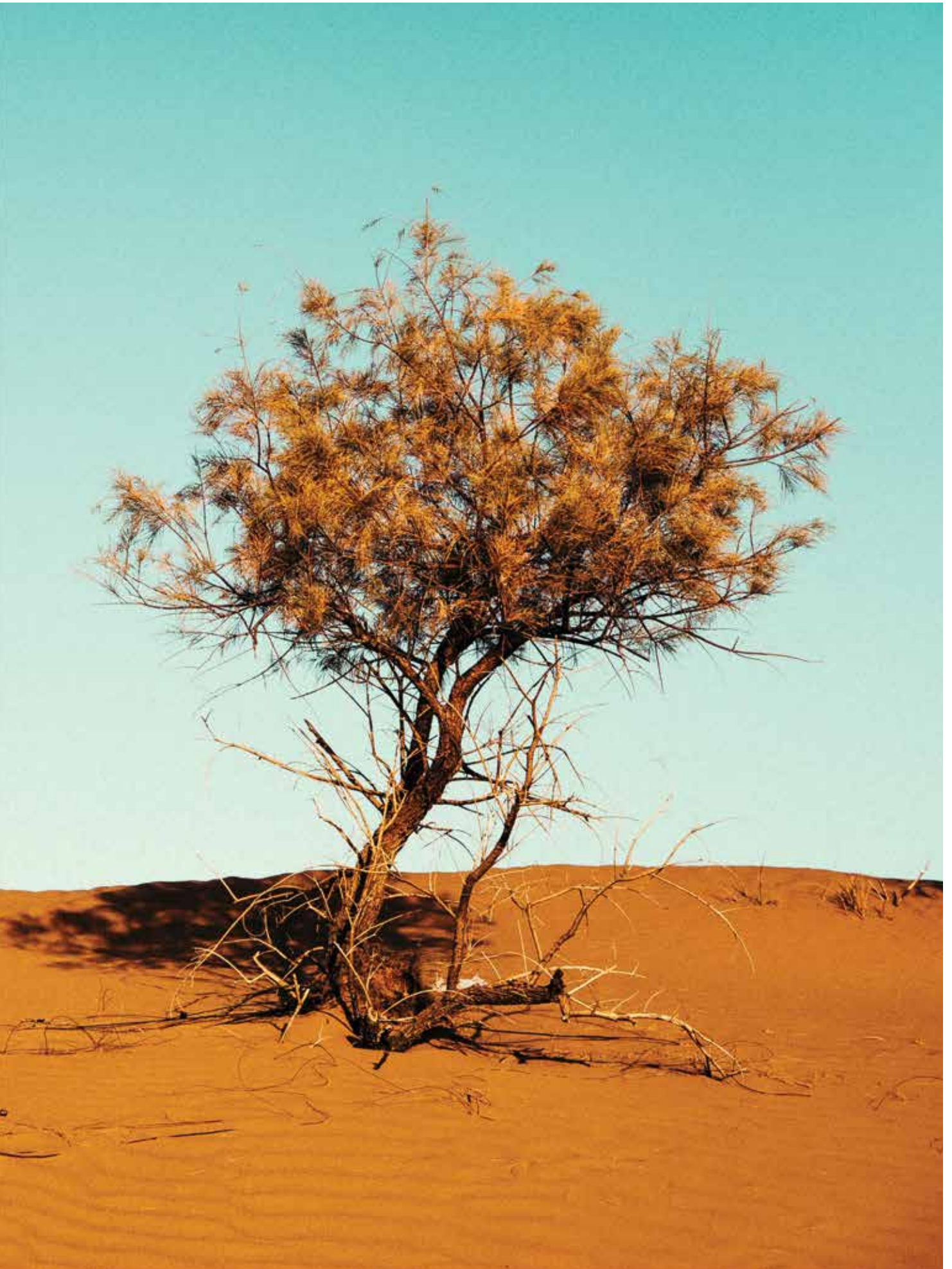




# More companies calling climate change a 'material issue' as stress testing gains traction



## Key takeaways:

- Nearly one-quarter of companies surveyed in the 2021 S&P Global Corporate Sustainability Assessment call climate change a material risk.
- Incoming mandatory disclosure rules in some jurisdictions are driving companies to integrate recommendations from the Task Force on Climate-Related Financial Disclosures into risk management.
- Scenario analysis could help carbon-intensive sectors prepare for the future as climate hazards increase and the energy transition progresses.

The destructive effects of climate change have upended lives and economies for decades, and 2021 was no exception: from flooding in Europe and Canada and wildfires in the U.S. to growing water scarcity and agricultural disruption, the human and financial costs were great. The number of weather-related disasters has risen 5x from the 1970s to the 2010s, with economic losses related to those events reaching \$1.38 trillion in the 2010-2019 decade, the World Meteorological Organization said in August 2021.<sup>1</sup>

More than ever before, companies are taking the risk seriously.



Jennifer Laidlaw

Senior Writer  
ESG Thought Leadership  
S&P Global Sustainable1

<sup>1</sup> "WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019) (WMO-No. 1267)," World Meteorological Organization, 2021, [https://library.wmo.int/doc\\_num.php?explnum\\_id=10902](https://library.wmo.int/doc_num.php?explnum_id=10902).



Tyra Linko

ESG Specialist  
S&P Global Sustainable1

<sup>2</sup> "Why we need Biden's executive order on climate-related financial risk," S&P Global Sustainable1, May 24, 2021, <https://www.spglobal.com/esg/insights/why-we-need-biden-s-executive-order-on-climate-related-financial-risk>.



Stuart Bowles

ESG Analyst  
S&P Global Sustainable1

Results from the 2021 S&P Global Corporate Sustainability Assessment, or CSA, show that more companies are building strategies to prepare for climate change, from measuring and disclosing their risks to using scenario analysis to test how their approaches hold up under different climate change scenarios. Nearly one-quarter of companies surveyed now give climate change the weighty label of "material issue."

Companies face pressure to prepare from three directions: internally, from investors and from regulators. Almost 60% of the companies in the S&P 500 have at least one asset at high risk of physical impact from climate change, according to S&P Global Sustainable1 data.<sup>2</sup> Shareholders and portfolio managers are increasingly assessing their holdings for climate change risk. And a growing number of regulators across jurisdictions are outright requiring climate risk disclosure at financial institutions or stress testing their economies' climate resiliency.

In this context, CSA data shows that the most carbon-intensive sectors such as utilities and energy are recognizing the threat and integrating climate into business strategy. But there is some disparity among companies in the use of scenario analysis to test the resiliency of climate strategies — a tool that could help companies avoid credit downgrades as climate hazards increase and the energy transition progresses.



## Regulation is driving increased disclosure

An uptick in climate-related regulation worldwide is signaling to companies that the wind is changing on risk disclosure and strategy integration. The European Union took the lead in 2018 with the launch of its Sustainable Finance Action Plan, a broad package of rules that are reshaping the sustainability landscape. There is the EU green taxonomy – a dictionary of sustainable activities designed to steer companies as they adapt their business strategies to climate change – and a raft of ESG disclosure-related rules, including the Sustainable Finance Disclosure Regulation, which requires asset managers, pension funds and insurers to disclose how they consider ESG risks in their investment decisions.<sup>3</sup>

<sup>3</sup> “New EU ESG disclosure rules to recast sustainable investment landscape,” S&P Global Sustainable1, Aug. 3, 2021, <https://www.spglobal.com/esg/insights/new-eu-esg-disclosure-rules-to-recast-sustainable-investment-landscape>

<sup>4</sup> “ASEAN Sectoral Bodies Release ASEAN Taxonomy for Sustainable Finance – Version 1,” Association of Southeast Asian Nations, Nov. 10, 2021, <https://asean.org/asean-sectoral-bodies-release-asean-taxonomy-for-sustainable-finance-version-1/>.

<sup>5</sup> “Common Ground Taxonomy – Climate Change Mitigation,” International Platform on Sustainable Finance, Nov. 4, 2021, [https://ec.europa.eu/info/sites/default/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/211104-ipsf-common-ground-taxonomy-instruction-report\\_en.pdf](https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/211104-ipsf-common-ground-taxonomy-instruction-report_en.pdf).

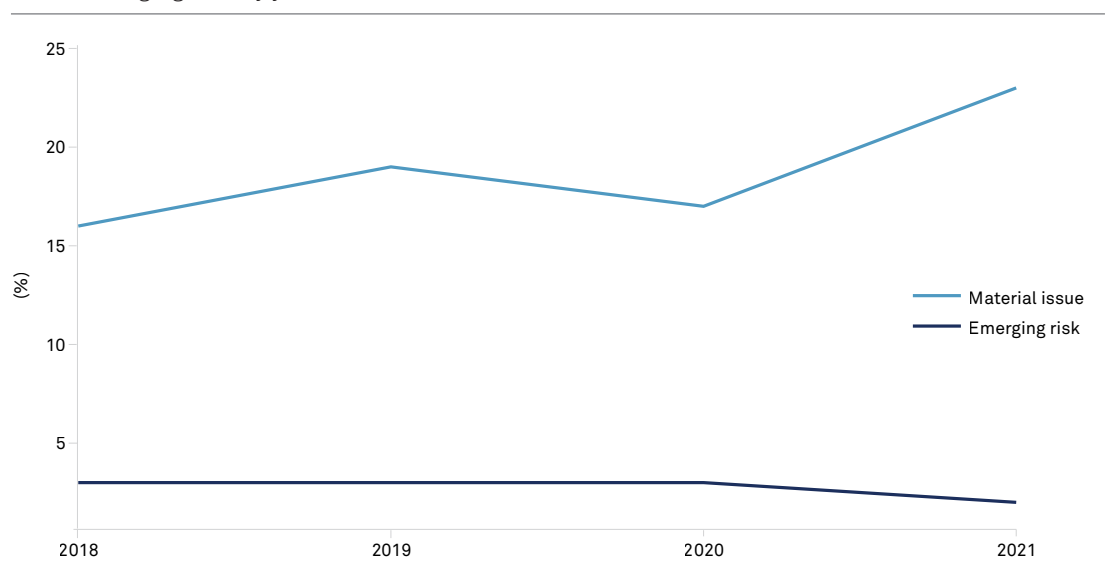
<sup>6</sup> “Top US financial regulator faces big questions in move to mandate ESG disclosures,” S&P Global Sustainable1, Sept. 8, 2021, <https://www.spglobal.com/esg/insights/top-us-financial-regulator-faces-big-questions-in-move-to-mandate-esg-disclosures>.

Taxonomies and disclosure rules are springing up worldwide. The Association of Southeast Asian Nations, an economic forum of 10 southeast Asian nations including Thailand, the Philippines and Malaysia, published its taxonomy in November 2021.<sup>4</sup> China already has its own taxonomy and is working on a common taxonomy with the EU.<sup>5</sup> The U.S. Securities and Exchange Commission is developing climate risk disclosure regulations on climate risk.<sup>6</sup>

There is also growing momentum for making voluntary disclosure frameworks such as the influential Task Force on Climate-Related Financial Disclosures, or TCFD, mandatory. Calls for a consistent, global ESG disclosure framework prompted the creation of an International Sustainability Standards Board.

## Rising number of companies see climate change as material risk

Percentage of surveyed companies identifying climate change as one their “top 3 material issues” or as an “emerging risk” by year



Data as of November 2021. Based on 2,130 to 3,967 companies surveyed each year from 2018 to 2021. Source: Corporate Sustainability Assessment 2021, S&P Global Sustainable1.

The percentage of surveyed companies calling climate change a material issue rose to 23% in the 2021 CSA from 17% the prior year.



The goal of the 2015 Paris Agreement is to limit global warming to “well below” 2 degrees C and “preferably” to 1.5 degrees C compared to preindustrial temperatures.

Against this backdrop, more corporates are calling climate change a material issue for their business. According to the 2021 CSA, companies are increasingly considering climate one of the top three concerns that could have a material impact on their business. The percentage of surveyed companies calling climate change a material issue rose to 23% in the 2021 CSA from 17% the prior year.

Sustainability reporting and disclosure are improving in tandem. Almost all sectors improved their scores on Climate Strategy, the CSA criterion that considers the strategies implemented by the business to consider the risks and opportunities of climate change, alongside approaches for mitigation and adaptation. The criterion is aligned with the CDP, a nonprofit formerly known as the Carbon Disclosure Project, a global environmental disclosure framework for investors and companies.

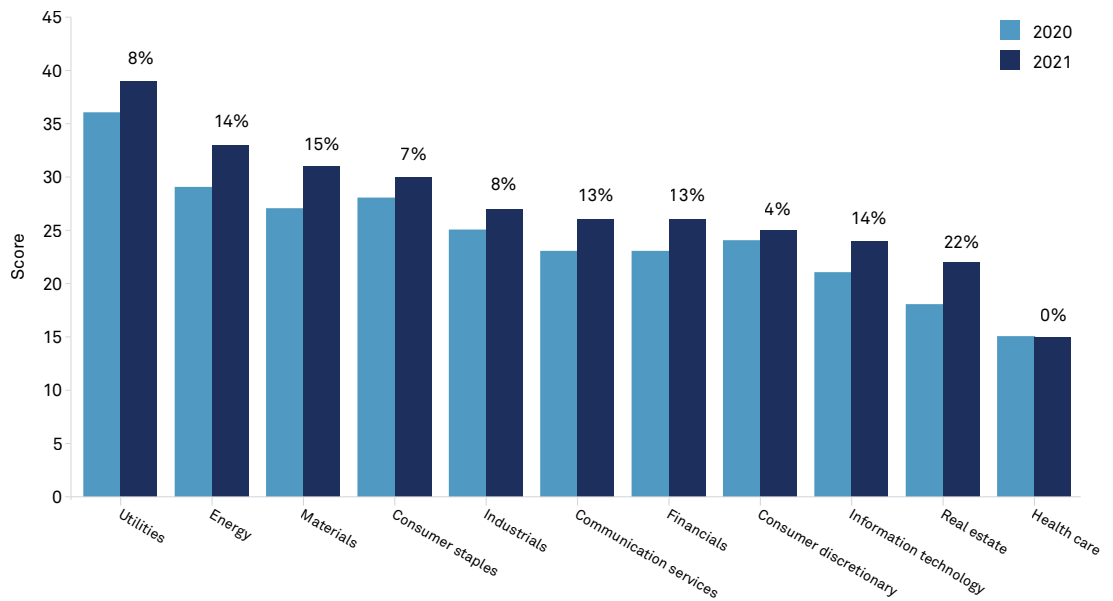
Some of the most carbon-intensive sectors account for the highest score increases, showing that the companies facing a business reboot from climate change are increasingly integrating this risk into their business strategies. The real estate sector, which includes property developers and managers<sup>7</sup>, saw a 22% increase in its climate strategy scores. The materials sector improved 15%, while energy and information technology improved 14%.

### **Integration of the TCFD in risk management**

Frameworks such as the Financial Stability Board’s TCFD are encouraging companies to report on how climate risks could impact their businesses. The TCFD has provided companies with a voluntary framework since June 2017 and uses standardized guidelines to steer companies in disclosing material climate risks. It focuses on governance, strategy and risk management as well as metrics and targets.

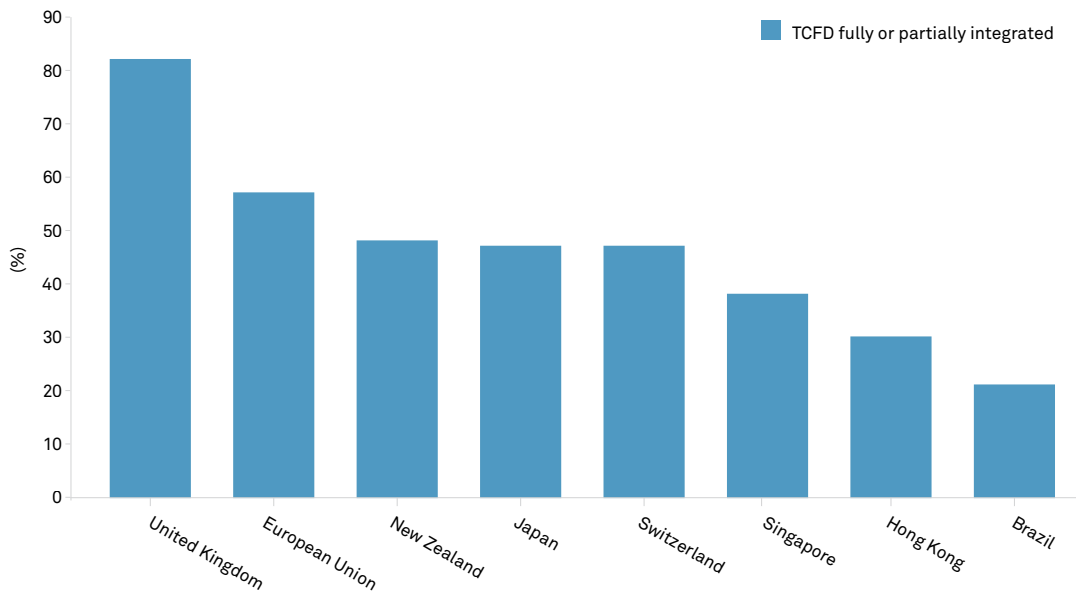
<sup>7</sup> Existing buildings and new construction are the source of nearly 40% of global energy-related carbon emissions, according to the nonprofit World Green Building Council. “UN climate conference seeks concrete steps to tackle dirty, energy-hungry buildings,” S&P Global Sustainable1, Nov. 3, 2021, <https://www.spglobal.com/esg/insights/un-climate-conference-seeks-concrete-steps-to-tackle-dirty-energy-hungry-buildings>.

## Energy, materials and real estate sectors show highest improvement in climate strategy scores



Data as of November 2021. The CSA's Climate Strategy criterion focuses on the risks and opportunities of climate change as well as mitigation and adaptation strategies and measures. The criterion is aligned with the CDP. Based on a survey of 5,301 companies. Source: Corporate Sustainability Assessment 2021, S&P Global Sustainable1.

## Mandatory TCFD disclosure rules in the UK are pushing companies to integrate the framework



Data as of November 2021. Based on a survey of 5,301 companies. Source: Corporate Sustainability Assessment 2021, S&P Global Sustainable1.



In 2021, the CSA asked for the first time whether companies integrate TCFD in their risk management. The survey results show that high-carbon emitting sectors with greater exposure to transition and physical risks have a higher percentage of companies that have started to integrate TCFD.

For example, more than 60% of energy companies surveyed are reporting fully or partially in line with the TCFD's 11 disclosure recommendations. These recommendations include detailing management's role in calculating and overseeing climate-related risks, as well as conducting scenario analysis to test a company's resilience to "different climate-related scenarios, including 2 degree or lower scenario."<sup>8</sup> The goal of the 2015 Paris Agreement is to limit global warming to "well below" 2 degrees C and "preferably" to 1.5 degrees C compared to preindustrial temperatures. More than 56% of utilities firms surveyed integrate TCFD, compared to 46% of materials and 41% of financials.

Health care is at the bottom of the pack, with 16.5% of companies surveyed integrating TCFD into risk management. The health care sector contributes just 4.4% of global emissions, but the COVID-19 pandemic

made it one of the fastest-growing sectors in the world, and its carbon footprint could triple by 2050 if no action is taken.<sup>9</sup>

### **Companies prepare for mandatory disclosure rules**

The momentum for increased disclosure comes as many jurisdictions are making it mandatory for companies to report on climate risk, with many of them endorsing the TCFD. A strong signal for widespread compulsory TCFD disclosure came in June 2021, when the G7 group of countries said they backed the idea.

While the EU has not officially adopted the TCFD for its 27 member states, it is reforming its Non-Financial Reporting Directive as the Corporate Sustainability Reporting Directive. The policy hinges on the idea of "double materiality," in which firms need to report not just in financial terms but also about how sustainability issues affect them and how their business affects the environment, employees and customers.<sup>10</sup> The expanded regulation will also require companies to disclose what percentage of their revenues are in line with the EU's green taxonomy.

<sup>8</sup> "Task Force on Climate-related Financial Disclosures 2021 Status Report," Financial Stability Board, Sept. 15, 2021, <https://www.fsb.org/wp-content/uploads/P141021-1.pdf>.

<sup>9</sup> "US pharma giants combat emissions crisis with long-term net-zero pledges," S&P Capital IQ Pro, Sept. 27, 2021, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/us-pharma-giants-combat-emissions-crisis-with-long-term-net-zero-pledges-66729132>.

<sup>10</sup> "Questions and Answers: Corporate Sustainability Reporting Directive proposal," European Commission, April 21, 2021, [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_1806](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_1806).

CSA data shows that companies are taking heed of regulatory requirements and preparing for mandatory disclosure. More than 80% of U.K.-based CSA participants are partially or fully integrating TCFD, while in the EU and New Zealand that figure stands at 57% and 48%, respectively. In Japan, 47% of assessed companies are applying the TCFD to risk management. In June 2021, Japan revised its Corporate Governance Code to require some listed companies to disclose climate-related financial information according to TCFD recommendations.<sup>11</sup> Corporations are taking note of mandatory disclosure in other regions as well. In Brazil, more than 20% of CSA-assessed companies are integrating TCFD. The country's central bank announced in September 2021 that Brazilian financial institutions will be required to disclose climate risks within the TCFD framework in December 2022.<sup>12</sup>

### Minority of companies are using scenario analysis to gauge future transition risks

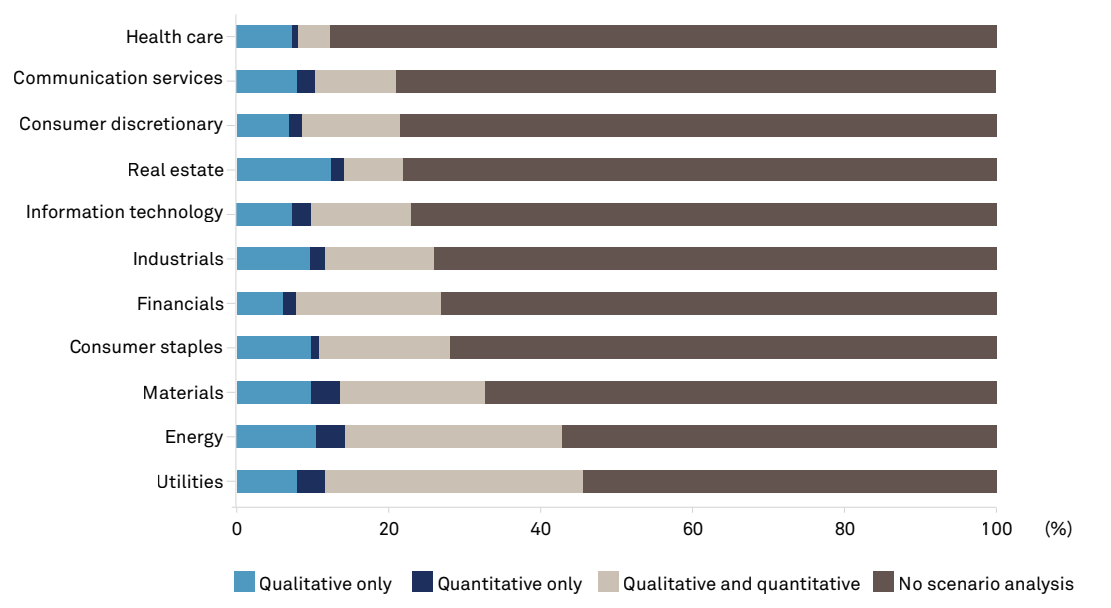
As corporations increase disclosure and integrate climate change into risk management, CSA data shows that only a quarter of surveyed companies are currently using scenario analysis to test for transition

risks. Transition risk scenario analysis takes a forward-looking approach to how future policy, regulatory and technological changes as well as legal, market and reputational risks would impact a business. Companies can also test for physical risks, such as rising sea levels or an increase in extreme weather events like hurricanes, flooding and wildfires.

Among the CSA respondents, the utilities and energy sectors have the highest number of companies conducting scenario analysis at 46% and 43%, respectively, followed by materials at 33%. These three sectors use quantitative analysis more than others, indicating the impact of current regulation such as the EU Emissions Trading Scheme or the expectation of future carbon pricing initiatives. Quantitative scenario analysis uses analytical models to determine a wide range of climate-risk outcomes, while qualitative scenario analysis is based on descriptive narratives and is often the first step for organizations to explore potential future climate outcomes.

In sectors with less obvious climate transition risks, such as health care, the percentage of companies conducting only qualitative scenario analysis is higher relative to quantitative analysis, suggesting that climate risks have

### Only a quarter of companies are using scenarios to test their transition risks



Data as of November 2021. Based on a survey of 5,301 companies. Source: Corporate Sustainability Assessment 2021, S&P Global Sustainable1.

<sup>11</sup> "Task Force on Climate-related Financial Disclosures 2021 Status Report," Financial Stability Board, Sept. 15, 2021, <https://www.fsb.org/wp-content/uploads/P141021-1.pdf>.

<sup>12</sup> "New regulation on social, environmental, and climate-related risk disclosures," Banco Central do Brasil, Sept. 15, 2021, [https://www.bcb.gov.br/content/about/legislation\\_norms\\_docs/BCB\\_Disclosure-GRSAC-Report.pdf](https://www.bcb.gov.br/content/about/legislation_norms_docs/BCB_Disclosure-GRSAC-Report.pdf).



In the results of its economy-wide stress test, the ECB said its analysis shows that the mining, electricity, and gas sectors would be most affected by climate change by 2050 if no mitigation action was taken, raising their probability of default.

been considered less material and the practice of using scenarios is less developed.

Scenario analysis for transition or physical risks may be a tool companies need to focus on as regulators seek more information about climate risks to national economies.

Concerns over the significant risks posed by climate change are prompting financial regulators and supervisors to conduct climate stress tests on their national financial systems and economies. They are largely using scenario analysis created by the Network for Greening the Financial System, or NGFS, a group of central banks collaborating on how to tackle climate change, which has asked companies and financial institutions to report on climate risks using TCFD disclosures. In the NGFS framework, a disorderly scenario implies a delayed or sudden implementation of transition policies, combined with high costs, while an orderly transition means transition policies are enacted in a timely manner with limited costs.

Since the 2008 financial crisis, regulators have used stress tests to assess how well banks can withstand hypothetical adverse scenarios, such as a sharp market downturn or an economic shock. Regulators can then determine, for example, whether banks need to shore up capital to weather losses. Regulators are now tailoring these tests to climate change to amass key data on banks' exposure to potentially stranded assets and examine their resilience to climate risk. What makes them different from existing stress tests is that they force banks and insurers to think beyond their usual three-to-five-year business cycle and look at a 30-year horizon, considering various transition and physical risk scenarios.

### Climate stress testing carbon-intensive sectors

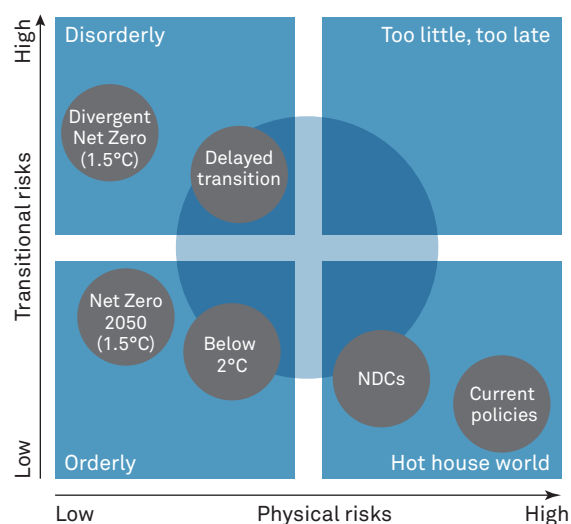
A recent French central bank climate stress test demonstrated that the credit risk in seven high-risk sectors, including mining and fossil fuel production, triples in a worst-case climate scenario.<sup>13</sup> In the results of its economy-wide stress test, the European Central Bank said its analysis shows that the mining, electricity, and gas sectors would be most affected by climate change by 2050 if no mitigation action was taken, raising their probability of default.<sup>14</sup>

According to CSA data, carbon-intensive sectors are reacting to the risks presented by climate change. They are ahead of other sectors in applying the TCFD recommendations to their climate risk management. The oil and gas sector has the highest TCFD integration

<sup>13</sup> "A first assessment of financial risks stemming from climate change: The main results of the 2020 climate pilot exercise," Banque de France Prudential Supervision and Resolution Authority, 2021, [https://acpr.banque-france.fr/sites/default/files/medias/documents/20210602\\_as\\_exercice\\_pilote\\_english.pdf](https://acpr.banque-france.fr/sites/default/files/medias/documents/20210602_as_exercice_pilote_english.pdf).

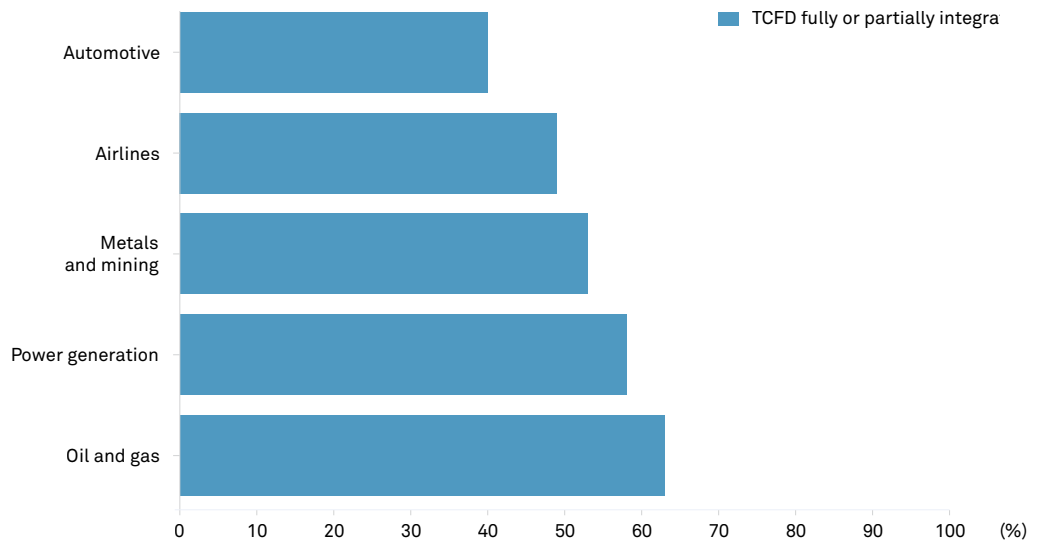
<sup>14</sup> "ECB economy-wide climate stress test," European Central Bank, September 2021, <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op281-05a7735b1c.en.pdf>.

### NGFS Scenerios Framework



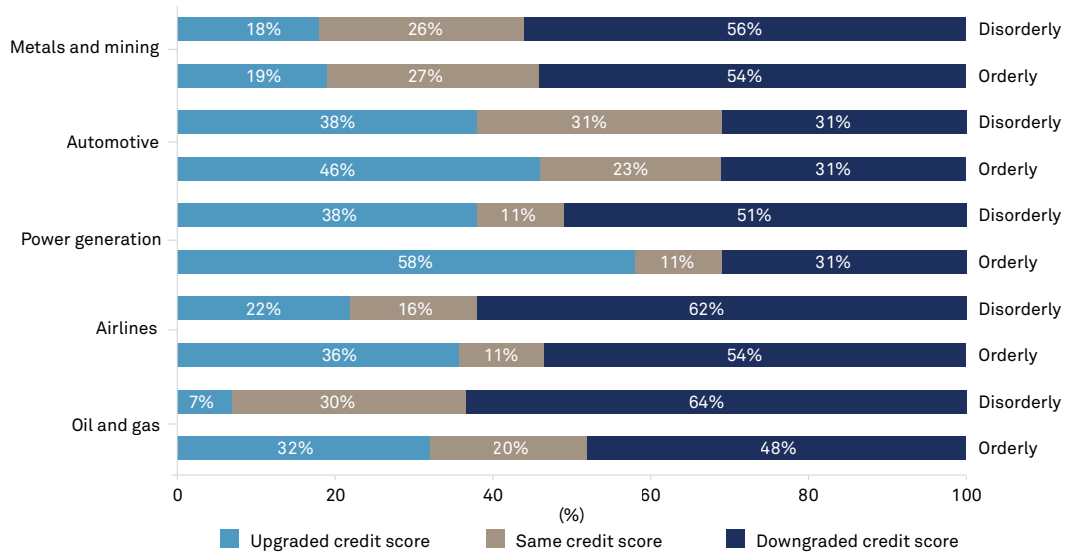
Positioning of scenerios is approximate, based on an assessment of physical and transition risks out to 2100. Source: Network for Greening the Financial System.

## The oil and gas sector has the highest TCFD integration among carbon-intensive sectors



Data as of November 2021. Results based on responses from 629 companies in carbon-intensive sectors. CSA industries are aligned with the industries used in S&P Global Market Intelligence credit score analysis of carbon intensive sectors. Source: Corporate Sustainability Assessment 2021, S&P Global Sustainable1.

## Chance of a credit score change by 2050 for the largest companies by revenue operating in carbon-intensive sectors



Data as of November 2021. Based on Network for Greening the Financial System scenarios. An orderly scenario assumes the early introduction of climate policies. A disorderly scenario implies a delayed or sudden introduction of transition policies.

Analysis assesses the credit risk of transition risks based on 5,608 companies: 3,800 in oil & gas sectors, 1,290 in power generation sectors, 410 in metals & mining sectors, 95 in the airline industry and 13 in automobile manufacturing.

Source: S&P Global Market Intelligence, S&P Global Sustainable1. Results produced using Climate Credit Analytics.



among carbon-intensive sectors. That's a positive signal, given that an S&P Global Market Intelligence analysis of high-carbon sectors found that oil and gas companies face the highest credit impact related to transition risks by 2050 under an NGFS disorderly scenario.

However, while most companies in carbon-intensive industries have started using TCFD recommendations to manage climate risk, less than half are testing the resiliency of their strategy by conducting transition risk scenario analysis. Metals and mining stands out as the sector with the lowest percentage of companies using transition risk scenario analysis even though the risk of an impact on the sector's credit score is more than 50%.

### The costs of not transitioning in time

The financial costs of not adapting to climate change could be high, so companies – especially those in high-carbon sectors – need to act to ensure they do not face massive disruptions to their businesses over the longer term.

Understanding climate risks to business and the wider economy is a joint effort by all stakeholders, from corporations to policymakers to investors. CSA data

indicates that companies recognize the material impact climate change can have on their business and aligning with TCFD is a concrete step in managing climate risk and preparing for future climate stress tests by regulators, particularly in carbon-intensive industries. Companies ahead of the curve may find themselves better prepared for the economic impacts of climate change. ■

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#### Contributors



Giorgio Baldassarri, PhD  
Analytical Development Group  
Global Head  
S&P Global Market Intelligence



Henna Viinikka  
Senior Manager  
ESG Research  
S&P Global Sustainable1