



TCFD

TASK FORCE ON  
CLIMATE-RELATED  
FINANCIAL  
DISCLOSURES

# TCFD report for year ending 31 March 2023

Boots Pension Scheme

Produced by: Boots Pension Limited, as Trustee of the Boots Pension Scheme

Date: September 2023

# 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 Scheme's vulnerability to climate-related risks will help us to mitigate the risks and take advantage of any opportunities.

UK regulations require trustees to meet climate governance requirements and publish an annual report on their pension scheme's climate-related risks. The regulations require trustees to report in a line with the recommendations of the Taskforce on Climate-related Financial Disclosure ("TCFD").

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 lead to more accountability and provide decision-useful information to investors and beneficiaries.

This report has been prepared in accordance with the regulations set out under The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 (the "Regulations"). It provides an update on how the Boots Pension Scheme (the "Scheme") aligns with each of the four elements set out in the regulations. The four elements covered in the statement are detailed below:

- **Governance:** The Scheme's governance around climate-related risks and opportunities.
- **Strategy:** The actual and 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.

This document is the annual TCFD report for the Scheme for the year ended 31 March 2023. It has been prepared by Boots Pensions Limited (the "Trustee"), in its capacity as Trustee of the Scheme.

## What is TCFD?

The Financial Stability Board created the Taskforce on Climate-related Financial Disclosure ("TCFD") to develop recommendations on the types of information that entities should disclose to support investors, to assess and price risks related to climate change.

The TCFD has developed a framework to help companies and other organisations, including pension schemes, more effectively disclose climate-related risks and opportunities through their existing reporting processes.



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# Executive summary

To produce this TCFD-aligned report, we have worked with our investment consultant to carefully consider the potential impacts that climate change could have on the Scheme's investments and how we identify, manage, and mitigate those risks.

The following pages summarise the Trustee's current position with regards to the TCFD recommendations and those set out in the Regulations.

## Overview of the Plan

The Scheme is set up as a Defined Benefit ("DB") Scheme.

The Scheme's DB investment portfolio is diversified across a range of different asset classes including equities, fixed income, property, alternatives, hedging assets known as Liability Driven Investments ("LDI"), and cash.

The Trustee has been supported by its investment consultant, Aon Investments Limited ("Aon") with the production of its TCFD disclosures report and also the data contained within it.

## Summary of findings

### Strategy

The Trustee has undertaken a combination of qualitative and quantitative analysis.

- From the qualitative analysis, which covered assets the Scheme's most material assets, it is apparent that climate-related risks and opportunities impact all the different asset classes in which the Scheme invests.
- Over time, there was a general expectation that the impact of both physical and transition risks increases.
- The investment managers identified numerous climate-related opportunities for the different asset classes in which the Scheme invests.

After undertaking quantitative analysis, the Trustee has:

- Reviewed the climate change scenario analysis previously undertaken and is comfortable, at this time, that this remains appropriate. The Trustee will continue to review this on an annual basis and refresh at least triennially.
- The Scheme's investment portfolio exhibits some resilience under all the climate change scenarios considered. This is due to the diversification of assets, the low-risk strategy, and high levels of hedging against changes in interest rates and inflation.
- Over the long term, the Scheme is expected to remain in surplus in three of the four climate scenarios considered.

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## Risk Management

The Trustee has integrated climate-related risks into its policies and processes. For example, the Trustee has a clear policy on stewardship, including the impact of climate change, as outlined in its Statement of Investment Principles. In addition to this, the Trustee receives data on voting and engagement from its managers annually (as outlined in its Engagement Policy Implementation Statement, which is also produced annually).

The Trustee has outlined a Risk Management Plan, starting on page 23 which assists with the ongoing management of climate related risks and opportunities. As part of this, the Trustee undertakes periodic training on responsible investment to understand how ESG factors, including climate change, may impact the Scheme's assets and liabilities. Details of training the Trustee has undertaken through the Scheme year are included in the Governance Section and Risk Management Section.

## Metrics and Targets

The Trustee gathered the carbon metrics data from a range of different sources, including its investment managers, supported by its investment consultant. The Trustee has, as far as it is able, collated the data for the total greenhouse gas emissions, carbon footprint, data quality and the proportion of assets which are Net Zero or Paris-aligned. The reporting metrics were chosen as a combination of recommendations in the Regulations and through discussion with the Trustee's investment consultant. The Trustee has excluded its derivative holdings from the carbon metrics, due to the lack of methodologies for these types of assets at this time, and this is in line with the guidance from the DWP. More detail is provided on page 32.

The Trustee is keen to understand the carbon emissions in the Scheme's portfolio, and notes that the data has improved in comparison to the previous year's reporting. As per the Trustee's expectation noted in last year's report, the overall data availability for greenhouse gas emissions has improved, which led to higher overall emissions as the availability and coverage of data expands. In addition, more managers were able to provide scope 3 emission data which contributed to the overall emissions being higher versus the previous year's reporting. More detail on how the emissions are defined is provided on page 30.

In relation to the target, which was set last year, the Trustee has reviewed this and is comfortable that it remains appropriate at this time. The Trustee, supported by its investment consultant, will continue to engage with the Scheme's investment managers to understand what improvements can be made, or any particular challenges that have arisen.

Following completion of the Scheme's second TCFD report, the Trustee was reassured, through the analysis, that the potential financial impact of climate change on the Scheme is not thought to be significant but realises that this may change over time. The Trustee spent considerable time and effort to set up the TCFD framework for its first year of reporting and this has continued as part of the production of the second TCFD report. The Trustee continues to integrate the management of climate change into its various activities.

We hope you enjoy reading this report and understanding more about how we are managing climate-related risks and opportunities within the Scheme.

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Chair of the Trustee

on behalf of the Trustee of Boots Pension Scheme



# 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 Trustee and others making Scheme-wide decisions, such as those relating to the investment strategy or how it is implemented, funding, the ability of the sponsoring employer to support the Scheme, and liabilities.



# Our Scheme's governance

The Trustee of the Scheme is responsible for oversight of all strategic matters related to the Scheme. This includes the approval of governance and management frameworks relating to environmental, social and governance ("ESG") considerations, and climate-related risks and opportunities.

## Role of the Trustee

Given its importance, the Trustee has not identified one individual to specifically be responsible for the Trustee's response to climate risks and opportunities. Rather, the Trustee Board has collective responsibility for setting the Scheme's climate change risk framework.

The Trustee has discussed and agreed its climate-related beliefs and overarching approach to managing climate change risk. Details are set out in the Statement of Investment Principles ("SIP"), which is reviewed annually by the Board.

### Our climate beliefs

- the risks associated with climate change can have a materially detrimental impact on the Scheme's investment returns within the timeframe that the Trustee is concerned about and, as such, the Trustee integrates assessments of climate change risk into its investment decisions.
- climate-related factors may create investment opportunities. Where possible, and appropriately aligned with the Trustee's strategic objectives and fiduciary duty, the Trustee will seek to capture such opportunities through its investment portfolio.
- the most appropriate time horizons for the Scheme are as follows:
  - short term: 1-3 years
  - medium term: 4-10 years
  - long term: 11-20 years
- The Trustee has determined these time horizons are appropriate, given the membership profile of the Scheme.

Climate-related risks and opportunities are assessed over the above time horizons. Where appropriate, the Trustee considers transition and physical risks separately.

The Trustee Board receives training – at least on an annual basis but more frequently if required – on climate-related issues to ensure that it has the appropriate degree of knowledge and understanding on these issues to support good decision-making. The Trustee expects its advisers to bring important and relevant climate-related issues and developments to the Trustee's attention in a timely manner and expects its advisers to have the

appropriate level of knowledge on climate-related matters. This is captured by the annual training in relation to climate related issues being included on the Trustee's business plan.

Climate-related risks and opportunities are integrated into our risk management framework, to maintain oversight of the climate-related risks and opportunities that are relevant to the Scheme. The Trustee Board has delegated oversight of the Scheme's climate change risk management framework to the Investment Committee ("IC") (see pages 26-28) where they relate to investment matters and the Valuation Committee ("VC") where they relate to actuarial matters. Both committees are sub-committees of the Trustee Board and both committees keep the Trustee Board apprised of material climate-related developments on a regular basis (at least annually).

## Role of the Investment Committee

The Trustee Board has delegated the ongoing monitoring of the Scheme's climate change risk management framework to the IC where they relate to investment matters.

Implementation is detailed later in this report, but key activities undertaken by the IC, with the support of the Trustee's advisers, are:

- ensuring investment proposals explicitly consider the impact of climate risks and opportunities.
- proactively seeking investment opportunities which enhance the ESG and climate change focus of the Scheme's portfolio.
- engaging with the Scheme's investment managers to understand how climate risks are considered in their investment approach.
- working with the investment managers to disclose relevant climate-related metrics as set out in the TCFD recommendations.
- ensuring that stewardship activities are being undertaken appropriately on the Scheme's behalf.

The IC will monitor and review progress against the Scheme's climate change risk management approach on a biannual basis. The initial framework was agreed by the Climate Working Group ("CWG"), which was temporarily set up for the Scheme's first TCFD disclosures and approved by the Trustee Board. The CWG was subsequently disbanded in Q4 2021 and the responsibility for monitoring of the Scheme's climate risk approach was taken up by the Investment Committee and Valuation Committee.

The IC will keep the Trustee Board apprised of any material climate-related developments through regular (at least annual) updates.

## Role of the Valuation Committee

The Trustee Board has delegated the ongoing monitoring of the Scheme's climate change risk management framework to the VC where they relate to actuarial matters.

Implementation is detailed later in this report, but key activities undertaken by the VC, with the support of the Trustee's advisers, are:

### Trustee's update

Over the year, the Trustee completed further training on climate-related risks and additional metric requirements under Year 2 TCFD statutory guidance.

Training was received in relation to the regulatory changes occurring in 2022, and how this would impact the Scheme. This included the industry feedback published by the Pensions Regulator following its review of the TCFD reports published by occupational pension schemes.

In addition, the Trustee received training on Net Zero to understand what commitment this would entail and how this may impact on the wider investment strategy.

The purpose of both these training sessions was to better equip the Trustee ahead of the preparation of its second TCFD report and to consider further actions to help protect the Scheme against potential financial impacts of climate change.

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

The VC will monitor and review progress against the Scheme's climate change risk management, as part of the triennial valuation cycle, annual funding updates and monitoring of the covenant. The VC will keep the Trustee Board apprised of any material climate-related developments through regular (at least annual) updates.

## Role of the Boots Pensions Team

The Boots Pensions Team may assist the Investment Committee and Valuation Committee, with the day-to-day aspects of the implementation of the TCFD framework, as and when required.

## Role of external advisors

The Trustee expects its advisers and investment managers to bring important climate-related issues and developments to its attention in a timely manner, and to have the appropriate knowledge on climate-related matters.

**Investment consultant** – our investment consultant, Aon, provides investment-related strategic and practical support to the IC and Trustee in respect of the management of climate-related risks and opportunities. This includes provision of regular training and updates on climate-related issues, climate change scenario modelling and ESG ratings for investment managers.

**Scheme Actuary** - the Scheme Actuary, Robert Mellor, will help the Trustee and VC assess the potential impact of climate change risk on the Scheme's funding position where appropriate.

**Covenant adviser** - the Trustee's covenant adviser will help the Trustee understand the potential impact of climate-related risk on the sponsor covenant of the principal employer of the Scheme.

### Trustee's update

Through the year the Trustee has received regular updates from the IC. This has included a summary of recommendations and clear direction in relation to the framework for managing climate-related risks.

The IC, and the Trustee, has received training and information from its investment consultant in relation to the regulations, and any key changes to the regulations. This includes training on the climate metrics to be reported on, and the change to the regulations from 1 October 2022 to include a Portfolio Alignment metric.





# Strategy

It is crucial to think strategically about the climate-related risks and opportunities that will impact the Scheme if we 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?

Each year we carry out a qualitative risk assessment of the asset classes the Scheme is invested in. From this we identify which climate-related risks could have a material impact on the Scheme. We also consider climate-related opportunities.

Given the number of asset classes used in the Scheme, we completed this exercise to the best of our ability. To help us with our assessment, we surveyed our investment managers asking them to rate the climate-related risks and opportunities they believe their funds are exposed to. At the time of writing six managers have been able to provide information for the risk assessment, two managers provided limited responses and one manager was unable to provide information.

## Trustee's update

The Trustee has focused this analysis on the most material assets for the Scheme.

## Our investments

The Scheme's DB investment portfolio is diversified across a range of different asset classes including equities, fixed income, property, alternatives, LDI, and cash. The strategic allocation is noted below.

Portfolio	Asset classes	Strategic allocation (%)
Matching		75.0
	<ul style="list-style-type: none"> <li>Corporate, supranational and government bonds</li> <li>Swaps and other interest rate and inflation derivatives</li> <li>Credit default swaps</li> <li>Alternative fixed income investments</li> <li>Asset-backed contribution structures</li> </ul>	
Growth		25.0
	<ul style="list-style-type: none"> <li>Multi-Factor Equity</li> <li>Impact Equity</li> <li>Property</li> <li>Illiquids</li> <li>Insurance Linked Securities ("ILS")</li> </ul>	
Hedge Ratio		
	<ul style="list-style-type: none"> <li>Target for interest rate hedging</li> <li>Target for inflation hedging</li> </ul>	88%
	(Measured as a proportion of liabilities valued on a Gilts flat basis)	88%

## How the risk assessment works



### Risk categories

In the analysis, the climate-related risks have been categorised into physical and transitional 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 Trustee assessed the climate-related risks and opportunities over multiple time horizons, considering the liabilities of the Scheme and its obligations to pay benefits. The Trustee 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 in relation to transition and physical risks can be found in the Appendix.

## Key conclusions

Diversification across asset classes, sectors and regions is important to manage climate-related physical and transition risks for the Scheme.

Fixed Income, which forms a significant part of the Scheme's assets, is deemed a medium-risk area in terms of exposure to climate-related risks (particularly transition risks), indicated by the amber ratings over the majority of time horizons. Transition risks are more prevalent in the short-term whereas physical risks are more likely to be material over the longer-term time horizons. The Trustee has taken steps to mitigate these risks, including:

- monitoring of stewardship activities carried out by its investment managers (to ensure they are engaging with investee companies on the management of climate risks).
- utilising actively managed strategies where appropriate (allowing greater scope to manage and identify climate-related risks and opportunities).

Property, which is a small proportion of the Scheme's assets, is primarily impacted by physical risks. These investments may increase in risk to the Scheme if they are in regions that are vulnerable to climate change. The Scheme's property manager mitigates this by avoiding properties in high-risk regions as well as insuring against potential damage.

For more a detailed risk assessment by asset class please see overleaf.

## Climate-related risk assessment – in detail

The Trustee has asked its investment managers for details on how they are incorporating climate-related risks and opportunities into the funds and asset classes in which the Scheme invests in. The responses from its investment managers are summarised below.

### Matching assets – 75% of the Scheme assets

#### LDI

The Scheme's LDI portfolio is managed entirely by LGIM. The investment manager was contacted for information and able to provide a clear response to the RAG rating. The table below is representative of the response received.

##### Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	A	A

The investment manager suggested that chronic risks are long term in nature and not expected to have a significant financial impact in the short- and medium-term. Approaching the long-term, the manager believes that as extreme weather events become more frequent and severe the impact of acute and chronic risks are likely to become more significant. Acute risks may cause business interruptions in the long-term, with global interconnected supply chains, dragging down economic performance and sovereign bond valuations.

##### Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	G	G	G	G
Medium	A	G	A	A
Long	A	A	A	A

The manager considers there to be a low likelihood of material financial risk in the short-term. Governments should be preparing for the medium- and long-term impacts of the shift in technologies. The medium-term is a crucial period for the climate transition, as time is running out to stay within global carbon budgets for limiting global warming to well-below 2°C. Over the longer-term, significant financial repercussions at a global sovereign bond index level may occur to those countries that are highly dependent on fossil fuels and have taken few mitigative actions up until that point.

#### Fixed Income

At the time of reporting, the Scheme invests in three fixed income mandates: one managed by Wellington, and the remaining two managed by LGIM. All were contacted for information and were able to provide a clear response to the RAG rating. The table below is representative of an equally weighted average of the responses received.

##### Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	A	A

##### Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	G	G	G	A
Medium	A	G	A	A
Long	A	A	A	A

The managers believe these risks increase over time, as extreme weather events become more frequent and severe. Increased physical risks are likely to have a growing impact at a portfolio level - especially in temperate climates, where much of today's global bond value is concentrated. Heat stress, rising sea levels and changes to weather patterns are likely to affect labour productivity and cause changes in migration patterns.

Reputational damage may occur as a result of increasing pressure from investors and regulators in the short-term. This can affect credit ratings and hence bond valuations negatively, with significant impacts even at a global corporate bond portfolio level.

Over the longer-term the investment managers have identified a mismatch of supply and demand for essential raw materials that may result in volatile pricing, social unrest in response to poorly managed climate policy as potential material risks at the portfolio level.

## Emerging Market Debt

The Scheme's emerging market debt manager – GSAM – was not able to provide an overall RAG rating for physical and transitional risks over the different time periods. However, the manager did provide information regarding both these risks which can be seen below.

### Physical Risks

Increased acute and chronic physical risks may impact corporates; particularly those involved in industries such as property and casualty insurance and utilities. Developing countries, especially those that are small and lacking diversification may be more likely to suffer the consequences.

### Transitional Risks

The Scheme's emerging market debt manager acknowledges the risk of increased carbon regulation (e.g., tax or cap and trade systems) and energy-related technology changes (e.g., risk of low-carbon sources of energy such as renewables). Shifting customers preferences may impact valuations, as well as potential liability (e.g., litigation against governments and companies due to lack of action).

## Growth assets – 25% of the Scheme assets

### Equity

At the time of reporting, the Scheme invests in two equity mandates which are managed by separate investment managers: Mirova and Ownership Capital. Both were contacted for information, however Mirova was unable to provide a clear response to the RAG rating. The table below is representative of Ownership Capital, which was able to provide information on the requested climate-related risks. Both managers provided information to support the narrative on these risks.

### Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	G	G

The equity manager considers there to be a low level of financial risk to acute and chronic physical-related climate risk as it invests in predominantly asset-light companies. The geographic exposure of the operating footprint of our companies is largely in developed markets with a low level of unmanaged physical climate risk.

### Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	G	G	G	G
Medium	G	G	G	G
Long	G	G	G	G

The investment manager states it has no exposure to high-impact climate sectors and engages regularly with companies to reduce their carbon footprint, hence the lower financial exposure to near-term regulations. The investment manager also does not view reputational risk as material since the majority of its portfolio already provide transparency on their emissions and carbon reduction pathway.

## Property

The Scheme's property assets are managed by Schroders. The investment manager was contacted for information on the requested climate-related risks and able to provide a clear response to the RAG rating. The table below is representative of the response received.

### Physical Risks

	Acute	Chronic
Short	G	G
Medium	A	G
Long	A	A

In the medium- and longer-term, the physical effects of changing climate present potential material financial impacts, for example, in relation to heating or cooling buildings in changing climates, weather events and availability of water.

### Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	G	G	G	A
Medium	A	A	A	A
Long	A	A	A	A

The reputational risk in the short-term recognises the substantial increase in climate-related client engagement in relation to real estate over recent years.

Over the longer-term the investment manager has identified all transitional risks as a medium risk due to the significant transformation in real estate, driven by societal demands, regulatory changes and investor attitudes, ultimately putting pressure on property portfolios.

## Alternatives

At the time of reporting, the Scheme invests in five alternatives mandates managed by Basalt, LGIM, Leadenhall, GSAM and Kennedy Lewis. All were contacted for information, however GSAM and Kennedy Lewis were unable to provide a clear response to the RAG rating as well as commentary to support the narrative on these risks. The table below is representative of an equally weighted average of the responses received from the remaining investment managers.

### Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	A	G

The Scheme's alternative investment managers have not identified any material risks in the short or medium-term. As the long-term approaches, the managers believe that as extreme weather events become more frequent and severe, the impact of these physical risks are likely to have a growing impact at the portfolio level. This can be attributed to the sensitive climate where most of the mandates value is created.

### Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	G	G	G	G
Medium	A	G	A	A
Long	A	G	A	A

The managers do not see any significant transitional risks in the short-term. As time passes, market risks include the potential influence of changing risk profiles, loss experience and risk perception on capital requirements and supply, which may impact product availability and returns. A lack of coherence in approaches globally across political and regulatory environments may also have a detrimental impact.

## Climate-related opportunities

### Equity

The Scheme's equity investment managers have identified climate-related opportunities. These are:

- Seeking to utilise more efficient production and distribution processes such as recycling.
- Shifting to lower-emissions sources of energy.

### Property

Following assessment of the physical and transitional risks, opportunities exist as follows:

- The development of more efficient buildings that exhibit greater resilience to changing weather patterns and an ability to operate under more extreme conditions.
- Enhanced resilience of portfolio asset, through adoption of low carbon technology and energy efficiency measures.
- Ability to diversify business activities and access new markets.

### Alternatives

The Scheme's investment managers have outlined the following areas for potential investment opportunities:

- Greater demand for insurance coverage as changing weather patterns and more extreme conditions emerges.
- Wider adoption of renewable energy programs and energy-efficient measures
- Carbon capturing and storage such as zero-carbon hydrogen and ammonia production present potential innovative solutions.

### Fixed Income

The following areas for potential investment opportunities are listed below:

- Investment in green bonds.
- Resource efficiency, as certain direct lending targets may benefit from reduced operating costs and increased production capacity.
- Wider adoption of renewable energy
- Research and Development opportunities leading to the adaption of more resilient infrastructure to better prepare for extreme climate events

### Emerging Market Debt

Following assessment of the physical and transitional risks, the Scheme's manager outlined the following areas for potential investment opportunities:

- Alternative energy sources such as the use of renewables
- Access to new markets
- Stronger resilience to extreme weather patterns and changes in climate conditions.

### LDI

Investors in gilts are shielded from some of the downside risk from a low-carbon transition compared to equity investors. This means they will be unable to profit from much of the upside risk of climate-related opportunities.

# How resilient is the Scheme to climate change?

Last year we carried out climate change scenario analysis to better understand the impact climate change could have on the Scheme's assets and liabilities.

The analysis considers a range of climate change scenarios. Each scenario considers what may happen to the Scheme when transitioning to a low carbon economy under different temperature-related environmental conditions. These scenarios were developed by our investment consultant, Aon, and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty.

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.

Investment risk is 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 analysis undertaken by the Trustee looks at four climate change scenarios. Each scenario considers what might happen when transitioning to a low carbon economy under different conditions. The Trustee has chosen these scenarios because it believes that they provide a reasonable range of possible climate change outcomes.

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

## Trustee update

The Trustee notes that the Regulations require that there may be circumstances which require the climate scenario analysis to be re-done. This may be as a result of, but 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 analysis is based on assumptions and the Scheme's strategic asset allocation as at 31 March 2021. The Trustee recognises that there may be differences should the analysis be updated to more recent assumptions.

The Trustee has reviewed the analysis for the Scheme and is comfortable that the analysis undertaken for its TCFD report in the first year remains appropriate for this year's report as changes to the modelling assumptions or strategic allocation are not considered to have significantly altered the output. The Trustee will continue to review the analysis annually.

Scenario	Degree warming vs pre-industrial levels by 2100	Introduction of environmental regulation	Scenario description
<b>Base case</b>  Reach net zero by: 2050	~2°C – 2.5°C	-	Emission reductions start now and continue in a measured way in line with the objectives of the Paris Agreement and the UK government's legally binding commitment to reduce emissions in the UK to net zero by 2050.
<b>Disorderly Transition</b>  Reach net zero by: After 2050	<4°C	Late and Aggressive	The world economy remains oriented towards improving near-term economic prospects, with companies and governments taking a "business as usual" approach. Eventually, market participants begin to fully grasp the implications of climate change and there is a growing realisation that current levels of action are inadequate. Market values price in high levels of economic damage and the irreversible loss.
<b>Orderly Transition</b>  Reach net zero by: 2050	<2°C	Coordinated	Increased public awareness of climate change risks galvanises opinion and leads to governments undertaking widespread action globally to aggressively mitigate and adapt to climate change. A high global greenhouse gas tax and carbon cap is introduced.
<b>Abrupt Transition</b>  Reach net zero by: 2050	<2°C	Aggressive	The effects from increasingly extreme weather events in the next five years lead to widespread public concern over climate change. This leads to governments introducing policies to drive a rapid reduction in greenhouse gas. Delayed action on reducing emissions means that the costs of tackling the problem are higher.
<b>Smooth Transition</b>  Reach net zero by: 2045	<1.5°C	High Coordination	Private sector innovation and a green technology revolution, combined with government coordination, help drive progress towards tackling climate change.

When undertaking the scenario analysis, the Trustee undertook this based on the Scheme's asset allocation as at 31 March 2021, which invests across a diverse range of asset classes. Alongside this the Scheme has an LDI strategy, where the assets are designed to perform in a similar way to the liabilities.

## Impact Assessment

The Trustee has undertaken the climate scenario analysis based on the Scheme's strategic allocation, which is outlined on page 12.

The impact assessment shows that the Scheme's portfolio exhibits a relatively high degree of climate resilience under three of the four climate scenarios. This was driven by the high level of diversification in the assets, low risk strategy and high levels of hedging against changes in interest rates and inflation expectations.

The table below describes the impact of each scenario on the Scheme over the short-, medium- and long-term time horizons.

### Disorderly Scenario

Temperature rise by 2100	<4°C
Reach net-zero by	After 2050
Introduction of environmental regulation	Late and Aggressive

#### Summary of the Scenario

##### In the short term:

Insufficient consideration given to long-term policies and there is no action taken to combat climate change

##### In the medium term:

Late but coordinated action is taken to tackle climate change. The late timing means it is less effective and more costly to implement. Adverse impacts from climate change leads to a drag on risk assets

##### In the long term:

After the costly implementation to tackle climate change and the resulting drag on risky assets, the transition to clean technologies and green regulation begins to boost economic growth when considering the very long term. However, the late and disorderly climate transition means that physical climate risks remain prominent over the very long term.

#### Summary of the impact to the Scheme

##### In the short term:

There is no initial risk to the Scheme, as the performance of the assets, and the liabilities and therefore the Scheme's funding level, is expected to follow a similar path to the base case.

##### In the medium term:

The Scheme's funding level deteriorates as a result of late and aggressive action to tackle climate change and falls into deficit. This may place a strain on the sponsoring employer, should it be required to make up any funding shortfall.

##### In the long term:

After 10 years the Scheme's funding level sharply deteriorates and does not recover within the 20-year time horizon, relative to the base case, leaving the Scheme materially worse off. This is the worst-case scenario for the Scheme and under the period of analysis, the Scheme is in deficit.

### Orderly Scenario

Temperature rise by 2100	<2°C
Reach net-zero by	2050
Introduction of environmental regulation	Coordinated

#### Summary of the Scenario

##### In the short term:

Immediate coordinated global action is taken to tackle climate change. Risky assets perform poorly.

##### In the medium term:

The rapid transition to clean technologies and green regulation begins to boost economic growth.

##### In the long term:

The rapid transition to clean technologies and green regulation begins to boost economic growth. This represents the fastest transition to a green economy, combined with limited physical impacts from climate change despite the large initial transition cost.

#### Summary of the impact to the Scheme

##### In the short term:

The Scheme experiences an initial fall in the funding level. This may place a strain on the sponsoring employer, should it be required to make up any funding shortfall via contributions.

##### In the medium term:

The funding position begins to recover as risky assets perform well, benefitting from the economic growth. The Scheme is expected to return to a surplus in funding.

##### In the long term:

The funding position recovers long term and continues to increase its surplus. However, performance does lag versus the base case.

## Abrupt Scenario

Temperature rise by 2100	<2°C
Reach net-zero by	2050
Introduction of environmental regulation	Aggressive

### Summary of the Scenario

#### In the short term:

Despite growing public awareness, material action is not undertaken to combat climate change.

#### In the medium term:

Increasing effects of extreme weather lead to a rapid introduction of policies to tackle climate change. The delayed action leads to higher costs to tackle climate change and risky assets perform poorly as a result. The higher costs are the result for the economy being forced to transition away from fossil fuels.

#### In the long term:

Following rapid action in the medium term, the longer-term benefits from tackling climate change lead to higher growth.

### Summary of the impact to the Scheme

#### In the short term:

There is no initial risk to the Scheme, as the performance of the assets and the liabilities, and therefore the Scheme's funding level, is expected to follow a similar path to the base case.

#### In the medium term:

The Scheme's funding level deteriorates as a result of delayed action to tackle climate change and falls into deficit. This may place a strain on the sponsoring employer should it be required to make up any funding shortfall. However, funding does begin to recover within the period as the economy begins to recover, which boosts growth, but the Scheme remains in a deficit.

#### In the long term:

The funding position recovers long term and moves into a surplus, before continuing to increase. However, performance does lag versus the base case, in addition to lagging the orderly and smooth scenarios.

## Smooth transition

Temperature rise by 2100	<1.5°C
Reach net-zero by	2045
Introduction of environmental regulation	High Coordination

### Summary of the Scenario

#### In the short term:

Collective and coordinated action in the short term, despite initial costs of funding the structural costs to transition the economy, leads to innovation and green technology development which boosts growth.

#### In the medium term:

The rapid technological advancement combined with government actions drives a smooth transition to a low carbon economy and enjoys growth.

#### In the long term:

The rapid technological advancement combined with government actions drives a smooth transition to a low carbon economy. Risk assets perform well.

### Summary of the impact to the Scheme

#### In the short term:

The Scheme is expected to benefit, relative to the base case and the surplus increases.

#### In the medium term:

The Scheme continues to benefit from a growing surplus, following innovation and a green technology revolution which boosts economic growth.

#### In the long term:

The Scheme's funding position is expected to continue to grow. The Trustee noted this was the scenario which provided the best outcome for the Scheme, based on the strategic asset allocation.

Source: Aon. All scenario projections as at 31 March 2021 on the Scheme's Technical Provisions Basis

## Modelling limitations

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

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## Covenant Assessment

The Trustee recognises the importance of climate change and the risk it poses to the Scheme. The Trustee takes climate-related risks into account in determining its investment strategy.

Another key risk identified from the analysis is the volatility of the funding level. Under the *abrupt transition* and the *disorderly transition*, the Scheme experiences sudden falls in the funding level before recovering (with the Scheme remaining in deficit for most of the period under analysis for the disorderly transition). Deterioration of the funding level will place a strain on the Employer covenant if it must make up a bigger shortfall through deficit contributions. It may also require the Scheme to re-risk its portfolio or extend the time frame for achieving full funding.

The Trustee therefore recognises that climate change may have an impact on the Employer covenant. The Trustee monitors the covenant on a regular basis, with the support of its covenant adviser, and maintains a regular dialogue with the Employer. It is supported in this by its covenant adviser who considers the impact of climate-related risks on the Employer covenant.



# Risk management

The Trustee 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 the Trustee's risk management processes provides context for how it thinks about and addresses the most significant risks to its efforts to achieve appropriate outcomes for members.



# Our process for identifying and assessing climate-related risks

The Trustee has 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 Trustee monitors the most significant risks to the Scheme in its efforts to achieve appropriate outcomes for members.



## Qualitative assessment

The first element is a qualitative assessment of climate-related risks and opportunities which is prepared by the Trustee's investment adviser and reviewed by the Trustee.



## Quantitative analysis

The second element is quantitative in nature and is delivered by means of climate change scenario analysis, which is provided by the Trustee's investment adviser and reviewed by the Trustee.

## Trustee update

This process of identifying and assessing climate related risks has been reviewed in the process of producing this TCFD report and is deemed to be continually suitable.

The Trustee has included quantitative analysis when preparing its report.

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

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

# Our process for managing climate related risks

The Trustee recognises the long-term risks posed by climate change and has taken steps to integrate climate-related risks into the Scheme's risk management framework.

The Trustee has developed the following risk management plan, to help with its ongoing management of climate-related risk and opportunities. The risk management framework gives clear understanding on who is involved, what is done and how often. The Trustee has delegated a number of tasks to different stakeholders but retains the responsibility of final approval. The processes for managing climate-related risks and opportunities are summarised in the tables below.

## Governance

Activity	Owner	Adviser / supplier support	Frequency of review
Approve climate risk management framework	Trustee	IC	One off
Publish TCFD report	Trustee	IC, Investment consultant	Annual
Receive training on climate-related issues	Trustee	Advisors	Annual
Review advisor objectives to ensure advisors have appropriate climate capability, and bring important, relevant and timely climate-related issues to the Trustee's attention	Trustee	Advisors	Annual
Ensure investment proposals explicitly consider the impact of climate-related risks and opportunities, and seek investment opportunities	IC	Investment consultant	Ongoing
Ensure that actuarial and covenant advice adequately incorporates climate-related risk factors where they are relevant and material	VC	Scheme Actuary, Covenant advisor	Triennial
Engage with the investment managers to understand how climate risks are considered in their investment approach, and stewardship activities are being undertaken appropriately	IC	Fund managers, Investment consultant	Annual

### Trustee update

The Trustee monitors the above activities as part of its management of climate-related risks and opportunities. The Trustee has delegated responsibility of several activities in this pillar to the IC. The Trustee received several training sessions through the year on climate-related issues, including new reporting metrics and net zero.

The Trustee has monitored progress of the IC and its respective implementation of the climate change governance framework through the year, receiving regular updates from the IC and querying information as and when required.

## Strategy

Activity	Owner	Adviser / supplier support	Frequency of review
Undertake quantitative scenario analysis to understand the impact of climate-related risks	IC	Investment consultant	At least Triennial (with annual review)
Identify the climate-related risks and opportunities for investment & funding strategy and assess their likelihood and impact.	IC	Advisors	Annual

### Trustee update

The IC spent refreshed its risks and opportunities analysis, asking each material manager for details how these are assessed. The conclusion of this is included in the Strategy pillar.

The Trustee also considered the appropriateness of the climate change scenario analysis, carried out within the Scheme's initial TCFD disclosures, and is comfortable that the analysis remains relevant for the current reporting period.

## Risk management

Activity	Owner	Adviser / supplier support	Frequency of review
Consider the prioritisation of those climate-related risks, and the management of the most significant in terms of potential loss and likelihood.	IC	Advisors	Annual
Include consideration of climate-related risks in the Scheme's other risk processes and documents, such as the risk register and the SIP, and regularly review these.	IC	Advisors	One-off, ongoing thereafter
Seek to understand the climate-related risks to the employer over the short-, medium- and long-term.	Trustee, VC	Covenant adviser	Annual

### Trustee update

The Trustee reviews its process of identifying and assessing climate-related risks as part of the annual TCFD process to evaluate its continued suitability. This is integrated into the ongoing activities of the Scheme.

The Trustee delegates to its advisors the review of the underlying investment managers and how ESG is integrated within their decision-making processes, including climate change. The Trustee also asks for details on how these have been implemented in practice, including key themes for engagement, such as climate change.

## Metrics and Targets

Activity	Owner	Adviser / supplier support	Frequency of review
Obtain data for metrics	IC	Investment consultant, Fund managers	Annual
Review continued appropriateness of metrics	IC	Investment consultant	Annual

### Trustee update

The Trustee, supported by its investment consultant, collects metrics data on an annual basis, to understand the current state of the portfolio regarding its emissions, data quality and portfolio alignment. This data is evaluated to produce a climate-related target, whereby in this instance the Trustee has elected to improve the data quality for the Scheme.

Metrics have been collected in line with industry practice and supported by the IC and its advisers. The Trustee also agreed an additional metric for reporting, as per changes to the Regulations. In addition, the Trustee has reviewed its target, which was set previously, and considered any refinements required to this. More details can be found in the metrics and targets section.

## Assessing the Scheme's investment managers

To assess the Scheme's investment managers, the Trustee has posed "top" questions designed by the Pensions Climate Risk Industry Group<sup>1</sup> to help trustees to assess their investment managers' capabilities to manage climate-related risks. The questions cover a range of issues including the manager's approach to climate management, whether they produce their own TCFD reporting, their ability to conduct climate scenario analysis, their engagement policies and their ability to provide GHG emissions data.

### Key Conclusions

We have seen an increase in climate risk disclosures from our investment managers, however progress within this area is still needed. Some of the key highlights include:

- An increase in responses from our managers – last year, some managers were excluded on the basis of materiality, however, this year the Trustee was able to obtain responses from all the Scheme's managers for the strategy and risk management pillars.
- More managers are expected to adopt TCFD disclosures and produce TCFD reports in the future<sup>2</sup>.

<sup>1</sup> Aligning your pension scheme with the Taskforce on Climate-Related Financial Disclosures recommendations - GOV.UK ([www.gov.uk](https://www.gov.uk))

<sup>2</sup> Even though the majority of the managers do not have explicit temperature alignment goals on portfolio levels, all managers have committed to managing investment portfolios towards Paris Agreement goals.

- Wellington, Ownership Capital, Mirova and Schroders all have plans in place to align their strategy towards a 1.5-to-2-degree global warming scenario.

We will continue to engage with our investment managers to understand the future changes to the management of the Scheme's assets, in particular the integration of climate-related risk analysis, improvements in carbon reporting and temperature alignment, and the associated timescales involved with these.



# Metrics & Targets

Metrics help to inform the Trustee's 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 Trustee to identify, manage and track the Scheme's exposure to the financial risks and opportunities climate change will bring.



# Our climate-related metrics

The Trustee uses some quantitative measures to help it understand and monitor the Scheme's exposure to climate-related risks. Measuring the greenhouse gas emissions related to the Scheme's assets is a way for the Trustee to assess the Scheme's exposure to climate change.

Greenhouse gases ("GHG") 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 Trustee reported on Scope 1 and 2 emissions only. This year the Trustee is also required to report Scope 3 emissions. 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.



## Our climate-related metrics

In the first year of TCFD reporting, the Trustee decided what metrics to annually report on. As part of its second TCFD report, the Trustee is required to report on a fourth metric, which is the portion of the investments with net zero, or Paris-aligned targets.

These are described below. This year the Trustee reviewed the metrics and believes the metrics continue to be suitable for the Trustee to report against.



### Total Greenhouse Gas emissions

The total greenhouse gas (“GHG”) emissions associated with the portfolio is an absolute measure of carbon output from the Scheme’s investments and is measured in tonnes of carbon dioxide equivalent (“tCO<sub>2</sub>e”).

Where possible, the Trustee has obtained scopes 1&2 and scope 3 emissions from the managers separately.



### 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 (“tCO<sub>2</sub>e/£m”).

Where possible, the Trustee has obtained scopes 1&2 and scope 3 emissions from the managers separately.



### Data quality

A measure of the proportion of the portfolio that the Trustee has 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.

The Trustee has not made any estimates where data is unavailable.







### Portion of the portfolio with net zero, or Paris-aligned targets

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 or are already net-zero or Paris-aligned, or that have been verified by the Science Based Target Initiative (“SBTi”).

In the table below are the climate-related metrics for the Scheme's assets. The metrics are shown separately for the Liability Driven Investments ("LDI") and the other investments because the methodology used for each are different so aggregating the metrics would not make sense.

## The carbon metrics

									
			Data Quality (%)		Total GHG emissions (tCO <sub>2</sub> e)		Carbon footprint (tCO <sub>2</sub> e/£m)		Binary Target Measurement
Asset class	%		Scopes 1 & 2	Scope 3	Scopes 1 & 2	Scope 3	Scopes 1 & 2	Scope 3	Portion of portfolio SBTi aligned
Equities	4.1%	2022	98.7%	98.7%	552	9,293	2.9	48.6	79.2%
		2021	96.3%	-	230,741	-	257.0	-	-
Property	8.6%	2022	79.3%	79.3%	1,021	1,909	3.2	6.0	N/A
		2021	83.1%	-	1,305	-	2.9	-	-
Alternatives	11.8%	2022	12.5%	12.5%	2,487	8,594	21.7	74.8	3.0%
		2021	-	-	-	-	-	-	-
Fixed Income	30.4%	2022	78.0%	20.3%	46,500	227,089	52.2	523.5	22.9%
		2021	75.1%	-	176,654	-	78.8	-	-
Emerging Market Debt	4.4%	2022	13.5%	13.5%	10,237	28,828	363.6	1,028.5	N/A
		2021	-	-	-	-	-	-	-
Total assets (ex hedging)	59.3%	2022	50.3%	35.5%	60,798	275,713	39.5	253.4	30.2%
		2021	62.4%	-	408,700	-	142.9	-	-
Hedging	35.8%	2022	78.4%	28.4%	75,919	25,197	47.1	49.5	N/A
		2021	63.0%	-	299,848	-	98.2	-	-
Cash and other assets	5.0%	2022	-	-	-	-	-	-	-
		2021	-	-	-	-	-	-	-

Source: Investment managers / Aon. Data as at 31/12/2022 unless specified otherwise.

Scope 3 emissions are not available for 2021 because this is the first year of reporting Scope 3 emissions. Totals may not sum due to rounding.

### Additional notes:

- For the hedging assets, carbon metrics are shown solely in relation to the Scheme's physical gilt holdings. This excludes repo, interest rate and inflation swaps and cash.
- Carbon data metric calculation methodology for hedging (and LDI) has not yet been agreed industry wide meaning the LDI total emissions figures are subject to change in the future and are based on estimations at the current time.
- Carbon metrics relating to derivative investments have been excluded. The DWP notes that methodologies for calculating metrics in relation to certain asset classes, particularly derivatives (such as repo and interest rate and inflation swaps), are not yet established. At this time, trustees are not expected to be able to readily calculate emissions associated with derivatives.
- The Portfolio Alignment metric shows the percentage of the portfolio with SBTi Net-Zero initiatives. It does not include companies that are committed to set targets on a later date or set targets based on any other initiative or methodology.
- The data shown for the hedging assets is based on the physical gilt holdings, which is considered a sovereign entity. As a result, SBTi is therefore not relevant as SBTi is an initiative that covers corporate entities and not sovereigns.

- *In 2022, the Scheme experienced a notable fall in absolute GHG emissions and carbon footprint for Scopes 1 & 2. This fall was largely driven by the sale of the equity assets held in LGIM's Diversified Multi-Factor Equity fund, which contributed 223,568 tCO<sub>2</sub>e under Scopes 1 & 2 in 2021 (i.e., within the first year of disclosures). The outstanding equity managers have exposures to less intensive sectors, such as financials and technology, as well as renewable energy companies which are carbon offsetting. This has resulted in relatively low absolute emissions and carbon footprint, for this asset class, in the second year of reporting.*
- *The fall in absolute GHG emissions was also attributed by a reduction in value invested in the Scheme's fixed income assets. During the reporting period, the Scheme experienced a widening of credit spreads, rising yields and sale of fixed income assets to support the cash collateral within the LDI portfolio.*

## How are hedging asset emissions calculated?

You can see that the emissions for the hedging assets are a material portion of the Scheme's total GHG emissions. This is mainly down to the method used to calculate the emissions, which is different to other asset classes.

The hedging portfolio contains mainly UK government bonds, also known as "gilts". Carbon metrics for UK government bonds are based on the total GHG emissions for the whole of the UK, which are high. By contrast, carbon emissions for equities, for example, are based on the emissions associated with the underlying companies invested in, which are lower. Hence, the carbon metrics for hedging assets are higher than many other asset classes.

## Notes on the metrics data

Our investment consultant, Aon, requested information from all the Scheme's investment managers on their greenhouse gas emissions. Aon collated this information to calculate the following climate-related metrics for the Scheme's portfolio of assets.

### Availability of data

- Six out of the Scheme's nine managers provided GHG emissions data.
  - LGIM are responsible for managing four mandates for the Scheme but were unable to provide data for the private bond mandate. They also only provided scopes 1 and 2 only for the global credit mandate. Scopes 1, 2 and 3 data was provided for the remaining mandates.
- Wellington provided scopes 1 and 2 only, stating they do not calculate scope 3 emissions due to double counting issues. However, they hope to provide scope 3 emissions data in future reporting years.
- Basalt, Kennedy Lewis and Leadenhall were unable to provide carbon data at this time. These managers are classified within the illiquid assets. The Trustee recognises that managers in this area are faced with additional challenges as methodologies to calculate metrics are not yet available. The Trustee will continue to liaise with these managers.

### How we collected the data

Our investment adviser, Aon, collected the carbon emissions data from our managers on our behalf using the industry standard Carbon Emissions Template ("CET"). 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.

- Ownership Capital, GSAM Broad Street as well as both LGIM and Wellington (in relation to their global credit mandates) provided portfolio alignment metrics data, in the form of a Binary Target Measure (%).

Aon did 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 Trustee expects that in the future better information will be available from managers and this improvement will be reflected in the coming years' reporting. The Trustee plans to engage with its managers that were unable to supply emissions data to communicate its expectations for future reporting.

## Notes on the metrics calculations

### **The carbon metrics**

Aon calculated the carbon metrics for the Scheme based on the information provided by the investment managers.

### **Binary target measurement**

Aon calculated the binary target measurement for the Scheme based on the information provided by the investment managers. Aon requested the portion of the portfolio with SBTi aligned targets for each mandate from the Scheme's investment managers and aggregated the results based on the portion of assets invested in each mandate.

Aon did not make any estimates for missing data. The Scheme's binary target measurement only represents the portion of the portfolio for which the Trustee has data.

# Looking to the future

## Our climate-related target

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

Last year the Trustee agreed to report against a target for improving the data quality metric. Without meaningful emissions data from the Scheme's investment managers, it is very hard for the Trustee to measure the Scheme's climate-related risk exposure. So, it is important to set a target to improve the quality of GHG emissions data from the investment managers.



2022  
Target

Based on the observation of data quality in the first TCFD report, the Trustee agreed to set the following data quality target for the Scheme's assets, split by asset class over the next five years (using data as at 31 December 2021 as the baseline):

***The Trustee has set a target for improving the data quality metric over the next 5 years, to improve the quality of GHG emissions data from managers. The Trustee will initially focus on coverage of data, with the targets outlined in the table below.***



2023  
Update

In the second year of reporting, there has been an improvement in the quality of data provided by the Scheme's managers. Based on the observation of data quality summarised in the previous section, the Trustee has summarised its progress against its target within the middle column in the table below.

Asset Class	Actual coverage (as at 31 Dec 2021)	Actual coverage (as at 31 Dec 2022)	Target coverage (as at 31 Dec 2026)
Equities	96.3%	98.7%	>95%
Property	83.1%	79.3%	90.0%
Alternatives	-	12.5%	25.0%
Fixed Income	75.1%	78.0%	80.0%
Emerging Market Debt	-	13.6%	25.0%
Hedging	63.0%	78.4%	75.0%

Note: Base Year is 31 Dec 2021

Notes in relation to the target data coverage:

- The data coverage targets have been set to collate carbon emission data across scopes 1 and 2.

- The Trustee considered setting a target covering the scope 3 emissions, however, determined this was not appropriate due to the significant uncertainties with scope 3 data. The Trustee may reconsider this decision in future.
- The Trustee recognises that the data coverage and quality for equities is already strong. It therefore plans to ensure reporting remains over 95% in future years.

## Observations

As a result of the collection of data for the second-year reporting period, data was available for most of the Scheme's assets, with coverage varying across the asset classes in which the Scheme invests.

In particular, coverage was low for alternatives (12.5%) and emerging market debt (13.6%).

### Suitability of target

**The Trustee believes the original target, which focuses on improving the data quality metric for carbon emissions data across scopes 1 and 2 by 2026, remains suitable.**

## What is the Trustee doing to reach the target?

The Trustee is taking the following steps to reach the target:

<p>Increasing mandate coverage of data</p> <p><b>1</b></p>	<p>Making the reporting consistent</p> <p><b>2</b></p>
<p><b>Observation</b></p> <p>The coverage of data for equity mandates is greater versus other assets (such as fixed income or property). For equity holdings, data available was in excess of 90%. The coverage of carbon data for alternatives and emerging market debt assets was much lower.</p> <p>Data was not available for most of the alternative mandates, including emerging market debt.</p>	<p><b>Observation</b></p> <p>There were some managers who were able to provide high coverage but were not able to split out the data between scope 1, 2 and 3 emissions.</p>
<p><b>Solution</b></p> <p>The Trustee will engage with its investment managers, supported by its investment consultant, to request higher data availability and coverage for fixed income and alternative mandates. Through engagement, identify opportunities to improve coverage, or investigate alternative sources of data.</p> <p>In addition to engagement undertaken, the Trustee expects that improvement in data availability and reporting will in part be dependent on improved industry methodologies to calculate carbon metrics, including increased regulatory requirements for reporting carbon metrics.</p>	<p><b>Solution</b></p> <p>The Trustee will engage with its investment managers, supported by its investment consultant, to understand the challenges for splitting out this data and find an appropriate solution.</p>

# Appendices

# Glossary

<b>Governance</b>	refers to the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders. <sup>3</sup> 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. <sup>4</sup>
<b>Strategy</b>	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. <sup>5</sup>
<b>Risk management</b>	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. <sup>6</sup>
<b>Climate-related risk</b>	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. <sup>7</sup>
<b>Climate-related opportunity</b>	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. <sup>8</sup>

<sup>3</sup> A. Cadbury, [Report of the Committee on the Financial Aspects of Corporate Governance](#), London, 1992.

<sup>4</sup> OECD, [G20/OECD Principles of Corporate Governance](#), OECD Publishing, Paris, 2015.

<sup>5</sup> TCFD, [Recommendations of the Task Force on Climate-related Financial Disclosures](#), 2017

<sup>6</sup> Please refer to the link in reference number 10.

<sup>7</sup> Please refer to the link in reference number 10.

<sup>8</sup> Please refer to the link in reference number 10.

<b>Greenhouse gas emissions scope levels<sup>9</sup></b>	<p>Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.</p> <p>Scope 1 refers to all direct GHG emissions.</p> <p>Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam.</p> <p>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.<sup>10</sup></p>
<b>Value chain</b>	<p>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).<sup>11</sup></p>
<b>Climate scenario analysis</b>	<p>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.<sup>12</sup></p>
<b>Net zero</b>	<p>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.<sup>13</sup></p>

<sup>9</sup> World Resources Institute and World Business Council for Sustainable Development, [The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard \(Revised Edition\)](#), March 2004.

<sup>10</sup> PCC, [Climate Change 2014 Mitigation of Climate Change](#), Cambridge University Press, 2014.

<sup>11</sup> TCFD, [Recommendations of the Task Force on Climate-related Financial Disclosures](#), 2017

<sup>12</sup> Please refer to the link in reference number 16.

<sup>13</sup> Energy Saving Trust, [What is net zero and how can we get there? - Energy Saving Trust](#), October 2021

# Appendix – Climate scenario modelling assumptions

The climate scenarios were developed by Aon and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty.

The purpose of the model is to consider the long-term exposure of the Scheme to climate-related risks and the pattern of asset returns 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 model assumes a deterministic projection of assets and liabilities on the Technical Provisions basis, using standard actuarial techniques to discount and project expected cashflows.

- i. It models the full yield curve as this allows for an accurate treatment of the liabilities and realistic modelling of the future distribution of interest rates and inflation. It also allows the Trustee to truly assess the sensitivities of the assets and liabilities to changes in interest and inflation rates.
- ii. The parameters in the model vary deterministically for each scenario.

The liability update and projections are considered appropriate for the 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.

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 model has been set up to capture recent market conditions and views (as at 31 Mar 2021); the model may propose different solutions for the same strategy under different market conditions.

## Key Assumptions

	Temperature rise by 2100	Reach net zero by	Introduction of environmental regulation
Base Case	~2°C – 2.5°C	2050	Fragmented coordination
Disorderly	<4°C	After 2050	Late and aggressive
Orderly	<2°C	2050	Coordinated
Abrupt	<2°C	2050	Aggressive
Smooth transition	<1.5°C	2045	High coordination

Source: Aon.

# Appendix – An explanation of climate risk categories

Climate-related risks are categorised into physical and transitional 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 referring to extreme climate events such as flooding and wildfires, and chronic referring to 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 – 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 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<sup>14</sup> 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<sub>2</sub>e"). This enables the different gases to be compared on a like-for-like bases, relative to one unit of carbon dioxide.

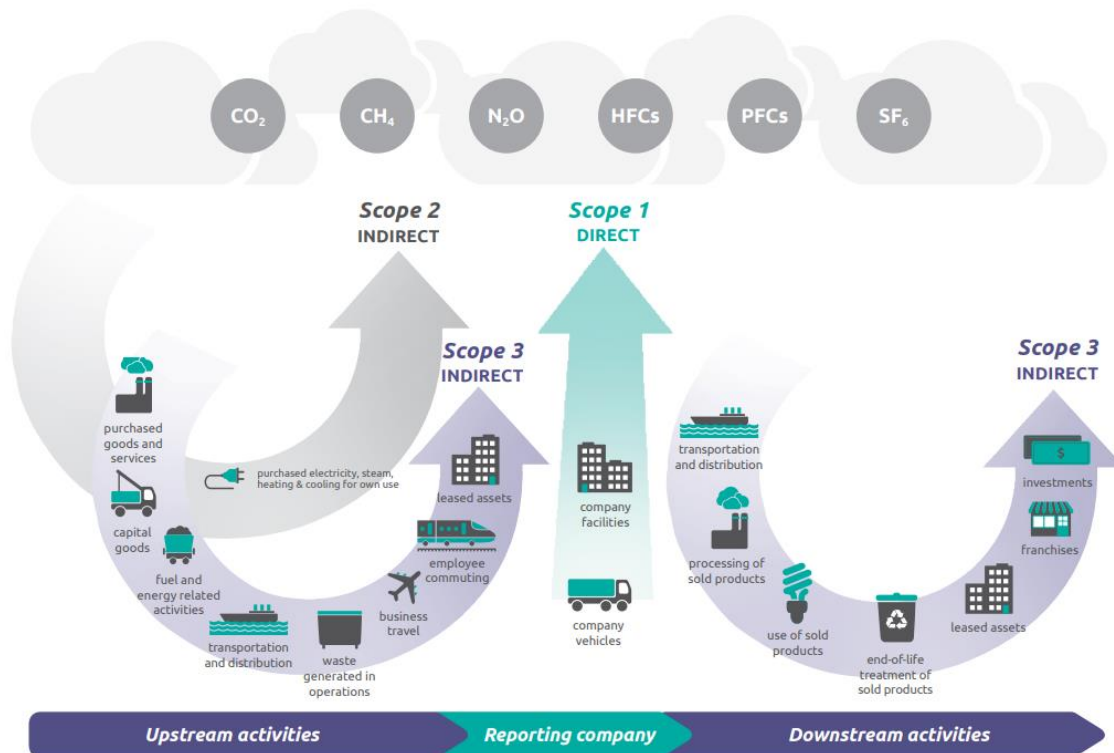
### Six main greenhouse gases identified by the Kyoto Protocol

					
Carbon dioxide	Methane	Nitrous oxide	Hydro-fluorocarbons	Per-fluorocarbons	Sulphur hexafluoride
CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>

<sup>14</sup> [https://unfccc.int/kyoto\\_protocol](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