MARSH & McLENNAN COMPANIES | Global Risk Center

HOW CLIMATE RESILIENT IS YOUR COMPANY?

MEETING A RISING BUSINESS IMPERATIVE

MARSH

MERCER

KEY TAKEAWAYS

1. Climate resilience is the capacity to adapt and succeed in the face of the direct and indirect impacts of climate change. In addition to addressing and managing risks, it encompasses the ability to capitalize on the strategic opportunities presented by the shift to a lower-carbon and resource-constrained economy.

2. Companies often focus narrowly on passively mitigating long-term climate risk and meeting short-term environmental or sustainability compliance standards. This fails to meet the need to go on the offensive to build climate resilience in order to gain competitive advantage.

3. Five major groups are placing pressure on companies to assess, define, and enact strategies that enhance climate resilience. Investors, policymakers and regulators, customers, supply chains, and competitors are increasingly demanding that businesses have an answer to the question: Is your company climate resilient?

4. The five groups are also rapidly reshaping the dialogue on climate risk and shifting the discussion inside boardrooms and C-suites of companies across all sectors—from questioning what impacts their businesses could have on the environment, to how climate change will impact their businesses.

5. The shift to de-carbonization and managing resource constraints is driving dynamic and structural changes across the economy. Companies that identify physical and transitional climate risks and integrate these risks into strategic and operational planning can position themselves to improve their climate resilience and gain a competitive edge.

6. An effective resilience strategy should address how climate and market changes can impact corporate and financial performance. To better understand how climate resilient your company is, we recommend the following steps: (1) Assess climate vulnerability of operations and facilities, (2) embed climate risks into enterprise risk management programs, and (3) undertake scenario analysis to enhance decision making around risks and opportunities.

7. Boards, CEOs, and C-suite executives need to begin a dialogue on climate change to ensure that an offensive approach to risks and opportunities is properly embedded within company strategy and operations.

complex and too distant to assess; moreover, such changes may be viewed as too indistinct to justify a given business decision.[3]

Consequently, most companies simply manage climate risks to maintain compliance with regulatory or market standards. For example, a 2016 study revealed that only a small fraction of CEOs (13 percent) planned to assess the vulnerabilities of existing business models and strategies against climate-related risks.[4] Further, in a recent survey of US corporate directors, only 6 percent viewed climate change as having a significant impact on their companies over the next 12 months and only 9 percent expected to see its impacts over the next five years.[5]

In other instances, company responses to climate risks are narrowly linked to corporate social responsibility (CSR) goals in the area of sustainability. As the director of a leading food products company noted: "At many companies, sustainability is delegated to the supply chain or regulatory compliance. Results are reported annually to preserve corporate reputation and avoid regulatory risks. This process, while important, is inherently defensive. Ultimately, it may not be enough to ensure competitive success in today's dynamic world."[6]

To consider climate resilience simply in terms of far-off future impacts or just a compliance issue is shortsighted. As businesses around the world prepare to face current and immediate climate-related pressures, forward-thinking companies that go on the offensive to build climate resilience will gain a competitive edge.

Since the 2015 Paris Agreement on climate change, more than 190 nations worldwide have indicated their commitments to the goal of limiting the rise in global average temperatures to less than 2°C.[7] Notwithstanding the announcement that the United States will withdraw from the Agreement, global support for the commitments that were made in Paris has remained steadfast.[8] Across every industry, the increased focus on climate change is interacting with and accelerating other major global trends, such as disruptive technologies, digitization, urbanization, and evolving demographics. These changing economic activities and shifting technologies, combined with new policies and regulations, are driving toward a lower-carbon economy. This shifting landscape creates many uncertainties, risks, and opportunities beyond managing carbon emissions and energy use, including opportunities for new products, services, supply-chain structures, and improved resource management among many others.

Ensuring that an offensive approach to climate-related risks and opportunities is properly embedded within a company's strategy and operations has become a real business imperative. A focus on climate resilience allows an organization to pursue attendant business opportunities and guard against being caught flat-footed on this important capability.

> "At many companies, sustainability is delegated to the supply chain or regulatory compliance. Results are reported annually to preserve corporate reputation and avoid regulatory risks. This process, while important, is inherently defensive. Ultimately, it may not be enough to ensure competitive success in today's dynamic world."

3 Marsh & McLennan Companies. "Unlock Growth by Integrating Sustainability," 2016.
See also, Center for Climate and Energy Solutions, 2013. "Weathering the Storm: Building Business Resilience to Climate Change"

4 The Conference Board. "CEO Challenge," 2016.

5 National Association of Corporate Directors, 2017. "2016-2017 Public Company Governance Survey"

6 BRINK News, 2016. "Sustainability and the Power of And."

7 The Paris Agreement was open for signatories at the UN in New York for one year until April 2017, where over 190 countries signed and indicated their commitment to the Agreement.

8 Morgan Stanley, June 6, 2017, "The Path Ahead after U.S. Leaves Paris Agreement," http://www.morganstanley.com/ideas/us-path-after-paris-agreement?cid=sm_smsp_lnk_06222017. Since President Trump's announcement to withdrawal from the agreement, which since the USA had already ratified, will take three years to withdrawal, over 1,000 cities, counties, states, universities and businesses in the USA joined the "We are still in" coalition to support actions to meet the Paris goals, see: http:// wearestillin.com/

Exhibit 1: Paradigm shift: building a mindset of climate resilience

INVESTORS

A growing number of investors view climate change as a material investment risk. Investors—particularly institutional investors intent on creating and preserving long-term value—are assessing how their portfolios would perform in the transition to a lower-carbon economy.[10] Thus, the resilience of corporate operations to climate-associated risks and opportunities will increasingly affect both the cost and availability of financing.

Investors are considering these emerging environmental risks and allocating their investments accordingly. Indeed, an estimated $8 trillion was invested in ESG portfolios in 2016, roughly one-fifth of total assets under professional management in the United States.[11]

More recently, in March 2017, the $900 billion Norwegian Sovereign Fund[12] updated its exclusion assessment and removed 10 companies from its portfolio that did not meet new product-based thermal coal criteria. Half of the companies excluded are based in the Asia-Pacific region, and have at least 30 percent of their business activities based on coal, or derive 30 percent or more of their revenues from

10 Already more than 180 intuitional investors controlling more than $20 trillion in assets have pledged to align their investments with climate-compatible growth.
11 US SIF Foundation; see http:// etfdb.com/etf-education/5-sustainable-investing-trends-2017/
12 Norges Bank, 2017. "Grounds for decision—Product-based coal exclusions."

POLICYMAKERS ANDREGULATORS

Policymakers and regulators are focused on reducing the risk of manmade, or “anthropogenic,” climate change. In some industries, such as transportation and energy, companies are facing evolving regulations around GHG. Such regulations are expected to expand into other sectors, such as aviation, maritime, and heavy industries as nations look to reduce their GHG emissions. For example, both the United Kingdom and France have announced their intention to ban the sale of new cars with conventional engines beginning in 2040, while Norway has pledged to do the same by 2025 and India by

13 SGX, 2016. SGX-ST Listing Rules – Sustainability Reporting Guide.
14 UNPRI, 2016. French Energy Transition Law – Global Investor Briefing.
15 Reuters, 2016. EU requires pension funds to assess climate change risks.
16 EU-MACS, 2017. EU law to force pension funds to account for climate risk.

CUSTOMERS

The information explosion, advanced technology shifts, and new consumer preferences are transforming buying patterns for goods and services. Consumers increasingly seek products that have been sourced and manufactured with a reduced carbon footprint. While such products are sold at a premium, consumers have shown a willingness to pay.[17]

A recent study revealed that brand-purchasing behaviors are strongly influenced (33 percent) by consumers' perception of the product's environmental or social impact.[18] Surveying over 20,000 individuals across both emerging economies and developed markets–including the UK, US, Brazil, Turkey, and India–the study indicated a strong correlation between stated opinions on sustainability and actual purchasing choices. The study also found that over 20 percent of its respondents would actively choose brands if sustainability credentials were made more visible on the packaging.

As consumers develop increasingly high expectations with respect to sustainable brands, companies must consider their competitive positioning. This trend is further accelerated by the pressures of social media and digital transparency. Increasingly, customers will seek out and do business with those companies whose sustainability and climate risk management practices are robust.

SUPPLY CHAINS

Supply-chain sustainability has become increasingly important for suppliers, vendors, and other third parties trying to stay competitive along the value chain. Many global companies are making sustainability considerations a critical requirement in vendor selection. For example, Walmart's Project Gigaton aims to remove 1 billion metric tons of GHG emissions from its supply chain by 2030, with an intermediate milestone of reducing emissions in its own internal operations by 18 percent before 2025. Initiatives like this are driving changes in all aspects of supply chains, including fleet transportation and operational energy use.

Large corporations can drive the long-term resilience of their supply chains in two ways: first, by directly /Lang (en-US)/ueeands.

17 GreenBiz, 2017. Sustainable Retail Trends Watch.
18 Unilever, 2017. Report shows that one-third of consumers prefer sustainable brands

be as high as 60 percent. Companies across multiple sectors face the challenge of how water stress, critical manufacturing sites, and emerging growth markets overlap. One innovative response to these stresses has come from leading textile manufacturers, which are developing techniques for improved resource management in water-based cloth-dyeing processes. Key resource-constrained risk has been translated into an opportunity, where cost savings through reduced water consumption have improved business throughout the supply chain. Companies from other industry sectors, including Carlsberg, Coca-Cola, MGM Resorts International and Kimberly-Clark, have also invested in innovation to reduce water use.

The deep structural impacts of the transition to a lower-carbon economy are also demonstrated by the expected changes in the automotive sector. Many governments are promoting electric vehicles and /or planning bans on sales of new combustion engines as a means to reduce GHG emissions.[19] Along with this, technical advances and consumer excitement about EVs have pushed forth the momentum of change, and have started to disrupt the transport and mobility sectors significantly. For example, Tesla's highly anticipated Model3 generated hundreds of thousands of pre-order sales before production began.[20] The impact of EVs will be felt deep into the automotive supply chain. An estimated 70 percent of an EV's component parts are different from those of a gasoline-powered vehicle[21] and demand for maintenance for the gearboxes, fuel management assemblies, and exhaust systems will begin to dwindle. In contrast, companies providing software, security, and charging station infrastructure will see rising demand.[22]

MANAGING DIRECTORS AND OFFICERS LIABILITIES ARISING FROM CLIMATE CHANGE

Transition risks may pose additional financial and reputational risks to organizations. Climate change has evolved beyond an ethical environmental or societal issue and is fast becoming a matter of effective corporate governance. For example, in August 2017, an Australian bank was sued by shareholders for what is viewed as a failure to properly disclose the risks to the business posed by climate change. More such cases are expected to follow globally. Shareholders and regulators will be examining companies and directors for purported failures to accurately disclose climate change-related risks to investors.

The increased focus on climate-change exposures to companies presents new and different challenges for directors and officers who now must have a thorough understanding of the risks to the organization. Many current director-and-officer (D&O) policies are designed to protect the personal assets of directors and officers, but they may not be adequate to protect against the exposure from climate risks since these risks do not fit neatly within existing definitions and exclusions, thus producing gaps in D&O coverage.

As such, appropriate D&O insurance policies are needed that provide coverage for any possible climate change exposures. Directors and officers today should carefully analyze their companies' risk profiles and exposures to ensure an enhanced D&O program is structured to meet their needs amid ever-changing

19 For example, Norway has a complete ban of pure ICEVs sales planned for 2025, and both France and the UK have recently announced an end to sales of pure ICEVs by 2040 as part of an ambitious plan to meet targets under the Paris climate accord, and China has noted that it is reviewing such a ban.

20 The Week, 2017, Tesla Model 3 Specs, prices and release.

21 Idaho National Laboratory. How do Gasoline and Electric Vehicles Compare?

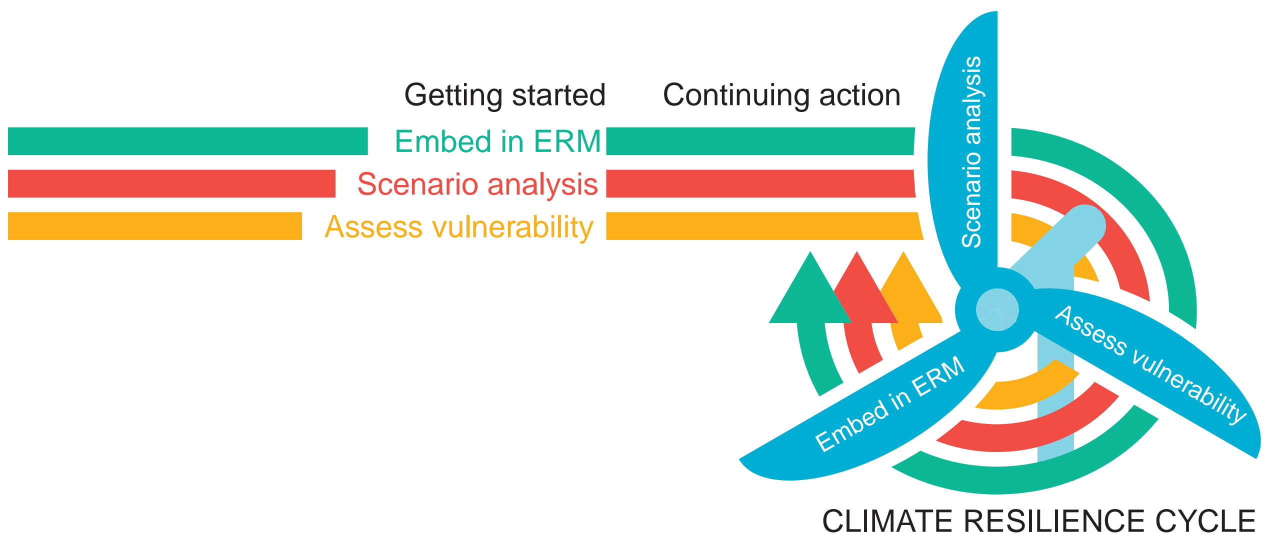
22 Bloomberg New Energy Finance, 2016. Electric vehicles: It's not just about the car

“How do climate risks – both direct physical risks and indirect transitional risks – inject volatility into financial performance?”

An effective resilience strategy should address how climate and market changes affect businesses and corporate performance. Understanding those effects—with special attention paid to an organization's critical functions, as well as its customers and suppliers—will be essential to adaptation, especially as climate risks evolve. The strategies in place today, such as assessing redundancy issues in supply chains and manufacturing processes to address future business needs and growth projections, may not need to be completely altered; instead, they may require adjustments, so as to take into consideration the climate risks of tomorrow. Corporations deliberating major capital spending may need to regularly assess their strategies as climate risks continue to develop and evolve. There are a number of steps companies can take toward integrating climate resilience into their decision-making process concerning capital allocations, operation management, and risk mitigation. (See Exhibit 4.) We recommend the following actions:

- Assess the vulnerability of operations and facilities to climate risks and extreme weather events
- Embed climate risks into Enterprise Risk Management (ERM) programs
- Undertake scenario analysis to quantify risks, opportunities, and identify potential responses.

Exhibit 4: Actions create and preserve long-term value in the transition to a lower carbon economy



Source: MMC Global Risk Center

Copyright © 2017 Marsh & McLennan Companies

coverage is designed to reflect the actual physical exposure of assets, operations, and facilities, and is conditioned upon a pre-agreed payout mechanism that can be used for physical damages and business interruption, as well as post-event repair and recovery in a timely manner. Thus, parametric solutions minimize climate risks to organizations and could constitute an efficient economic hedge.

EMBED CLIMATE RISKS INTO ERM PROGRAMS

Companies can leverage existing enterprise risk management (ERM) and risk assessment processes to increase awareness of climate risks, better assess resilience across the organization, consider additional areas of analysis and risk mitigation, and develop appropriate management approaches.

Our research reveals, however, that few organizations have effectively done so.[26] Fewer still have successfully identified connections between climate risks and their underlying drivers. In part, this is due to the vast difference between the pace of climate change and the time frames of the typical corporate risk assessment: Climate change is measured in decades, whereas

UNDERTAKE SCENARIO ANALYSIS TO ASSESS RISKS, OPPORTUNITIES, AND ACTIONS

Scenario analysis techniques can help in assessing an organization’s climate resilience and risks. Modeling different environmental scenarios gives form to the amorphous problem of climate change and provides mechanisms to discuss potential future states of operation.

The effects of climate change on specific sectors, industries, and organizations are highly variable. Thus, organizations ought to apply scenario analysis in strategic and financial planning, as well as in its risk-management processes.[27] Indeed, the FSB TCFD recommends the use of such techniques, noting: “[Scenario analysis] is an important and useful tool for an organization to use, both for understanding strategic implications of climate-related risks and opportunities and for informing stakeholders about how the organization is positioning itself in light of these risks and opportunities.”[28] A growing number of companies, asset managers, pension funds, and banks are applying the tool to assess climate resilience.

“[Scenario analysis] is an important and useful tool for an organization to use, both for understanding strategic implications of climate-related risks and opportunities and for informing stakeholders about how the organization is positioning itself in light of these risks.”

CONCLUSION

Climate risks, in both their direct physical effects and the impact of transitioning to a lower-carbon economy, have been shown to disrupt normal business operations and severely erode a company's profitability, driving changes in corporate strategies.

In response to the growing threats presented by climate change, companies face increased pressures to define how climate risks are impacting current and expected corporate financial performance. Additionally, companies are under pressure to disclose how they plan to address, adapt, and mitigate these risks (See Exhibit 8.)

As boardrooms and C-Suites begin to examine how a changing climate is affecting their business, the urgent need to increase corporate climate resilience as a business fundamental is evident. Companies that can successfully identify physical and transitional climate risks, and integrate these risks into strategic and operational planning, can better position their companies to improve climate resilience.

The wide-ranging impacts of climate change reflect the complexity of enhancing climate resilience. This underscores the necessity of commencing discussion about climate change in every company and in every sector, one that is translatable into material action to assess the underlying drivers of climate change and to cope with the challenges — and seize the opportunities it presents.

Copyright © 2017 Marsh & McLennan Companies

Exhibit 8: What is our climate resilience? Three questions for the C-Suite and the board

Authors

LUCY NOTTINGHAM
Director, Marsh & McLennan Companies' Global Risk Center

JACLYN YEO
Senior Research Analyst, Marsh & McLennan Companies' Asia Pacific Risk Center

Special thanks to Giulia Pasquale and David Neher (both consultants at Oliver Wyman) for providing additional content support

Contributors

Guy Carpenter: Beverly Adams, Robert Bentley, Imelda Powers; Lippincott: John Marshall; Marsh: David Batchelor, Ellen Charnley, Duncan Ellis, Mark Pollard, Chris Smy; Marsh Risk Consulting: Robert Smith; Mercer: Jane Ambachtsheer, Alex Bernhardt, Helga Birgden, Karen Lockridge; Oliver Wyman: John Colas, Peter Reynolds, Curt Underwood, Lauren Wylie, Alban Pyanet; Marsh & McLennan Companies: Elizabeth Barry, Mae Hsieh; Global Risk Center: Richard Smith-Bingham; Alex Wittenberg Asia-Pacific Risk Center: Wolframy27aoun <</La

MAR & cLENNAN
COMPANIES