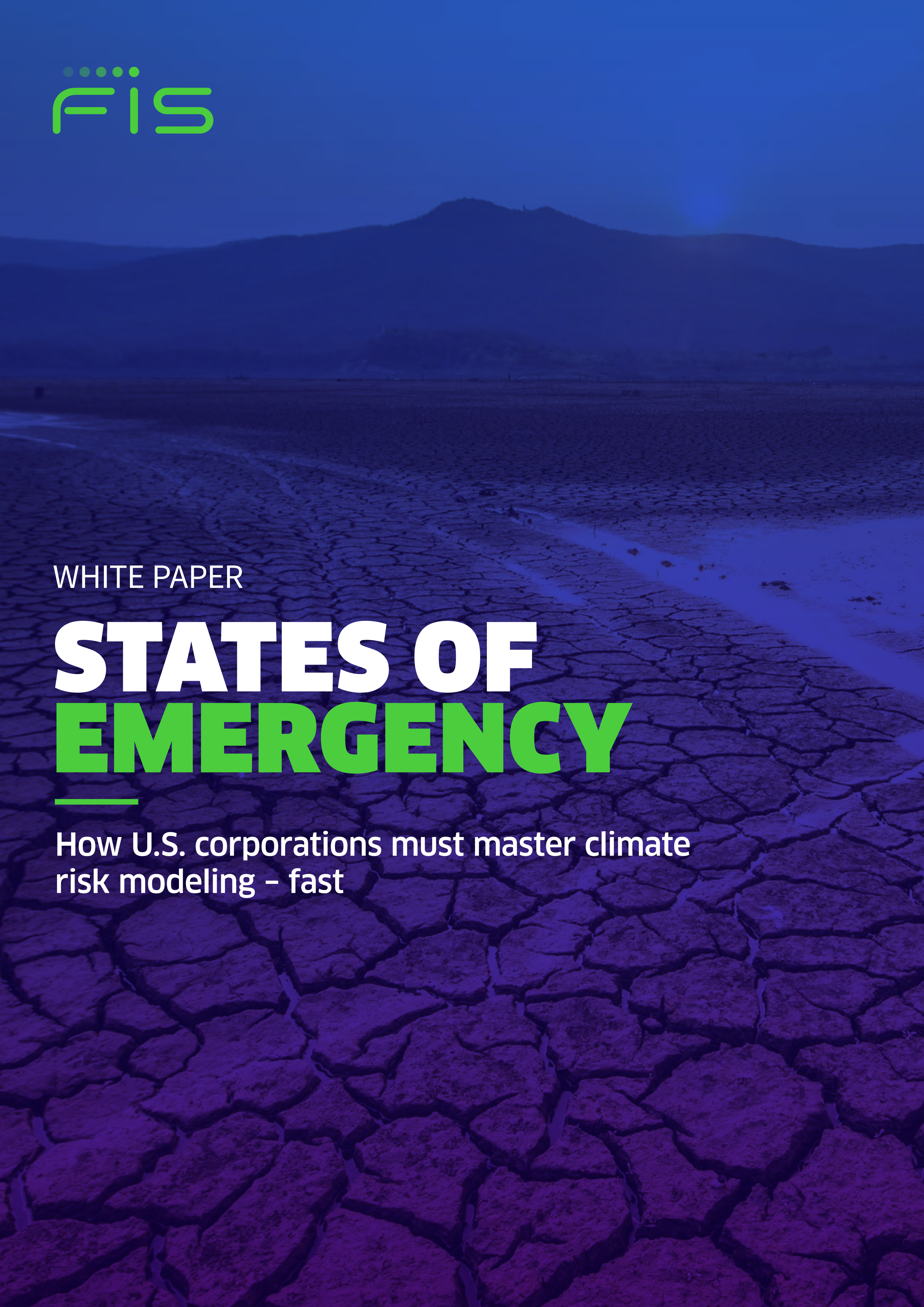

WHITE PAPER

STATES OF EMERGENCY

How U.S. corporations must master climate risk modeling – fast

The time to model climate risks is now

Around the world, the climate emergency poses significant risks to business, from interruption to supply chain, changing consumer preferences, to direct climate impacts on property.

Every year seems to bring ever-greater weather extremes linked to our changing climate. In 2023 alone, the U.S. experienced more than 25 separate billion-dollar-plus weather and climate disasters – the most recorded in a calendar year.[1]

No firm can afford to ignore the potential impacts of such events on either its everyday operations or its long-term business model. Nor can corporations avoid assessing and disclosing the risks for their business, as regulators make climate reporting mandatory.

Climate risks, however, are markedly different from any risk most firms will have measured or managed before. With so much at stake, modeling climate risk requires a deep understanding of the underlying science and the ability to translate that knowledge into complex, credible models.

For both compliance and growth, there's not a moment to waste. It's time to put climate change risk modeling and management at the top of your corporate agenda.

Address risks and regulations

As one of the largest and most geographically diverse countries in the world, the U.S. is subject to almost every form of weather peril.

In 2023, as the world experienced its warmest year on record,[2] the U.S. endured its highest number of weather events that caused losses of more than $1 billion. These included 19 severe storms, two flooding events, one tropical cyclone, one winter storm, one wildfire, one drought and one heatwave.

In total, the 25 confirmed disasters cost more than $81 billion and resulted in 482 direct and indirect fatalities.[3]

The immediate impacts of climate change couldn't be clearer. And soon, in the wake of increasingly severe weather conditions, publicly traded corporations in the U.S. will have to model, measure and report how the fallout is affecting their own businesses.

Understand the disclosure requirements

In June 2023, the International Sustainability Standards Board (ISSB) released the final version of its International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards, S1 and S2.

Drawing heavily on the voluntary reporting framework developed by the Taskforce on Climate-related Financial Disclosures (TCFD), these global guidelines recommend that corporations gather both sustainability and climate change-related data for reporting.

Now, the U.S. Securities and Exchange Commission (SEC) has announced its own climate disclosure rules which will make it mandatory for listed companies to disclose the material impacts of climate change on their business and financial statements.

Disclosures will cover the "physical risks" caused by extreme weather events and longer-term shifts in climate patterns, as well as the "transition risks" of moving to a low-carbon economy. Plus, firms in some jurisdictions will be asked to report any business opportunities that climate change might present.

Inaction on climate change could cost the world's economy $178 trillion by 2070.[4] So, what will climate change mean for your business?

Know your climate risks – and opportunities

In 2022, the World Economic Forum identified extreme weather as the most likely risk to become a critical global threat over the next two years.[5] However, the risks for individual corporations will vary widely from firm to firm.

What physical risks could your corporation face?

Physical risks include damage to property, infrastructure or inventories, business interruption and increased operating costs. Sectors that face the most immediate physical risks include:

Agriculture

Droughts, floods and heatwaves can cause significant damage to crops, livestock and fisheries, leading to food shortages, price hikes and loss of revenue.[6]

Leisure

Ski seasons are getting shorter as rising temperatures reduce snowfall. Almost all U.S. ski resorts could see a 50% shorter season by 2050, and up to 80% by 2090.[7]

Construction

In winter and summer, extreme weather conditions can affect many aspects of the construction process, compromise the health and safety of workers, delay projects and push up costs. New buildings must also be thermally efficient and climate resilient.[8]

Retail

Changing weather patterns and more frequent and extreme events disrupt supply and distribution chains to impair business performance, limit availability and raise prices, as well as disrupting business continuity and endangering employees.[9] For large retail groups, there are also direct physical risks to stores and warehouses.

Pharmaceutical

Reliance on global networks for manufacturing and distribution makes pharma companies especially vulnerable to unexpected weather events and other effects of climate change.[10]

What about the transition risks?

Business-related transition risks arise from the global shift toward a low-carbon economy and fall into four main categories.

1. Policy and legal risks

Government policy can greatly impact the transition risks some companies face. Policies in question include: mandates to phase out conventional petrol or gas cars in favor of EVs; imposing variable forms of carbon taxes; and incentives to adopt new greener technologies such as heat pumps, solar panels and wind turbines.

On the legal side, climate-related court claims against organizations have more than doubled since 2015[11] and may continue to rise as climate change and its contributing factors cause more costly damage and loss.

2. Technology risk

Technology is helping drive the transition to a lower-carbon economy and can potentially accelerate the replacement of certain products such as gas-fired boilers or petrol- or gas-based generators. While this shift represents risks for some firms, it can also create opportunities for others.

3. Market risk

Changing consumer behavior and shifts in supply and demand for raw materials, products and services can push up prices, with 69% of consumers globally changing their consumption habits due to climate change.[12]

As policymakers work to influence consumer behavior with incentives and mandates, consumers themselves are becoming increasingly aware of climate change. And technology is driving new products to market to meet this transition.

4. Reputational risk

With corporations under pressure to demonstrate their contribution to a greener economy, 69% of people expect CEOs to do more to address environmental issues.[13]

Any upsides to report?

Climate change can also present companies with opportunities for growth through the exploitation of new technologies, new regulations and new markets.

For example, manufacturers and providers of renewable energy products such as solar panels and wind turbines will have the potential to grow faster in a greener economy. Equally, oil and gas companies could manage their own transition risks by moving into renewables or electric vehicle charging.

As companies pivot to lower their carbon emissions, many are also developing products that have a lower carbon footprint or are more sustainable. This could lead to higher sales or revenue, especially as consumer trends change – and enhance a firm's reputation with customers and employees.

Plus, as climate change unfortunately increases the spread of disease globally, there will likely be demand for pharmaceutical companies to step up production and extend into new treatments and medicines.[14]

Look beyond compliance

Immediate filing demands aside, firms need to see the bigger picture of climate change for their business and take practical steps to alleviate the impacts.

Think globally

Many large U.S.-based corporations are either multinational or rely on suppliers overseas for products, services, equipment or raw materials. It's important to consider the impacts of climate risk on your international supply chain or operations outside the U.S.

Drive strategic change

It's not enough to simply report the impacts of climate change. When you understand your risks fully, you can learn how to reduce them by adjusting your strategy.

Many retailers are already making modifications to buildings at high risk from extreme weather to protect them from further damage. Some are replacing sheet roofing on large stores with stronger materials that can withstand hailstorms. Others are specifying additional flood protection for new buildings at the design phase.

Adapt and thrive

By proactively tackling climate change and embracing sustainability, corporations have the potential to improve their business, create value and drive growth, as well as contribute to a greener future. Opportunities for the taking include:

Green energy – Investing in renewable energy sources to reduce their carbon footprint and energy costs

Sustainable products and services – Meeting growing demand from consumers and improving their brand reputation and customer loyalty

Efficient operations – Improving efficiency by reducing waste, conserving resources and optimizing supply chains

Innovative technologies – Developing or adopting carbon capture and storage, smart grids and electric vehicles to reduce emissions, improve sustainability and create new markets and competitive advantage

Adaptation and resilience – Preparing for the impact of climate change by developing adaptive strategies and investing in disaster risk reduction

Build a climate modeling framework

Climate modeling software is key to helping corporations understand their exposure to climate change, report the financial impact on their business and comply with upcoming SEC regulations.

By simulating different scenarios, firms can identify the most effective ways to adapt to changing weather patterns, whether by building away from flood plains, developing stronger flood defenses or installing more air conditioning in response to rising temperatures.

Analyzing climate data can also help firms better manage their supply chains, plan for impacts on insurance or employee health[15]– and develop products and services that support the transition to a low-carbon economy.

Tackle climate modeling challenges

But modeling the physical risks of climate change is no mean feat for corporations.

Writing specifically about the challenges for financial institutions, McKinsey says, “Climate change creates physical and transition risks that are complex, uncertain and playing out in real time. To gauge the potential impacts on clients and portfolios, as well as the effects of mitigation measures, banks require new models, new documentation and new model risk management Capabilities.

“With few precedents in hand, none of this is easy. And given the need for sector-specific methodologies, the industry is facing a significant talent deficit.”[16]

In other words, it takes a combination of deep expertise in climate science and powerful risk management technology to build and validate climate models, feed in the right hazard data, calculate the impacts of different scenarios and project the results decades into the future.

As the urgency to model climate risk grows, few – if any – corporations will have the time, skills and resources to develop in-house systems to carry out this work.

But the good news is that newly available tools and services can provide and manage the data, models and calculations for you, allowing your business to quickly and easily estimate the financial risks of climate change.

Model the financial risks of climate change rapidly with FIS and PwC

With climate data provided by PwC*, FIS Climate Risk Financial Modeler offers corporations a cost-effective way to understand and quantify their exposure to the physical risks of climate change. Now you can analyze how future climate change is likely to impact your business and project the financial cost of those impacts into the future under different emissions scenarios. Get in touch with FIS to find out more.

[1] National Centers for Environmental Information, November 2023 National Climate Report

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[3] National Centers for Environmental Information, November 2023 National Climate Report

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[5] World Economic Forum, The Global Risks Report 2022, January 2022

[6] United States Environmental Protection Agency (EPA), Climate Change Impacts on Agriculture and Food Supply, November 2023

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[9] Climate and Climate-related Risk in the Retail Industry, April 2022

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[12] Statista, Change made to consumer behavior due to climate change, March 2023

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[15] Energy and Sustainability Solutions, Getting more from climate data, March 2023

[16] McKinsey, Using model risk management to address climate analytics, January 2023

*FIS’ Climate Risk Financial Modeler solution allows end clients to use a climate data model developed by PwC. Due to PwC’s independence obligations as a public accounting firm, PwC Climate data will not be available to certain companies, therefore FIS’ Climate Risk Financial Modeler solution is currently only available to companies that are not subject to these independence restrictions.

About FIS

FIS is a leading provider of technology solutions for financial institutions and businesses of all sizes and across any industry globally. We enable the movement of commerce by unlocking the financial technology that powers the world’s economy. Our employees are dedicated to advancing the way the world pays, banks and invests through our trusted innovation, absolute performance and flexible architecture. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS ranks #241 on the 2021 Fortune 500 and is a member of Standard & Poor’s 500® Index. To learn more, visit www.fisglobal.com. Follow FIS on Facebook, LinkedIn and Twitter (@FISGlobal).

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