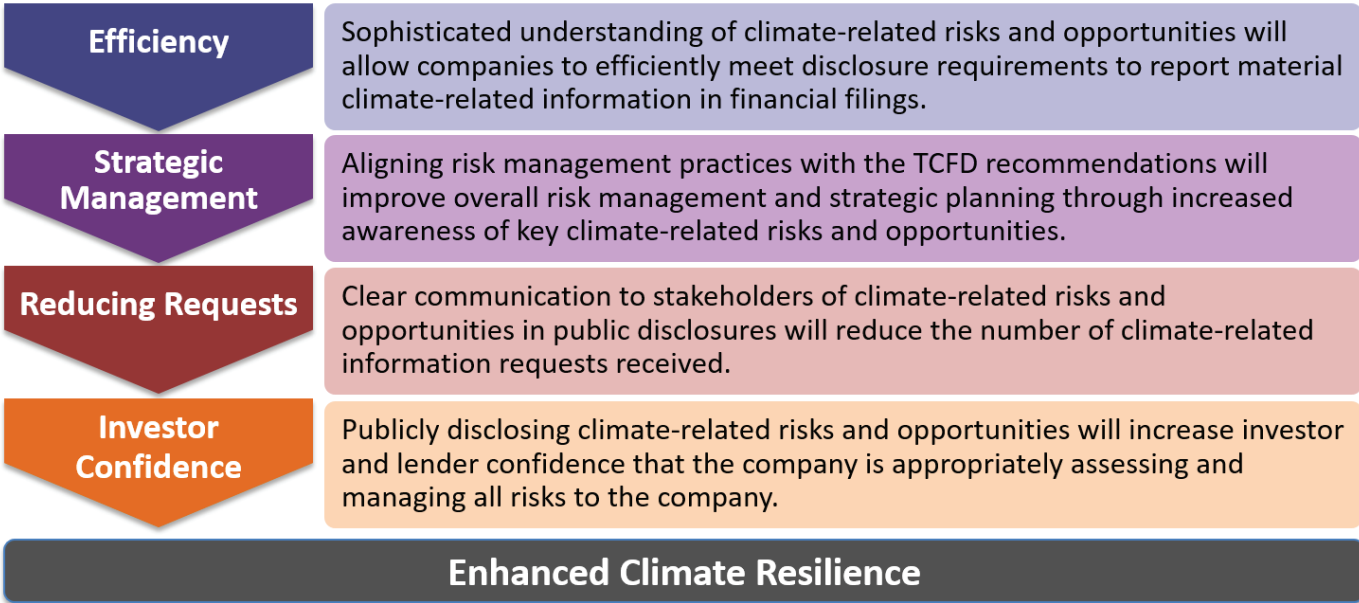


Figure 2. Benefits Identified in the TCFD Recommendations

Source: Recommendations of the Task Force on Climate-related Financial Disclosures (Rep.). Basel, Switzerland: Task Force on Climate-related Financial Disclosures. 2017.

As public awareness of climate-related financial disclosures has increased following the TCFD recommendations report’s release, tools have been developed that allow analysts, investors, and other stakeholders to easily access companies’ climate-related financial information. One such tool is an online portal that allows users to access comparisons of corporate environmental financial disclosures—currently at no cost. The tool enables users to view preliminary environmental and climate-related financial filings within public financial filings and

highlights instances where corporations have omitted climate-related financial information of potential interest to investors. The portal currently features the financial filings for 40 electric and gas utilities and oil companies. As this tool and others are developed and provide auditors, investors, analysts, and regulators with quick access to climate-related disclosures, gaps in these disclosures will present a significant liability, and disclosing risks and actively working to address those risks will realize increased benefits.

ASSESSING PHYSICAL AND TRANSITION RISKS AND OPPORTUNITIES

The risks climate change presents are both immediate and gradual, as the economy shifts to accommodate the new business landscape. Prudent organizations will incorporate both physical and transition risks into their strategic planning.

Companies face key physical risks associated with climate change, including increased severity and frequency of extreme weather events, changing precipitation patterns, and rising mean temperatures and sea levels. These impacts will affect financial outcomes related to labor productivity, capital expenses, resource trapping, decreased or uncertain production, and supply chain disruption. The financial implications of climate-related weather events already have become clear. Hurricane Harvey caused an estimated [\\$75 to \\$160 billion in economic losses](#).⁴ Flooding in California in February 2017, caused by persistent and heavy rainfall, resulted in [an estimated \\$1.5 billion in economic losses](#).⁵ In 2016, wildfires in the western and southeastern United States, stretched over 5.0 million acres, cost [an estimated \\$2.5 billion](#).⁶ In total, the National Oceanic and Atmospheric Administration's National Climatic Data Center reports that the United States was affected by nine billion-dollar or greater disasters in 2015 due to droughts, flooding, severe storms, tropical cyclones, and wildfires. Fifteen such disasters occurred in 2016, and fourteen have occurred so far in 2017.

The TCFD identifies a variety of risks associated with the global transition to a low-carbon economy. Depending on the context of a company's operations, these may vary significantly, but they can include the following:

- Policy and legal risks associated with emissions pricing and reporting obligations
- Technology risks related to substitution of products
- Market risks associated with changing consumer behaviors and uncertain market signals
- Reputational risks connected to increased stakeholder and investor attention

Employing physical and transition scenario analysis serves as a key strategy in understanding, prioritizing, and planning for the risks and opportunities described above. The following section outlines options and best practices for employing climate-related scenario analysis.

CONSIDERATIONS FOR SCENARIO ANALYSIS

While many companies complete scenario analyses that focus on economic and market trends, employing climate-related scenarios to perform risk analysis may present a new undertaking for many companies. The TCFD recommends that companies better understand the risks they face by including transition and physical scenario planning in their risk management process. Broadly, scenarios should be plausible, unique, logical, relevant, and challenging. Different analytical frameworks will be suitable for understanding each of these risks.

Physical Scenarios

The [Intergovernmental Panel on Climate Change's \(IPCC\) Representative Concentration Pathways](#)⁷ (RCPs 2.6, 4.5, 6, and 8.5) describe climate impacts associated with a range of possible greenhouse gas emissions pathways, from considerable emissions reductions (RCP2.6) to business-as-usual emissions (RCP8.5). The [Fourth National Climate Assessment's \(NCA\) scenarios](#)⁸ on climate, sea level rise, and population and land use employ RCPs 8.5 and 4.5 as high-end and low-end emissions scenarios, respectively. The NCA then uses the emissions scenarios alongside other resources to depict a range of plausible future conditions at the regional and national scales in the United States. These IPCC and NCA scenarios are a good starting point for conducting quantitative analysis of specific physical climate impacts affecting aspects of a company's value chain.

Economic Scenarios

In contrast, the International Energy Agency's (IEA) transition scenarios are best suited for conducting qualitative assessments of risk under different pathways. Most academic and industry analysis of climate-related risk currently builds upon IEA scenarios rather than IPCC scenarios, though both scenarios together prove highly complementary.

The [IEA defines a 450 scenario](#)⁹ as a scenario that sets forth an energy pathway consistent with the goal of limiting global temperature increases to 2°C by limiting concentrations of greenhouse gases in the atmosphere to around 450 parts per million of CO₂. Under that scenario, the IEA depicts a world that implements policies consistent with providing

a 50 percent chance of limiting the average global temperature increase in 2100 to 2°C above pre-industrial levels. The scenario assumes the following:

- Most Organization for Economic Co-operation and Development countries implement carbon pricing by 2020.
- International sectoral agreements include the passenger light-duty vehicles sector and the aviation sector, providing CO₂ emission limits for new cars and aircraft in all countries.
- Subsidies are removed for fossil-fuel inputs.

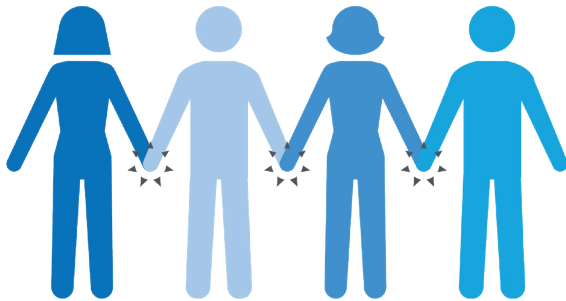
Cadmus recommends that companies start by considering the IPCC's four central scenarios (RCPs 2.6, 4.5, 6, and 8.5) and the NCA's designated scenarios (on climate, sea level rise, and population and land use) when beginning physical scenario analysis, and then applying IEA's three core scenarios (the New Policies Scenario, the Current Policies Scenario, and the 450 Scenario) when beginning transition scenario analysis.

CASE STUDY: A FINANCIAL FIRM AT RISK

Though firms with physical supply chains, including those in agriculture and manufacturing, may face the most evident risks associated with climate change, professional and financial services firms are also at risk. For example, a financial firm with a loan portfolio that includes commercial and residential real estate along a coast could employ the RCP scenarios to understand the risks climate change poses to those assets. Using mapping and analysis of storm surge and sea level rise, this firm could better understand the risks faced by those loans and could adjust interest rates and forecast potential revenue changes associated with declining values posed by properties most at risk.

Cadmus has identified the following steps that companies can use to align disclosure with TCFD's recommendations and to employ climate-related scenario analysis in risk management:

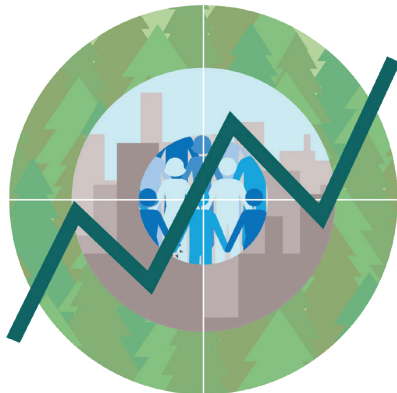
KEY STEPS FOR COMPANIES TO EFFECTIVELY INCORPORATE TCFD RECOMMENDATIONS



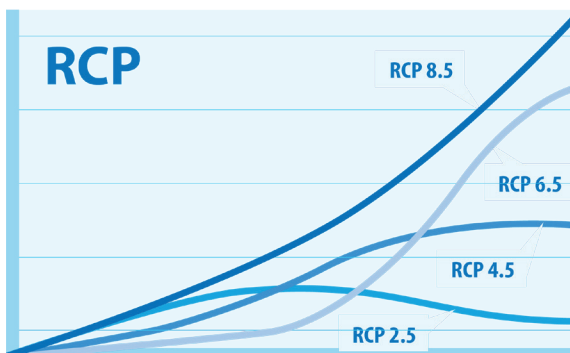
- 1. Create a Team:** Recruit representatives from all levels of the company and the value chain, including the research and development teams, thought leaders, and financial analysts. These individuals will participate in the scenario analysis exercise.



- 2. Assess Risk Management Capacity:** Evaluate the company's existing risk management activities to understand current capacity levels.



- 3. Map Critical Assets:** Map assets such as physical infrastructure, employees, financial investments, strategic partners and shareholders, supply chains, and other components that are essential and material to the company.



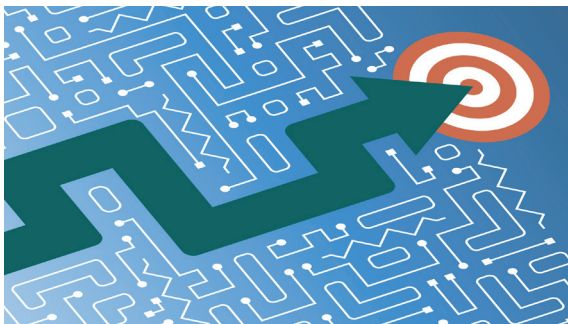
- 4. Identify Climate Scenarios:** Identify a range of possible climate futures including a BAU scenario (i.e., RCP 8.5), a scenario where average global temperature increase is limited to 2 degrees Celsius above pre-industrial levels by 2100 (i.e., RCP 2.6), and any other relevant climate-related scenarios. Also identify at least two transition scenarios, such as the IEA 450 and New Policies Scenarios.



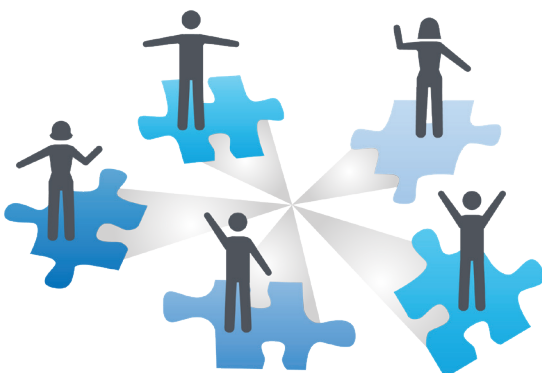
5. Assess Climate Risks: Employ chosen climate scenarios and a team of company representatives to assess physical, regulatory, supply chain, financial, reputational, and transition risks with their associated secondary and tertiary cascading impacts.



6. Rank Climate Risks: Once risks are identified, rank the risks in order of likelihood and impact. Evaluate the net cost of climate-related risks under the BAU and other climate scenarios identified.



7. Integrate Climate Risks into Broader Strategy: Integrate climate-related risks into the company's broader risk management framework and spending plan. Develop methods to gradually incorporate mitigation activities into the company-wide spending plan.



8. Engage Key Stakeholders: Engage thought leaders within the organization and in the broader sector to assess the future of the company in the face of climate change. Engage in dialogue with relevant industry trade associations to establish a mechanism to allow sectoral compilation of climate-related financial data to increase confidence in prediction of costs of climate change impacts.

WHAT NEXT?

The TCFD recommendations highlight key business continuity issues driven by climate change that companies do not frequently acknowledge publicly. These issues include resource availability, relevance of services and products in a volatile market, fluidity of business models, and shifting consumer preferences.

Though quantifying climate change's global financial impacts on a company's value chain can be challenging, it deserves urgent attention. Bringing stakeholders together to determine materiality and key risks associated with a changing climate, and employing scenario analysis to move forward successfully with both internal risk management and public disclosures of climate-related risks and opportunities, will go a long way toward helping a company not only survive but thrive in the emerging new-climate economy.

To learn more about how Cadmus can help your organization effectively incorporate TCFD recommendations, visit www.cadmusgroup.com.



ENDNOTES

- 1 World Wildlife Fund. "Report: Fortune 500 Companies Accelerating Renewable Energy, Energy Efficiency Efforts." April 25, 2017. Available online: www.worldwildlife.org/press-releases/report-fortune-500-companies-accelerating-renewable-energy-energy-efficiency-efforts.
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