Taskforce on Climate-Related Financial Disclosures (TCFD) Statement – Year Ended 31 March 2024

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Executive Summary

This report has been produced by the Trustee of the LV= Employee Pension Scheme (the "Scheme") and their advisors under the requirements of the Occupational Pension Schemes (Climate Change Governance and Reporting) regulations 2021. As part of these regulations, the Scheme is legally required to produce formal disclosures in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This report covers the period from 1 April 2023 to 31 March 2024 ("the Scheme year").

A short summary of the report is included below to help members to understand the key findings. A more detailed report then follows, split into four sections:

- **Governance**: the arrangements that have been put in place around climate-related risks and opportunities.
- **Strategy**: the actual and potential impacts of climate-related risks and opportunities on the investment and funding strategy of the Scheme.
- **Risk Management**: how the Trustee identifies, assesses, and manages climate-related risks.
- **Metrics and Targets**: used to assess and manage climate-related risks and opportunities.

These sections address the specific disclosure requirements in the Regulations and have regard to the Statutory Guidance. This report has also been prepared with regard to the Pension Regulator's guidance on the governance and reporting of climate-related risks and opportunities. For brevity, where we refer in this report to risks and opportunities relating to climate change, we mean this to cover both the risks arising from changes in the climate itself and the risks and opportunities presented by the anticipated transition of economies and society to a lower carbon future.

In the Scheme's previous TCFD report, the Defined Benefit ("DB") Section and the "popular arrangements" of the DC Sections of the Scheme were covered in detail. In April 2023, shortly after the beginning of the Scheme year in question, the assets of the DC Section of the Scheme were transferred via a bulk transfer to a Master Trust arrangement. As noted in last year's report, the Trustee has chosen to take a proportionate approach given the size of the single popular arrangement and the short time they were held, the DC assets will therefore not be included in this report[1]. Where the phrase "Scheme assets" is used, this refers only to the Scheme's DB assets.

Governance

The Trustee of the Scheme retains ultimate responsibility for all investment decisions of the Scheme including the management of climate-related risks and opportunities. Certain responsibilities regarding climate policy and strategy are delegated to the Funding & Investment ("FISC") sub-committee with input from its Defined Benefit ("DB") advisor, Redington. The previous report outlined the role of the Defined Contribution Sub Committee ("DCSC"). As the DC Section assets moved to a Master Trust arrangement in April 2023, the Trustee took the decision to disband the DCSC during the Scheme year.

The Trustee receives training relating to responsible investment, with a focus on issues related to climate change. The Trustee also requires the Scheme's appointed fund managers to be cognisant of climate-related risks and opportunities. The Trustee has tasked their investment advisor, to engage with the managers regarding this on their behalf, bringing any relevant update to the Trustee's attention.

[1]A popular arrangement is one in which £100 million or more of the Scheme's assets are invested; or one that accounts for 10% or more of the assets used to provide money purchase benefits (excluding assets which are solely attributable to Additional Voluntary Contributions).

Strategy

The Trustee considers climate-related risks and opportunities across short-, medium- and long-term time periods relevant to the Scheme. These risks are primarily assessed via climate scenario analysis of the Scheme's assets, liabilities, and an assessment of the extent to which climate change poses a risk to the strength of the sponsor covenant in the context of the Scheme's funding position.

For this report, the Trustee has decided not to refresh the asset, liability and covenant scenario analysis, with the reasoning explained in the Strategy section below. The analysis presented in this report therefore continues to be based on analysis performed as at 31 March 2023.

The Trustee recognises the increasing scrutiny of climate modelling and scenario analysis. This scrutiny has highlighted that current methodologies may not fully account for the short- and medium-term climate risks the Scheme could face; the analysis may therefore have limited reliability and usefulness as a decision-making tool. As such, the Trustee does not rely solely on this analysis to inform its strategic decision-making.

Risk Management

The Trustee has integrated climate-related metrics into the Scheme's wider risk management framework. As referred to in the Statement of Investment Principles ("SIP"), the Trustee engages with its investment managers to understand their approach to ESG integration and specifically undertake an assessment of climate-related risks. The Trustee receives annual climate-related reporting from its investment advisor, which provides relevant information to identify and assess climate-related risk on a fund-by-fund basis, as well as quarterly reporting providing an overview of the Scheme's overall estimated carbon emissions at a portfolio level.

During the Scheme year, the Trustee considered changes to the investment strategy to limit exposure to climate-related risks and take advantage of climate-related opportunities. To do this, the Trustee considered the levers it could pull to manage climate risks, which included the following:

- **Making strategic changes.** In June 2023, the Trustee agreed to adopt a key stewardship theme of 'Climate Change' to best channel the stewardship efforts of its investment managers.

- **Making changes within mandates.** The integration of ESG factors played a role in the Trustee's decision to transition the LDI and synthetic equity holdings from Blackrock to Schroders, as well as the corporate bond holdings from Insight Investment to Schroders.

Metrics and Targets

On an annual basis, the Trustee monitors and reports the Scheme's total greenhouse gas emissions[1], carbon footprint[2], data coverage[3] and the output of the portfolio alignment SBTi metric[4]. These metrics are reported on as at the Scheme's year-end (31 March 2024) within this report.

The Trustee uses these results to identify the climate-related risks and opportunities which are relevant to the Scheme. These might include, for example, engaging with fund managers who have material carbon intensity levels or with other industry participants, exploring low-carbon alternative investment options, and updating investment guidelines for managers where the Trustee has discretion to make

[1] Represents the total share of Scope 1, Scope 2 and Scope 3 carbon emissions a fund is responsible for.
[2] Measurement of the CO2e emissions of a fund per million pounds invested using Scope 1, Scope 2 and Scope 3 emissions. Given a company's direct Scope 1 emissions will inevitably be another company's indirect Scope 3 emissions, aggregating the individual Scope emissions results in a higher number of emissions than exists.
[3] Measurement of Scheme assets which report acceptable emissions data
[4] SBTi examines whether a voluntarily disclosed company's decarbonisation target is aligned with a relevant science-based pathway. The scores are binary with a yes or no assessment.

such changes. The Trustee has also set an aspirational emissions intensity reduction target of reducing the emissions intensity of the Global Investment Grade credit holdings by 40% by the year 2028.

The following pages summarise the Trustee's current position compared to the recommendations set out by the TCFD as per the Occupational Pension Schemes (Climate Change Governance and Reporting) regulations 2021.

The results of the analysis show that the Scheme's scope 1 & 2 absolute carbon emissions and carbon footprint reduced over the year. As at 31 March 2024, the carbon emissions reduction target of a decrease in the carbon footprint of the Scheme's Global Investment Grade Corporate Bond investments by 40% has now been achieved ahead of the target date. This target will therefore be re-evaluated in the next TCFD report to ensure it remains as appropriate for the Scheme as possible.

1. Governance

The LV=EPS Trustee is responsible for running the Scheme in the best interest of its members and has the ultimate responsibility for identifying, assessing, and monitoring climate-related risks and opportunities, as well as the oversight of broader responsible investment ("RI") matters. The Trustee recognises that environmental factors are financially material to investment risks and returns and should be considered within the Trustee's fiduciary objectives.

Whilst the Trustee is ultimately responsible for making strategic decisions for the Scheme, they have delegated certain responsibilities to the Funding and Investment Sub Committee ("FISC"). These responsibilities included the consideration of funding, investment, governance, and covenant matters concerning the Scheme. The FISC considered climate-related risks and opportunities in detail on behalf of the Trustee, before providing quarterly updates and recommendations to the Trustee.

Responsibilities of the FISC

The FISC met four times during the Scheme Year. Its role included consideration and advice to the Trustee Board on investment strategy and risks associated with the Scheme, this included risks associated with climate change. The FISC also monitored the Scheme's investment performance, along with the Trustee Board, and was responsible for reviewing investment items on the Scheme's risk register and reporting its findings to the Board.

Active engagement with companies in which the Scheme is invested, specifically relating to climate-related risks and opportunities, was delegated to the Scheme's investment managers. Meetings between the Trustee, FISC, and its Investment Advisor took place quarterly.

The FISC delegated the monitoring of climate-related risks and opportunities in the first instance to their investment advisor, who provided regular updates on how each manager incorporated climate change considerations into their investment process. In the interim the Scheme's investment advisor raised points to note as appropriate, with the FISC questioning and, where appropriate, challenging the information being provided to them. Any key takeaways from this day-to-day monitoring were reported back to the Trustee. At the Trustee Board meetings, the relevant work the FISC had undertaken over the period since the last meeting was relayed back to the Trustee. The FISC also relied on the internal modelling capabilities of their investment advisor to effectively assess climate-related risks and opportunities.

In order to effectively carry out these responsibilities, the FISC (and separately the Trustee) received sufficient training, from its investment advisor, on an ongoing basis in respect of climate-related risks and opportunities. To date, the Trustee has received regulatory requirement training, climate metric and scenario analysis training, as well as training on how to integrate climate-related opportunities into the Scheme's assets. The FISC has received training on stewardship matters, including the selection of a key stewardship theme for the Scheme, selecting 'Climate Change'.

Additionally, the FISC met with its investment advisor to discuss necessary decisions pertaining to this report, such as the decision not to re-run the DB scenario analysis, and to retain the current climate metrics and climate targets.

The FISC (and the Trustee) will continue to review the climate competency of its advisors to ensure adequate processes are in place. For example, the Scheme's investment advisor is reviewed annually against the Competition Markets Authority ('CMA') objectives, with one of the objectives being ESG advice (including advice on climate risk). This review was undertaken in June 2023 and the FISC was satisfied that its advisor met these objectives competently.

2. Strategy

The Trustee evaluates climate-related risks and opportunities, assessing their potential impact on the investment and funding strategy of the Scheme. This is accomplished through the analysis of climate scenarios that encompass the Scheme's assets, liabilities, and the covenant. By incorporating climate-related factors throughout the Trustee's funding and risk management process, ranging from strategic asset allocation to manager selection and portfolio monitoring, the Trustee encourages comprehensive consideration of potential climate-related risks to the Scheme.

The Trustee recognises that climate-related risks can arise from diverse sources. The primary known risks, namely transition risk and physical risk, are outlined below. However, it's important to note that these risks are not exhaustive, as there may be others that are either unknown or not yet fully captured in climate analysis due to the challenge of accurately quantifying them.

- **Transition Risk** is the possibility of price fluctuations in the Scheme's assets due to policy measures aimed at promoting the decarbonisation of economies. Policy actions are anticipated to impact the value of assets through mechanisms like carbon pricing and the increased adoption of renewable energy. Additionally, the transition towards a low-carbon economy presents investment prospects in enterprises that stand to gain from this shift.
- **Physical Risk** refers to the potential price impact on the Scheme's assets due to changes in weather patterns and extreme weather scenarios, as well as from other physical effects of climate change such as rising sea levels. These risks can affect the value of assets due to direct damage to assets and indirect destabilising impacts from disruptions to supply chains.

During the global transition to a low-carbon economy, climate-related opportunities may arise over time, for example through improved resource efficiency across production and distribution, adopting low-emission energy uses, supply chain resilience, and the creation of new products or services. These opportunities will likely vary depending on region and industry.

The Regulations require the Trustee considers the potential impact of these on the Scheme's funding strategy over the short-, medium-, and long-term. For example:

- Short-term risks and opportunities arise from increased regulation addressing climate change, possibly affecting stock prices (i.e. mostly transition risk).
- Over the medium term, changes in consumer spending habits are expected as a result of technological advancements, such as the growing adoption of electric vehicles (i.e. a combination of transition and physical risk).
- In the longer term, there are potential risks of physical damage to real assets, such as coastal properties or infrastructure, caused by rising sea levels. However, organizations that proactively implement strategies to mitigate these risks well in advance have the opportunity to outperform the market (i.e. higher levels of physical risk than over the medium or short-term).

The time horizons chosen by the Trustee are outlined in the table below:

Time Horizon	Years	Rationale
Short Term	0 – 3 years	This time horizon aligns with the Scheme's three-year actuarial valuation cycle which captures the more immediate climate risks and opportunities. Risks/opportunities include: carbon prices, regulation, and changes in consumer behaviour.
Medium Term	5 – 8 years	This time horizon broadly aligns with the Scheme's target full funding date of 2028 (on a gilts + 0.25% basis) and demonstrates

		the importance of significant climate data improvements to meet carbon emission reduction targets. Risks/opportunities include: carbon prices, regulation, changes in consumer behaviour, extreme weather events, and competitive pressures.
Long Term	15 – 25 years	This time horizon is broadly in line with the Scheme's liability duration and helps the Trustee consider the potential impact of physical risks. This time frame is also helpful given the long-term nature of the Scheme's investments. Risks/opportunities include: regulation, changes in consumer behaviour, competitive pressures, weather events, food price inflation, and commodity scarcity.

Please note, each item identified above may be a risk or an opportunity depending on how the companies within the Scheme's portfolio respond to climate-change.

2.1 Asset and Liability Scenario Analysis

The Scenario Analysis remains unchanged for this report. The initial analysis was performed in relation to the Scheme's DB and DC* assets, DB liabilities, and covenant by the Trustee's advisors. Specifically:

Scheme component	Provider of climate scenario analysis
DB assets & liabilities	Hymans Robertson (actuary)
DC assets*	LCP (investment advisor)
Covenant	EY (covenant advisor)

*Please note, as these assets were moved to a Master Trust arrangement in April 2023 they have not been included in this section.

This analysis will be performed triennially; interim updates may be performed, for example if there are material changes to the Scheme's strategy, member demographics or if there are significant changes to the methodology and industry practice relating to the analysis. To this end, the Trustee will consider annually whether a refresh of the analysis is required. The results of these climate scenarios are aligned where possible to ensure a consistent approach is taken across the Scheme's entire funding strategy.

This analysis is considered alongside other factors when the Trustee sets the strategic asset allocation. This helps to determine whether investment strategy changes are likely to have a positive or detrimental impact on the Scheme's climate risk profiles.

In 2023, the Trustee assessed the impact of identified climate-related risks and opportunities on the Scheme's investment and funding strategy across both assets and liabilities. To do this, the Trustee undertook scenario analysis consistent with Hymans Robertson's bespoke scenarios. The scenarios modelled are defined in terms of the pace and extent of the world's response to climate risks. These scenarios were chosen to show a range of lower-risk and higher-risk outcomes and represent the most recent scenarios that the Trustee has analysed, with the analysis taking place as at 31 March 2023:

- **Green Revolution**: Rapid policy and technology changes lead to climate goals being realised but with near-term economic costs. High expectation of achieving 2°C warming or lower by 2100.
- **Delayed Transition**: Some priority given to climate policy albeit necessary action is delayed. More extreme policy shifts in future incur greater costs to realise climate goals. High expectation of achieving 2°C warming or lower by 2100.
- **Head in the Sand**: no priority given to climate policy with countries pursuing their own short-term economic interests. Climate goals very unlikely to be met. Low/no expectation of achieving 2°C warming by 2100.

The scenario analysis for the assets and liabilities of the Scheme has not been refreshed given there were no meaningful changes to the asset allocation, data availability, scenarios, modelling or industry best practice that would affect the results of the analysis, and an update is not required by regulation.

The Trustee recognises the increasing scrutiny of climate modelling and scenario analysis. This scrutiny has highlighted that current methodologies may not fully account for the short- and medium-term climate risks the Scheme could face; the analysis may therefore have limited reliability and usefulness as a decision-making tool. As such, the Trustee does not rely solely on this analysis to inform its strategic decision-making. Nonetheless, the scenario analysis does help to highlight that climate change risks do exist, and the Trustee therefore believes that appropriate risk management steps should be taken to address and limit their potential impacts. This is covered in more detail in the Risk Management section.

Given the Trustee's desire to remain aligned with emerging good practice, the Trustee remains informed on developments (based on advice from the investment advisor). Further information on the scenarios may be found in Appendix B.

2.2 Results of Scenario Analysis

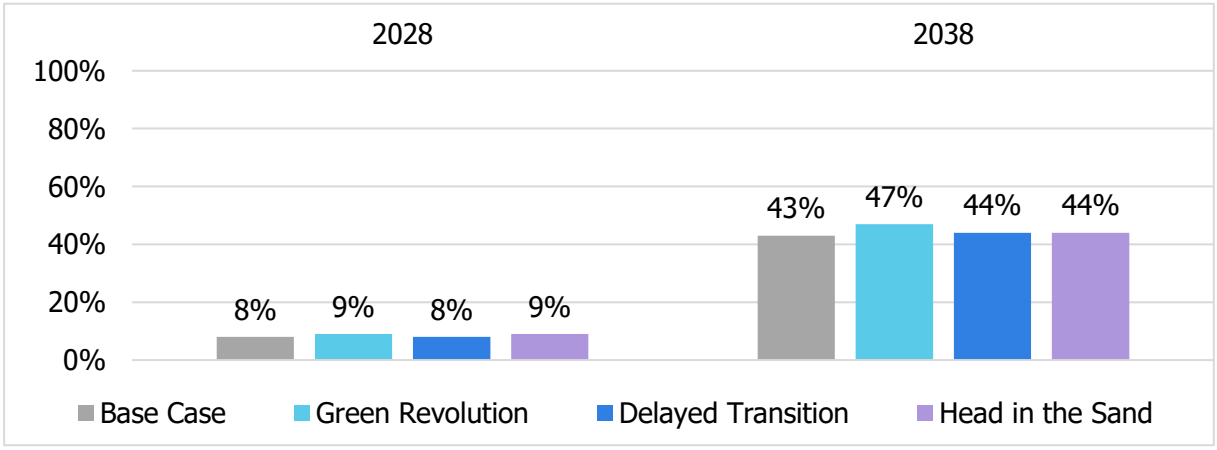
Of the key risks that affect the Scheme's funding level, interest rate and inflation risks are modelled to have a lower impact due to the high level of hedging in place provided by the LDI portfolio. However, as longevity risk of the uninsured members is predominantly unhedged, the variable life expectancy of members may have unmitigated effects on the Scheme's funding level. The charts below summarise the impact of the three climate scenarios on the following two measures versus the 'base case' in grey:

1. Chance of being fully funded when measured from the valuation date;
2. How the Scheme's funding level could be impacted in a 1-in-20 downside scenario.

The impact of the three scenarios are then measured at the following two timepoints, in order to consider both shorter and longer time horizons:

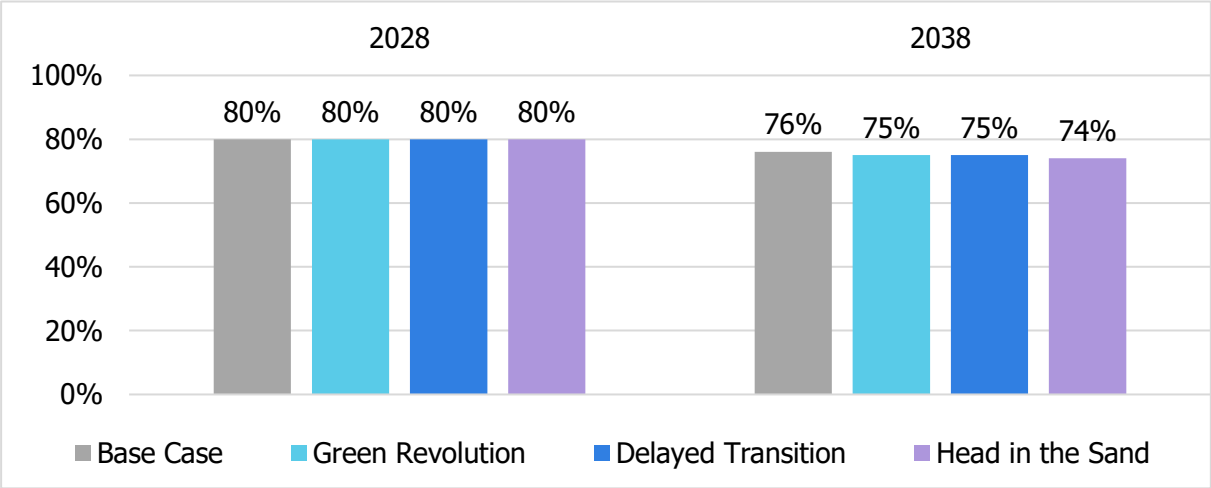
- 2028 – the Trustee's target for being fully funded on a gilts + 0.25% p.a. basis;
- 2038 – a longer term example, 15 years from the modelling date.

Figure 1. Likelihood of the Scheme being fully funded by each date



Source: Hymans Robertson. Please note, this scenario analysis is conducted as at 31 March 2023.

Figure 2. Average of worst funding levels in 1-in-20 downside scenario



Source: Hymans Robertson. Please note, this scenario analysis is conducted as at 31 March 2023.

It should be noted that the financial modelling above does not incorporate the potential longevity impacts of climate change due to the manner in which Hymans Robertson stress the volatility of the financial parameters. Instead, Hymans Robertson have illustrated the potential impact on life expectancy on current 50- and 65-year-olds[1]. These impacts are taken from the work done by Club Vita in its paper "Hot and Bothered". Life expectancy impacts will have more material impacts on downside risk than likelihood of success.

Scenario	Impact on life expectancy from age 65		Impact on results
	50 year old	65 year old	
Green revolution	Increase of 2 years	Increase of 1 years	Negative
Delayed transition	Reduction of 1.5 – 2 years	Reduction of 0.5 – 1 year	Positive
Head in the sand	Reduction of 4.5 years	Reduction of 1.5 year	Positive

Source: Hymans Robertson. Please note, this scenario analysis is conducted as at 31 March 2023.

Hymans Robertson have used their proprietary stochastic asset model, the Economic Scenario Service (ESS) to model to estimate the above results. 5,000 simulations of the model are performed, with the percentages referring to the proportion of the simulations where the required outcome is achieved. Changes in inflation, inflation expectation, interest rates, and asset class returns over time are included in the analysis, as are projected cashflows into and out of the Scheme. Further detail and limitations of the analysis may be found in Appendix B.

Conclusion

The above tables highlight that over the short and longer term it is the 'green revolution' or 'head in the sand' scenarios that are modelled to have a larger potential impact for the Scheme, although the impact on the probability of reaching full funding is predicted to be modest.

Under the 'head in the sand' scenario the average of the worst 5% of funding levels is modelled to decrease 2% to 74% for being fully funded by 2038 (the funding level fall in this scenario represents c.25% of the Scheme's maximum 'budget' for Funding Ratio at Risk). All other scenarios model a smaller reduction to the funding level. According to this analysis, the modelling carried out does not significantly underestimate climate risk in relation to the Scheme's strategy, although we have seen reductions in

[1] https://www.clubvita.net/assets/images/general/ClubVita_Booklet_UpdatedStats.pdf

the Scheme's likelihood of reaching full funding on the gilts + 0.25% basis since the last time this analysis was carried out, showing that market movements and changes in asset/liability values may impact time taken for the Scheme to reach full funding under the modelled contribution plan.

The analysis indicates that the Scheme's strategy is fairly resilient to climate risk when looking at the likelihood of achieving full funding on the long-term gilts + 0.25% p.a. basis. The Trustee notes that as the stresses are applied at the total asset level, the effect on the detailed funding strategy in each scenario (Scheme assets and liabilities, as well as member longevity) has not been included here. This will be improved upon in the next iteration of the scenario analysis.

The fact that the success likelihood and downside risk are not significantly worse under any of the scenarios does not mean that climate risk is not important or that the scheme is "immune" to its effects.

2.3 Covenant Scenario Analysis

As part of the scenario analysis on the full funding strategy carried out in the previous Scheme year (31 March 2022 – 31 March 2023), the Trustee engaged with the covenant advisor, EY, to understand how sponsor strength would be impacted by various climate scenarios.

Having reviewed the analysis provided, the Trustee is currently satisfied that the sponsor is developing strategies to address the anticipated risks and opportunities arising from climate change and does not, at present, see a reason to alter the Scheme's funding strategy as a result. Instead, it will continue to review the approaches of the sponsor in light of the risks and opportunities that their businesses are exposed to, performing formal analysis triennially or sooner following meaningful changes that could affect the covenants or the schemes' funding strategies. The Trustee also acknowledges that there may be scope to further develop covenant analysis in the future and will continue to monitor for developments in methodology that can be incorporated into the Trustee's risk management process.

Conclusions on covenant resilience to climate risk

LV= is in the early stages of developing its strategy and assessment of climate change risk. This is likely to develop further, particularly as it considers its TCFD obligations, which may change the results of the analysis it has performed to date. We would therefore expect visibility of covenant resilience to increase over time to support the Trustee's ongoing evaluation of the resilience of its funding strategy under different climate scenarios.

The analysis performed to date is focused on the potential impact to LV='s capital surplus in the event of market and mortality stresses and does not therefore consider some of the wider impacts in terms of future performance if LV= does not respond effectively, particularly as regards competitors. In general, there is significant uncertainty regarding the impact of climate change, particularly in relation to the impact on longevity, morbidity and mortality and LV='s scenarios have only sought to capture impacts to mortality and longevity, running both a mortality increases and a longevity stress for each climate scenario.

In addition to requiring more investment in climate risk assessment capabilities, there are information gaps which limit the abilities of insurers to fully assess climate risk and therefore factor this into business decisions which will impact their longer-term financial resilience. As a result, climate risks are currently only being partially measured. Although it has several limitations, the analysis which LV= has performed suggests that it has a high level of resilience to market stress arising from change, with negligible impacts in relation to the FY24 (financial year 2024) surplus.

In relation to EY's covenant assessment, their assessment took account of the strong levels of capital surplus. Although a reduction in capital surplus is significant in the 'head in the sand' scenario, there would still be a substantial capital surplus applying this to the FY24 surplus position. EY would not expect a significant impact to their covenant assessment based on this analysis.

3. Risk Management

3.1 Climate Risk Monitoring and Management

The Trustee considers both the physical risks posed to assets due to climate change and the transition risks associated with the global transition to a low-carbon economy. In the coming decades, it is anticipated that transition risks will have a more pronounced impact than physical risks. However, as we approach the midpoint of the century, physical risks are expected to become increasingly significant. Considering the scenario analysis conducted, the Scheme demonstrates a slightly higher vulnerability to near-term transition risks compared to longer-term physical risks.

The Trustee has incorporated climate change considerations into the broader risk management of the Scheme. To supplement this, Redington provides quarterly high-level estimated portfolio-level reporting and annual detailed fund-by-fund reporting with a focus on climate-related factors. These reports adhere to the climate metrics outlined in the DWP adoption of the recommendations of the TCFD. The provided information encompasses metrics such as total absolute carbon emissions, carbon footprint, a non-emissions-based metric selected by the Trustee to evaluate data coverage, and the portfolio alignment output measured by the SBTi (Science-Based Targets initiative) metric. Climate risks are identified through this reporting and the Scheme's scenario analysis but will also be identified by the Scheme's advisors should any specific risks emerge, and by the Scheme's investment managers in their updates to the FISC and Trustee. Where risks are identified they will be addressed in the first instance by the FISC to agree appropriate actions. There is an expectation that the Trustee will use the climate analysis included in this report to monitor investment manager progress towards the climate targets stated in 'Section 4: Metrics & Targets', with any material developments escalated by the FISC to the Trustee as appropriate.

The Trustee has considered changes to the investment strategy to limit exposure to climate-related risks and take advantage of climate-related opportunities. To do this, the Trustee considered the levers it could pull which included the following:

- **Making strategic changes**. In June 2023, the FISC agreed to adopt a stewardship theme of 'Climate Change' to better align with DWP guidance and focus stewardship efforts. In choosing Climate Change as a theme, this will guide the FISC's investment decisions, interactions with managers and their reporting practices.

- **Making changes within mandates**. During the Scheme-year, the Trustee undertook a manager selection exercise for the consolidation of its LDI, synthetic equity and credit holdings. As part of the exercise, ESG was one of the lenses assessed which formed the Trustee decision to select a manager. One of the criteria considered was the manager's sustainable investment credentials and the scope to align with the goals of the Scheme. The Trustee decided to move its LDI and synthetic equity mandates from BlackRock, and its Corporate Bond portfolio from Insight Investment to Schroders.

The Scheme's investment advisor is responsible for providing guidance on responsible investment approaches, aiding the Trustee in determining a suitable responsible investment strategy and establishing appropriate objectives for the Scheme. The specific duties of the investment advisor are elaborated upon in 'Section 1: Governance'. Additionally, the Trustee mandates that the appointed investment managers demonstrate awareness of climate-related risks and opportunities in their investment processes concerning the Scheme's assets.

The Trustee also aims to take advantage of climate-related opportunities where this is expected to improve the risk/return profile of the Scheme. This will highlight asset classes that may perform well in different climate-related scenarios. At the level of individual investments, the Trustee expects the

appointed investment managers to consider climate-related opportunities when making investments and engage with portfolio companies to encourage them to take advantage of relevant opportunities.

Examples of climate risk monitoring and integration include:

- Meeting agenda items dedicated to climate-related monitoring. This included a presentation by Schroders in June 2023, where the investment manager covered portfolio characteristics with respect to climate risk and ESG more broadly.
- The Trustee further emphasised the importance of ensuring there is a robust decarbonisation pathway within the credit assets with Schroders. As per the Investment Management Agreement, the manager may engage with companies to ensure their commitments to decarbonisation remain on track.
- The reference index for the Scheme's holdings within the Volatility Controlled Equities portfolio with Schroders is the MSCI World Low Carbon Target index.

3.2 Engagement and voting

The Trustee recognises the significance of engagement and voting as integral elements of robust risk management. Engagement activities are aimed at ensuring that companies effectively address the physical and transitional risks posed by climate change. The Scheme's investment managers conduct direct engagement with underlying companies in which the Trustee owns shares and/or debt. The extent of the Trustee's influence over investment managers' stewardship activities depends on the nature of the investments held. Given the characteristics of the Scheme's assets, the Trustee has limited direct influence over managers' stewardship activities.

The Trustee's policy is to delegate responsibility for engagement to its investment managers, which includes the exercising of rights (including voting rights) attaching to investments made by the investment managers. Each investment manager is expected to exercise voting rights in accordance with their guidelines. The Trustee encourages its managers to engage with investee companies and promote adherence to best practice in corporate governance.

When selecting a new investment manager, ESG integration including climate change, as well as stewardship and engagement are factored into the Trustee's decision-making process to the appropriate level for the specific asset class in question.

Engagement examples by the Scheme's investment managers during the Scheme year in question may be found below:

- Since 2021, Schroders has been working with a North American bank on its transition to Net Zero, focusing on emissions targets, lending policies, and climate reporting. Schroders has had discussions about sector-based climate targets and risk assessment and has urged for improvements in the bank's fossil fuel lending policy and absolute emissions targets.
- In 2023, Schroders discussed the British electricity grid's decarbonisation, engaged with the Board Chair on governance strategy, and clarified the company's net zero strategy with the CEO. They also joined a climate change working group and planned future engagements. They will continue monitoring the company's environmental progress.

4. Metrics & Targets

4.1 Metrics Introduction

The Department for Work and Pensions ('DWP') guidance for pension schemes submitting TCFD reporting suggests that the following metrics are chosen: an absolute emissions metric (total greenhouse gas emissions), an emissions intensity metric (carbon footprint), an additional non-emissions-based metric, and a portfolio alignment metric.

The Trustee has chosen the following metrics:

DWP suggested metric	Metric selected	Rationale
Absolute emissions	Total carbon emissions	This is the absolute emissions metric recommended by the DWP.
Emissions intensity	Carbon Footprint	This is the emissions intensity metric recommended by the DWP.
Additional metric	Data coverage	This metric measures the percentage of Scheme assets which report acceptable climate risk data. This metric suits more mature, and low-risk, pension schemes like the LV=EPS.
Portfolio Alignment	Science-based target initiative (SBTI)	This metric assesses if a company's disclosed decarbonisation target aligns with a science-based pathway. There is evidence to suggest that companies with science-based targets demonstrate effective emissions reduction efforts, making this metric crucial for driving positive change.

The Trustee selected "data coverage" as the additional metric as it believes it is the most appropriate given the characteristics of the Scheme, as highlighted in the table above.

The selected metrics will undergo annual reviews to ensure their continued relevance and suitability for the Scheme. Considering the evolving nature of climate metrics within investment contexts, the Trustee may assess the need to update or replace metrics based on factors such as changes in data coverage, availability of more robust metrics and methodologies, or industry advancements. The results derived from these metrics will enable the Trustee to identify pertinent climate-related risks and opportunities for the Scheme. This may involve engaging with fund managers exhibiting significant carbon intensity, collaborating with other industry participants, exploring low-carbon alternative investment options, and updating investment guidelines for managers where the Trustee has the authority to do so, building upon previous efforts as mentioned.

The metrics chosen by the Trustee were reviewed by the FISC in March 2024 and remained unchanged. The Trustee will continue to monitor these metrics and their effectiveness in identifying pertinent climate-related risks and opportunities for the Scheme.

The emissions-based metrics have been calculated using line-by-line portfolio holding information from the Scheme's asset managers and climate data from the ESG data provider MSCI. Where it was not possible to reflect a fund using line-by-line emissions data analysis from the MSCI data feed, the metrics have been modelled at an asset class level.

This approach was applied wherever line-by-line data coverage for a particular fund was below 50% or the line-by-line data is not available. Line-by-line data has been used for the Scheme's largest non-LDI mandate only. Asset class proxying has been used for the infrastructure equity portfolio due to the unavailability of line-by-line data. Please note that the investment advisor updated the proxy used for

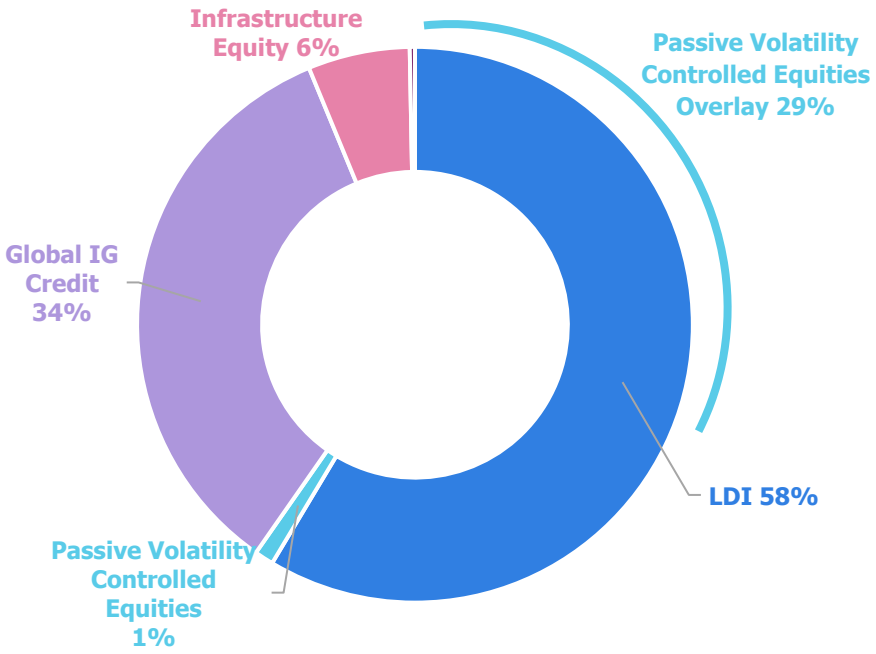
the infrastructure equity portfolio to align with their modelling approach and to better reflect the assets within the portfolio.

As with last year's report, for the purpose of this analysis, emissions from government bonds and cash are currently excluded. The Trustee expects data availability to improve following wider adoption of climate metrics and greater industry consensus on appropriate methodologies. As this develops, the Trustee will review its approach to calculating climate metrics to ensure that the Scheme is aligned with industry best-practice.

The Trustee will use the results to identify the climate-related risks and opportunities that are relevant to the Scheme. These might include, for example, engaging with fund managers who have material carbon intensity levels or with other industry participants, exploring low-carbon alternative investment options, and updating investment guidelines for managers where the Trustee has discretion to make such changes.

The below pie chart shows the Scheme's asset allocation as at 31 March 2024.

Figure 3: Scheme Asset Allocation as at 31 March 2024



Source: Redington ADA as at 31 March 2024.

Please note that the Scheme's investment grade corporate bond mandate was transferred from Insight Investment to Schroders during the Scheme year. The description previously used for the Insight mandate was "Global IG Credit". The corporate bonds held within the Schroders mandate have similar characteristics in that they are of investment grade quality and consist of UK, European, and US corporate bonds. Therefore, the same description has been used in this report. It should be noted that the bonds within the Schroders mandate are typically buy and maintain in nature.

4.2 Metrics Results

Metric 1: Absolute emissions (Scope 1, 2 & 3) – Total carbon emissions (tonnes CO_2 equivalent)

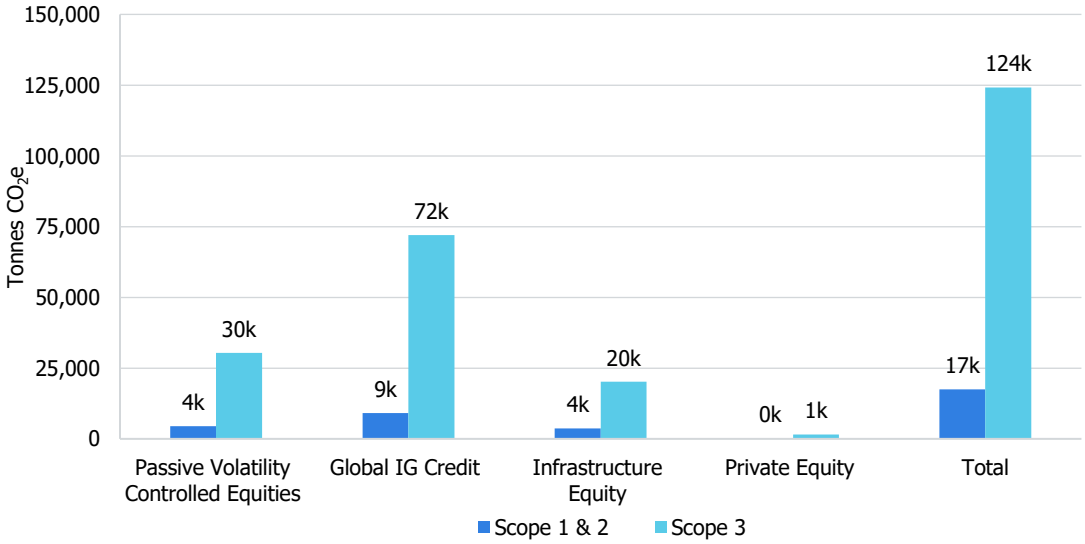
The Trustee has chosen total carbon emissions as the main metric for absolute emissions – the metric shows the total greenhouse gas emissions that are financed by the Scheme's investments, also known as category 15 (investment emissions) in the Greenhouse Gas ('GHG') Protocol.

There are three scopes of carbon emissions:

- **Scope 1 emissions** are direct emissions from an entity's owned or operationally controlled sources;
- **Scope 2 emissions** are those from the use of electricity purchased by an entity;
- **Scope 3 emissions** are indirect emissions from the use of company's products, or any other emissions across its supply chain.

The absolute emissions of a mandate are naturally in part a function of its size, with larger mandates in terms of assets invested likely to have larger total emissions. Consistent with this relationship, the analysis showed that the Scheme's Global Investment Grade credit mandate had the largest absolute Scope 1 & 2 as well as Scope 3 emissions, followed by the volatility-controlled equity mandate.

Figure 4 Total (absolute) carbon emissions as at 31 March 2024



Carbon metrics are proxied where there is insufficient data for funds. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2024 MSCI ESG Research LLC. Reproduced by permission.

Key takeaway: The Global Investment Grade credit mandate (c.34% of total Scheme assets and c.82% of non-LDI assets) is responsible for the majority of the Scheme's total absolute carbon emissions. This is to be expected as this is the largest non-LDI mandate by value.

Total Scheme scope 1 & 2 absolute carbon emissions fell slightly by c.6% over the Scheme year.

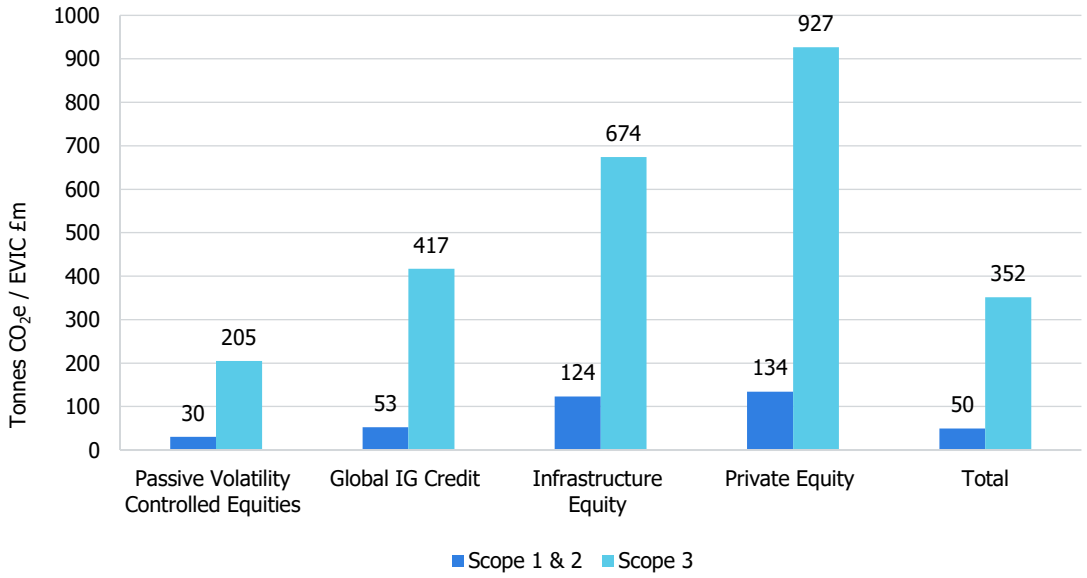
Metric 2: Emissions intensity (Scope 1, 2 & 3) – Carbon footprint (tonnes CO_2 equivalent per million pounds invested)

The Trustee monitors carbon footprint as its emissions intensity metric. Carbon footprint measures the carbon efficiency of a portfolio in terms of emissions per million pounds invested. It normalises the total carbon emissions for the value of the portfolio. As it shows the emissions per millions of pounds invested, the metric is comparable between investments of different sizes.

At a portfolio level, the emissions intensity measures are calculated as the average of the emissions intensity of the underlying holdings, weighted by the value of each holding. A portfolio with a high emissions intensity will have a steeper route towards decarbonisation than a less intensive one. Hence, measuring the emissions intensity is useful to gauge how difficult (or easy) it will be to progressively decarbonise its portfolios.

Differences in portfolio emissions intensities are driven by differences in sector and company exposure. Portfolios with higher exposures to high-carbon sectors such as utilities, non-energy materials, energy and industrials tend to exhibit higher emissions intensities.

Figure 5. Carbon footprint as at 31 March 2024



Carbon metrics are proxied where there is insufficient data for funds. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2024 MSCI ESG Research LLC. Reproduced by permission

Key takeaway: per million pounds invested, the Scheme's private equity mandate (c.1% of total Scheme assets) has the highest emissions. The Trustee notes the allocation to this asset class is due to decrease over the coming years as the funds wind up, which will naturally reduce the portfolio-level carbon footprint.

The Scheme's total scope 1 & 2 carbon footprint fell c.14% over the Scheme year.

Metric 3: Data coverage – Percentage of assets with acceptable climate data available

The Trustee monitors the data coverage of the Scheme's emissions data which measures the proportion of each mandate within the asset portfolio which produces acceptable quality climate data. As at 31st

March 2024, MSCI-verified emissions data was available for one of the Scheme's mandates. This was the Global IG Credit Portfolio.

The tables below outline the portfolio-weighted (using the Scheme's respective allocation to each mandate as at 31st March 2024) proportion of holdings for which MSCI verified issuer reported emissions data was available for each mandate and a Fund-level total. The Trustee recognises that, although the emissions data is not verified by MSCI, the LDI portfolio accounts for a meaningful proportion of the Scheme's total assets. As such, the total portfolio-weighted coverage achieved when the LDI portfolio is accounted for has also been included below.

The Scheme's data coverage as at 31 March 2024

Fund	Fund Value (£m)	MSCI Climate Metrics Coverage
Passive Volatility Controlled Equity	148.5 (synthetic exposure)	-
Global Investment Grade Credit	172.9	100.0%
Infrastructure Equity	29.9	-
Private Equity	1.7	-
TOTAL	**353.0**	**49.0% (26.7% including LDI)**

Carbon metrics are proxied where there is insufficient data for funds. In these instances, no figure is shown for MSCI Climate Metrics Coverage. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2024 MSCI ESG Research LLC. Reproduced by permission.

Key takeaway: of the Scheme's investments, MSCI-verified emissions data was available for 49.0% of total assets (excluding LDI) and 26.7% (including LDI).

Metric 4: Portfolio alignment – Science-based target initiative (SBTI)

The Trustee has agreed to adopt the Science Based Target's initiative as the portfolio alignment metric, which captures a company or issuer's progress against a self-developed decarbonisation target using science-based methodology. The target can be aimed at different time horizons, with each company being scored with a binary yes or no assessment on the following target categorisations: "SBTi Approved 2ºC", "SBTi Approved Well Below 2ºC" or "SBTi Approved 1.5ºC". Each of the categorisations all denote the implied global temperature increases that coincide with the decarbonisation target. Whilst the Trustee is aware that the "SBTi Approved 2ºC" categorisation will be gradually phased out in line with the initiative's raised ambition to 1.5ºC, the Trustee will continue to report under the "SBTi Approved 2ºC" categorisation to capture companies currently on a 2ºC path.

The Scheme's SBTi score as at 31 March 2024

Fund	Fund Value (£m)	SBTi Score
Passive Volatility Controlled Equity	148.5 (synthetic exposure)	-
Global Investment Grade Credit	172.9	45.1%
Infrastructure Equity	29.9	-
Private Equity	1.7	-
TOTAL	**353.0**	**22.1% (12.0% including LDI)**

Where presented, "Science Based Target initiative" scores are all based on look through data where it is available and never proxied. MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Certain information ©2024 MSCI ESG Research LLC. Reproduced by permission.

Key takeaway: The Scheme had an SBTi rating of 22.1% (excluding LDI) and 12.0% (including LDI) meaning that 22.1% of non-LDI portfolio companies have had their climate targets approved by the SBTi. The Investment Grade Credit mandate has the highest score, whilst the remaining mandates do not have available SBTi scores. This is to be expected, given SBTi submissions are voluntary and are performed only by companies that issue public debt/equity.

4.3 Bulk Annuity Metrics Results

The Scheme has also purchased a bulk annuity insurance policy ('a buy-in') issued by The Phoenix Group Holdings Plc ('the Phoenix Group') to cover benefits for a subset of core legacy pensioners and dependents. In line with DWP guidance and in order to include the emissions of the buy-in to the extent that was possible, the relevant data was requested from the Scheme's insurer, details of which are included below.

The data has been provided by the Phoenix Group and may be found in its TCFD report[1] and all emissions data is therefore as at 31 December 2023. The data provided for the bulk annuity assets has been calculated using the most appropriate data available to the Trustee at the time of writing. The metrics have been calculated using the **total** annuity portfolio held by the Phoenix Group and scaled pro-rata to the value of the LV=EPS bulk annuity as at 31 March 2024. Therefore, the emissions shown below may not be an accurate reflection of the underlying assets associated specifically with the Scheme. The emissions contained here cover Scope 1 & 2 only and do not include Scope 3 emissions. Therefore, the metrics of the buy-in are provided separately from the other metrics of the Scheme's assets.

Over the year, the Phoenix Group expanded their portfolio carbon emission baseline and increased their coverage to approximately 79% of the Phoenix Group's total AUA and includes emissions arising from their listed equity portfolio. Additionally, the 2023 TCFD report now includes the Group's illiquid credit holdings which were not included in the previous report.

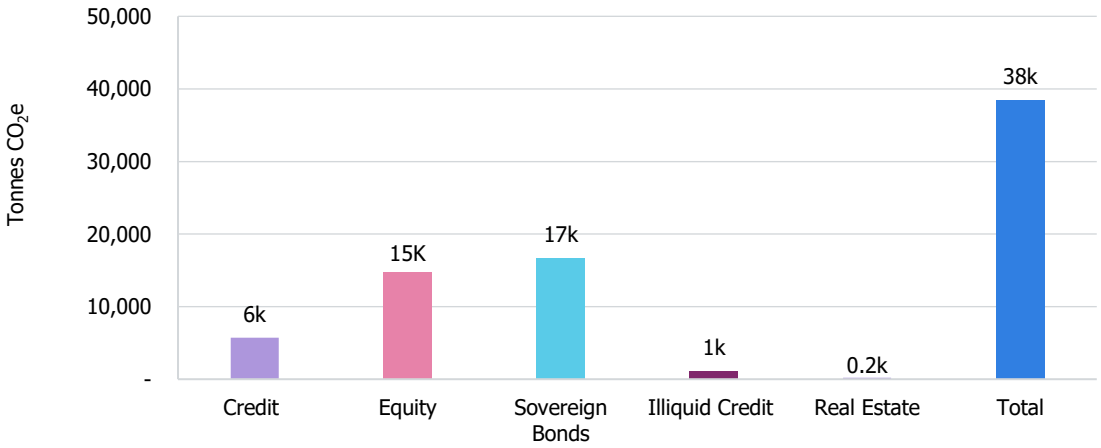
The Phoenix Group plan to continue to review their decarbonisation performance against a net-zero glide path to better understand where faster decarbonisation may be required. Further information on the data and methodology used in this section may be found in Appendix C.

The Trustee continues to work with the Phoenix Group to receive more bespoke data. Specific holdings held in relation to the Scheme's bulk annuity insurance policy is expected to be made available for the following edition of this report.

[1] https://www.thephoenixgroup.com/media/pfgccxck/climate-report-2023.pdf

Metric 1: Absolute emissions (Scope 1 & 2) – Total carbon emissions (tonnes CO_2 equivalent)

Figure 6. Total (absolute) carbon emissions for the Buy-in as at 31 March 2024 (using emissions data as at 31 December 2023)

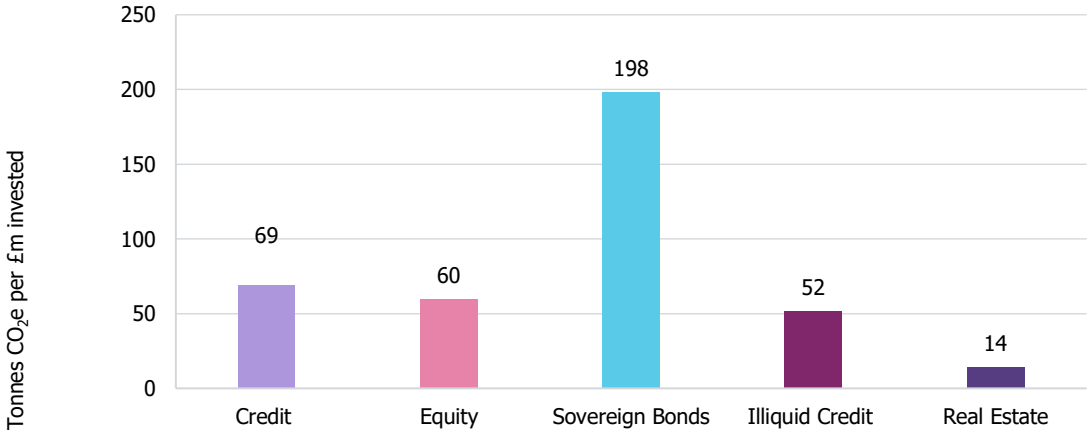


Produced using total emissions of Phoenix Group Holdings Plc "assets under administration" as at 31 December 2023. Then scaled by the value of the Scheme's buy-in assets as at 31 March 2024.

Key takeaway: Based on analysis performed, the listed equity holdings make up that largest contributor of the buy-in emissions, followed by the sovereign bonds holdings.

Metric 2: Emissions intensity (Scope 1 & 2) – Carbon footprint (tonnes CO_2 equivalent per million pounds invested)

Figure 7. Carbon footprint for the Buy-in as at 31 December 2023



Produced using carbon footprint of Phoenix Group Holdings Plc "assets under administration" as at 31 December 2023.

Key takeaway: Based on analysis performed, the sovereign bonds have the highest carbon footprint of the buy-in assets. The listed credit carbon footprint is also slightly higher than the listed equity carbon footprint.

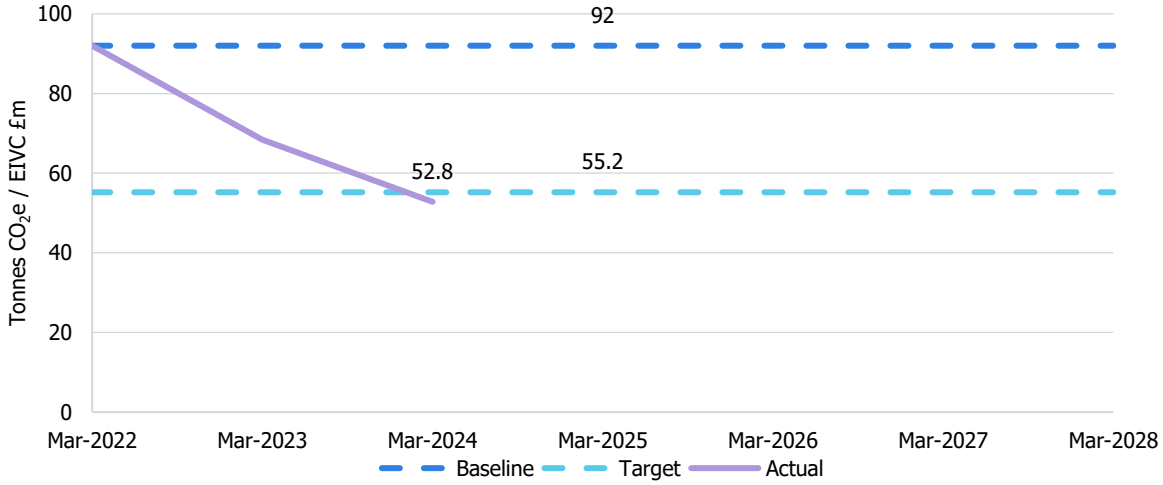
4.4 Target

The Trustee has set an aspirational target of reducing the scope 1 & 2 emissions intensity of the Global IG Credit holdings by 40% by the year 2028, using a base year of 31st March 2022 to monitor progress against annually. This target was chosen to help the Trustee manage climate-related risks in a timeframe to coincide with their primary funding objective. The Global IG Credit holdings were selected as this mandate is the only segregated non-LDI mandate that the Scheme invests in; there is therefore more scope to directly influence the manager's actions to reduce emissions. The Trustee is aware that progress towards this metric may not occur in a linear fashion and the carbon footprint of the mandate may increase in some years and decrease in others. It is, however, the trend over time that is important and will be the key focus of the Trustee.

The Trustee has, with input from its external advisers, assessed the feasibility of such a target by considering the anticipated changes in the Scheme's asset allocation over time. The Trustee intends to continue to engage with its Credit manager and climate credentials will also be strongly considered in any ongoing and future manager appointment exercises. This target is embedded within the governance, strategy, and risk management processes through its inclusion in the ESG reporting that is provided annually to the Trustee. On an annual basis, the Trustee will measure performance against this target using the methodology outlined for "Metric 2: Emissions Intensity" in Section 4.2 of this report and furthermore determines whether this target remains the most appropriate for managing the Scheme's exposure to climate-related risk.

Over the Scheme-year, the Investment Grade Credit holdings were moved from Insight to Schroders; however, as the corporate bonds held in the new mandate were of investment grade quality and invested in UK, European, and US corporate bonds, the target was agreed to remain unchanged in this report. This target has been selected in accordance with the DWP's regulations, and Figure 8 below relates to the progress towards the target. As shown in Figure 8 below, the carbon footprint of the IG Credit mandate has fallen by over 40% compared to the 2022 baseline. However, it is difficult to attribute this decrease to active decisions made and to the movement in mandate to Schroders. Therefore, this target will be revisited and re-evaluated in the next TCFD report.

Figure 8. Scope 1 & 2 carbon footprint of the Scheme's Global Investment Grade Credit against Scheme target as at 31 March 2024



Key takeaway: The carbon footprint of the Scheme's Global Investment Grade investments has fallen from the baseline to 31 March 2024 below the target reduction of 40% by 2028. The target will be re-evaluated in the next TCFD report.

Appendix A: Carbon Footprint Analysis

Where possible and where there is reasonable data coverage, the Trustee monitors 'line-by-line' emissions reporting for funds. These tend to be more generic, long-only asset classes such as corporate credit. However, for funds with less than 50% coverage, funds with more than 2% in short positions, and illiquid assets, the Trustee monitors 'asset class level' carbon estimates in the absence of reliable, reported line-by-line emissions data from MSCI. The Trustee notes using asset class modelling of emissions for index to proxy an infrastructure fund).

Emissions metrics will be calculated in line with the GHG Protocol Methodology, the global standard for companies and organisations to measure and manage their GHG emissions. The GHG Protocol provides accounting and reporting standards, sector guidance and calculation tools. It has created a comprehensive, global, standardised framework for measuring and managing emissions from private and public sector operations, value chains, products, cities, and policies to enable greenhouse gas reductions across the board.

Limitations of Carbon Metrics

TCFD based regulations require portfolios to report on their climate metrics without asset class adjustments. Therefore, metrics in funds with a lower coverage, or in multi-asset funds and liquid / semi-liquid credit need to be evaluated with more context. This is because a low coverage means a larger part of emissions are unknown, and because the carbon risk of equity holdings will tend to be higher than that of credit holdings.

Specific line-by-line modelling of emissions is currently available only for publicly listed equity and credit assets. For unlisted asset classes, Redington provide asset class-level estimations of carbon emissions. This gives the Trustee a broad and longer-term understanding of what the portfolio's emissions are and where the biggest amount of emissions come from. This is enough from a strategic asset allocation perspective but will not capture specific actions managers are taking to reduce their CO_2e footprint. Due to lags in company carbon reporting and database updates, carbon footprint numbers have a one-to-two-year lag. Our carbon numbers are updated at the start of every year.

Appendix B: Further Detail on Scheme Scenario Analysis

As part of the Scheme's actuarial valuation, Hymans Robertson produced a stochastic financial review by projecting the Scheme's funding position on a gilts + 0.25% p.a. basis using 5,000 simulations of the future to help understand the resilience of the Scheme's funding and investment strategy in a range of climate outcomes.

The 5,000 simulations in the modelling incorporate a range of future outcomes including some we would expect to be consistent with poorer climate outcomes. Each of these simulations is unweighted and given equal likelihood of occurring. As such, the modelling already includes simulations which we expect would be consistent with certain climate outcomes.

To test the resilience of the Scheme's funding and investment strategy, more weight is placed on those simulations that better reflect the conditions that might be expected in specific climate change scenarios. The existing output from the modelling is taken and tilted towards those simulations which Hymans Robertson believe are more likely in the three climate scenarios examined. These simulations are much more volatile in periods when climate change (or the response to it) is estimated to cause more uncertainty in the financial system. This approach means measures including success likelihood or the downside risk can be calculated as has been done to date in the financial modelling.

The three Hymans Robertson scenarios are divided into different time periods of five years, corresponding roughly to the five-year framework of the Paris Agreement 'ratchet mechanism' under which signatory countries are supposed to review (and reduce) national greenhouse gas emissions. The five-year periods are rolling rather than fixed to Paris Agreement ratchet dates but given that climate action and reaction will not take place neatly according to a timetable we believe this approach is reasonable.

The three scenarios all involve periods of higher volatility, corresponding to periods when the response to transition and/or physical risks leads to uncertainty, frequent repricing, changes in government borrowing and inflation, etc. The allowances for higher volatility are shown below at a high level which illustrates the anticipated timing of the higher volatility in each climate outcome examined.

Scenario	Volatility criteria			
	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Green revolution	Very high	Moderate	Moderate	
Delayed transition		Very high	High	
Head in the sand			High	Very high

The approach taken to this modelling may differ to that used by other consultancies with some consultancies opting for simple, directional assumptions and it should be noted that there is no 'right' model to use. The output of different models can be used alongside each other to get a good feel for the risks the Scheme is exposed to.

The base modelling is based on market conditions as at 31 March 2023, and on future benefit cashflows projected as part of the 31 March 2023 valuation, so using membership data as at that date. Further scenario analysis has been carried out consistently. The modelling is based on the current investment strategy and the level of contributions agreed following the 2021 actuarial valuation (£5m p.a. until 2028). Hymans Robertson know that both contributions and investment strategy will be reviewed as part of the valuation, and will revisit this analysis incorporating any changes made following those discussions, and triennially thereafter as part of the valuation process.

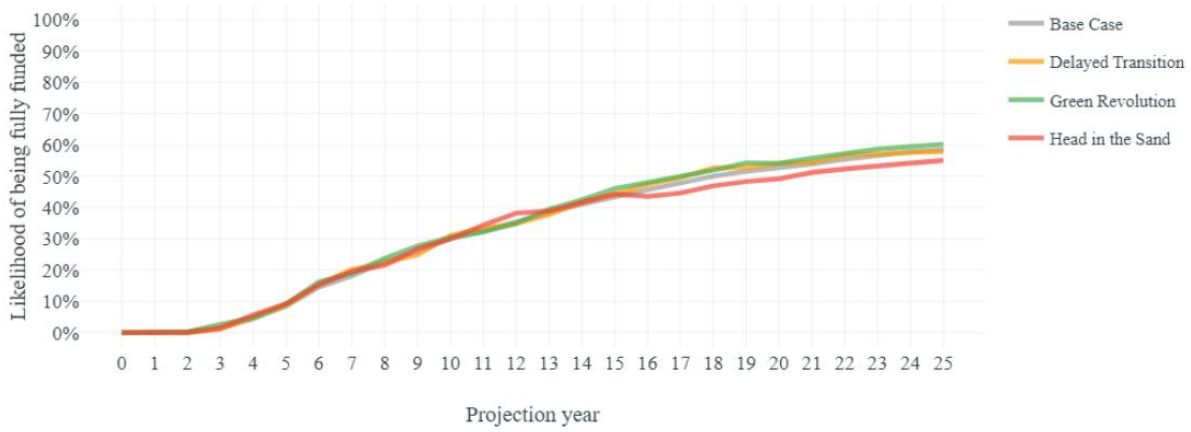
As the Scheme has a buy-in matching the majority of the Scheme's pensioner members, the analysis here considers only the Scheme's uninsured liabilities and non-buy-in assets.

It should be noted that the financial modelling does not incorporate any changes to longevity or the effect the scenarios would have on the Company's covenant. We comment on these factors below.

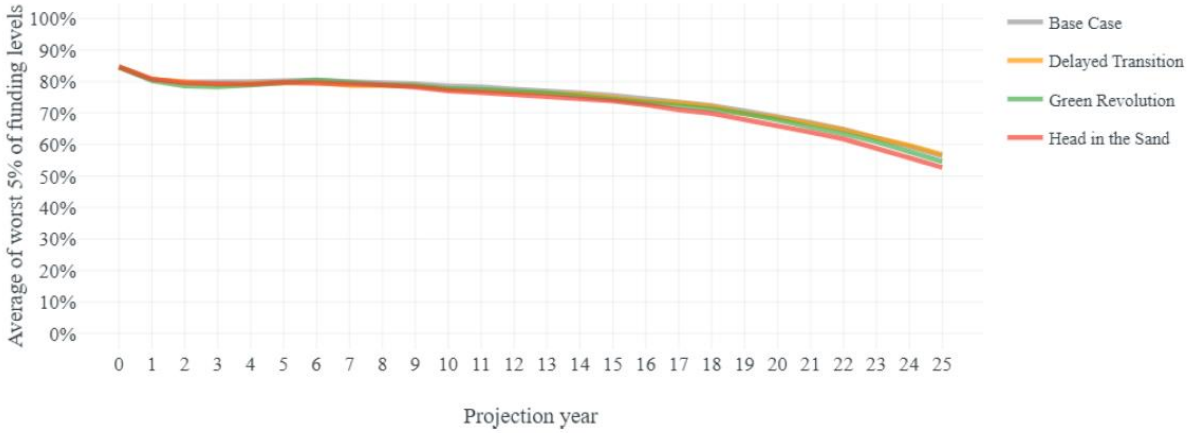
Modelling and Results

For the purposes of the modelling, we show below two charts. Each chart shows the 'base case' in grey which is overlaid with the projected outcomes under each of the three climate scenarios. As noted above, the modelling has been carried out on a gilts + 0.25% p.a. basis.

The below chart illustrates the chance of being fully funded when measured from the valuation date. In relation to considering the potential impact of climate stresses, over the longer term there is not a great difference between the base case and the three scenarios modelled, although with slightly lower chances of success under the 'Head in the Sand' scenario, particularly when we consider projections over 15 years.



The below chart illustrates how badly the Scheme could be funded in the average of the worst 5% of outcomes. The difference between the base case and the three scenarios is again fairly similar, although there are worse funding outcomes under both the 'Green Revolution' and 'Head in the Sand' scenarios over the longer term (c9-25 years).



The details explaining the qualitative descriptions of the three Hymans Robertson scenarios:

Scenario	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Green revolution/ Smooth transition 2100 temperature pathway **at or below** 2 degrees	• Short term concerted policy action and investment in new technology • Immediate introduction and ramping up of carbon pricing • Policy actions to reduce reliance on fossil fuels for electricity generation and transportation • Government/corporate spending on "green solutions" and favourable tax position for sustainable strategies • Significantly improved climate disclosures help market prices adjust to reflect expectation of "new normal" • Market repricing in response to companies' reaction and preparedness		• Further policy action to maintain policy intent and acceleration of timeframes for change • Continued ramp up of policy actions sees carbon emissions fall rapidly • Expectations of the reliance on technological solutions for negative carbon emissions in future fall • Markets weed out poor performers on climate, fast adapters do well	• Policies have forced companies to pursue more sustainable agendas and take account of externalities through explicit pricing mechanisms • Innovation is rewarded and expectations of physical impact from climate change are therefore expected to be more limited. • Expectations of meeting 2 degree targets are high • Modest physical impacts are seen such as reduced crop yields and increased precipitation. • Renewable energy now represents a significant proportion of energy usage and is continuing to trend upwards.
Challenging times Delayed transition 2100 temperature pathway **at or below** 2 degrees	• Limited investment and policy measures are introduced, perhaps inconsistently across the globe. • Modest government spending on adaptation • No significant market repricing or physical risks	• Concerted policy action as Paris commitments are reviewed and enforced. Action is more extreme and disruptive than may otherwise have been needed • Carbon pricing is implemented with prices rising higher and faster than under the smooth transition • Government spending is redirected as climate priorities take hold • Pricing adjusts in face of growing policy action • Some businesses respond quickly, leading to divergence between them and climate laggards		• Outcomes similar to Green Revolution, with high expectations of meeting 2 degree targets
Head in the sand/ No transition 2100 temperature pathway **above** 2 degrees	• No material policy action • Governments pursue own agendas and societal pressure for change is resisted • No significant market repricing or physical risks	• Low effort at climate adaptation with policy failure and adherence to current ways of thinking • Little concerted effort, countries pursue their own interests	• Growing fear that world is on track for more than 2 degrees temperature increase creates market uncertainty and price adjustments • Increased likelihood of acute physical impacts on businesses • Increased government spending in response to immediate environmental damage, concentrated on short-term mitigation measures • Attempts to respond by governments and businesses are generally piecemeal and ineffective	

Reliance and limitations of the modelling underlying the probability analysis

In projecting forward the evolution of the Scheme, Hymans Robertson have used estimated cashflows generated using their actuarial valuation system, based on information provided as part of the March 2021 actuarial valuation of the Scheme including the Scheme rules.

As with all modelling, the results are dependent on the model itself, the calibration of the model and the various approximations and estimations used. These processes involve an element of subjectivity.

Variation in actual experience away from the demographic assumptions underlying the cashflows has not been allowed for. Variations in demographic assumptions (and experience relative to those assumptions) can result in significant changes to the funding level and contribution rates. Variations in inflation (RPI or CPI as appropriate), inflation expectations (RPI or CPI as appropriate), interest rates and asset class returns has been allowed for. Cashflows into and out of the Scheme are projected forward in annual increments, are assumed to occur in the middle of each year and do not allow for inflation lags. Investment strategies are assumed to be rebalanced annually.

It is assumed that all contributions are made and not varied throughout the period of projection irrespective of the funding position. In practice the contributions are likely to vary especially if the funding level changes significantly. The investment strategy is also likely to change with significant changes in funding level, but unless stated otherwise the impact of this is not considered.

In allowing for the simulated economic scenarios, suitable approximations for updating the projected cashflows are used. The nature of the approximations is such that the major financial and investment risks can be broadly quantified. However, a more detailed analysis is required to understand fully the implications and appropriate implementation of a very low risk or 'cashflow matched' strategy.

The returns that could be achieved by investing in any of the asset classes will depend the exact timing of any investment/disinvestment, the costs associated with buying or selling these assets and liquidity of the asset classes. The model implicitly assumes that all returns are net of fees and ignores these other factors.

For the purposes of modelling very low investment risk strategies or matched bond portfolios, Hymans Robertson have constructed an LBP (liability benchmark portfolio) that is a hypothetical portfolio that exactly matches the changes in value and cashflows of the liabilities under all states of the world. It is

generally not possible in practice to construct a portfolio with the same high quality of matching as the LBP but major financial and investment risks can be broadly quantified. However, a more detailed analysis is required to understand fully the implications and appropriate implementation of a very low risk or 'cashflow matched' strategy.

The distributions of outcomes depend significantly on the Economic Scenario Service (ESS), Hymans Robertson's (proprietary) stochastic asset model. This type of model is known as an economic scenario generator and uses probability distributions to project a range of possible outcomes for the future behaviour of asset returns and economic variables. Some of the parameters of the model are dependent on the current state of financial markets and are updated each month (for example, the current level of equity market volatility) while other more subjective parameters do not change with different calibrations of the model.

Key assumptions include:

- The average excess equity return over the risk free asset and its volatility which affects growth asset returns.
- The level and volatility of yields, credit spreads, inflation and expected (breakeven) inflation, which affect the projected value placed on the liabilities and bond returns.
- The gap between CPI and RPI. The market for CPI-linked instruments is not well developed and this is based on our judgement. Target rates for CPI (inflation and inflation expectations) are RPI – 1% p.a. pre-2030, and RPI – 0% p.a. post 2030, which trends towards a long-term CPI assumption of 2% p.a.
- The output of the model is also affected by other more subtle effects, such as the correlations between economic and financial variables.
- Long-term real interest rates are estimated to gradually rise from their current low levels. This is based on a selection of yield normalisation levels reflecting the fundamental uncertainty around long term average yield levels. Higher long-term yields would mean a lower value placed on liabilities and hence an improvement in the current funding position unless the scheme is fully hedged.

While the model allows for the possibility of scenarios that would be extreme by historical standards, including very significant downturns in equity markets, large systemic and structural dislocations are not captured by the model. Such events are unknowable in effect, magnitude and nature, meaning that the most extreme possibilities are not necessarily captured within the distributions of results.

The following figures have been calculated using 5,000 simulations of the Hymans Robertson Economic Scenario Service, calibrated using market data as at 31 March 2023. All returns are shown net of fees. Percentiles refer to percentiles of the 5,000 simulations and are the annualised total returns over 5, 10 and 20 years, except for the yields which refer to the (simulated) yields in force at that time horizon.

		Annualised total returns												
		Cash	Index Linked Gilts (medium)	Fixed Interest Gilts (medium)	Credit Overlay	Cash (1yr maturity)	Unlisted Infrastructure Equity	Diversified Growth Fund (medium equity beta)	Corporate Bonds (Medium duration, A rated)	Inflation (RPI)	17 year real yield (RPI)	Inflation (CPI)	17 year real yield (CPI)	17 year yield
5 years	16th %'ile	2.7%	0.3%	1.1%	-1.2%	2.8%	0.7%	2.0%	1.2%	2.0%	-0.3%	1.0%	-0.2%	3.1%
	50th %'ile	3.5%	3.3%	3.3%	0.8%	3.5%	7.8%	6.0%	4.0%	3.5%	0.6%	2.5%	0.7%	4.2%
	84th %'ile	4.3%	6.5%	5.5%	2.1%	4.2%	15.3%	10.0%	6.5%	5.1%	1.5%	4.1%	1.6%	5.5%
10 years	16th %'ile	2.5%	0.8%	2.4%	-0.5%	2.5%	2.4%	3.1%	2.7%	1.6%	-0.3%	0.9%	-0.3%	2.7%
	50th %'ile	3.6%	2.8%	3.7%	0.7%	3.5%	7.8%	6.1%	4.3%	3.2%	1.0%	2.5%	0.9%	4.1%
	84th %'ile	4.7%	5.1%	4.9%	1.6%	4.6%	13.2%	9.0%	5.8%	4.9%	2.2%	4.1%	2.2%	5.9%
20 years	16th %'ile	2.3%	1.0%	3.3%	-0.1%	2.3%	3.9%	3.8%	3.7%	1.1%	-0.5%	0.7%	-0.5%	1.4%
	50th %'ile	3.7%	2.7%	4.1%	0.7%	3.7%	7.9%	6.3%	4.7%	2.6%	1.2%	2.3%	1.3%	3.4%
	84th %'ile	5.4%	4.5%	4.8%	1.3%	5.4%	12.0%	8.9%	5.8%	4.3%	2.9%	3.9%	2.9%	5.9%
	Volatility (Disp) (1 yr)	0%	7%	6%	5%	0%	16%	9%	8%	1%		1%		

APPENDIX C: Bulk annuity emission analysis methodology

Calculating absolute emissions

Measuring financed emissions (Scope 1 and 2) in absolute terms, i.e. metric tonnes of CO_2e, provides a baseline for climate action to align with the Paris Agreement. The financed emissions are calculated by multiplying our proportion of any given exposure, by the emissions of the respective investee company, country, or underlying asset (depending on the asset class in question):

$$\text{Absolute emissions for listed equity and listed credit} = \sum_c \frac{\text{Outstanding amount}_c \times \text{Company Emissions}_c}{\text{Enterprise Value including Cash}_c}$$

$$\text{Absolute emissions for sovereign debt} = \sum_c \frac{\text{Outstanding amount}_c \times \text{Country Emissions}_c}{\text{PPP Adjusted Gross Domestic Product}_c}$$

The Phoenix Group calculate the absolute emissions for real estate in line with the waterfall of choices outlined by PCAF, which varies dependent on the availability of actual data versus approximations.

Calculating financed emissions for listed equity and credit – emissions intensity

When the absolute emissions figure is not normalised for the size of the company or investor, it does not allow for comparison across companies, portfolios, or different time periods. To address this challenge, The Phoenix Group calculated the weighted average of economic intensity using the following formulae:

$$\text{Weighted average of economic intensities} = \frac{\sum_c \text{Holding Value}_c \times \text{Carbon Emissions Intensity (Economic)}_c}{\sum_h \text{Portfolio Holding Value}_h}$$

Where for listed debt and equity:

$$\text{Carbon Emissions Intensity (Economic)}_c = \frac{\text{Carbon Emissions}_c}{\text{Enterprise Value including Cash}_c}$$

Where for real estate:

$$\text{Carbon Emissions Intensity (Economic)}_c = \frac{\text{Carbon Emissions}_c}{\text{Asset value}_c}$$

Where for sovereign debt:

$$\text{Carbon Emissions Intensity (Economic)}_c = \frac{\text{Carbon Emissions}_c}{\text{PPP Adjusted GDP}_c}$$

The Phoenix Group have calculated the proportion of their investments for which they have been able to calculate finance emissions for and plan to continue to work with their climate data providers to improve data coverage across all asset classes.

Asset class	Data Coverage (as at 31 December 2023)
Listed Equity	99%
Listed Credit	81%
Sovereign Bonds	100%
Real Estate	100%
Illiquid Credit	99%

Source: The Phoenix Group Holdings Plc TCFD report 2023.

APPENDIX D: Glossary of Terms (ESG and Carbon Metrics)

Enterprise Value Including Cash (EVIC): Defined as the sum of market capitalisation of shares and book values of total debts and minority interests at fiscal yearend. No deductions of cash or cash equivalents are made to avoid potential negative enterprise values. This is the recommended denominator metric for carbon attribution according to the GHG Protocol, the global standard for carbon accounting endorsed by the European Union and the DWP.

Estimated Total Carbon Emissions (tonnes): Represents the total share of Scope 1, Scope 2 and Scope 3 carbon emissions a fund is responsible for. Please note the metric is sensitive to the investment holding size in the fund.

MSCI Climate Metrics Coverage: The proportion by value of a fund for which carbon metrics are available from MSCI. Climate metrics are proxied where coverage is low and, in this case, the MSCI Climate Metrics Coverage will be assumed to be.

Tonnes of Carbon Dioxide Equivalents (tCO2e): Tonnes of greenhouse gases including methane, nitrous oxide, carbon dioxide, and fluorinated gases. Given the abundance and prominence of carbon as a greenhouse gas, all the other gasses are considered carbon equivalents.

Scope 1 & 2 Carbon Footprint (tCO2e / £m invested): Measurement of the Scope 1 & 2 CO2e emissions of a fund per million pounds of EVIC. Scope 1 emissions refer to those which are directly connected to the production of a company's product or service. For example, the burning of fossil fuels to power the electricity grid. Scope 2 emissions refer to those from the electricity used to power the facilities and machinery of a company.

Scope 3 Carbon Footprint (tCO2e / £m invested): Measurement of the Scope 3 CO2e emissions of a fund per million pounds of EVIC. Scope 3 emissions refer to those that are consequences of the activities of the company but occur from sources not owned or controlled by the company. 15 categories of Scope 3 emissions exist. For example, for an investment in an oil and gas company, this would be the emissions associated with the use of the fuel.

Weighted Average Carbon Intensity (tCO2e / sales £): A weighted average of the scope 1 & 2 emissions carbon intensity of companies, defined as a company's total emissions divided by its total sales. This metric can be interpreted as a measure of the relative carbon efficiency of a fund, can used for sovereign assets, and is not affected by movements in companies' valuation. However, it is sensitive to movements in price.

SBTi Score: The Science-Based Targets initiative ("SBTi") sets out a framework through which companies can set out their decarbonisation pathway and have them assessed against the goals set out in the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels or well-below 2°C. The SBTi Score is the proportion of assets invested that are classified as being Paris-aligned.