

CLIMATE CHANGE

The Implications for Boards — Article Series 2020

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FOREWORD

On behalf of the National Association of Corporate Directors and Marsh & McLennan, we are pleased to present this compendium of articles on the implications of climate change for boards. The boards of today confront a more complex and rapidly evolving risk landscape than ever before. At the start of 2020, disruptive technologies, cybersecurity, geopolitical volatility and societal dynamics were just a few of the risks vying for directors' attention. Shortly after, a global pandemic triggered simultaneous public health and economic crises.

In the face of such urgent threats, it is easy to view climate change as something for the longer term that can be dealt with once more immediate risks have been addressed. However, the articles in this compendium show that taking such a view would be a mistake. Together, they demonstrate that climate change is already having a material effect on enterprise risks and opportunities, with important implications for the role of the board, the personal liability of directors, and the skills and competencies that boards need to develop.

The first three articles examine the board's role in overseeing management of climate risks. "Climate Change is an Enterprise Risk Multiplier" explores the different channels through which climate change affects businesses and shows how companies are already dealing with mounting climate impacts and disruptions triggered by low-carbon technologies and business models. It cautions against narrowly thinking of climate change as "more extreme weather" and argues it is best understood as a risk multiplier.

The second and third articles consider the implications of increasing investor scrutiny of companies' climate risks and demands for greater disclosure. "The Climate Risk Oversight Deficit" presents evidence indicating that many boards may be overlooking climate risks rather than overseeing them, placing both companies and directors at increased risk of litigation. "Climate Disclosure and the Role of the Board" discusses different options for formalizing oversight of climate disclosure and offers insights on how existing climate-disclosure frameworks can be used as tools to benchmark a company's climate-risk management processes.

The fourth article examines climate change through the lens of opportunity. "Realizing the Climate Opportunity" shows how the transition to a low-carbon economy is creating trillions of dollars in new revenues and reduced operating costs. It argues that the board has a critical role to play in ensuring that management's strategies keep sight of these opportunities, particularly at a time when executives are often focused on the "here and now" of dealing with the coronavirus pandemic.

The final article concludes with thoughts on how boards must adapt to meet new challenges that climate change presents. "Building Climate-Smart Boards" argues that most boards are unknowledgeable about climate change and may lack the "competency to judge." Accordingly, some of the most important steps that boards can take will focus on developing a culture of courage and challenge in which this inadequacy is recognized and action is taken to address it.

We hope that you find these articles informative.



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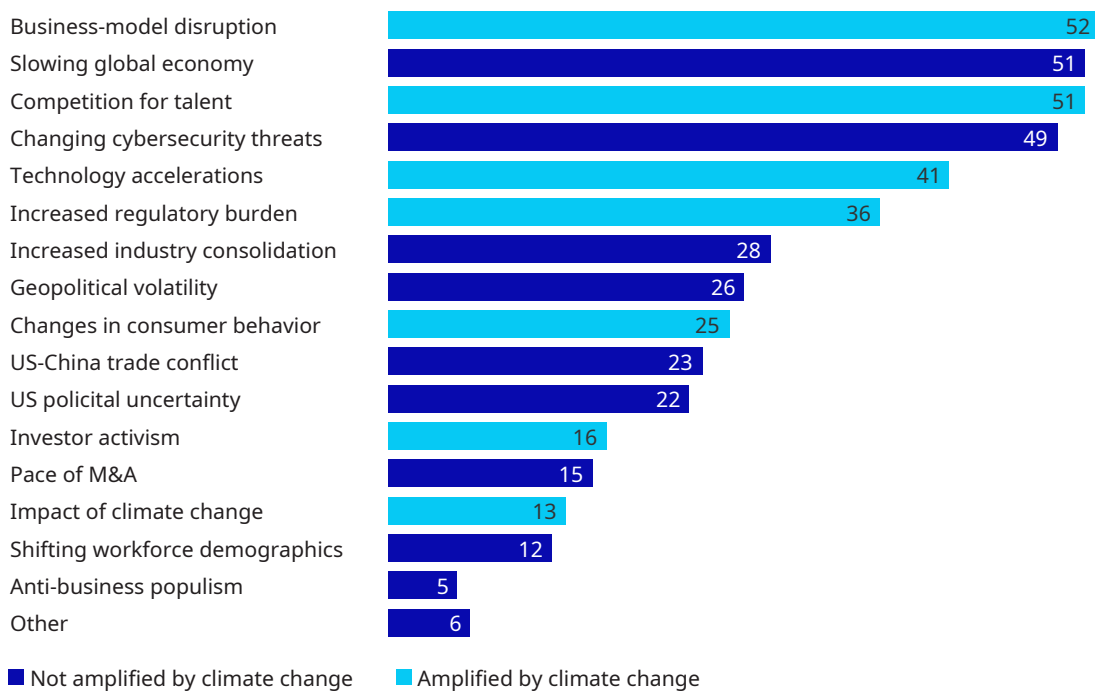
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CLIMATE CHANGE IS AN ENTERPRISE RISK MULTIPLIER

By Rob Bailey and Lucy Clarke

Boards are not strongly concerned about the impact of climate change on their business in the short term. This might be the conclusion reached from a cursory read of the 2019-2020 NACD Public Company Governance Survey¹, which found that only 13 percent of directors ranked climate change in their top five risks for 2020, placing climate far down the corporate risk register (see Exhibit 1).

Exhibit 1: Top concerns for boards of US public companies, in %



Source: 2019-2020 NACD Public Company Governance Survey. Categorization of risks as “amplified by climate change” or “not amplified by climate change” by Marsh & McLennan.

However, this conclusion fails to recognize the full range of ways in which climate change is redrawing the corporate risk landscape. Companies not only face physical risks from climate change, such as sea-level rise or increasingly extreme weather, but they also face a range of transition risks. These include policy or regulatory changes, competitive and investor pressures, and shifts in consumer preferences as greenhouse gas emissions are cut for a low-carbon future.

Through these channels, climate change is amplifying many of the traditional risks that boards are most concerned about.

Enterprise risk and the low-carbon transition

Take, for example, the risks of business-model disruption (ranked 1) and technological advancements (ranked 5). The old business model² of electric utilities, based upon the generation and transmission of electricity from fossil fuels, has been upended by distributed, renewable technologies that are now cheaper than coal³. The automobile sector is now preparing for a wave of technological disruption from electric vehicles, autonomous vehicles, and shared mobility platforms, which together⁴ offer the prospect of lower emissions and greater efficiency.

Low-carbon disruptions do not begin and end with the sectors initially affected; they sweep along supply chains with consequences for companies providing parts, services, or raw materials. For example, the switch to electric vehicles will reduce vehicle repair and servicing revenues and destroy markets for suppliers manufacturing parts for internal combustion engines and gearboxes. Innovations to reduce the carbon footprint of buildings, such as sustainable construction materials, energy efficiency technologies, and onsite renewables, could have impacts felt far beyond the real estate sector, threatening the demand for carbon-intensive materials like cement and steel as well as the demand for electricity and natural gas. In the power sector, the growth of renewables hasn't simply disrupted utility business models, it has hit coal miners⁵ and railroad companies⁶ as well.

Moving down the list of the top concerns in Exhibit 1, climate change also has major implications for regulatory risks (ranked 6), as the plethora of regulations governing carbon-emitting activities attests. A third of the US GDP⁷ is covered by carbon pricing policies which charge companies for their emissions.

Thirty-eight states, plus the District of Columbia, have set renewable energy standards⁸, and 43 states and the District of Columbia implemented policies to promote electric vehicles⁹ during 2019 alone. Sudden or far-reaching regulatory changes present the greatest risks. Oliver Wyman, for example, recently estimated¹⁰ that global implementation of a \$50 tax on carbon could cost banks up to \$1 trillion from loan defaults in high-carbon sectors.

Meanwhile, mounting concerns about climate change have begun to influence consumer behaviors (ranked 9), driving growth in the demand for sustainable products and the emergence of new norms such as "flight shaming," which has already affected¹¹ European air travel and has now spread to the United States¹², where it reportedly has airline executives worried¹³. Climate change is also fueling a new wave of investor activism (ranked 12).¹⁴

Even competition for talent (ranked 3) is affected by climate change. Companies in high-carbon sectors are finding it harder to attract young talent, a finding corroborated by recent research¹⁵ which found that the most popular companies to work for, and those that are the most attractive to young talent, outperform their peers on environmental issues.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

How material is transition risk for the company and its customers?

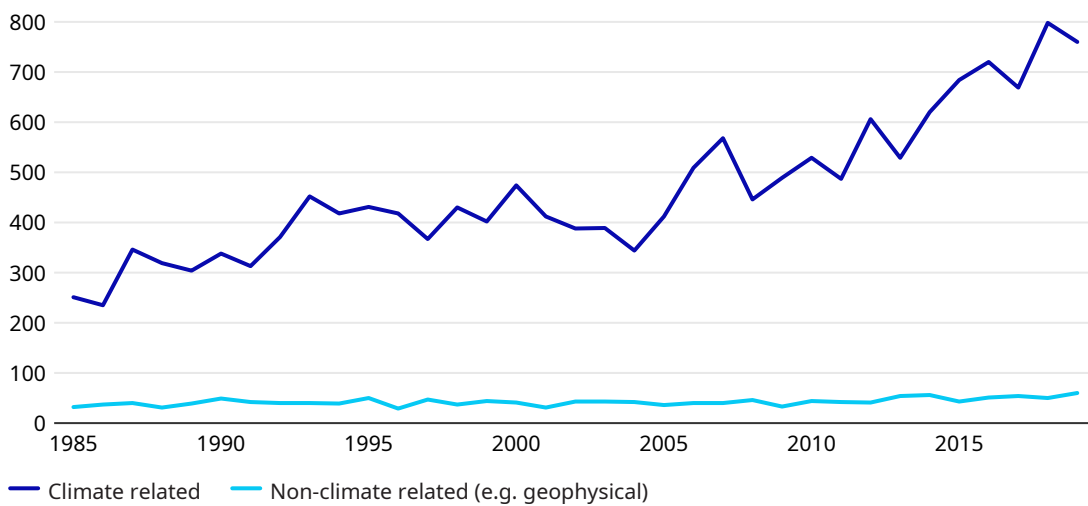
What impact will a low-carbon transition have on the company's strategy? How is management assessing the impact of a low-carbon transition on enterprise risks?

What are the most material transition-related scenarios for the company — for example, is there likely to be a particular regulatory change or shift in customer sentiment?

Enterprise risk and a changing climate

Climate change is also multiplying physical risks associated with natural catastrophes and resource security. Climate-related disasters are increasing steadily (see Exhibit 2).¹⁶ Morgan Stanley estimates¹⁷ that globally, climate-related disasters cost \$650 billion from 2016 to 2018. Of this, two-thirds were borne by North America. Results from a survey conducted by Marsh and RIMS at the beginning of 2020, and published for the first time here, reveal that more than half of respondents expect to be affected by tropical storms, hurricanes, typhoons, or tropical cyclones in the next five years, and 29 percent expect to be hit by coastal flooding.

Exhibit 2: Reported natural disasters worldwide



Source: Munich Re and Marsh & McLennan analysis

These events can have severe and long-lasting consequences. Assets may be destroyed and loss of power and damage to transportation infrastructure can interrupt business operations. Even if companies emerge relatively unscathed, they can still be vulnerable to downturns in the local economy.

Small- and medium-sized enterprises may be particularly vulnerable because they typically have less working capital to draw upon in the aftermath of a disaster and often lack adequate flood insurance. The Federal Emergency Management Agency estimates¹⁸ that between 40 and 60 percent of small businesses forced to close by disasters never reopen. After Hurricane Harvey hit Texas in 2017, the following quarter saw 13.5 percent¹⁹ of businesses lost from the disaster area. The National Oceanic and Atmospheric Administration has since estimated Harvey to have cost \$125 billion²⁰, with scientists finding that climate change could be responsible for three-quarters²¹ of the bill.

Climate impacts are also a growing concern for major corporations, which are experiencing rising costs from the effects of water scarcity, supply-chain logistics, and commodity market volatility, to name a few. Last year, 215 of the world's largest companies reported²² \$400 billion of profits at risk from a changing climate.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

Does the company assess the risk of climate-related impacts along its entire value chain, for example, on its own assets, operations, suppliers, and customers?

What are the most material climate-related impacts the company is exposed to, and how is it managing these risks?

How are physical risks expected to change under various future climate scenarios?

How is management incorporating an assessment of future physical risks into decision making, such as long-term sourcing strategies?

Emerging from COVID-19

Board oversight of climate risks is particularly important in the wake of the coronavirus pandemic, when senior management is likely to be preoccupied with the tactical and operational matters of surviving the crisis. During this time, many companies will be especially vulnerable to climate impacts because balance sheets are stretched thin, supply chains are fragile, and lockdowns may challenge businesses' and authorities' ability to implement emergency responses.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

How have climate risks changed as a result of the pandemic (see Exhibit 2)?

What climate-related disasters will the company be exposed to in the near term? What resilience measures are in place?

How have climate risks been considered in pandemic recovery strategies?

Meanwhile, transition risks are evolving rapidly due to government stimulus measures, market dynamics, and changes in consumer behaviors brought about by the crisis (see Exhibit 3).

Exhibit 3: Questions to help directors to understand how COVID-19 has reshaped climate risks

Regulatory

- What green policy instruments will be included in stimulus packages?
- Will bailouts and regulatory rollbacks lock in high-carbon or promote low-carbon activities?
- What environmental conditions will be attached?

Technology

- Will stimulus packages favor particular low-carbon technologies?
- How will R&D budget cuts or impacts on the start-up sector affect prospects for low-carbon disruption?
- Has lockdown resulted in gains or setbacks for particular disruptive technologies?

Market

- How have valuations of high-carbon assets been affected, e.g., oil & gas reserves, thermal generation assets?
- How have consumer preferences for low- and high-carbon products and services shifted?

Natural Catastrophes

- How has vulnerability to pre-existing NatCat risks changed?
- How might plans to restructure supply chains change exposure to NatCat risks in the future?

Behavioral

- Will changes in behavior consistent with lower-carbon lifestyles “stick,” e.g., for transport, retail?
- What opportunities do new working patterns provide to reduce carbon footprint, e.g., remote working, video conferencing?

Reputation

- How has public concern about climate change, and support for action, shifted?
- How have workforce values changed, and what is the implication for the competition for talent?

Source: Marsh & McLennan

Companies attuned to these shifts in climate risk will be better able to weather imminent climate effects and gain a competitive edge as the economy emerges from the pandemic and charts a new course toward decarbonization. Now is a critical time for boards to ensure that climate risk is properly integrated into recovery strategies.

Implications for board oversight

The threats outlined above are not in themselves new. Successful businesses have long managed risks associated with natural disasters, access to water, and the availability of raw materials. Similarly, competitiveness rests on businesses' ability to anticipate and respond to technological advancement, business-model disruption, and changes in regulation and consumer behavior. Climate change means that these traditional risks are becoming more severe, more multifaceted, and more interdependent, and that these trends will continue for the foreseeable future.

This has clear implications for the board and its responsibility to oversee corporate strategy and ultimately protect long-term shareholder value. Climate change should not be thought of narrowly as "more extreme weather," nor should it be placed in a bucket alongside more-familiar enterprise risks. These approaches fail to recognize its role as a risk multiplier.

Boards need to ensure that management understands how climate change is reshaping the company's entire risk landscape, and they must be assured that this is reflected in corporate strategy. An integrated approach to climate risk starts at the top.

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THE CLIMATE RISK OVERSIGHT DEFICIT

By Rob Bailey and Jack Flug

Climate change is complicating two of the most important board responsibilities — its duties to protect long-term shareholder value and oversee risk management. Investors and regulators are paying more attention to how companies are managing climate risks as concerns grow about the risk that climate change poses to shareholder value, with implications for directors.

New expectations for the governance of climate risk

This trend of increasing expectations was exemplified by BlackRock CEO Larry Fink when earlier this year he argued¹ that “climate change has become a defining factor in companies’ long-term prospects.” He stated that BlackRock, the world’s largest asset manager, would ask companies to disclose data on climate risks and opportunities and that it would “be increasingly disposed to vote against management and board directors” that fail to disclose and manage climate risks. These were not empty threats. Six months later, BlackRock had voted against 53² companies for unsatisfactory progress on climate-risk disclosure or management and put a further 191 companies “on watch.”

BlackRock is far from unique in this regard. In 2019, State Street Global Advisors published climate risk oversight guidance for directors in its portfolio companies, having engaged with 160 companies on climate issues in the previous three years; Legal & General Investment Management engaged with 249 companies³ on climate issues in 2019 alone — more than on compensation, diversity, or strategy.

The climate-risk disclosures demanded by investors, most notably those recommended⁴ by the Taskforce on Climate-Related Financial Disclosures (TCFD), are voluntary, but indications are that this is set to change over time in many jurisdictions. The UK government has proposed⁵ mandatory reporting in line with TCFD for listed companies by 2022. Other governments⁶ that have endorsed the TCFD include Canada, Sweden, and France; the latter already has legislation requiring⁷ climate disclosures from listed companies and institutional investors. In Australia, listed companies are required⁸ to disclose climate risks in their annual reports, and the New Zealand government is considering⁹ a similar proposal.

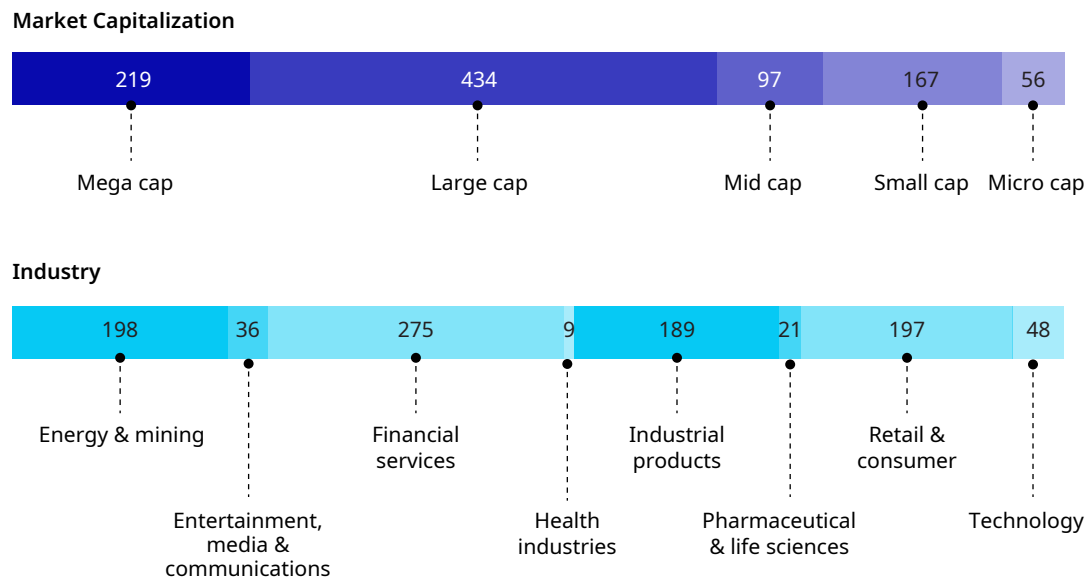
Financial regulators, concerned about the risks that climate change poses to financial stability, have begun to issue new guidance for banks and insurers that have repercussions for companies in the real economy. For example, the Bank of England has set about developing a climate stress test and has published requirements¹⁰ for climate risk management, including specific demands

of the board, that all Bank of England-regulated firms, including UK subsidiaries of US financial institutions, will need to demonstrate they meet by the end of 2021¹¹. This also has implications for the corporate sector, because as banks incorporate climate into their risk-management processes, they will require greater transparency of climate risks from the companies they lend to.

In time, similar regulatory approaches should be expected in the United States. A coalition of more than 70 investors, former regulators, and leaders from the corporate and nonprofit sectors recently wrote¹² to federal regulators asking them to incorporate climate risk into their activities.

Chairman Jerome Powell has signalled¹³ that the Federal Reserve is likely to join the Network for Greening the Financial System¹⁴ — a group of more than 60 central banks and supervisors working to “contribute to the development of environment and climate risk management in the financial sector.” SEC commissioners have recently debated¹⁵ the inclusion of climate risk disclosures in SEC filings, while legislation that would mandate disclosure has been reintroduced to Congress, though it remains unlikely to pass. Despite the absence of regulation requiring specific disclosure of climate-related risks, a number of American companies¹⁶ have begun to publish TCFD disclosures, and a significant number disclose climate-related risks in their Form 10-K filings (Exhibit 1).

Exhibit 1: Number of companies in Russell 3000 Index reporting climate-risk factors in their 2020 Form 10-K Filings



Source: MyLogIQ Multidimensional Public Company Intelligence, www.MyLogIQ.com

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

What are the positions of our major investors with respect to climate risk disclosure?

How does the company currently disclose climate-related risks?

What is management's view on whether the TCFD's recommendations are appropriate for the company?

How are the company's peers disclosing climate-related risks?

What exposures does the company have to climate-related regulatory developments inside and outside the United States?

Oversee or overlook?

Evidence suggests climate risk governance in many companies falls short of shareholder expectations. Rather than overseeing climate risks, many boards may be overlooking them. In a survey conducted by Marsh and RIMS at the beginning of 2020 and revealed for the first time here, only 31 percent of respondents acknowledged that the board or senior leaders had asked for information about climate risks. According to CDP¹⁷, the world's leading climate disclosure platform, US companies have some of the lowest levels of board oversight of climate risks globally — 60 percent compared to a global average of 73 percent. Given that companies reporting to CDP are likely to have above-average climate risk awareness, the real numbers are likely to be lower.

In some instances, senior leadership may be complacent about climate change. The same survey revealed that 39 percent of C-suite respondents thought their company was not exposed to climate risk at all. Executives were also significantly more likely than risk managers to believe there was no need to build resilience to climate change (30 percent compared to 22 percent).

Less than one quarter of C-suite respondents believed that climate risk had a 'clear owner' in their organizations. It is perhaps unsurprising then that climate change is too rarely integrated into strategic planning and enterprise risk management. The Marsh-RIMS survey found that less than a third of respondents had discussed a comprehensive climate risk strategy and that only 12 percent had quantified the potential financial impacts of climate change.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

What is the process for providing information to the board about climate risks?

Does the company have documented strategies or plans for managing climate risks?

Has the company quantified the potential financial impacts of climate change?

Who among the senior management team is responsible for climate risk?

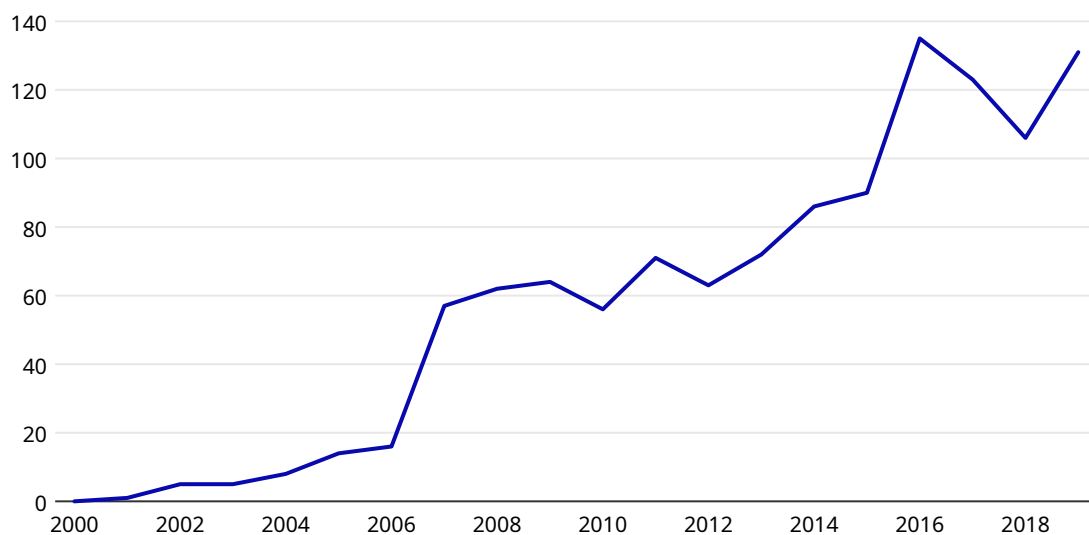
Does the board need a director with experience or expertise in climate change?

Climate litigation

Risk oversight is a key component of a director's fiduciary duty and deficits in oversight of climate risk may lead to material governance failures and the possibility of shareholder action, including litigation.

During the 2020 proxy season, US companies faced 54 climate-related shareholder proposals¹⁸, making climate change the second most important driver of submissions, and American courtrooms are experiencing a rise in climate-related cases (see Exhibit 2).

Exhibit 2: Number of US climate litigation cases (public and private defendants)



Source: Climate Change Litigation Database, Sabin Center for Climate Change Law at Columbia Law School

Plaintiffs have made various claims against companies relating to the management and transparency of climate risks. Companies have been sued¹⁹ for misleading investors by failing to disclose climate risks and for risking shareholder value in pursuit of high-carbon investments vulnerable to regulatory change. Other cases have argued that companies have misled consumers with marketing campaigns that greenwash their product portfolio and business activities. Companies that fail to manage the foreseeable risks that a changing climate presents to assets and operations are also at risk of litigation. For example, one recent case argued²⁰ that an oil and gas company had failed to plan for the effects of sea level rise and extreme weather at a major storage terminal, placing the local environment at risk from pollution.

The target of litigation has broadened from corporations to include directors and officers.²¹ In one recent example, shareholders sued the directors and officers of an oil and gas company, arguing they had failed to discharge their fiduciary duties in relation to climate risk oversight. In a second, bondholders brought a case against an electric utility and its directors and officers, arguing that creditors had been misled about company actions to manage risks arising from climate impacts.

To date, litigation has predominantly targeted the energy, power, and financial sectors, but this focus is likely to broaden as climate impacts mount and the low-carbon transition spreads to other sectors of the economy. Meanwhile, expectations of boards and executive teams will continue to increase as shareholders, regulators, and policymakers pursue greater transparency and scrutiny of climate risks. Against this backdrop, for directors and officers in companies exposed to climate change, a deficit in climate risk oversight could become a personal liability. As an immediate action, directors would be well advised to revisit their directors and officers insurance to ensure that their policy covers this emerging litigation threat. More fundamentally, boards should consider what actions they can take to close any potential oversight deficit, including educating themselves on climate risk and assigning responsibilities for climate risk to a particular board committee or committees.

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CLIMATE DISCLOSURE AND THE ROLE OF THE BOARD

By Lloyd Yates and Katherine J. Brennan

As the risks from environmental, social, and governance (ESG) issues such as climate change become more apparent, the role of corporate boards in overseeing these risks — and how they are disclosed to stakeholders — is evolving. Climate-related risks¹ dominated long-term risks in terms of both likelihood and severity in the World Economic Forum's Global Risks Report 2020.² A number of voluntary ESG reporting frameworks have emerged to meet new disclosure needs. If properly implemented, these frameworks can serve as a tool for directors to evaluate a company's climate-related risk management procedures and disclosures.

Climate-related disclosure frameworks

The rules established by the US Securities and Exchange Commission (SEC), Public Company Accounting Oversight Board (PCAOB), and the stock exchanges provide a well-established framework for the board's oversight of financial statement disclosures. Climate-risk disclosure, however, is a rapidly evolving concept with no one right way to evaluate a company's disclosure practices. This lack of standardization is a challenge for companies attempting to make decisions about what constitutes useful disclosures and for boards overseeing and monitoring these disclosures.

There are numerous, voluntary, climate-risk reporting frameworks. Most recently, in January 2020, the World Economic Forum released a Consultation Draft³ of proposed common ESG metrics for companies to consider using, including in investor communications. However, the most popular reporting frameworks today include those from the Global Reporting Initiative⁴, Carbon Disclosure Project⁵, Climate Disclosure Standards Board⁶, the Financial Stability Board's Taskforce on Climate-related Financial Disclosures (TCFD)⁷, and Sustainability Accounting Standards Board⁸. Work is underway to harmonize⁹ these approaches and align climate-risk disclosure with the recommendations¹⁰ of the TCFD, which seeks¹¹ to "develop recommendations for voluntary climate-related financial disclosures that are consistent, comparable, reliable, clear, and efficient, and provide decision-useful information to lenders, insurers, and investors." As of September 2020, support¹² for the TCFD has grown to include more than 1,440 organizations, representing a market capitalization of over \$12.6 trillion.

To date, however, the SEC has not adopted mandatory, climate-related information in securities law disclosures. Indeed, ESG disclosures were conspicuous by their absence¹³ in the recently adopted amendments to Regulation S-K, despite strong demand from investors and disagreement among the Commissioners on this omission. The issue is expected to return when the Commission considers rules to amend Item 303 of the Regulation. While disclosure remains voluntary in the near term, boards should begin to think about their role in overseeing these disclosures.

Governance of climate-related disclosure

A board's responsibility for overseeing climate disclosure should be delegated within the board's existing structure and approach to overall climate risk. At one end of the spectrum, aspects of climate-risk governance may be the responsibility of a few committees — for example, the risk committee becomes responsible for oversight of climate-risk management and the compensation committee is responsible for tying executive compensation to performance against corporate climate goals. In this case, the audit committee might be charged with overseeing climate-related disclosures as an extension of its financial reporting responsibilities. At the other end of the spectrum is a centralized model, where the board nominates a dedicated sustainability, ESG, or climate-change committee that might assume primary responsibility for all aspects of climate-related risk and disclosures.

In practice, the approach most boards take sits somewhere along this spectrum. Although it may make sense for the audit committee or sustainability committee to assume primary responsibility for overseeing disclosure, different disclosure elements are likely to touch on the remits of other committees, making it necessary to coordinate on matters of mutual interest (see Exhibit 1).

Exhibit 1: TCFD climate-related disclosures and their relevance to the board and its committees

TCFD Disclosure	Board Relevance	Board Committee Responsibility			
		Audit & Risk	Compensation	Directors & Governance	ESG
<p>Governance</p> <p>Describe management's role in assessing and managing climate-related risks and opportunities and of the board's oversight of climate-related risks and opportunities</p>	<ul style="list-style-type: none"> How does the board oversee climate-related risks and opportunities? 	<ul style="list-style-type: none"> Oversees integrity of financial statements, including disclosure of material risks Oversees enterprise risk management 		<ul style="list-style-type: none"> Oversees corporate governance guidelines, including the board's role in risk oversight 	<ul style="list-style-type: none"> Oversees environmental and other public policy initiatives
<p>Strategy</p> <p>Describe climate-related risks and opportunities identified over the short, medium and long term; how these impact business, strategy and financial planning, including the resilience of corporate strategy under different climate scenarios</p>	<ul style="list-style-type: none"> How does climate factor in to the board's review of the company's strategic and financial planning? 	<ul style="list-style-type: none"> The full board oversees the company's strategic and operating plans, fundamental financial objectives, and major corporate actions 			
<p>Risk Management</p> <p>Describe the processes for identifying, assessing and managing climate-related risks, and how these are integrated into overall risk management</p>	<ul style="list-style-type: none"> How does the board oversee the company's assessment of climate risk within its enterprise risk management programs and processes? 	<ul style="list-style-type: none"> Oversees enterprise risk management 	<ul style="list-style-type: none"> Oversees design of incentive compensation plans, including senior executive objectives 		<ul style="list-style-type: none"> Oversees environmental and other public policy initiatives
<p>Metrics and Targets</p> <p>Disclose i) the metrics used to assess climate-related risks and opportunities; ii) the metrics used to measure and assess scope 1, 2 and 3 emissions and related risks; and iii) the targets used to manage climate-related risks and opportunities and achieve publicly state goals</p>	<ul style="list-style-type: none"> What metrics does the company use to measure and manage climate-related risks and opportunities, and how do they help the board evaluate a company's climate-related risk management procedures and disclosures? 	<ul style="list-style-type: none"> Oversees integrity of financial statements, including disclosure of material risks Oversees enterprise risk management 	<ul style="list-style-type: none"> Oversees design of incentive compensation plans, including senior executive objectives 		<ul style="list-style-type: none"> Oversees environmental and other public policy initiatives

Source: Marsh & McLennan

The Marsh & McLennan board has formally focused on key aspects of the company's ESG initiatives since 2008, when it created a corporate responsibility committee. Renamed the ESG committee in 2020, the committee oversees and supports the company's commitment to social, environmental, and other public-policy initiatives, including climate risk. In order to maintain transparency and consistency with respect to all ESG matters, the ESG Committee comprises members of each of the board's other committees. While the company's audit committee is responsible for overseeing the integrity of the company's financial statements and the company's enterprise risk management programs and processes, the ESG committee has primary responsibility for all aspects of climate-related risk and disclosures.

Marsh & McLennan signed on to TCFD in May 2020 and expects to publish its first integrated ESG report, including climate disclosures pursuant to the TCFD framework, in 2021. The report will include a TCFD disclosures index, which will map the company against relevant peers, enabling the ESG committee to benchmark the company's disclosure and performance in a standardized framework.

While the SEC, PCAOB, New York Stock Exchange, and Nasdaq have yet to establish a framework for the board's oversight of climate-related disclosures, directors in most states still have a duty of oversight that requires them to implement and oversee the operation of "any reporting or information system or controls" designed to inform them of material risks.¹⁴ Without a robust reporting framework subject to effective oversight, the risks¹⁵ of litigation and bad publicity in relation to ESG disclosures are greater, and are likely to grow as investor scrutiny of ESG disclosures increases.

Evaluating management's approach

A framework can provide a tool for boards to benchmark management's approach to the identification, assessment, management, and disclosure of material climate-related risks in a manner analogous to the way in which some boards have used the National Institute of Standards and Technology's Framework for Improving Critical Infrastructure Cybersecurity¹⁶ as a basis for evaluating their management's approaches to cybersecurity.

Although the TCFD framework is focused on disclosure, it still identifies the key components of climate-risk governance that boards could use to develop a simple diagnostic tool to evaluate the maturity of existing management approaches (see Exhibit 2). The results could inform a road map for management to follow.

Exhibit 2: Illustrative climate risk governance diagnostic framework derived from TCFD

Governance

- How often are the board and/ or relevant board committees informed about climate-related issues?
 - Does/do the board and/ or board committees consider climate-related issues when:
 - Reviewing strategy, risk management and business plans?
 - Monitoring implementation and performance of plans and initiatives?
 - Overseeing major capital expenditures, mergers, acquisitions, and disposals?
 - Does the board approve corporate climate-related targets and monitor progress against them?
 - Have senior managers or management committees been assigned climate-related responsibilities and if so, do they report to the board?
 - Are processes in place for relevant senior managers and/ or management committees to monitor climate-related issues and information?
-

Strategy

- Is there a methodology and process for identifying climate-related risks and opportunities over relevant short-, medium- and long-term horizons, and across different business lines and geographies?
 - Is management able to quantify the financial impacts of climate-related risks and opportunities?
 - Does analysis of climate-related risks and opportunities feed into financial planning and strategy development?
 - Does management use scenario analysis to test the resilience of corporate strategy to different climate scenarios?
-

Risk Management

- Are there robust processes in place to identify and assess climate-related risks?
 - Are there robust climate-risk management frameworks that can justify decisions to mitigate, transfer, accept, or actively manage risks?
 - Is climate risk management properly integrated with wider Enterprise Risk Management processes?
-

Metrics and Targets

- Are there appropriate metrics in place to measure climate-related risks for water use and energy use, or exposure to physical impacts? Has trend analysis been performed on these?
 - Does the company use an internal carbon price?
 - Has the company established targets for climate-related revenues?
 - Does the company measure scope 1, 2 and 3 emissions using an accepted methodology, and benchmark itself against its peers?
 - Is management incentivized to achieve relevant targets and goals?
-

Source: Marsh & McLennan

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REALIZING THE CLIMATE OPPORTUNITY

By Scott McDonald and Rob Bailey

While it is often discussed in boardrooms as a major risk, climate change is also a business opportunity. The low-carbon transition creates opportunities for efficiency, innovation, and growth that extend beyond high-carbon industries like energy and transport to all sectors. Companies can save energy and materials costs, serve new customer needs, enhance their reputations, and better attract and retain talent — all as a consequence of working to reduce their emissions and those of their customers and suppliers.

Through their governance role, boards can help to ensure that climate opportunities are captured by reviewing corporate strategy and focussing on long-term value. This is truer than ever before as companies navigate the fallout from COVID-19 and plan for recovery: executive teams are occupied with the “here and now” of operational and financial management and boards will need to keep the pressure on management teams to engage with the strategic questions of what comes next. As we show below, those that apply a “green” lens to recovery planning could uncover trillions of dollars in low-carbon opportunities.

Cost management

Green operations are lean operations, and companies with sufficient capital expenditure flexibility to make smart green investments can reduce their costs at a time when every dollar counts.

Research¹ undertaken by Oliver Wyman and CDP², a nonprofit that runs the leading global climate-related disclosure system, found that European corporations are realizing significant operating cost savings from comparably modest spending on emissions reductions. Investments last year in low-carbon projects such as renewables and energy efficiency were expected to net companies \$45 billion over the investments’ lifetimes — a savings of \$20 for every metric ton of carbon dioxide equivalent avoided. The same is happening in the United States, where a 2017 analysis³ found that Fortune 500 companies were saving \$24 per metric ton.

Last year, US corporations signed power purchase agreements with renewables developers that will bring 13.6 GW⁴ of clean energy into operation. This is equivalent to almost two thirds of the generation capacity added in the United States last year (20.7 GW⁵) — renewables, fossil fuels, and nuclear energy included.

Greener operations can also reduce capital costs. The rapid growth⁶ in green lending (where use of proceeds is tied to specific low-carbon projects) and sustainability-linked lending (where borrowing costs are linked to sustainability performance, but with flexibility as to how proceeds are used) provides new opportunities to access cheaper finance. For example⁷, Prologis, Avangrid, CMS Energy and Xylem have all agreed to new credit arrangements with interest rates linked to sustainability performance, and US banks are targeting this new market for growth.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

How have opportunities to increase operational efficiency through investment in clean energy investments and energy efficiency been evaluated? How often are these reconsidered?

What opportunities are there to access cheaper green financing?

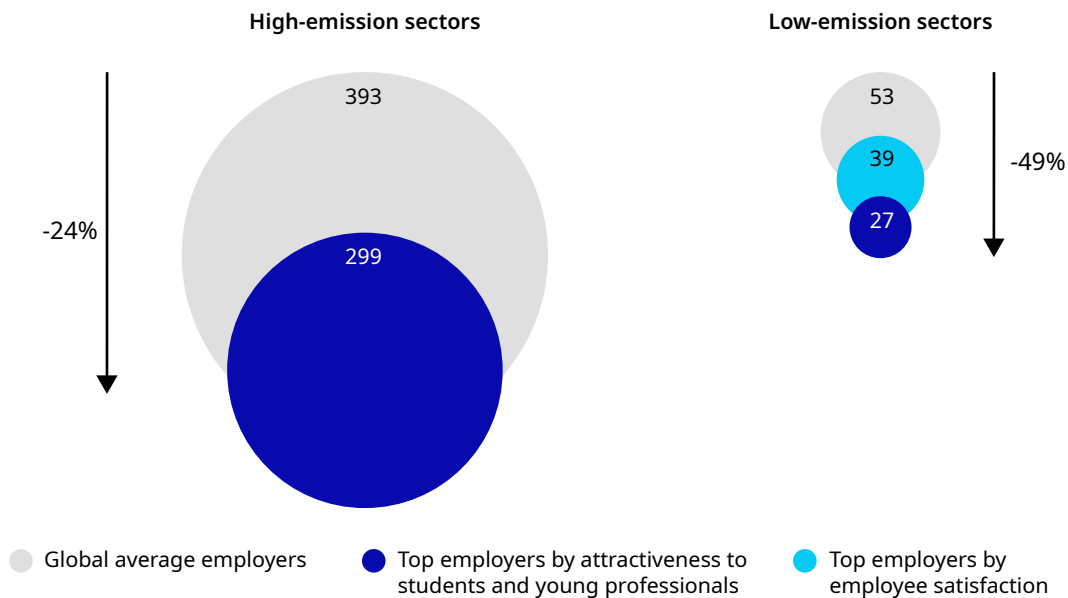
Capitalizing on changes in behavior

The pandemic has imposed changes in working arrangements and lifestyles that may create opportunities to increase green efficiency savings. For example, a shift to remote working may provide opportunities to reduce travel and cut office use and energy costs. However, more fundamental shifts in attitudes may also be underway.

Research⁸ firm IPSOS Mori found that more than half of Americans (59 percent) think that climate change is as serious a problem as COVID-19 and want to see it prioritized in recovery planning — a finding replicated across the world. Companies that capitalize on these attitudes may be able to enhance brand loyalty and increase market share among concerned consumers. Research⁹ by New York University's Stern Center for Sustainable Business has found that sustainable brands have increased their share of the US market during the pandemic — demonstrating this trend.

These dynamics are also relevant to workforces. Strong corporate environmental performance is associated¹⁰ with increased staff satisfaction and attractiveness to talent, with the most popular companies producing significantly lower emissions per dollar of revenues than their peers (see Exhibit 1).

Exhibit 1: Average employer emissions intensity for popular companies compared to peers
 Metric tons of carbon dioxide equivalent per US\$ million revenue, 2019



Source: Marsh & McLennan, based on data from MSCI, Fortune and Universum.

Put another way, companies with leading environmental credentials will be at an advantage¹¹ when recovery takes off and the competition for talent heats up. The benefits will continue to increase well after the pandemic has waned, as the labor force becomes increasingly dominated by millennial and gen Z cohorts who place a higher premium¹² on employers’ climate credentials.

New revenue opportunities

The low-carbon transition is creating demand for new sustainable goods and services worth trillions of dollars across all sectors. The transportation sector has seen rapid growth in zero-emission vehicles and the explosion of new mobility services. By 2030, electric vehicles may account for 28 percent¹³ of global passenger vehicle sales; this year, Tesla became the most valuable car maker¹⁴ in the world, despite generating less than one-tenth of the revenues of the second-most-valuable company. In the United States, the green economy is already worth \$1.3 trillion¹⁵ and it is growing at over 20 percent a year.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

What impact will growing consumer concerns about climate change have on the company?
 What opportunities does this create?

How does the company’s performance on climate change compare to that of its peers?

How does the current talent strategy take into account growing public concerns about climate change?

Fifty percent¹⁶ of recent growth in consumer packaged goods has come from sustainable product lines while sales of plant-based foods — which generally have a significantly lower carbon footprint than animal-based alternatives — have grown at five times the market rate, to reach \$5 billion¹⁷. New financial products and services are emerging in response — Oliver Wyman estimates that revenues from sustainable finance could amount to \$100-150 billion¹⁸ a year.

Even before the coronavirus hit, the multitrillion-dollar scale of the low-carbon business opportunity was abundantly clear. In 2018, 225 of the world's largest companies reported¹⁹ over \$2 trillion of climate-related opportunities from low-carbon goods and services, shifting consumer preferences, and the potential to gain new forms of competitive advantage. Last year, European companies alone identified \$1.4 trillion²⁰ of opportunities — more than six times the cost to realize them. With the United States having the largest green economy²¹ in the world, low-carbon opportunities for American companies should be larger still.

QUESTIONS FOR THE BOARD TO ASK MANAGEMENT

What impact does the low-carbon transition have on our current strategy? What is the plan to realize low-carbon opportunities?

What is the estimated size of potential low-carbon revenue opportunities for the company? What investments need to happen to realize these opportunities?

The green horizon

COVID-19 has not erased these opportunities. The immediate challenges of dealing with the crisis may distract from decarbonization efforts in the short term, and the pace of transition may be slowed if government stimulus plans favor high-carbon activities over low-carbon ones — by providing royalties relief²² for oil and gas companies rather than providing incentives for efficiency technology upgrades or electric vehicles, for example. But the final destination — a zero-emission economy — is inevitable. This is for the simple reason that climate change will stop only once net global emissions have reached zero. The transition has a long way to go and a lot more value to create.

With many management teams focused on tactical matters of survival in the wake of the coronavirus pandemic, directors have a critical role to play in making sure that strategies keep sight of the trillions of dollars to be gained from low-carbon opportunities on the other side of the crisis. The prize is only going to get bigger.

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Rob Bailey is Director of Climate Resilience for Marsh & McLennan Advantage.

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BUILDING CLIMATE-SMART BOARDS

By Keith McCambridge and Michelle Daisley

Demands on directors have increased dramatically in recent years, and boards have struggled to stay on top of the challenges presented by an increasingly dynamic, volatile, and ambiguous world. Climate change has multiplied the challenges facing directors by significantly complicating risk oversight¹. Of course, providing risk oversight and protecting the interests of shareholders is just one aspect of the board's role. High-performance boards act as enablers of competitive and organizational advantage, using their collective capabilities to create value, rather than acting as mere defenders and protectors of the organization's current market position. Beyond just understanding and managing climate-related risk, the board must encourage management to look at the other side of the proverbial coin — climate-related opportunities². This is no small ask, and the degree of adjustment and change required of the board to recognize these opportunities and encourage management to pursue them should not be underestimated.

The effective functioning of a board can be viewed through two dimensions:

- **Board Composition and Dynamics:** The profiles, experiences, expertise, and capabilities of board members, both individually and collectively, and how they behave as a group to perform the board's duties
- **Organization and Operation:** The setup and operations of the board and its committees, how agendas are set, what information the board receives, and how and when it is involved in key decisions and processes

Both dimensions must be considered before the board's ability to respond to the challenges posed by climate risks can be enhanced.

Composition and dynamics

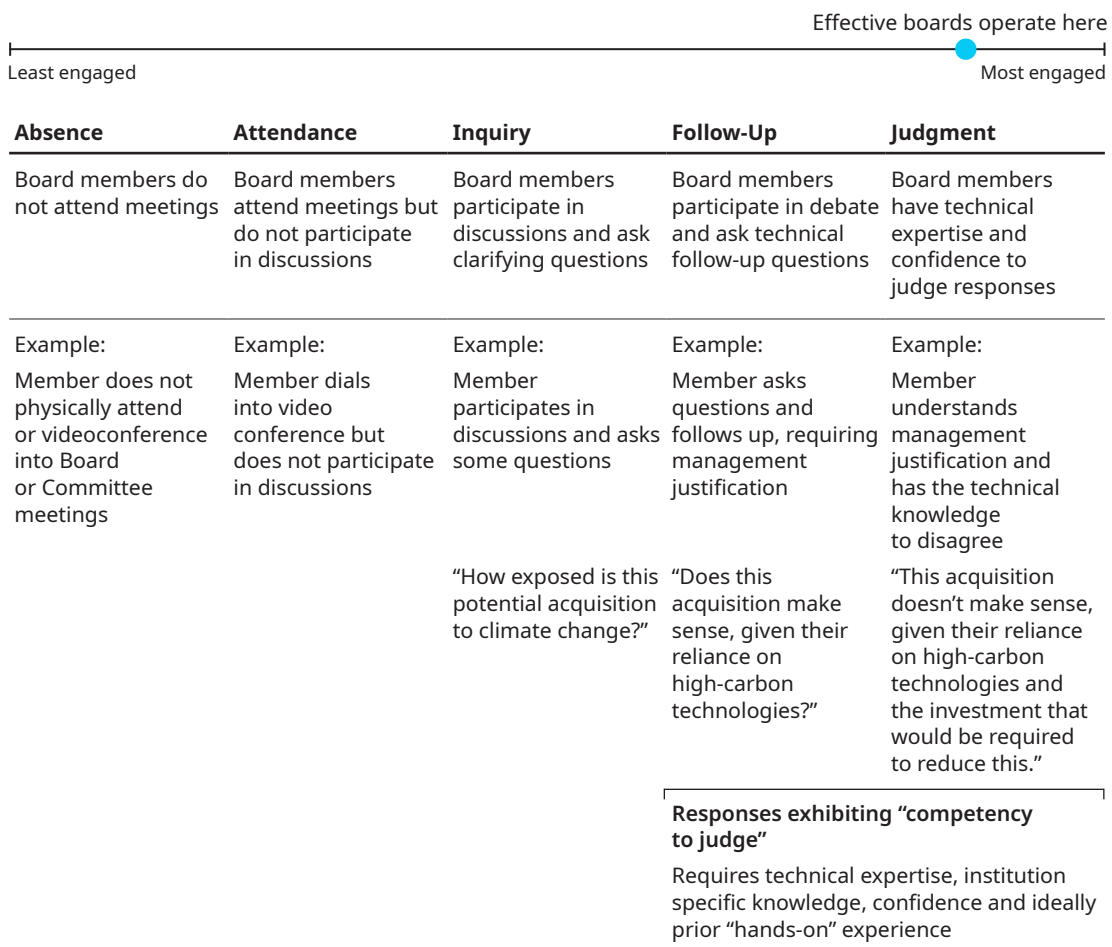
Professor Herminia Ibarra at the London Business School talks of the need for leaders and organizations to stop being "know-it-alls" in favor of becoming "learn-it-alls," arguing that the speed of change that organizations currently face requires continuous learning and connection to the ecosystem in which they operate.³

Without this, it is too easy for an enterprise to suddenly lose its relevance and, equally, for boards to lose their competency to protect shareholder interests and provide effective oversight of risks. Boards need to be open learning systems, not closed entities relying on their eminence and their historical experience of markets that have changed so much from how they functioned before that they are now unrecognizable.

The first step for any board to take is to accept its knowledge deficit and commit to continuous learning and exploration.

Climate change is new, unfamiliar, and was not part of the job description when many nonexecutive directors (NEDs) were executives themselves. This means that boards may lack the “competency to judge”. Exhibit 1 below shows a spectrum of engagement and challenge for board members: “What good looks like.”

Exhibit 1: The spectrum of engagement and challenge for board members



Source: Oliver Wyman

So, how can directors build their “competency to judge”?

In order to gain expertise in new areas, many boards have first looked at their own composition. Demand for NEDs with experience in digital transformation, climate change, sustainability, and regulatory issues has soared, yet this can create new problems. Boards only have authority as a collective — no one individual within a board has authority to act alone, and it is only this cabinet

authority that gives a board its mandate. Boards can fall into a trap of appointing one NED who has experience with climate risk, which often leads to that NED being viewed as the “board expert” on climate risk — debate, discussion, and competent disagreement on this issue among the full board is forgotten.

This creates a single point of failure as no one feels able or equipped to challenge the views espoused by that expert. A single appointment of a director with specific expertise or experience is insufficient to equip the board with the collective competency to judge. The key to gaining the competency to judge lies in augmenting this expert view with additional strategies. Dedicating time to learning as a board is vital to the board's development as an entity. This learning can be guided by the subject-matter expert but should also include input from management to ensure organizational relevance.

Increasingly, boards are experimenting with expert panels. Here, the board engages external and impartial individuals to augment their judgment. Expert panelists are not board members, nor do they carry any decision-making authority; their role is to bolster the board's competency to judge. On occasion, these external individuals can attend board discussions to ensure that the right questions are being asked and that the responses are understood. This approach has been widely used in the area of digital transformation, where the technology and risks associated with migration or real-time replatforming are considerable. It goes without saying that these strategies to equip the board with the competency to judge are not fail-safe, but they do significantly increase the chances of informed oversight.

Board chairs need to create the right environment for board members to be pupils — not teachers. They need to develop a board environment that is conducive to the psychological safety required for constructive conflict among board members. Board members need to find the courage to reveal their lack of understanding, ask questions that encourage learning, and recognize their inadequacies. Increasing board diversity and introducing directors with more varied experience and unusual backgrounds (not necessarily climate expertise) can help to foster a culture of courage and challenge.

QUESTIONS FOR THE BOARD TO CONSIDER

Are there one or more board members with expertise in climate change and/or experience in climate risks and opportunities?

Would there be value in engaging external experts to advise the board on climate issues? What would be their role?

Does the board already have a director education plan? How could climate change be integrated into that?

Organization and operation

One approach to building a climate-competent board is to establish a board sustainability committee. A dedicated committee, with the right mandate and members, can provide more-focused attention on climate-related topics. However, with this approach there remains a risk of pigeonholing the issue away from full-board decision making, when climate change is in fact a whole-enterprise issue that touches upon many different board responsibilities.

A more holistic approach involves embedding relevant aspects of climate change into all key board decisions and processes. For example, climate-risk considerations should be part and parcel of all board discussions about strategy, risk, M&A, and innovation, as opposed to being a separate agenda item.

Directors should be satisfied that executives are actively considering climate implications and regularly providing information to the board. Directors should challenge executives if this does not happen. To enable this, the board needs to set clear expectations for management reporting and accountability.

The board is being transformed by the very environment in which it now operates. Today's first-class directors possess qualities that are different from those of board members in the past. Knowledge is becoming less valuable than the capacity to learn. The formality and eminence of boards are being replaced by humility, exploration, external connections, and the need for a boardroom climate of psychological safety that encourages constructive conflict.

QUESTIONS FOR THE BOARD TO CONSIDER

Are the potential consequences of climate risks routinely considered in relevant board committee discussions?

Is management providing regular information about climate risks and how they are being managed?

Has the board issued guidance to management for climate reporting and accountability for risk management?

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Endnotes

- 1 Bailey, R., & Clarke, L. (2020, September 9). Climate Change Is an Enterprise Risk Multiplier. NACD BoardTalk. <https://blog.nacdonline.org/posts/climate-change-risk-multiplier>
- 2 Bailey, R., & McDonald, S. (2020, September 29). Realizing the Climate Opportunity. NACD BoardTalk. <https://blog.nacdonline.org/posts/realizing-the-climate-opportunity>
- 3 Ibarra, H., & Rattan, A. (2019, August 7). From know-it-alls to learn-it-alls: How leaders can instil a growth mindset [Wordpress]. Herminia Ibarra. <https://herminiaibarra.com/from-know-it-alls-to-learn-it-alls-how-leaders-can-instil-a-growth-mindset/>

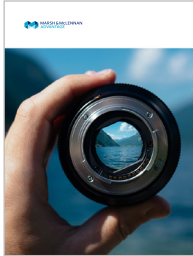
GLOSSARY OF CLIMATE-RELATED TERMS

Term	Definition
Carbon dioxide equivalent	A standard measure used to compare the emissions of different greenhouse gases based on their contribution to global warming. It converts emissions to an equivalent amount of carbon dioxide that would make the same contribution to global warming.
Carbon pricing	A policy approach to reduce carbon emissions by charging emitters for the cost of their pollution. Typically implemented through a tax or cap and trade system.
Climate opportunity/ climate-related opportunity	Potential positive business impact arising from a business response to climate change, such as enhanced efficiency, reduced energy costs, new revenues from low-carbon products and services, or new markets and enhanced resilience.
Climate risk/ climate-related risk	Potential negative business impact arising from climate change, associated with physical impacts such as extreme weather, or the transition to a low-carbon economy.
Climate-related disaster	Natural disaster caused by a hazard for which climate change is likely to influence the likelihood and/or severity, such as floods, droughts, heatwaves, wildfires, storms, cyclones.
Flight shaming	An environmental movement that discourages air travel.
Physical risk	Category of climate risk arising from the physical impacts of climate change, such as extreme weather and sea-level rise.
Renewable energy standard	A regulation requiring utility companies to generate or sell a certain proportion of electricity from renewable sources. Sometimes also referred to as a renewable portfolio standard.
Sustainability- linked loan	A loan for which the interest rate is linked to a company's performance against pre-agreed environmental or ESG criteria.
Transition risk	Category of climate risk arising from the transition to a low-carbon economy, for example through regulatory changes, technological changes, and behavioral changes.

CLIMATE-RELATED ABBREVIATIONS

CDP	Formerly the Carbon Disclosure Project. A non-profit that operates the world's leading carbon disclosure platform.
CDSB	The Climate Disclosure Standards Board. A non-profit consortium of businesses and non-governmental organizations working to align natural capital and financial capital in corporate reporting.
ESG	Environmental, Social, and Governance
GRI	Global Reporting Initiative. An international non-profit working on sustainability reporting standards.
NGFS	Network of Central Banks and Supervisors for Greening the Financial System. A network of central banks and financial supervisors working to 'enhance the role of the financial system to manage risks and mobilize capital for green and low-carbon investments'.
SASB	Sustainability Accounting Standards Board. A non-profit working on the development of sustainability accounting standards.
TCFD	Taskforce on Climate-related Financial Disclosures. A body established by the Financial Stability Board to develop guidance on climate-related disclosures.

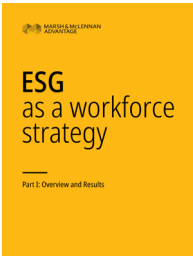
FURTHER READING



2020 Climate Resilience Handbook



Global Risks for Infrastructure: The Climate Challenge



ESG as a Workforce Strategy



Climate Change: Three Imperatives for Financial Services



Doubling Down: Europe's Low-Carbon Investment Opportunity



The Burning Issue: Managing Wildfire Risk

For Marsh & McLennan's latest publications and perspectives on climate change, visit <https://www.mmc.com/insights/climate-resilience.html>

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