London Stock Exchange

Understanding climate risk and opportunity

Your guide to climate reporting

Guidance for London-listed companies on the integration of climate reporting best practice and TCFD implementation.

An LSEG Business

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Foreword

David Schwimmer
Chief Executive Officer, LSEG

Rarely have investors, policymakers and regulators been more united in a single message to the business world: sustainability is no longer a 'nice to have'. In fact, four in five asset owners told us it is now integral to how they allocate capital, and for two thirds of them, climate and carbon is their top sustainability priority.

London's listed companies have responded to these demands impressively in recent years and are some of the best climate reporters in the world. But why shouldn't every large or listed company in the UK voluntarily provide climate-related data? That would make our companies more attractive internationally and strengthen our economy against the inevitable challenges of climate change ahead.

Building on the pioneering work of the Task Force on Climate-Related Financial Disclosures (TCFD), LSEG (London Stock Exchange Group) has created a practical and comprehensive guide to help companies do exactly that.

Other stock exchanges around the world are drawing up similar TCFD-aligned guidance to meet the needs of their home markets, following the work of the UN Sustainable Stock Exchanges initiative which launched Model Guidance for exchanges and listed companies earlier this year.

We believe as global exchanges publish their guides in the months and years to come, thousands more companies will begin reporting their climate-related data – getting ahead of an inevitable increase in mandatory reporting in countries around the world. That in turn will accelerate investors' re-allocation of capital towards those that are doing the most to decarbonise and transition to a low-carbon future.

I believe this guidance is an important new tool in equipping London-listed companies for a world in which investor demands, consumer attitudes and regulatory requirements are changing fast. This, I hope, will ultimately provide further impetus to all our efforts to address climate change.

Executive summary

The global economy needs to undergo an industrial transition to rapidly decarbonise, with huge implications for business and the investment community. The finance and investment sectors are increasingly re-allocating capital to reflect this, moving capital away from companies with potentially unaddressed climate risks and towards those with clear plans for a transition to a low-carbon economy, as well as those actively operating in 'Green Economy' growth markets. The finance sector is also in the spotlight, given its critical role of mobilising finance in support of the transition to net-zero.

It is vital that companies are able to effectively disclose and communicate their approach to climate change, their strategies, and how they are managing associated risk and opportunity. Investors require high quality, globally consistent data to inform their investment strategies and how they allocate capital.

As a global exchange we have an important role to play in supporting companies on our markets to understand how to approach and communicate this information. The effective flow of climate risk information enables better capital allocation and engagement between companies and investors. It will also help to improve the climate resiliency of global capital markets.

Financial market participants are developing a more sophisticated understanding of how to price risks relating to climate change and demanding higher quality, consistent and comparable data to inform their decisions. This requires a dramatic improvement in climate-related reporting globally. The Financial Stability Board (FSB) established the Task Force on Climate-Related Financial Disclosures (TCFD) to develop recommendations that help companies assess, manage and report on climate change-related risks and opportunities within their financial accounts, using an approach that demonstrates a clear understanding of the most material issues and the plans in place to address them.

Investors increasingly demand more precise detail of companies' climate strategy and carbon emissions and regulators including the UK's Financial Conduct Authority (FCA), are making disclosure in line with TCFD mandatory, beginning with premium-listed companies and with a roadmap that is likely to include all sectors and sizes. The most recent consultations set out the regulator's proposals to extend climate-related disclosures rules to companies with a standard listing and to asset managers, life insurers, and FCA-regulated pension providers. This approach would also accelerate TCFD-aligned disclosure amongst privately-owned companies and assets within portfolios of mandated institutions.

Measures to improve reporting on other extra-financial issues relating to environmental, social and governance (ESG) practices continue to be developed. While there is significant overlap between climate issues and broader ESG issues, it is important the distinction is understood given the urgency around addressing the climate emergency, demand for this data from the investment and finance sector, and also

The effective flow of climate risk information enables better capital allocation and engagement between companies and investors.

because for climate reporting we have a clear single global framework in the TCFD recommendations.

Recognising this, the London Stock Exchange has put together this guidance on TCFD reporting to support best practice and to educate companies on how they can implement these recommendations. It complements and cross-references a separate LSEG publication: *Revealing the full picture: Your guide to ESG reporting*.[1] Used together, these guides can help companies understand and deliver best practice on disclosure to investors, prepare for regulation and derive commercial value from improved management information.

This guidance is not a deep technical document, but a broad overview intended to help companies understand the issues, grasp how they might apply in each company's own case and take steps towards gathering and reporting the relevant information. It is designed for all companies listed on the London Stock Exchange's markets, regardless of their sector, size or the stage of their transition journey.

To help companies integrate and communicate climate-related information in alignment with TCFD's recommendations, the following three-stage process is helpful:

STEP 1

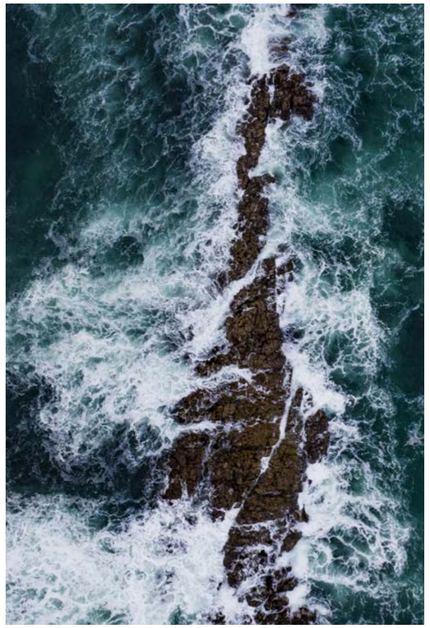
Disclosure diagnosis and context

The first step to ensuring that climate-related issues are sufficiently addressed by your organisation is to understand the relevance of climate change and take stock of your current strategy and disclosure practices. To help companies understand the key climate-related considerations for their business, this guidance provides an overview of the evolution of climate-related disclosures and the current financial, political and regulatory landscape. In order to help companies evaluate their current disclosure, this guidance also provides a checklist (Annex 1) which helps companies determine whether or not they are providing sufficient information to investors.

STEP 2

Integration of climate-related risks and opportunities

Once management recognises the context and need for action on climate change for their organisation, they can begin to integrate climate-related considerations into their risk assessment and strategy development processes (see Chapter 2). Climate change has implications for all businesses irrespective of industry. This integration should be done from the top of the organisation and should filter down through policies, processes and strategy.



1. LSEG_Guide_to_ESG_Reporting_2020.pdf

STEP 3

Disclosure of climate-related practices and data

The third step is communicating the organisation's understanding through its disclosure of climate-related practices, strategy and objectives to investors and stakeholders.

The purpose of the TCFD's recommendations, as envisioned by the Financial Stability Board (FSB), was to develop best practice to deliver more effective climate-related disclosures globally. They aim to identify disclosures that could promote more informed investment, credit and insurance-underwriting decisions, and in turn, enable stakeholders to better understand the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks. This includes a growing focus on whether a company's climate targets are on a trajectory to net-zero emissions before 2050.

Although the fundamental aims of TCFD remain unchanged, its recommendations will continue to evolve as climate science and market understanding develop. This was demonstrated by the substantial update in October 2021: this iteration includes a recommendation that companies develop and disclose clear plans for their transition to a low-carbon economy, as well as expanding the guidance on emissions disclosure to include emissions in the supply chain (so-called Scope 3 emissions).

Who should use this guidance?

Whilst this guidance is specifically written to support companies on the London Stock Exchange's markets, all companies should find it helpful and are encouraged to use these recommendations to ensure the information they are communicating with investors and wider stakeholders is both consistent and useful by addressing the most financially-material aspects of climate change to their organisation.

This three-stage, cyclical process can be undertaken by any company, regardless of size or sector. Of course, each company will be at a unique phase of its reporting practice evolution, so will have different levels of expertise, but this guidance aims to help all companies, even those with limited reporting experience or limited resources. It is recommended that all companies perform each of these steps, however the depth and detail of each stage of the process may vary.

Companies may also wish to communicate their commitment to disclosure through a statement supporting TCFD. More

2,000+

companies have announced their support for TCFD and its work since its launch in 2017

than 2,000 companies representing in excess of $20 trillion in market capitalisation have announced their support for TCFD and its work since its launch in 2017, including global financial firms responsible for assets in excess of $178 trillion.[2] LSEG supports the recommendations of TCFD and recognises the importance of continued development of best practice reporting on our markets on climate-related risks, opportunities, and disclosures, as well as reporting against the framework as a listed business ourselves.

We are committed to providing guidance on topics that are essential to the efficient functioning of capital markets. Because it is now clear climate change will affect all sectors of the economy, we aim to support companies and investors in understanding the climate transition and help them to use disclosure to foresee risk and future proof their businesses.

This guidance aims to clarify current global best practice in climate-related disclosure and provides a step-by-step guide to supporting companies starting on this journey. This guidance can be a starting point for report preparers who wish to integrate climate-related information for the first time, while also providing additional resources that can help enhance the quality of climate-related disclosure for those that are at a more

advanced stage. The need for clear, consistent and decision-useful information from companies on climate-related information is widely recognised and therefore we provide this guidance to support our market both to understand this increasing demand, and to help build consistency within our market on how to report on climate-related information. Greater understanding of and transparency with respect to climate risk is the best way to ensure our markets are climate resilient.

2. As of May 2021 – Bloomberg, A guide to the Task Force on Climate-related Financial Disclosures, 2021

How does this guidance relate to LSEG's *Guide to ESG reporting*?

This document complements LSEG's ESG reporting guide, which walks the reader through eight key principles to deliver best practice (summarised right). With a focus on climate disclosure in this guidance, we look at these principles through the prism of the TCFD recommendations and the latest state of investor and regulator engagement. Some, such as strategic relevance, via scenario planning, materiality in relation to TCFD-aligned disclosures and Green Revenue reporting driven by the rise of taxonomies, are central to climate disclosure and are covered in depth. Others are of similar relevance – effective communication using recognised frameworks with investment-grade data applies equally to climate and broader ESG reporting.

Strategic relevance

What is the relevance of ESG issues to business strategy and business models?

Investor materiality

What do investors mean by materiality?

Investment grade data

What are the essential characteristics of ESG data?

Global frameworks

What are the most important ESG reporting standards?

Reporting formats

How should ESG data be reported?

Regulation and investor communication

How can companies navigate regulations and communicate effectively?

Green Revenue reporting

How can issuers get recognition for green products and services?

Debt finance

What should debt issuers report and what are the emerging standards here?

01

Climate disclosure – the strategic picture

The initial step for a company contemplating the requirements of TCFD for the first time is to ask why it matters. In particular, what it means for the company and its business model. Although the specifics may vary, there are commonalities in how a company can articulate the business case for improving climate-related analysis and disclosure, using TCFD's recommendations.

Here are three possible contexts in which to consider why climate change data and disclosure might be strategically important for your organisation.

Changing investment trends

Estimates of the financial impact of climate change vary; according to the ECB's climate stress tests, under a scenario where climate change is not addressed the expected losses on corporate loan portfolios are shown to rise significantly over time, driven by ever increasing physical risk, with the potential

of becoming critical over the next 30 years. In 2050, the average corporate loan portfolio of a European bank is 8% more likely to default under its 'hot house world' scenario than under an 'orderly transition'. Portfolios most vulnerable to climate risk are 30% more likely to default in 2050 compared with 2020 under the hot house world scenario: five times more than the average portfolio increase under the same scenario,[3] meaning upwards of $43 trillion in assets under management could be at risk through to the end of the century.[4] Such studies suggest that climate-related financial risks are not just limited to fossil fuels or high carbon sectors but exist economy-wide including across industries and asset classes. As a result, both investors and companies are adopting an increasingly long-term outlook for more efficient and risk-adjusted allocation of capital and need to set out their strategies in response to this economic transition.

As investors shift their portfolios towards companies that are better positioned on climate change, they are likely to assume poor corporate disclosure means a company is not preparing for the climate transition, whether or not this is the case. This could have a corresponding impact on a company's cost of capital when looking to raise finance. Asset owners are increasingly likely to demand improved disclosure as a first step to engaging with companies on improving their climate change preparedness.

Examples of investors' focus on this area include the Transition Pathway Initiative (TPI), a global, asset-owner-led initiative which assesses companies' preparedness for the transition to a low-carbon economy. Similarly, the interlinked Climate Action 100+ (CA100+) is the world's largest investor-driven initiative, which aims to engage the world's largest corporate greenhouse gas emitters to take necessary action on climate change. CA100+ has over 500 investment institutions from around the world as members, managing more than $47 trillion in assets which includes the largest global asset owner (Government Pension Investment Fund of Japan) and the world's largest asset manager (BlackRock).

Impending changes to policy and regulation

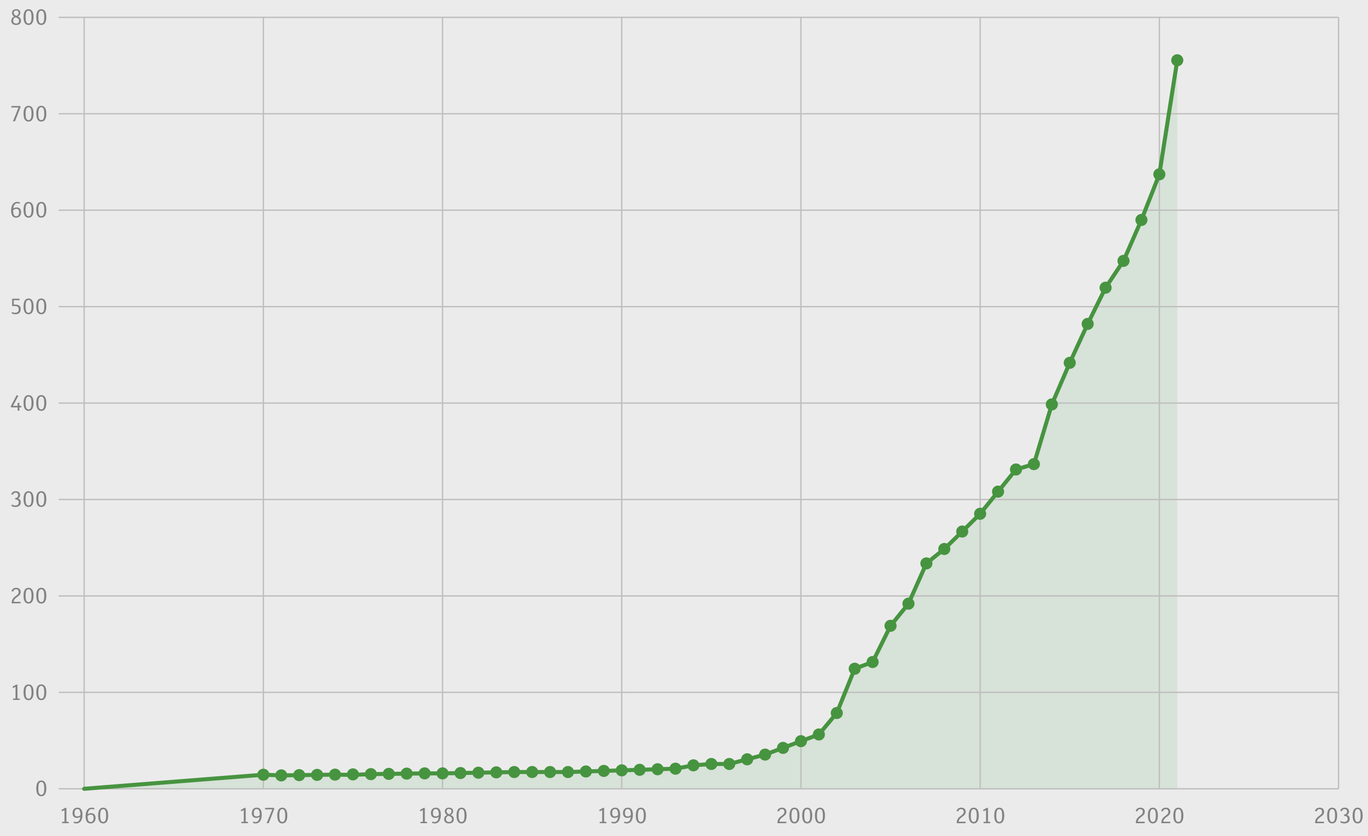
Globally, financial regulators are paying increased attention to sustainability issues, as illustrated by a 2019 whitepaper[5] by the UN-backed PRI (Principles for Responsible Investment), which found that globally there are over 650 policy tools and guidance and more than 300 policy revisions which support, encourage or require investors to consider all long-term value drivers, including ESG factors. See the chart from the PRI's Regulation Database (Figure 1, page 12).

Asset owners are increasingly likely to demand improved disclosure as a first step to engaging with companies on improving their climate change preparedness.

3. ECB, https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op281~05a7735b1c.en.pdf, September 2021
4. World Energy Outlook, Special briefing for COP21, 2015
5. PRI, Taking stock: Sustainable finance policy engagement and policy influence, 2019

This trend has only accelerated, with the 2020 TCFD status report indicating a number of governments beginning to embed the recommendations in policy and guidance and moving toward requiring TCFD disclosures through legislation and regulation. Together with momentum from the International Organization of Securities (IOSCO) and International Financial Reporting Standards Foundation (IFRS), markets need to prepare themselves for changes to policy and regulation globally to ensure stability and resiliency of financial markets. With such a clear trend, companies have the opportunity to build their strategy in preparation: a company that does the internal due diligence to comply with TCFD reporting earlier in this global shift will be much better prepared to meet future regulatory requirements, gaining competitive advantage and strategic opportunities.

Figure 1 Cumulative number of sustainability policy interventions



Source: PRI, Taking stock: Sustainable finance policy engagement and policy influence, 2019

Legal and reputational risks

Companies and investors are increasingly aware of the legal and reputational risks related to their responses to climate change. As of January 2020, the total number of climate change legal cases filed across the world reached approximately 1,400 for the year, continuing an upward trend of such cases.[6] The most recent climate change litigation update by Norton Rose Fulbright notes "the growing demand from consumers for environmentally sustainable goods and services is prompting ever increasing scrutiny from consumer advocates and regulators into misleading and fraudulent corporate climate claims or commitments". Both companies and investors can minimise legal and reputational repercussions by being aware of their environmental impact and demonstrating transparency around their climate-related governance and strategy.

Litigation is not the only risk. Customer and brand risks associated with climate change are also on the rise. A damaged brand due to climate can have an impact on sales, for example, through consumer boycotts or local community protests. Knock-on effects include damage to its regulator and investor relationships, and the ability to attract talent.

Further, not only are customers pushing for climate action from companies, but so are shareholders. Shareholder resolutions are increasingly addressing climate and putting pressure on companies to make significant changes to business strategies and operations. The 2020 Proxy Voting Annual Review shows record-high environmental proposals both filed and making it to vote, as well as a new record number of proposals receiving majority support. Additionally, the report predicts better-targeted environmental proposals in 2021 and sees growing demand for creating environmentally focused reports or industrial waste-pollution reports.[7]

1,400+

climate change legal cases filed across the world as of January 2020

6. Norton Rose Fulbright, Climate change litigation update, 2020

7. Proxy Insight, 2020 Global Shareholder Voting Review, 2020

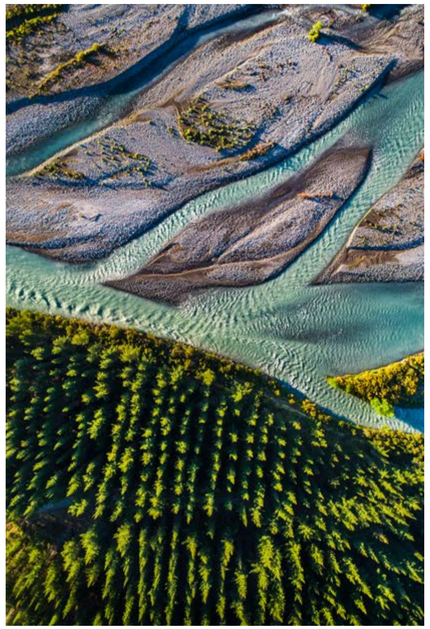
The London Stock Exchange's Climate Governance Score: A practical assessment of corporate climate governance

Companies on the London Stock Exchange now have access to a Climate Governance Score, which is based on TPI's Management Quality methodology and powered by FTSE Russell data. It measures the quality of companies' management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition. The assessment criteria is aligned to and modelled on TCFD recommendations.

The score is relevant for all companies in all sectors, and is an assessment of companies' climate change management practices. Given privately in the issuer services platform, companies within the FTSE Russell research universe are provided a score between 0 and 4 as well as their industry averages. For all other companies, there is an online self-calculation tool available which provides personalised recommendations on how to improve their climate reporting.

See Section 2.5 and Figure 2.3 for more details on how the Climate Governance Score works in practice and how it applies this guidance in a simple and clear way to help companies benchmark themselves against TCFD in a manner that is aligned with investor expectations.

Note that this **does not provide an assessment of climate performance** or the quality of companies' emissions reduction targets, but rather whether the foundational elements of governance and reporting are in place that should enable companies to set credible targets with appropriate levels of ambition.



02

Risks and opportunities

Materiality

Materiality, which can be understood in simple terms as the importance of a piece of information for decision-making processes, is a crucial aspect of the TCFD recommendations. While it is noted that over time materiality will evolve and that time horizons impact whether or not information is relevant to a decision, the recommendations primarily relate to information deemed “financially material”.

In alignment with this, our guidance is designed to help report preparers to understand the financial impact of climate-related information. In most jurisdictions, the regulatory framework for listed companies requires that if information is indeed found to be financially material, or in other words poses a financial risk or opportunity to the organisation, it must legally be disclosed by the company. For this reason, many companies working to report against the TCFD framework have found it appropriate for this activity to be sponsored at the board level by the Chief Financial Officer, while the team that prepares the disclosures is more likely to be an interdisciplinary one with representation from finance, sustainability, corporate reporting and other teams.

The TCFD recommendations are based on the belief that climate-related issues are or could be material for many organisations,

and its recommendations should be useful to them in complying more effectively with existing disclosure obligations. It also notes, however, that climate-related risk is a non-diversifiable risk that affects nearly all industries, and therefore many investors believe it requires special attention. For example, in assessing organisations' financial and operating results, many investors want insight into the governance and risk management context in which such results are achieved. Therefore, TCFD believes disclosures related to its governance and risk management recommendations directly address this need for context and should be included in annual financial filings regardless of materiality priorities.

When determining whether or not to disclose certain information in mainstream financial filings, companies often conduct a materiality assessment (also known as a materiality analysis). Through a mapping exercise, organisations can determine what issues will be the most relevant in the near future and which are most likely to have a financial impact on the company. Both physical and transitional risks pose important financial impacts to organisations; companies that are not evaluating these risks may find investors are doing this analysis themselves.

Companies who do not find climate-related considerations material to their business are encouraged to explain how they reached this conclusion, and the time horizon used. Where it is apparent that climate risks are likely to become material in the future, TCFD encourages these organisations to begin disclosing climate-related financial information alongside statutory financial filings. This would facilitate the integration of such information into financial filings once they become material.

Integration

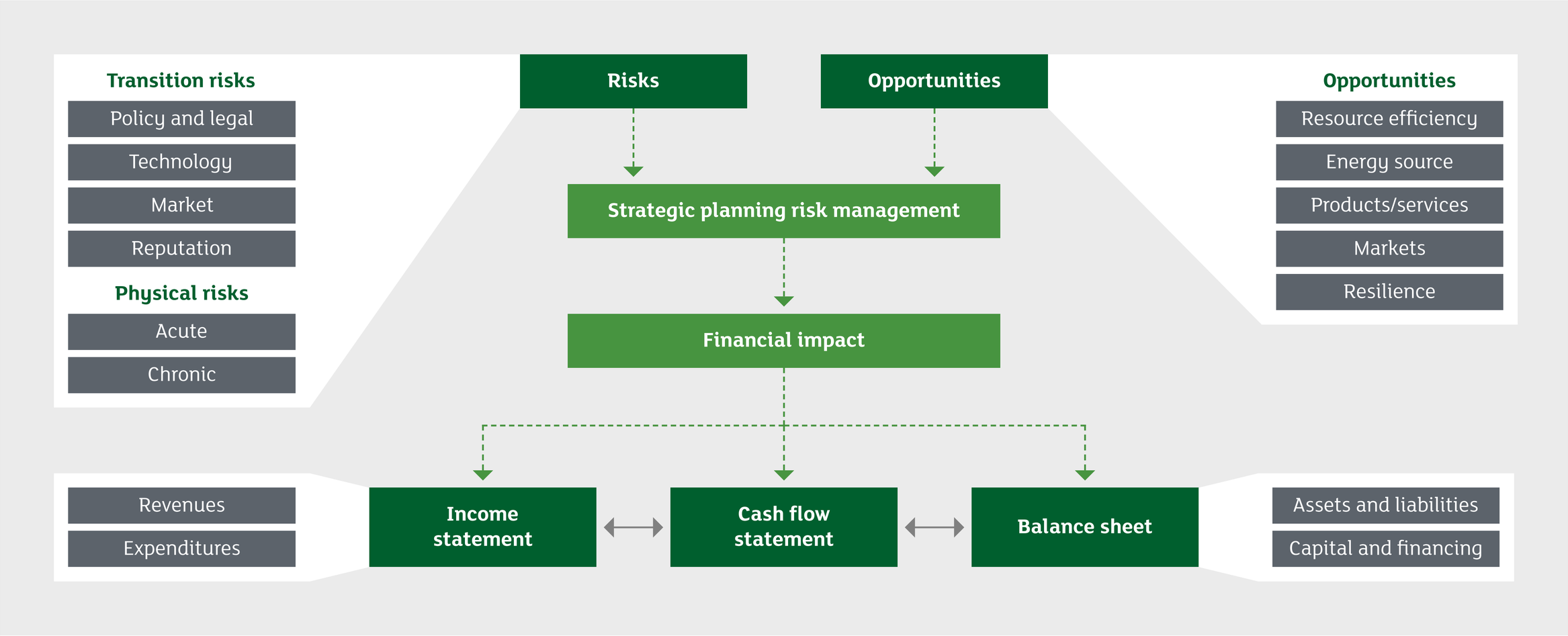
Once a company has determined the materiality of climate-related risk, the second step is to integrate climate-related considerations into their governance, strategy and risk management processes. In order to do this, it is important that the board and senior-level management recognise the climate-related risks and opportunities that are relevant to their organisation, industry, supply chain and location. To help organisations with this task, this section identifies key climate-related risks and opportunities, as well as providing guidance on practices used to evaluate the risk and opportunities most relevant to an organisation.

Both physical and transitional risks pose important financial impacts to organisations; companies that are not evaluating these risks may find investors are doing this analysis themselves.

While many organisations will already be considering various opportunities and risks associated with climate change, the TCFD recommendations offer a framework that enables global consistency. The TCFD's recommendations serve to encourage organisations to evaluate and disclose, as part of their annual financial filing preparation and reporting processes, the climate-related risks and opportunities that are most pertinent to their business activities. The risks and opportunities recommended for consideration by TCFD are those which have a financial impact and should therefore also be reflected in the organisation's financial statements (Figure 2.1, page 18).

Figure 2.1 Climate-related risks, opportunities and financial impact

Source: Page 8 of the TCFD recommendations



2.1 Climate risks

In its work evaluating risks related to climate, TCFD found two key categories of risk that report preparers should consider:

1. Risks related to the climate *transition* to a lower-carbon economy
2. Risks related to the *physical* impacts of climate change.

Within a scenario of climate transition, companies may face risks relating to policy and legal changes, new or obsolete technologies, changing market behaviours and reputational risks. These risks have been found to have an impact on all aspects of a company's finances, from its income statement and revenues and expenditures, to its balance sheet, assets, liabilities, capital and financing. Examples of types of risks falling into the two categories of transition and physical risks were identified by TCFD (see Figure 2.1 for an overview) and may be used as a framework for assessing issues particular to your company. A materiality analysis can and should be conducted to illustrate how materiality is determined and what risks are determined to financially impact an organisation.

While climate change is a global challenge, it also has unique local implications. Whether a business is operating in one or many countries, they should consider both global and domestic risks and opportunities confronting their operations when conducting an initial analysis.

2.2 Climate opportunities

Efforts to mitigate and adapt to climate change can and are producing substantial opportunities for organisations and their investors. Climate-related opportunities may come through the implementation of new resource efficiencies and cost-saving programmes, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain. In fact, the financial impact of climate opportunities may outweigh climate risks. In a 2019 study by CDP,[8] it was found that 225 of the world's 500 largest companies reported climate-related opportunities representing potential financial impacts of over $2.1 trillion – more than twice the financial impact estimate from climate risks ($970 billion). Additionally, the report found that more than half of all reporting companies in the study identified potential opportunities that could have a substantive or strategic impact on their business.

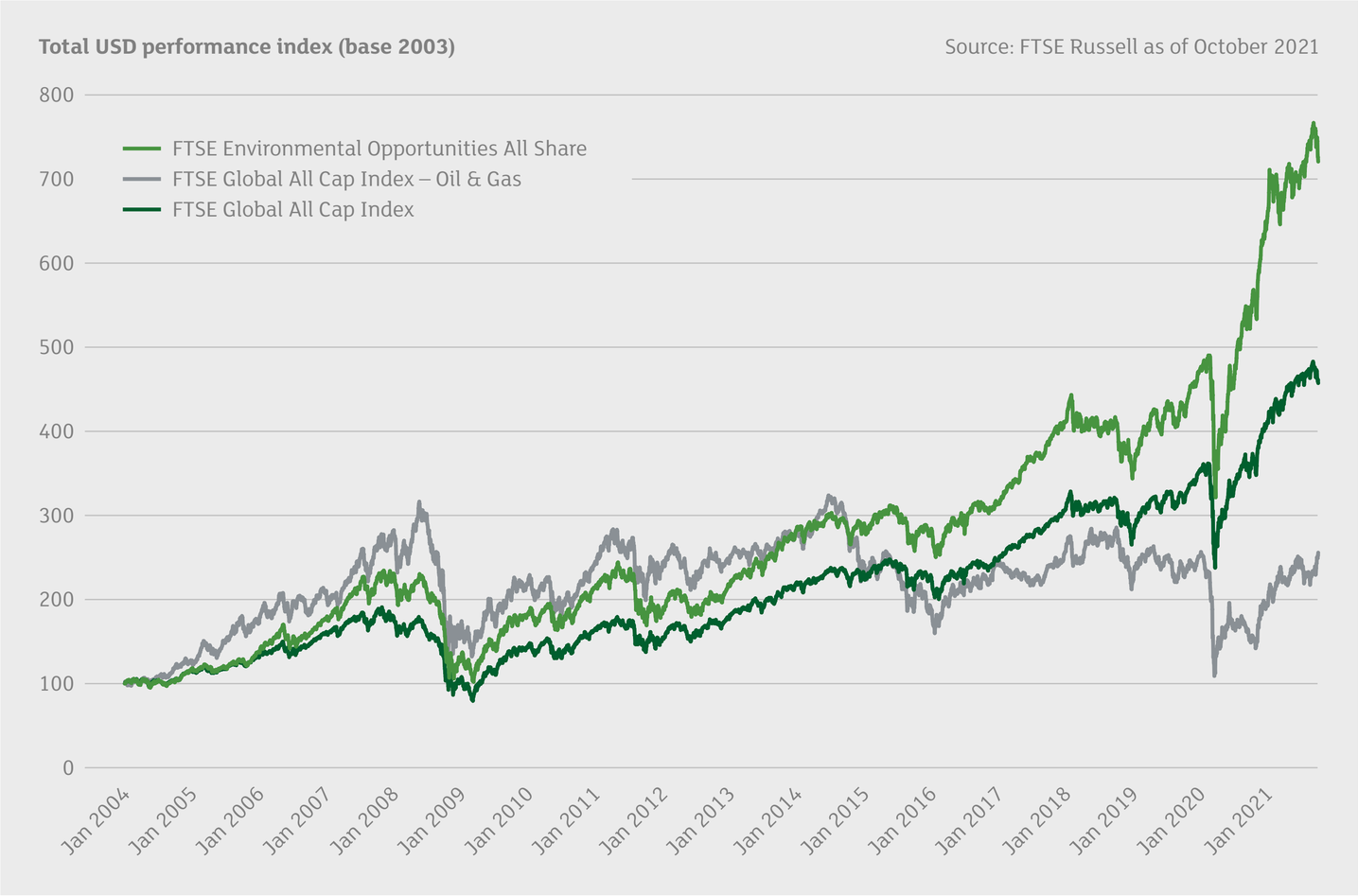
Whether a business is operating in one or many countries, they should consider both global and domestic risks and opportunities confronting their operations.

8. CDP, Major Risk or Rosy Opportunity: Are companies ready for climate change? 2019

To gauge the size and breadth of the 'Green Economy' and track its growth, FTSE Russell created the FTSE Russell Green Revenues 2.0 Data Model. This provides investors with data on more than 3,000 global listed companies that have exposure to the green economy. It addresses important challenges of green economy data; the taxonomy of green activities, tiers of "greenness" and low levels of disclosure of green revenues.

The data[9] shows a $4 trillion market cap green economy investment opportunity – an equivalent of over 5% of the total listed equity market. Moreover, these companies have been outperforming the wider market, as shown in Figure 2.2.

Figure 2.2 Performance of "green industries" vs. the wider market



9. Investing in the green economy – sizing the opportunity, FTSE Russell

2.3 Integrating climate into internal processes and governance

A key aspect of ensuring climate-related risks and opportunities are integrated into companies' internal processes is through its governance mechanisms. Users of climate-related financial disclosures are interested in understanding the role an organisation's board plays in overseeing climate-related issues as well as management's role in assessing and managing those issues. Such information supports evaluations of whether climate-related issues receive appropriate board and management attention. While good governance should intrinsically include climate governance, as climate data can be both new and complex, boards may require additional support to fully consider the scientific, macroeconomic and political uncertainty of climate change and its impact on their business. For one company, that might mean establishing an internal climate or environmental management committee. For another, appointing a board member with expertise and responsibility to oversee the collation and dissemination of climate risk information could be more appropriate. The solutions are likely to be specific to the company, but they should all ensure climate change is considered a relevant topic at the highest levels.

In addition to the other guidance provided by LSEG on ESG reporting requirements[10] and best practice, companies should consider to what extent their current corporate governance accounts for and takes into consideration climate-related risks and opportunities. TCFD considers governance, as well as risk management, to be essential information required by investors to assess an organisation's financial and operating results. As such, the recommended disclosures pertaining to these two sections (risk management and governance) are recommended to be disclosed in the annual financial filings of all listed companies.

2.4 Scenario analysis

TCFD recommends conducting a scenario analysis to help identify and effectively assess the potential implications of a range of plausible future conditions in the context of a rising global temperature. Scenarios are hypothetical constructs that consider how the future might look if certain trends continue or certain conditions are met.

Scenario analysis is not an exercise in forecasts, predictions or sensitivity analyses, but rather in evaluating resilience to different possible future scenarios. It is a method for

10. LSEG_Guide_to_ESG_Reporting_2020.pdf

developing strategic plans that are more flexible or robust, and has become a useful tool for businesses to understand the strategic implications of climate-related risks and opportunities. While it is an important element of the TCFD framework, it is also often the area for which companies have the least experience.

However, companies do have numerous resources available to them, including TCFD's Guidance on Scenario Analysis for Non-Financial Companies (2020), TCFD's Knowledge Hub and many other resources on scenario analysis. For example, the TCFD's guidance on scenario analysis provides a detailed step-by-step guide on how to conduct a scenario analysis and available scenarios and models that organisations may wish to adopt. The same guidance also provides a list of key messages that organisations should understand about scenario analysis. If companies have not worked on a scenario analysis before, they may wish to use the many resources available through TCFD.

CASE STUDY

ROLLS-ROYCE PLC

What was the initial approach used?

Rolls-Royce plc started with scenario planning in 2016 and it has since become an integral part of the strategic investment prioritisation and decision-making processes. In 2018 Rolls-Royce enlisted the support of a strategic consulting firm to consider the future implications of climate change. This case study describes how Rolls-Royce adapted and tailored the process recommended by TCFD.

The purpose of the analysis was to improve the understanding of how the risks and opportunities associated with climate change may impact Rolls-Royce over the medium term, with a view to bringing context to Rolls-Royce's business strategy and to enable more informed decision making.

Tailoring the TCFD scenario analysis process

Although TCFD recommends using scenarios, readers of their technical reports may not yet be able to perform this analysis. TCFD reports only describe the broad, high-level, process, which needed to be adjusted and tailored for the purpose of Rolls-Royce.

Identifying 'useful' scenarios

Ideally, scenarios are developed specifically for an organisation, to ensure they talk to their specific concerns and challenges. But sometimes it is acceptable to use an existing set of scenarios and tailor these. After an extensive review of publicly available scenarios, one set was identified that was felt to be useful ('complete and relevant') for describing plausible future contexts for Rolls-Royce. This set was informed by and partly based on externally recognised and scientifically accepted climate scenarios, including those developed for CDP/We Mean Business.

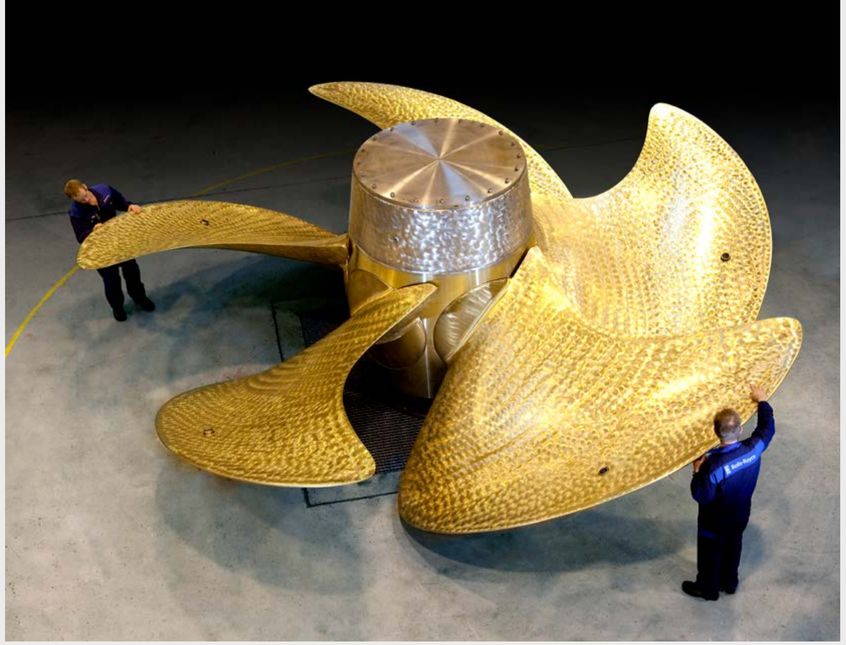
Continued on page 24

Evaluating business impacts

In scenario planning, in a process stage called 'scenario wind-tunnelling', the exposure of a business to external change can be assessed. This is done by evaluating, under each scenario, the resilience of the current strategy and business plan (including strategic and operational objectives) as well as other aspects of the 'current business design', such as current organisation, company culture, location of factories, choice of ERP system, current technology development roadmap, portfolio of intellectual property, etc. So, to ensure testing and assessment of the Rolls-Royce business against different scenarios was possible, their strategy was captured in a simple but explicit strategic framework, which included such elements as brand value and reputation, access to capital, and people.

One scenario implications workshop

A diverse group of Rolls-Royce executives representing business units, strategy, technology, HR, investor relations and risk were gathered for a day-long workshop where implications were assessed, and action items identified.



Further insights

By having conducted this exercise, Rolls-Royce is in a better position to inform strategic decision making; respond to investor disclosure requests, and to help shape company policy. The insights gained by Rolls-Royce are being used to stimulate further exploration of the company's strategic options and better engage with external stakeholders. Over the coming months and years Rolls-Royce will work internally and externally to extract the maximum possible value from undertaking these and similar studies to ultimately ensure better outcomes for the company, the industry, and the environment.

Box 2.1

IPCC, IEA and NGFS scenarios

Intergovernmental Panel on Climate Change (IPCC)

The IPCC has developed a new basis for the construction of comparable scenarios across research and modelling groups – Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSPs). RCPs are "emissions scenarios" that include time series of emissions and concentrations of the full suite of greenhouse gases, aerosols and chemically active gases, as well as land use/land cover. RCPs are used to develop climate projections by informing physical climate system models; these models, in turn, project how the physical climate may change under different levels of radiative forcing driven by greenhouse gas concentrations. SSPs were developed to complement the RCPs with varying socioeconomic challenges to adaptation and mitigation. The combination of SSP-based "socioeconomic scenarios" and RCP-based climate projections provides an integrative framework for climate impact and policy analysis. The following table outlines the RCPs:

Mean Temperature and Full Range Associated with Each RCP

Scenario	Atmospheric carbon dioxide concentrations in 2100	Temperature increase to 2081–2100 relative to a 1850–1900 baseline		Global mean sea level rise for 2081–2100 relative to a 1986–2005 baseline	
		Average	Likely range	Average	Likely range
RCP2.6	421ppm	1.6°C	0.9–2.3°C	0.40m	0.26–0.55m
RCP4.5	538ppm	2.4°C	1.7–3.2°C	0.47m	0.32–0.63m
RCP6.0	670ppm	2.8°C	2.0–3.7°C	0.48m	0.33–0.63m
RCP8.5	936ppm	4.3°C	3.2–5.4°C	0.63m	0.45–0.82m

The SSPs describe five alternative socioeconomic futures over the course of the 21st century assuming no explicit policies to mitigate or adapt to climate change, as follows:

— Sustainable development (SSP1)

— Middle-of-the-road development (SSP2)

— Regional rivalry (SSP3)

— Inequality (SSP4)

— Fossil-fuelled development (SSP5).

Continued on page 26

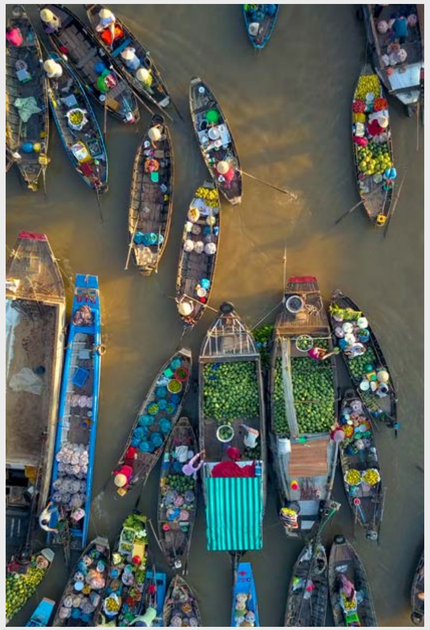
International Energy Agency (IEA)

In contrast to the IPCC approach, the IEA focuses on energy and emission scenarios. The IEA's World Energy Model runs three main scenarios describing the future energy mix:

- **Current Policies Scenario (CPS):** This scenario considers policies that are in place at the preceding year of publication (i.e. mid-2019 for the 2019 World Energy Outlook), without any additional government policy intervention.
- **Stated Policies Scenario (SPS):** This scenario is designed to explore all policies enacted in the preceding year, plus the policies that have been firmly communicated or committed to by national authorities. The SPS scenario assumes that there is a slow implementation of these policies, based on the IEA's assessment of the many political, institutional and societal barriers that exist to a rapid transition.
- **Sustainable Development Scenario (SDS):** This scenario assumes the world is successful in achieving Sustainable Development Goals by 2030. The SDS holds the temperature rise to below 1.8°C with a 66% probability without reliance on global net-negative CO_2 emissions.

The Network for Greening Financial System (NGFS) scenario

The Network for Greening the Financial System (NGFS), a group of over 80 central banks focused on addressing climate risks, worked with an academic consortium from the Potsdam Institute, IIASA, University of Maryland, Climate Analytics and the Swiss Federal Institute of Technology (ETHZ). It set out three reference scenarios and five additional scenarios that cover a comprehensive range of transition pathways and climate outcomes, meeting the needs of the financial sector. The scenarios include multiple IAMs (REMIND, GCAM and MESSAGE), climate models (on the physical risk side) and macro models (added in phase II) to provide more complete macro pathways. NGFS consulted the wider scientific and financial communities to ensure the scenarios are robust, effective and usable, and will continue to evolve the scenarios, increasing sectoral and geographic granularity of emissions/energy data, and adding more climatic events, regulatory policy indicators, and macro variables. As central banks and supervisors globally will likely ask the institutions they supervise to use these scenarios, who in turn could make the same request upon their corporate clients, there will likely be a net efficiency to the financial system using these scenarios and working with NGFS to ensure their robustness and usefulness.

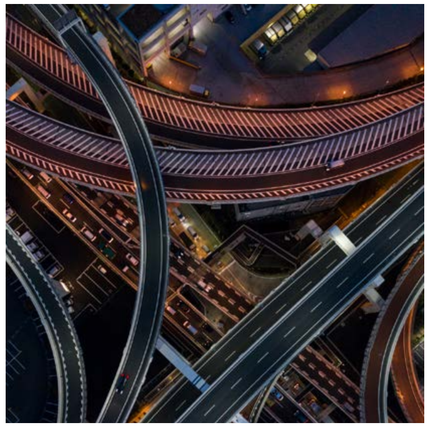


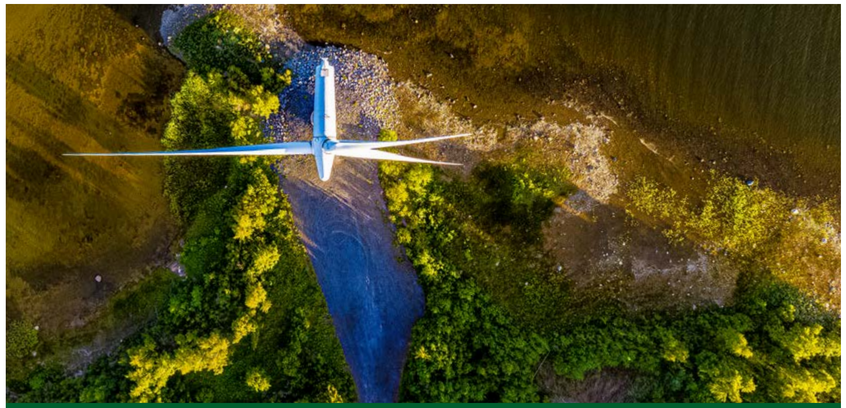
Sources: UN SSE, with data from the TCFD Technical Supplement titled "The use of scenario analysis in disclosure of climate-related risks and opportunities" and the NGFS website.

2.4.1 Scenario selection

When implementing a scenario analysis for the first time, organisations have a plethora of resources to help develop in-house scenarios or to make use of publicly available scenarios. Because few boards contain significant climate-modelling expertise, the many publicly available scenarios are very useful, either to be used as they are, adapted, or used as the basis of an in-house scenario.

The best known publicly available scenarios are those of IPCC, IEA, and the NGFS. Other organisations, such as the International Renewable Energy Agency, and the Deep Decarbonization Pathways Project (DDPP), have published their own scenarios, which provide a different narrative and outlook to those listed above. Organisations should choose scenarios that best align with their own underlying assumptions in managing climate risks and opportunities and should also align with the country's Nationally Determined Contributions (NDCs) under the Paris Agreement. NDCs are refreshed every five years in accordance with the Paris Agreement. Current NDCs, however, fail to achieve a 2°C temperature goal, so companies using NDCs as another basis of scenarios should understand both NDC pathways and limitations.





UK commitments

Nationally Determined Contributions
On 12 December 2020, the UK declared its new NDC under the Paris Agreement. This NDC commits the UK to reducing economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.

Although this is more ambitious than the previous target, it is likely to get even more stringent as time goes by and the need to reduce GHG emissions if climate change is to be held within 1.5°C.

2.4.2 Simplified approach for first-time scenarios

For those companies starting a scenario analysis for the first time, the steps and guidelines available may seem overwhelming and daunting. Choosing existing scenarios, or using aspects of existing scenarios, are often the easiest way to begin a scenario analysis, and after scenarios are chosen the process may become much more clear. As an important aspect of the TCFD recommendations, companies should always choose a simplified scenario over no scenario. In order to simplify the process, companies can ask themselves three key questions:

1. **Would the business be profitable if** countries were successful in achieving the goals of the Paris Agreement and there is an orderly transition to a low-carbon economy?
2. **Would the business be profitable if** there is an abrupt and disorderly transition as countries belatedly catch up on climate goals?
3. **Would the business be profitable if** there is a failure to transition?

68%

reduction in economy-wide greenhouse gas emissions by 2030 targeted by the UK's Nationally Determined Contribution

CASE STUDY

TESCO

The UK's largest supermarket chain, Tesco, started looking at TCFD disclosure in 2018, including disclosures against the TCFD framework in its 2019 annual report.

The entire project was sponsored by the chief financial officer, who was able to make sure others on the executive board understood its importance and were committed to supporting it.

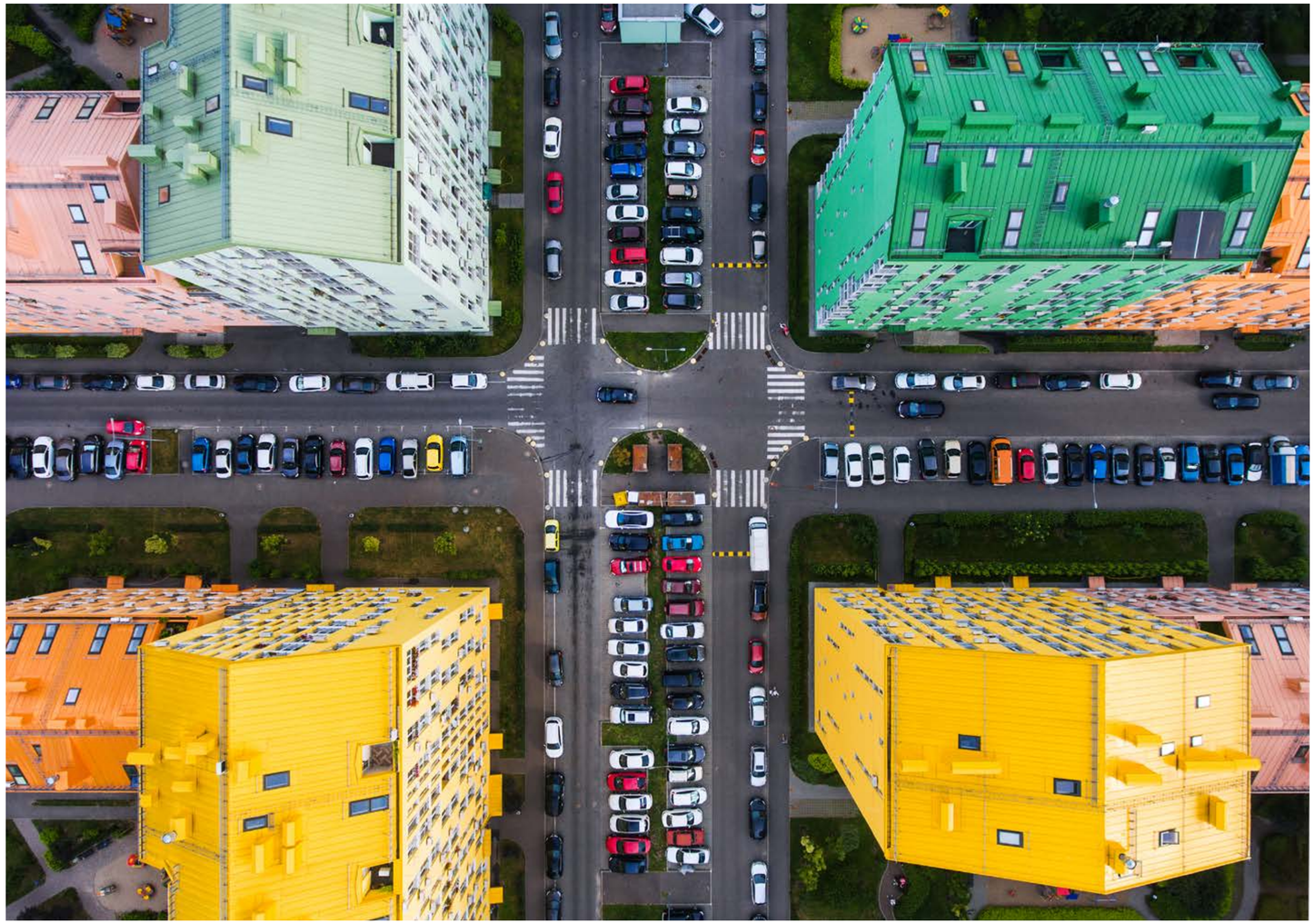
As a global supermarket chain, there are various areas where Tesco is likely to be affected by climate change. In preparation for TCFD disclosures, it looked at its produce and animal protein supply chains in the UK, as well as its property estate. The results of the scenario analysis looking at these business areas will inform its long-term strategic business planning.

Like other companies, Tesco found competitors and peers were prepared to help them work out the most effective approach to this analysis. "We learned a lot from other companies who were further in their TCFD development than we were," said Manjula Chummun, Tesco's Head of Finance – Sustainability, at the time. "We picked up the phone and spoke directly to some of them, and this helped us take the first step."

Another piece of advice arising from Tesco's experience was to jump in without waiting for the "perfect" data or the "perfect" scenario. "After the initial disclosure, the data, disclosures and scenarios can be developed further, but the key is to get started," said Ms Chummun.

2.5 How detailed should climate reporting be?

Climate risk is relevant for companies of all sizes and sectors but the depth and detail of reporting that investors expect will not be the same for all companies. Many small- and medium-sized organisations may put off reporting on or considering climate-related information in their risk management and strategy development processes because they assume that they do not have sufficient resources to comply with recommendations such as those made by TCFD. When following the three steps proposed within this guide, companies' reporting can be expected to vary in depth and breadth depending on size and sector. There is a growing expectation from investors that larger companies and especially those in industries that are most susceptible to climate risk such as extractives, energy, agriculture, steel, cement, tourism and travel will provide more detailed disclosures. Therefore, in these cases the TCFD Checklist should be used to ensure that all disclosure recommendations are met. However, smaller companies in less vulnerable industries and/or those with fewer resources available for reporting procedures, may wish to use the results of the checklist exercise to map a plan for future disclosures.



In going through the checklist, many companies may realise they are already in possession of much of the relevant data, so preparing the TCFD disclosures is less onerous than might be expected. In this case, it can be useful to prepare a gap analysis of what is already included in existing reporting compared with TCFD disclosure. This reduces duplication of effort and helps to streamline the process of assembling the necessary data.

Taking a stepped approach to TCFD

Companies that choose to map a plan towards full disclosure may wish to use an existing staged process such as the TPI's four-level staircase (see Figure 2.3) which is directly aligned with London Stock Exchange's Climate Governance Score.

While initially developed as an assessment tool, the TPI staircase can also help companies chart a pathway of constant progression and set objectives for their climate-related disclosure journey. To assist companies with this, the TCFD Checklist in Annex 1 to this guidance indicates to which step of the staircase each question corresponds, and can help companies to determine which questions need to be answered to achieve the next step in their progression. It is important to note, however, that a staged approach should only be considered when limited resources do not permit an organisation to integrate all the recommendations of TCFD, and particularly companies in climate-vulnerable industries should consider either immediate alignment or an accelerated progression (within one to two years).

Figure 2.3
TPI's four levels of TCFD alignment

LEVEL 0 Unaware	LEVEL 1 Awareness	LEVEL 2 Building capacity	LEVEL 3 Integrated into operational decision-making	LEVEL 4 Strategic assessment
Company does not recognise climate change as a significant issue for the business	Company explicitly recognises climate change as a relevant risk/opportunity for the business Company has a policy (or equivalent) commitment to action on climate change	Company has set GHG emission reduction targets Company has published information on its operational GHG emissions	Company has nominated a board member / committee with explicit responsibility for oversight of the climate change possibility Company has set quantitative targets for reducing its GHG emissions Company reports on its Scope 3 GHG emissions Company has had its operational GHG emissions data verified Company supports domestic and international efforts to mitigate climate change Company discloses membership and involvement in trade associations engaged on climate Company has a process to manage climate-related risks Company discloses Scope 3 GHG emissions from use of sold products (selected sectors only)	Company has set long-term quantitative targets (more than five years) for reducing its GHG emissions Company has incorporated climate change performance into executive remuneration Company has incorporated climate change risks and opportunities in its strategy Company undertakes climate scenario planning Company discloses on an internal carbon price Company ensures consistency between its climate change policy and position of trade associations of which it is a member

Source: Page 7 of Transition Pathway Initiative's State of Transition Report 2021

03

Investment grade data: metrics and targets

The third step for organisations that have recognised the need for action on climate is to communicate their action and intentions through measurable climate-related disclosures. The TCFD recommendations for disclosure are current best practice for deciding what metrics should be reported and it is important for companies to ensure this information is accessible and easy to find.

3.1 Investor-useful information

Investors want to understand how a company is positioning itself strategically in light of its climate-related risks and opportunities. They frequently indicate that climate-related risks and opportunities have a significant impact on their investment decisions. While the TCFD recommendations emphasise single materiality (information which has an immediate financial impact and therefore should appear in financial filings), companies should also pay attention

to double materiality, the impact a company's actions have on society or the environment.

This can be of significant benefit for the future, as materiality may vary over time. Information which is identified as financially immaterial in the near-term – which is unlikely to impact mainstream financial filings – but that is found to have an outward impact on society or the environment, will likely become financially material at some point in time.

For example, while a strategic decision made by a company (such as changing suppliers) may seem to have an adverse financial impact in the short term, the longer-term impact may be much greater and in the opposite direction (such as a reputational impact or legal risks).

Companies reporting on climate should be aware that investors are looking for information that gives them confidence that companies understand climate-related issues, how they impact the business and what action they are taking as a result. Many investors with diversified portfolios are also asking for consistent data across all companies they invest in to be able to apply consistent methodologies to inform the level of investment they are making in each company. Therefore, in order to ensure that the efforts put in by those preparing the report have the desired impact in informing shareholders of the climate-resiliency of their company, information should be shared in a standardised format and include the content that investors are looking for.

In addition to TCFD's resources aimed at supporting report preparers to align data with investor decision-making processes, there are a number of other initiatives to help in this alignment process. One such example are stock exchange-led events aimed to facilitate an active conversation between companies and investors on the type of data that is most helpful for both parties. Another example is the Transition Pathway Initiative (TPI) described above and recapped in Box 3.1 (page 35), which assesses companies' preparedness for the transition to a low-carbon economy.

... investors are looking for information that gives them confidence that companies understand climate-related issues, how they impact the business and what action they are taking as a result.

Box 3.1

Benchmarking climate transition readiness with TPI

London Stock Exchange's Climate Governance Score provides London-listed companies with a score based on TPI's Management Quality methodology as well as a self-calculation tool for companies not covered by FTSE Russell's ESG data universe.

Source: UN SSE initiative, with data from The Transition Pathway Initiative website and the Climate Action 100+ website

The TPI is a global initiative led by asset owners and supported by asset managers. Aimed at investors and free to use, it assesses companies' preparedness for the transition to a low-carbon economy, supporting efforts to address climate change. Through robust and independent research, the tool aims to empower investors to assess the alignment of their portfolios with the goals of the Paris Agreement and to drive real world emission reductions through action.

Using publicly disclosed company information, TPI carries out the following assessments:

- Evaluates and tracks the quality of companies' management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition;
- Evaluates how companies' planned or expected future carbon performance compares to international targets and national pledges made as part of the Paris Agreement;
- Publishes online the results of this analysis through a publicly-available tool hosted by its academic partner, the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science (LSE).
- The TPI tool complements existing initiatives and frameworks, by aligning with prevailing disclosure initiatives and with investors' climate change and sustainability expectations. It is also being aligned with the requirements of TCFD and is used for the disclosure assessment of the Climate Action 100+ (CA100+) Net-Zero Company Benchmark – an assessment of the world's largest corporate greenhouse gas emitters on their progress in the transition to the net-zero future.

How investors can use TPI

Investors are using TPI for a broad range of activities, including ESG integration, active ownership, informing proxy voting, exclusions, product creation due diligence and demonstrating commitment to environmental sustainability.

How listed companies can use TPI

Companies can use the analysis already conducted by TPI on their own company, or if they have not been evaluated by TPI, they can use the analysis of a competitor or similar industry analysis to determine the baseline scenario analysis. Additionally, companies are also using TPI for other ESG-related exercises such as helping suppliers to align climate policies across a global value chain.

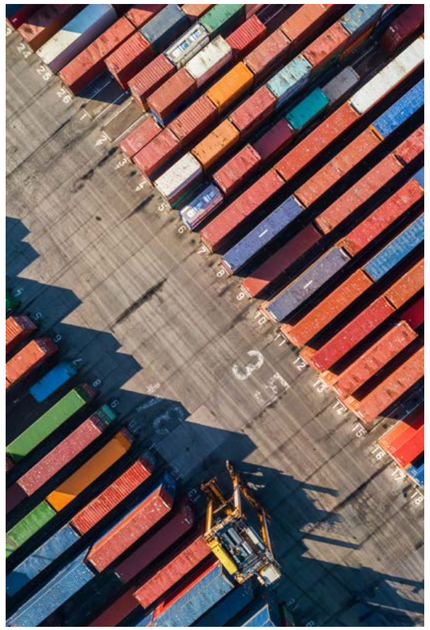
3.2 Reporting on opportunities

TCFD recommends that, where relevant, organisations should provide climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy. Some of the opportunities that are being created by the climate transition impact financial statements primarily through cost reductions and efficiency creation, such as resource efficiency and energy sources. Opportunities that the corporation is taking advantage of should be reported to investors not only to indicate a strategic alignment with climate-resiliency but also to indicate expected future savings or efficiency increases. Other opportunities, however, also provide new revenue to the business, often being referred to as "green revenues". By introducing new products or services, or accessing new markets, organisations may tap into new revenue streams that are climate-aligned.

Reporting on climate-related opportunities will often mean breaking down the revenues associated with certain activity segments that enable climate mitigation or adaptation. For example, a manufacturer that manufactures lighting should not just report revenues from a whole lighting segment but instead break down its revenue from relevant sub-segments where those offer climate solutions, in this case LED lighting given its superior efficiency to other lighting products. However, a common concern is that competitors may use this information to gain an advantage in the market. While this concern may be genuine, many companies are realising that this is becoming essential information for their investors and the analysts following their company.

One significant challenge in reporting opportunities is defining which product and service categories to identify. A solution for this can be found in the growing development of green and sustainable finance "taxonomies" by various regulators. The EU has been early in setting requirements in this regard and the activity categories they set out may be a useful framework for companies to consider as taxonomies develop.

More detailed analysis can be found with products such as FTSE Russell's Green Revenue Classification System, which provides granular classifications of a company's revenue to allow meaningful allocation to different environmental objectives. A full discussion of the development of global taxonomies can be found in Section 5.2 (page 53).



London Stock Exchange's Green Economy Mark

A growing number of companies generate commercial revenues from products and services that contribute to positive environmental outcomes, for example: renewable energy helps to mitigate climate change; recycling technologies reduce waste such as plastics; zero-emission vehicles contribute to improved air quality. A growing proportion of asset owners and managers seek to deploy capital into sustainable investments, driven by regulation and also market trends such as changing consumer appetites, evolving technologies and financial risks relating to stranded assets in legacy sectors.

Companies and investment vehicles of all sizes, in all geographies and across every industry are part of the Green Economy, meaning that no single industrial classification captures this effectively. And different companies' Green Economy activities are at differing stages of maturity, with some generating all of their revenues and others with single digit percentages of revenue, even if growing.

The Green Economy Mark was created to help address this challenge by recognising London-listed companies and funds that derive more than 50% of their revenues from products and services that are defined within the FTSE Russell Green Revenues Classification System: activities supporting objectives such as climate change mitigation and adaptation, waste and pollution reduction, and the circular economy.

The Green Economy Mark enables investors to identify an investible universe of 'green economy' equities, enabling a broad exposure, rather than a focus on one area, such as renewable energy infrastructure. Less obvious environmental solutions are more visible and thus better able to attract green or climate-aware investors and capital.

More than 100 issuers on the London Stock Exchange have been now recognised with the Green Economy Mark across all Main Market segments and AIM.

As market innovation drives new solutions and as market norms shift, these taxonomy definitions will also need to evolve, so it is important for companies to set out which of their products and services provide solutions to climate challenges and to break out revenue and expenditure associated with those activities. For more detail on current taxonomies and how they might evolve, refer to Chapter 5.

3.3 Carbon emission reporting

Carbon reporting is short-hand for CO_2 equivalent greenhouse gas emissions (GHG), a measure used to standardise into one metric the combined climate impact in carbon equivalent units of the release of all gases linked to the greenhouse effect and climate change. It looks to measure what amount of these gases an organisation is responsible for, using a system that classifies emissions as Scope 1, 2 or 3, depending on the source of the emissions. As per the GHG Protocol Corporate Accounting and Reporting Standard,[11] Scope 1, 2 and 3 emissions can be broadly understood as:

1 **SCOPE 1 (Direct GHG emissions):** Emissions that occur from sources that are owned or controlled by the company. For example, emissions from combustion in owned or control-led boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

2 **SCOPE 2 (Electricity indirect GHG emissions):** Emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

3 **SCOPE 3 (Other indirect GHG emissions):** Emissions that are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased materials; transportation of purchased fuels; business travel and employee commuting, and use of sold products and services. For stock exchanges, Scope 3 emissions will include business travel (emissions of means of transport).

11. The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard (revised edition), 2004

CASE STUDY

PENNON GROUP

Owner of South West Water

As a water utility, Pennon Group sees climate change as a key element of its strategic planning. It is detailed in its annual report as a principle risk, so it is monitored by the Audit Committee.

While preparations for TCFD did not bring out any new information for the company, which already integrates climate change into its analysis, the need to include scenario planning helped it reframe its thoughts about long-term investments.

Since a waterworks plant built now has an expected lifespan of 60–80 years, considering how the environment may change over that period allows Pennon Group to design that asset with the resilience to meet changing demand or supply issues that may arise. “This is a project that is not just for one area of the business to resolve,” says Chris Tregenna, Group Treasurer at Pennon Group. “To be effective, there needs to be communication, collaboration and board/executive-level support to ensure the full range of outcomes is considered and that any implementation plans can be executed.”

While it is important climate change is seen as an issue at all levels of the company, it is even broader than that. “We’ve got to understand the risks are not just for us,” says Chris. “We have to think about whether our product is not just sustainable in terms of how we make it but whether customers will continue to want it.”

Scenario planning is not just about managing the risks, however. “Consider everything!” says Chris. “It is not just about risks, there will be opportunities as well as the business transitions to a low-carbon economy which may make the company more sustainable and provide for future developments.”

“It is not just about risks, there will be opportunities as well as the business transitions to a low-carbon economy which may make the company more sustainable and provide for future developments.”

Chris Tregenna
Group Treasurer, Pennon Group

While many companies and sectors have come to grips with Scope 1 and 2 emissions, Scope 3 has proved harder to pin down. Agreeing comparable and equitable definitions and measurements of these emissions has proved challenging. However, TCFD considers the data and methodology are now sufficiently mature that disclosure of Scope 3 emissions is appropriate for all sectors and industries. This is particularly important for companies where Scope 3 emissions constitute 40% or more of total emissions.

When considering disclosures under TCFD in this area, companies may wish to consider existing reporting obligations they are subject to. For example, some UK companies have been required to report on their energy use and greenhouse gas emissions under the Companies (Directors' Report) and Limited Liability Partnerships (Energy and Carbon Report) Regulations 2018.[12] This is one example of where the existing legislative framework requires disclosures which can assist companies in their reporting against the TCFD framework.

3.4 Setting targets

To achieve climate-resilient markets and net-zero emissions companies will need to set both attainable and impact-driven targets, based on widely understood and accepted definitions. TCFD recommends that organisations describe their climate-related targets such as those related to GHG emissions, water usage, energy usage, etc. in line with anticipated regulatory requirements or market constraints. Organisations should also align their climate-related targets with other goals such as efficiency or financial goals, financial loss tolerance, avoidance of GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a lower-carbon economy. A major and growing focus for many companies and investors is in the setting of emissions targets that are aligned with the trajectory towards net-zero emissions before 2050, which according to the scientific community, is needed to keep global average temperature increases below 1.5°C. To ensure that targets align with climate-science, resources such as the Science Based Targets initiative can be consulted.

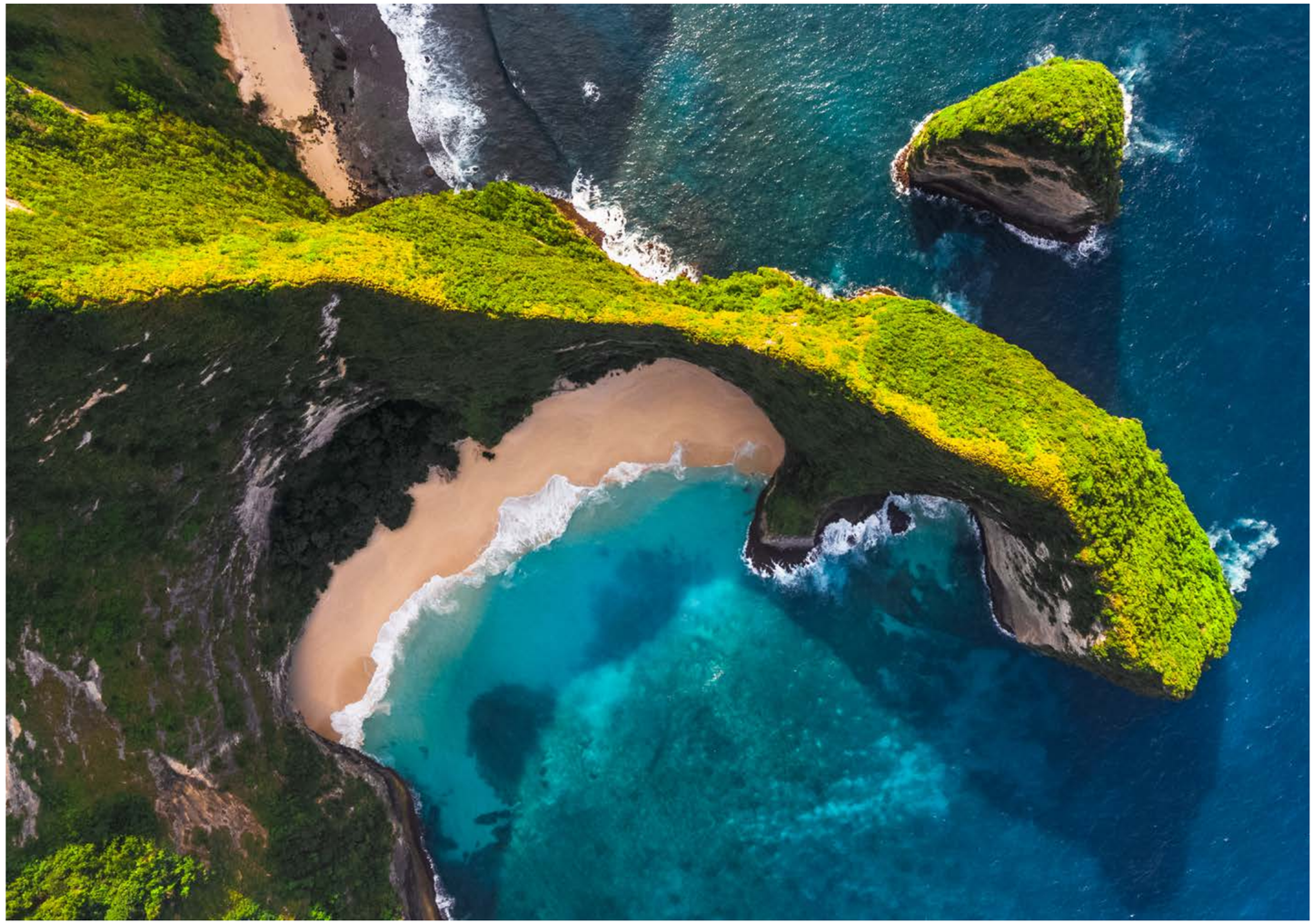
It is important that common definitions are used when setting climate-related targets, as investors are interested in consistency across companies as well as within companies.

To achieve climate-resilient markets and net-zero emissions companies will need to set both attainable and impact-driven targets, based on widely understood and accepted definitions.

12. Gov.uk, Guidance: Measuring and reporting environmental impacts: guidance for businesses, 2019

Trend lines, or proof of progress are more useful than static targets or long-off objectives, so companies should endeavour to show how they have progressed over time on the climate-related targets chosen.

Linking these targets to remuneration should also be considered. An annual CDP report covering companies worth three quarters of European market cap finds 47% reward their senior management for managing climate topics, with one in four tying incentives to climate targets.[13] For example in December 2018, following significant investor engagement including by those involved in TPI and CA100+, Shell announced plans to link executive pay to carbon pollution reduction targets and by October 2019, four of the other seven supermajors had formally linked remuneration for senior executives to climate change performance, including ConocoPhillips, Eni, Exxon Mobil and Total.[14]



13. CDP, "Half of Europe's largest firms now link executive pay to climate change", February 2019

14. Corporate Knights, "Climate bonus: Is paying executives to address the climate crisis good business?", November 2019

Box 3.2

Setting science-based targets

The Science Based Targets initiative (SBTi) is a collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), the World Wide Fund for Nature (WWF) and one of the We Mean Business Coalition commitments. Central to SBTi's mission is ensuring that companies have the tools they need to set targets in line with climate science, recognising that the science itself is nuanced and dynamic. Due to the complexity of the science, the SBTi plays an important role by conducting in-depth research and analysis, as well as consulting with scientists and sustainability professionals, in order to develop science-based targets (SBT) and setting methods that are transparent, robust and actionable.

Methods endorsed by the SBTi are instructive frameworks that may be used by companies to set emissions reduction targets consistent with the best available climate science. These methods are constructed from three main elements: a greenhouse gas (GHG) budget, a set of emission scenarios and an allocation approach. The SBTi's procedure for developing a method begins with determining a representative set of emissions scenarios that are considered plausible, responsible, objective and consistent, and that are aligned with specific temperature goals (1.5°C – 2°C of global warming). In general, SBTi scenarios must not exceed the GHG budget associated with the temperature goal prior to reaching global net-zero emissions, in addition to meeting other criteria. An allocation approach is used to translate the resulting global or sector-specific emissions pathway into practical requirements that align company emissions with the pathway.

The Science Based Targets initiative has also developed methodologies to support net-zero targets. In 2019 SBTi launched a process to develop the first science-based global standard for corporate net-zero targets, to ensure that companies' net-zero targets translate into action that is consistent with achieving a net-zero world by no later than 2050.

Source: UN SSE initiative, with data from the Science Based Targets initiative website – www.sciencebasedtargets.org

3.4.1 Targeting net-zero emissions

A number of public and private organisations globally have begun committing to cutting all Scope 1, 2 and 3 emissions, and offsetting any residual emissions that cannot be abated, to achieve what is referred to as "net-zero emissions". Recognising the importance of keeping global warming to 1.5°C, companies are increasingly adopting net-zero climate targets. Between July 2019 and June 2020, over 230 companies committed to reaching net-zero emissions as part of the Business Ambition for 1.5°C campaign, led by the SBTi and backed by a global coalition of UN leaders, business organisations and NGOs.

Achieving net-zero emissions means that your organisation cuts GHG emissions to zero. In the cases where it is impossible to abate emissions completely, net-zero requires it to offset the remaining emissions, for example, through actions such as tree planting or employing technologies that can capture carbon before it is released into the air. The United Nations has also launched a campaign aimed at building momentum towards net-zero emissions called the "Race to Zero" campaign (Box 3.3, page 44).

Box 3.3

United Nations Race to Zero campaign

1,675
businesses

569
universities

471
cities

120
countries

Source: UN SSE initiative, with data from the UNFCCC website – https://unfccc.int/climate-action/race-to-zero-campaign

Race to Zero is a global campaign to rally leadership and support from businesses, cities, regions and investors for a healthy, resilient, zero-carbon recovery that prevents future threats, creates decent jobs and unlocks inclusive, sustainable growth.

It mobilises a coalition of leading net-zero initiatives, representing 471 cities, 23 regions, 1,675 businesses, 85 of the biggest investors and 569 universities. These 'real economy' actors join 120 countries in the largest ever alliance committed to achieving net-zero carbon emissions by 2050 at the latest. Collectively these actors now cover nearly 25% global CO_2 emissions and over 50% GDP.

Led by the High-Level Climate Champions for Climate Action – Nigel Topping and Gonzalo Muñoz – Race to Zero mobilises actors outside of national governments to join the Climate Ambition Alliance, which was launched at the UNSG's Climate Action Summit 2019 by the President of Chile, Sebastián Piñera.

The objective is to build momentum around the shift to a decarbonised economy ahead of COP26, where governments must strengthen their contributions to the Paris Agreement. This will send governments a resounding signal that business, cities, regions and investors are united in meeting the Paris goals and creating a more inclusive and resilient economy.

Starting line criteria

All commitments in the Race to Zero campaign are channelled through networks and initiatives that require their participants to meet the following procedural criteria:

1. **Pledge:** Pledge at the head-of-organisation level to reach net-zero in the 2040s or sooner, or by mid-century at the latest, in line with global efforts to limit warming to 1.5°C.
2. **Plan:** In advance of COP26, explain what steps will be taken toward achieving net-zero, especially in the short- to medium-term. Set an interim target to achieve in the next decade, which reflects a fair share of the 50% global reduction in CO_2 by 2030 identified in the IPCC Special Report on Global Warming of 1.5°C.
3. **Proceed:** Take immediate action toward achieving net-zero, consistent with delivering interim targets specified.
4. **Publish:** Commit to report progress at least annually, including via, to the extent possible, platforms that feed into the UNFCCC Global Climate Action Portal.

Many countries have announced the timeline for achieving carbon neutrality since 2019 and started to explore the pathways in achieving the goal. Such national goals will influence the actions and decision-making process for financial institutions and listed companies. Therefore, the timeline, goals, and pathways to achieve carbon reduction for each individual company, including the models and tools they use, would be relevant for disclosure.

3.4.2 Reporting templates for climate targets

More granular, comprehensive and standardised disclosures are a vital component of better climate reporting: robust carbon targets data can provide a critical input into analytical tools and investment products that help investors to address climate risk.

Based on discussions with experts from a variety of initiatives such as the TCFD, TPI and CA100+, FTSE Russell has developed a TCFD-aligned disclosure template to promote concise and unambiguous disclosures of corporate GHG emissions reduction targets. The template and detailed guidance for its use can be found in Annex 4.

The template is deliberately agnostic on the type, scope or ambition level of the emissions reduction target, and provides a standardised format for companies to disclose information on their targets and the methodology. It also is designed to minimise the reporting burden for companies.

The template is intended to be completed separately for individual targets where companies disclose multiple targets (e.g. for different emissions scopes or different timeframes). It is structured in three sections – Target ID, Target Information and Target Methodology, and contains a total of 20 fields to be completed for each GHG target.

3.4.3 Transition plans – develop and disclose

The most recent guidance from TCFD, published in October 2021, has brought transition plans into greater prominence. A transition plan is that aspect of a company's overall business strategy that lays out how the organisation aims to minimise climate risk as the world transitions to a low-carbon economy, including by reducing emissions of its own balance sheet and that of its value chain.

A transition plan is that aspect of a company's overall business strategy that lays out how the organisation aims to minimise climate risk as the world transitions to a low-carbon economy.

The TCFD has proposed the following principles for disclosing a transition plan. It should be:

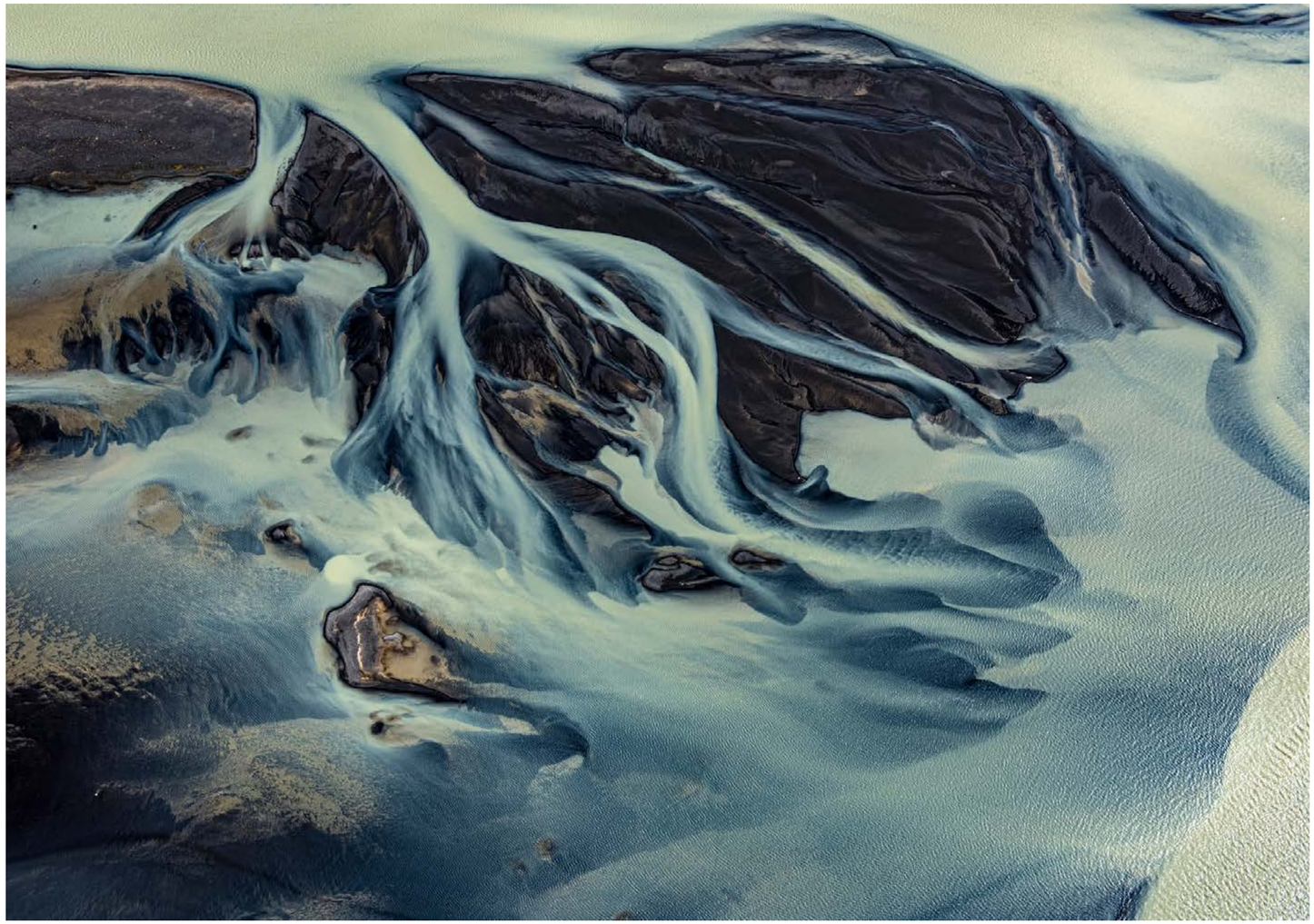
— Disclosed as part of the broader organisational strategy to address climate-related risks and opportunities;

— Anchored in quantitative elements, including climate-related metrics and targets, based on climate science;

— Approved and overseen by the Board. To be effective, a transition plan must be agreed at the highest level and subject to regular oversight by the Board and senior management with relevant climate expertise;

— Actionable and linked to specific initiatives. The plan should articulate specific actions the company will take to effectively execute the transition plan;

— Detailed and verifiable. Transition plan disclosure should include sufficient detail to enable verification by external stakeholders.



04 Global frameworks

Companies have access to a number of frameworks to present the information recommended for disclosure by the TCFD. By using the TCFD Checklist (Annex 1), together with the guidance in previous chapters, companies should now have an idea of what information they are already disclosing and what disclosures they could improve. This chapter helps companies to align TCFD recommendations with disclosure frameworks to enhance efficiency, as well as providing guidance on how and where to disclose climate-related data.

4.1 Frameworks for disclosure

Companies should aim to follow TCFD's Principles for Effective Disclosures to ensure they achieve high-quality and decision-useful disclosures that enable users to understand the impact

of climate change on organisations. These principles state that disclosures should:

1. Represent relevant information
2. Be specific and complete
3. Be clear, balanced and understandable
4. Be consistent over time
5. Be comparable among companies within a sector, industry or portfolio
6. Be reliable, verifiable and objective
7. Be provided on a timely basis

Although the array of frameworks for disclosing climate and other ESG risks may seem vast, most have been mapped and aligned to TCFD recommendations to ensure consistency and efficiency, which is essential to make sure information provided is useful for making decisions. To this end, a number of initiatives have been launched.

For example, the Better Alignment Project is an initiative that explored how sustainability reporting frameworks can work together to support organisations preparing ESG disclosures. As part of this collaboration, the initiative has outlined alignment with CDP, CDSB, GRI, IIRC and SASB (see Annex 3 for a description of each). These five framework and standard-setting institutions also issued a letter of intent in September 2020, outlining a vision for a comprehensive corporate reporting system, and a commitment to work together to achieve it.[15] As part of this collaborative effort facilitated by Impact Management Project, World Economic Forum and Deloitte, the organisations have since launched a "Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard"[16] which is based on the four principles of the TCFD recommendations (Governance, Strategy, Risk Management, and Metrics and Targets).

In another example, the trustees of the IFRS Foundation created a working group in March 2021 to accelerate convergence in global sustainability reporting standards focused on enterprise value and to undertake technical preparation for a potential international sustainability reporting standards board under the governance of the IFRS Foundation.

15. Statement of Intent to Work Together Towards Comprehensive Corporate Reporting – Summary of alignment discussions among leading sustainability and integrated reporting organisations CDP, CDSB, GRI, IIRC and SASB. Facilitated by the Impact Management Project, World Economic Forum and Deloitte.
16. Prototype of a Sustainability-related Financial Disclosure Presentation Standard

4.2 Data verification and assurance

Information disclosed in external reports should follow internal assurance procedures to ensure the data is accurate, appropriate, and reliable. Companies may consider engaging external consultants to undertake assurance procedures to improve the credibility of their data. Third-party audit and external support may be essential if the capacity does not exist internally, where preparers of information are concerned about liability risks or where information which meets TCFD requirements also falls within the scope of legislative or regulatory requirements requiring it to be subject to formal review. As climate-related disclosures become more common and are included in mainstream financial filings, the governance process should be similar to those used for existing public financial disclosures and should therefore include a review by the chief financial officer and audit committee or equivalents.

4.3 Location and timing of climate-related disclosure

The TCFD recommends that organisations provide climate-related financial disclosures in mainstream financial filings and the London Stock Exchange supports this recommendation. It is recognised, however, that some climate-related information may not be compatible with the current reporting requirements or deemed financially material. When this is the case, organisations may wish to disclose certain elements in other official company reports that are issued at least on an annual basis and are widely distributed and available to investors and other stakeholders. The reports should be subject to internal governance processes that are the same or substantially similar to those used for financial reporting. Ideally, climate data and financial data should be reported at the same point in time and cover the same reporting boundaries and time periods to aid comparison and analysis. For climate-related information that organisations choose to include outside of or in addition to their mainstream financial filings, it is important that this information is easy to find and easy to understand. It is also important to include references in the mainstream filings to additional information reported elsewhere as it can significantly improve its accessibility.

The TCFD recommends that organisations provide climate-related financial disclosures in mainstream financial filings and the London Stock Exchange supports this recommendation.

CASE STUDY

GSK

Pharmaceuticals company GSK started looking at TCFD recommendations in 2018 and made its first disclosure against the TCFD framework in its 2019 annual report, following up with more detailed disclosure in the 2020 annual report.

GSK's engagement with TCFD was led by its chief financial officer; this high-level engagement from the finance team meant it was possible to bring together teams such as finance, sustainability and corporate reporting.

The first move was a simple gap analysis, which led, as expected, to the need for scenario analysis. This was carried out with the support of external consultants, who advised on the choice of scenarios and helped design the analysis.

Having carried out this initial analysis, GSK used the tools and models it had developed to analyse a range of its products in the context of climate risk. The global pharmaceuticals company has now looked at the potential impact of climate change on products making up around 40% of its revenues.

All of this work has not only positioned it well to meet new regulatory requirements for disclosure, but also helped the company better understand the risks it faces as climate change becomes a reality.

The main advice from GSK for companies contemplating the TCFD framework for the first time is to be pragmatic about what your first steps could be and what will help you as you move forward.

"Starting with a small piece of analysis gave us a strong steer for what to do next and helped us build our business case," according to a GSK statement.

40%

GSK has looked at the potential impact of climate change on products making up around 40% of its revenues

05

Regulation in the UK and global taxonomies

5.1 TCFD in the UK: mandatory reporting is coming

The UK's regulation on mandatory TCFD reporting is in the process of being finalised. BEIS recently held a consultation process to seek views on proposals to mandate climate-related financial disclosures by publicly quoted companies, large private companies and Limited Liability Partnerships (LLPs).

These proposals build on the expectation set out in the UK government's 2019 Green Finance Strategy, that all companies on the public markets, and large asset owners should disclose in line with the TCFD recommendations by 2022.

The proposals were developed in cooperation with the UK Treasury and TCFD, which has considered an approach to economy-wide mandatory climate-related financial disclosure, as set out in the 2020 Roadmap and Interim Report.

The proposals are an important step towards the UK's intention to become the first G20 country to make TCFD-aligned disclosures mandatory across the economy.

BEIS is considering the consultation responses before finalising the new regulations.

In addition to the above, in December 2020, the Financial Conduct Authority (FCA) introduced a requirement for commercial companies with a premium listing either to make TCFD disclosures or explain why they are not doing so. This applies to all accounting periods beginning on or after 1 January 2021.

If your company falls within the scope of this rule, you must include a statement in your annual financial report setting out:

- whether you have made disclosures consistent with the TCFD's recommendations and recommended disclosures in your annual financial report
- where you have included some, or all, of your disclosures in a document other than your annual financial report, an explanation of why and a reference to where the disclosures can be found
- where you have not made disclosures, an explanation of why and a description of any steps you are taking or plan to take to be able to make consistent disclosures in the future – including relevant time frames.

The FCA has also recently closed a consultation on whether this requirement should be extended to all companies of standard listed equity shares (excluding standard listed investment entities and cash shell companies). It intended to publish the final policy by the end of 2021.

While regulation is moving fast in the UK, investor demand is keeping pace. Asset owners and asset managers, through coalitions such as CA100+ and TPI, are working closely with companies to improve disclosure and performance on climate-related goals. Frameworks such as TCFD are helping to standardise disclosure, making that task more straightforward and enabling companies to work on improving their climate change performance more effectively.

Asset owners and asset managers are working closely with companies to improve disclosure and performance on climate-related goals.

5.2 Developing taxonomies globally

While the focus of TCFD is on climate risk reporting, it must be seen in the context of an increasing movement among regulators to mandate ESG reporting more generally. To support this, a number of existing and emerging taxonomies have been developed to help companies and investors understand what parts of each business contribute to creating a sustainable economy.

5.2.1 EU taxonomy and the Green Revenue Classification System

The EU Taxonomy has laid out principles for classifying business activities for use with investment products, but it is to some extent still a broad-brush concept. FTSE Russell has developed a highly aligned but more granular system, the Green Revenues Classification System (GRCS).

The most recent iteration of this, the Green Revenues 2.0 data model identifies companies providing green products and services, and classifies associated revenues based on the GRCS. This data allows companies to be precise in reporting their contribution to climate change mitigation and adaptation, something that investors are increasingly demanding, either for their own analysis or to feed into investment decisions.

Given the rising amount of assets going into sustainability-tilted passive strategies, having easily accessible green data puts a company in a better position for inclusion in sustainability indices. As part of the GRCS service to clients, FTSE Russell produces a specific EU Taxonomy aligned score. As the EU completes its guidance for other environmental objectives already covered by Green Revenues, FTSE Russell will introduce further work on alignment.

Rules for EU listed companies will come into effect in due course, mandating them to disclose their EU Taxonomy alignment. Companies working with the Green Revenues system will be in a position to use that score, which will become a very important part of the company analysis.

5.2.2 Other taxonomies and disclosure regimes

In the UK, a Green Technical Advisory Group (GTAG) has been established by the UK Government and is working to develop a UK specific taxonomy. Over the two years from June 2021, GTAG will provide advice and recommendations on how to develop a reliable and transparent taxonomy that can provide investors with the reassurance their money is working to build a sustainable economy.

On the other side of the world, China has committed to working with the EU towards converging their two taxonomies, potentially creating a global standard.

Meanwhile, the EU has brought the Sustainable Finance Disclosure Regulation into force, requiring transparency on sustainability for asset owners, asset managers and financial advisers, as part of the broader Sustainable Finance Framework. Fortunately, this multiplicity of disclosure regimes and taxonomies is not additive, but rather is intended to be mutually reinforcing, so the EU taxonomy can be the basis for SFDR disclosure. Similarly, TCFD reporting can be supported by understanding of the various taxonomies, just as it can by the use of Green Revenue reporting.

The International Platform on Sustainable Finance should also contribute to making sure taxonomies work together or reach equivalence. While not a founding member, the UK has joined the Platform, demonstrating a willingness to collaborate.

Conclusion

The aim of this guidance is to help companies take their first steps along the path of climate disclosures against the TCFD framework.

As we have seen, investors are demanding this data and regulators are mandating it. Companies thus need to rapidly develop and communicate credible climate strategies: those that do are more likely to have a successful long-term future and will be supported in that journey by their investors. Those that do not appreciate the mega trend that climate change represents may find themselves on the wrong side of one of the biggest industrial revolutions of our lifetimes.

Done well, there is a clear, positive business and investment case to undertake this analysis – it shines a light on risks that must be managed and commercial opportunities on which to capitalise. However, there is also a need for companies to get themselves ready for regulation.

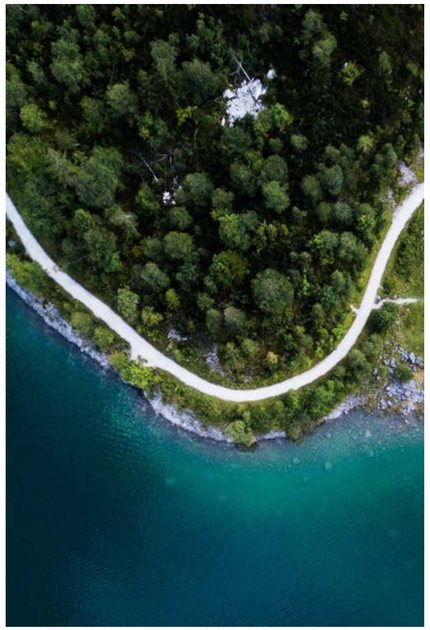
The London Stock Exchange is pro-actively helping to support this process, with a variety of tools. It recently made Refinitiv's ESG data and scores available to all London-listed issuers through its Issuer Services platform. The new development means firms can access data from over 10,000 global companies, enabling them to gain a global view of ESG in their sector, discover best practice, and benchmark performance against industry peers.

Our free to use ESG Disclosure Score tool helps companies identify the disclosures that are relevant to their industry and benchmark against industry peers. Companies can also use the tool to identify areas that require improvement to ensure they publish data that is decision-useful for investors. Our guide to ESG reporting, which identifies the eight priorities for ESG reporting, seeks to demystify all aspects of ESG reporting from uncovering the strategic relevance of ESG issues to understanding established reporting frameworks.

As scrutiny of companies' climate impact increases, the London Stock Exchange has responded by developing a series of initiatives aimed at facilitating appropriate capital flows and enabling effective investor-corporate dialogue to help the market achieve net-zero. In addition to this guidance, the Climate Governance Score and Tool uses TPI's Management Quality methodology to help companies assess and understand their carbon management practices.

To expand its resources for companies looking to implement TCFD and develop credible transition plans, it has also established a bitesize training series on climate reporting in partnership with the UN SSE.

Disclosing climate data is a vital step for companies to take in preparing themselves for a low-carbon future and it is only by understanding what data is material that firms can start to identify where action can be taken to reduce their carbon emissions. In direct response to the financial markets efforts to make markets climate resilient, disclosure requirements globally will continue to gather pace, with implications for every sector on the planet. We hope this guidance supports companies to shape their climate reporting to meet these standards and ready themselves for the low-carbon transition.



Annexes

Annex 1: TCFD Checklist

The TCFD recommendations give companies a list of disclosures that should be included in mainstream financial reports when deemed financially material. As such, all of the recommendations in the checklist (pages 59–64) should ideally be found in the company's mainstream financial filings. Potentially further detail may be provided in supplementary reports including sustainability reports. If information is not provided then an explanation outlining the rationale for not covering it would be helpful. Issuers are encouraged to use this checklist to determine whether or not the information recommended for disclosure by the TCFD can be found in their current reporting content. The checklist was compiled by the United Nations Sustainable Stock Exchange's initiative (UN SSE) by combining the TCFD recommendations as well as the TPI Management Quality Assessment to help issuers diagnose their current reporting and create a path towards full alignment with TCFD recommendations.

Companies can use this checklist to determine whether the informational needs of investors pertaining to climate are addressed by current disclosures. Where sufficient data to answer a question is not currently available in public reports, report preparers should focus on ensuring this information is added

to their reports. Where the company determines insufficient financial materiality to deem including this information in the mainstream financial filings, the report preparers should explain at a minimum how this decision was made and what time horizons were being used in supplemental reports such as a sustainability report. Where sufficient data is provided in public reports to answer a question, report preparers are encouraged to also indicate where it can be accessed within their current disclosure so that it is easy to find. This checklist can therefore be used as a map for investors looking for the following data (see Box 3.1 and Box 3.2).

Finally, companies can also use the checklist to determine their current level of disclosure based on TPI's Management Quality Assessment. This assessment, which includes four levels, has been mapped to the TCFD recommendations (Table A) to help companies determine what level they may already be at. Smaller companies in less climate-vulnerable industries can use this assessment to chart a path forward aiming to achieve level 4 disclosure as part of its two-to-five-year plan. However, larger companies (with more than $1 billion in revenue and those in climate-vulnerable industries) should consider aligning with TCFD within one to two years or sooner based on regulatory requirements.

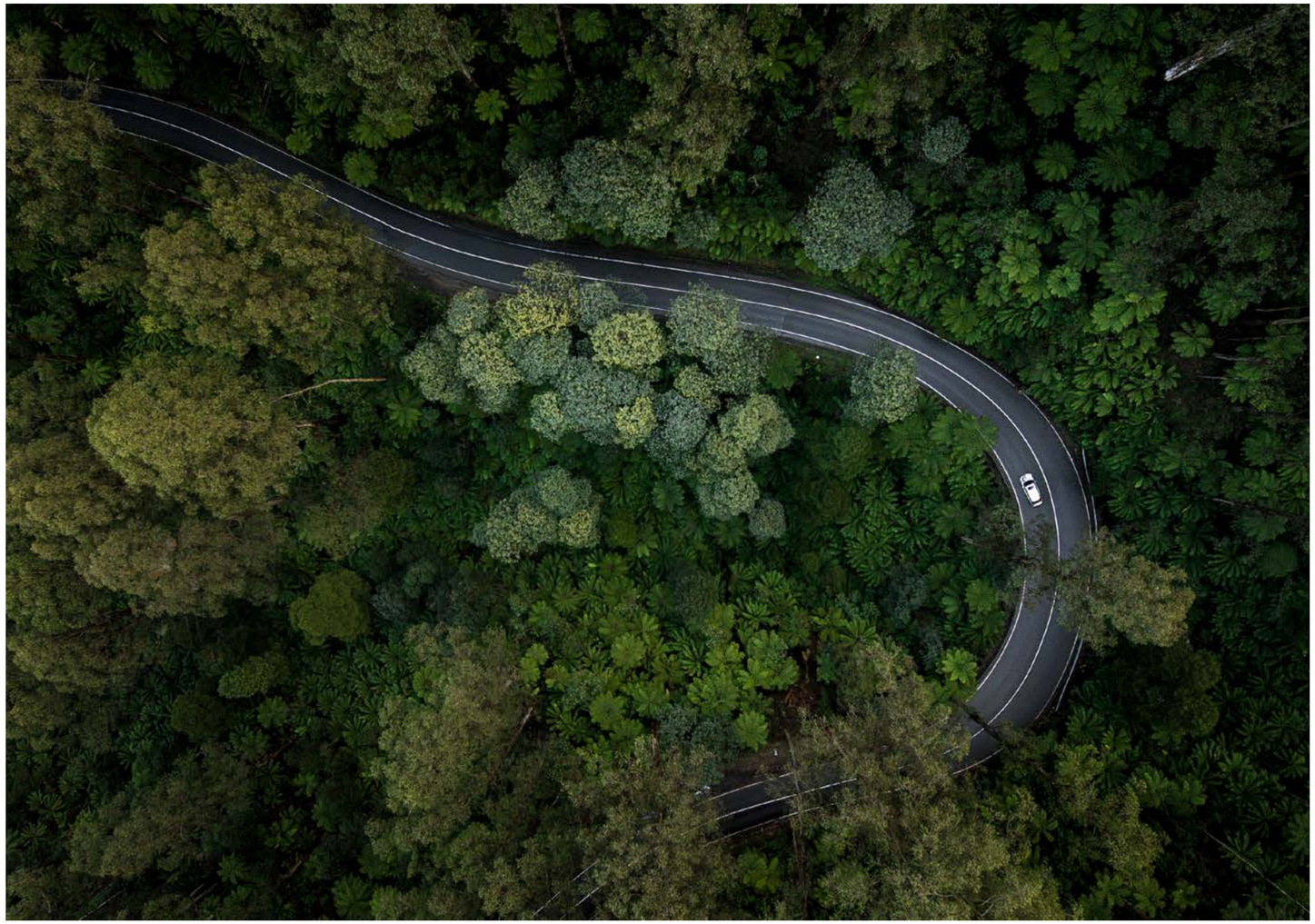


Table A TCFD Checklist

Does current disclosure answer the question?		Stage
GOVERNANCE		
a. Board oversight of climate-related risks and opportunities		
ALL	Are board and/or board committees (e.g., audit, risk, or other committees) informed about climate-related issues?	1
	— Does the company recognise climate change as a relevant risk and/or opportunity for the business?	1
	— Is there a board member or committee with explicit responsibility for oversight of the climate change policy?	3
ALL	Do board and/or board committees consider climate-related issues when reviewing and guiding:	
	— major plans of action,	
	— risk management policies,	
	— business plans,	2
	— annual budgets,	
	— strategy,	
	— performance objective, monitoring implementation and performance, and	4
	— overseeing major capital expenditures, acquisitions and divestitures.	
ALL	How does the board monitor and oversee progress against goals and targets for addressing climate-related issues?	3
b. Management's role in assessing and managing climate-related risks and opportunities		
ALL	Does the organisation have assigned climate-related responsibilities to management-level positions or committees? If so, how do such management positions or committees report to the board or a committee of the board and do those responsibilities include assessing and/or managing climate-related issues?	4

Continued

Does current disclosure answer the question?		Stage
ALL	How are managers informed about climate-related issues?	2
ALL	How do managers monitor climate-related issues?	2
STRATEGY		
a. Identification of climate-related risks and opportunities over the short, medium and long term.		
ALL	How does the organisation define short-, medium- and long-term time horizons? Does this take into consideration the useful life of the organisation's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms?	2
ALL	What specific climate-related issues that could have a material financial impact on the organisation have been identified for each time horizon (short, medium and long term)?	3
	— Is this consistent with climate change policy and positions taken by trade associations of which the organisation is a member?	4
ALL	Is a materiality analysis used to determine which risks and opportunities could have a material financial impact on the organisation?	1
ALL	Is a scenario analysis used to determine which risks and opportunities could have a material financial impact on the organisation?	3
ALL	Are risks and opportunities considered by sector and/or geography?	
b. The impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning		
ALL	How do climate-related risks and opportunities impact on businesses and strategy in the following areas: — Products and services, — Supply chain and/or value chain, — Adaptation and mitigation activities, — Investment in research and development, — Operations (including types of operations and location of facilities).	4
ALL	What are the time period(s) used and how are climate-related risks and opportunities prioritised as inputs into the financial planning process?	3
Insurance	How do potential impacts of climate-related risks and opportunities influence client, cedent or broker selection?	3

Continued

Does current disclosure answer the question?		Stage
Insurance	Are specific climate-related products or competencies under development, such as insurance of green infrastructure, specialty climate-related risk advisory services and climate-related client engagement?	4
Asset owners	How are climate-related risks and opportunities factored into relevant investment strategies?	4
Asset managers	How are climate-related risks and opportunities factored into relevant products and investment strategies?	4
Asset managers	How might the transition to a lower-carbon economy affect each product or investment strategy?	3
Non-financial organisations	How are climate-related risks and opportunities integrated into current decision making and future strategy formulation through (where applicable): — research and development (R&D) and adoption of new technology; — existing and committed future activities such as investments, restructuring, write-downs, or impairment of assets; — critical planning assumptions around legacy assets, for example, strategies to lower carbon-, energy- and/or water-intensive operations; — how GHG emissions, energy and water issues, if applicable, are considered in capital planning and allocation; this could include a discussion of major acquisitions and divestments, joint-ventures and investments in technology, innovation and new business areas in light of changing climate-related risks and opportunities; and/or — the organisation's flexibility in positioning/repositioning capital to address emerging climate-related risks and opportunities.	4
c. The organisation's strategy resilience, taking into consideration different climate-related scenarios, including a 2°C or lower scenario		
ALL	Has the organisation conducted a scenario analysis that evaluates how resilient their strategies are to climate-related risks and opportunities?	4
ALL	Does the analysis include a 2°C or lower scenario?	4
ALL	What time horizons are considered in the organisation's climate-related scenario analysis?	4
ALL	How will climate-related risks and opportunities (as listed in Tables 1 and 2 of the TCFD recommendations) affect the organisation's strategies, and how may strategies change to address potential climate-related risks and opportunities?	3
Insurance	Is a climate-related scenario analysis conducted for underwriting activities? If so, what scenario and what time frame is used?	4
Asset owners	How are climate-related scenarios used to inform investments in specific assets?	4

Continued

Does current disclosure answer the question?		Stage
Non-financial organisations	Where an organisation has more than one billion U.S. dollar equivalent (USDE) in annual revenue, is a more robust scenario analysis conducted? This should include assessing the resilience of strategies against a range of climate-related scenarios, including a 2°C or lower scenario and, where relevant to the organisation, scenarios consistent with increased physical climate-related risks and the implications of different policy assumptions, macro-economic trends, energy pathways and technology assumptions used in publicly available climate-related scenarios.	4
RISK MANAGEMENT		
a. Climate-related risk management processes		
ALL	How does the organisation determine the relative significance of climate-related risks in relation to other risks?	1
ALL	Are existing and emerging regulatory requirements related to climate change (e.g. limits on emissions) considered a risk by the organisation?	3
ALL	How is the potential size and scope of identified climate-related risks determined?	3
ALL	How does the organisation define or classify risk and risk-related terms? (Is a taxonomy used?)	1
Insurance	How are climate-related risks on re-/insurance portfolios identified and assessed (by geography, business division, or product segments)? Does this assessment include the following: — physical risks from changing frequencies and intensities of weather-related perils; — transition risks resulting from a reduction in insurable interest due to a decline in value, changing energy costs, or implementation of carbon regulation; and/or — liability risks that could intensify due to a possible increase in litigation?	3
Asset owner and managers	What engagement activities are undertaken with investee companies to encourage better disclosure and practices related to climate-related risks to improve data availability and asset owners' ability to assess climate-related risks?	4
Asset manager	How are climate-related risks identified and materiality assessed for each product or investment strategy? What resources and tools are used in the process?	3
Non-financial organisations	What key metrics related to GHG emissions, energy, water, land use and, if relevant, investments in climate adaptation and mitigation that address potential financial aspects of shifting demand, expenditures, asset valuation and cost of financing are used? (Have the illustrative examples in the TCFD Implementation Guide Tables 3–6 been taken into consideration?)	4

Continued

Does current disclosure answer the question?		Stage
b. Managing climate-related risks		
ALL	How are decisions to mitigate, transfer, accept, or control climate-related risks made?	3
ALL	How is materiality determined for the risks listed in Table 1 of the TCFD recommendations?	3
Insurance	What key tools or instruments, such as risk models, are used to manage climate-related risks in relation to product development and pricing?	4
Insurance	What are the range of climate-related events considered and how are the risks generated by the rising propensity and severity of such events managed?	3
Asset owner	How is the positioning of the total portfolio considered with respect to the transition to a lower-carbon energy supply, production and use?	4
Asset manager	How are material climate-related risks managed for each product or investment strategy?	4
c. Processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management		
ALL	How are climate-related risks integrated into their overall risk management?	1
METRICS & TARGETS		
a. Metrics used to assess climate-related risks and opportunities in line with its strategy and risk management process		
ALL	What are the key metrics used to measure and manage the climate-related risks and opportunities found in Tables 1 and 2 of the TCFD recommendations?	3
ALL	Where climate-related issues are material, are related performance metrics incorporated into remuneration policies?	4
ALL	What internal carbon prices are used for measuring impact and setting targets?	4
ALL	What climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy are used?	3
Insurance	What is the aggregated risk exposure to weather-related catastrophes of the organisation's property business (i.e. annual aggregated expected losses from weather-related catastrophes) by relevant jurisdiction?	3
Asset owner	What metrics are used to assess climate-related risks and opportunities in individual funds or investment strategies and how do these metrics change over time?	
Asset manager	What metrics are used to assess climate-related risks and opportunities in each product or investment strategy and how do these metrics change over time?	

Continued

Does current disclosure answer the question?		Stage
b. Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks		
ALL	What are the Scope 1 and Scope 2 GHG emissions and, if appropriate, Scope 3 GHG emissions and the related risks of the organisation, according to GHG Protocol methodology?	2
	— If found to be appropriate, what are the company's Scope 3 emissions?	3
	— Are GHG emissions data externally verified?	3
ALL	What are the historic GHG emissions and trends?	2
Asset owner	What is the weighted average carbon intensity, where data are available or can be reasonably estimated, for each fund or investment strategy?	4
Asset manager	What is the weighted average carbon intensity, where data are available or can be reasonably estimated, for each product or investment strategy?	4
c. Targets used to manage climate-related risks and opportunities and performance		
ALL	What are the key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc. in line with anticipated regulatory requirements or market constraints or other goals?	2
	— What are the long-term quantitative targets for reducing GHG emissions?	3
ALL	Does the organisation have climate-related targets pertaining to: — efficiency or financial goals, — financial loss tolerances, — avoided GHG emissions through the entire product life cycle, or — net revenue goals for products and services designed for a lower-carbon economy?	4
ALL	Are climate-related targets absolute or intensity based?	2
ALL	What time frames are applied to each climate-related target?	2
ALL	What is the base year used for each climate-related target?	2
ALL	What key performance indicators are used to assess progress against each climate-related target?	4

Source: UN SSE initiative, adapted from TCFD recommendations and TPI Management Quality Assessment

Annex 2: Alignment of recommended disclosures with other frameworks

GOVERNANCE RECOMMENDED DISCLOSURES		
	Frameworks	**Location**
a. Describe the board's oversight of climate-related risks and opportunities	EU NFRD	3.2 (Table 2)
	G20/OECD Principles of Corporate Governance	5.a.4, 5.a.9, 6.a, 6.d.1, 6.d.2, 6.d.3, 6.d.4, 6.d.7, 6.e.2, 6.f
	CDP Climate Change Questionnaire 2021	C1.1b
	GRI 102: General Disclosures	102-18, 102-19, 102-20, 102-26, 102-27, 102-29, 102-31, 102-32
	CDSB Climate Change Reporting Framework	4.16, 4.17
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-03
	International Integrated Reporting Framework	3.4, 3.41, 4.8, 4.9
b. Describe management's role in assessing and managing risks and opportunities	EU NFRD	3.2 (Table 2)
	GRI 102: General Disclosures	102-29, 102-31, 102-32
	CDP Climate Change Questionnaire 2021	C1.2, C1.2a
	CDSB Climate Change Reporting Framework	2.8, 2.9, 4.12, 4.13, 4.16, 4.17
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-03
c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	EU NFRD	3.1 (Table 1)
	CDP Climate Change Questionnaire 2021	C3.2, C3.2a
	CDSB Climate Change Reporting Framework	4.7

Continued

STRATEGY RECOMMENDED DISCLOSURES		
	Frameworks	**Location**
a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term	EU NFRD	3.4 (Table 4)
	G20/OECD Principles of Corporate Governance	5.a.7, 5.a.8
	CDP Climate Change Questionnaire 2021	C2.1a, C2.3, C2.4, C2.4a
	CDSB Climate Change Reporting Framework	4.6, 4.9, 4.10, 4.11, 4.14
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-02, REQ-06
	GRI 102: General Disclosures	102-15
	International Integrated Reporting Framework	3.5, 3.17, 4.6, 4.7, 4.23, 4.24, 4.25, 4.26
b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning	EU NFRD	3.1 (Table 1)
	G20/OECD Principles of Corporate Governance	5.a.2, 5.a.7, 5.a.8
	CDP Climate Change Questionnaire 2021	C2.3a, C2.4a, C3.1, C3.2a, C3.3, C3.4, C3.4a, C-FS3.7, C-FS3.7a,
	GRI 201: Economic Performance	201-2
	CDSB Climate Change Reporting Framework	2.8, 2.9, 2.10, 4.6, 4.7, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-02, REQ-06
	International Integrated Reporting Framework	3.3, 3.5, 3.39, 4.12, 4.23, 4.28, 4.29, 4.34, 4.35, 4.37
c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	EU NFRD	3.1 (Table 1)
	CDP Climate Change Questionnaire 2021	C3.2, C3.2a
	CDSB Climate Change Reporting Framework	4.7

Continued

RISK MANAGEMENT RECOMMENDED DISCLOSURES		
	Frameworks	**Location**
a. Describe the organisation's processes for identifying and assessing climate-related risks	EU NFRD	3.4 (Table 4)
	G20/OECD Principles of Corporate Governance	5.a.2, 5.a.7
	CDP Climate Change Questionnaire 2021	C2.1, C2.2, C2.2a, CFS2.2b, C-FS2.2c, C-FS2.2f
	GRI 201: Economic Performance	201-2
	CDSB Climate Change Reporting Framework	4.6, 4.7, 4.8, 4.9, 4.11
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-02, REQ-03
b. Describe the organisation's processes for managing climate-related risks	EU NFRD	3.4 (Table 4)
	G20/OECD Principles of Corporate Governance	5.a.2, 5.a.7
	CDP Climate Change Questionnaire 2021	C2.1, C2.2, CFS2.2f
	CDSB Climate Change Reporting Framework	4.12, 4.13, 4.16, 4.17
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-02, REQ-03
	International Integrated Reporting Framework	4.23, 4.24, 4.25, 4.26, 4.40, 4.41, 4.42
c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management	EU NFRD	3.4 (Table 4)
	G20/OECD Principles of Corporate Governance	5.a.2, 5.a.7 6.d.1, 6.f
	CDP Climate Change Questionnaire 2021	C2.1, C2.2
	CDSB Climate Change Reporting Framework	4.6, 4.7
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-02, REQ-03, REQ-06
	International Integrated Reporting Framework	2.7, 2.8, 2.9

Continued

METRICS & TARGETS RECOMMENDED DISCLOSURES		
	Frameworks	**Location**
a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	EU NFRD	3.5
	G20/OECD Principles Of Corporate Governance	6.d.1, 6.d.7
	CDP Climate Change Questionnaire 2021	C4.2, C4.2a, C4.2b, C9.1
	GRI 102: General Disclosures	102-30
	CDSB Climate Change Reporting Framework	2.36, 2.37, 2.38, 4.14, 4.15
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01, REQ-04, REQ-05, REQ-06
	International Integrated Reporting Framework	3.52, 3.53, 4.30, 4.31, 4.32, 4.38, 4.53
b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	EU NFRD	3.3 (Table 3)
	CDP Climate Change Questionnaire 2021	C6.1, C6.3, C6.5, C-FS14.1, C-FS14.1a, C-FS14.1b, C-FS14.1c
	GRI 102: General Disclosures	102-29, 102-30
	GRI 201: Economic Performance	201-2
	CDSB Climate Change Reporting Framework	4.19.1, 4.19.2, 4.29, 4.30, 4.31, 4.32, 4.33
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-04, REQ-05
c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	EU NFRD	3.3 (Table 3)
	CDP Climate Change Questionnaire 2021	C4.1, C4.1a, C4.1b, C4.2, C4.2a, C4.2b,
	CDSB Climate Change Reporting Framework	4.12, 4.13, 4.14, 4.15
	CDSB Framework for Reporting Environmental Information & Natural Capital	REQ-01
	International Integrated Reporting Framework	4.53, 4.60, 4.61, 4.62

Source: UN SSE initiative, compiled from TCFD Hub, CDP and the European Commission

Annex 3: Sustainability reporting frameworks

CDP

CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. The world's economy looks to CDP as the gold standard of environmental reporting with the richest and most comprehensive dataset on corporate and city action. CDP runs the global environmental disclosure system. Each year CDP supports thousands of companies, cities, states and regions to measure and manage their risks and opportunities on climate change, water security and deforestation. They do so at the request of their investors, purchasers and city stakeholders.

Reporting to CDP offers competitive advantage and can keep a company ahead of changes to regulation and policy, help you identify and tackle growing risks and find new opportunities for action that your investors and customers around the world demand. Additionally, CDP helps companies publicly commit to take meaningful action and set ambitious targets to tackle climate change and transition to the low-carbon economy through renewable energy use, science-based targets, carbon pricing and more.

Climate Disclosure Standards Board (CDSB)

CDSB is an international consortium of business and environmental NGOs. Jointly, they are committed to advancing and aligning the global mainstream corporate reporting model to equate natural capital with financial capital. CDSB does this by offering companies a framework for reporting environmental information with the same rigour as financial information. In turn this helps them to provide investors with decision-useful environmental information via the mainstream corporate report, enhancing the efficient allocation of capital. Regulators also benefit from compliance-ready materials. Recognising that information about natural capital and financial capital is equally essential for an understanding of corporate performance, CDSB's work builds the trust and transparency needed to foster resilient capital markets. Collectively, they aim to contribute to more sustainable economic, social and environmental systems.

CDSB has developed a framework for reporting environmental and climate change information in mainstream corporate reports, such as the annual report or the Form 10-K. It allows investors to assess the relationship between specific environmental matters and the organisation's strategy, performance and prospects. To disclose environmental and natural capital information and to deliver on the TCFD recommendations, use the CDSB Framework for reporting environmental and climate change information.

Global Reporting Initiative (GRI)

GRI is the independent, international organisation that helps businesses and other organisations take responsibility for their impacts, by providing them with the global common language to communicate those impacts. GRI provides the widely used standards for sustainability reporting – the GRI Standards. The organisation works with businesses, investors, policymakers, civil society, labour organisations and other experts to develop the GRI Standards and promote their use by organisations around the world. With thousands of reporters in more than 100 countries, the Standards are advancing the practice of sustainability reporting, and enabling organisations and their stakeholders to take action and make better decisions that create economic, environmental and social benefits for everyone.

The GRI Standards create a common language for organisations – large or small, private or public – to report on their sustainability impacts in a consistent and credible way. This enhances global comparability and enables organisations to be transparent and accountable. The Standards help

organisations understand and disclose their impacts in a way that meets the needs of multiple stakeholders. In addition to reporting companies, the Standards are highly relevant to many other groups, including investors, policymakers, capital markets and civil society. The Standards are designed as an easy-to-use modular set, starting with the universal Standards. Topic Standards are then selected, based on the organisation's material topics – economic, environmental or social. This process ensures that the sustainability report provides an inclusive picture of material topics, their related impacts, and how they are managed.

International Integrated Reporting Council (IIRC)

IIRC is a global coalition of regulators, investors, companies, standard setters, the accounting profession, academia and NGOs. The coalition promotes communication about value creation as the next step in the evolution of corporate reporting across the world.

Integrated reporting applies principles and concepts that are focused on bringing greater cohesion and efficiency to the reporting process and adopting 'integrated thinking' as a way of breaking down internal silos and reducing duplication. It improves the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital. Its focus on value creation and the capitals used by the business to create value over time contributes towards a more financially stable global economy.

The IR Framework was released following extensive consultation and testing by businesses and investors in all regions of the world, including the 140 businesses and investors from 26 countries that participated in the IIRC Pilot Programme. The purpose of the Framework is to establish Guiding Principles and Content Elements that govern the overall content of an integrated report and to explain the fundamental concepts that underpin them.

Sustainability Accounting Standards Board (SASB)

SASB standards enable businesses around the world to identify, manage and communicate financially-material sustainability information to their investors. SASB has developed a complete set of 77 industry standards. In November 2018, SASB published these standards, providing a complete set of globally applicable industry-specific standards which identify the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry.

These standards are explained graphically through SASB's Materiality Map, are available for individual sector download and may be viewed through SASB's complete Standards Navigator database. SASB staff and Standards Board followed a rigorous due process outlined by the Conceptual Framework and Rules of Procedure to develop these standards, which are designed to be cost-effective for companies to implement and decision-useful to both companies and investors.

SASB provides an Engagement Guide for investors to consider questions to discuss with companies regarding financially material issues as well as an Implementation Guide (update in early 2019) for companies which explains issues and approaches to consider when implementing SASB standards.

Annex 4: LSEG carbon targets disclosure template

FTSE Russell has developed the following TCFD-aligned disclosure template to promote concise and unambiguous disclosures of corporate GHG emissions reduction targets. The template is detailed on pages 74–75, and completed with fictional details for an example target.

The template is intended to be completed separately for individual targets where companies disclose multiple targets (e.g. for different emissions scopes or different timeframes). It is structured in three sections – Target ID, Target Information and Target Methodology, and contains a total of 20 fields to be completed for each GHG target (see the Appendix for detailed guidance for disclosures in each field).

Target ID

This section helps investors ensure that they identify all individual emissions targets a company has set, irrespective of how or where they are disclosed. The information also supports the tracking of targets over time, particularly as targets are now frequently updated or revised by companies.

Target Information

This section allows a company to disclose the main parameters that describe a GHG emissions target: the base year, the target year, the target reduction from base year, and the emissions scopes covered. Additional information – such as the calculation method for Scope 2 emissions and category of Scope 3 emissions, together with a disclosure of percentage of emissions covered – conveys the boundaries of the emissions target.

Target Methodology

This section provides a qualitative context and important methodological details for the target. To keep the structure simple, companies can reference publicly available documents and page numbers where the relevant information is available.

GHG emissions reduction target disclosure template

TARGET ID	Example data			
Overall number of active GHG emissions targets:	4	Include interim targets in the count		
Target number:	1 (of 4)			
Target type:	Absolute (interim target)	Indicate whether this is an interim target (e.g. a short-term milestone between the organisation's mid- or long-term target and current period).		
Date the target was set:	08/02/2019	**Date that the target was last revised:**	14/01/2021	
TARGET INFORMATION	**Example data**			
Scope(s) covered:	Scope 1 and 2 (market-based) + 3 (cat 11: use of sold product)	For Scope 2 emissions, indicate if calculations are location- or market-based. For Scope 3 emissions, indicate the GHG protocol categories that are covered.		
Percentage of in-scope emissions covered by the target:	99%			
Base year:	2015	**Base year emissions:**	75,000 tCO_2e	For intensity targets, provide activity measure (e.g. tCO_2e/Mwh or tCO_2e/tonne of cementitious product).
Target year:	2030	**Target year projected emissions:**	30,000 tCO_2e	
Targeted reduction from base year (%):	60%			
Targeted reduction from current year (%):	50%	**Current emissions:**	60,000 tCO_2e (2020)	Please indicate the most current year for which emissions data is available.

Continued

TARGET METHODOLOGY		
Verified by an independent third party.	Yes. SBTi	Please indicate the name of the independent third party that verified the target.
Source that describes how the percentage of in-scope emissions covered by the target has been calculated.	Sustainability Report 2020 (p.8, p.12)	Please indicate the title(s) of publicly available documents and relevant page numbers where information can be found.
Source that describes transition plan outlining how this target will be met.	Roadmap to Net-zero 2050 (p.1–10)	Please indicate the title(s) of publicly available documents and relevant page numbers where information can be found.
For Scope 3 targets, source that describes the methodology used to calculate the Scope 3 emissions covered by the target.	GHG Emissions Methodology (p.15–16)	
Indicate the % of the target to be achieved through offsets and provide a source that specifies their type and the offset provider.	20% will be achieved through CCS. Roadmap to Net-zero 2050 (p.8)	
For intensity targets, source that describes the methodology used to calculate the carbon intensity.	Sustainability Report 2020 (p.89)	

Detailed guidance for the GHG target disclosure template

TARGET ID	
Overall number of active GHG emissions targets	Specify the total number of active carbon emissions targets within the company. Those that have expired or been met should not be counted unless this occurred in the latest financial year.
Target number	Specify a number for each target. This helps investors to differentiate between targets.
Target type	Specify if the target is an 'absolute' (total GHG emissions) or 'intensity' target (normalised GHG emissions) and whether it is an 'interim' target on a decarbonisation pathway or an 'end-state' target for long-term, steady-state GHG emissions of the company.
Date the target was set	Specify the date at which management or the board adopted the target as a company objective.
Date the target was last revised	If the target has been revised, indicate when the updates were adopted by management or the board.
TARGET INFORMATION	
Scopes covered	Indicate which emissions scopes are covered by the target. If Scope 2 is included, indicate if this is measured using market- or location-based methods. If Scope 3 is included, specify the categories included. Categorisations used should align with the GHG Protocol.
Percentage of in-scope emissions covered by the target	Provide the percentage of in-scope GHG emissions covered by the target. Details about how this was calculated should be provided in the target methodology section.
Base year	Specify the financial year of emissions against which progress is being measured.
Base year emissions	Specify the GHG emissions against which progress is being measured. Indicate the unit of measurement.
Target year	Specify the financial year in which the company is targeting its intended emissions.
Target year emissions	Specify the quantity of emissions that should be achieved in the targeted year. Indicate the unit of measurement.

Continued

TARGET INFORMATION *continued*	
Targeted reduction from base year (%)	The percentage reduction that is targeted, relative to the base year.
Targeted reduction from current year (%)	The percentage reduction that is targeted, relative to the latest financial year. This should match the financial year in the 'current emissions' field.
Current emissions	Indicate the latest year of emissions using the same units and scopes as above. Indicate the financial year to which these emissions relate. Indicate the unit of measurement.
TARGET METHODOLOGY	
Verified by an independent third party	Indicate the name of the independent third party that has verified the target and its constituent data, if applicable.
Source that describes how the percentage of in-scope emissions covered by the target has been calculated	Describe, or provide a link to a source that describes the boundaries to which the target applies. Generally, the main emissions targets should cover the same boundaries as adopted in the consolidated financial statements of the company, described in IFRS 10 or similar document.
For Scope 3 targets, source that describes the methodology used to calculate the Scope 3 emissions covered by the target	Describe, or provide a link to a source that describes the methodology used to calculate the Scope 3 emissions covered by the target.
Indicate the percentage of the target to be achieved through offsets and provide a source that specifies their type and the offset provider	Describe, or provide a link to a source that describes the proportion of the target to be achieved through carbon offsetting programmes, and provide a source that specifies their type and the offset provider.
For intensity targets, source that describes the methodology used to calculate the carbon intensity	Describe, or provide a link to a source that describes the methodology used to calculate carbon intensity metrics. Intensity targets can vary greatly in their measurement, and investors may not always be familiar with abbreviations used in any units – avoiding the use of abbreviations can help to avoid misinterpretation.

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For more information

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