



# Climate Disclosure Report

A report for members  
by the Trustee of the  
GEAPS Pension Scheme

Year to 31 March 2023

# Executive summary



This report describes the activities and approach taken by the Trustee to understand and reduce the risks to the Scheme related to climate change, and potentially take advantage of any opportunities as part of the transition to a lower carbon economy. This report covers the period from 1 April 2022 to 31 March 2023.

**The following points are a summary of the detailed report that follows:**

- Climate change is a priority for us (the Trustee). This is because we believe that appropriate treatment of climate-related risks and opportunities for the Scheme's investments should help improve the security of member benefits through better long-term returns and lower risk. For brevity, where we refer in this report to climate-related "risks and opportunities" we mean this to cover both the risks arising from the physical risks of climate change and the risks and opportunities presented by the anticipated transition of economies and society to a lower carbon future.
- We have identified a number of risks and opportunities to the Scheme arising from physical changes to the climate itself and from steps being taken to limit climate change. We are considering actions to best position the Scheme to reflect these factors.
- We have considered how such risks and opportunities might affect the funding strategy, investment strategy and the employer's ability to provide financial support to the Scheme, by modelling the Scheme under different potential climate scenarios (noting the limitations of any modelling). Overall, we believe the Scheme is positioned to be resilient to climate-related risks over the long term, but there might be some volatility in the funding position under certain scenarios in the shorter-term.
- With the help of our advisers, we regularly assess our underlying investment managers' Responsible Investment practices including their ability to best position the Scheme's assets to reflect climate change. We engage with our fiduciary manager on any matters of concern.

- The Scheme's assets are invested in a diversified, risk-controlled investment strategy. Over the Scheme year, following a significant improvement in the funding level, the Trustee reduced risk within the Scheme's assets. We continue to look out for further opportunities to reduce risk when this is affordable. As part of this process, we will consider assets which are positioned to reflect the risks and opportunities associated with climate change.
- During the year the Trustee received training on various climate related matters, stewardship and regulatory developments.
- We have collected emissions data on the Scheme's assets, including their carbon footprint, to help us understand and monitor climate-related risks and identify any data gaps. It is widely recognised that there remain shortcomings in the quality and completeness of the emissions data available for many assets, and there is not yet an industry wide consensus on how to calculate the emissions for some assets such as government bonds and derivatives. We are working with our fiduciary manager (who in turn liaises with our underlying investment managers) to improve the quality and coverage of reporting on climate data. Data was available for 80% of the Scheme's invested assets at 31 December 2022, with Scope 1 and 2 emissions data (either reported or estimated) for individual assets comprising 58% of the value of the Scheme's assets. The main data gaps relate to the Scheme's investments in illiquid assets (private equity, private credit, long lease property and opportunistic credit), where data is generally lacking across the industry, as well as corporate bonds.
- As required, the Trustee has chosen a target to monitor progress against. The target is to increase the percentage of the Scheme's listed equity and corporate bonds that have Science Based Targets for reducing emissions, to 60% by 31 December 2027. As at 31 December 2022, 31% of the listed equity and corporate bond holdings had Science Based Targets. We will continue to engage with our managers to endeavour to achieve this target over the upcoming years.

This is the first climate disclosure report published by the Trustee of the Scheme. We hope you find it informative and would welcome any feedback.

**Mark Elborne**

Chair of GE Vernova Pension Trust Limited

# Introduction

## About the GEAPS Pension Scheme

The Scheme is an occupational pension scheme that is looked after by GE Vernova Pension Trust Limited (the “Trustee”), with members from around the UK. It is a Defined Benefit (“DB”) scheme, with invested assets of c£1.9bn as at 31 March 2023. The Trustee’s primary objective is to ensure that the Scheme should be able to meet benefit payments as they fall due.

The Scheme benefits from a Guarantee from GEH Holdings (“the Guarantor”) which confirms a commitment to provide financial support to the Scheme if required, where the sponsoring/participating employers are unable to meet their obligations to the Scheme (collectively the Guarantor and sponsoring/participating employers are referred to as the “sponsors”).

In order to meet its objective the Trustee invests in a range of asset classes. Assets are invested by State Street Global Advisers Limited (“SSGA”) on behalf of the Scheme.

The Trustee’s belief is that its ability to meet its objectives is directly impacted by the global climate transition and the impact this has on businesses (including the sponsors) and financial markets.

# The purpose and structure of this report

The purpose of this report is to describe the Scheme's framework for managing climate-related risks and opportunities and how it has been implemented in the year from 1 April 2022 to 31 March 2023.

It is the Scheme's first report in accordance with the Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 ('the Regulations'). The Report has been prepared having regard to statutory guidance as well as the Pension Regulator's guidance on the governance and reporting of climate-related risks and opportunities.

## This report covers the following areas:

- ✓ **Governance** – the Scheme's governance around climate-related risks and opportunities.
- ✓ **Strategy** – the potential impacts of climate-related risks and opportunities on the Scheme and the resilience of the Scheme's investment strategy and funding strategy under different climate-related scenarios.
- ✓ **Risk Management** – the processes used by the Scheme to identify, assess, and manage climate-related risks.
- ✓ **Metrics and Target** – the metrics and target used to assess and manage relevant climate-related risks and opportunities to the Scheme.

To aim to improve readability, whilst the main body of this report contains key comments, you will see references to relevant Appendix pages from each Section, which you can read for more detailed information.

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Published alongside the Scheme's annual report and accounts for the Scheme Year to 31 March 2023.

# Governance

## Management of climate-related risks and opportunities – roles and responsibilities

The Trustee of the Scheme has ultimate responsibility for ensuring effective governance of climate-related risks and opportunities in relation to the Scheme.

The Trustee has delegated some responsibilities to its Funding & Investment Committee (“FIC”) and collectively they are supported by various parties including the Scheme Secretary, the Fiduciary Manager, investment managers and advisers, as listed in **Appendix 2**. No climate-related governance activities are undertaken by parties other than the Trustee and its sub-committees.

In September 2022, the Trustee agreed a Statement on Governance of Climate Change Risks and Opportunities, which clearly lays out the division of responsibilities between the parties noted above to maintain appropriate oversight of the climate-related risks and opportunities relevant to the Scheme. This ensures the Trustee can be confident that its statutory and fiduciary obligations are being met.

## The role of the Trustee

The Trustee has ultimate responsibility for all issues relevant to the Scheme, including its governance activities. The Trustee takes all Scheme-wide decisions. The Trustee's role also includes:

- Ensuring the Trustee Directors have sufficient knowledge and understanding of climate change to fulfil their statutory and fiduciary obligations and that this remains up to date.
- Putting effective climate governance arrangements in place.
- Determining the short-, medium- and long-term periods to be used when identifying climate-related risks and opportunities for the Scheme; and identifying and assessing such risks and opportunities over these periods.
- Incorporating climate-related considerations into strategic decisions relating to the Scheme's funding and investment arrangements, as well as its assessment and monitoring of the strength of the sponsors' covenant.
- Incorporating climate-related considerations into the Scheme's risk register and Integrated Risk Management ("IRM") framework.
- Ensuring that the Scheme's advisers have clearly defined responsibilities in respect of climate change, documented as appropriate, and that they have adequate expertise and resources, including time and staff, to carry these out.
- Communicating with Scheme members and other stakeholders on climate change where appropriate.

## The role of the Funding & Investment Committee ("FIC")

In addition to the FIC assisting the Trustee in the above responsibilities, the Trustee has delegated specific consideration of some climate-related matters to its FIC. The FIC is responsible for:

- Incorporating climate-related considerations into strategic decisions relating to the Scheme's investments.
- Incorporating climate-related considerations into the Trustee's investment beliefs and the Scheme's investment policies.
- Ensuring that the Scheme's Fiduciary Manager is managing climate-related risks and opportunities in relation to the Scheme's investments, and has appropriate processes, expertise and resources to do this effectively.
- Selecting and regularly reviewing metrics to inform the Trustee's identification, assessment and management of climate-related risks and opportunities, and setting and monitoring targets to improve these metrics over time where appropriate.



# The Trustee's **climate-related** investment beliefs and policies

The Trustee has agreed a range of climate-specific investment beliefs and policies. These are captured in broad terms in the Statement of Investment Principles, with further detail on beliefs and policies in its Responsible Investment (“RI”) Policy.

The Statement of Investment Principles is available via the following link:  
[www.geapspensionscheme.com](http://www.geapspensionscheme.com)

## RI Policy

The Scheme's RI Policy contains details of the Trustee's RI beliefs and principles, including its approach to monitoring investments and investment managers on a range of factors. It also sets out the actions the Trustee, and its external providers, take on behalf of the Scheme's members and other stakeholders, to protect the Scheme from environmental, social and governance (“ESG”) issues and reputational risks.

This document was updated in June 2022 to specifically reflect the Trustee's beliefs and policies in relation to climate risks and opportunities. The document is reviewed on an annual basis.

# Ensuring adequate oversight of climate-related risks and opportunities

The Trustee believes that by delegating certain responsibilities to the FIC and by allocating specific time at its quarterly Trustee meetings to discuss and consider advice in relation to responsible investment (including, where relevant, climate risks and opportunities), along with the advice of its Strategic Investment Consultant, ensures a structure that allows significant dedication to climate matters, and sufficient discussion and challenge on information provided.

Examples of the main items discussed in relation to climate risks and opportunities over the Scheme year are as follows:

- Modelling of climate scenario analysis for the Scheme, see **pages 18 to 22** for further details;
- Discussion on RI beliefs and updates to the Scheme's RI policy to specifically incorporate climate risks and opportunities;
- Incorporating climate specific risks into the Scheme's risk register, and discussing how these may impact the existing risks already identified;
- Discussion on setting stewardship priorities for the Scheme to focus engagement efforts with its underlying investments, noting that climate was one of the key priorities identified;
- Training on climate-related metrics, discussion on what metrics to monitor for the Scheme and agreeing the choice of target, see **pages 30 to 37** for further details; and
- Assessment of how the covenant may be impacted by climate-related risks under different climate scenarios, see **page 23 to 24** for further details.

Typically, the FIC will receive advice or recommendations from the Strategic Investment Consultant or Fiduciary Manager on climate risks and opportunities which is discussed during the FIC meetings. The FIC typically debate the advice and provide challenge where appropriate, to ensure the advice is fully understood and a range of options considered. Once an agreement has been reached, any decisions are proposed to the Trustee for approval.

An example of challenge relates to the FIC's understanding of the underlying managers' activities on climate-related issues, which has led to the Fiduciary Manager evolving its reporting to capture discussions that have taken place.

## Ensuring appropriate adviser arrangements

**Appendix 2** details the advisers that were in place during the Scheme year, along with the advisers' responsibilities, as set out in the Statement on Governance of Climate Change Risks and Opportunities.

The Trustee has ensured appropriate climate-related considerations are reflected in advisers' formal objectives, where relevant. In addition, when appointing new advisers, the Trustee ensures the adviser has suitable climate credentials. For example, the Trustee appointed Isio Group Limited as actuarial adviser during the Scheme year, who will be providing advice on climate change related funding matters, so the Trustee placed importance on this adviser's climate credentials.

The Trustee and the FIC satisfy themselves that their advisers take adequate steps to identify and assess climate-related risks and opportunities which are relevant to the matters on which they advise by:

- setting clearly defined responsibilities and expectations in respect of climate change;
- documenting their responsibilities, where relevant, in agreements such as the strategic objectives for the Strategic Investment Consultant and Fiduciary Manager;
- ensuring they have adequate expertise and resources, including time and staff, to carry these out; and
- ensuring they are adequately prioritising climate-related risk.

The Trustee reviews advisers against objectives set on an annual basis, as relevant. The Trustee has clear processes for assessing the competency of the advisers, including (but not limited to) reviewing the advisers against specific climate objectives where relevant. The latest review took place in November 2022.

# Oversight activities and processes

The Trustee and FIC ensure adequate oversight of climate-related risks and opportunities via various regular activities. A summary of the items reviewed by the Trustee and FIC are outlined below:

## Quarterly reviews

At its regular meetings each quarter, the Trustee will receive and review:

- The Scheme's risk register, following review and updates from its advisers.
- An update report on the metrics in the Scheme's IRM dashboard, produced by its advisers.

At its regular meetings each quarter, the FIC will receive and review:

- Relevant parts of the Scheme's risk register, following review and updates from its advisers.
- An update report on the metrics in the Scheme's IRM dashboard, produced by its advisers.
- Updates on the Scheme's investment managers from the Fiduciary Manager.
- A responsible investment report from the Scheme's Fiduciary Manager that reviews the Scheme's investment managers in relation to ESG factors and climate change.

These documents incorporate climate-related risks and opportunities where possible, in accordance with the roles and responsibilities set out in **Appendix 2**.

## Annual reviews

At one or more meetings each year, the Trustee will review, revise (where appropriate) and approve:

- Its governance arrangements in relation to climate change.
- Its draft Climate Disclosure Report.
- A draft business plan for the following year that outlines the main topics due to be discussed at each Board meeting, including climate-related topics.
- Whether it is appropriate to carry out scenario analysis that illustrates how the Scheme's assets and liabilities might be affected under various climate change scenarios, in years when this is not required because it has been carried out within the previous two years.
- The advisers' climate competency and assess how they have performed against their climate responsibilities.

At one or more meetings each year, the FIC will review, revise (where appropriate) and approve:

- Its investment beliefs and the Scheme's investment policies (as set out in the Statement of Investment Principles) in relation to climate change.
- Its Responsible Investment Policy.
- Data on four climate-related metrics for the Scheme's investments from its investment advisers and performance against any targets set in relation to these metrics.
- Whether to retain or replace any targets set in relation to these metrics.

## Less frequent reviews

The Trustee, with help from the FIC where appropriate, will consider climate-related risks and opportunities whenever the following activities are undertaken:

- Actuarial valuation of the Scheme.
- Review of the Scheme's investment strategy.
- Assessment of the sponsoring employer's covenant.

The Trustee, with help from the FIC where appropriate, will also at least every three years, and following any major changes in the Scheme's position, review:

- Its choice of short-, medium- and long-term time periods to be used when identifying climate-related risks and opportunities to the Scheme.
- The results of scenario analysis that illustrates how the Scheme's assets and liabilities, as well as covenant, might be affected under various climate change scenarios, and the implications for the resilience of the Scheme's funding and investment strategies.

The FIC will, at least every three years, review its choice of metrics to inform the Trustee's identification, assessment and management of climate-related risks and opportunities.

The Trustee also considers climate-related risks and opportunities in other regular activities where appropriate to do so (for example, when reviewing its integrated risk management ("IRM") framework).

Whenever reviewing agreements with external advisers, or appointing new advisers, the Trustee will consider and document the extent to which the advisers' climate-related responsibilities are included in the agreements and/or any adviser objectives set.

Training undertaken by the Trustee during each Scheme Year is documented in the Trustee's training record. During the year the Trustee received training on various climate related matters, stewardship and regulatory developments. The Trustee will continue to assess skill gaps and undertake training accordingly.

# Strategy

## Identification and assessment of climate-related risks and opportunities relevant to the Scheme

### Timeframes for assessing climate-related risks and opportunities

The Trustee has considered climate-related risks and opportunities over various time periods which it believes are most relevant to the Scheme.

The Trustee has selected short-term, medium-term, and long-term time horizons, over which to formally consider the impact of climate-related risks and opportunities. These are outlined in the table below, along with the Trustee's rationale for choosing these timeframes.

Time horizons	Period	Rationale
<b>Short term</b>	3 years	This aligns with the period between actuarial valuation cycles.
<b>Medium term</b>	8 years	This is broadly the period until full self-sufficiency* funding was projected to be achieved, under a low-risk strategy, at the effective date the Trustee undertook climate scenario analysis (31 December 2021). This period remains appropriate.
<b>Long term</b>	15 years	This is the approximate duration of aggregated Scheme liabilities at the effective date of the analysis, which is relevant if the Trustee is unable to achieve full independent security for members (for example, via an insurance contract).

\*Self-sufficiency: a funding measure where the Trustee could afford to invest in low-risk assets and still expect to pay all benefits.

## Understanding what climate-related risks and opportunities are relevant to the Scheme

The Scheme faces risks and opportunities from both the physical effects of climate change – for example, more frequent storms, rising temperatures and changing rainfall patterns – and from the effects of transitioning to a lower carbon economy to limit the extent of climate change – for example, government policies to restrict or discourage the use of fossil fuels, technological advances in renewable energy, and shifts in consumer demand towards “greener” products.

The Trustee has identified various specific climate-related risks and opportunities which could impact the Scheme’s financial position and monitors these regularly through climate considerations in the risk register across investment, funding and covenant. The Trustee considers the likelihood and impact of these risks and opportunities over the short, medium and long-term time horizons outlined above. Some examples of these are outlined below.

Factors that impact...	in the short term.	in the medium term.	in the long term.
<b>Investment strategy...</b>	<p>Investment market shocks due to the pricing-in of climate effects (transition and/or physical). This is of particular concern in the short term whilst the Scheme transitions to a lower risk portfolio, as the initial position is exposed to a higher level of investment risk generally.</p> <p>There could be an opportunity to invest in assets that may benefit from a transition to a low carbon economy to improve returns, if required, whether on an asset class, sector or specific company basis.</p>	<p>The Scheme is still expected to be exposed to some higher risk assets in the medium term, although this reduces as the Scheme is expected to move to a lower risk portfolio.</p> <p>Further de-risking and consideration of climate-aware strategies (for example in the Scheme’s credit mandates) could increase the resilience of assets to climate risks over this period.</p>	<p>Lower real investment returns, particularly over the longer term due to physical impacts of a changing climate.</p> <p>Cost of long-term solutions such as insurance contracts may increase as insurers allow for climate-related risks in their pricing and reserving bases, reducing the range of investment options available to the Scheme in the future.</p> <p>Full insurance is expected to provide greater protection from climate risks for members’ benefits.</p>

Factors that impact...	in the short term.	in the medium term.	in the long term.
<b>Funding strategy...</b>	<p>Potential shocks to interest rates and inflation could have a positive or negative impact on the Scheme's funding position. However, the Trustee has taken steps to partially immunise the Scheme from changes in these factors through various investment holdings that change in value in a consistent manner with the liabilities under these factors.</p>	<p>Potential impact on the Scheme's long-term funding target due to changes in interest rates and inflation, although as described on the left, the Trustee has taken steps to partially immunise the Scheme to these impacts.</p> <p>Climate impacts on investment markets and regulatory requirements could affect the cost of options to secure members' benefits with an insurance company over the medium-long term, should the Trustee wish to do so.</p>	<p>Potential demographic impacts on the Scheme's liability cashflows. Direct and indirect impacts on life expectancy could be either positive or negative. Direct impacts include the effects of milder winters and hotter summers, as well as healthcare disruption caused by extreme weather events. Indirect impacts could include improved air quality due to lower fossil fuel use and reduced spending on healthcare if economic growth is lower.</p>
<b>covenant...</b>	<p>Whilst current macroeconomic challenges make sharp transition potentially less likely over the Scheme's short term time horizon, the increasing prevalence of climate and extreme weather events means this possibility is not eliminated.</p>	<p>Expectation of transition risk including shifting demand / behaviours and increasing cost of carbon-intensive activity which would be expected to put financial pressure on the covenant but may also give rise to covenant-enhancing opportunities.</p>	<p>Longer-term costs of extreme weather events and global heating could impact both the wider economy and covenant and create longer-term uncertainty.</p>



## Assessing the importance of climate-related risks and opportunities to the Scheme

The Trustee uses various tools to assess the potential impact and likelihood of the risks and opportunities it has identified, as described in more detail on **page 27**.

The next section explains how scenario analysis has been used to assess how climate-related risks and opportunities might impact the Scheme's investment and funding strategy. The subsequent section considers the potential impacts of climate change on the sponsors' ability to provide financial support for the Scheme. This high-level analysis is complemented by more granular assessment of risks to the Scheme's investment portfolios using climate-related metrics (**pages 32 to 33**).

The later section on risk management (**pages 25 to 29**) outlines the steps the Trustee is taking to help mitigate climate-related risks and take advantage of opportunities.

# Climate scenario analysis

Scenario analysis is a tool for examining and evaluating different ways in which the future may unfold. At its May 2022 Training Day, the Trustee used scenario analysis to consider how climate change might affect the funding strategy and investment strategy, and the FIC also considered the impact of these scenarios on the employer's covenant in February 2023.

## Details of the climate scenarios the Trustee has used in its most recent scenario analysis

When considering the possible impact of climate change of the Scheme's expected funding position, the Trustee sought to consider, via asset and liability modelling, the impact of three scenarios on the Scheme. The Trustee chose these scenarios (developed by Ortec Finance and Cambridge Econometrics), after consultation with its Strategic Investment Consultant, for the following reasons:

Transition	Description	Why the Trustee chose it
<b>Failed Transition</b>	Global Net Zero targets are not reached by 2050; only existing climate policies are implemented.	To explore what could happen to the Scheme's funding position if carbon emissions continue at current levels and this results in significant physical risks from changes in the global climate that disrupt economic activity.
<b>Orderly Net Zero by 2050</b>	Global Net Zero is achieved by 2050; rapid and effective climate action (including using carbon capture and storage), with smooth market reaction.	To see how the Scheme's finances could play out if an orderly transition to Net Zero carbon emissions is achieved by 2050.
<b>Disorderly Net Zero by 2050</b>	Same policy, climate and emissions outcomes as the Orderly Net Zero by 2050, but financial markets are slower to react, and then react abruptly.	To look at the risks and opportunities for the Scheme if an orderly transition to Net Zero by 2050 is met, but financial markets are volatile as they adjust to a low carbon economy.

The Trustee acknowledges that many alternative plausible scenarios exist, but found these were a helpful set of scenarios to explore how climate change might affect the Scheme in the future.

The intricacies of climate systems present considerable difficulties in modelling the impacts on pension schemes’ assets and liabilities. This is particularly true in the Failed Transition scenario where over 4°C of warming is observed. Due to the unprecedented nature of such warming, it is challenging to encompass all potential consequences within the modelling process. Simplifications in the modelling, such as not allowing for tipping points, mean the actual impact on pension schemes is likely to be more significant than is currently being modelled. The Trustee has considered the potential impact of such limitations in the modelling. The Trustee is comfortable that, as long as these limitations are understood, the scenarios still provide valuable insights to inform climate risk assessment and management.

To provide further insight, the Trustee also compared the outputs under each scenario to a “climate uninformed base case”, that makes no allowance for either changing physical or transition risks in future.

The scenarios’ key features are summarised below.

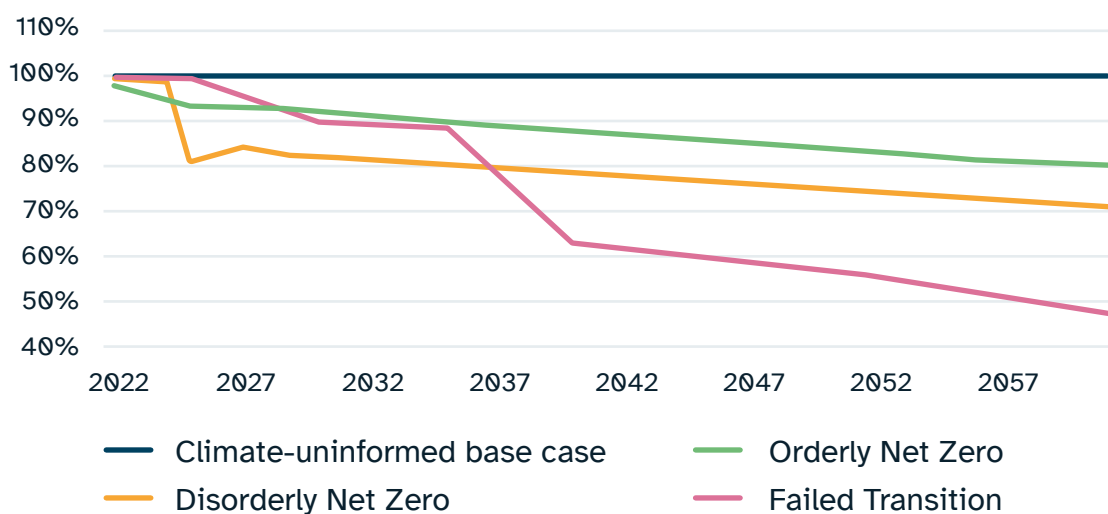
Scenarios:	Failed Transition	Orderly Net Zero by 2050	Disorderly Net Zero by 2050
Low carbon policies	Continuation of current low carbon policies and technology trends	Ambitious low carbon policies, high investment in low-carbon technologies and substitution away from fossil fuels to cleaner energy sources and biofuel. Carbon Capture and Storage also used to achieve global net zero by 2050	
Paris Agreement outcome	Paris Agreement goals not met	Global net zero achieved by 2050; Paris Agreement goals met	
Global warming	Average global warming is about 2°C by 2050 and over 4°C by 2100, compared to pre-industrial levels	Average global warming stabilises at around 1.5°C above pre-industrial levels	
Physical impacts	Severe physical impacts	Moderate physical impacts	

<p><b>Impact on GDP</b></p>	<p>Global GDP is significantly lower than the climate-uninformed scenario in 2100.</p> <p>For example, UK GDP in 2100 predicted to be 50% lower than in the climate uninformed scenario.</p>	<p>Global GDP is lower than the climate-uninformed scenario in 2100.</p> <p>For example, UK GDP in 2100 predicted to be about 5% lower than in the climate-uninformed scenario</p>	<p>In the long term, global GDP is slightly worse than in the Paris Orderly scenario due to the impacts of financial markets volatility</p>
<p><b>Financial market impacts</b></p>	<p>Physical risks priced in over the period 2026-2030. A second repricing occurs in the period 2036-2040 as investors factor in the severe physical risks</p>	<p>Transition and physical risks priced in smoothly over the period of 2022-2025</p>	<p>Abrupt repricing of assets causes financial market volatility in 2025</p>

Source: Ortec Finance, modelling as at 31 December 2021. Figures quoted are medians.

These scenarios show that equity markets could be significantly impacted by climate change, with lesser but still noticeable impacts in bond markets. All three scenarios envisage, on average, lower investment returns and these could result in a worse funding position.

### Cumulative impact on global equity returns (relative to the climate-uniformed base case)



Source: Ortec Finance. Impacts shown are medians, based on financial conditions as at 31 December 2021.

Over the long-term, and particularly beyond the time horizon modelled, the largest effects would be felt under the Failed Transition scenario. On the face of it, the results below suggest that Scheme is relatively resilient in this scenario, expected to achieve full funding on the Scheme's long-term basis within a reasonable period of time. This is partly because in the modelling the Scheme is assumed to reach its low-risk long-term investment strategy by 2029, after which it has significantly lower exposure to growth assets such as equities which are expected to be most severely affected by climate change. Moreover, the Scheme invests in a way that is designed to make it fairly immune to changes in interest rates and inflation in normal circumstances, which significantly reduces the volatility of its funding position. However, under climate scenarios with major economic disruption – such as the later years of the Failed Transition scenario – the Scheme's interest rate and inflation protection may break down, leaving it more exposed to climate risks. The median modelled outcomes do not illustrate this possibility.

## Results of the Trustee's assessment of climate scenarios on the Scheme's investment and funding strategy

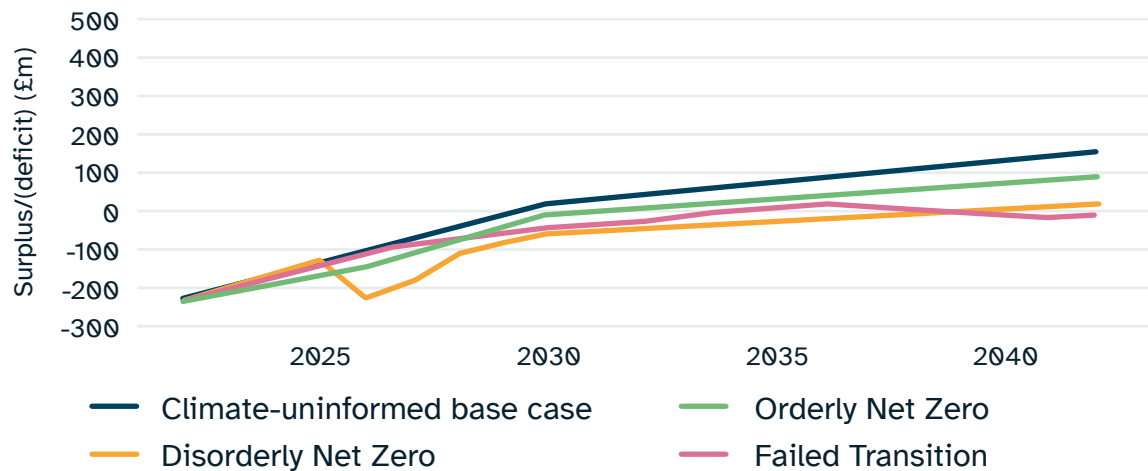
The chart below shows the potential impact on the progression of the Scheme's funding position over time under each of the scenarios outlined above, relative to the climate uninformed base case. The effective date of the analysis is 31 December 2021. The Scheme's funding position reflects the gap between the value placed on the Scheme's assets and the value placed on its liabilities over time. To calculate the funding position at each point, the impact of each climate scenario has separately been applied to the assets and liabilities, before the two figures are compared.

At the time of the analysis, the Trustee was considering a lower risk path to look to achieve its longer-term objectives, so the analysis considered both the current strategy and a lower-risk strategy path. Since the lower-risk strategy was subsequently agreed with the sponsors, this is the analysis shown in this report.

For the purpose of this analysis the Trustee used a funding measure of gilts + 0.5% pa, which reflects the long-term funding target for the Scheme, and the Trustee aims to achieve full funding on this basis by 2033. The Trustee also considered the analysis on the Technical Provisions funding basis, but given the Scheme was broadly fully funded on this measure when the analysis was discussed (and has since moved into surplus), the main focus of discussion was on the long-term funding basis.

The modelling used in the analysis assumes the current investment strategy is held until 2029 (at which point the Scheme was expected to be fully funded on its long-term funding basis) and a further de-risking step undertaken at that time. The chart below does not assume any specific action is taken to further secure benefits when full funding is achieved.

## Projection of surplus/deficit under proposed journey plan, from 31/12/21



Surplus (deficit) on gilts + 0.5% pa basis as at effective date of analysis: £(221)m

Surplus (deficit) on gilts + 0.5% pa basis as at 31 March 2023: £22m

## Results from the Trustee's climate scenario analysis

The journey plan illustrated is projected to achieve full funding on a gilts +0.5% pa measure before the current target date of 2033 in most climate scenarios. The strategy adopts a modest risk and return profile at outset, and is therefore not significantly sensitive to the long-term impact of both transition risks and physical risks of climate change as compared to the previous journey plan.

The key scenario which could potentially hinder the Trustee's objectives to achieve full funding on a low-risk measure in the agreed timeframe is a Disorderly Net Zero scenario. Following the initial funding shock, the recovery is expected to be slow due to the low return nature of this investment strategy.

The Scheme's exposure to high-risk assets such as equities are expected to reduce as the Scheme de-risks, increasing the Scheme's resilience to climate risks. In the short term, the Scheme is exposed to climate-related shocks largely due to the high-risk equity assets held, although these will be mitigated somewhat by the Scheme holding a diversified mix of different managers and approaches.

In all climate-informed scenarios, the reliance on the sponsors continues for a number of years and through a timeframe where both the transition risks and physical risks of climate change may become more apparent. In some scenarios it is also possible that the Scheme falls back into Technical Provisions deficit, which may prompt additional contributions to be payable.

The Trustee recognises that there are many reasons why the outcome might differ from those modelled. Further information on the assumptions used as part of this analysis and the limitations of the analysis can be found in **Appendix 4**.

## The Trustee's analysis of sponsor covenant

The Trustee engaged its covenant adviser to carry out an assessment of how the covenant may be impacted by climate-related risks under different climate scenarios. The results of this assessment were discussed with the FIC in February 2023.

The Scheme's direct covenant that supports the Scheme's funding strategy is primarily the GE Vernova part of the group, which is where the covenant adviser has focused its work.

The resilience of the funding strategy to climate scenarios depends upon the ability of the covenant to underwrite financial needs of the Scheme under the different climate stress scenarios modelled. Two of the climate scenarios result in additional funding requirements during the 20-year time horizon modelled, and under all three scenarios the modelling suggests an extension of the time to reach the longer-term funding target and hence lengthening the period over which the Scheme may need the support of the Group.

The nature of GE Vernova operations means transition risks are expected to be more relevant than physical risks in the short term, with a shift in emphasis to physical risk over the longer term.

GE has a clear climate strategy and ambitions but is exposed to climate risks and opportunities that could impact its future performance. The below table summarises key climate risks and opportunities that the covenant is exposed to:

Transition risks	Description
<b>Technology innovation</b>	Technology innovation, and the associated investment requirements in Research and Development and changes in demand.
<b>Supply chain</b>	Increased cost of inputs (raw materials, production energy, transport) from carbon taxes.
<b>Competitors</b>	Failure to adopt new technologies adversely impacting competitive position.
<b>Reputation</b>	Loss of customers / business partners if businesses are not seen as responsible corporate citizens.
<b>Carbon capture and storage ("CCS")</b>	Impact on demand from viability and affordability of CCS, which is dependent on large-scale investment in transport and storage infrastructure.

## Physical risks

## Description

<b>Acute: Extreme weather</b>	Risk from events such as flooding, drought, extreme heat and wildfires increasing in prevalence over time, across GE's global operations, supply chain and customers, as well as the impact on wider economy.
<b>Chronic: Rising sea levels, desertification</b>	Risk over longer term to GE operations, supply chain and customers (as well as wider economy) from longer term climate trends and areas becoming uninhabitable or expensive to protect.

## Opportunities

## Description

<b>Renewables market</b>	Ability to participate in rising global demand for renewable energy.
<b>Gas power generation</b>	Resilience or growth of demand for gas-fired power generation (supported by GE Power gas turbine products and services) as more carbon-intensive coal and oil are phased out.
<b>Investment</b>	Ability to gain competitive advantage from innovation in emerging solutions such as nuclear and hydrogen.



# Risk Management

## Risk management processes

The Trustee has established various processes to identify, assess and manage climate-related risks and opportunities in relation to the Scheme, and has taken steps to integrate these within the overall risk management of the Scheme. Some of the key measures in place are outlined below.

- Various responsibilities have been agreed to ensure the identification and assessment of climate-related risks and opportunities, as outlined in the 'Governance' section of this report (see **pages 7 to 13**). The Trustee will review these responsibilities on an annual basis, to ensure they are covered appropriately during each Scheme year.
- The FIC is responsible for selecting and regularly reviewing metrics to inform the Trustee's identification, assessment and management of climate-related risks and opportunities, and setting and monitoring targets to improve these metrics over time where appropriate.
- The Trustee, supported by relevant sub-committees, reviews its risk register on a quarterly basis. This incorporates considerations for climate risks, alongside other risks relevant to the Scheme. The Trustee is also in the process of building climate-related monitoring into its quarterly reporting.
- On a quarterly basis, the FIC receives a responsible investment report from the Scheme's Fiduciary Manager that reviews the Scheme's investment managers in relation to environmental, social and governance (ESG) factors and climate change.

- The Trustee's covenant adviser provides covenant monitoring which is being expanded to include some climate risk reporting. The adviser aims to extend this over time as information availability improves. An initial assessment of the climate exposures of the sponsors was conducted in February 2023 and a summary of that review is outlined on **pages 23 to 24**.

In June 2022, the Trustee updated its Responsible Investment Policy to reflect the additional actions being taken to manage climate-related risks.

## The role of stewardship in managing climate-related risks and opportunities

The Trustee believes that good stewardship practices, including monitoring and engaging with investee companies, and exercising voting rights attached to investments, are key to managing climate-related risks.

In seeking to ensure strong stewardship practices, the Trustee is mindful of its governance structure, with the Fiduciary Manager liaising with underlying managers, who in turn liaise with portfolio companies.

On a quarterly basis, the FIC reviews a responsible investment report from the Scheme's Fiduciary Manager that reviews the Scheme's investment managers in relation to ESG factors (including climate change) and engagement. Throughout the year, the Trustee challenged its Fiduciary Manager on the contents of this reporting, to ensure it properly understood activity taking place.

Towards the end of the Scheme year, the Trustee identified three key priorities for stewardship, one of which is climate risk. The Trustee has subsequently communicated its stewardship priorities to the Fiduciary Manager and will look to review the Fiduciary Manager's approach to ensuring these priorities are reflected in underlying activities for the Scheme.

The Implementation Statement with the same date as this report contains more information about the Trustee's stewardship processes and stewardship activity during the Scheme year.

The Implementation Statement can be found online via this link:

**[www.geapspensionscheme.com](http://www.geapspensionscheme.com)**



## Tools used to identify and assess risks and opportunities

The Trustee has used the following tools to help identify and assess climate-related risks and opportunities facing the Scheme arising from both the physical impacts of climate change and the transition to a low carbon economy:

- **Climate scenario analysis** was used to understand the impact of different climate scenarios on the Scheme's finances (see the climate scenario section on **pages 18 to 22** for further details).
- The Strategic Investment Consultant's **LCP Analysis of Climate Threats ("ACT")** tool was used to provide an initial appraisal of the Scheme's portfolio's main areas of climate risk exposure.
- **Assessment of sponsor covenant** was used to identify the potential impact of both physical and transition risks from climate change on the financial strength of the sponsors.
- The Trustee's Strategic Investment Consultant provides an annual report on the Scheme's portfolios containing various **climate-related metrics**, which help illustrate the current exposure to certain climate transition risks (see **pages 30 to 35** for further details).
- The Trustee, with the help of the FIC and its advisers, **assesses and monitors its investment managers** to ensure they are adequately managing risks to the Scheme's assets, including those relating to climate change. This includes regular monitoring from the Fiduciary Manager on the underlying managers' responsible investment practices and stewardship.

The Trustee also undertakes regular training, to maintain and deepen its understanding of climate-related risks and opportunities. Over the Scheme year, the Trustee received training on climate scenarios, climate metrics and stewardship.

# How the assessment of climate-related risks fits into the wider risk management picture

In September 2022, the Trustee updated the Scheme's risk register to include an assessment of climate-related risks alongside various other investment, funding and covenant risks to the Scheme. The Trustee sought to amend existing risks where it identified that climate risks should be considered alongside these factors.

For example the risk that investment returns were not achieved in line with expectations, which could be impacted by climate change as well as other investment risks. The Trustee also incorporated risks which hadn't previously been considered, such as potential volatility in the Scheme's funding level driven by the impact of a disorderly transition.

The Trustee has put in place various controls to help mitigate these risks. Inclusion within the risk register helps the Trustee to put climate risk into the context of other risks being run, and to prioritise those risks which pose the most significant potential for loss and are most likely to occur. The risk register considers risks through the lenses of both how likely a risk is to occur, and the magnitude of impact if the risk does occur. This helps the Trustee to prioritise those risks that are both high likelihood and high severity first. Overall, the Trustee has assessed the impact of climate related risks as broadly medium in the context of other risks being faced by the Scheme, prior to the controls it has put in place. However, the Trustee believes the measures it has put in place are sufficiently robust to reduce the risk of the climate factors it has identified materially impacting the Scheme's financial position.

The Trustee is also in the process of incorporating monitoring of climate risks into its IRM dashboard, so it can more frequently assess climate risks in the context of wider risks the Scheme is subject to. The FIC monitors the IRM dashboard at its quarterly meetings.

# How the Trustee helps manage the key risks and opportunities identified

The Trustee has in place a number of measures to help manage climate-related risks and opportunities. Some examples of these are outlined below:

- The Scheme invests in a well-diversified investment strategy to help reduce exposure to risk generally, which also reduces the exposure to climate risks impacting any individual asset class. In addition, the Trustee undertook de-risking steps during the latest Scheme year and continues to seek opportunities to further de-risk the Scheme's investment strategy.
- The Trustee has a policy to protect against a high proportion of the interest and inflation risks that could impact the value of the Scheme's liabilities. Therefore, any potential impact on interest rates and inflation from climate change (and indeed from other factors) are significantly mitigated.
- The Trustee has set a target to have 60% of the Scheme's holdings in listed equity and corporate bonds to have set a science-based emissions reduction target ("SBT"), which measures how aligned companies are with a transition to a low-carbon economy. Further details on the Trustee's climate target are shown on **page 37**.

# Metrics and targets

The Trustee has chosen four climate-related metrics to help it monitor climate-related risks and opportunities to the Scheme.

Metric	High-level methodology
<b>Absolute emissions: Total greenhouse gas emissions</b>	The sum of each company's most recent reported or estimated greenhouse gas emissions attributable to the Scheme's investment in the company, where data is available. Emissions are attributed evenly across equity and debt investors. Reported in tonnes of CO2 equivalent. This methodology was chosen because it is in line with the statutory guidance.
<b>Emissions intensity: Carbon footprint</b>	The total greenhouse gas emissions described above, divided by the value of the invested portfolio in £m, adjusted for data availability. Emissions are attributed evenly across equity and debt investors. Reported in tonnes of CO2 equivalent per £1m invested. This methodology was chosen because it is in line with the statutory guidance.

Metric	High-level methodology
<b>Portfolio alignment: Science-based targets (SBT)</b>	The proportion of the portfolio by weight of holdings with science-based targets to reduce their greenhouse gas emissions, demonstrated by a target validated by the Science Based Targets initiative (SBTi) or equivalent. The Trustee chose this “binary target” measure because it is the simplest and most robust of the various portfolio alignment metrics available at the time.
<b>Additional climate change metric: Data quality</b>	The proportion of the portfolio for which greenhouse gas emissions data is reported, estimated or unavailable. This approach was chosen because it is in line with the statutory guidance.

The data has been collected and calculated based on portfolio holdings as at 31 December 2022, where available. At that date, the total assets of the Scheme were valued at £1.8bn. Data has only been included in the table below where information on the Scheme assets was available, therefore the total asset value in the table is lower than this figure due to data gaps. We have provided more detail on data gaps on **page 36**.

The emissions data applicable to the underlying holdings at this measurement date will often relate to an earlier period. For example, corporate emissions data will typically be aligned to the corporate reporting year for each company. As year-ends vary by company, the emissions data will be from various periods.

Further information about the methodologies used to calculate the metrics, including key judgements, assumptions and data inputs and provided in **Appendix 4**.

The Trustee notes that the investment strategy, as agreed with the Guarantor, is constructed to help achieve the Trustee’s objectives. In particular, a large proportion of the Scheme’s assets is held in governance bonds and equivalent derivative-based holdings, because these are viewed as low-risk in the context of the ability to pay member benefits. The Trustee does not intend to change key strategic measures in place as a result of its review of metrics collected.

# Metrics collected

## Metrics 1 and 2 - Absolute and intensity emissions metrics

**Metric 1:** Total emissions (tonnes CO<sub>2</sub>e) for the Scheme's assets<sup>2</sup> and  
**Metric 2:** Carbon footprint (tonnes CO<sub>2</sub>e per £m invested)<sup>2</sup>

Portfolio <sup>1</sup>	Asset value at 31/12/2022	% of Scheme assets	Coverage (emissions data)	Metric 1		Metric 2	
				Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3
Global equities (active) <sup>5</sup>	£99.4m	5.4%	96%	6,034	43,101	64	456
Global equities (passive) <sup>5</sup>	£26.1m	1.4%	99%	1,540	8,456	59	324
Emerging market equities <sup>5</sup>	£6.6m	0.4%	99%	236	1,126	36	172
Private Equity <sup>7</sup>	£11.8m	0.6%	100%	412	N/A	35	N/A
UK Property <sup>3</sup>	£166.0m	9.1%	35%	288		4	
Multi-asset credit <sup>5</sup>	£160.7m	8.8%	40%	10,365	48,304	161	755
Corporate bonds <sup>5</sup>	£353.3m	19.3%	46%	15,832	69,390	97	423
Government bonds	£38.5m	2.1%	100%	6,684	4,030	174	105
Liability Driven Investment <sup>6</sup>	£593.3m	32.5%	100%	214,942	N/A	195	N/A

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## Metrics 3 and 4 - Portfolio alignment and data quality

**Metric 3:** Portfolio alignment (% SBTi Yes / No)<sup>4</sup> and

**Metric 4:** Data quality (% reported / estimated / unavailable)

Portfolio <sup>1</sup>	Asset value at 31/12/2022	% of Scheme assets	Coverage (emissions data)	Metric 3	Metric 4	
					Scope 1 & 2	Scope 3
Global equities (active) <sup>5</sup>	99.4m	5.4%	95%	39.2/60.8	80/15/5	0/95/5
Global equities (passive) <sup>5</sup>	£26.1m	1.4%	99%	27.5/72.5	78/21/1	0/98/2
Emerging market equities <sup>5</sup>	£6.6m	0.4%	99%	18.7/81.3	81/18/1	0/99/1
Private Equity <sup>7</sup>	£11.8m	0.6%	100%	N/A	N/A	
UK Property <sup>3</sup>	£166.0m	9.1%	35%	N/A	0/35/65	
Multi-asset credit <sup>5</sup>	£160.7m	8.8%	40%	10.4/89.6	29/11/ 60	0/40/60
Corporate bonds <sup>5</sup>	£353.3m	19.3%	46%	29.6/70.4	41/5/54	0/46/54
Government bonds	£38.5m	2.1%	100%	100.0/0	100/0/0	100/0/0
Liability Driven Investment <sup>6</sup>	£593.3m	32.5%	100%	100.0/0	100/0/0	100/0/0

SBTi baseline level for combined listed equity and corporate bonds: 31% (relevant for Trustee's choice of target on **page 37**)

Certain data ©2022 MSCI ESG Research LLC. Reported by permission. See **Appendix 4** for more details.

## Notes on the metrics

1. Where the Trustee has not been able to obtain any data N/A is shown.
2. The total greenhouse gas (GHG) emissions figures omit any entities for which data was not available. For example, if the portfolio was worth £100m and emissions data was available for 70% of the portfolio by value, the total GHG emissions figure shown would relate to £70m of assets and the portfolio's carbon footprint would equal total GHG emissions divided by 70. In other words, no assumption is made about the emissions for entities without data.
3. UK property GHG emissions, carbon footprint and data quality metrics includes Scope 1, 2 and 3 emissions combined, as the managers were unable to disaggregate this information.
4. 'No' is for a combination of companies either not having an SBT target or data not being available.
5. Metrics data is obtained from ©2022 MSCI ESG Research LLC and reported by permission. See **Appendix 4** for further information.
6. Total GHG emissions and carbon footprint for the LDI portfolio is calculated based on gilts that are owned by the Scheme (and for the purpose of this calculation, gilts that have been temporarily sold as part of gilt repurchase agreements are included). We have not however included the value of any gilts that have been posted for margin purposes in respect of derivative contracts.
7. The allocation shown for Private Equity represents only one of the Scheme's managers, or around 14% of the Scheme's total allocation to this asset class, due to the lack of suitably available data from the other managers.

## Conclusions from assessment of the metrics

The Trustee uses the metrics collected in its identification and assessment of climate-related risks and opportunities to the Scheme. This more granular assessment complements the macro-level climate scenario analysis described on **pages 18 to 22**, enabling the Trustee to focus its climate risk management on the areas of the portfolio which are expected to be most exposed to climate change.

The Trustee considered the metrics collected for each of the asset classes in the portfolio (detailed on **pages 32 to 33**), with the following highlights:

- **Listed equities:** Equities emissions coverage is high, and the global active and passive equity portfolios have similar Scope 1 and 2 carbon footprint of 60–65 (tonnes CO<sub>2</sub>e per £m invested). For comparison, a designated low carbon global equity strategy could have a Scope 1 and 2 carbon footprint of around 17 (tonnes CO<sub>2</sub>e per £m invested), therefore there might be an opportunity to reduce carbon emissions in the portfolio. The carbon footprint in the emerging markets portfolio is low, which could be attributed to the fact it is a concentrated portfolio and so is avoiding a lot of the higher emitting companies when compared to the broader market index.
- **Illiquid assets:** It is difficult for the Trustee to make a full assessment of the climate risk and opportunities within the portfolios since the majority of the investment managers were unable to provide meaningful climate data. Since the Scheme's move to a lower risk portfolio, the illiquid assets are now a smaller part of the strategic allocation (although this portfolio is currently overweight versus target) and the Scheme has halted new commitments to the illiquid assets, so this allocation will get smaller over time. Therefore, the Trustee views this portfolio as less of a priority for climate actions relative to some of its other portfolios.
- **Corporate bonds:** The corporate bond mandate forms a material and growing component of the Scheme's assets, so it is important that climate risk within this portfolio is managed well. Coverage within the portfolio is currently low, which makes it difficult to draw meaningful conclusions from the data. High Scope 1 and 2 emissions exposure combined with low SBT exposures could be a concern if high emitters do not have plans in place to decarbonise. The Trustee could consider incorporating a stronger climate focus within the management of the fixed income portfolio and has asked the Fiduciary Manager to engage with managers to improve the quality of data reported, so it can better assess the climate risks and opportunities in the portfolio.
- **LDI and government bonds:** This is a large component of the Scheme's matching portfolio for investment risk management purposes and will be held long-term. Emissions appear high, but this is expected given the large allocation and the way emissions metrics are calculated for government bonds. Although required as part of the disclosure, the Trustee recognises that emissions are not a good indication of climate risk for these portfolios, and that government climate policies are more relevant for assessing their long-term climate risk exposure. Nonetheless, the Trustee has asked its Fiduciary Manager to continue to engage with the LDI manager on how ESG risks are managed within the LDI portfolios (for example relating to bank counterparties).

## Climate change data gaps

Data was available for 80% of the Scheme's assets at 31 December 2022, with Scope 1+2 emissions data (either reported or estimated) for individual mandates comprising 58% of the value of the Scheme's assets.

Data was unavailable for 20% of the Scheme's assets, due to the investment manager being unable to provide the data or the data being omitted on materiality grounds. For example, the Scheme has not included cash or standalone derivative allocations (such as tactical derivative positions or derivatives used for currency hedging purposes), or funds which make up less than 0.5% of the Scheme's total invested assets at 31 December 2022. No proxy information or models were used to estimate data that was missing.

Most of the Scheme's investment managers are seeking to improve their climate-related reporting, by increasing the number of metrics they report and seeking to fill the data gaps. The Trustee therefore expects data coverage and quality to improve over time. As data is incomplete, the Scheme's total greenhouse gas emissions are currently understated. This metric may increase in future years as more data becomes available.

The main data gaps relate to the investments in illiquid assets (ie private equity, private credit, long lease property and opportunistic credit). For wider context, provision of emissions data is generally lagging for private market investments. These managers are currently undertaking data gathering exercises, so the Trustee expects data coverage to improve for these assets over the coming years, although the allocations to these managers is expected to reduce materially over time due to recent changes to the investment strategy as outlined above.

# The Trustee's choice of target

The Trustee has set the following target against one of its three chosen metrics:

Target	Scheme coverage	Reference base date
60% of listed equity and corporate bonds (by portfolio weight) to have set science-based targets by 31 December 2027	Listed equity and corporate bonds (around 26% of total Scheme assets at 31 December 2022)	31 December 2022

This target was chosen as the metric is forward-looking and focussed on the transition that needs to occur in the future in order to achieve Net Zero aims globally.

Achieving the above target will improve the Scheme's assets' alignment with a 1.5°C pathway which is expected to help manage climate-related risks to the Scheme by:

1. Reducing exposure to climate transition risks in the shorter-term by keeping up with/slightly ahead of a general market trend; and
2. Supporting collective action to meet the Paris Agreement goals, hence reducing longer-term systemic risks from the physical effects of climate change.

The Trustee notes that any actions as a result of its work in relation to climate change, including efforts to move towards achieving the target set, will be taken on the condition that they are also appropriate from a wider strategic perspective.

## Initial performance against the target

The climate reporting carried out for the Scheme during the year included an assessment of the current alignment with the above target. **Broadly 31% of the Scheme's listed equity and corporate bonds had set SBT targets by 31 December 2022**, based on information held on the MSCI database about SBTi-validated targets.

## The following steps are being taken to achieve the target

The Trustee, with help from its Strategic Investment Adviser, has communicated the target to its Fiduciary Manager.

The Trustee has highlighted the following actions which it will be taking forward over the next year:

- Considering the merits of introducing a stronger climate focus within certain of the Scheme's asset allocations, such as listed equities and corporate bonds (the assets around which the target has been set).
- Engaging (via the Fiduciary Manager) with underlying investment managers to improve the quality of the data (both coverage and quality) so as to allow the Trustee to better identify climate risks and opportunities within this allocation.

The Trustee will review progress towards the target each year and consider whether additional steps are needed to increase its chance of meeting the target.

# Appendix 1: Glossary of terms used within this report

Below we describe various terms which are used in this report.

- **Carbon emissions** – These refer to the release of carbon dioxide, or greenhouse gases more generally, into the atmosphere.
- **Carbon footprint** – In an investment context, the total carbon dioxide or greenhouse gas emissions generated per amount invested (eg in £m) by an investment fund. Related definitions are used to apply the term to organisations, countries and individuals.
- **Covenant** – this refers to the underlying premise of the employer to pay contributions to a pension scheme. It is the employer’s legal obligation and financial ability to support their defined benefit scheme now and in the future.
- **Environmental, social and governance (ESG)** – an umbrella term that encompasses a wide range of factors that may have been overlooked in traditional investment approaches. Environmental considerations might include physical resource management, pollution prevention and greenhouse gas emissions. Social factors are likely to include workplace diversity, health and safety, and the company’s impact on its local community. Governance-related matters include executive compensation, board accountability and shareholder rights.
- **Fossil fuels** – fuels made from decomposing plants and animals, which are found in the Earth’s crust. They contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of fossil fuels.
- **Fiduciary manager** – the party to whom the Trustee delegates day-to-day investment decision-making and implementation of all of the Scheme’s assets. The Trustee does not delegate its responsibilities or duties via this arrangement and retains ownership of the Scheme’s investment strategy.
- **Greenhouse gas (GHG) emissions (scopes 1, 2 and 3)** – gases that have been and continue to be released into the Earth’s atmosphere. Greenhouse gases trap radiation from the sun which subsequently heats the planet’s surface (giving rise to the “greenhouse effect”). Carbon dioxide and methane are two of the most important greenhouse gases. See also **Appendix 4**.
- **Gross Domestic Product (GDP)** – this is the value of all goods and services produced in a country over a given period, typically a year.

- **Net Zero** – this describes the situation in which total greenhouse gas emissions released into the atmosphere are equal to those removed. This can be considered at different levels, eg company, investor, country or global.
- **Physical risk** – these are climate-related risks that arise from changes in the climate itself. They include risks from more extreme storms and flooding, as well as rising temperatures and changing rainfall patterns.
- **Paris Agreement** – the Paris Agreement is an international treaty on climate change, adopted in 2015. It covers climate change mitigation, adaptation and finance. Its primary goal is to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels.
- **Responsible Investment (RI)** – the process by which environmental, social and governance (ESG) issues are incorporated into the investment analysis and decision-making process, and into the oversight of investments companies through stewardship activities. It is motivated by financial considerations aiming to improve risk-adjusted returns.
- **Science-based targets** – targets to reduce greenhouse gas emissions that are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement.
- **Science-Based Targets initiative (SBTi)** – an organisation that sets standards and provides accreditation for science-based targets set by companies and investors.
- **Stewardship** – stewardship is the responsible allocation, management and oversight of capital to create long-term value for clients and beneficiaries leading to sustainable benefits for the economy, the environment and society. It is often implemented via engagement with investee companies and exercising voting rights.
- **Transition risk** – these are climate-related risks that arise from the transition to a low-carbon economy and can include changes in regulation, technology and consumer demand.



## Appendix 2: Key advisers supporting the Trustee

We have included a list of the key advisers in-place supporting the Trustee over the year below:

- **Actuarial adviser** – Isio Group Limited (changed from Hymans Robertson LLP during the Scheme year)
- **Strategic Investment Consultant** – Lane Clark & Peacock LLP
- **Fiduciary Manager** – State Street Global Advisors
- **Covenant adviser** – EY-Parthenon
- **Legal advisers** – Sacker & Partners LLP
- **Scheme Secretary** – Aon Solutions UK Limited

The roles of these advisers, as described in the Statement on Governance of Climate Change Risks and Opportunities, are laid out below.

### The role of the actuarial adviser

In broad terms, the Scheme's actuarial adviser is responsible, as requested by the Trustee, for:

- Advising how climate-related risks and opportunities might affect the Scheme's funding position over the short-, medium- and long-term and the implications for the Scheme's funding strategy, long-term objective, journey plan and other regular activities (e.g. factor reviews).
- Working with the Trustee's other advisers to assist the Trustee in incorporating climate change in its governance arrangements, risk register, IRM framework and communication with stakeholders (including, but not limited to, its Climate Disclosure reporting) as appropriate.

## The role of the Strategic Investment Consultant

In broad terms, the Scheme's Strategic Investment Consultant is responsible, as requested by the Trustee or FIC, for:

- Providing training and other updates to the Trustee and FIC on relevant climate-related matters.
- Helping the FIC to formulate its investment beliefs in relation to climate change and reflecting these in the Scheme's investment policies and strategy.
- Advising how climate-related risks and opportunities might affect the different asset classes in which the Scheme might invest over the short-, medium- and long-term, and the implications for the Scheme's investment strategy and journey plan.
- Providing support to the Trustee and FIC on ensuring the Fiduciary Manager appropriately considers climate-related factors when selecting and monitoring underlying investment managers.
- Assisting the Trustee and FIC in incorporating climate change into their strategic monitoring.
- Advising on the inclusion of climate change in the Scheme's governance arrangements, risk register and IRM framework, working with the Trustee, the FIC and other advisers as appropriate.
- Assisting the FIC in identifying, monitoring and using suitable climate-related metrics and targets in relation to the Scheme's investments.
- Leading on the preparation of the Trustee's Climate Disclosure reporting and assisting with other communication with stakeholders in relation to climate change, working with the Trustee, FIC, governance committee and other advisers as appropriate.

## The role of the Fiduciary Manager

In broad terms, the Scheme's Fiduciary Manager is responsible, as requested by the Trustee or FIC, for:

- Advising the FIC on the appropriateness and effectiveness of the Scheme's investment managers' processes, expertise and resources for managing climate-related risks and opportunities, given the Trustee's investment objectives and beliefs, and engaging with the managers to improve their climate-related integration over time.
- Assisting the Trustee and FIC in incorporating climate change in their investment monitoring.
- Providing information, as required, on underlying Scheme holdings to aid collection of climate-related metrics and targets data.
- Using its influence with underlying investment managers and other parties to improve the quality and availability of metrics over time.

## The role of the Scheme's investment managers

In broad terms, the Scheme's investment managers are responsible for:

- Identifying, assessing and managing climate-related risks and opportunities in relation to the Scheme's investments, in line with the investment management arrangements agreed between the Trustee and Fiduciary Manager.
- Exercising rights (including voting rights) attaching to the Scheme's investments, and undertaking engagement activities in respect of those investments, in relation to climate-related risks and opportunities in a way that seeks to improve long-term financial outcomes for Scheme members.
- Reporting on stewardship activities and outcomes in relation to the Scheme's investments, wherever feasible.
- Providing information to the Scheme's Fiduciary Manager on climate-related metrics in relation to the Scheme's investments, as agreed from time to time, and using its influence with investee companies and other parties to improve the quality and availability of these metrics over time.

## The role of the covenant adviser

In broad terms, the Scheme's covenant adviser is responsible, as requested by the Trustee, for:

- Identifying climate-related risks (and to the extent relevant, opportunities) relevant to the employer covenant over the short-, medium- and long-term, how these may impact on the covenant under different transition and physical risk scenarios, and the associated implications for the Scheme's journey plan.
- Considering the implications of climate change risk to the employer covenant in periodic covenant reviews for the purposes of monitoring, scheme funding decisions, and assessing the impact of transactions or other corporate activity.
- Identifying in the Scheme's covenant monitoring factors relevant to climate risk in the sponsor covenant (for example, legislation, company activity or policy, progress against climate-related targets), working with the Trustee and the other advisers as appropriate to determine the implications and required actions.
- Working with the Trustee's other advisers to assist the Trustee in incorporating climate change in its governance arrangements, risk register, IRM framework and communication with stakeholders as appropriate.

## The role of the legal adviser

In broad terms, the Scheme's legal adviser is responsible, as requested by the Trustee or FIC, for:

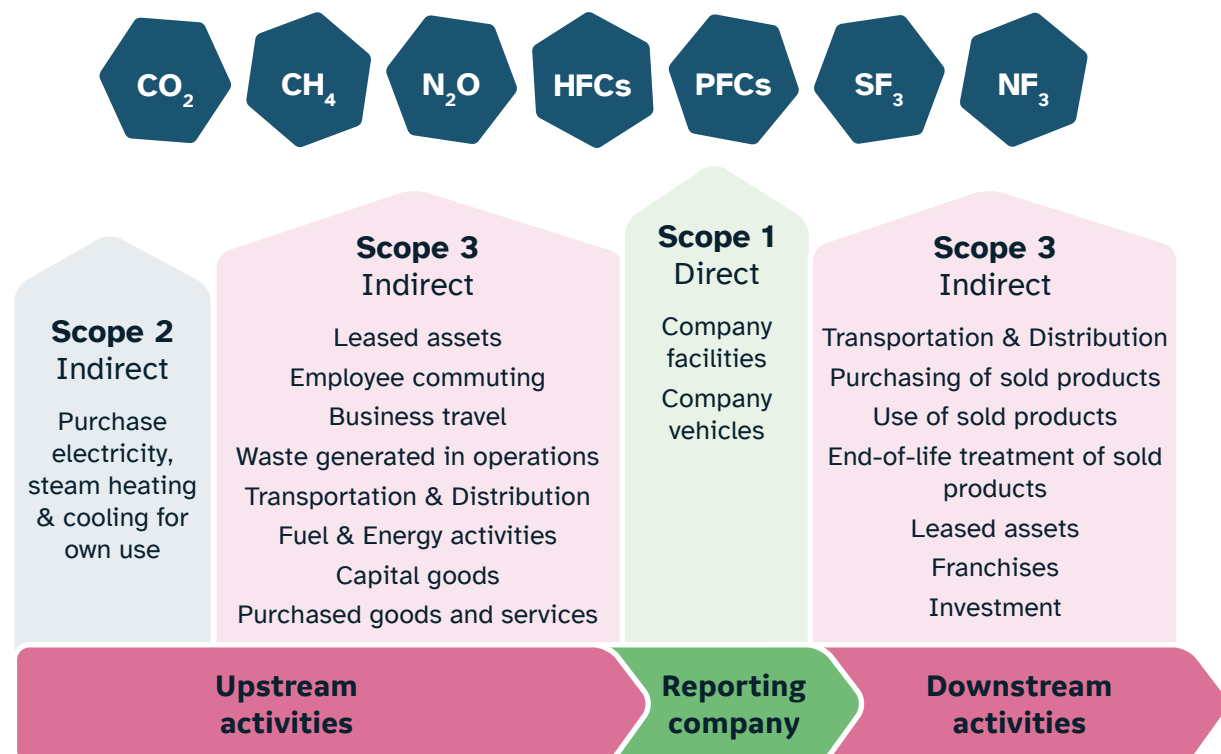
- Providing training and other updates to the Trustee and FIC on relevant climate-related legal matters.
- Ensuring the Trustee and FIC are aware of their statutory and fiduciary obligations in relation to climate change and working with the Trustee's other advisers to ensure alignment between these obligations and:
  - Any FIC formulation of investment beliefs in relation to climate change.
  - The identification and monitoring of climate-related metrics and targets in relation to the Scheme's investments.
- Working with the Trustee's other advisers to assist the Trustee in incorporating climate change in its governance arrangements, risk register, IRM framework and communication with stakeholders as appropriate.
- Where requested, assisting in the documentation of any contractual requirements to be included in the arrangements with the Scheme's Fiduciary Manager with respect to the governance, management and reporting of climate-related matters.

# Appendix 3: Greenhouse gas emissions explained

Within the ‘metrics and targets’ section of the report, the emissions metrics relate to seven greenhouse gases – carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). The figures are shown as “CO<sub>2</sub> equivalent” (CO<sub>2</sub>e) which is the amount of carbon dioxide that would be equivalent to the excess energy being stored by, and heating, the earth due to the presence in the atmosphere of these seven greenhouse gases.

The metrics related to greenhouse gas emissions are split into the following three categories: Scope 1, 2 and 3. These categories describe how directly the emissions are related to an entity’s operations. Scope 3 emissions often form the largest share of an entity’s total emissions, but are also the ones that the entity has least control over.

- **Scope 1** greenhouse gas emissions are all direct emissions from the activities of an entity or activities under its control.
- **Scope 2** greenhouse gas emissions are indirect emissions from electricity purchased and used by an entity which are created during the production of energy which the entity uses.
- **Scope 3** greenhouse gas emissions are all indirect emissions from activities of the entity, other than scope 2 emissions, which occur from sources that the entity does not directly control.



Source GHG Protocol

# Appendix 4: more detail on the climate scenario analysis

## Modelling approach

The scenario analysis is based on the ClimateMAPS model developed by Ortec Finance and Cambridge Econometrics, and was then applied to the Scheme's assets and liabilities by LCP. The three climate scenarios were projected year by year, over the next 40 years.

ClimateMAPS uses a top-down approach that consistently models climate impacts on both assets and liabilities, enabling the resilience of the Scheme's funding strategy to be considered. The model output is supported by in-depth narratives that bring the scenarios to life to help the Trustee's understanding of climate-related risks and opportunities.

ClimateMAPS uses Cambridge Econometrics' macroeconomic model which integrates a range of social and environmental processes, including carbon emissions and the energy transition. It is one of the most comprehensive models of the global economy and is widely used for policy assessment, forecasting and research purposes. The outputs from this macroeconomic modelling – primarily the impacts on country/regional GDP – are then translated into impacts on financial markets by Ortec Finance using assumed relationships between the macroeconomic and financial parameters.

Ortec Finance runs the projections many times using stochastic modelling to illustrate the wide range of climate impacts that may be possible, under each scenario's climate pathway. LCP takes the median (ie the middle outcome) of this range of impacts, for each relevant financial parameter, and adjusts it to improve its alignment with LCP's standard financial assumptions.

LCP then uses these adjusted median impacts to project the assets and liabilities of the Scheme to illustrate how the different scenarios could affect its funding level. The modelling summarised in this report used scenarios based on the latest scientific and macro-economic data at 31 December 2021, calibrated to market conditions at 31 December 2022.

The modelling assumed no further contributions are received given the Scheme was in surplus on Technical Provisions basis at the date of the analysis (and maintained a surplus throughout the Scheme year). No allowance was made for changes to the investment strategy or contributions in response to the climate impacts modelled.

The liabilities modelled are based on the assumptions and results from the 2018 actuarial valuation, since the results from the 2021 actuarial valuation had not been finalised at the date of the analysis.

## Modelling limitations

As this is a “top-down” approach, investment market impacts were modelled as the average projected impacts for each asset class, ie assuming that the Scheme’s investments are affected by climate risk in line with the market-average portfolio for the asset class. This contrasts with a “bottom up” approach that would model the impact on each individual investment held in the Scheme’s investment portfolio. As such, it does not require extensive scheme-specific data and so the Trustee was able to consider the potential impacts of the three climate scenarios for all of the Scheme’s assets.

In practice, the Scheme’s investments may not experience climate impacts in line with the market average. The Trustee considers, on an ongoing basis, how the Scheme’s climate risk exposure differs from the market average using climate metrics (which are compared with an appropriate market benchmark).

Like most modelling of this type, the modelling does not allow for all potential climate-related impacts and therefore is quite likely to underestimate some climate-related risks. For example, tipping points (which could cause runaway physical climate impacts) are not modelled and no allowance is made for knock-on effects, such as climate-related migration and conflicts. In addition, the model presumes that the UK government and bank counterparties will remain solvent, thereby making no allowance for credit risk on government bonds and derivative exposures. However, in a scenario where global warming exceeds 4°C, this assumption may no longer be valid.

Medians from Ortec Finance’s model outputs are used to project forward assets and liabilities, which means the results reflect the model’s “middle outcomes” for investment markets under the three scenarios. Allowing for market volatility would result in better or worse model outputs than shown. Investment markets may be more volatile in future as a result of physical and transition risks from climate change, and this is not illustrated in the modelling shown.

Uncertainty in climate modelling is inevitable. In this case, key areas of uncertainty relating to the financial impacts include how climate change might affect interest rates and inflation, and the timing of market responses to climate change. ClimateMAPS, like most modelling of this type, does not allow for all climate-related impacts and therefore, in aggregate, is quite likely to underestimate the potential impacts of climate-related risks, especially for the Failed Transition scenario. For example, tipping points (which could cause runaway physical climate impacts) are not modelled and no allowance is made for knock-on effects, such as climate-related migration and conflicts.

## Impact of climate change on life expectancy

If a member lives longer, the Scheme pays the member's pension for longer and therefore needs more assets to make the payments.

Like the economic impacts, the impact of climate change on life expectancy is highly uncertain and therefore the scenarios modelled make no explicit allowance for mortality impact. As part of the discussions on the climate scenario analysis, the Trustee considered the various possible drivers for changes in mortality rates with both positive and negative potential impacts expected in each of the scenarios considered.

For example, in the Orderly Net Zero by 2050 scenario, the reduced use of fossil fuels should lead to lower air pollution, increasing life expectancy. But this effect could be countered by economic prosperity generally being lower in this scenario, and this may limit the funding available for healthcare.



# Appendix 5: More detail on the climate-related metrics reported

This appendix provides more detail on the metrics reported in the main body of this report, on **pages 32 to 33**.

## Government bonds, including Liability Driven Investment (LDI), gilts and swaps

### GHG emissions

GHG emissions for government bonds and swaps are calculated on a different basis from the other asset classes, so cannot be compared with the other emissions figures shown.

The LDI emissions figures were calculated by the Scheme's LDI manager using publicly available data sources and its interpretation of the guidance.

As outlined by the manager, the emissions data for this portfolio has been calculated as follows:

- Absolute emissions = market value of gilts / (market value of gilts in issuance x CO<sub>2</sub>e)
- Carbon footprint = (tCO<sub>2</sub>e / market value of gilts in issuance)

Where CO<sub>2</sub>e means “carbon dioxide equivalent” and is a measurement of the total greenhouse gases emitted, expressed in terms of the equivalent measurement of carbon dioxide. tCO<sub>2</sub>e stands for tonnes of carbon dioxide equivalent.

For the LDI mandate, gilts posted out as collateral are included but gilts received as collateral are excluded. Interest rate swaps, inflation swaps, futures, cash and money market fund holdings have been excluded. Short gilt positions have also been excluded. Scope 3 emissions are not included.

### Science-based targets

Government bonds have been assessed as having a science-based target if Climate Action Tracker has assessed the issuing country as having a domestic emissions target which is rated as 1.5°C or below 2°C. For example, the UK (the issuer of the vast majority of the Scheme's government bonds) is rated as 1.5°C. It has a Net Zero by 2050 target written into law and sets carbon budgets to achieve this target based on advice from the independent Committee on Climate Change.

## Equities, corporate bonds and multi asset credit

The metrics for these mandates were obtained from MSCI<sup>1</sup>, a leading provider of climate-related data for investors, by the Trustee's investment adviser in January 2023, using portfolio holdings as at 31 December 2022. Data coverage is likely to compare favourably with other data sources.

### GHG emissions

Emissions coverage is less than 100% because:

- Some holdings are not covered by MSCI's database such as cash and bonds that have recently matured.
- The MSCI database does not hold emissions data for some portfolio companies because the company does not report it and MSCI does not estimate it.
- The MSCI database does not hold EVIC<sup>2</sup> data for some portfolio companies, so emissions cannot be attributed between equity and debt investors.

The last of these reasons is the main explanation for the fairly low emissions coverage. The Trustee's Strategic Investment Adviser has met MSCI to encourage them to increase the EVIC coverage. MSCI already has plans to do this and welcomed feedback on the types of issuer to prioritise.

Where emissions data is estimated, MSCI uses one of three methods.

- For electric utilities, MSCI's estimate of Scope 1 emissions is of direct emissions due to power generation, calculated using power generation fuel-mix data.
- For companies not involved in power generation, which have previously reported emissions data, MSCI starts with a company-specific carbon intensity model.
- For other companies, MSCI uses an industry segment-specific carbon intensity model, which is based on the estimated carbon intensities for 1,000+ industry segments.

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<sup>2</sup> EVIC is Enterprise Value Including Cash, ie the value of equity plus outstanding debt plus cash. It is used to attribute emissions to investors in the calculation of Total GHG emissions and hence Carbon Footprint.

The Scope 3 emissions are MSCI's estimates, even where reported emissions are available. This provides greater consistency than using a mixture of reported and estimated emissions. Analysis of reported Scope 3 emissions suggests that the data quality is currently low: data is volatile and often out of date, with relatively few companies reporting on all types of Scope 3 emissions. In contrast, MSCI estimates all types of Scope 3 emissions for most companies in its database, for a recent reporting year and using a consistent approach.

### Science-based targets

The metric shown is the proportion of the portfolio by weight for which the MSCI database indicates the company has an SBTi-accredited target. Coverage is not available for this metric because the MSCI database does not distinguish between companies which do not have an SBTi target and companies for which the SBTi status is not known. The Trustee's investment adviser has asked MSCI to introduce this distinction.

## UK property

For the UK property holdings, with total value £166m as at 31 December 2022, the climate-related metrics have been provided by the investment manager for the buildings held as at 31 December 2021 as this was the latest data available at the time of the analysis.

The emissions figures relating to electricity use are location-based, ie calculated using the average emissions intensity of the electricity grid where the property is located. The majority of emissions are "tenant controlled" so they are classed as Scope 3 emissions.

The investment manager was unable to split report Scope 1, 2 and 3 emissions separately.


## Private equity

One private equity manager, with market value £11.8m as at 31 December 2022, provided Total GHG emissions and Carbon Footprint data based on emissions data as at 31 December 2021 as this was the latest data available at the time of the analysis. It was unable to provide SBT metrics or Scope 3 emissions.


No other private equity managers were able to provide any metrics data.

## Need to get in touch?

If you have any questions about your pension, contact the Scheme administrator, Barnett Waddingham, on:

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