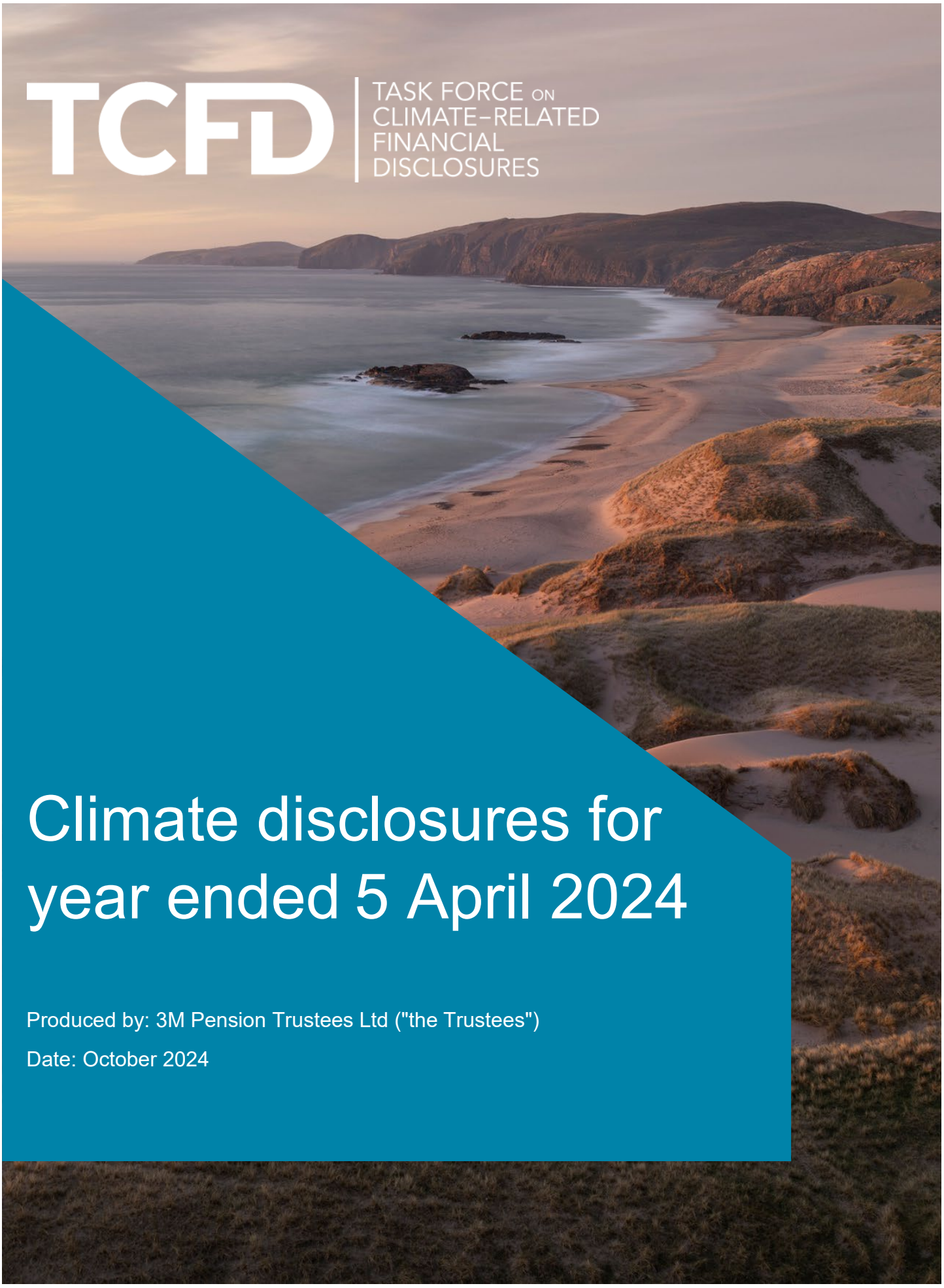
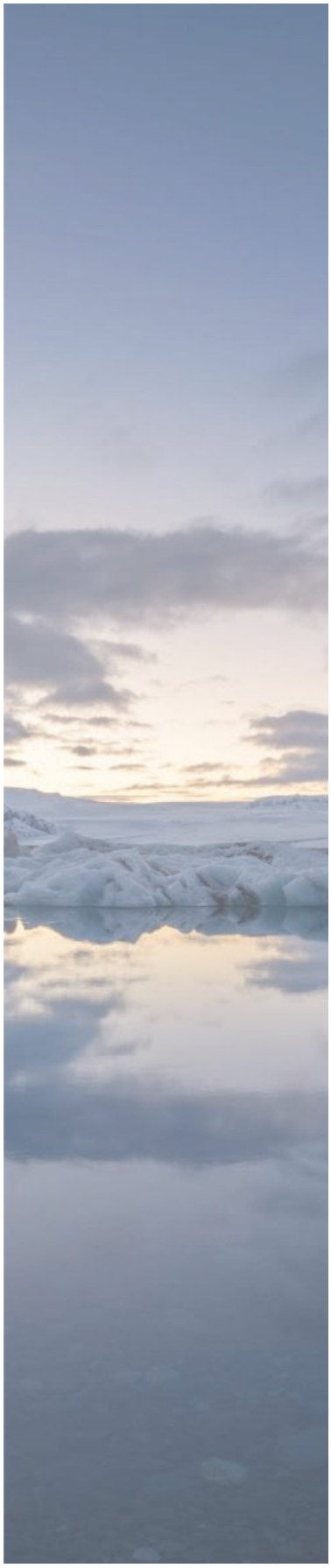


Climate disclosures for year ended 5 April 2024

Produced by: 3M Pension Trustees Ltd ("the Trustees")

Date: October 2024

Introduction



Climate change is affecting the planet, causing extreme weather events, impacting crop production and threatening Earth's ecosystems. Understanding the impact of climate change and the 3M Pension & Life Assurance Scheme's (the "Scheme") vulnerability to climate-related risks will help us to mitigate the risks and take advantage of any opportunities.

UK regulations require trustees of pension schemes with more than £1bn in assets to meet certain climate governance requirements and publish an annual report on their scheme's climate-related risks.

Better climate reporting should lead to better-informed decision-making on climate-related risks. And on top of that, greater transparency around climate-related risks should increase accountability and provide decision-useful information to investors and beneficiaries.

This report is the annual climate disclosures for the Scheme for the year ending 5 April 2024. This report has been prepared by the Trustees in accordance with the regulations set out under The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 (the "Regulations") and is aligned to the Taskforce for Climate-related Financial Disclosures ("TCFD") framework.

The four elements covered in the report are:

Governance:	The Scheme's governance around climate-related risks and opportunities.
Strategy:	The potential impacts of climate-related risks and opportunities on the Scheme's strategy and financial planning.
Risk Management:	The processes used to identify, assess and manage climate-related risks.
Metrics and Targets:	The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

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Executive summary

This report sets out the Trustees' approach to assessing, monitoring, and mitigating climate-related risks, in the context of the Trustees' broader regulatory and fiduciary responsibilities to the Scheme's members.

The Trustees have considered carefully the recommendations set out by the Taskforce on Climate-Related Financial Disclosures ("TCFD") and the Trustees will use them to continue to assess, monitor and mitigate climate-related risks on behalf of the Scheme's members.

This report has been prepared in accordance with the regulations set out under "The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021" and provides a status update on how the Scheme is currently aligning with each of the four elements set out in the regulations (and in line with the recommendations of the TCFD).

Overview of the Scheme

The Scheme invests across a range of assets, and within this report we consider the impact of climate related risks on those asset classes and the investment strategy, as well as the potential impact on the funding of the Scheme.

Governance

The Trustees believe that the risks associated with climate change can have a materially detrimental impact on the Scheme's investment returns. The Trustees therefore consider climate change risk when making investment decisions. Where possible and appropriate, the Trustees will also seek to pursue climate related investment opportunities.

Strategy

The Trustees have carried out a qualitative risk assessment on each of the Scheme's asset classes. From this, the Trustees have identified which climate-related risks and opportunities could have a material impact on the Scheme. Over time, there is a general expectation that the impact of physical and transition risks will increase in frequency and severity.

The Trustees have also undertaken climate change scenario analysis to better understand the impact climate change could have on the Scheme's assets and liabilities. From the analysis, the Trustees concluded that the investment strategy is resilient to climate change under various scenarios and time periods considered.

Risk Management

The Trustees, in conjunction with their advisers, have established a process to identify, assess and manage the climate-related risks that are relevant to the Scheme. This is part of the Scheme's wider risk management framework and is how the Trustees monitor the most significant risks to the Scheme, in their efforts to achieve appropriate outcomes for members. The Trustees have also undertaken a review of the capability and approach to climate risk management of each of their investment managers.

Metrics and Targets

The Trustees gathered the carbon metrics from their investment managers, supported by Aon. The Trustees have, as far as they are able, collated information on four climate-related metrics for the Scheme:

- Total Greenhouse Gas (GHG) Emissions.
- Carbon Footprint.
- Data Quality.
- Portfolio Alignment Metric (portion of assets with net zero or Paris-aligned targets).

The reporting metrics were chosen as a combination of the requirements of the Regulations and through discussion with the Trustees' investment advisers.

The Trustees have also set the following target for the Scheme:

Improve portion of equity and fixed income assets that are Science Based Targets initiative ("SBTi") aligned to 35% by 2028.

The Trustees reviewed the metrics and the targets and believe they remain appropriate.

Following completion of the report, the Trustees were reassured that the various analyses showed that the potential financial impact of climate change on the Scheme is not thought to be significant. The Trustees have spent considerable time and effort to monitor the TCFD framework and will continue to monitor the potential impacts of climate change on the Scheme. The Trustees hope you enjoy reading this report and understanding more about how they are managing climate-related risks and opportunities within the Scheme.

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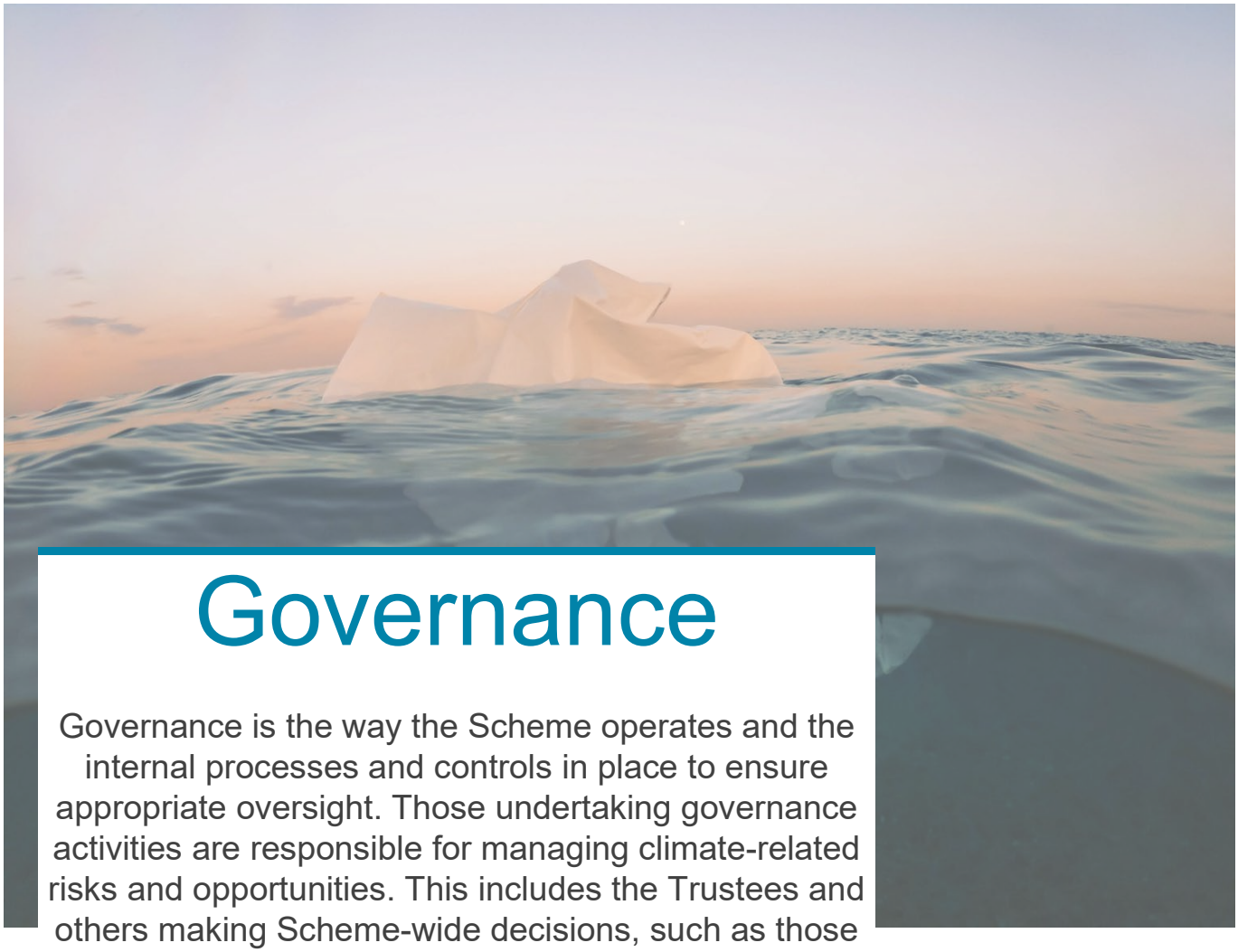
on behalf of the 3M Pension Trustees Ltd.



Governance

Governance is the way the Scheme operates and the internal processes and controls in place to ensure appropriate oversight. Those undertaking governance activities are responsible for managing climate-related risks and opportunities. This includes the Trustees and others making Scheme-wide decisions, such as those relating to the investment strategy or how it is implemented, funding, and the ability of the sponsoring employer to support the Scheme and its liabilities.

The Scheme's governance

The Trustees of the Scheme are ultimately responsible for overseeing all strategic matters related to the Scheme. This includes the governance and management frameworks relating to environmental, social and governance ("ESG") considerations and climate-related risks and opportunities.

The Trustees have discussed and agreed their climate-related beliefs and overarching approach to managing climate change risk. These are set out in the Scheme's Statement of Investment Principles ("SIP"), which is reviewed and (re)approved annually by the Trustees.

Climate Mission Statement

The Trustees' primary concern is to act in the best financial interest of the Scheme and its beneficiaries ensuring that the benefits promised can be paid and seeking a level of financial return that is consistent with a prudent and appropriate level of risk. This includes the risk that environmental factors, including climate change, may negatively impact the value of the investments held if not understood and evaluated properly.

Through the actions of the Scheme's appointed investment managers and advisers, an engagement-led approach allows the Trustees to be active participants in improving corporate behaviour, upholding high standards of corporate governance, and encouraging responsible ownership practices.

The Trustees believe that the risks associated with climate change can have a materially detrimental impact on the Scheme's investment returns within the timeframe that the Trustees are concerned about (see Strategy Section) and, as such, the Trustees seek to integrate assessments of climate change risk into their investment decisions.

Furthermore, the Trustees believe that climate-related factors are likely to create investment opportunities. Where possible, and where appropriately aligned with the Trustees' strategic objectives and fiduciary duties, the Trustees will seek to pursue such opportunities through their investment portfolio.

Trustees update

During the Scheme year, the Trustees received training recapping the reporting disclosures outlined within the TCFD framework.

The purpose of this training session was to better equip the Trustees ahead of the preparation of their second TCFD report.

The Trustees are also responsible for the implementation and day-to-day oversight of the Scheme's climate change risk management approach and will monitor and review progress against that approach on a regular basis.

The Trustees receive training on an annual basis (or more frequently if required) on climate-related issues to ensure that they have the appropriate knowledge and understanding to support good decision-making.

How the Trustees work with their advisers

The Trustees expect their advisers and investment managers to bring important climate-related issues and developments to their attention in a timely manner.

The Trustees also expect their advisers and investment managers to have the appropriate knowledge on climate-related matters to advise them effectively. Therefore, the Trustees review their adviser objectives to ensure advisers have appropriate climate capability. In the case of the investment consultant, the Trustees carry out this review once a year, as part of the annual review of their investment consultant's wider objectives.

Investment consultant – The Trustees investment adviser, 3M BFIC is supported by Aon to provide strategic and practical support to the Trustees in respect of the management of climate-related risks and opportunities and ensuring compliance with the recommendations set out by the TCFD. This includes the provision of regular training and updates on climate-related issues and climate change scenario modelling to enable the Trustees to assess the Scheme's exposure to climate-related risks.

Scheme Actuary – The Scheme Actuary, Aon, will help the Trustees consider climate change risk when setting the Scheme's funding assumptions.

As part of the Trustees' assessment of their advisers' climate-related competence, they will seek to understand how climate-related factors affect the funding assumptions used for the Scheme, and which sources of expertise the Scheme Actuary has used in determining the appropriate assumptions to use.

Covenant adviser – The Trustees take covenant advice from Aon to help them understand the potential impact of climate change risk (alongside other risks) on the covenant of the Scheme.

As part of covenant advice sought, the Trustees seek to understand whether climate-related factors could materially affect the covenant over time and, if so, how these might impact the Scheme's strategy. The Trustees note that 3M ("the Company") has published its sustainability policies together with its annual Global Impact Report.

Trustees update

During the Scheme year, the Trustees set out clear expectations to their advisers around the need to bring important and relevant climate-related issues and developments to their attention in a timely manner.

Strategy

It is crucial to think strategically about the climate-related risks and opportunities that will impact the Scheme if the Trustees are to stand a chance of mitigating the effects of climate change.

Assessing the climate-related risks and opportunities the Scheme is exposed to is key to understanding the impact climate change could have on the Scheme in the future.

What climate-related risks are most likely to impact the Scheme?

The Trustees carried out a qualitative risk assessment of the asset classes the Scheme is invested in. From this, the Trustees identified which climate-related risks could have a material impact on the Scheme. The Trustees also identified suitable climate-related opportunities.

Given the number of asset classes used by the Scheme, the Trustees have undertaken a reasonable and appropriate approach to analyse the climate-related risks of each asset class. To help with their assessment, they surveyed their investment managers asking them to rate the climate-related risks and opportunities they believe their funds are exposed to.

The Scheme's investments

The Scheme's investment portfolio is diversified across a range of different asset classes including equities, fixed income and alternatives.

The Scheme's asset allocation is as follows:

Asset Class	LDI	Equities	Fixed Income	Alternatives	Cash
Strategic Allocation	27%	5%	62%	5%	1%

Asset allocations as at 31 Dec 2023

Cash has been excluded from the below assessment as climate-related risks are not considered material for cash assets.

How the risk assessment works

Risk categories

In the analysis, the climate-related risks have been categorised into physical and transition risks.

Transition risks are associated with the transition towards a low-carbon economy.

Physical risks are associated with the physical impacts of climate change on companies' operations.

Ratings

The analysis uses a RAG rating system where:

Red denotes a high level of financial exposure to a risk.

Amber denotes a medium level of financial exposure to a risk.

Green denotes a low level of financial exposure to a risk.

Time horizons

The Trustees assessed the climate-related risks and opportunities over multiple time horizons considering the liabilities of the Scheme and its obligations to pay benefits. The Trustees decided the most appropriate time horizons for the Scheme are:

short term: 1-3 years
medium term: 4-10 years
long term: 11-20 years

More details about transition and physical risks can be found in the Appendix.

Climate-related risk assessment

The Trustees have taken a reasonable and appropriate approach to analyse the climate-related risks of each asset class in which the Scheme invests by obtaining information from its investment managers. The Trustees' ability to influence how each manager incorporates climate related issues varies depending on the mandate and the types of underlying assets within each mandate.

Based on the analysis completed:

- The managers who engaged with the process provided an insightful commentary on and assessment of climate risks.
- There were significant differences in the way the managers assessed climate risk, which may represent methodological rather than real differences in risk exposure.
- At the time of writing some of the investment managers have been unable to provide the information requested to support the Trustees' assessment. The Trustees are engaging with the managers (via their advisers) to encourage them to better support the Trustees' understanding of climate risks. The Trustees will consider engaging with the managers further if their expectations are still not met in due course.

Below is a summary of the assessment undertaken by the Trustees regarding how their investment managers are incorporating climate risks and opportunities in the asset classes in which the Scheme invests, excluding cash. Each table is associated with commentary provided by the managers.

Equities – 5% of portfolio

	Physical Risks		Transitional Risks			
	Acute	Chronic	Regulatory	Technology	Market	Reputation
Short term	Green	N/A	Amber	Amber	Red	Red
Medium term	Green	N/A	Amber	Amber	Red	Red
Long term	Green	N/A	Amber	Amber	Red	Red

Source: Investment managers, Aon. Data as at 5 April 2023.

Transition risks are the main climate-related risks associated with global equities. Regulatory changes (e.g., carbon taxes, increased compliance costs), market factors (e.g., increased raw material costs, changing consumer behaviour), and reputation risks are viewed as key risks that could negatively impact global equities.

Fixed Income (including LDI) – 89% of portfolio

	Physical Risks		Transitional Risks			
	Acute	Chronic	Regulatory	Technology	Market	Reputation
Short term	Green	Green	Amber	Green	Green	Green
Medium term	Amber	Amber	Amber	Amber	Amber	Amber
Long term	Red	Amber	Red	Red	Red	Red

Source: Investment managers, Aon. Data as at 5 April 2023.

In the short term, the managers see minimal risk in relation to the transition to a low-carbon economy, however overall, managers expect risks to intensify in the long-term as an increased awareness around the physical risks of climate change and its consequences happens within the industry.

In the near term, the transition risks are far less evident for emerging markets assets and entities, where solid legislation and regulation around greenhouse gas ("GHG") emissions are generally not yet present. Substitution and transition to cleaner energy requires alternatives and these are still in the early stages of development. However, the risks are anticipated to be more pronounced in the future, as efforts to reduce climate change are embraced globally and not just in the developed world.

Alternatives – 5% of portfolio

	Physical Risks		Transitional Risks			
	Acute	Chronic	Regulatory	Technology	Market	Reputation
Short term	Green	Amber	Amber	Green	Green	Green
Medium term	Green	Amber	Amber	Amber	Amber	Amber
Long term	Green	Amber	Amber	Amber	Amber	Amber

Source: Investment managers, Aon. Data as at 5 April 2023.

Real Estate assets are likely to be impacted by a combination of physical and transition risks. Physical risks arising from climate change could lead to property damage and material financial impacts, particularly in geographically vulnerable areas.

Transition risks, such as tenants preferring 'green' buildings and therefore making some buildings effectively 'un-rentable', are significant climate related issues. Other examples such as energy efficiency regulations, increases in energy costs, carbon taxes, and valuation considerations are expected risks which could lead to increased costs.

Climate-related opportunities

The Scheme's managers identified some climate-related opportunities which are summarised below. The Trustees and their advisers are liaising with their investment managers to understand the developments in this area which may be of benefit to the Scheme. These opportunities are valid over the short-, medium- and long-term time horizons:

Equity	▪ Environmental protection ▪ Business services ▪ Global empowerment
Fixed Income	▪ Clean transportation ▪ Renewable energy ▪ Pollution prevention
Alternatives	▪ Demand for green building from tenants and investors ▪ Sufficient capital expenditure on existing assets ▪ Renewable energy (e.g. rooftop solar panels) ▪ Living and natural resources ▪ Energy efficiency

Source: Investment managers

How resilient is the Scheme to climate change?

The Trustees, supported by external advisers, have undertaken climate change scenario analysis to better understand the impact climate change could have on the Scheme's assets and members' pension savings

The analysis looks at three climate change scenarios. Each scenario considers what might happen to the Scheme when transitioning to a low carbon economy under different temperature-related environmental conditions. The Trustees have chosen these scenarios because they believe that they provide a reasonable range of possible climate change outcomes. These scenarios were developed by Aon and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty.

The Trustees established a "base case" scenario against which the three climate change scenarios are compared.

The climate scenarios intend to illustrate the climate-related risks the Scheme is currently exposed to, highlighting areas where risk mitigation could be achieved through changing the investment portfolio.

Other relevant issues such as governance, costs and implementation (including manager selection and due diligence) must be considered when making changes to the investment strategy.

Investment risk is captured in the deviance from the base case scenario, but this is not the only risk that the Scheme/members face. Other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

	Temperature rise by 2100	Description
No transition	**4ºC**	No further action is taken to reduce GHG emissions leading to significant global warming.
Disorderly transition	**<3ºC**	Limited action is taken and insufficient consideration is given to sustainable long-term policies to manage global warming effectively.
Orderly transition	**1.3 ºC - 2ºC**	Immediate and coordinated action to tackle climate change is taken using carbon taxes and environmental regulation.

Trustees update

Under the Regulations, climate scenario analysis must be carried out at least every 3 years, with an annual review in interim years. Circumstances which may require the climate scenario analysis to be re-done may include, but are not limited to:

- a significant/material change to the investment and/or funding strategy; or
- the availability of new or improved scenarios or modelling capabilities or events that might reasonably be thought to impact key assumptions underlying scenarios.

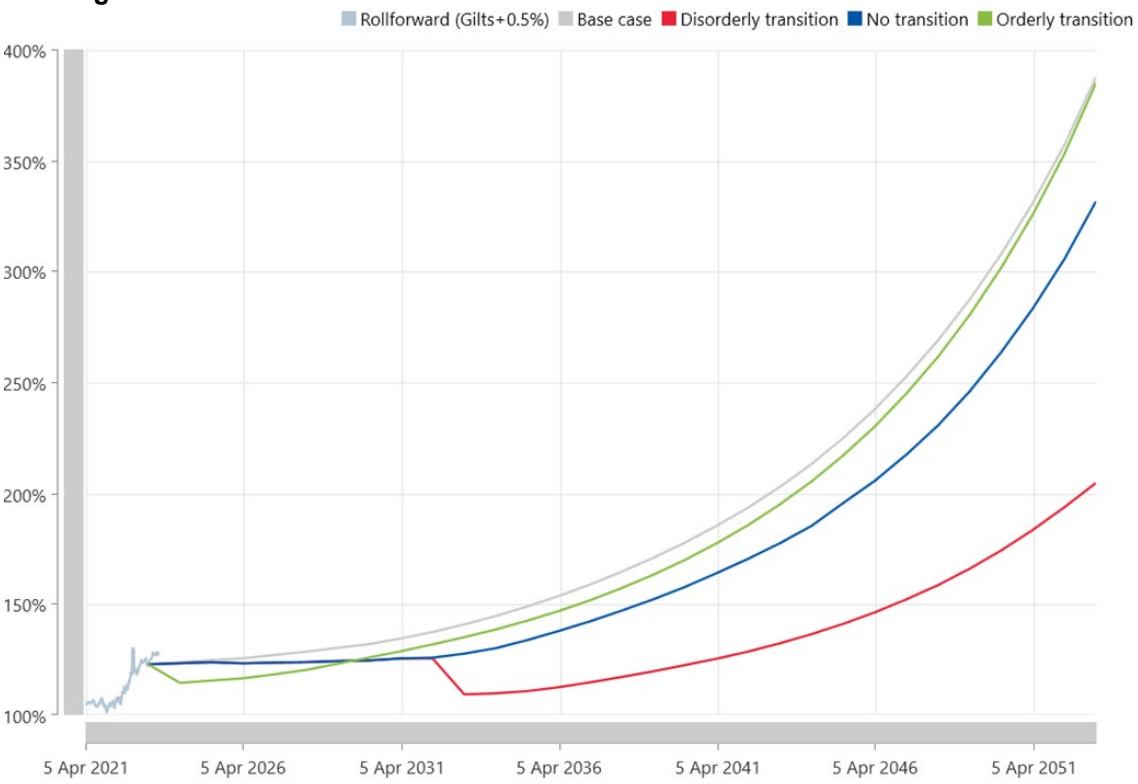
The Trustees reviewed the scenario analysis completed as at 31 March 2023 and they are comfortable that the analysis remains appropriate for this year's report. Although inflation expectations have significantly changed since the analysis was carried out, the Trustees do not expect this to materially change the results of the analysis given the high level of inflation hedging in place. There have been no significant changes to the investment strategy, the liability profile/membership of the Scheme or the modelling techniques, and there has been no significant shift in policy implementation to tackle climate change or change to asset data availability.

Impact Assessment

The Scheme's investment portfolio exhibits reasonable resilience under all of the climate scenarios. This is due to high levels of hedging against changes in interest rates and a low-risk growth strategy.

The worst-case scenario for the Scheme is the disorderly transition. Although initially the funding level improves in line with the base case, after 10 years the funding level deteriorates sharply. This leaves the Scheme materially worse off relative to the base case, however it remains well over 100% funded on the gilts +0.5% basis.

Funding level scenario under each climate scenario



Source: Aon. Scenario projections as at 31 March 2023.

Modelling limitations

Please refer to the Appendix for further details in relation to the assumptions used for the scenario analysis and its limitations.

Risk management

The Trustees must have processes to identify, assess and manage the climate-related risks that are relevant to the Scheme and these must be integrated into the overall risk management of the Scheme.

Reporting on their risk management processes provides context for how the Trustees think about and address the most significant risks to their efforts to achieve appropriate outcomes for members.

Process for identifying and assessing climate-related risks

The Trustees have established a process to identify, assess and manage the climate-related risks that are relevant to the Scheme. This is part of the Scheme's wider risk management framework and is how the Trustees monitor the most significant risks to the Scheme in their efforts to achieve appropriate outcomes for members.

Qualitative assessment

A qualitative assessment of climate-related risks and opportunities which is prepared by the Trustees' investment adviser and reviewed by the Trustees.

Quantitative analysis

Climate scenario analysis, which is provided by the Trustees' investment adviser and reviewed by the Trustees.

Together these give the Trustees a clear picture of the climate-related risks that the Scheme is exposed to. Where appropriate, the Trustees distinguish between transition and physical risks. All risks and opportunities are assessed with reference to the time horizons that are relevant to the Scheme.

When prioritising the management of risks, the Trustees assess the materiality of climate-related risks relative to the impact and likelihood of other risks to the Scheme. This helps the Trustees focus on the risks that pose the most significant impact.

Trustees update

The Trustees' process for identifying and assessing climate related risks has been reviewed in the process of producing this TCFD report and the Trustees believe it is still suitable.

Climate risk management questionnaire

The Trustees recognise the Scheme's exposure to the climate-related risks stemming from transitioning to a lower-carbon economy, and as a result of physical risks from shocks caused directly by climate change. As a result, the Trustees conducted a manager questionnaire, based on the Pensions Climate Risk Industry Group's recommended areas, to better understand and assess the impact of these climate-related risks on the Scheme's investments.

In summary, all of the investment managers displayed some understanding of climate related risks, with the majority of the managers supporting TCFD reporting, committed to providing carbon data and participating in industry initiatives. Many of the managers also carry out climate scenario modelling. Some managers were unable to provide carbon data however most incorporate ESG considerations into their investment processes.

The Trustees were pleased that all of the Scheme's managers responded to the questionnaire. Overall, through reviewing the detailed information provided by the managers and based on the recommendations of the Trustees' investment adviser, the Trustees agreed that the managers:

- have adequate frameworks and processes in place to ensure they take into account climate related risks and opportunities within the strategies they manage on the Trustees' behalf; and
- are taking sufficient steps to identify, assess and manage climate-related risks within their strategies and have integrated these steps into their overall risk management process appropriately.

The Trustees are therefore comfortable with the managers' ability to act in the best interests of the Scheme and to account for climate-related risks and opportunities in the portfolios that they manage.

Process for managing climate related risks

The Trustees recognise the long-term risks posed by climate change and have taken the following steps to integrate climate-related risks into the Scheme's risk management framework and processes.

Training

The Trustees receive at least annual training and guidance on responsible investment to understand how ESG factors, including climate change, could impact the Scheme's assets and liabilities.

Investment managers

The Trustees and the investment adviser will use ESG ratings information provided by a third-party source, where relevant and available, to monitor the level of the Scheme's investment managers' integration of ESG on a regular basis in order to assess the risks posed by sustainability concerns including climate change risks.

Actuarial and covenant

The Trustees ensure that actuarial and covenant advice adequately incorporate climate-related risk factors where they are relevant and material.

The Trustees also seek to understand the climate-related risks to the employer over the short, medium and long term.

Integrated risk management framework

Climate-related risks are included in the Scheme's wider risk management framework, which is overseen by the Trustees on an ongoing basis.

Investment strategy

The Trustees ensure investment proposals explicitly consider the impact of climate risks and opportunities.

Managers

The Trustees engage with the investment managers through their investment advisers to understand how climate risks are considered in their investment approach, and stewardship activities are being undertaken appropriately.

The Trustees also monitor on an ongoing basis the extent to which the current investment managers are integrating climate (and other ESG) considerations into their investment strategies.

Scheme documentation

The Trustees include consideration of climate-related risks in the Scheme's other risk processes and documents, such as the SIP, and regularly reviews these.

Advisers

The Trustees expect their advisers to have the appropriate knowledge on climate-related matters to advise them effectively. Therefore, the Trustees review their adviser objectives to ensure advisers have appropriate climate capability.

Metrics & Targets

Metrics help to inform the Trustees' understanding and monitoring of the Scheme's climate-related risks. Quantitative measures of the Scheme's climate-related risks, in the form of both greenhouse gas emissions and non-emissions-based metrics, help the Trustees to identify, manage and track the Scheme's exposure to the financial risks and opportunities climate change will bring.

The Scheme's climate-related metrics

The Trustees use some quantitative measures to help them understand and monitor the Scheme's exposure to climate-related risks.

Measuring the greenhouse gas emissions related to their assets is a key way for the Trustees to assess their exposure to climate change.

Greenhouse gases are produced by burning fossil fuels, meat and dairy farming, and some industrial processes. When greenhouse gases are released into the atmosphere, they trap heat in the atmosphere causing global warming, contributing to climate change.

Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.

Scope 1

All direct emissions from the activities of an organisation which are under their control; these typically include emissions from their own buildings, facilities and vehicles

Scope 2

These are the indirect emissions from the generation of electricity purchased and used by an organisation

Scope 3

All other indirect emissions linked to the wider supply chain and activities of the organisation from outside its own operations – from the goods it purchases to the disposal of the products it sells

Last year, the Trustees reported on Scopes 1 and 2 emissions only. This year they are required to report Scope 3 emissions as well. Scope 3 emissions are often the largest proportion of an organisation's emissions, but they are also the hardest to measure. The complexity and global nature of an organisation's value chain make it hard to collect accurate data.

For more explanation about GHG emissions, please see the Appendix.

The Scheme's climate-related metrics – in detail

In their first year of TCFD reporting, the Trustees decided what metrics to annually report on. The Trustees' investment adviser, Aon, collected information from the Scheme's managers on the following climate-related metrics for the Scheme's portfolio. This year the Trustees reviewed the metrics, and they believe they continue to be suitable for the Scheme to report against.

Total Greenhouse Gas emissions

The total greenhouse gas (GHG) emissions associated with the portfolio. It is an absolute measure of carbon output from the Scheme's investments and is measured in tonnes of carbon dioxide equivalent (tCO2e).

Carbon footprint

Carbon footprint is an intensity measure of emissions that takes the total GHG emissions and weights it to take account of the size of the investment made. It is measured in tonnes of carbon dioxide equivalent per million pounds invested (tCO2e/£m).

Data Quality

A measure of the proportion of the portfolio that the Trustees have high quality data for (i.e., data which is based on verified, reported, or reasonably estimated emissions, versus that which is unavailable).

This has been selected on the basis that it provides a consistent and comparable measure of the level of confidence in the data.

Portfolio Alignment Metric

A metric which shows how much of the Scheme's assets are aligned with a climate change goal of limiting the increase in the global average temperature to 1.5˚C above pre-industrial levels.

It is measured as the percentage of underlying portfolio investments with a declared net-zero or Paris-aligned target which have been approved by the Science Based Targets initiative ("SBTi"), or are already net-zero or Paris-aligned.

Source: Aon. Managers

The carbon metrics

The tables below show the climate-related metrics for the Scheme's assets. The emissions are split out between sovereigns and other assets.

Sovereign emissions are those associated with securities issued by public governments whereas corporate emissions are those associated with securities issued by companies.

Liability driven investments ("LDI") mainly invest in UK sovereign bonds. The carbon emissions for UK sovereigns are based on the total GHG emissions for the whole of the UK, which are extremely high. By contrast, carbon emissions for corporates are based on the emissions associated with the underlying companies invested in, which are smaller. Hence, the carbon emissions for sovereigns are higher than other assets.

Sovereign and corporate emissions are hence split for two reasons. The aggregation of these two emission classes would result in double counting, and the mixing of different emissions calculation methodologies.

			Scopes 1 & 2			Scope 3			
Asset class	**Year**	**%**	**Data Quality (%)**	**Total GHG emissions (tCO_2e)**	**Carbon footprint (tCO2e/£m)**	**Data Quality (%)**	**Total GHG emissions (tCO_2e)**	**Carbon footprint (tCO2e/£m)**	**SBTi alignment (%)**
Equity	2023	5%	100.0%	13,055	129.6	59.3%	49,974	836.6	23.7%
	2022	7%	97.4%	22,682	171.1	-	-	-	18.0%
Fixed Income	2023	58%	81.5%	80,884	89.7	73.0%	306,395	379.2	20.4%
	2022[1]	57%	85.5%	83,200	76.7	-	-	-	13.8%
Alternatives	2023[2]	5%	37.3%	1,670	53.4	32.7%	10,192	370.6	0.63%
	2022[3]	11%	38.1%	19,259	119.7	-	-	-	0.5%

Source: Investment managers / Aon. Excludes cash. Figures may not sum due to rounding.

1.2022 data for fixed income includes sovereign data, but this year sovereign data has been split out following latest industry methodology

2.One alternatives' manager was only able to provide data as at 31 December 2022.

3.The 2022 alternatives data quality and total emissions data has been restated to reflect latest methodologies.

- 2023 data as at 31 December 2023: Includes Scopes 1, 2 and 3 emissions.
- 2022 data as at 31 December 2022: Excludes Scope 3 emissions as these were not required for year 1 reporting.

LDI includes both physical emissions (emissions associated with physical assets that are held within the portfolio) and synthetic emissions (emissions associated with the notional exposure to sovereign bonds gained through derivatives). Scope 3 emissions are not provided for LDI/sovereigns. This is due to the complex nature of attributing indirect emissions in the context of sovereign investments.

LDI				Scopes 1 & 2	
	Year	Asset Allocation(%)	Data Coverage (%)	Total GHG emissions (tCO_2e)	Carbon footprint (tCO2e/£GDP)
LDI Physical	2023	95	100	81,611	170.2
LDI Synthetic	2023	5	100	4,220	170.2
LDI	2022	25	80	33,256	74.1
Sovereigns	2023	4	100	12,899	170.2
Sovereigns	2022	4	99	14,651	195.3

Source: Investment managers / Aon. Scope 3 emissions and SBTi alignment are not applicable to LDI/sovereigns.

2023 emissions associated with LDI has been calculated from the following sources:

- Physical-synthetic split as at 31 December 2023 from LGIM.
- UK national emissions as at 31 December 2022 from the Emissions Database for Global Atmospheric Research. The 2023 figure is currently unavailable.
- PPP-adjusted GDP as at 31 December 2022 from the Organization for Economic Cooperation and Development. The 2023 figure is currently unavailable.

2023 sovereigns data as at 31 December 2022. 2022 data as at 31 December 2022.

Notes on the metrics data

Availability of data:

- All managers, with the exception of LDI and the sovereign bond fund, provided Scopes 1, 2 and 3 GHG emissions.
- 2 alternative fund managers were not able to provide metrics data. However, as these funds make up a very small proportion of the Scheme's assets, the impact on overall disclosures will not be significant.
- 6 managers provided SBTi alignment data.

Aon does not make any estimates for missing data.

Because not all the Scheme's managers were able to provide all the requested data, the reported emissions metrics do not include all the Scheme's GHG emissions. And so, the metrics show the Scheme's GHG emissions to be lower than they really are.

The Trustees expect that in the future better information will be available from managers and this improvement will be reflected in the coming years' reporting.

Calculation methodologies have developed and improved in accuracy in line with the latest industry-developments since the Scheme's first report. This means that the carbon metrics between 2022 and 2023 may not be directly comparable.

Notes on the metrics calculations

There is no industry-wide standard for calculating some of these metrics yet and different managers may use different methods and assumptions. These issues are common across the industry and highlight the importance of climate reporting to improve transparency. We expect that in the future better information will be available from managers as the industry aligns to expectations and best practice standards.

The carbon metrics

Aon collected carbon metrics from managers before aggregating by asset class. The methodology used for this aggregation does not make any assumptions about the carbon emissions for assets for which data was unavailable. The aggregation methodology is as set out below:

G = A x C x F
G = Total GHG expressed as (tCO2e).
A = Assets expressed in £ Millions.
C = Data Coverage expressed as a decimal between 0 and 1.
F = Carbon Footprint expressed as (tCO2e/£M invested).

The methodology used follows the industry-standard best-practice established within the Carbon Emissions Template ("CET")[1].

LDI/sovereigns

Aon collected the physical and synthetic split from the Scheme's LDI manager. The carbon footprint was calculated using UK GHG Emissions and PPP adjusted GDP and assumes data coverage to be 100%. There is currently no industry agreed standard for calculating LDI emissions. Aon therefore calculates to ensure consistency across managers and reporting.

Portfolio Alignment Metric

Aon requested the portfolio alignment metric as the portion of each fund that is SBTi aligned from the Scheme's investment managers and aggregated the results based on the portion of assets invested in each fund. Aon does not make any estimates for missing data. The Scheme's portfolio alignment metric only represents the portion of the portfolio for which we have data.

Currently, there is no standard approach for calculating SBTi alignment for government bonds. Hence there is no SBTi alignment for the LDI and sovereign assets.

The Carbon Emissions Template

The Scheme's investment adviser, Aon, collected the carbon emissions data from the Scheme's managers on the Trustees' behalf using the industry standard CET Template. The CET was developed by a joint industry initiative of the Pension and Life Savings Association, the Association of British Insurers and Investment Association Working Group. The CET provides a standardised set of data to help pension schemes meet their obligations under the Climate Change Governance and Reporting Regulations, and associated DWP Statutory Guidance.

[1] https://www.plsa.co.uk/Policy-and-Research/Document-library/Carbon-Emissions-Template

Looking to the future
The Scheme's climate-related target

Trustees update

Each year the Trustees review the suitability of the target they have set. Based on the data collected and the metrics calculated this year, they believe the target continues to be suitable.

Climate-related targets help the Trustees track their efforts to manage the Scheme's climate-change risk exposure.

In their first year of reporting, the Trustees set a target to improve the portion of the portfolio that is SBTi aligned of the Scheme's fixed income and equity investments over a 5-year horizon.

The Trustees chose to base the target around the Scheme's listed equity and corporate bond assets as they form a significant part of the investment strategy collectively and this is where most of the more comprehensive climate data exists.

The Trustees will continue to review the appropriateness of the climate target on a regular basis. The Trustees can engage with their investment managers to encourage them to improve their SBTi alignment.

The Scheme's progress towards the target

The table below shows the progress against the Scheme's target compared to the previous year.

Asset class	2023 SBTi alignment	2022 SBTi alignment	Future target	Target timescale
Fixed Income	20.4%	13.8%	35%	2028
Equity	23.7%	18.0%	35%	2028
Overall	20.7%	14.0%	35%	2028

The Scheme's performance against the target is measured and reported on every year. Over time, this will show the Scheme's progress against the target.

Since last year, good progress has been made with the portion of portfolio that is SBTi aligned improving by 6.7%.

Steps the Trustees are taking to reach the target

To reach their target, the Trustees plan to engage with the Scheme's investment managers to improve the portion of the portfolio that is SBTi aligned. Through ongoing pressure from asset owners collectively and new regulatory requirements for asset managers, the Trustees expect the portion of the portfolio that is SBTi aligned to improve over time and will engage

further with the managers if progress does not meet the Trustees' expectations.

Appendices

Additional supplementary information regarding our climate disclosures report.

Appendix 1 - Glossary

Governance	refers to the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders.[2] Governance involves a set of relationships between an organisation's management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organisation are set, progress against performance is monitored, and results are evaluated.[3]
Strategy	refers to an organisation's desired future state. An organisation's strategy establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy formulation generally involves establishing the purpose and scope of the organisation's activities and the nature of its businesses, taking into account the risks and opportunities it faces and the environment in which it operates.[4]
Risk management	refers to a set of processes that are carried out by an organisation's board and management to support the achievement of the organisation's objectives by addressing its risks and managing the combined potential impact of those risks.[5]
Climate-related risk	refers to the potential negative impacts of climate change on an organisation. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, and fires). They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise). Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations.[6]

[2] A. Cadbury, Report of the Committee on the Financial Aspects of Corporate Governance, London, 1992.

[3] OECD, G20/OECD Principles of Corporate Governance, OECD Publishing, Paris, 2015.

[4] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

[5] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

[6] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

Climate-related opportunity	refers to the potential positive impacts related to climate change on an organisation. Efforts to mitigate and adapt to climate change can produce opportunities for organisations, such as through resource efficiency and cost savings, the adoption and utilization of low-emission energy sources, the development of new products and services, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organisation operates.[7]
Greenhouse gas emissions scope levels[8]	Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard. Scope 1 refers to all direct GHG emissions. Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam. Scope 3 refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions could include: 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 (e.g., transmission and distribution losses), outsourced activities, and waste disposal.[9]
Value chain	refers to the upstream and downstream life cycle of a product, process, or service, including material sourcing, production, consumption, and disposal/recycling. Upstream activities include operations that relate to the initial stages of producing a good or service (e.g., material sourcing, material processing, supplier activities). Downstream activities include operations that relate to processing the materials into a finished product and delivering it to the end user (e.g., transportation, distribution, and consumption).[10]
Climate scenario analysis	is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organisation to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time.[11]

[7] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

[8] World Resources Institute and World Business Council for Sustainable Development, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), March 2004.

[9] PCC, Climate Change 2014 Mitigation of Climate Change, Cambridge University Press, 2014.

[10] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

[11] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

Net zero means achieving a balance between the greenhouse gases emitted into the atmosphere, and those removed from it. This balance – or net zero – will happen when the amount of greenhouse gases add to the atmosphere is no more than the amount removed.[12]

[12] Energy Saving Trust, What is net zero and how can we get there? - Energy Saving Trust, October 2021

Appendix 2 – An explanation of climate risk categories

Climate-related risks are categorised into physical and transition risks. Below are examples of transition and physical risks.

Transition risks

Transition risks are those related to the ability of an organisation to adapt to the changes required to reduce greenhouse gas emissions and transition to renewable energy. Within transition risks, there are four key areas: policy and legal, technological innovation, market changes, and reputational risk.

Policy and legal

Examples
Increased pricing of GHG emissions
Enhanced emissions-reporting obligations
Regulation of existing products and services

Potential financial impacts
Increased operating costs (e.g. higher compliance costs, increased insurance premiums)
Write-offs, asset impairment and early retirement of existing assets due to policy changes

Technology

Examples
Cost to transition to lower emissions technology
Unsuccessful investments in new technologies

Potential financial impacts
Write-offs and early retirement of existing assets
Capital investments in technology development
Costs to adopt new practices and processes

Market

Examples
Changing customer behaviour
Uncertainty in market signals
Increased cost of raw materials

Potential financial impacts
Reduced demand for goods and services due to shift in consumer preferences
Abrupt and unexpected increases in energy costs
Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)

Reputational

Examples
Stigmatisation of sector
Increased stakeholder concern or negative stakeholder feedback

Potential financial impacts
Reduced revenue from decreased demand for goods and services.
Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions)
Reduced revenue from negative impacts on workforce management and planning

Physical Risks

Physical risks refer to the physical impacts of climate change on a firm's operations. They directly impact a firm's ability to perform its function due to climate disruption. They fall into two subcategories: acute and chronic. Acute risks are extreme climate events such as flooding and wildfires, and chronic risks are trends over time such as an increase in temperature or ocean acidification.

Acute

Examples
Extreme heat
Extreme rainfall
Floods
Droughts
Storms (e.g., hurricanes)

Chronic

Examples
Water stress
Sea level rises
Land degradation
Variability in temperature
Variability in precipitation

Appendix 3 – Climate scenario modelling assumptions

The purpose of climate scenario modelling is to consider the impact of climate-related risks on the Scheme's assets and liabilities over the long-term.

In particular, the model considers different climate change scenarios and the approximate impact on asset/liability values over the long-term.

The scenario modelling assumes a deterministic projection of assets and gilts + 0.25% liabilities, using standard actuarial techniques to discount and project the Scheme's expected future cashflows.

It models the full yield curve as this allows for a more accurate treatment of the liabilities and more realistic modelling of the future distribution of interest rates and inflation. It also allows the Trustees to truly assess the sensitivities of the assets and liabilities to changes in interest and inflation rates.

The modelling parameters vary deterministically for each scenario.

No allowance is made for expenses, with modelled asset/liability cashflows left unaffected by these factors.

The liability update and projections are considered appropriate for this analysis. However, they are approximate and a full actuarial valuation carried out at the same date may produce a materially different result. The liability update and projections are not formal actuarial advice and do not contain all the information needed to make a decision on the contributions payable or investment strategy.

The model intends to illustrate the climate-related risks the Scheme is currently exposed to, highlighting areas where risk mitigation could be achieved through changing the portfolio allocation.

Other relevant issues such as governance, costs and implementation (including manager selection and due diligence) must be considered when making changes to the investment strategy.

Climate-related risks are considered on an asset class level, and do not consider the specific geographical locations which will have a strong influence on the climate-related risk the Scheme is exposed to.

Investment risk is only captured in the deviance from the Base Case, but this is not the only risk that the Scheme faces; other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

The scenario modelling has been set up to reflect recent market conditions and current market views. The model may produce different results for the same strategy under different market conditions.

This report, and the work relating to it, complies with 'Technical Actuarial Standard 100: General Actuarial Standards' ('TAS 100'). The model complies with TAS 100.

Key Assumptions

	Temperature rise by 2100	Reach net zero by	Carbon price (2030/2050)	Introduction of environmental regulation
No transition	+4^{0}C	After 2050	$40/$50	None
Disorderly transition	<3^{0}C	After 2050	$65/$340	Late and aggressive
Orderly transition	1.3^{0}C – 2^{0}C	2050	$100/$215	Coordinated

Data used

The model projects using the following inputs as at 31 March 2023:
Market value of assets: £1,904m
Present value of gilt +0.25% liabilities: £1,550m

Appendix 4 – Greenhouse gas emissions in more detail

Greenhouse gases in the atmosphere, including water vapour, carbon dioxide, methane, and nitrous oxide, keep the Earth's surface and atmosphere warm because they absorb sunlight and re-emit it as heat in all directions including back down to Earth. Adding more greenhouse gases to the atmosphere makes it even more effective at preventing heat from leaving the Earth's atmosphere.

Greenhouse gases are vital because they act like a blanket around the Earth making it the climate habitable. The problem is that human activity is making the blanket "thicker". For example, when we burn coal, oil, and natural gas we send huge amounts of carbon dioxide into the air. When we destroy forests, the carbon stored in the trees escapes to the atmosphere. Other basic activities, such as raising cattle and planting rice, emit methane, nitrous oxide, and other greenhouse gases.

The amount of greenhouse gases in the atmosphere has significantly increased since the Industrial Revolution. The Kyoto Protocol[13] identifies six greenhouse gases which human activity is largely responsible for emitting. Of these six gases, human-made carbon dioxide is the biggest contributor to global warming.

Each greenhouse gas has a different global warming potential and persists for a different length of time in the atmosphere. Therefore, emissions are expressed as a carbon dioxide equivalent (CO_2e). This enables the different gases to be compared on a like-for-like bases, relative to one unit of carbon dioxide.

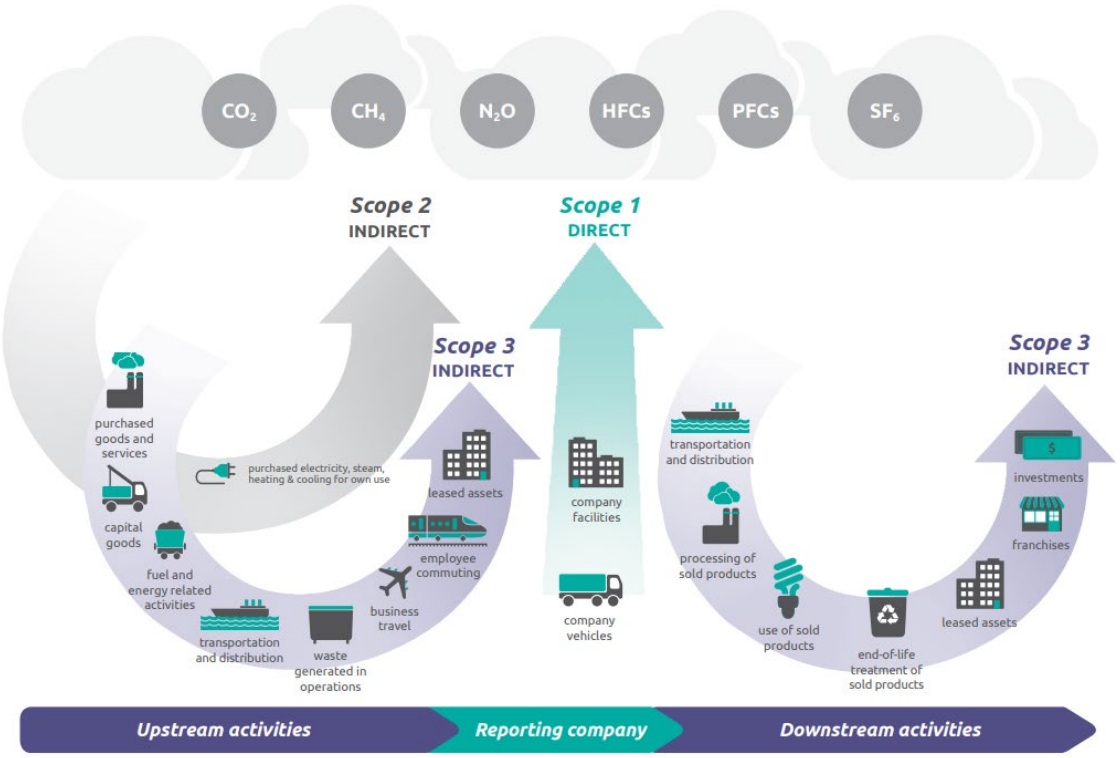
Six main greenhouse gases identified by the Kyoto Protocol

Carbon dioxide	Methane	Nitrous oxide	Hydro-fluorocarbons	Per-fluorocarbons	Sulphur hexafluoride
CO_2	CH_4	N_2O	HFCs	PFCs	SF_6

[13] https://unfccc.int/kyoto_protocol

Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.

Overview of GHG Protocol scopes and emissions across the value chain



Source: Greenhouse Gas Protocol, Corporate value chain (scope 3) Accounting and Reporting Standard, 2011