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SUSTAINABILITY & RESOURCE PRODUCTIVITY PRACTICE

How companies can adapt to climate change

Taking effective action can turn risk into competitive advantage.

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From the early days of seafaring trade, dealing with the weather has been an integral part of doing business. Today, however, concerns over climate change are taking this to a whole new level, and companies will have to adapt to growing regulatory, environmental, and consumer pressures.

This is a daunting prospect. That may explain why, in a survey of S&P Global 100 companies by the Center for Climate and Energy Solutions, only 28 percent said they had done climate assessments, and an even smaller number (18 percent) said they use climate-specific tools or models to assess their risks.¹ But delay is not a strategy. Organizations can benefit by taking action to recognize and even anticipate such climate-related risks as changing government policies, product-preference shifts, and price volatility.²

There are, in broad terms, six different kinds of climate risks (Exhibit 1). These can be divided into two interconnected groups: value-chain risks and external-stakeholder risks.

Value-chain risks

Physical risks are those related to damage inflicted on infrastructure and other assets, such as factories and supply-chain operations, by the increased frequency and intensity of extreme weather events, such as wildfires, floods, or hurricanes. According to the *New England Journal of Medicine*, the frequency and severity of climate-related disasters like floods, droughts, and storm surges has increased markedly since the 1970s.

This can affect company performance in real and visible ways. In 2012, for example, Cargill, one of

the world's largest food and agricultural companies, posted its worst quarterly earnings in two decades, in large part because of the US drought. While no single event can be attributed to climate change, of course, this is an example of how climate can and does affect business prospects. Western Digital Technologies, a major supplier of hard disk drives, posted a sharp decline in revenues in 2011 after flooding in Thailand, where most of its production was located. That loss of production meant global supply slumped, with severe reverberations for computer manufacturers.

Such physical risks are impossible to control, but companies can take steps to prepare for the changes that could occur in years and decades to come. First, it helps to forecast a range of reasonable scenarios; doing so may require the help of specialized climate modelers. Climate forecasting can highlight high-level risk probabilities by region, such as for flood, drought, or sea-level rise, and for long-term changes in such factors as temperature, humidity, or rainfall patterns. The scenarios should help reveal which parts of the business are vulnerable. A variety of mitigating risk processes, technical standards, and capabilities can then be put in place. In the long

term, risk management could call for changes to supply chains (to build in geographic variability or redundancy), including moving away from suppliers and/or locations that are highly exposed.

Price risks refer to the increased price volatility of raw materials and other commodities. Drought can raise the price of water; climate-related regulation can drive up the cost of energy. High-tech and renewable-energy industries, for example, face price risks in the competition for rare earths, which are used in the production of computer hard drives, televisions, wind turbines, solar photovoltaic systems, and electric vehicles.

For more than a decade, the prices of many resources have been both rising and volatile.³ An unstable climate could ratchet up the pressure further, forcing companies to cope with uncertainty around inputs to production, energy, transport, and insurance.

Some companies are taking significant steps to get ahead of this concern. IKEA is in the process of substituting renewables for conventional sources of energy; in time, it hopes to be largely self-sufficient with regard to power. In that event, the retailer will have

Exhibit 1 We have identified the types of risks climate change poses to businesses.



Source: McKinsey analysis

a good idea of what price it will pay for power and will insulate itself against global and regional energy price spikes.⁴ Volkswagen is doing something similar. To hedge against the possibility of rising fossil-fuel prices, the German car maker is investing €1 billion in renewable-energy projects and is aiming to power its manufacturing sites mainly through on-site production.⁵ These are just two examples: we expect more and more companies to go “off grid” for both strategic and economic reasons.⁶

Product risks refer to core products becoming unpopular or even unsellable. Effects could range from losing a little market share to going under entirely. Alternative cooling technologies, for example, could conceivably displace air-conditioning systems; ski resorts that no longer can count on snow or cold weather could go under. Regulatory and production costs could raise the price of coal in some markets above that of lower-carbon competition, with ripple effects for mining-equipment manufacturers and related industries.

This kind of risk, of course, is familiar; new products, by definition, displace older ones. The difference is that responding to climate-related pressures can change the entire context in which a business operates, not just a specific segment. It’s more like the change from the horse-and-buggy era to the car than shifting from manual to automatic transmission. Utilities, for one, know this; they are seeing their traditional business model threatened in markets where renewable energy accounts for a greater part of new generation.

On the positive side, however, greener products are emerging in a number of industries. The construction and infrastructure sectors are developing new products and services that cater to cleaner cities, such as electric-vehicle charging infrastructure, renewables integration, smart metering, smart grids, congestion-fee systems, and high-performance building technologies.

In the business-to-consumer sectors, especially retail and consumer products, new segments are making inroads as people make it clear they are willing to pay for greener products. Groceries advertised as sustainable, for example, are growing fast in the United States, and the organic-food sector has seen double-digit growth for the past decade. This is a testament to the emergence of a significant cohort of customers for whom environmental consciousness is a factor in where and what they buy.

How can companies adapt? One approach is to adopt a “design to sustainability” approach, in which new products are designed to minimize waste and to be broken down for reuse or recycling. Another is to redefine corporate strategy to align business interests with climate-change mitigation and adaptation. Siemens, for instance, has developed a dedicated “environmental portfolio” of carbon-efficient products, while Saint-Gobain, the construction and packaging giant, puts sustainable housing technologies at the core of its product-development strategy.

External-stakeholder risks

We define *ratings risk* as the possibility of higher costs of capital because of climate-related exposure such as carbon pricing, supply-chain disruption, or product obsolescence.

While the ratings risk varies widely between and within industries, even companies with carbon-intensive activities can start to manage it. Already, more than 4,000 organizations are reporting their exposure to the CDP (previously known as the Carbon Disclosure Project), a first step in dealing with the issue. A number of oil majors use an internal carbon price to guide some of their strategic decisions.

Regulation risk refers to government action prompted by climate change. This can take many forms, including rules that add costs or impede specific business activities, subsidies in support of a competitor, or withdrawal of subsidies. In many

industries, government plays a crucial role in setting the rules of the game; with climate change in mind, many of those rules are changing.

Around the world, we are seeing governments respond to the possibility of climate change in ways that necessarily affect business prospects. To cite just a few examples: China is launching carbon-trading programs in seven regions in preparation for a potential national plan by 2020. Most US states have introduced renewable portfolio standards, which require a certain proportion of the state’s electricity to be produced from renewable sources. Ethiopia has charted a course to become a middle-income country through low-emissions growth with its Climate-Resilient Green Economy strategy.

One complication is that on the national and international level, climate-change policies often change, sometimes with the speed of an election result. That makes it difficult for businesses to make long-

term investment and operating decisions. Businesses can, however, take the initiative in managing regulation risk. The first step in preparing for and helping to shape future regulation is to understand the policy options. The second step is to develop an internal strategy on climate change to put the company in a position to react effectively to regulations and policy changes. The final step is to work with external stakeholders, such as regulators and industry groups, to get their perspectives.

Reputation risk can be either direct, stemming from a company-specific action or policy, or indirect, in the form of public perception of the overall industry. In the climate-change context, reputation risk can be understood as the probability of profitability loss following a business’s activities or positions that the public considers harmful. A poor reputation on climate can hurt sales through consumer boycotts or local community protests. It could damage the regulatory environment and investor relationships.

Exhibit 2 Climate-change risks will be felt differently by industry.



Source: McKinsey analysis

And it could make the company less attractive to current or future employees.

This is part of a larger trend: the changing expectations of stakeholders. Investors are asking for disclosure of carbon emissions and starting to lodge concerns about “stranded” assets—those that become unusable due to climate-policy regulation or physical climate change. Many employees want sustainability to be part of the day-to-day operations of their companies. Nongovernmental organizations are getting more prominence when it comes to their ability to measure and compare corporate actions.

In response, some companies have taken very public steps to adopt climate-change strategies. Unilever, for example, leads the FTSE CDP Carbon Strategy risk and performance index and has improved its carbon efficiency by 40 percent since 1995. Its stated goal is to reduce the carbon and water footprints of its products to half of 2010 levels by 2020. The retailer Kohl’s has been recognized for its efforts to green its operations and reduce emissions.⁷ IBM has also gotten positive attention for its actions on climate, such as setting rigorous greenhouse-gas-emission standards for suppliers. IBM won a 2013 Climate Leadership Award from the US Environmental Protection Agency for supply-chain leadership⁸ and was also recognized in 2014 for its greenhouse-gas management.⁹ Just about every company in the Fortune 500 touts its commitment to sustainability. There is still a long way to go in many respects, but it can be said that action has well and truly started.

The big picture

Based on case studies, industry interviews, and our analysis, Exhibit 2 evaluates the climate-change risk exposure of seven different industries.

Results for individual companies will vary, of course, depending on geography, target markets, and management. But this chart is a useful way to look at the economic landscape.

One truth is evident across all these industries: companies that ignore climate-related risks are likely to feel the consequences. Those that identify the most pertinent risks, think through how they relate to one another, and then put in place appropriate measures can begin to manage the challenges ahead. These companies will not only put themselves in position to ride out the storm; they could rise above it. ■

¹ *Weathering the Storm: Building Business Resilience to Climate Change*, Center for Climate and Energy Solutions, 2013, c2es.org.

² “The business of sustainability: McKinsey Global Survey results,” October 2011, mckinsey.com.

³ For more, see “Resource revolution: Tracking global commodity markets,” McKinsey Global Institute, September 2013, on mckinsey.com.

⁴ “Ikea unveils plans to use 100% clean energy by 2020,” *Guardian*, October 23, 2012, theguardian.com.

⁵ “VW will unabhängig von Stromversorgern werden,” *Handelsblatt*, October 12, 2012, handelsblatt.com.

⁶ Antonio Volpin, “How businesses can address the risks related to energy consumption,” *Energy World*, January 2014, energyinst.org.

⁷ *Partner Profile*, United States Environmental Protection Agency, 2015, epa.gov.

⁸ *EPA Recognizes IBM for Climate Change Leadership*, IBM, 2013, ibm.com.

⁹ *2014 Climate Leadership Award Winners*, United States Environmental Protection Agency, 2015, epa.gov.

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