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Pension
Fund

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APPENDIX 2

Derbyshire Pension Fund Climate-Related Disclosures

November 2021

Report prepared in alignment with the recommendations of
the Taskforce on Climate-related Financial Disclosures

Report prepared in collaboration with LGPS Central Limited

Glossary of Terms and Abbreviations

Anthropogenic

Anthropogenic in terms of climate change refers to the impact humans have had on climate change, primarily through emissions of greenhouse gases.

Financial Stability Board

The Financial Stability Board is an international body that monitors and makes recommendations about the global financial system. It was established after the G20 London summit in April 2009 as a successor to the Financial Stability Forum.

Greenhouse Gases

Greenhouse gases are gases in the Earth's atmosphere that are capable of absorbing infrared radiation and thereby trap and hold heat in the atmosphere. The main greenhouse gases are: water vapour; carbon dioxide; methane; and nitrous oxide.

Scope 1 Greenhouse Gas Emissions

Scope 1 emissions are direct emissions produced by the activities of the emitter.

Scope 2 Greenhouse Gas Emissions

Scope 2 emissions are indirect emissions generated by the electricity, heat, or steam consumed and purchased by the emitter.

Scope 3 Greenhouse Gas Emissions

Scope 3 emissions are other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities not covered in Scope 2, outsourced activities, waste disposal, etc.

UNFCCC

The UNFCCC secretariat (UN Climate Change) is part of the United Nations and was established in 1992 when countries adopted the United Nations Framework Convention on Climate Change (UNFCCC).

Abbreviations

CO ₂	Carbon Dioxide
Committee	Pensions & Investments Committee
CH ₄	Methane
DPF	Derbyshire Pension Fund
ESG	Environmental, Social & Governance
GHG	Greenhouse Gas
IEA	International Energy Agency
LGIM	Legal & General Investment Management
LGPS Central	LGPS Central Limited
NDC	Nationally Determined Contribution
TCFD	Taskforce on Climate-related Financial Disclosures
WEF	World Economic Forum

Introduction to the TCFD

The Taskforce on Climate-related Financial Disclosures (The Task Force/TCFD) was commissioned in 2015 by Mark Carney in his remit as Chair of the Financial Stability Board, in recognition of the risks caused by greenhouse gas emissions to the global economy and the impacts that are likely to be experienced across many economic sectors. The Task Force was asked to develop voluntary, consistent climate-related financial disclosures that would be useful to investors, lenders and insurance underwriters in understanding material climate-related risks.

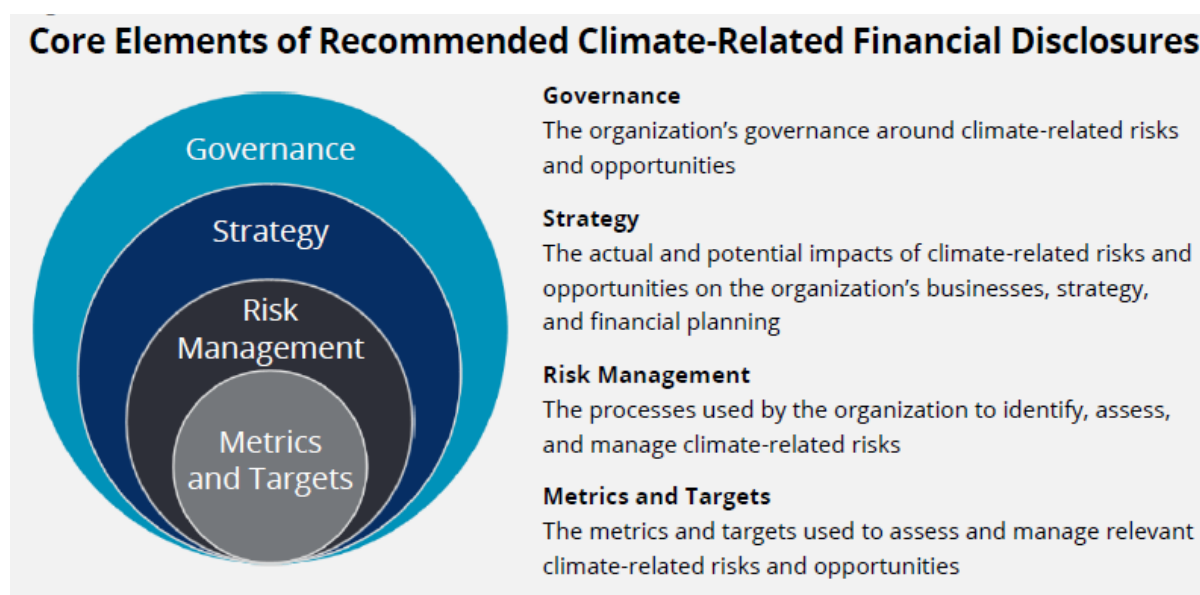
In 2017, the TCFD released its recommendations for improved transparency by companies, asset managers, asset owners, banks, and insurance companies with respect to how climate-related risks and opportunities are being managed. Guidance was also released to support all organisations in developing disclosures consistent with the recommendations, with supplemental guidance released for specific sectors and industries, including asset owners.

In his introduction to the final TCFD report, Michael Bloomberg (TCFD Chair) noted: 'it is difficult for investors to know which companies are most at risk from climate change, which are best prepared, and which are taking action. The Task Force's report establishes recommendations for disclosing clear, comparable and consistent information about the risks and opportunities presented by climate change. Their widespread adoption will ensure that the effects of climate change become routinely considered in business and investment decisions. Adoption of these recommendations will also help companies better demonstrate responsibility and foresight in their consideration of climate issues. That will lead to smarter, more efficient allocation of capital, and help smooth the transition to a more sustainable, low carbon economy.'

The Task Force divided climate-related risks into two major categories: risks related to the transition to a lower-carbon economy; and risks related to the physical impacts of climate change. The TCFD report noted that climate-related risks and the expected transition to a lower carbon economy affect most economic sectors and industries, however, opportunities will also be created for organisations focused on climate change mitigation and adaptation solutions. The report also highlights the difficulty in estimating the exact timing and severity of the physical effects of climate change.

The Task Force structured its recommendations around four thematic areas that represent core elements of how organisations operate: governance, strategy; risk management; and metrics and targets (see Figure 1).

Figure 1: Core Elements of Recommended Climate-Related Financial Disclosures



The four overarching recommendations are supported by recommended disclosures (see Appendix 1) that build out the framework with information that will help investors/stakeholders understand how reporting organisations assess climate related risks and opportunities. The disclosures are designed to make TCFD-aligned disclosures comparable, but with sufficient flexibility to account for local circumstances.

Derbyshire Pension Fund (the Pension Fund/Fund) supports the TCFD recommendations as the optimal framework to describe and communicate the steps the Fund is taking to manage climate-related risks and incorporate climate risk management into investment processes. The Fund published its first TCFD report in March 2020. The Fund is a long-term investor, diversified across asset classes, regions and sectors. It is in the Fund's interest that the market is able to effectively price climate-related risks and that policy makers are able to address market failure. The TCFD report noted the important role that large asset owners have in influencing the organisations in which they invest to provide better climate-related financial disclosures.

As of 6 October 2021, the Task Force had over 2,600 supporters globally, including 1,069 financial institutions, responsible for assets of \$194 trillion. TCFD supporters now span 89 countries and jurisdictions and nearly all sectors of the economy, with a combined market capitalisation of over \$25 trillion – a 99% increase since 2020. Disclosure that aligns with the TCFD recommendations currently represents best practice. The Fund believes TCFD-aligned disclosure from asset owners, asset managers, and corporates, is in the best interest of the Fund's stakeholders.

About this report

This is the second Climate-related Disclosures report published by Derbyshire Pension Fund. The first report was published in March 2020, and the climate-related disclosures will continue to develop over time.

The report has been prepared in collaboration with LGPS Central Limited (LGPSC), and describes the way in which climate-related risks are currently managed by the Pension Fund. It includes the results of climate scenario analysis and carbon risk metrics analysis undertaken on the Fund's assets as part of LGPSC's preparation of an annual Climate Risk Report for the Pension Fund.

Climate scenario analysis carried out at the asset class level estimates the effects of different climate scenarios on key financial parameters (e.g. risk and return) over a selection of time periods.

The Task Force recognised that the use of scenarios in assessing climate-related issues and their potential financial implications is relatively recent and that practices will evolve over time, but believed that such analysis is important for improving the disclosure of decision-useful, climate-related financial information. Carbon risk metrics analysis on the Fund's listed equities and investment grade bond portfolios considers: portfolio carbon footprint (weighted average carbon intensity); fossil fuel exposure; carbon risk management; and clean technology (portfolio weight in companies whose products and services include clean technology).

The challenges of measuring the potential impact of climate change on investment portfolios are well recognised. The Fund believes that a suite of carbon risk metrics and climate scenario analysis currently provides the most appropriate method of analysing climate risk to support the development of a detailed strategy for integrating climate risk into investment decisions.

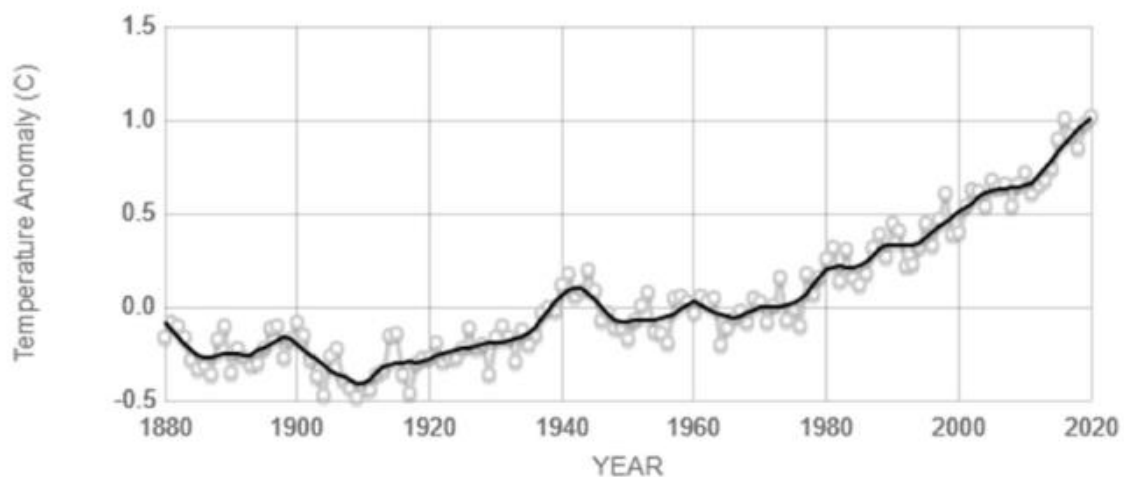
The findings of the Climate Risk Report, together with the Fund's own ongoing climate research, which is structured around the TCFD's four thematic areas of governance, strategy, risk management and metrics and targets, were used to support the development of the Fund's Climate Strategy which was approved by the Pensions and Investments Committee (the Committee) in November 2020. In addition, high level climate change risk analysis from the Fund's actuary, Hymans Robertson LLP, which considers the potential effect of climate change on the Fund's liabilities as well as on the assets of the Pension Fund, supported the development of the Climate Strategy. Guidance on implementing the TCFD recommendations for asset owners from the TCFD and the Principles for Responsible Investment have also been utilised.

Climate-related risks

Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels (Source: NASA), most of which has occurred in the last 35 years. Nineteen of the hottest recorded years have occurred since 2000 (Figure 2) (Source: NASA), with the exception of 1998, which was helped by a very strong El Niño. 2020 tied with 2016 for the hottest year on record since record-keeping began in 1880.

Over 97% of climate scientists (Source: NASA) agree that this trend is the result of greenhouse gas (GHG) emissions which are being trapped in the atmosphere and creating a 'greenhouse effect' – a warming that occurs when the atmosphere blocks heat radiating from Earth towards space. These climate scientists have observed that these climactic changes are primarily the result of human activities including electricity and heat production, agriculture and land use change, industry, and transport.

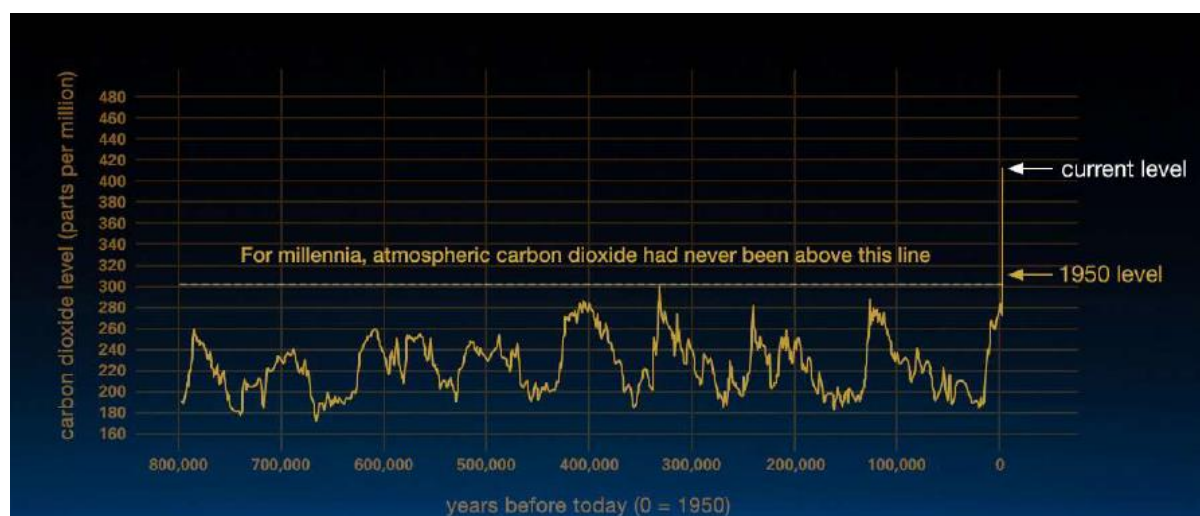
Figure 2: Graph showing Global Temperature Difference from 1951-80 average. Source: NASA



The principle source of GHG emissions, particularly carbon dioxide, is the burning of fossil fuels for the production of energy. The second largest contributor is methane, primarily related to agrarian activities (i.e. relating to cultivated land or the cultivation of land), fossil fuel production and waste.

During the last 250 years, atmospheric concentrations of carbon dioxide (CO₂) and methane (CH₄) have increased by 40% and 150%, respectively. As shown in Figure 3 below, in October 2021, the global average concentration of carbon dioxide was 417ppm compared to its pre-industrial equivalent of 280ppm.

Figure 3: Levels of Atmospheric carbon dioxide. Source Nasa



Climate scientists believe that in order to mitigate the worst economic impacts of climate change, there should be a globally co-ordinated policy response. The majority of climate scientists anticipate that given the current level of climate action, the world will be between 2°C and 4°C warmer by 2100, with significant regional variations. This is substantially higher than the Paris Climate Change Agreement (see Figure 4 for selected extracts of the Paris Agreement), which reflects a collective goal to hold the increase in the climate's mean global surface temperature to well below 2°C above preindustrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

Figure 4: Selected extracts from the Paris Agreement on climate change. Source: UNFCCC.

Paris Agreement Article 2(1)a

Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

Paris Agreement Article 2(1)c

Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

Paris Agreement Article 4(1)

In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

The Paris Agreement commits signatories to the establishment of Nationally Determined Contributions (NDCs), which are intended to be individually equitable and collectively sufficient to achieve Article 2(1)a. It is estimated that under current global policies (and assuming successful implementation), the world is heading towards a warming of 3.2°C, albeit the International Energy Agency (IEA) has estimated that the climate pledges announced at the 2021 United Nations Conference of the Parties (COP26) could keep the temperature rise to within 1.8°C degrees on pre-industrial levels but only if the commitments are implemented in full.

As set out in the Fund’s Climate Strategy, the Fund supports the ambitions of the Paris Agreement, and aims to achieve a portfolio of assets with net zero carbon emissions by 2050.

The low-carbon transition is already underway, with several governments and institutions around the world intensifying their climate change policies, and corporates responding in turn. One example is the recent UK declaration to bring all greenhouse gas emissions to net zero by 2050, with a target of cutting emissions by 78% by 2035 compared to 1990 levels.

Acknowledgement of the risks posed by climate change among business and government leaders is reflected in the World Economic Forum (WEF) Global Risks Report, which illustrates the increased focus on environmental and social risks (compared with purely economic and political risks) over time. Environmental risks, particularly those associated with climate change, account for four of the top five risks of global business leaders by likelihood, and three of the top five risks by impact.

Figure 5: WEF Top global risks. Source: World Economic Forum; The Global Risks Report 2021



The more attention business leaders pay to managing climate risk, the greater the implications for investors. The WEF’s global risks are also highly interconnected. For example, climate change potentially exposes businesses

to more natural disasters, extreme weather and water shortages. These in turn may lead to involuntary migration or conflict. Taking the interconnectivity of risks into account will continue to be important for long-term investors seeking to anticipate the effects of climate change and prepare their portfolios for a changing global context.

Given its contribution to global GHG emissions, the energy sector is expected to play a significant role in the long-term decarbonisation of the economy, albeit fossil fuels are expected to continue to provide a large proportion of the global energy mix for many years to come. The behaviour of private and state-owned energy companies will be as important as the actions taken by their publicly traded counterparts. It is also important to recognise that the demand for energy and the type of energy demanded will also play a crucial role in global decarbonisation.

However, the potential climate-related issues faced by diversified investors (such as pension funds) are not limited to the oil & gas and power generation sectors. Investors focussing exclusively on primary energy suppliers could fail to identify material climate risks in other sectors. There is considerable uncertainty in the crystallisation pathway for climate risk.

Well known concepts such as stranded assets risk are not homogeneous within certain sectors (e.g. oil & gas and power generation), and robust due diligence will be required in order to identify the potential winners and losers. The uncertainty of climate change stems from the complexity and inter-relationship of value and supply chains, the flow through of fossil fuels to by-products and services across multiple sectors and industries, the pass through cost of carbon, policy fragmentation, and the consideration that certain companies are too big to fail. The likelihood of asset stranding depends on the commodity, the asset quality, the customer base, the rate of technology change, cost curve dynamics, mitigating strategies (e.g. company diversifying portfolio), and the ability of the market to price risk and timing thereof.

The Fund recognises that climate-related risks can be financially material and that the due consideration of climate risk falls within the scope of the Fund's fiduciary duty. Given the Fund's long-dated liabilities and the timeframe in which climate risks could materialise, a holistic approach to risk management covering all sectors and all relevant asset classes is warranted.

Governance

TCFD Recommended Disclosure

a) Describe the board's oversight of climate-related risks and opportunities

Roles and responsibilities are clearly set out in the Pension Fund's Governance Policy & Compliance Statement.

The Pensions and Investments Committee, which meets six to eight times a year, is responsible for approving the Fund's Investment Strategy Statement, together with the standalone Responsible Investment Framework and Climate Strategy. The Committee also receives a quarterly stewardship report setting out the stewardship and voting activities of the Pension Fund's largest investment managers.

The Fund's approach to managing climate risk, including the Fund's beliefs, objectives, metrics and targets, is set out in detail in the Climate Strategy.

The Committee receives an annual Climate Risk Report from LGPSC and receives ongoing training in respect of responsible investment and climate related risks and opportunities.

Derbyshire Pension Board has an oversight role in ensuring the effective and efficient governance and administration of the Fund, including securing compliance with the LGPS Regulations and any other legislation relating to the governance and administration of the Scheme.

To support good decision-making, the Fund applies the Myners Principles.

Disclosure of compliance against the Myners Principles is made annually in the Fund's Annual Report.

TCFD Recommended Disclosure

b) Describe management's role in assessing and managing climate-related risks and opportunities.

The Head of Pension Fund and the Investments Manager have primary day-to-day responsibility for the way in which climate-related investment risks are managed. As a largely externally managed fund, the implementation of much of the management of climate-related risk is delegated to portfolio managers. Each manager's approach to Environmental, Social and Governance (ESG) factors and how these are integrated into their investment process is assessed as part of the manager selection process. The Fund's external

managers are monitored on a regular basis, and a Climate Stewardship Plan has been developed.

A climate risk report is procured on an annual basis from LGPSC, the Fund’s pooling company.

Strategy

TCFD Recommended Disclosure

a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term.

As a diversified asset owner, the range of climate-related risks and opportunities, are varied and constantly evolving. A subset of risk factors is presented in Table 1.

Table 1: Examples of Short, Medium & Long-Term Risks

	Short & Medium Term	Long Term
Risks	<ul style="list-style-type: none"> Carbon prices Policy change Technological change Consumer preferences Stock selection Timing 	<ul style="list-style-type: none"> Resource scarcity Extreme weather events Sea level rise
Asset class	<ul style="list-style-type: none"> Listed equities Growth assets Energy-intensity industry Oil-dependent sovereign issuers Carbon-intensive corporate issuers 	<ul style="list-style-type: none"> Infrastructure Property Agriculture Commodities Insurance

Short-term risks include stock price movements resulting from increased regulation to address climate change.

Medium-term risks include technology and policy changes leading to rapid product obsolescence or changes in consumer behaviour (e.g. uptake in electric vehicles), stock selection (there will be winners and losers across all sectors) and timing (being the first adopter does not guarantee success or better returns).

Long-term risks include stranded assets, physical damages to real assets and resource availability. An example would be the risk to coastal infrastructure assets from rising sea levels.

The Fund receives an annual Climate Risk Report from LGPSC, the findings of which, together with the Fund's own ongoing climate research, support the preparation of the Fund's Climate Strategy.

TCFD Recommended Disclosure

b) Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning.

Consideration of climate related risks and opportunities has impacted the formulation of the Fund's new strategic asset allocation benchmark. Diversification across asset classes, regions, and sectors is an important investment risk management tool to reduce risk. However, the Fund recognises that climate risk is systemic and is unlikely to be eliminated through diversification alone.

As part of the latest review of the Fund's long-term investment strategy, a 29% allocation to Global Sustainable Equities was approved. This allocation targets investments in global companies that are sustainable in financial, environmental, social and governance terms and, where appropriate, that are providing solutions to sustainability challenges.

Furthermore, the Fund has invested in several renewable energy opportunities, and continues to actively assess and invest in these opportunities. Research commissioned by LGPSC from Mercer (presented below) suggests that these allocations could lead to a positive return impact on the Pension Fund's investment portfolio were a 2°C scenario to be suddenly priced in by the market.

The Fund's allocated weighting to the UK equity market has also been reduced from 30% in December 2016 to 12% in the new final strategic asset allocation benchmark which will become effective on 1 January 2022. This has significantly reduced the exposure to companies with fossil fuel reserves. The Fund's carbon risk metrics analysis (Figure 8 below) shows that the UK equity market has the highest exposure to fossil fuel reserves compared to other regional equity markets, although it should be noted that some of the largest UK companies with fossil fuel reserves are among the most progressive in terms of factoring climate risk into their long-term strategy. In each regional equity portfolio, the Fund has a lower exposure to fossil fuel reserves companies than the benchmark.

The Fund is exploring options to further embed climate-related risks and opportunities into its investment strategy.

c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Analysis has been carried out by Mercer for LGPSC to understand the extent to which the Fund's risk and return characteristics could come to be affected by a set of climate scenarios. This analysis was completed in 2020 on the Fund's assets at 31 July 2019. Given the long-term nature of the scenario analysis, this analysis will be carried out every two years. The analysis includes an estimation of the annual climate-related impact on returns and climate stress tests (to explore the potential impact of a sudden climate-related price movement). All asset classes are included in this analysis. The climate scenarios considered are 2°C, 3°C and 4°C above pre-industrial levels. Three asset allocations have been analysed:

- the actual asset allocation at 31 July 2019 (the reporting date used in Fund's first TCFD report);
- the strategic asset allocation benchmark at 31 July 2019 (the reporting date used in the Fund's first TCFD report); and
- an alternative strategic asset allocation which is a close proxy for the Fund's new final strategic asset allocation benchmark which will become effective on 1 January 2022.

Since 31 July 2019, the Fund has made significant progress towards its new final strategic asset allocation weightings, including further investment into sustainable infrastructure, and expects to complete the move to the new final strategic asset allocation benchmark in Q1 2022.

The results of the climate scenario analysis are shown below:

Table 2: Annualised climate change impact on portfolio returns to 2030 and 2050¹

Scenario	Timeline	Asset Allocation at 31 Jul-19	Strategic Asset Allocation at 31 Jul-19	Alternative Strategic Asset Allocation
2°C	2030	+0.15%	+0.25%	+0.72%
	2050	+0.02%	+0.08%	+0.36%
3°C	2030	0.02%	-0.01%	+0.03%
	2050	-0.07%	-0.06%	+0.01%
4°C	2030	-0.06%	-0.06%	-0.07%
	2050	-0.11%	-0.12%	-0.13%

■ ≤ -10 bps
■ > -10 bps, < 10bps
■ ≥ 10 bps

Key findings of the climate scenario analysis in relation to the alternative allocation are:

- A 2°C scenario would have a positive impact on the Fund’s returns considering both a timeline to 2030 and to 2050. This positive impact is boosted by the 29% allocation to Global Sustainable Equities in the alternative allocation.
- A 3°C scenario (which is in line with the current greenhouse gas trajectory) has a mildly positive impact on the Fund’s annual returns.
- A 4°C scenario would reduce the Fund’s annual returns, with most asset classes expected to experience negative returns.

The scenario analysis produces more positive relative returns for the alternative allocation under a 2°C and a 3°C scenario than the actual allocation, and the benchmark allocation, at 31 July 2019. Under a 4°C scenario, returns across all three scenarios are negatively impacted.

The scenario analysis supports the Fund’s ongoing transition to the new final strategic asset allocation benchmark from 1 January 2022.

¹ Extract from Mercer Limited’s (Mercer) report “Climate Change Scenario Analysis” prepared for and issued to LGPS Central Limited for the sole purpose of undertaking climate change scenario analysis for Derbyshire Pension Fund. Other third parties may not rely on this information without Mercer’s prior written permission. The findings and opinions expressed are the intellectual property of Mercer and are not intended to convey any guarantees as to the future performance of the investment strategy. Information contained herein has been obtained from a range of third-party sources. Mercer makes no representations or warranties as to the accuracy of the information and is not responsible for the data supplied by any third party.

It should be noted that the climate scenario analysis only forecasts the climate related impact on relative returns, and does not take account of any other factors which may have an impact including economic and market conditions; political and geopolitical events; monetary policy conditions, etc. It is also important to note that the asset allocation required to capture the upside under one scenario, may have a negative impact under an alternative scenario.

Climate stress testing analysis suggests that should a 2°C scenario suddenly be priced in by the market, the Fund could benefit in terms of financial returns, whereas the opposite is true should a 4°C scenario be priced in by the market.

Table 3: Impacts to returns based on the sudden pricing in of plausible climate-scenarios²

Stress Test	2°C Shock	4°C Shock
Actual Asset Allocation 31 July 2019	+0.8%	-2.0%
Strategic Asset Allocation Benchmark 31 July 2019	+1.8%	-2.4%
Alternative Final Strategic Asset Allocation Benchmark	+7.7%	-2.9%

Translating climate scenario analysis into an investment strategy is a challenge as: there is a wide range of plausible climate scenarios; the probability of any given scenario is hard to determine; and the best performing sectors and asset classes in a 2°C scenario tend to be the worst performers in a 4°C and vice versa. Despite the challenges, the Fund believes it is worthwhile procuring climate-related research to support robust decision making.

Risk Management

TCFD Recommended Disclosure

a) Describe the organisation’s process for identifying and assessing climate-related risks.

The Pension Fund seeks to identify and assess climate-related risks at the total portfolio level and at the individual asset level. Both ‘top-down’ and ‘bottom-up’ analysis has been received from LGPSC. The tools and techniques for assessing climate-related risks in investment portfolios are an

² Extract from Mercer Limited’s (Mercer) report “Climate Change Scenario Analysis” dated prepared for and issued to LGPS Central Limited for the sole purpose of undertaking climate change scenario analysis for Derbyshire Pension Fund. Other third parties may not rely on this information without Mercer’s prior written permission. The findings and opinions expressed are the intellectual property of Mercer and are not intended to convey any guarantees as to the future performance of the investment strategy. Information contained herein has been obtained from a range of third-party sources. Mercer makes no representations or warranties as to the accuracy of the information and is not responsible for the data supplied by any third party.

imperfect but evolving discipline; the Fund aims to use the best available information to assess climate-related threats to investment performance.

As far as possible climate risks are assessed in units of investment return, in order to compare with other investment risk factors.

As a largely externally managed pension fund, the identification and assessment of climate-related risks is also the responsibility of individual fund managers appointed by the Fund. Existing fund managers are monitored on a regular basis to review the integration of climate risks into the portfolio management, and to understand their engagement activities.

Stewardship activity is conducted with investee companies by the Pension Fund. The importance of shareholder voting as a stewardship tool is valued and the services of a specialist third party voting service provider have been retained. Historically, the Fund executed voting activities directly but following the transition of the vast majority of its direct equity holdings into pooled products, voting is executed by the Fund's appointed fund managers (see below).

The Fund has several selected stewardship partners including LGPSC, Hermes EOS, and Local Authority Pension Fund Forum (LAPFF) (see Table 4 below). A Climate Stewardship Plan has been developed based on the results of the LGPSC Climate Risk Report to focus the Fund's engagement resources.

TCFD Recommended Disclosure





b) Describe the organisation's process for managing climate-related risks.

The Fund manages risk by prioritising those risks which it believes will have the biggest impact on the Pension Fund. For climate-related risks, this will likely depend on analyses including climate scenario analysis and carbon risk metrics. The Pension Fund's approach to climate risk management is set out in detail in the Fund's Climate Strategy.

Stewardship activities will remain an important aspect of the Pension Fund's approach to managing climate risk. All investee companies are expected to manage material risks, including climate change, and the Fund believes that climate risk management can be meaningfully improved through focussed stewardship activities by investors.

Either through its own membership, or through LGPSC's membership, the Fund has several engagement partners that engage investee companies on climate risk.

Table 4: The Fund's Stewardship Partners

Organisation	Remit
	<p>Specialist third party voting service provider. ISS' research includes recommendations on casting votes on climate-related shareholder resolutions.</p>
	<p>The Fund is a 1/8th owner of LGPSC.</p> <p>Climate change is one of LGPSC's stewardship themes, with quarterly progress reporting available on the website.</p> <p>The Responsible Investment Team at LGPSC engages companies on DPF's behalf, including via the Climate Action 100+ initiative.</p>
	<p>Hermes EOS is engaged by LGPSC to expand the scope of the engagement programme, especially to reach non-UK companies.</p>
	<p>DPF is a long-standing member of the LAPFF. LAPFF conducts engagements with companies on behalf of local authority pension funds.</p>

The Pension Fund recognises that outcomes of engagement are of greater importance than the volume of engagement. The outcomes of engagement activities of the Fund's stewardship partners are published on each provider's website.

The instruction of shareholder voting opportunities is an important part of climate stewardship. Following the transition of the vast majority of its direct equity holdings into pooled products, voting activity is largely carried out by external fund managers.

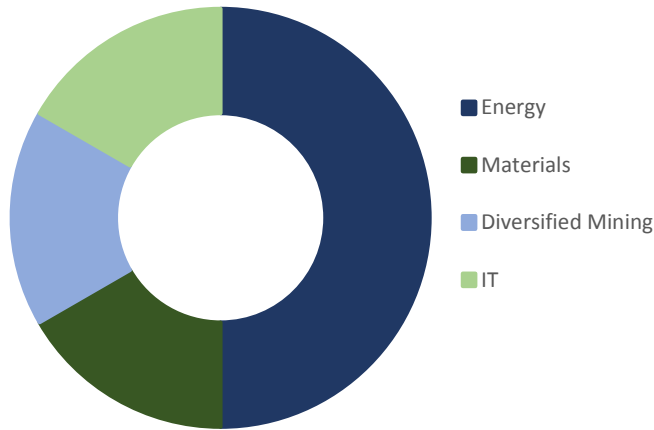
Legal & General Investment Management (LGIM) currently manages a sizeable proportion of the Fund's assets on a passive basis. The votes in respect of these assets are cast by LGIM. LGIM has a robust approach to incorporating climate change factors in its voting decisions, including on specific climate-related shareholder resolutions. The Pension Fund's direct US Equity portfolio is managed by an external manager, and the manager is responsible for casting the votes in line with their policies, which include specific consideration of climate change factors.

The stewardship and voting activities of the Fund's largest investment managers are reported to Committee on a quarterly basis.

Based on analysis prepared by LGPSC, the Pension Fund has developed a Climate Stewardship Plan which, alongside the wide-scale engagement activity undertaken by LGPSC, Hermes EOS, and LAPFF, will include

targeted engagement at investee companies of particular significance to the Fund's portfolio.

Figure 6: Sectors to be included in proposed Climate Stewardship Plan



The forward Climate Stewardship Plan comprises BP; CRH; Gazprom PA; Rio Tinto; Shell; and Taiwan Semiconductor Manufacturing.

In order to support and improve the quality of data available to investors to assess and monitor climate-related risks, the Fund, through its pooling company, LGPS Central Limited, contributes to the funding of the Transition Pathway Initiative (TPI). The TPI framework evaluates companies based on their climate risk management quality and carbon performance in terms of alignment of the Paris Agreement.

The climate risk management quality score includes an assessment of policies, strategy, risk management and targets. The TPI award a quality level to each company assessed under the framework, ranging from Level 0 – unaware of (or not acknowledging climate change) to Level 4* - satisfies all management quality criteria.

In terms of the climate risk management quality score, which covered 288 of companies, the average TPI quality score was 2.7. In terms of carbon performance and alignment to the Paris Agreement, which covered 194 companies, TPI assessed that 15% of the companies covered were below 2°C aligned; 5% were 2°C aligned; 16% had Paris pledges; 4% had international pledges; 45% were not Paris aligned; and 15% related to companies with no or unsuitable disclosure.

TCFD Recommended Disclosure

c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.

Both 'mainstream' risks and climate-related risks are discussed by the Pensions and Investments Committee. While specific macro-economic risks are not usually included in isolation, climate risk is included as a separate risk on the Fund's Risk Register.

Climate risk is further managed through the Fund's Climate Strategy and the Climate Stewardship Plan.

Metrics and Targets

TCFD Recommended Disclosure

a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.

The Fund received its first report covering the carbon risk metrics of its listed equities portfolios in February 2020. This report set out the carbon metrics of the listed equity portfolio at 31 July 2019 (the 2020 benchmark). A subsequent report was received in November 2021 covering the listed equity portfolio at 31 March 2021, together with the carbon metrics in respect of the Fund's investment grade bond investments at the same date. The poor availability of data in asset classes other than listed equities and investment grade bonds prevents a more complete analysis at this time.

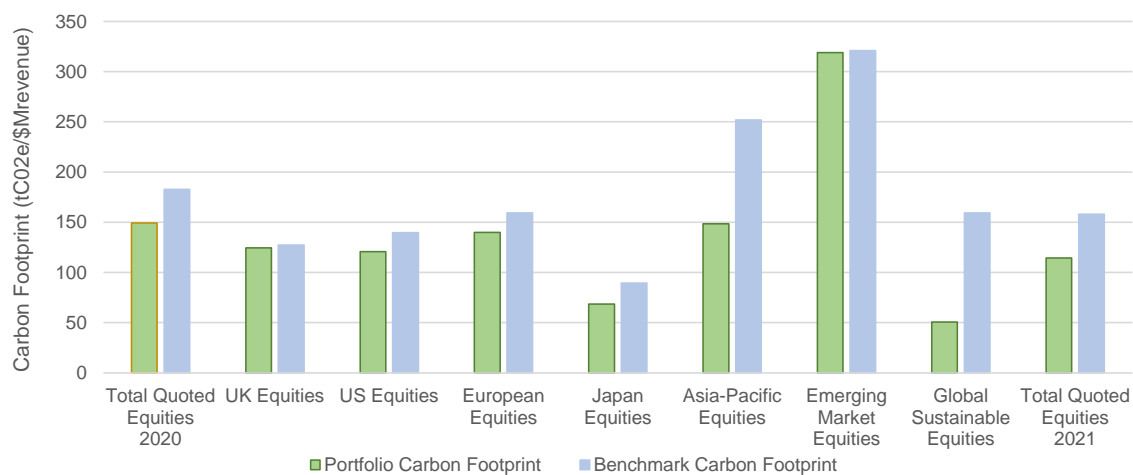
Carbon risk metrics aid the assessment of potential climate-related risks to which the Fund is exposed, and help to identify areas for further risk management, including company engagement and fund manager monitoring. The Fund additionally monitors stewardship data (see above).

TCFD Recommended Disclosure

b) Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. TCFD Guidance: *Asset owners should provide the weighted average carbon intensity, where data are available or can be reasonably estimated, for each fund or investment strategy.*

In line with the TCFD guidance, the carbon footprints of the Fund’s listed equity portfolios³ at 31 March 2021, which represented 52.9% of the Pension Fund’s total investment assets at that date, are set out below:

Figure 7: Portfolio Carbon Footprints in each regional equity portfolio⁴



Note: The blended benchmark comprises the underlying regional benchmarks, weighted in proportion to the current GBP amount in each equity region

Figure 7 shows that compared to the weighted benchmark, the Fund’s Total Quoted Equities portfolio is around 27% less carbon intensive than the benchmark, and 37% lower than the 2020 Benchmark. This means that, on average, for every \$m of economic output companies produce, the Fund’s investee companies emit 27% fewer GHG emissions than the companies in the benchmark. Each regional equity portfolio also has a lower portfolio carbon footprint than its regional benchmark.

In addition, with the exception of Emerging Market Equities, each regional equity portfolio has a lower than benchmark weight in companies with fossil fuel reserves (the Total Quoted Equities portfolio has around 25% less weight in fossil fuel companies than the blended benchmark - Figure 8 below, 44% lower than the 2020 Benchmark). The Fund’s weight in thermal coal reserves was also 29% lower than the weighted benchmark at 31 March 2021 – Figure 9 below).

The carbon footprint analysis above includes Scope 1 and 2 emissions (those emitted either directly by a company or indirectly through its procurement of electricity and steam) but does not include Scope 3 emissions (those emitted by a company’s suppliers and customers). This means that for some companies the assessment of their carbon footprint could be considered an

³ Analysis undertaken on the listed equities portfolios with holdings data as of 31 March 2021.

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‘understatement’. Examples could include an online retailer whose logistics emissions are not included in Scope 1 or 2.

The methodology used to calculate the weight in fossil fuel reserves and thermal coal reserves includes the full weight of any company which has either fossil fuel reserves, thermal coal reserves or derives more than 30% of their energy mix from coal power, regardless of how much those activities/reserves represent of the company’s total operations.

Figure 8: Exposure to companies with fossil fuel reserves in each regional equity portfolio⁵

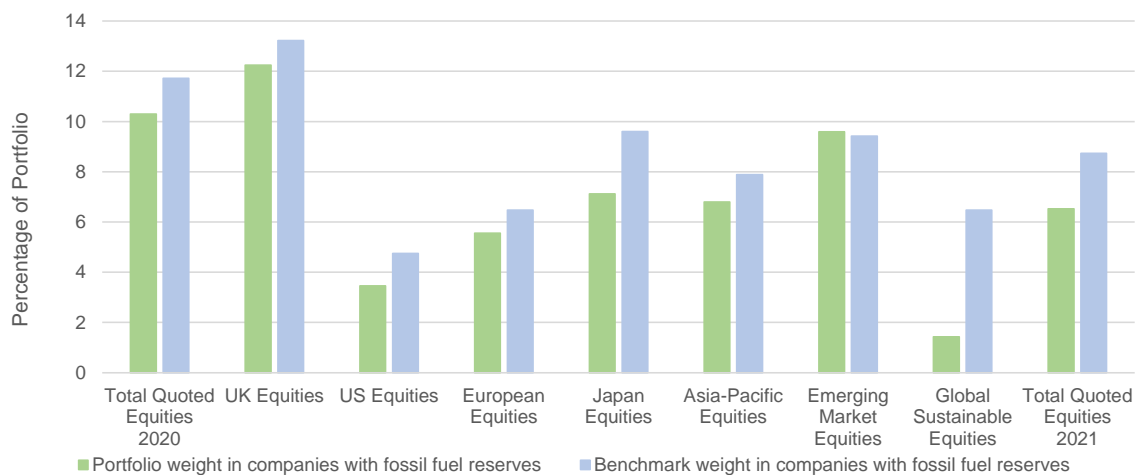


Figure 9: Exposure to thermal coal reserves in each regional equity portfolio⁶

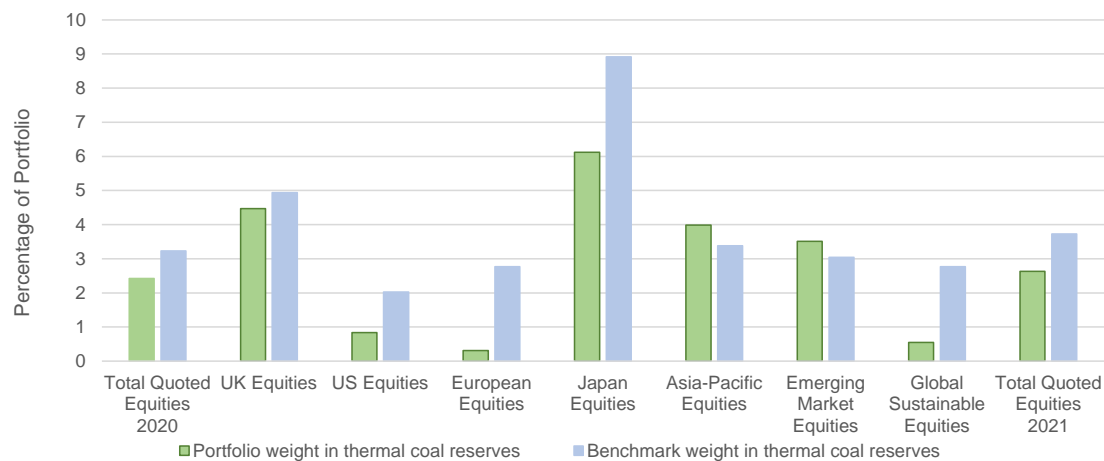


Figure 10 below indicates that the Fund’s Total Quoted Equities portfolio has around a 12% lower exposure to clean technology than the weighted portfolio benchmark. This measure should be viewed with some caution as there appears to be a moderate positive correlation in the dataset between sectors that have a high carbon intensity (or a higher weight in fossil fuel reserves) and those that have a higher weight in clean technology. For example,

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Utilities and Oil & Gas are the sectors with the third and fourth highest weight in clean technology. This correlation means that it may be difficult to have a diversified portfolio that is simultaneously carbon efficient, is underweight fossil fuels, and overweight clean technology. The analysis takes no account of the Fund's unquoted onshore & offshore, solar and hydro renewable energy infrastructure investments. These investments & commitments were in excess of £275m at 31 March 2021.

Figure 10: Exposure to clean technology in each regional equity portfolio⁷

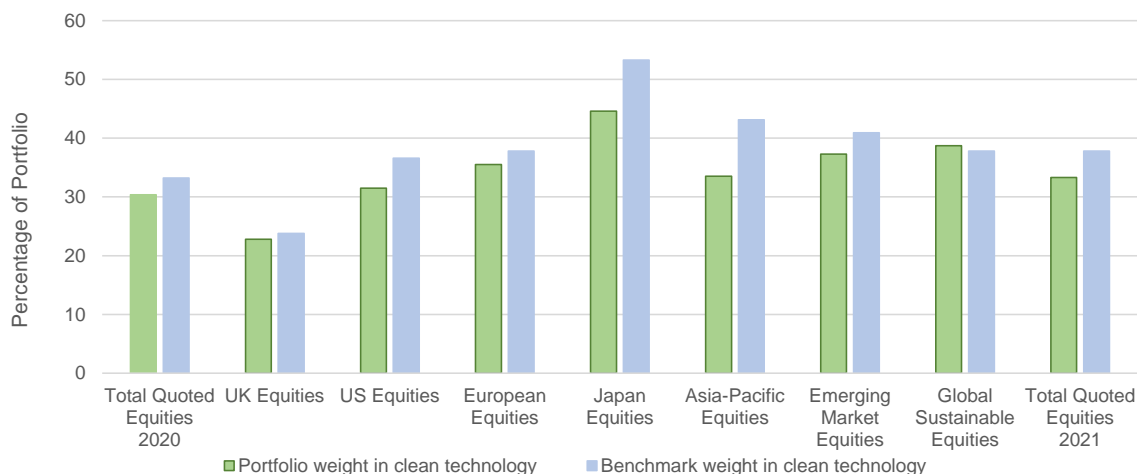


Table 5 below sets out the carbon footprint in respect of the Pension Fund's investment grade bond investments at 31 March 2021, which represented 6.1% of total investment assets at that date.

Table 5: Carbon Metrics in respect of the Fund's Investment Grade Bond Portfolio⁸

Carbon Metric	Portfolio	Benchmark	% Variance
Carbon Footprint	135.9	170.0	(20.1)

The Fund's investment grade bonds portfolio is around 20% more carbon efficient than the benchmark.

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TCFD Recommended Disclosure

c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

The Pension Fund developed a standalone Climate Strategy which was approved by Committee in November 2020 and sets out the Fund's approach to addressing the risks and opportunities related to climate change.

Portfolio-wide 'top down' targets are an important means to set direction and appropriate ambition for an investment strategy towards net zero, and to monitor whether that strategy is achieving expected outcomes. However, a focus on just a single top down portfolio emissions reduction target can incentivise a shift of assets within a portfolio from high to already lower carbon assets and sectors, rather than driving additional 'real world' emissions reductions from increasing investments in climate solutions that contribute to the achievement of the net zero goal. As a result, the Fund will aim to:

- Reduce the carbon footprint (Scope 1 & 2) of the Fund's listed equity portfolio by at least 30% relative to the weighted benchmark in 2020 by the end of 2025; and
- Invest at least 30% of the Fund portfolio in low carbon & sustainable investments by the end of 2025.

The table below, shows the progress to date in respect of the two targets:

Target	Target by end of 2025	Actual at 31 March 2021
(1) Reduce the carbon footprint (Scope 1 & 2) of the Fund's listed equity portfolio by at least 30% relative to the weighted benchmark in 2020 by the end of 2025	(30%)	(37%)
(2) Invest at least 30% of the Fund portfolio in low carbon & sustainable investments by the end of 2025	30%	19%

The Fund has already achieved the first target and expects to make further progress on this measure and significant progress in respect of the second target in 2021-22 as part of the ongoing move to the new final strategic asset allocation benchmark. It is expected that additional material progress will need to be supported by emissions reductions by companies in the Fund's investment universe in order to avoid the risk of unbalancing the equity portfolio and limiting diversification.

It should be noted that any improvement in the consistency, comparability and quality of climate-related data is likely to have an impact on the Fund's carbon metrics relative to the targets noted above.

The targets will be reviewed in 2023, and at least every three years thereafter, and are expected to increase in line with the stated ambition of achieving a portfolio of assets with net zero carbon emissions by 2050. The impact of the significant ongoing transitions on performance and risk within the investment portfolio will be closely monitored and assessed.

Appendix 1

TCFD Recommendations for Asset Owners

Governance

Recommended Disclosure (a) Describe the board's oversight of climate-related risks and opportunities.

Recommended Disclosure (b) Describe management's role in assessing and managing climate-related risks and opportunities.

Strategy

Recommended Disclosure (a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.

Recommended Disclosure (b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.

Recommended Disclosure (c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Risk Management

Recommended Disclosure (a) Describe the organisation's processes for identifying and assessing climate-related risks.

Recommended Disclosure (b) Describe the organisation's processes for managing climate-related risks.

Recommended Disclosure (c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.

Metrics and Targets

Recommended Disclosure (a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.

Recommended Disclosure (b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Recommended Disclosure (c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Important Information

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