



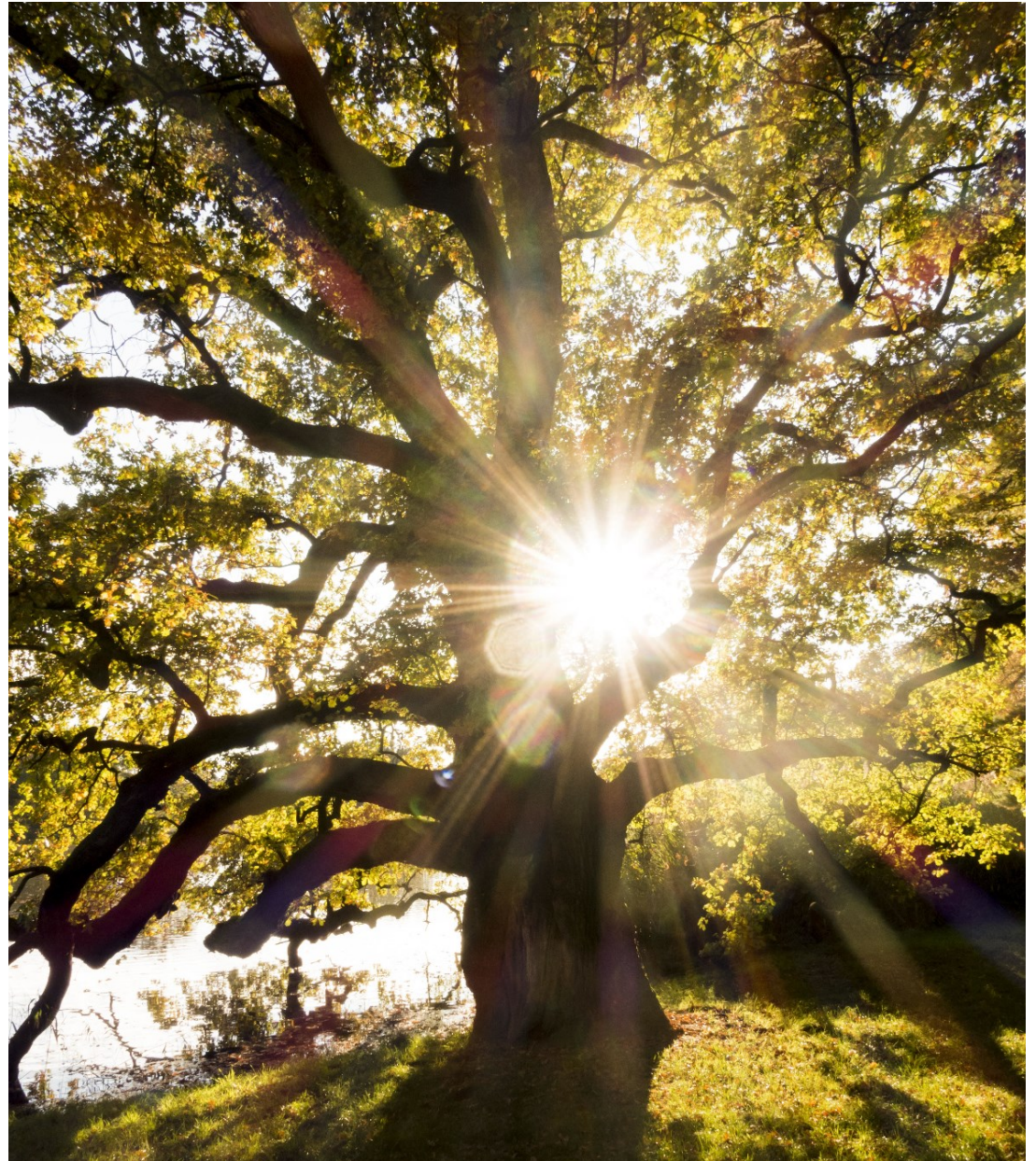
## TCFD Report

DUKPS Section of the Deloitte Pensions Master Plan

Year ending 31 March 2024

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# **Introduction and Executive Summary**



## Introduction

This climate-related disclosure report has been prepared by the Trustee of the DUKPS Section of the Deloitte Pensions Master Plan (the “Trustee” and the “Section” respectively) in line with the recommendations of the Taskforce on Climate-related Financial Disclosures (“TCFD”).

The Trustee recognises that climate change presents both risks and opportunities to the Section. This report provides an overview of the governance framework, strategy, risk management, and metrics and targets used by the Trustee to identify, assess and monitor the risks and opportunities associated with climate change on the investment and funding strategies of the Section.

The Trustee has the fiduciary duty of acting in the best interests of members including considering all factors that could have an impact on the risk profile and sustainability of returns over time. The Section faces a number of risks that require consideration proportionate to the magnitude of each. Climate change is one such risk. The Trustee recognises the financial materiality of the risks and opportunities associated with both the physical aspects of climate change itself, and the necessary transition to a low-carbon economy. Therefore, it has taken, and continues to take, action to prepare the Section to mitigate these risks as they arise.

This report has been split into four sections in line with the four pillars of the TCFD recommendations set out below.



### Governance

The governance processes established by the Trustee to maintain oversight of relevant climate-related risks and opportunities.



### Strategy

The Trustee’s assessment of the resilience of the Section’s investment and funding strategies to climate-related risks over appropriate short, medium and long-term time horizons. This section includes the output of scenario analysis undertaken on the Section’s assets, liabilities, and covenant.



### Risk Management

How the Trustee has integrated processes to identify, assess and manage relevant climate-related risks into the Section’s integrated risk management framework. This section includes a summary of the key climate related risks identified by the Trustee.



### Metrics & Targets

The key climate-related metrics for the Section’s investment portfolios and targets set by the Trustee.



## Executive Summary

Climate change poses a threat to our world and a whole-economy transition is required to limit global temperature increases. Through the physical and transitional implications, climate change is likely to have a significant impact on the Section's members, financial markets, and society more broadly. This report focuses on climate-related risks and opportunities, and sets climate risk in the context appropriate for the Section.

Each of the four main areas to be addressed as prescribed by legislation are summarised as follows.



### Governance

The Trustee has put in a place a governance framework to manage risk and opportunities from environmental, social and governance factors, including climate change, with support from external advisers.

**ESG Governance policy** – this Environmental, Social and Governance (“ESG”) governance policy set by the Trustee documents the processes for maintaining effective oversight of climate-related risks and opportunities.

**Committees** – the policy also sets out the roles and responsibilities of the Investment Subcommittee and the Trustee.

**External advisers** – the Trustee is supported by suitably qualified external advisers to assist in the identification of risks and opportunities. Regular reviews of advisers ensures that they are held to account and provide appropriate support for the Trustee.

**Training and reviews** – regular training sessions are held to upskill the Trustee to ensure adequate knowledge and understanding of the topic.

Further details can be found on pages 7-11.



### Strategy

The Trustee recognises that climate change poses both risks and opportunities for the Section. To consider the potential impact of these risks, the Trustee has modelled how the Section's funding position would be expected to perform under different climate change scenarios.

Based on the results of the scenario analysis, the Trustee believes that the Section's portfolio is resilient under the climate change scenarios projected over 5, 10 and 15 years. The Section has a low risk, well diversified investment strategy and does not currently rely on the employer for contributions to the Section.

Over the longer term, under the Early Action and Late Action climate change scenarios, the Section's funding position is expected to be worse off (£47m to £52m respectively). However, the No Additional Action scenario has a larger negative impact on the Section's funding position (c. £67m worse-off), with failure to deal with climate risks resulting in sustained underperformance from return-seeking assets. However, even under the worst scenario outcome modelled, the Section is expected to remain in a surplus on a low risk funding basis over each of the time horizons.

Further details of the approach taken to assessing strategy risk are included on pages 12-19.



## Executive Summary

### Risk Management

The Section's key tools for identifying climate-related risks are:

- climate metrics, such as carbon emissions data and Science Based Target alignment;
- ongoing monitoring of the Section's investment managers' climate-related risk management capabilities in relation to their respective funds; and
- climate scenario analysis.

The Trustee has a well-developed governance framework for managing climate-risks across the Section with clear roles and responsibilities defined. Climate change risk is considered within the Section's risk register including the materiality of the risk identified based on the likelihood of that risk occurring and the impact the risk could have. The Trustee has also considered mitigation strategies for the risks with the aim of reducing the potential financial impact, the likelihood of occurrence or both.

Engagement and shareholder voting are part of the Section's approach to managing climate risk. The Section's stewardship and engagement policies, included within the Statement of Investment Principles, reflect the Section's strategy to engage with its investee companies and other key stakeholders.

Further details can be found on pages 20-23.

### Metrics and Targets

To inform the Trustee's understanding of climate-related risks and opportunities, it has introduced several relevant metrics for ongoing review.

Total assets at 31 December 2023	£828.3m
<b>Data coverage</b>	84%
<b>Scope 1 and 2 Greenhouse Gas ("GHG") Emissions</b> (tonnes of CO <sub>2</sub> e)	62,000
<b>Carbon Footprint</b> (Scope 1 and 2 GHG Emissions per £1m invested)	62
<b>Data quality</b> Verified   Reported   Estimated	7%   77%   0%

The scope 1 and 2 emissions data currently received from the Section's investment managers covers 84% of the Section's total assets. The Trustee had previously set the target of achieving total data coverage of c. 75% of total Section assets within the short term.

Given the improvement in the availability of data, the Trustee has put in place a new target. The Trustee has set the target for the Section's Buy and Maintain Credit portfolio to have 100% Science Based Target alignment by 2040 with a linear improvement to be made each year as an interim target.

Further details are included on pages 24-30.



**Governance**

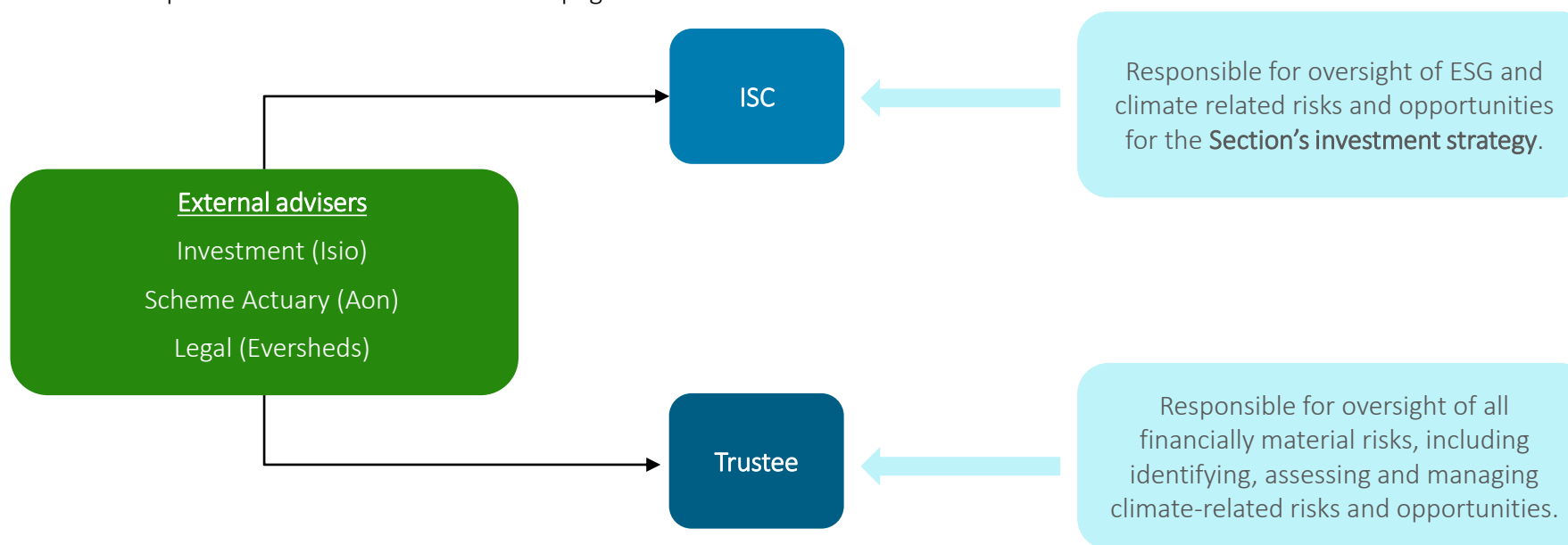


## Oversight of climate-related risks and opportunities

The Trustee has ultimate responsibility for ensuring effective governance of Environmental, Social and Governance factors including climate-related risks and opportunities, and for meeting its obligations under the associated legislation. The Trustee has an established governance and risk-management framework with clear roles and responsibilities delegated to committees, which report to the Trustee. Given that monitoring and managing climate-related risks and opportunities is integral to the management of the Section, the Trustee ensures sufficient time and resource is dedicated to climate-related discussion.

The Investment Subcommittee (“ISC”) is responsible for the oversight of climate-related risks within the Section. The ISC has delegated responsibility for the oversight of ESG and climate related risks and opportunities for the Section’s investment strategy and feeds into the full Trustee. The ISC meets once a quarter. Over the Section year to 31 March 2024, the full Trustee sat on the Investment Subcommittee, which meant that these ISC meetings became additional full Trustee meetings. This made the decision-making process more efficient as the full Board could approve decisions at the ISC meetings rather than there being a need for the ISC to recommend decisions to the Trustee. During strategic reviews, such as considering a new asset class or mandate, and throughout the process of undertaking TCFD-related actions, the ISC may hold additional, off-cycle meetings to address climate-related matters.

The following structure diagram illustrates the delegation of roles and responsibilities of those undertaking climate-related governance activities in relation to the Section. These are explained in more detail on the next page.







## Roles and responsibilities

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### Trustee

The Trustee is responsible for risk-management and overseeing the identification and management of ESG and climate-related risks. This includes climate-related risks and opportunities for the Section's investments, as well as those related to the Section's liabilities and the employer. Climate-related risks and opportunities are discussed as a regular agenda item, proportionate to the other issues being discussed.

The Trustee is responsible for agreeing the ESG Governance Policy and undertakes at least annual reviews of this policy and climate-related risk-management processes to ensure it remains fit for purpose and to incorporate any developments in best practice.

The Trustee has oversight of those advising on or involved in governance of climate-related risks and opportunities. In respect of external advisers, the Trustee is responsible for:

- Ensuring that they have sufficient knowledge and understanding to competently manage climate-related risks and opportunities for the Section, and to credibly challenge the advice provided by managers and advisers to the Section. Further detail of how the Trustee achieves this is provided on page 11.
- Reviewing that external advisers or those supporting with the governance of the Section have the skills and resources to address ESG factors including climate-related risks and opportunities.
- Setting objectives and determining clear work scopes for external advisers to support them with the oversight of ESG factors including climate-related risks and opportunities for their relevant subject matter and for including this within contractual agreements for advisers as required.

### Assessing Climate Competence

The Trustee has a process in place to review and assess the skills of the external advisers. The Trustee has objectives set for the Section's investment advisers, which include the following in relation to climate competency:

- Whether the investment adviser has helped the Trustee to consider ESG integration within the investment strategy and when making recommendations to alter the investment strategy both ESG (including climate change) and stewardship have been considered.
- Whether the investment adviser has supported the Trustee with the identification and assessment of climate-related risks and opportunities in the Section's investment portfolios.



## Roles and responsibilities

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### Investment Subcommittee (“ISC”)

The ISC recommends investment strategy changes to the Trustee and is responsible for implementing the investment strategy. This includes investment strategy decisions driven by climate-related risks and opportunities. The ISC has delegated responsible for:

- Ensuring the ISC has sufficient level of understanding with regards to climate-related risks and opportunities through regular training, to support the Trustee and to meet statutory and fiduciary obligations.
- Incorporating climate-related considerations into strategic decisions relating to the Section’s investments and funding arrangements.
- Ensuring that the Section's investment managers are competently managing climate-related risks and opportunities, in a manner aligned with the Trustee's ESG-related investment beliefs.

The ISC also has delegated responsibility for reviewing the voting and engagement practices of the investment managers to ensure that the managers are acting in line with the Trustee’s policies as laid out in the Statement of Investment Principles, and to prepare the annual Implementation Statement required by regulation which reviews the voting and engagement behaviour of the investment managers. The Implementation Statement can be accessed via the [Section’s website](#).

### Investment Adviser

- Advises the ISC on all aspects of investment strategy and overseeing the implementation of the strategy, including strategy decisions in relation to climate-related risks and opportunities. Advice is delivered quarterly via quarterly reporting as well as ad-hoc updates where necessary.
- Provides support with the identification of climate-related risks and opportunities, identifying appropriate climate-related metrics and targets and preparing disclosures including the annual TCFD report.
- Provides training and relevant updates to the Trustee on relevant climate-related matters, as requested.
- Supports the Trustee with monitoring stewardship activity across the investment portfolio, at least annually.

### Scheme Actuary

- The Scheme Actuary’s responsibilities include, but are not limited to, assessing climate-related risks and opportunities in relation to the Section’s liabilities and funding position. This includes input on the impact on mortality rates and the Section’s liabilities under the climate scenarios modelled.

### Legal Adviser

- Assists the Trustee in ensuring they are compliant with all ESG-related regulatory requirements.



## Training

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It is the responsibility of the Trustee to ensure that they have sufficient knowledge and understanding of climate-related risks and opportunities to competently manage these on behalf of the Section. This is primarily achieved through delivery of training sessions by the Section's investment and legal advisers. During the scheme year and in preparation for the Section's first TCFD report, the Trustee received training on the following topics:

- **Climate Change Governance and Regulations:** Initial training session delivered by the Section's Investment Adviser and Legal Adviser. This session was to educate the Trustee on the new climate change governance and reporting regulations, climate change risks and opportunities, and wider ESG considerations.
- **Climate-related Risk and Opportunities:** Training session on climate-related risks and opportunities for the asset classes in which the Section invests. This included a training session on both transition and physical risks and how they could impact the different asset classes held by the Section. The purpose of this session was to educate the Trustee on the main risks and opportunities for the Section's current investments, and to aid the Trustee with performing a qualitative assessment of the risks.
- **Climate Change and Portfolio Alignment Metrics:** Training covered an explanation of climate metrics, focussing on the factors that would cause significant changes in the value of the Section's climate metrics. The aim of this session was to aid understanding of how the Section's metrics may differ to other schemes. This session also included discussion of appropriate targets which could be set for these metrics.
- **Scenario Analysis (Inputs):** Training covered a recap of the scenarios included in the scenario analysis and an overview of the modelling tool used by the Investment Adviser for the Section's asset portfolio. The aim of this session was to aid discussion around the appropriateness of the time-horizons used in the context of the Section's long-term funding objectives.
- **Scenario Analysis (Output):** Updated scenario modelling, incorporating the Actuarial Valuation results as at 31 March 2023, was discussed. This training session covered the impact of changes in the Section's liability profile on the results of the scenario analysis.
- **Draft TCFD Report GAP Analysis:** This training session included a detailed review of the 2022 draft TCFD report in comparison to the regulatory requirements. The aim of this session was to make the Trustee aware of what needed to be included within the TCFD report and to ensure they were comfortable with the level of disclosure.

The purpose of these training sessions was to upskill the Trustee to ensure adequate knowledge and understanding of the topic so that they are able to effectively recognise, manage and monitor the climate-related risks and opportunities relevant to the Section. At quarterly ISC/Trustee meetings, there is a robust discussion and engagement on all topics covered. The Trustee regularly challenges advice provided by their advisers to ensure that they fully understand and agree with the advice being provided. The financial background and experience of the Trustee ensures the information provided is appropriately challenged.



**Strategy**



## Introduction to Climate Risks and Opportunities

The Trustee considers both the transition and physical risks and opportunities of climate change to be financially material considerations to the value of the Section's investments.

### Transition

Transition risks and opportunities are those that arise as a result of the transition towards a low carbon economy.

An example of this would be changes in policy and regulations such as national limits on emissions, carbon pricing, subsidies and tariffs that will offer different risks and opportunities to companies. Another example is the technological changes and developments needed to achieve decarbonisation. There is reputational risk for those businesses which lag behind the transition to a low carbon economy. Climate change may also result in shifts in demand resulting from evolving consumer preferences and behaviour.



**Policy and  
legal risk**



**Liability  
risk**



**Technological  
risk**



**Demand-side  
risk**

### Physical risks

Changes in value of investments which are directly caused by changes in the climate, for example such as greenhouse emissions, pollution and land use. The effects may be **chronic** (represents the background incremental changes in), such as global warming and sea level rise, or they may be **acute** events (severe and extreme events and location-specific), such as instances of extreme weather.



**Flooding**



**Drought**



**Sea level rise**



**Heat**



**Extreme weather**



## Introduction to Strategy

The Trustee has considered the impact of climate-related risks and opportunities on the Section's investment and funding strategies. The Trustee recognises that climate change can have a significant financial impact on the value of certain assets held over different time horizons.

The strength of the employer may also be impacted by climate change. The Trustee maintains a regular dialogue with the employer who has its own processes and plans in place to address the key risks and opportunities to the business from climate change. The Trustee will continue to monitor and consider this as part of its ongoing assessment of the strength of the business but notes that the Section is not currently reliant on the employer for contributions.

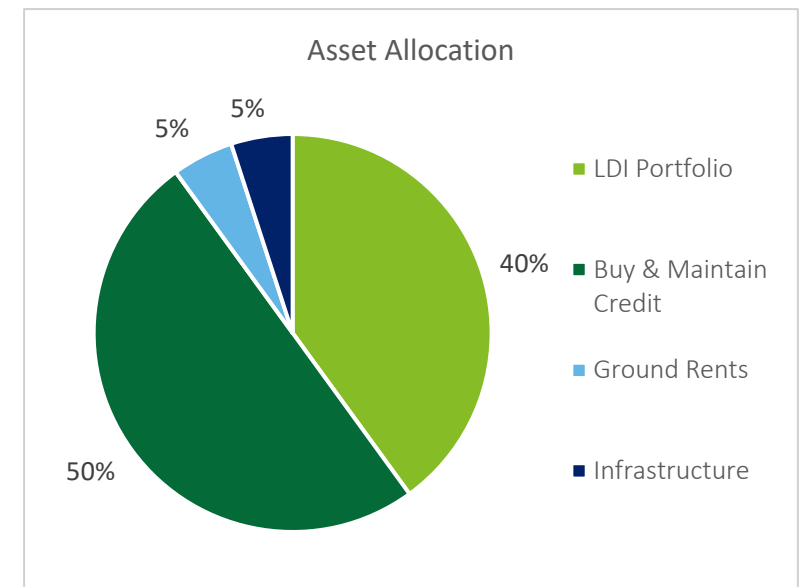
This section highlights the key climate-related risks and opportunities that the Trustee has identified over short, medium and long-term time horizons. The Trustee has chosen 5, 10 and 15 years as the short, medium and long-term time horizons. These timeframes have been selected based on a blended view of the climate outlook, membership demographics, the funding position, the long-term objective of the Section and its ability to pay benefits. In the shorter-term, the Trustee expects transition risks to be greatest and in the longer-term it expects that physical risks will increase and become more important.

The Trustee has undertaken scenario analysis to inform its understanding of the resilience of the Section's investment and funding strategies to different climate change scenarios. The output of this analysis and the conclusions reached by the Trustee on the resilience of the strategies are included within this section. The Trustee will review the appropriateness of the climate scenario analysis on an annual basis.

The scenario analysis has been carried out based on the Section's portfolio as at 1 April 2023, as shown in the chart to the right. This analysis is based on the strategic asset allocation of the Section, which was adjusted for the decision to reinvest the Section's 5% multi-asset credit allocation into buy and maintain credit, which took place shortly after this date so that the analysis provided the most representative forward-looking projection.

A large proportion of the Section's assets are invested in a liability hedging ("LDI") portfolio (c. 40%) and a buy and maintain credit mandate (c. 50%). The liability hedging portfolio is intended to move broadly in line with the Section's liabilities in response to movements in interest rates and inflation expectations, while the buy & maintain credit portfolio generates stable cashflows for the Section. The remainder of the Section's assets (c. 10%) are invested across alternative return-seeking asset classes and the Trustee recognises that financially material climate risks and opportunities can impact the value of these assets relative to the Section's liabilities.

The Trustee has considered the results of the scenario analysis and uses them to help with considering climate-related risks and opportunities throughout the investment process, from strategic asset allocation to manager selection and monitoring.





## Scenario Analysis - Approach

The Trustee carried out scenario analysis to better understand and quantify climate-related risks over the 5, 10 and 15 year time horizons. Three climate scenarios were considered that were aligned with industry guidance, alongside a base, counterfactual scenario whereby the risks associated with climate change are not considered to have a material impact on the Section's assets and liabilities.

The scenarios considered are based on those provided within the 2021 Biennial Explanatory Scenarios ("CBES") set by the Bank of England. These scenarios were selected to test a broad range of feasible outcomes and the Section's exposure to both transition and physical risks associated with climate change in the future. The Bank of England CBES were commonly used by pension schemes and asset managers for initial climate change modelling to meet the requirements of TCFD. For each scenario provided as part of CBES, the Trustee has not sought to amend or adjust this information to reflect its opinions on the likely effects of climate change. These scenarios are not necessarily forecasts of the most likely future outcomes. Rather, they are plausible representations of what might happen based on different future paths of governments' climate policies.



### Scenario 1: Early policy action and orderly transition

Immediate and coordinated effort to transition to a net-zero economy which achieves net-zero global carbon emissions by 2050.

The policies that are implemented are successful in limiting global warming (relative to pre-industrial levels) to 1.8°C by the end of the scenario (2050), falling to around 1.5°C by the end of century.

Under this scenario, transition risks are highest.



### Scenario 2: Late policy action and disorderly transition

There is no immediate action to combat the challenges posed by climate change, with action being delayed until 2031. Following this delay, aggressive action is taken to reach the target of net-zero global carbon emissions by 2050.

Global warming is limited to 1.8°C by the end of the scenario (2050) relative to pre-industrial levels, but then remains around this level at the end of the century.



### Scenario 3: No action and failed transition

No action is taken to transition economies away from carbon, leading to a growth in concentration of greenhouse gas emissions and global temperatures.

The absence of transition policies results in global temperature levels continuing to increase, reaching 3.3°C higher relative to pre-industrial levels by the end of the scenario (2050).

Under this scenario, physical risks are highest.

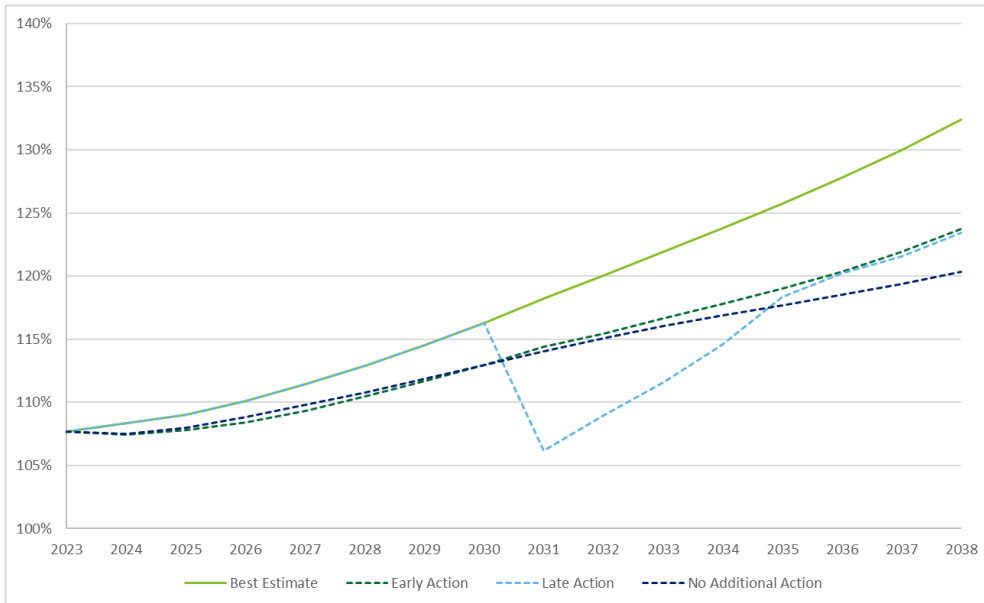
The climate scenario analysis was carried out based on the Section's strategic asset allocation at 1 April 2023, assuming regular rebalancing and no future changes to asset allocation. It has also been assumed that the Section maintains a 95% hedge of its interest rate and inflation risk over each of the time horizons. Each of the asset classes in which the Section invests have been included in the scenario analysis. Further assumptions and limitations are included in the Appendix.

The Trustee has not refreshed the Section's scenario analysis since 1 April 2023 as there has been no change to the Section's strategic asset allocation since. There has been no change to the Section's investment or funding strategy over the year to 31 March 2024 that would impact the resilience of the Section's invested assets to different climate change scenarios.



## Scenario Analysis – Summary of Results

Funding level progression under each climate change scenario



	2023	Short 5 Years	Medium 10 Years	Long 15 years
Base Scenario Surplus/(deficit)	£62m	£96m	£139m	£175m
<b>Estimated losses vs. Base Scenario (£m Asset value loss)</b>				
Early Action	-	(£18m)	(£34m)	(£47m)
Late Action	-	-	(£67m)	(£52m)
No Additional Action	-	(£16m)	(£38m)	(£67m)

Note: Surplus/(deficit) values are projected values only, these figures have not been discounted to present day.

- The Trustee believes that the Section's portfolio is resilient under the climate change scenarios projected over 5, 10 and 15 years. The Section has a low risk, well diversified investment strategy and does not currently rely on the sponsoring employer for contributions into the Section.
- The Section currently adopts a high level of interest rate and inflation hedging, which reduces funding level volatility due to transitional and physical risks. The Section therefore only marginally benefits from the rise in nominal and real gilt yields under the different scenarios (albeit to differing degrees).
- The exposure to return-seeking assets leads to outperformance over the discount rate but exposes the Section's expected funding path to higher volatility. For example, a significant rise in credit spreads or a sharp fall in property markets immediately post 2030 under the Late Action scenario has contributed to a material fall in the funding level in 2031 under this scenario.
- Over the longer term, under the Early Action and Late Action climate change scenarios, the Section's funding position is expected to be moderately worse off (c. £47m to c. £52m respectively). The No Additional Action scenario has a much larger negative impact on the Section's funding position in the long-term (c. £67m), with failure to deal with climate risks resulting in sustained underperformance from return-seeking assets in particular.
- In summary, the Section's investment portfolio is expected to be resilient under the scenarios modelled, with the Section expected to remain in a surplus on the low-risk basis under each of the scenarios and over each of the time horizons considered.





## Scenario Analysis – Impact on Liabilities

The Section's Actuary has identified changes in how long members are expected to live and draw their pensions from the Section ("longevity risk") as a potentially material source of risk to the funding level of the Section. The Actuary has provided an assessment of longevity risk under different climate scenarios as part of the Section's climate strategy review. A summary of this analysis is provided in the table below. More detail on the impacts of longevity under each scenario, along with the assumptions and limitations of this analysis, is included in the Appendix.

	Impact on mortality rates (Scheme Actuary assumed long term improvement in mortality)	Resultant impact on value of the Section's liabilities
<b>Base Case</b>	1.5% p.a.	-
<b>Scenario 1:</b> Early policy action and orderly transition.	2.0% p.a.	+2.0% (+£16m)
<b>Scenario 2:</b> Late policy action and disorderly transition	1.0% p.a.	-1.5% (-£12m)
<b>Scenario 3:</b> No action and failed transition	0.0% p.a.	-4.5% (-£36m)

The analysis suggests that significant early policy action is where there may be an increase in the value of the liabilities from life expectancy improvements relative to the base case. The other scenarios could lead to a reduction in life expectancy improvements and a fall in the value of the liabilities relative to the base case which is not a risk to the funding position. Combining this with the scenario analysis for the Section's assets, the Section is still expected to remain in a surplus on the low-risk basis under each of the scenarios and over each of the time horizons considered.

The Actuary will refresh this analysis each time the Trustee undertakes climate scenario analysis. The Trustee considers and will continue to consider opportunities to manage longevity risk if it is appropriate in terms of pricing and the broader funding and investment strategy.

The Trustee has implemented a high degree of liability hedging, through liability-matching assets which move in line with the liabilities given changes in interest rates and inflation which reduces the risk of material movements in the Section's funding level from financial factors.



## Climate Risks Identified

The Trustee has identified the following climate-related risks for the Section. The Trustee has also considered mitigation strategies for the risks with the aim of reducing the potential financial impact, the likelihood of occurrence or both. The Trustee addresses these risks within the risk register, considering both the impact and probability of each risk materialising.

Risk Description	Mitigation Controls
Abrupt/unexpected movements in gilt yields/valuations	<ul style="list-style-type: none"> <li>The Section holds gilts to hedge almost all (c. 95%) of the liabilities and so overall financial impact of significant moves in yields would largely be reflected in the liabilities.</li> </ul>
Risk of rise in value of liabilities from changes in financial and/or demographic assumptions.	<ul style="list-style-type: none"> <li>95% of movements due to financial factors are hedged by asset portfolio.</li> </ul>
Significant fall in credit valuations (given 50% strategic credit allocation)	<ul style="list-style-type: none"> <li>Well diversified across sectors and high quality credit.</li> <li>Positions are actively managed and investment managers consider climate risk when selecting investments.</li> <li>Manager actively engages on climate matters with boards of investee companies.</li> </ul>
Additional reporting obligations and associated costs	<ul style="list-style-type: none"> <li>Costs relative to Section size for support with training, monitoring and disclosure are expected to be relatively small.</li> </ul>
Significant fall in alternative asset valuations (e.g. property, private debt)	<ul style="list-style-type: none"> <li>Limited to only 10% of the strategic allocation.</li> <li>Diversified across asset classes, geographies and sectors.</li> <li>Portfolio managers increasingly considering climate risks as part of investment selection and management.</li> </ul>
Risk of deterioration in strength of sponsoring employer covenant as a result of climate change.	<ul style="list-style-type: none"> <li>The Section's funding level has significantly improved in recent years to a strong position where it does not currently rely on the sponsoring employer for contributions.</li> <li>The employer has strategies in place to assess and monitor climate related risks to the business, has sustainability targets in place, and is positioned to be resilient to the climate transition and benefit from opportunities.</li> </ul>

The Trustee's analysis suggests that given the low-risk investment strategy adopted and strong funding level of the Section, the level of climate risk in the portfolio is not significant and does not present a risk of significant detriment to the funding position. It is not considered significant as the Section is expected to remain in surplus on the low-risk basis under all scenarios.



## Climate Opportunities Identified

### Asset Class Level Opportunities

In addition to climate risks, the Trustee has also identified a range of climate opportunities as part of its asset class level qualitative risk assessment. These include:-

- Credit - Identifying well governed companies. Those with an effective transition plan and robust risk management are likely to have more sustainable performance in the long term. Within the Buy & Maintain Credit portfolio, the Trustee has implemented thresholds to manage the proportion of investment in bonds with lower credit ratings. In addition, the Trustee has placed a screen on the portfolio which restricts investment into companies that do not meet the investment managers' criteria in relation to involvement in the manufacture and production of controversial weapons, violators of the United Nations Global Compact and involvement or expansion of thermal coal or oil sands power generation, mining and extraction.
- Private Markets & Infrastructure -
  - Potential for increased revenues through access to new markets and new products and services to support the transition to carbon neutral economy.
  - Increased renewable energy infrastructure investment opportunities.
  - Increased market valuations through resilience planning, e.g. focus on companies adapting revenue streams to focus on new products/services relating to resilience or adapting physical assets, such as the Section's infrastructure equity manager engaged with its underlying rail asset to create value via replacing old electric trains with new electric trains which are 33% more efficient.

### Day-to-day Management

Moreover, the day-to-day management of the Section's assets is delegated to the investment managers, and the Trustee expects the investment managers to consider the financially material impact that climate-related risks and opportunities may have on their respective mandates and the overall sustainability of the investment programme, as is stated as part of the Section's ESG and stewardship policies within the Statement of Investment Principles. The Trustee regularly reviews the processes in place with the investment managers.



**Risk Management**



## Identifying and assessing climate-related risks

This section provides detail on the processes in place for identifying, assessing and managing climate-related risks in relation to the Section and how these processes are integrated within the Trustee's overall risk management of the Section.

### Tools for identification of risks

The Trustee utilises the following tools to feed into its understanding of the key climate-related risks to the Section. Where it is appropriate to do so, the Trustee distinguishes between transition and physical risks.

- **Climate metrics** – as set out in the final section of this report, the Trustee reviews the total greenhouse gas emissions, carbon footprint and science-based target alignment of the Section's investment portfolios to understand which assets are not aligned with the latest climate science data necessary to meet the goals of the Paris Agreement. The Trustee will monitor this trend over time to understand the Section's exposure to carbon.
- **Investment monitoring reports** – the Trustee receives ongoing monitoring reports from investment managers and external advisers to make them aware of emerging risks and the steps being taken to manage these risks. Day-to-day management of climate-related risk is delegated to the investment managers, who are overseen regularly by the investment adviser and the Trustee.
- **Scenario analysis** – the Trustee utilises the results of scenario analysis to understand which asset classes are most sensitive to different climate change scenarios. The summary of this analysis is included in the Strategy section of this report.

- **Risk Register** – the Trustee identifies climate-related risks to the Section and documents these within the Section's risk register to ensure that climate risks are fully integrated within the Section's overall risk-management processes. The Trustee considers the materiality of risks identified based on the likelihood of risks occurring and the impact the risk could have. The Trustee has also considered mitigation strategies for the risks with the aim of reducing the potential financial impact, the likelihood of occurrence or both. The Trustee reviews the risk register, including climate-related aspects, at least annually.

### Prioritisation of risks

The Trustee reviews the risk register holistically and prioritises the risks to the Section based on likelihood and financial impact metrics. Management of climate-related risks is integrated within the Section's wider risk management processes.

The assessment of climate-related risks has not impacted the Section's prioritisation and management of risks for the Section, with climate change considered to be a relatively low risk relative to others faced by the Section given the low-risk investment strategy, strong funding position and minimal financial reliance on the employer. The Trustee nonetheless considers climate-related risks on an ongoing basis to ensure that any increase in the risks posed by climate to the Section's investment and funding strategies is recognised and managed.



## Managing climate-related risks

Methods utilised by the Trustee for managing the identified climate-related risks in the Section are as follows:

### Setting Investment Strategy

Based on the results of the climate scenario analysis the Trustee believes that the Section's funding position is resilient against the climate change scenarios projected over 5, 10 and 15 year time horizons.

This is driven by the Section's low risk, well diversified portfolio, which implements a high level of interest rate and inflation hedging. However, the Trustee recognises that climate-related risks are systemic and cannot be addressed through diversification alone. The Trustee will continue to try and identify investment opportunities brought about by the transition to a low carbon economy.

### Investment Manager Mandates

The Trustee's policy is that climate-related financial risks and opportunities should be considered by the investment managers when selecting, retaining and realising investments.

The Trustee has implemented a screen on the Section's credit portfolio, which works to exclude certain companies that do not meet the investment managers' criteria in relation to involvement in the manufacture and production of controversial weapons, violators of the United Nations Global Compact and involvement or expansion of thermal coal or oil sands power generation, mining and extraction. It also excludes those companies which fail to meet the investment managers' minimum requirements on the transition to a carbon neutral world.

More information on these policies is set out in the Statement of Investment Principles (SIP) and Responsible Investment Policy. The Section's adherence to the SIP is reviewed annually in the Section's Implementation Statement. Prior to appointing a new investment manager, the Trustee assesses the extent to which the manager incorporates ESG factors, including climate change, within their investment process, and monitors this on an ongoing basis.

### Stewardship

Engagement and shareholder voting are an integral aspect of the Section's approach to managing climate risk and the Trustee believes that climate risk management can be meaningfully improved through focussed stewardship activities by investors.

The Section's stewardship and engagement policies within the SIP reflect the Section's strategy to engage with its investee companies and other key stakeholders. The Trustee aims to protect and increase shareholder value by engaging on a range of financially material ESG investment factors, including climate change. The Section currently holds no investments that carry voting rights. However, the Trustee delegates the responsibility for engagement to its investment managers and expects the managers to be actively engaging on their behalf to influence decarbonisation plans. The Trustee also ensures that the investment managers stewardship and active engagement policies are aligned to their own. The Trustee reports on the Section's engagement activities publicly through its annual Implementation Statement.



## Integration into overall risk management

### Governance approach to integrating climate-related risks

The Trustee has a well-developed governance framework for managing risks across the Section with clear roles and responsibilities, which is outlined in the Governance section of the report. In summary, the Trustee is responsible for oversight of all financially material risks, including identifying, assessing and managing climate-related risks and opportunities, and the ISC is responsible for overseeing compliance with the climate-related governance and disclosure requirements of the Section's investment strategy.

The Trustee records the climate-related risks within the Section's risk register. The Trustee manages climate risk in different ways according to the nature, duration, magnitude and time-horizon of the risk exposure. Similarly to the Section's other risks, the Trustee assesses the likelihood and financial impact of each of these risks and prioritises those which pose the most significant potential loss and are most likely to occur, after allowing for mitigation measures.

Each risk has also been given an "ownership" allocation which details who has primary oversight of the controls in place to manage the risk, recognising that the Trustee has ultimate responsibility for reviewing the risk register. The Trustee regularly discusses the risk register.

### Investment approach to integrating climate-related risks

The Trustee considers climate-related factors at all stages of the investment process, including identifying risks and opportunities during asset class and manager selection, engagement and stewardship, and ongoing monitoring of the Section's investments and funding position.

The Trustee has undertaken climate scenario analysis to assess the impact of climate risk on the Section's investment and funding strategies. The Trustee has not sought to make immediate changes to the Section's investment strategy based solely on the results of this scenario analysis. However, as part of any future investment strategy work or risk transfer exercise, the consideration of climate risk, including those identified through scenario analysis and metrics calculations, will be an input into the decision-making process.

Furthermore, as part of any investment manager or insurance provider selection exercises the Trustee will assess the manager's stewardship capabilities and the extent to which the manager incorporates ESG factors, including climate change, within their investment process. These factors will be given the appropriate weighting as part of the decision-making process, alongside other factors.



# Metrics and Targets





## Metrics used to assess climate-related risks and opportunities

The Trustee reviews and monitors climate-related metrics for the investment portfolios of the Section to assess the climate-related risks and opportunities as identified in the Strategy section of this report. These metrics help inform the Trustee on which areas of the Section's asset portfolio are most carbon intensive and at the greatest risk of financial impairment due to the transition to a net zero economy. This can feed directly into the investment strategy and risk management processes where these are deemed to be financially material. The Trustee intends to use this analysis to feed into the investment decision-making process and to monitor progress against targets over time.

To enable meaningful change towards tackling climate change, attaining a clear picture of the current position of the Section's investments and their corresponding Greenhouse Gas ("GHG") emissions is needed.

The Trustee selected and monitored four climate metrics for the Section during the year as set out below. The Trustee expects the quality of data to improve over time. To monitor the Section's progress towards decarbonisation, the Trustee has set a target for the Buy and Maintain Credit Portfolio to have 100% Science Based Target ("SBT") alignment by 2040 as defined by the Science Based Targets initiative ("SBTi") with a linear improvement made each year as an interim target. Further information on the Section's progress against this target is included on page 30.

1. **Absolute emissions metric – Total GHG emissions:** Total GHG (Scope 1 & 2) emitted by the underlying portfolio companies, attributed to the investor based on the total investment in each company. The Trustee has reported Scope 1 and 2 emissions to ensure consistency across all asset classes. Scope 3 data is not currently available for all of the Section's mandates and the Trustee is not required to disclose Scope 3 data in the first scheme year that they are subject to TCFD reporting requirements.
2. **Intensity-based emissions metric – Carbon footprint:** An intensity measure of emissions that assesses the level of GHG emissions (Scope 1 & 2) arising from a £m investment in the fund. It highlights the most carbon intensive assets in the portfolio.
3. **Portfolio alignment metric**
  - a. **Science-Based Targets Initiative Alignment:** Exposure to companies with carbon emissions reduction targets as set out by the SBTi.
  - b. **Implied Temperature Risk:** The temperature pathway the mandate aligns to, expressed as a projected increase in global average temperatures compared to pre-industrial levels by the end of the century.
4. **Additional climate change metric:** the proportion of the portfolio for which high quality data is available.



### Total GHG emissions can be broken down into:

- **'Scope 1'** - direct emissions from the activities of an organisation or under its control;
- **'Scope 2'** - indirect emissions, for example from electricity purchased; and
- **'Scope 3'** - indirect emissions from activities of the organisation which occur from sources that the organisation does not directly control, for example use and disposal of the products it sells.



## Absolute Emissions and Emissions Intensity Metrics

The Trustee gathered climate metrics for the Section's investment strategy as at 31 December 2023 as far as it was able to and the results are set out below. This helps to set a baseline against which future action can be measured, so that trends over time and problem areas within the portfolio can be understood. The Trustee will report on Scope 3 emissions in next year's TCFD report.

The data coverage and reliability should be considered to contextualise this information (see Appendix for further information).

Mandates	Strategic Asset Allocation	Total GHG emissions (scope 1 & 2)		Carbon footprint (scope 1 & 2)		Data quality % of scope 1 & 2 emissions intensity that are:			
		Metric, tCO <sub>2</sub> e	Coverage	Metric, tCO <sub>2</sub> e/ £1m of EVIC	Coverage	Verified	Reported	Estimated	Unavailable
LDI (incl. leverage)	40%	27,181	176%	74	176%	0%	96%	0%	4%
<i>LDI notional (excl. leverage)</i>	-	<i>14,386</i>	<i>96%</i>	<i>71</i>	<i>96%</i>	<i>0%</i>	<i>96%</i>	<i>0%</i>	<i>4%</i>
Buy & Maintain Credit	50%	32,118	72%	66	72%	0%	72%	0%	28%
Cash	-	1,170	75%	45	75%	0%	75%	0%	25%
Ground Rents	5%	0	100%	0	100%	0%	100%	0%	0%
Infrastructure Equity	5%	1,532	100%	21	100%	99%	1%	0%	0%
<b>Total Portfolio</b>	<b>100%</b>	<b>62,000</b>	<b>84%</b>	<b>62</b>	<b>84%</b>	<b>7%</b>	<b>77%</b>	<b>0%</b>	<b>16%</b>

Source: Investment managers, Isio calculations. Further caveats and detail can be found in the Appendix. Metrics data is sourced from the respective investment managers and aggregated by Isio. Isio makes reasonable efforts to check specific data provided by investment managers, however data provided by managers has not been independently verified by Isio.



## Absolute Emissions and Emissions Intensity Metrics Summary

### Key Takeaways

The overall emissions coverage of the Section is 84%, including 7% of data that has been independently verified (see Appendix for more detail). Enhancing coverage is a focus for the Trustee which has been delegated to the investment adviser to communicate with investment managers.

### Buy & Maintain Credit and LDI

Together the Section's Buy & Maintain Credit Portfolio and LDI Portfolio produce c. 96% of the Section's 'absolute total' of c. 62,000 tonnes of GHG emissions reported based on the 84% of assets for which data is available.

Both portfolios are relatively carbon-intensive, however it should be noted that the investment manager has not been asked to adhere to any explicit carbon reduction targets for these mandates. The Buy & Maintain Credit portfolio is primarily holding bonds it believes to be 'money good', with climate-risk forming an implicit part of the long-term credit assessment. In addition, while the LDI Portfolio is relatively carbon intensive, the asset class is used as a risk mitigator to hedge the Section's liabilities and so this level of risk is accepted.

### Additional Climate Change Metric: Data Quality

The Trustee has also chosen to report on the proportion of the portfolio for which high quality data is available.

The Trustee acknowledges that emissions data quality and coverage varies across asset classes and underlying holdings, and that reporting methodologies for certain asset classes lack consensus. The Trustee has reported emissions data for each investment as far as it is able.

Information on data quality has been collected from the Section's investment managers and is reported using four categories:

- Emissions reported by companies/governments and **verified** by third parties (the highest quality).
- Emissions **reported** by companies/governments but not verified.
- Emissions **estimated** by the investment manager.
- Data **unavailable**.

### Other return-seeking assets

The Section's Ground Rent investments do not have any Scope 1 or Scope 2 GHG emissions due to all underlying assets being entirely tenant controlled and as such all emissions are considered to be Scope 3. The investment manager is working with underlying tenants in the attempt to increase the availability of Scope 3 emissions data, which the Trustee will report on in their 2025 TCFD report, should this holding remain in the portfolio. It should be noted that the Trustee has submitted a request to fully redeem this position and is awaiting the proceeds to be paid.

Compared to the Section's credit portfolio and ground rents investments, the Infrastructure holding has a significantly lower carbon emissions intensity.



Based on the data provided by the investment managers, the Trustee has been able to report Scope 1 and 2 GHG Emissions and GHG Emissions per £m invested for 77% of the Section's total assets as at 31 December 2023.



## Portfolio Alignment Metrics

Portfolio alignment metrics can provide a clearer picture of a portfolio's forward-looking climate risks, as these metrics take into account a company's plans to reduce future emissions, in contrast with the other metrics disclosed that are based on historical emissions. Portfolio alignment metrics also have a role to play in the target-setting process as they can provide input on what needs to be done to align a portfolio with the goals of the Paris Agreement.

To transition to a net-zero economy, the greatest financing will ultimately be required in the highest emitting sectors and companies, with capital required to decarbonise hard-to-abate practices. Investors therefore have to ensure that capital is allocated towards businesses that are aligned with the transition to net zero and re-directed away from those that are not.

### SBTi Alignment

The Trustee has chosen to report a binary target measurement for the Section's portfolio alignment metric. This measures the percentage of the Section's investments with SBTs for reducing GHG emissions.

Emissions reductions targets are considered science-based if they are aligned with the latest climate science data necessary to meet the goals of the Paris Agreement, limiting global warming to well below 2°C above pre-industrial levels. The table overleaf shows the proportion of the Section's investments that have net zero targets, either by signing up to the Paris Agreement or having declared a net-zero emissions target by 2050 or earlier.

### Implied Temperature Rise

The Trustee has also chosen to report on the Implied Temperature Rise of the portfolio as an additional portfolio alignment metric, where data is available.

The Trustee recognises that reporting on Implied Temperature Rise continues to develop across the industry and expects to include data for more of the Section's mandates in next year's report.

Implied Temperature Rise projects forward a company's future emissions and calculates the difference compared to their allocated carbon budget if the goals of the Paris Agreement were to be met. The extent to which the company exceeds or is under its allocated carbon budget is translated into a temperature rise. For example, if a company was given a score of 2.5°C, that would indicate that the company is exceeding its fair share of the global carbon budget. If every company exceeded its fair share by a similar proportion, it would lead to a warming scenario of approximately 2.5°C.



## Portfolio Alignment Metrics Summary

### Portfolio Alignment Metrics

The Trustee has gathered data on both the SBT and Implied Temperature Rise alignment approaches where possible from the Section's investment managers. Reporting availability of portfolio alignment metrics continues to develop across the industry and the Trustee continues to work with the investment managers to understand their reporting capabilities in this area.

The Section's Buy & Maintain Credit Portfolio has an implied temperature rise of 2.4°C, above the goal of the Paris Agreement of limiting global warming to well below 2°C above pre-industrial levels, with a target of 1.5°C. Currently only 25% of this portfolio has set SBTs to reduce carbon emissions.

The Infrastructure allocation has reported 56% of the fund's underlying assets have net zero commitments. It should also be noted that these net zero targets have not been approved/validated by the SBTi. The Trustee recognises that it would be more robust to push for these targets to be approved/validated by SBTi and we will continue to encourage this via the investment managers.

Mandates	SBT alignment		Implied Temperature Rise	
	Metric	Coverage	Metric	Coverage
LDI (incl. leverage)	Excluded		-	-
<i>LDI notional (excl. leverage)</i>				
Buy & Maintain Credit	25%	30%	2.4°C	72%
Cash	-	-	1.9°C	35%
Ground Rents	-	-	-	-
Infrastructure Equity	56%*	100%*	-	-
<b>Total Portfolio</b>	<b>17%</b>	<b>22%</b>	<b>1.4°C</b>	<b>36%</b>

Source: Investment managers, Isio calculations. Further caveats and detail can be found in the Appendix. In line with the guidance from the Institutional Group on Climate Change (IIGCC) Net Zero Investment Framework (NZIF), the Section's hedging and cash assets have not been included in the calculation of portfolio SBT alignment. \*Net zero targets have not been approved/validated by SBTi.



## Target to Manage Climate-related Risks

The Trustee has put in place a target to manage the climate-related risks identified within the Strategy section of this report. In 2022, the Trustee, with support from its Investment Adviser, set an initial target to achieve emissions data coverage for 75% of total Section assets in the short term. This has been achieved, as the Trustee can now obtain Scope 1 & 2 emissions data covering the Section's two largest investment portfolios, namely the Buy & Maintain Credit portfolio and the LDI portfolio.

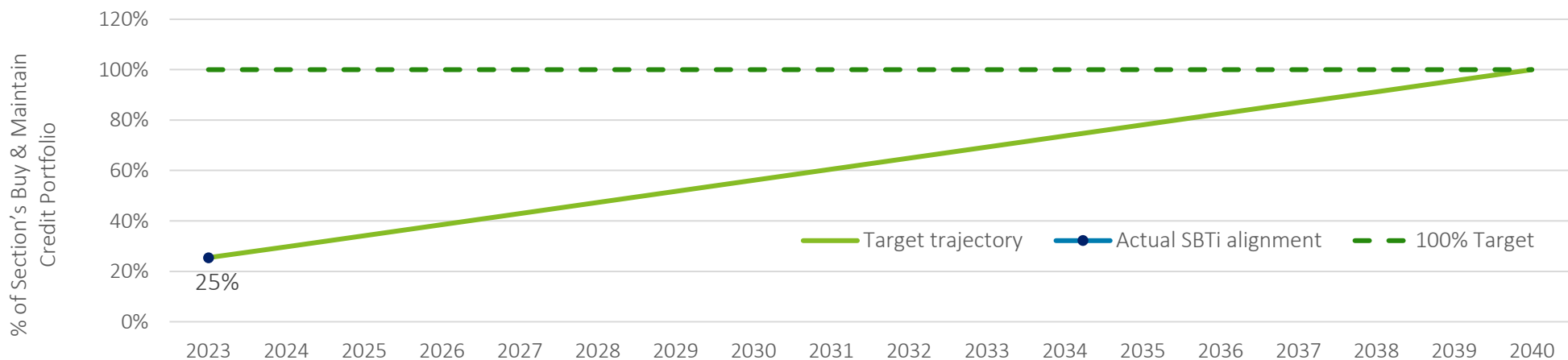
Scope 1 & 2 emissions data coverage	31 December 2022	31 December 2023
Total Portfolio	79%	84%

In addition, the Section is now receiving Scope 1 & 2 emissions data covering the majority of its investment mandates.

### New Target

Given data availability has improved, the Trustee has put in place a new target which focuses on decarbonisation. The Trustee has set the target for the Section's Buy & Maintain Credit portfolio to have 100% SBTi target alignment by 2040 with a linear improvement made each year as an interim target. This will help ensure that a large proportion of the Section's assets is invested in businesses with suitable decarbonisation plans in place for achieving net-zero emissions by 2050. The Trustee will use the year 2023, the year the target was set, as the baseline for which future progress against the target will be monitored.

The Trustee will seek to achieve this target through engagement with the Section's investment managers via the Investment Adviser to drive improvements in reporting and alignment of underlying assets. The Trustee recognises that its ability to directly influence the companies to adopt SBTs is limited and there is a reliance on the Section's investment manager to engage on the Trustee's behalf. The Trustee will monitor engagement activity to ensure the investment manager is acting appropriately on the Trustee's behalf.





**Appendix: Metric data caveats**  
**Limitations of scenario analysis**



# Appendix: Climate metrics supporting information

The following definitions and limitations support the Metrics and Targets section of this report.

### Definitions:

- Greenhouse gases: Gases that trap heat in the atmosphere and the absolute measure of contribution to climate change is captured by total GHG emissions. The emissions measured are the seven gases mandated under the Kyoto Protocol, of which one is carbon dioxide (CO<sub>2</sub>) converted to and expressed as carbon dioxide equivalents (CO<sub>2</sub>e) including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O).
- tCO<sub>2</sub>e: Tonnes of carbon dioxide equivalent, where CO<sub>2</sub>e expresses the impact of each different greenhouse gas in terms of the amount of CO<sub>2</sub> that would create the same degree of warming.
- EVIC: Enterprise value including cash.
- Coverage: Denotes the percentage of each fund where data is available.

Fund	Exclusions and limitations
LDI portfolio	<ul style="list-style-type: none"> <li>• Data as at 29 December 2023.</li> <li>• Coverage excludes derivative positions due to lack of developed estimation methodology.</li> </ul>
B&M Credit	<ul style="list-style-type: none"> <li>• Carbon footprint provided per \$1m carrying value. We have converted this to GBP using the exchange rate as at 31 December 2023 (1.27) for the LDI Portfolio and Cash Fund.</li> <li>• LDI government bond data uses 2019 emissions.</li> <li>• Data for the Cash Fund has been scaled to represent the Section’s investment in the pooled fund.</li> </ul>
Cash	<ul style="list-style-type: none"> <li>• Investment manager does not provide breakdown between scope 1 &amp; 2 and scope 3 emissions. The emissions reported under scope 1 &amp; 2 may also contain scope 3 emissions.</li> <li>• Investment manager relies on third party sourced model-based estimates for scope 3 data.</li> </ul>
Commercial Ground Rents Fund	<ul style="list-style-type: none"> <li>• Scope 1 and 2 emissions are not applicable for this fund, only Scope 3.</li> </ul>
Infrastructure Fund	<ul style="list-style-type: none"> <li>• Data as at 31 December 2023</li> <li>• Data is scaled to represent the Section’s investment in the fund.</li> </ul>





## Appendix: Limitations of Scenario Analysis on Assets

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Climate scenario modelling is a complex process and the Trustee is aware of the modelling limitations. In particular:

- The models used for scenario analysis are based on assumptions and simplifications across both the climate-related impacts and the investment implications, they are not intended to be a perfect prediction of the future but rather provide the Trustee with hypothetical constructs.
- No guarantee can be offered that actual outcomes will fall within the range of simulated results.
- The only risk factors considered in the modelling are those that affect the values of a pension schemes' assets. The modelling results should be viewed alongside other qualitative considerations including portfolio complexity, governance burden and liquidity risk.
- The model's projections are sensitive to the starting position and the economic assumptions. Changes to the assumptions can have a material impact upon the output. There can be no guarantee that any particular asset class or investment manager will behave in accordance with the assumptions. Newer asset classes can be harder to calibrate due to the lack of a long-term history.
- The scenarios considered are based on those provided within the 2021 Biennial Explanatory Scenarios ("CBES") set by the Bank of England. The CBES scenarios have been based on the publication conducted in 2021. Changes in market conditions from this point could lead to results which are materially different to those modelled.
- The CBES scenario specification builds upon a subset of the Network for Greening the Financial System (NGFS) climate scenarios. NGFS climate scenarios aim to provide central banks and supervisors with a common starting point for analysing climate risks under different future pathways. They are produced in partnership with leading climate scientists, leveraging climate-economy models that have been widely used to inform policy-makers. The scenarios have been generated with the help of NiGEM. The NiGEM economic model is the property of the National Institute of Economic and Social Research and NiGEM is a trade mark of the Institute. The 2021 CBES and the associated macroeconomic variable profiles have been produced under the guidance of the Financial Policy Committee and the Prudential Regulation Committee and are owned by the Bank of England.
- The model used assumes a deterministic projection of the assets and liabilities.



## Appendix: Scenario Analysis on Longevity

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- A description of each scenario and its possible impact on future mortality (short-term and long-term) is provided below:
  - **Orderly Transition:** Over the first three years, the global economy experiences a period of turmoil and lower growth as the economy arduously divests away from fossil fuels. Global growth and market returns remain strong relative to the base case in the long-term, supported by a brighter sustainable outlook and the positive spill-over effects from green policy adoption. Disruption to health and social care services, and damage to related infrastructure, due to extreme weather (potentially coinciding with increased demand) may increase mortality. However, the disruption is likely to be short-lived. In longer-term, better air quality and improved health conditions may lead to higher longevity: overall around a 0.5 year improvement in life expectancy for the average 60-year-old.
  - **Disorderly Transition:** Disruption to health and social care services, and damage to related infrastructure, due to extreme weather (potentially coinciding with increased demand) may increase mortality. Significant falls in GDP start from around year 10. Prolonged recession leads to issues with the provision of healthcare and ultimately to falls in life expectancy, with overall improvements at 1% p.a. over the long term.
  - **Failed Transition:** Limited consideration is given to environmental challenges. Governments and businesses rely on the (false) hope that market forces will provide engineering solutions to mitigate and adapt to climate change naturally, without worldwide government intervention. In the short-term more money may be spent on health services, perhaps reducing mortality slightly. There is growing awareness of a changing environment and the damaging effects a lack of action is having, over the intermediate term. There is a higher incidence of damaging storms, water shortages, higher pollution levels and reduced agricultural yields (leading to higher food prices). Markets become more volatile and climate change begins to have a growing drag on economic growth and asset returns. In such an environment, there may be no long-term future improvements in mortality (consistent with what we saw between 2014 and 2018). In terms of the direct climate impacts, fewer deaths from warmer winters may more than offset any impact of heatwaves but the impact is likely to be marginal.



## Appendix: Assumptions/Limitations for Scenario Analysis on Longevity

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- Data used: deaths and populations for years 1960-2022 as published by ONS and used by CMI in the industry-standard CMI mortality projections model CMI\_2022. Mortality standardised using the European Standard Population 2013 for ages 50-90 as set out in this paper: Revision of the European Standard Population - Report of Eurostat's task force - 2013 edition - Products Manuals and Guidelines - Eurostat (europa.eu)
- Model: industry-standard mortality projections model CMI\_2022 with varying parameters to reflect short and long-term impacts of different scenarios on mortality. The key parameters used were the Initial Addition (A = 0.5%) parameter which increases or decreases improvements in the near-term, and the long-term rate parameter (LTR) which increases or decreases improvements in the long term. Adjustments were applied to assumed base mortality to ensure that the rate used in 2022 was the same across all scenarios.
- Scenarios illustrate mortality rates up to 2050, but rates were provided up to 2150 to enable liabilities to be calculated.
- Liability impacts of each scenario were calculated based on the ratio of male life expectancy at age 60 and rounded to the nearest 0.5%. It is noted that the impact could be different depending on discount rate. A difference might also be expected for joint life annuities although it's not likely that they will be significantly different given that figures are rounded to 0.5%.
- Limitations: these scenarios provide an indication as to what might be expected in particular scenarios, to provide an impact of mortality on liabilities to place alongside the impact from financial variables on the liabilities and the impact on assets from investment returns of the given scenario. The scenarios are not intended to provide the highest or lowest possible outcomes, and are not intended to show what will happen, rather they give a reasonable range of impacts against which to consider the possible impact of climate change on a particular pension scheme. The scenarios are deliberately not given likelihoods, we have not sought in any way to estimate how likely each particular scenario is.
- Scenarios are essentially expressed relative to a pension scheme's current position (i.e. the central scenario). If a pension scheme is already specifically reflecting a particular belief on the current path (for example, if it is believed that we are heading to a "No transition" scenario) then variations should be expressed relative to that scenario rather than the central one, otherwise the liability impact of that scenario would be incorrect for that scheme. At this stage we don't believe pension schemes are reflecting views on climate change in this way, but this may be (explicitly or implicitly) the case in future.