Ceres

THE B TEAM

Getting Climate Smart:

A PRIMER FOR CORPORATE DIRECTORS IN A CHANGING ENVIRONMENT

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About Ceres

Ceres is a sustainability nonprofit organization working with the most influential investors and companies to build leadership and drive solutions throughout the economy. Through powerful networks and advocacy, Ceres tackles the world's biggest sustainability challenges, including climate change, water scarcity and pollution, and human rights abuses. For more information, visit www.ceres.org.

About The B Team

The B Team is a not-for-profit initiative formed by a global group of business leaders to catalyse a better way of doing business for the wellbeing of people and the planet. Founded in the belief that the private sector can, and must, redefine both its responsibilities and its own terms of success, The B Team is developing a new, sustainable model for business centered on concerted, positive action that will ensure business becomes a driving force for social, environmental and economic benefit. For more information, visit www.bteam.org.

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EXECUTIVE SUMMARY

The impact of climate change on business is clear. Greenhouse gas emissions are warming the earth, and the temperature rise above 2 degrees Celsius will have significant impacts on people and the planet. This poses market risks and opportunities to businesses. Company leadership, including corporate boards are trying to understand how to make their businesses resilient in the face of climate change impacts.

This primer is designed to help corporate directors get out in front of these issues. It is also to help them understand why climate change is a board-relevant issue, when climate change should fall within their mandate and how they can oversee climate-related risks and opportunities.

Why should corporate directors care about climate change?

The World Economic Forum identifies climate change as a top global risk, while the Economist Intelligence Unit estimates the value at risk to global assets from climate change at between $4.2 trillion and $43 trillion between now and 2100. Businesses face a range of market risks from climate change, including physical, value chain, regulatory, technological and reputational.

At the same time, there is a corresponding market opportunity for climate change mitigation and adaptation. Annual global investments in climate business solutions is over $1 trillion and growing. Many industries, including energy, agriculture, real estate and others are capitalizing on these opportunities.

As more businesses in more sectors are materially impacted, major investors are engaging with their portfolio companies on climate change. BlackRock, State Street Global Advisors and Vanguard are calling for boards to address climate change as a part of their long-term sustainable value creation strategies. There has been a growth in shareholder proposals on climate change, and increasingly for "climate-competent boards."

At the same time, more climate change regulations, compliance requirements and disclosure frameworks are being implemented globally. Since 1997, the number of climate change related regulations has grown over 200 percent to 1,200. The number of groups proposing frameworks for climate change disclosure is growing. Of note is the Taskforce for Climate-related Financial Disclosures, created by the Financial Stability Board at the request of the G20. More regulatory and quasi-regulatory bodies, including in France, the U.K. and the state of California, are starting to "mandate" climate risk disclosure in various ways.

How can directors build climate competency into their board?

- **Drive the assessment of whether climate change is material to their business**, including how it could affect shareholder value in the long term
- **Formally include climate change oversight in the board structure** by incorporating it within board committee charters
- **Recruit climate-competent directors** by casting a wide net through the nominating process to identify candidates with expertise in addressing climate change
- **Educate the whole board on climate change**
- **Integrate climate change into strategic planning and risk oversight** to ensure that the business impacts of climate change are accounted for at every level of the company
- **Tie executive compensation to climate change**
- **Promote climate change disclosure** based on the new Task Force on Climate-related Financial Disclosure (TCFD) guidelines

INTRODUCTION

The impacts of climate change on business are increasingly clear. More frequent and more extreme flooding, hurricanes and droughts, rising water scarcity and stranded assets are just a few of the challenges companies are facing. At the same time, evolving policy incentives and market trends, including more green bond offerings, the dropping cost of solar energy and advances in battery technologies, are creating new opportunities as global markets transition to a low carbon economy.

It is important that company leadership, including corporate directors, understand how these climate-related risks and opportunities affect their decision making on corporate strategy and investments.

This primer is designed to help corporate directors get a step ahead of these issues, to understand why climate change is increasingly a board-relevant issue, when climate change should fall within their mandate, and how they can oversee the climate related risks and opportunities. It is intended to give boards the tools and resources they need to ask the right questions and help management navigate how the changing climate is affecting the economy and their businesses.[1]

"Climate change refers to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. **It refers to any change in climate over time, whether due to natural variability or as a result of human activity."**[2]

— **Intergovernmental Panel on Climate Change (IPCC)**

SECTION 1:
Why should climate change belong on a director's agenda?

The science behind climate change is clear. Greenhouse gas emissions are warming the earth, and the temperature rise above 2 degrees Celsius will have significant impacts on people and the planet.[3] This poses enormous risks and uncertainty to the global economy, companies and investments across sectors.

The World Economic Forum identifies climate change as a top global risk, both in terms of likelihood of occurrence and magnitude of impact.[4] The Economist Intelligence Unit estimates the value at risk to global assets from climate change at between $4.2 trillion and $43 trillion between now and 2100.[5] Mercer notes that climate change will "inevitably have an impact on investment returns" and should be viewed as a new return variable.[6] The California Public Employees Retirement System, the largest U.S. public pension fund, considers climate change to be a systemic risk that affects all sectors.[7]

The risks associated with climate change are real, and so are the opportunities. According to Moody's, demand for green bonds (debt capital for climate change solutions) is expected to grow to over $250 billion in 2018.[8] The IFC estimates that annual global investment in climate business solutions is over $1 trillion and growing.[9]

This growing recognition of the financial impacts of climate change is changing how businesses address the issue. The responsibility for tackling climate change is now increasingly integrated in discussions of corporate strategy, enterprise risk and financial planning.

While board composition and the parameters of good governance vary across companies and jurisdictions, a board's most basic responsibility is to oversee management and drive a company's strategic direction and value creation. As climate change becomes a more significant business variable, assessing and addressing its impact is increasingly falling within a board's mandate.

> "Shifts in our climate bring potentially profound implications for insurers, financial stability, and the economy."[10]
>
> — **Mark Carney, Governor of the Bank of England; Chairman of the Financial Stability Board**

Director Duty of Care and Climate Change

Legal frameworks in most jurisdictions confer upon directors two duties: the duty of care and the duty of loyalty.[11] The duty of care requires a director to exercise due diligence when making decisions on behalf of the company.[12] To adequately discharge this duty, directors need to be able to understand and evaluate risks facing the business—including social and environmental forces such as climate change.[13] Given the growing attention of shareholders on climate change, directors need to proactively consider how this issue affects their companies.

Climate Change Litigation

Litigation related to climate change is increasing globally. As of March 2017, there were more than 654 cases filed in the U.S. alone concerning the impacts of climate change.[14] While the vast majority of the cases name the government as the defendant, a growing number of cases look to hold companies liable for damages associated with carbon emissions.[15] Additionally, a number of U.S. state attorney generals are starting to investigate the adequacy of public company climate change disclosures to investors and the public.[16]

SECTION 2:
Why should climate change oversight be a director priority?

Corporate directors face many competing demands for their attention, including growing business complexity, global uncertainty and constituent expectations. However, as the impacts of a warming planet become material to more businesses in more sectors, a number of key trends reinforce the importance of directors working with management to evaluate and prioritize these challenges.

Major investors are driving the climate change agenda

Investors are increasingly calling on boards to step up their oversight of climate change. The CEOs of BlackRock, Inc., State Street Global Advisors, and The Vanguard Group, Inc. have each emphasized the importance of addressing climate change as a part of the firm's long-term sustainable value creation approach.[18] BlackRock CEO Larry Fink specifically called for directors to be able to articulate and explain their oversight of how "structural trends—from slow wage growth to rising automation to climate change—affect [their] potential for growth." State Street CEO Ron O'Hanley noted that they would support climate resolutions if companies' disclosure, practices and board governance structures are found to be inadequate.[19]

At the same time, investors are filing more shareholder resolutions calling for formalized climate change oversight. Between 2010 and 2014, more than 250 shareholder resolutions were filed requesting explicit board oversight of sustainability issues.[20] Investors are increasingly calling on the companies they expect to be the hardest hit by climate change to recruit "climate-competent directors."[21]

Just as critically, large traditional investors are now driving these shareholder proposals—once seen as largely the realm of smaller socially responsible investors. During the 2017 proxy season in the U.S., of the 144 environmental shareholder proposals filed, 69 concerned climate change.[22] Of the 28 climate change proposals that were voted on, an average of 32.6 percent of the votes cast were in favor of the proposals, up from 2016.[23] And for the first time, three climate-related shareholder proposals passed with majority support—at Occidental Petroleum, PPL Corp. and ExxonMobil.[24] That makes 2017 the first year that a climate change proposal filed at a major oil company received a majority of votes in favor of the proposed action—despite management's recommendation to vote against the proposal.[25] In all three cases, major investors and asset owners, including BlackRock and CalPERS, joined in supporting the proposals.[26]

"I want to reiterate our request, outline in past letters, that you publicly articulate your company's strategic framework for long-term value creation and explicitly affirm that it has been reviewed by your board of directors... you must also understand the societal impact of your business as well as the ways that broad, structural trends—from slow wage growth to rising automation to climate change—affect your potential for growth."[17]

— Larry Fink, CEO of Blackrock, 2018 Annual Letter to CEOs — ***A Sense of Purpose***

Climate change regulations, compliance requirements and disclosure frameworks are growing globally

During the past two decades, we have seen a rapid escalation in the number of global regulations aimed at addressing climate change. Since 1997, the number of climate change related regulations has grown twenty fold to 1,200.[27] We expect that this trend will continue, as the Paris Climate Agreement, the global accord to curb GHG emissions ratified by 175 countries to date, is implemented.[28]

In parallel with regulations on climate change performance, there has also been a growth in disclosure frameworks that provide guidance on how companies can report on their exposure to climate risk and opportunities to investors and other stakeholders. (See Appendix 2)

Of note are the 2017 Recommendations of the Taskforce for Climate-related Financial Disclosures (TCFD,) created by the Financial Stability Board at the request of the G20. Based on the recognition that climate change poses a financial risk to global economies, the TCFD provides guidelines for how companies can disclose climate risk and climate governance in their financial filings to enable markets to accurately price those risks and opportunities.[33] The TCFD, led by Michael Bloomberg, was developed by business for business. Majors insurers, multinational companies, global asset managers and rating agencies, including Axa, JPMorgan Chase, The Dow Chemical Company and Moody's, helped develop the framework.[34]

A number of regulatory and quasi-regulatory bodies have started to "mandate" climate risk disclosure in various ways. Countries, including Australia, France and the U.K. and others now require companies to disclose their climate change performance.[35] The London Stock Exchange features the TCFD Recommendations in its guidance on ESG disclosures.[36] Since 2010, the U.S. National Association of Insurance Commissioners has issued a climate change survey for insurance companies that has been administered on a mandatory basis through a multi-state effort led by California.[37]

The Paris Climate Agreement

The goal of the Paris Climate Agreement is to limit global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit it even further to 1.5 degrees Celsius in this century.[29] Of the 197 countries that signed the Agreement as of April 2018, 175 have ratified it.[30] The agreement has strong support from hundreds of companies, investors, universities, and regional governments.

The Paris Climate Agreement requires all parties to put forward "national determined contributions" (NDCs) to reduce national emissions and adapt to the impacts of climate change. Parties must report regularly on their emissions reductions and implementation efforts. There will be a global effort every five years to assess the collective progress in achieving the Agreement and to inform further individual actions by the parties.

In 2017, the U.S. Administration announced its intended withdrawal from the Paris Climate Agreement. However, global progress on addressing climate change continues. More than 2,700 leaders from major U.S. businesses, investors, cities, states and universities—including **Walmart, Google, Target** and **Nike**—have said they intend to continue taking the action needed to meet the requirements of the Paris Climate Agreement as a part of the *We Are Still In* initiative.[31] Additionally, at the UN climate talks in November 2017 (COP23,) implementation of the Paris Climate Agreement advanced with China, France and others offering leadership on global climate change action.[32]

SECTION 3:
How can directors build climate competency into their board?

Corporate directors can take a number of steps to integrate climate change into their board responsibilities.

→ Drive the assessment of whether and how climate risk is material to the business

Climate change poses foreseeable risks to businesses. Directors should have management assess whether climate change has a material impact on the unique circumstances of their business and, if so, how this should be integrated into corporate strategy and enterprise risk. This assessment should consider whether critical stakeholders, such as investors, consider climate change to be relevant, for instance, as a part of their stated priorities or through investor engagement, including shareholder resolutions. The assessment should also consider how climate change could affect the creation of shareholder value, including in the long term.

→ Formalize climate change in the board structure

When material, directors should formalize climate change oversight as a part of the board structure. For instance, they could incorporate it into the charter of relevant board committees. Once it is formalized, climate change will be regularly included in board agendas and considered systematically as a part of board deliberations, including on strategy, expenditures and risk. Many companies, including **Citigroup** and **Ford Motor Company** have incorporated climate change oversight into the mandate of their Public Policy or Sustainability Committees, allowing for dedicated and in-depth discussion of the issue.[38] Another approach is to include climate change oversight in the mandate of existing board committees, including audit, risk, compensation and nominating committees.

→ Recruit climate-competent directors

Board nominating committees should recruit corporate directors who have the appropriate skills, background and aptitude to make thoughtful decisions on climate risks and opportunities. Committees should cast a wide net through the nominating process so they can consider candidates with diverse backgrounds. For instance, the **Canadian Energy Utility** made “Climate Change and Environment” one of the functional experience categories in their board skills matrix for board nominees.[39]

→ Educate the whole board on climate change

Many companies require that their board stay current on the latest issues, trends and developments that could affect the company through formalized continuing education programs. Board Governance Committees could expand these efforts to include focused training programs that bring in independent climate experts to provide ongoing education. Another option is to create the capacity for ongoing advice on climate issues, for instance by establishing advisory boards of external stakeholders or experts to inform and engage company leadership and the board on the connections between climate change, among other sustainability issues, and corporate strategy. Many businesses, including **Morgan Stanley, General Electric** and **PG&E**, have established advisory boards of this nature.

→ Integrate climate change into strategic planning and risk oversight

Directors should ensure that management is taking the business impacts of climate change into account at every level of the company as a part of existing and new strategic planning and enterprise risk management frameworks. Board audit and risk committees play a critical role in creating the right connections.

Scenario planning for climate impacts can be an effective tool for gathering insight into strategic plans and enterprise risk management programs. That can help a company be more resilient to climate change and pinpoint climate-related opportunities it can leverage. In recent years, driven in part by shareholder pressure, a number of companies, including **BHP Billiton** and **Shell**, produced scenario analyses assessing the impacts of climate change on their portfolio of assets and business strategies.[40]

Many companies are also using internal carbon pricing and greenhouse gas reduction targets to pinpoint hidden risks and opportunities associated with climate change.[41] Climate change target setting can ensure that climate awareness is integrated into business strategies and decision-making processes. Many companies have set GHG emissions reduction targets, and a growing number are setting ambitious science-based goals, and commitments to source 100 percent of their energy needs from renewable sources.

→ Tie executive compensation to climate change

Once climate change is integrated into business strategy and goals are set, Board compensation committees can tie short and long-term executive compensation to climate outcomes. For example, executive compensation can be tied to a company's progress on GHG emissions reduction goals, creating meaningful incentives. **Xcel Energy** links 30 percent of the long term incentive pay of its executives to carbon emission reduction goals over a three-year performance horizon.[42]

→ Promote robust disclosure of climate change

Directors should promote robust disclosure of climate change in financial filings, including meaningful discussion of climate oversight, risk, opportunities and business strategies. Without robust disclosure, investors and other stakeholders cannot analyze the quality of a company's strategic response to this key risk and its capacity for capturing the value of relevant opportunities. The TCFD framework provides guidance on disclosure that is intended to help markets price climate risk accurately and make informed investment recommendations. Building on the TCFD framework, a number of companies, including **Aviva, Unilever, Zurich Insurance** and **Marks and Spencer**, have committed to updating their disclosures.[43]

Tools and Resources

Scenario Planning

Scenario planning is a useful tool for future risks and opportunities where available datapoints are highly uncertain, and the timeframe is difficult to predict, such as the physical and economic transition risks of climate change. Scenario planning can also help companies and investors gain insight on how a business's strategy and financial plans could take into account the risks and opportunities of climate change. For more resources on scenario planning and how it can be used by a corporate board, refer to the TCFD's *Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities* and Ceres' *A Framework for 2 Degrees Scenario Analysis*.[44]

Science-Based Targets

Science-based targets are tools used by companies to make meaningful carbon emissions reductions in line with the Paris Climate Agreement. GHG emissions targets are considered "science-based" if they ensure that a company's carbon reduction trajectory matches the level needed to limit the increase in global average temperature to well below 2 degrees Celsius compared to pre-industrial temperatures.[45] The Science Based Targets initiative (SBTi) provides a framework for science-based target setting and supports companies with tools, best practice guidance and other resources, as well as independently reviewing and approving corporate GHG emissions reduction targets.[46] Companies including **Coca-Cola HBC, Dell, Sony** and hundreds of others, have committed to set targets using the SBTi.[47]

TCFD Disclosure Recommendations

The TCFD Recommendations include four categories of climate-related financial disclosures applicable to organizations across sectors and jurisdictions:

- **Governance**: Disclose the organization's governance around climate-related risks and opportunities.
- **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.
- **Risk Management:** Disclose how the organization identifies, assesses, and manages climate-related risks.
- **Metrics and Targets:** Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

For more detail on the TCFD's recommended disclosures, see *Annex: Implementing the Recommendations of the TCFD (June 2017)*.

Without robust climate disclosure, investors and other stakeholders cannot analyze the quality of a company's strategic response to this key risk and its capacity for capturing the value of relevant opportunities.

SECTION 4:
Is your business embracing the opportunities and addressing the risks?

Climate change poses market risks and opportunities for today's businesses. As part of a director's responsibility for overseeing the strategic direction of a company, boardroom discussion will want to consider these possibilities.

What are the market opportunities from climate change?

Annual global investment in climate business solutions is over $1 trillion and growing.[49] In emerging economies, the investment opportunities created by the transition to a low-carbon economy are estimated at $23 trillion between now and 2030.[50] Zero emission and plug-in hybrid markets alone are estimated to be worth $1 trillion by 2030.[51] Opportunities also exist in sectors outside the "green sector," or businesses traditionally associated with climate change mitigation. For example, the 2017 Global Opportunity Report identifies smart water products and services, including data and sensor-driven products to help manage municipal water distribution and infrastructure, as one of the largest potential markets.[52]

Many industries are capitalizing on these market opportunities. In the energy sector, 2017 marked the second year in a row that renewable power accounted for more than half of the new power generation worldwide.[53] In real estate, energy-efficient and green buildings are a $76 billion global market. In agriculture, climate-smart practices are expanding as businesses work to meet consumer demands and changing climates by, for example, developing crop varieties that are more resilient to the vicissitudes of climate change. Private and public partnerships are forming to develop sustainable transport, water and waste management systems to help cities create more climate-adaptable and resilient infrastructure.

The U.S. budget for 2018 included many tax credits to incentivize low-carbon energy market opportunities.[54] These include credits for geothermal heat pumps, fuel cells and small wind farms, along with larger credits for nuclear power startups and carbon capture and sequestration (CCS). The 45Q tax credits for CCS, for instance, offers $30-50 per metric ton of carbon dioxide captured and/or sequestered.[55]

Apart from revenue-generating opportunities, an increase in savings is expected for those companies that are prepared for hurricanes, floods, droughts and other climate-related disruptions. In 2016, 190 Fortune 500 companies collectively reported $3.7 billion in annual savings as a result of energy efficiency programs.[56]

"Our knowledge of risk, our financial resilience and long-term investment horizon enable us to offer more effective support for climate protection while making the most out of long-term opportunities for our customers."[48]

—Oliver Bäte, CEO of Allianz SE, B Team Leader

What are the market risks from climate change?

Physical Risks

The increase in the frequency and severity of extreme weather, including storms, floods and droughts, creates risks for business assets around the globe. More severe weather is already taking a greater toll. Extreme weather event-related losses in the U.S. have nearly quadrupled since 1980, according to the National Association of Insurance Commissioners.[57] Insurance giant Allianz estimates that climate change may cause insured losses to increase by 37 percent within a single decade.[58] Coastal assets in particular are at risk from rising sea levels and increasing severity of storms.[59] The impacts can include everything from physical asset risks and reduced availably of insurance to employee safety and health concerns.[60]

Value Chain Risk

Another type of physical risk that climate change is causing is the disruption to business value chains. These risks include shortages of inbound raw materials and disruptions in outbound logistics and distribution.[61] Cyclone Yasi's paralysis of the coal exploration region in Queensland, Australia in 2010-2011 is a vivid example, triggering a 25 percent increase in coal prices the following year that affected downstream producers of ferrous metals and users of those metals.[62]

In today's supply chain, the ripple effect of a weather disaster in one part of the world can move quickly around the globe. Typhoon Haiyan, which hit the Philippines in 2013, was estimated to have a negative effect on the supply chains of 21 percent of U.S. production.[63] A flash flood in Thailand in July 2011 forced Honda to reduce its operation days to three days per week at its U.K. plant because the Thai factories stopped producing parts.[64] The same floods led to a 8.8 percent drop in Toyota's sales that year.[65] Meantime, Sony was forced to delay the launch of new cameras because production was halted in some plants in Thailand.[66]

Regulatory Risks

The risk of company operations possibly affected by regulatory efforts to reduce or manage emissions or to incentivize the transition to low-carbon energy is on the rise. In many nations, and several states and regions, regulations that compel companies to calculate, report and reduce emissions are already in place. As noted earlier, this trend is only expected to grow as more countries implement the Paris Climate Agreement. Some jurisdictions use cap-and-trade systems or carbon markets as implementing mechanisms, while others use carbon taxes. Both systems require companies to keep emissions within some specified threshold or take actions to pay for emissions that exceed those thresholds.

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Technology Risks

Technological disruptions, such as advances in energy storage, electric vehicles, and energy efficiency are already changing existing business models in the energy sector.[67] These will have ripple effects even outside the energy sector, because of uncertainty around technological development, cost, and deployment. For example, there are many unknowns regarding the future development of decarbonization technologies—such as which technologies will be able to be deployed at low-cost and at scale.[68] Similar disruptions are taking place in the transportation sector. Forecasters have predicted that electric vehicles will capture significant market share from internal combustion engine vehicles in the next decade or so—Bloomberg New Energy Finance predicts that electric vehicles are on track to account for over half of new car sales by 2040, in part because of government mandates phasing out internal combustion or diesel-powered vehicles.[69]

Reputational Risks

Reputational risks are much harder to pinpoint but are issues that the board will want to monitor. These risks can stem directly from a company's actions or indirectly from public perception of a business, industry or entire sector. For example, advocacy groups have organized boycotts against companies to spotlight practices that accelerate climate change, including financing for carbon intensive projects.[70] As corporate market capitalization comes to depend more heavily on intangibles, serious harm to reputation can cause significant damage to valuations.

Reputational risk dovetails with the larger trend of changing stakeholder expectations on climate. Investors are demanding more climate change disclosure, while employees and future talent are seeking sustainability in day-to-day company operations. In addition, communities and NGOs are looking toward companies for more environmental accountability.

CONCLUSION

Investors, financial markets and executives at leading companies are now tackling the difficult work of figuring out how to navigate a future that is being shaped by the impacts of a warming planet. There is a growing expectation that these issues belong on the board agenda. Working with management, directors can assess the significance and relevance of climate to their businesses and duties, and then apply that understanding to how their companies are organized, how they develop strategies and tackle new markets and how they work with partners and meet customer demand. As stewards of corporate performance, directors play one of the most critical roles of all—ensuring that their companies are prepared and able to meet the risks of climate change and take advantage of the opportunities it creates.

APPENDICES

APPENDIX 1: QUESTIONS FOR DIRECTORS TO ASK MANAGEMENT ON CLIMATE CHANGE

To help facilitate effective management oversight on climate change, The Chartered Professional Accountants Canada and the National Association of Corporate Directors U.S. offer a number of questions for directors to ask management to understand how climate change affects the company's business model, and associated risks and opportunities.[71]

- How are our strategies and operations at risk, given expected climate changes and the drive to a lower-carbon economy?
- Does the company have a process, including metrics and targets, in place to identify, assess, quantify, and manage climate-related risks and opportunities?
- What are the likelihood and impact of changes in demand for the company's products and services due to climate change, and their implications for its business model?
- What are the reputational risks related to the company's approach in dealing with and communicating about climate change issues?
- What innovation and technology related opportunities have been investigated to reduce greenhouse gas emissions or adapt to climate change?
- How does management assess the difficulty of meeting greenhouse gas emission reduction targets, and how is progress monitored and reported?
- How has the current and potential future impact of climate change issues (including carbon pricing) been determined on revenues, expenditures, and cash flows?
- How does management ensure that information reported on corporate websites or in voluntary reports is consistent with government filings and continuous disclosure filings provided to securities regulators?

APPENDIX 2: Reporting and Transparency Initiatives

Taskforce for Climate-Related Financial Disclosure (TCFD)

The Financial Stability Board is an international organization that monitors and makes recommendations about the global financial system to promote financial stability. In 2015, FSB created a task force, chaired by Michael R. Bloomberg, to develop a set of disclosure recommendations for use by companies in communicating climate-related financial risks to investors, lenders and underwriters. That report, The Task Force on Climate-related Financial Disclosures (TCFD) was released at the end of June 2017, and its guidance covers all sectors. It also has supplemental guidance for banks, insurance companies, asset managers, asset owners, energy, transportation, materials and buildings, and agriculture, food and forest products sectors.

GRI

The Global Reporting Initiative (GRI) is an international independent standards organization that has worked since 1997 to help businesses, governments, and other organizations report on sustainability performance. The GRI Sustainability Reporting Standards, developed over 20 years using multi-stakeholder input, includes a number of indicators on a range of economic, environmental and social issues, including climate change. The majority of the world's largest companies now use the GRI standards to disclose their sustainability performance.

Sustainability Accounting Standards Board (SASB)

The Sustainability Accounting Standards Board (SASB) is a US based non-profit that has worked with investors to develop and maintain sustainability accounting standards for 79 industries in 11 sectors. The goal of the standards is to help public corporations disclose material, cost-effective, and decision-useful information on sustainability useful to investors. The standards cover a range of issues, including climate change.

CDP (formerly the Carbon Disclosure Project)

CDP is a nonprofit organization that supports companies and governments to report on climate change risks and emissions. CDP publishes an annual survey that includes reporting on water, forests and supply chains as well as climate risks and opportunities. Since its founding in 2002, over 6,000 companies have publically disclosed environmental information through CDP.

Climate Disclosure Standards Board (CDSB)

The Climate Disclosure Standards Board (CDSB) is a U.K. based non-profit organization that works to provide material information for investors and financial markets through the integration of climate change-related information into mainstream financial reporting. The CDSB has created a Climate Change Reporting Framework as a "standards-ready" tool for companies to disclose climate change-related information in mainstream financial reports.

APPENDIX 3: Climate Change Pledges

There are several initiatives that businesses can join in order to pledge, enable, and document their corporate climate action. For a comprehensive overview of these initiatives and what is required to participate visit the We Mean Business Coalition website.

We Are Still In

Launched in June 2017, We Are Still In, represents the broadest cross-section of the U.S. economy ever assembled in pursuit of climate action. It is a pledge to support America's enduring commitment to the Paris Agreement by more than 2,600 business, government and civil society leaders representing $6.2 trillion of the U.S. economy.

To join the pledge: https://www.wearestillin.com/user/register

RE 100

RE100 is a global initiative of businesses committed to using 100 percent renewable electricity. Companies receive technical guidance and resources to help pursue their renewable electricity strategy. The also receive international profiling through media work, digital content and speaker opportunities. It is in partnership with We Mean Business, The Climate Group and CDP.

For more information: http://there100.org/going-100

EP100

The EP100 initiative is aimed towards helping corporates reduce their own energy demand and significantly contribute to reducing energy demand globally. Companies can commit to double their energy productivity through this initiative in partnership with The Climate Group and the Alliance to Save Energy.

For more information: https://www.theclimategroup.org/project/ep100

Low Carbon Technology Partnerships (LCTPi)

The Low Carbon Technology Partnerships initiative (LCTPi) is comprised of companies and partners committed to accelerating the transition to a low-carbon economy. The Initiative is led by the World Business Council for Sustainable Development (WBCSD) and supported by partners.

For more information: https://lctpi.wbcsd.org/

EV100

EV100 is a global initiative bringing together companies committed to accelerating the transition to electric vehicles (EVs) and making electric transport the new normal by 2030. The initiative is lead by The Climate Group in coordination with We Mean Business Coalition.

For more information: https://www.theclimategroup.org/project/ev100

Science-Based Targets

The Science Based Targets initiative (SBTi) provides a framework for science-based target setting and supports companies with tools, best practice guidance and other resources, as well as independently reviewing and approving corporate GHG emissions reduction targets.

For more information: http://sciencebasedtargets.org/

ENDNOTES

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