



IBM I.T. Solutions Pension  
Scheme (the “Scheme”)

# Climate Change-related Disclosures

**Year-end 31 December 2023**

Report prepared to comply with the  
UK Occupational Pension Schemes Climate  
Change Governance and Reporting  
Regulations 2021 (as amended)

July 2024

IBM PENSIONS TRUST

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# Chair's foreword

Welcome to the 2023 Climate Change-related Disclosures Report for the IBM I.T. Solutions Pension Scheme ("the Scheme") – the second year that this report has been produced. Climate change continues to pose significant challenges to our planet and society. The increasing concentration of greenhouse gases in the atmosphere could lead to a variety of issues such as rising global temperatures, extreme weather events, rising sea levels and ecosystem disruptions, however climate change is not only an environmental issue but also a financial one.

The Trustee of the Scheme recognises climate change as a risk that could impact the financial security of Scheme members' benefits and the long-term value of pension savings if it is not properly measured and managed where the Trustee is able to do so. The Trustee recognises the importance of aligning the Scheme's investments with climate goals and promoting sustainable practices and is committed to integrating environmental, social, and governance (ESG) factors, including climate change, into decision-making processes. This means considering the environmental impact of the Scheme's investments, engaging with all stakeholders on sustainability issues, and supporting the transition to a low-carbon economy.

This report explains how the Trustee maintains oversight and processes to consider the Scheme's relevant climate-related risks and opportunities by all stakeholders involved in the day-to-day management of the Scheme over the year to 31 December 2023, including the progress made since the report published last year.<sup>1</sup>

Climate change is an incredibly complex process, both from a scientific and an economic perspective. The Trustee recognises that climate issues can be more relevant, and potential mitigations more readily implementable, for some parts of the portfolio than for others. The Trustee will seek to expand the remit of this report to cover the entirety of the Scheme's investment portfolio as and when the ability to monitor these risks becomes more achievable via improved availability of data and methodologies.

## The Trustee has internal investment processes to ensure climate change is considered as part of any investment decision-making:

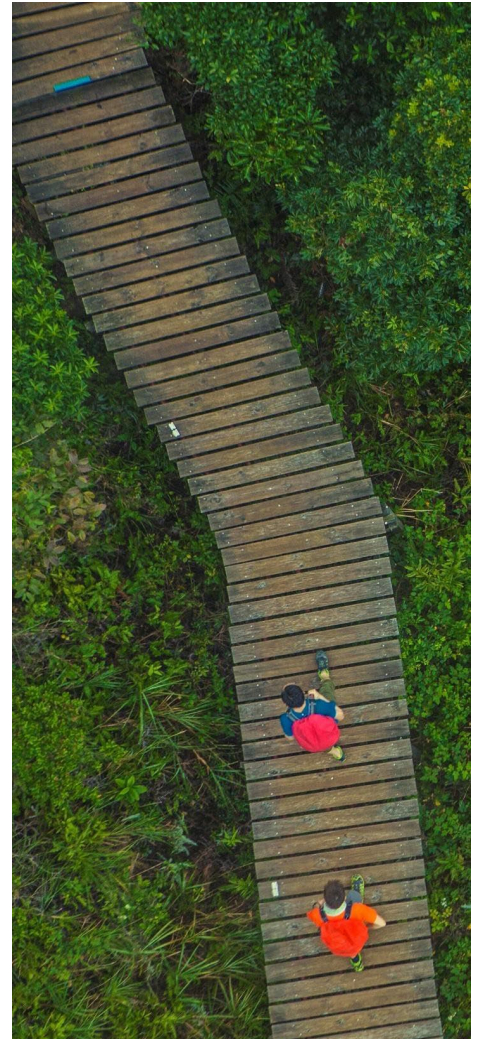
As the availability of data continues to improve, and as best practices move forward, the Trustee expects that additional detail will be included in future years. This report is available online, along with a member summary setting out the key highlights from this report at <https://www.smartpensionsuk.co.uk/#/page/governance-documentation>.

The Trustee recognises the importance of engaging with you, the Plan's valued members, on this topic. The Trustee is committed to keeping members informed about its efforts to address climate-related risks and opportunities and members are encouraged to ask questions, provide feedback, and share perspectives on how the Trustee can further enhance its approach to climate change considerations. You can contact the Trustee via IBM Pensions Trust at [IBM Pensions Trust | Contact Us \(smartpensionsuk.co.uk\)](mailto:IBM.Pensions.Trust@ibm.com).

We hope you enjoy reading this report, find it informative and continue to support the Trustee on its climate journey.

### Robert Tickell

Chair of the Trustee of the IBM I.T. Solutions Pension Scheme



<sup>1</sup> This report has been prepared to comply with the UK Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 and the UK Occupational Pension Schemes (Climate Change Governance and Reporting) (Miscellaneous Provisions and Amendments) Regulations 2022 using the statutory guidance issued by the Department for Work and Pensions ("DWP").

# Executive summary

This report covers the following four areas of the Climate Change Governance framework:

- **Governance:** How the Trustee maintains oversight and incorporates climate change into its decision making;
- **Strategy:** How potential future climate warming scenarios could impact the Scheme;
- **Risk Management:** How the Trustee incorporates climate-related risk in its risk management processes; and
- **Metrics and Targets:** How the Trustee measures and monitors progress against different climate related indicators known as metrics and targets.

## Trustee's Aims and Objectives:

The Trustee has set a target to **reduce the level of carbon intensity within the Scheme's investment portfolio by 20% over the 3 years from 31 December 2022**. It should be noted that the target applies for the assets where Weighted Average Carbon Intensity (WACI) data is reportable<sup>2</sup>.

In addition, the Trustee:

- supports the goals of the Paris Agreement that seeks to limit warming to below 1.5°C relative to pre-industrial temperatures;
- believes that climate risk can have an impact on securing long-term financial returns and that considering climate risk is in the best long-term interest of Scheme members;
- aspires to set a net-zero target and is working towards such a commitment as data quality improves.

The Trustee is working with its investment managers to improve the quality of data and is considering approaches to reduce carbon emissions exposure within the Plan's asset portfolio, with a view to gradually move towards setting a net-zero target in the future. The regulations note that *"whilst long term targets such as 'net-zero by 2050' are ambitious, a long term target with no interim targets would not on its own meet our expectation for trustees to consider and appropriately manage climate-related risk. Therefore, the target which trustees set should not be more than 10 years into the future."*

## The key messages from this report are:

- The Trustee has processes in place and has increased its level of governance over the reporting period to identify, assess and mitigate climate change risk.
- Climate change risk can have an impact on the long-term funding objectives of the Scheme and its members.
- Four metrics have been chosen to monitor the progress against climate change risk.
- Progress has been made to report on carbon metrics as far as possible, with an increase in the proportion of assets reported over the year.
- Scope 3 emissions data has been reported, but the Trustee notes that the data in this area is still very limited and expects this position to improve over time.
- The Trustee will continue to engage with the investment managers to help progress towards its WACI target and will review the appropriateness of the target in future strategic decision-making and on an annual basis for climate reporting purposes.
- Over 2023, the Trustee has considered ESG factors in further detail as part of the annual Stewardship Assessment, whereby there was greater focus on the extent that the Scheme's investment managers are aligned with the Trustee's ESG beliefs relating to climate change, energy efficiency and diversity, equity and inclusion (DEI). The Trustee has formed a framework in order to monitor and better understand how its investment managers approach these areas in order to align with the Trustee's key priorities.
- The Trustee has made encouraging progress towards its target in the reduction of Weighted Average Carbon Intensity within the Scheme's investment portfolio. The Trustee's progress is detailed overleaf.

<sup>2</sup> This includes scope 1 and 2 weighted average carbon intensity emissions data where available for the following mandates: Global Bonds, Long-term UK Core Credit, Diversified Multi-Asset Growth and Alternative Credit.

## Trustee's progress against Target

The table below summarises the progress against the chosen target metric over the year to 31 December 2023:

Mandate(s)	Asset allocation	Coverage	Changes in Weighted Average Carbon Intensity since 2022
Global Bonds / Global Credit / Long-term UK Core Credit	26.7%	59.9%	-22%
DMAG	4.8%	28.0%	-2%
Alternative Credit	2.7%	91.9%	20%
<b>Total</b>	<b>34.2%</b>	<b>-</b>	<b>-</b>

There has been some progress towards the WACI target in respect of the total credit portfolio, which is in part due to the changes in the underlying holdings of some of the credit mandates – further detail is set out in the 'Metrics' section of the report. However, it should be noted that the full effect of this change is impacted by external and economic factors outside of the Trustee's control. The Trustee will look to consider further analysis to better understand the drivers in relation to such movements in future reports.

The Trustee notes that there has been an increase in emissions intensity for the alternative credit mandate. Whilst the metric has shown an increase over the year, CQS (the manager of the mandate) have explained that there has been a change in their methodology to use EVIC (Enterprise Value including Cash) to calculate the carbon footprint and absolute carbon emissions (rather than the market capitalisation method used in prior years) to align with industry standards. Given the nature of the mandate there may be fluctuations in the underlying holdings and therefore this could impact on the carbon emissions reported going forwards.

Whilst the LDI portfolio does not form part of the Trustee's overall target (as sovereign assets are excluded), the sovereign carbon intensity reduced by c.4% over the reporting year.

The Trustee believes that the current target remains relevant, however, as part of the triennial investment strategy review to be carried out during 2024, the WACI target will be reviewed to ensure that this continues to be appropriate.

## Continuing the climate journey:

The Trustee is undertaking a number of actions in order to work towards the set target. Over the next 12 months and beyond, the Trustee is planning to undertake the following actions:

- **Stewardship:** Engage with investment managers on carbon intensive holdings, voting and engagement activity to work towards the Trustee's climate goals and alignment with the Trustee's beliefs. An annual Stewardship and Environmental, Social and Governance (ESG) integration assessment will also be completed.
- Where the Trustee has observed an increase in carbon intensity over the reporting period (for example, the alternative credit mandate managed by CQS), the Trustee will be engaging with the managers to understand the investment decisions made and the consideration of ESG and climate change factors as part of their investment process.
- **Risks:** Conduct an annual review of its risk register and Scheme governance documentation.
- **Climate Analysis:** Consider climate change risks and opportunities following completion of the Scheme's current investment strategy review.
- **Training:** Ensure that the Trustee is well equipped with sufficient knowledge of developments around climate change risk and regulatory changes through training and a review of skills.

The Trustee, with support from the Scheme's advisors, will review the above actions on an ongoing basis and consider longer-term actions in the Trustee's commitment to a sustainable future.

The Trustee works with its Investment Advisor, Mercer, to quantify the level of ESG integration within its investment decision-making by carrying out the [Responsible Investment Total Evaluation \(RITE\) assessment](#).

The RITE rating is **B+** for the Scheme. A regular RITE assessment is carried out to ensure the Trustee is continually assessing how well ESG factors are integrated.

**B+**





# Governance

## Describe the Trustee's oversight of climate change-related risks and opportunities

The Trustee has the ultimate responsibility for ensuring effective governance of climate-related risks and opportunities and is becoming increasingly educated on how these may influence decisions in relation to risk management, strategy setting and in monitoring implementation.

The Trustee maintains a [Statement of Investment Principles](#) (SIP), which includes the key beliefs, risks and approach to responsible investment and climate change. This is reviewed on an annual basis (or more frequently, as required). The Trustee maintains a standalone Investment Beliefs document, which provides more details on the Trustee's beliefs in matters such as integration of ESG factors, stewardship and climate change.

### The Trustee's overall investment beliefs on sustainability are:



ESG factors, including climate change, can impact the performance of the Scheme's investments over the medium to long-term, and these should be integrated into the investment process.



Taking a broader and longer-term perspective on risk, including identifying sustainability themes and trends, presents risks and opportunities which require explicit consideration. Climate change risks and opportunities are embedded in the investment strategy.



Stewardship (or responsible active ownership) can add value to the Scheme's assets in the long term and the Trustee will therefore seek to appoint managers who demonstrate strong engagement credentials, where relevant to the portfolio.

An ESG beliefs session is carried out triennially to refine the Trustee's beliefs and key priorities in relation to ESG factors. A review was carried out in Q1 2023, in which the Trustee agreed to the following key stewardship priorities:

- Climate Change;
- Diversity, equity and inclusion;
- Energy efficiency.

These stewardship priorities are used to determine the significant votes to include within the [Implementation Statement](#). The next review will be carried out in 2026.

The Trustee takes independent investment advice to help assess climate risks and opportunities, and looks to ensure that any decisions continue to be integrated into a coherent investment strategy that supports the Scheme's ability to provide pension benefits as they fall due.

The Trustee meets at least four times a year (and more frequently, as necessary) where investment performance and risk management are reviewed, and climate-related risks form part of the wider assessment.

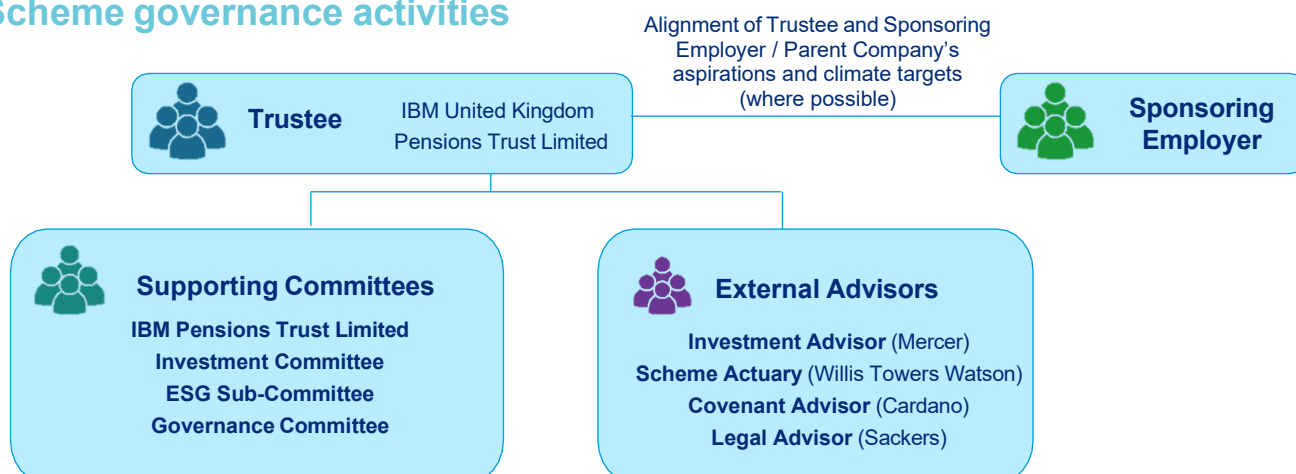
Research into how climate-related risks and opportunities impact financial markets is constantly evolving and expanding. The Trustee carries out training on a regular basis, and at least annually, to keep up to date with developments in this space.

The Trustee has delegated the responsibility for the selection, retention, and realisation of investments to its underlying investment managers. The Trustee seeks to manage the risks and opportunities associated with these ESG factors by selecting industry leaders in investment management who are committed to the UN Principles for Responsible Investment (PRI) and are signatories to the UK Stewardship Code. Managers have to demonstrate strong ESG, stewardship and engagement credentials, and align with the Trustee's ESG priorities.

The Trustee considers its current investment managers to be well-aligned overall with its own beliefs and policies.

The consideration of climate-related risks and opportunities is integrated into the wider monitoring and decision-making responsibilities of the Trustee. On at least an annual basis, the Trustee reviews the Scheme's risk register which includes climate change risks. The Trustee will be monitoring the carbon emissions metrics, portfolio alignment metric and non-emissions metric produced in this report and against the chosen target annually. It will also consider climate-related risks and opportunities in conjunction with future strategic reviews.

## Roles and responsibilities of those advising or assisting the Trustee on Scheme governance activities



**Figure 1: Scheme governance structure**

Further details of the roles and responsibilities of the supporting committees and the Trustee-appointed advisors are set out in the appendix.

The Trustee takes an active role in assessing and reviewing its advisors. The Trustee works with its advisors to ensure that climate-related risks and opportunities are considered as part of its integrated risk management framework and expects its advisors to ensure the Trustee is compliant with the regulatory requirements when considering climate change. Specific objectives are included within Mercer's investment advisor objectives to ensure ESG and climate related risks and opportunities are considered as part of the investment strategy setting and monitoring/selection of investment managers. An assessment against these objectives is completed by the Trustee on an annual basis. Where no specific climate objectives are currently in place, the Trustee will consider these as part of any contract updates with its advisors. In addition, the Governance Committee has a rolling programme of inviting advisors to its meetings to review and assess their performance.

The Trustee expects all advisors to act with integrity and diligence in fulfilling the set objectives and uses meetings with the advisors to assess and challenge them.

The Scheme's ESG sub-committee has oversight of climate change, stewardship and ESG related issues, as well as ensuring compliance with regulatory requirements. The ESG sub-committee is required to regularly report back to the Trustee to keep it informed of discussions and progress at the ESG sub-committee meetings. Over the course of 2023, the ESG sub-committee had several meetings covering the following areas:

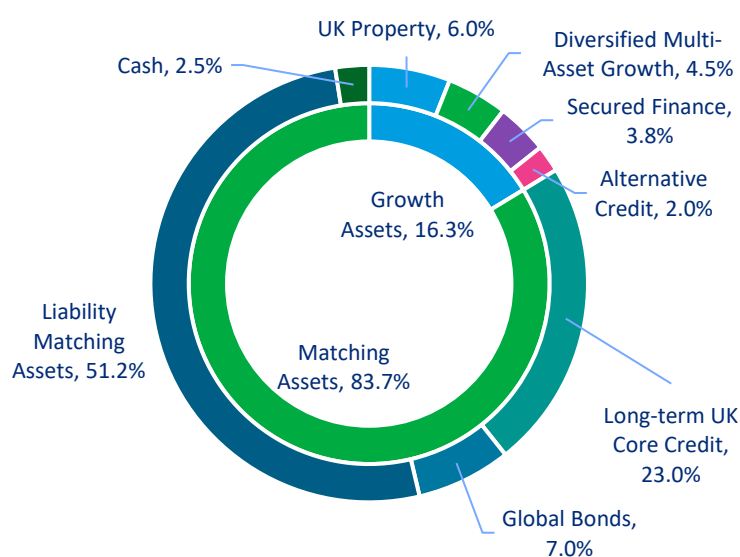
- Establishing a set of ESG investment beliefs;
- Detailed stewardship and ESG assessment;
- Annual RITE assessment;
- Education in relation to Energy Efficiency and Diversity, Equity and Inclusion (DEI);
- Education on the developments relevant to pension schemes from a sustainability investment perspective, such as considerations in relation to nature and biodiversity.

The Trustee has a specified engagement priority which includes focusing on climate change with the aim of improving the alignment to the transition to a lower carbon environment for the companies in which the Scheme is invested.

# Strategy

## Summary of Scheme Assets

The Scheme's long-term strategic asset allocation is set out in Figure 2 below. All of the funds within the Scheme's investment strategy are within the scope of climate-change related reporting requirements and are therefore considered as part of the scenario analysis and metrics (where available) in the remainder of this report.



**Figure 2: Strategic asset allocation of Scheme assets as at 31 December 2023**

Additionally, there is a currency overlay mandate held with Russell Investments which hedges the overseas exposure that isn't hedged at the individual mandate level and two reinsurance mandates held with Nephila and Securis which are in run-off and do not form part of the longer-term strategic allocation. These mandates are not covered. The currency overlay is employed as a means of limiting overall exposure to overseas currency to 10% of Scheme assets.

The Trustee has appointed Northern Trust as global custodian of the Scheme's assets.

The Trustee has considered scenario analysis based on the long-term strategic asset allocation. The Trustee, as far as it is able, has considered metrics for the Scheme assets, excluding for the currency overlay mandate and re-insurance mandates (due to the availability of data from the investment managers).

## Describe the climate-related risks and opportunities the Scheme has identified over the short, medium and long term

**Figure 3: Timeframes of short, medium and long-term horizons to identify relevant climate-related risks and opportunities.**

Short Term	Medium Term	Long Term
<p>The Trustee expects that potential short-term risks identified could cause an impact 0-3 years from now. This time horizon takes into account the <b>Scheme's triennial statutory funding valuation and investment strategy review</b>. The last triennial actuarial valuation effective 31 December 2021 was completed over 2022. The investment strategy was reviewed in 2023. The short term is defined as the period from 2022 to 2025.</p>	<p>The Trustee expects that potential medium-term risks identified could cause an impact 3-8 years from now. This time horizon considers the <b>Scheme's funding and investment strategy to gradually reduce risk over time</b> towards a long-term funding objective. At the time of writing, the investment strategy is largely de-risked, with activity undertaken in 2023 following positive funding level experience.</p> <p>The medium term is defined as the period from 2025 to 2030 in conjunction with IBM's net zero target and the time to move to a low-risk funding target.</p>	<p>The Trustee expects that potential long-term risks identified could cause an impact 8 years and beyond. This time horizon reflects the <b>long-term objective of the Scheme's funding and investment strategy to secure members' benefits</b> (e.g. with an insurance company). It should be noted that the DB Section's investment time horizon may shorten materially if the Trustee enters into further insurance contracts to secure member benefits.</p> <p>The long term is defined as the period from 2030 to 2050 in line with the Paris Agreement.</p>



As a long-term investor, the Trustee recognises the risks and opportunities arising from climate change are diverse and continuously evolving. Climate change presents risks over the short, medium and long-term, which the Trustee aims to better understand and mitigate where possible. The Trustee has considered short, medium and long term drivers of risk which are set out in the Appendix.

## Describe the climate-related risks and opportunities relevant to the Scheme over the time periods that the Trustee has identified and the impact of these on the Scheme's investment strategy

### Climate-related Risks

One of the greatest impacts to the Scheme from climate change is investment risk. The performance of the Scheme's portfolios is directly aligned to the value of the underlying assets, which are increasingly impacted by climate-related risks and opportunities.

The Trustee ensures that the Scheme's investment strategy is well-diversified, and that the investment managers have an appropriate understanding of both the companies and assets in which they invest and the risks to which they are exposed. As part of regular performance monitoring, the investment managers are expected to provide information on how climate-related risks and opportunities are integrated into their investment decisions.

The Trustee will monitor on an annual basis the carbon intensity of the Scheme's assets and how this changes over time, where the information is available. The carbon intensity for each of the Scheme's assets and impact on the Scheme's investment strategy has been reported (where available) within the Metrics section of this report.

Climate change risk can also have an impact on the long-term funding objective of the Scheme. The Scheme Actuary calculates the Scheme's funding level by comparing the current value of assets to the present value of the Scheme's current and future liabilities (pension payments to members). The Actuary adopts a range of assumptions to calculate the present value of liabilities, such as expected mortality and the long-term investment return. Mortality in the long term may be impacted by the ability to limit warming and transition to a lower carbon economy. Equally, the assumed investment return from the Scheme's investment strategy could be impacted under different climate change transition scenarios.

### Climate-related Opportunities

There are significant opportunities for investing in companies and assets that may benefit as the Scheme transitions to a lower carbon environment. As part of the 2023 triennial investment strategy review and ongoing monitoring of its investment managers, the Trustee will

engage with the investment managers to understand the underlying investments that are being made and the extent that climate change risk is considered along with potential opportunities.

### Addressing Future Risks and Opportunities

The Trustee acknowledges the potential for further progress in reducing climate-related risks in the short to medium term. Engaging with investment managers is considered a top priority for successfully achieving climate and sustainability goals. This can involve actions such as:

1. Adjusting benchmarks the funds track to a lower carbon intensive benchmark.
2. Changing the fund guidelines that limit the investment in carbon intensive funds within their portfolios.

If there is limited engagement from the investment manager, the Trustee may make the decision to switch out of a fund. The Trustee's primary focus in its climate journey is to maximise engagement with investment managers, with exclusions and disinvestments only considered as a last resort.

The Trustee expects Mercer, as the Scheme's Investment Advisor, to provide support and consider potential investment and implementation opportunities to reduce the Scheme's exposure to climate-related risks over time. However, the Trustee recognises a balance is needed to be maintained between meeting the funding and investment objectives for the Scheme (i.e. ensuring that member's benefits are met) and considering these risks. Climate-related risks, but also opportunities, will be monitored as part of the triennial strategy reviews for the Scheme.

For the 31 December 2021 actuarial valuation of the Scheme, the Trustee considered how climate-related risks might manifest themselves within the Scheme, and the assumptions adopted for the valuation contained an appropriate degree of prudence taking into account these risks.

The Trustee recognises that climate-related issues represent a material risk to future economic stability in the long term, with potentially wide-ranging impacts on ESG matters. From the perspective of the funding of the Scheme, the key ways these risks could manifest themselves are through unmatched falls in asset values, Scheme members living longer than assumed or a reduction in the strength of the Company covenant. However, the Trustee also acknowledges that the Scheme's investment time horizon may shorten materially if the Trustee enters into further insurance contracts to secure member benefits, which reduces the likely impact of climate risk over the long term.

For the 31 December 2021 actuarial valuation, the Trustee considered how longevity might be affected in different climate scenarios when deciding what assumptions to adopt. Climate is assumed to impact life expectancy both directly and indirectly. The climate-related issues which could impact life expectancy include more natural disasters, the possibility of warmer winters and impacts on air quality.

The Trustee recognises that under different scenarios climate change might lead to longer life expectancies (i.e. higher liabilities) or lower life expectancies (i.e. lower liabilities). Of the scenarios considered, life expectancies are expected to improve only in WTW's 'Global coordinated action' scenario (where all necessary action is taken to achieve the Paris Agreement aim of limiting global temperature increases to 1.5°C above preindustrial levels) and deteriorate in WTW's other scenarios. Other than the potential impact on longevity, the Scheme's liabilities are assumed not to change in these scenarios; the valuation uses market implied inflation and assumes that transition and physical risks are appropriately priced into markets.

## Describe the impact of climate-related risks and opportunities on the sponsoring employer's covenant over the relevant short, medium and long-term time horizons

The Trustee recognises it is crucial to better understand the potential impact on the covenant of the effects of climate change, which can impact on the long-term funding requirements of the Scheme. The analysis carried out by Cardano for this year's Trustee climate report has been based on the IBM Group (IBM) rather than the Scheme's employer (IBM United Kingdom Holdings Limited) given the integrated nature of the Group.

Climate change can impact a business or organisation throughout the whole value-chain and the key issues arising from climate change are complex and multi-dimensional.

IBM's exposure to climate risks can most easily be considered against the possible transmission channels throughout its value chain.

- **Supply Chain:** IBM's supply chain is global and diverse, with spend spread broadly around the world in key areas such as software, hardware, services and labour.
- **Operations:** IBM offers a wide range of Information Technology services, solutions, infrastructure and software such as cloud and data services, artificial intelligence, consulting, hybrid infrastructure and infrastructure support, and financing, to a wide range of customers, including commercial businesses and the public sector, in over 175 countries, primarily in North America, Europe and Asia.
- **Competitors:** Primary competitors include large multi-national listed companies.
- **End Market:** A diverse list of primarily technology services, hybrid, cloud and software for a diverse array of industries, including manufacturing, financial services, communications, energy, transportation, consumer and retail.
- **Macro-economic:** IBM's global reach and the nature of its product offering could expose it to wider macro-economic risks, such as inflationary pressures or global recessions.

## What could the sponsoring employer do to address such a risk?

IBM has committed to the below climate transition goals.

	Direct Operations Scope 1 and 2	Value Chain Scope 3
Net Zero Goal	2030	Some by 2030
Interim Target	65% by 2025	Some by 2025
Ambition	Aligned with 1.5 degrees	
Baseline	2010, adjusted for acquisitions and divestitures	

The Scheme's Covenant Advisor has provided updated recommendations as part of the 2023 covenant assessment:



**Contingency planning:** Consider undertaking contingency planning whereby Cardano work with the investment and actuarial advisors to map the possible impact of narrative downside scenarios over the nearer term (e.g. 5 years).

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**Monitor:** Closely monitor the Group's scope 3 carbon reduction progress against targets, including increasing visibility over remaining scope 3 emissions not yet calculated.

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**Regulatory readiness:** Regularly horizon scan for potential regulations, particularly in respect of data centre energy usage, and assess the Group's readiness to meet any such changes.

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**Supply chain exposure:** Consider the Group's supply chain exposure to regional, material climate events and any contingency/mitigation plans in place.

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**Sustainability oversight:** Consider whether the Trustee might benefit from adopting a 'sustainability dashboard' to monitor sustainability risks and policy implementation.

The Trustee is considering these recommendations and will look to incorporate these into its future monitoring and assessment of climate risks in respect of the sponsoring employer in an appropriate and pragmatic way.



## Scenario analysis

### Describe the resilience of the Scheme's strategy, taking into consideration different climate-related scenarios, including a 1.5°C or lower scenario

The Trustee supports the goals of the Paris Agreement that seeks to limit warming to well below 1.5°C relative to pre-industrial temperatures. The Trustee believes that climate risk may have an impact on securing long-term financial returns and believes that considering climate risk is in the best long-term interests of Scheme members.

Climate change scenario analysis has been undertaken on the Scheme's strategic asset allocation for the Scheme to assess the potential implications of climate change under three modelled scenarios, Rapid transition, Orderly transition and Failed transition, over 3, 8 and 28 years. The Trustee has chosen these scenarios to show the impact of considering climate risk and the levels of action taken at different ends of the transition spectrum i.e. from taking decarbonisation action now ('best case' scenario) to a scenario with little action in either the short or long term to reduce carbon emissions causing a more pronounced rise in global warming.

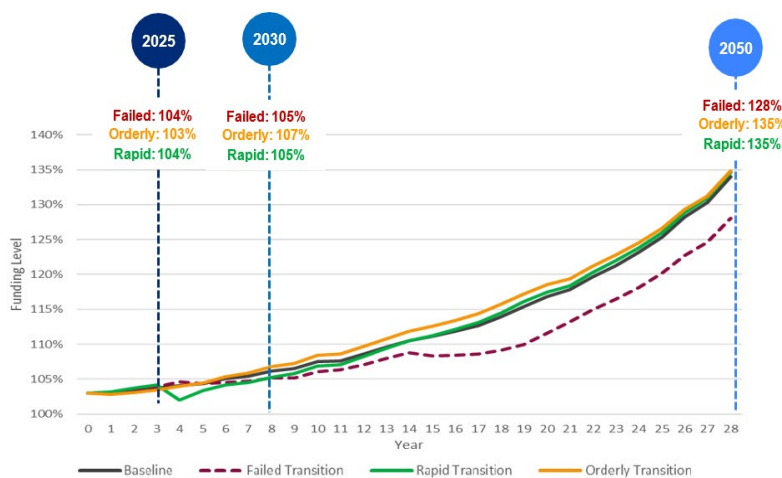
### Scenario Analysis Results

This section sets out high level output of the Trustee's quantitative analysis of the investment and funding strategy. This analysis was completed for the 2022 report and was not updated during the Scheme year as no changes were made to the strategic allocations or assumptions considered that would lead to a material change in the conclusions. This is consistent with the regulatory guidance to update scenario analysis at least every three years. Further detail on the assumptions and limitations associated with climate scenario analysis are set out in the appendix.

#### Funding and Investment Strategy

The chart below shows a projection of the funding level of the Scheme over a period of 28 years to 2050.

**Figure 4: Climate change scenario analysis – Funding Level**



#### Key Findings

- Short term (3 years):** transition risk has not yet had a significant impact on the investment strategy. The model assumes that transition risk will dominate under a Rapid Transition scenario, leading to a material drawdown in year 4. However, the timing of this shock and recovery is uncertain, and currently, there is little difference between scenarios in terms of their impact on returns.
- Medium term (8 years):** both physical impacts and transition risks are increasingly priced into the investment strategy. The Failed and Rapid Transition scenarios result in losses of around 1% and 0.9% respectively for the funding level portfolio compared to the baseline. Physical impacts and transition risks reduce annual investment strategy returns by approximately 0.1% per annum.
- Long term (28 years):** physical impacts become the most important factor. Under the Failed Transition scenario, losses amount to approximately 6.0% of the portfolio's funding level compared to the baseline. The deterioration in the funding level is partly due to a reduction in annual returns by approximately 0.2% per annum relative to the baseline. The investment portfolio performs better under the Orderly and Rapid Transition scenarios, as physical impacts are lower due to limited temperature rises.

This is "top down" analysis – i.e. it is based on the Scheme's investments at an asset class level and does not consider the individual stocks held within each asset class. Mercer has considered both assets and liabilities across the matching and growth portfolios of the Scheme's investment strategy. The analysis excludes the currency overlay mandate held with Russell Investments and the two reinsurance mandates held with Nephila and Securis.

The baseline represents what we are assuming the market is currently pricing in, and includes a **10% weight to a Failed Transition, 40% weight to an Orderly Transition, 10% to a Rapid Transition and 40% to a range of low impact scenarios.**

Source: Ortec, Mercer.

**It is important to note that the scenarios used in the analysis are not extreme or tail risk events. The true level of risk and uncertainty may be greater for higher warming scenarios. The analysis only forecasts the climate-related impact on relative returns and does not consider other factors such as economic conditions, political events, or market conditions.**

The Trustee will consider these climate scenarios further as part of the future funding and investment strategy of the Scheme. These will next be reviewed in late 2024 / early 2025, following the triennial investment strategy review which commenced in 2023.

## Covenant Scenario Analysis

The three climate scenarios considered as part of the covenant assessment carried out by Cardano for the Trustee's 2023 climate report are unchanged from the prior analysis conducted and are set out in the Appendix.

Under each climate scenario, Cardano identified the key potential risks and determined the extent that these risks would have on the covenant of the sponsoring employer in the short, medium and long term.

### The key findings from the risk analysis are:

- The risk associated with a **Rapid Transition** are greater in the near term than in an **Orderly Transition** due to delayed but sudden implementation of policies falling within the 'near-term' time horizon (2025).
- In the near term, risks associated with a **Rapid Transition** scenario are higher due to the implied cost of decarbonisation across the supply chain and operations.
- Over the longer term, the physical risks to suppliers, workforce and key operating sites, as well as GDP declines, are expected to be more pronounced in a **Failed Transition**.

IBM is also likely to benefit from opportunities to provide customers with services that better enable them to meet sustainability targets and limit environmental impact. This could partly offset risks identified in this assessment.

# Risk management

## Describe the Scheme's process for identifying, assessing and managing climate change-related risks

The Trustee recognises that climate-related risks can be financially material and that the due consideration of climate risk falls within the scope of the Trustee's fiduciary duty. Given the long-dated nature of the Scheme's investments and the timeframe in which climate risks could materialise, a total portfolio approach to risk management covering all relevant asset classes has been taken. The ongoing risk management processes that are carried out by the Trustee are set out in the Appendix. The table below provides additional information in relation to the risk management activities in each of the key areas for the reporting year.

<b>Governance</b>	<ul style="list-style-type: none"> <li>The <b>Trustee and ESG sub-committee received training</b> from Mercer on climate-related issues, including market and regulatory updates: <ul style="list-style-type: none"> <li>Education in relation to Energy Efficiency and Diversity, Equity and Inclusion (DEI)</li> <li>Education on the developments relevant to pension schemes from a sustainability investment perspective, such as considerations in relation to nature and biodiversity.</li> </ul> </li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>The Trustee undertakes <b>Climate change scenario modelling</b> on at least a triennial basis. The last assessment was carried out in 2022 and the next assessment is expected to take place in late 2024/early 2025.</li> <li>The Trustee has commissioned <b>covenant analysis</b> carried out by Cardano as part of this report, to understand the impact of climate change risk on the covenant of the Scheme's sponsor. The recommendations from the 2023 review are set out in the previous Section of this report.</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>The Trustee carried out a RITE assessment in 2023, which concluded: <ul style="list-style-type: none"> <li>The overall rating was B+ for the level of ESG integration in investment decision-making.</li> <li>Whilst the overall rating was unchanged compared to the 2022 assessment, there was a marginal increase in the score. This was a reflection of Trustee's action to strengthen its ESG beliefs and key priorities, and work to further engage with the Scheme's investment managers through the annual Stewardship assessment.</li> </ul> </li> </ul>
<b>Manager monitoring</b>	<ul style="list-style-type: none"> <li>Mercer carries out an annual <b>Stewardship and ESG Manager Ratings Assessment. The 2023 Stewardship Assessment concluded that:</b> <ul style="list-style-type: none"> <li>All of the Scheme's investment managers were signatories to the PRI and all managers have a PRI score of at least 4 (on a scale of 1 to 5 where 5 is the best score), where publicly disclosed.</li> <li>All managers were signatories to the 2020 UK Stewardship Code.</li> <li>All managers had a publicly available stewardship or engagement policy which aligns with the Trustee's belief that climate change is a priority area.</li> <li>Majority of managers had exclusions against UN Global Compact violators to some degree.</li> <li>All managers believe climate change risks and DEI to be important, and forms part of their investment process, which aligns with the Trustee's ESG beliefs.</li> <li>Where available, the Mercer ESG ratings for the funds the Scheme invests in were above the average ratings of the respective Mercer asset class universes, and ESG ratings for two funds had been upgraded over the year.</li> <li><b>IBM Pensions Trust are engaging with investment managers</b> where the Stewardship Assessment identified gaps in the responses or where managers did not perform as well on the assessment as their peers. Specifically, IBM Pensions Trust have engaged on Net Zero Asset Managers initiative (NZAMi), DEI and the UN Global Compact principles and worked with the managers to understand the context for their specific area of the investment.</li> </ul> </li> </ul>
<b>Manager Selection and Retention</b>	<ul style="list-style-type: none"> <li>Mercer rates investment managers on the extent of integration of ESG factors (including climate change) into their processes. <b>A manager's stewardship process forms part of the rating assessment.</b> This is considered at the firm level and at the investment strategy/fund level.</li> </ul>



## **Describe how processes for identifying, assessing and managing climate change-related risks are integrated into the Scheme's overall risk management (including the Scheme's liabilities and sponsor covenant)**

Both climate change-related risks and wider investment risks are considered as very important by the Trustee. Where possible, climate change and wider investment risks such as demographic trends are treated in a holistic manner by recognising they are often interrelated. Climate change and ESG risks are included alongside other material risks in the SIP and the risk register.

The climate change scenario analysis is strategic in nature and has therefore been incorporated into wider investment strategy discussions and considerations and into the portfolio design. The Trustee has commissioned scenario analysis to be carried out as part of understanding climate change risk on the sponsor covenant and the Scheme's assets and liabilities.



# Metrics and Targets

## Metrics

### Disclose the metrics used to assess climate change-related risks and opportunities in line with strategy and risk management process

This report presents carbon data and climate-related engagement analysis for the Scheme's investment mandates as at 31 December 2023 (or the closest date the data is available at time of preparing this report).

The Trustee recognises that the availability of accurate data for some asset classes continues to be an industry-wide issue and will engage with the investment managers to improve their climate and carbon reporting, but also to influence custodians and the companies in which they invest, to improve their climate and carbon reporting as quickly as possible. In this context, it should be noted that there can be a significant time lag in the provision of emissions data from individual companies to data providers, and from data providers to fund managers. The Trustee recognises that this leads to a certain amount of uncertainty regarding the drivers of changes in carbon emissions across the Scheme. The Trustee continues to work with Mercer to implement long-term carbon intensity reduction solutions where possible in order to reach the set target.

In this report, the Trustee has reported on the following four key metrics:

Metric Category	Metric chosen by Trustee	Rationale for chosen metric
<b>Absolute emissions</b>	The total carbon dioxide equivalent emissions (CO <sub>2</sub> e) attributable to a portfolio.	This is the recommended metric in line with regulations. (See Figure 5 (Credit Portfolio), Figure 7 (LDI Portfolio) and Figure 8 (Other Portfolios).)
<b>Emissions intensity</b>	Weighted Average Carbon Intensity ("WACI") The carbon intensity of a portfolio, weighted by the proportion of each constituent in the portfolio. Carbon intensity is calculated for each company as (Scope 1 and 2 carbon emissions / \$m sales).	The Trustee has chosen this metric as the majority of the Plan's investment managers (where relevant, although some investment managers have followed a slightly different approach due to the nature of the underlying assets) are able to report on this and because it provides a measure relative to the respective portfolio allocation and therefore currently provides better insight in this context than <b>Carbon Footprint</b> <sup>3</sup> . Carbon footprint is the recommended metric for measuring emissions intensity under UK regulatory guidance on "Taking Action on Climate Risk". The Trustee also reports on this and may move to this as a main metric in future, as it may be more intuitive for Scheme members and is a more straightforward metric to apply in the context of portfolio composition and attribution analysis. (See Figure 6 (Credit Portfolio), Figure 7 (LDI Portfolio) and Figure 9 (Other Portfolios).)
<b>Additional metric</b>	Share of portfolio held at year end for which engagement or voting on climate-related risk and opportunities has been a substantive topic	This non-emissions based metric allows the Trustee to assess the extent to which an asset manager is engaging and/or voting on the topic of climate change. The Trustee has chosen this metric as it believes that engagement on climate-related issues is important. This metric will enable the Trustee to monitor improvement in engagement levels over time and is an area of focus for the Trustee. (See Figure 11.)
<b>Portfolio alignment metric</b>	Science Based Targets initiative ("SBTi")	The Trustee has chosen this metric as it allows for an assessment of the extent to which a portfolio is committed to net zero. In addition, SBTi is an industry approved, scientifically rigorous approach used to assess decarbonisation pathways. This will enable the Trustee to monitor the progress of its investments relative to its own proposed net zero commitments. (See Figure 10.) The Trustee also reports on <b>Implied Temperature Rise</b> <sup>4</sup> , where data is available from the Scheme's investment managers, and this is included in the appendix.

<sup>3</sup> Carbon Footprint is an intensity measure of emissions that takes the Scheme's Total greenhouse gas emissions figure and normalises it to take account of the size of the investment.

<sup>4</sup> This is a forward-looking metric that considers the pledges, commitments and business strategy changes that underlying investee companies/issuers have made. It provides a prediction of the potential temperature rise over the rest of the century based on the activities of those companies and issuers. The metric illustrates the degree of portfolio alignment with the goals of the Paris Agreement.

## Carbon emissions analysis

The carbon emissions analysis includes scope 1 and 2 emissions for Scheme assets. This report also includes scope 3 data, where available. However, the Trustee does not rely on scope 3 data to form conclusions and actions given the poor data quality and availability. This means that for some companies the assessment of their carbon emissions could be considered an ‘understatement’ at present. Examples could include an online retailer whose logistics emissions are not included in scope 1 or 2. The metrics information set out in this report includes **coverage**, which represents the share of the securities in the fund which report on a given climate metric, provided by the Scheme’s investment managers.

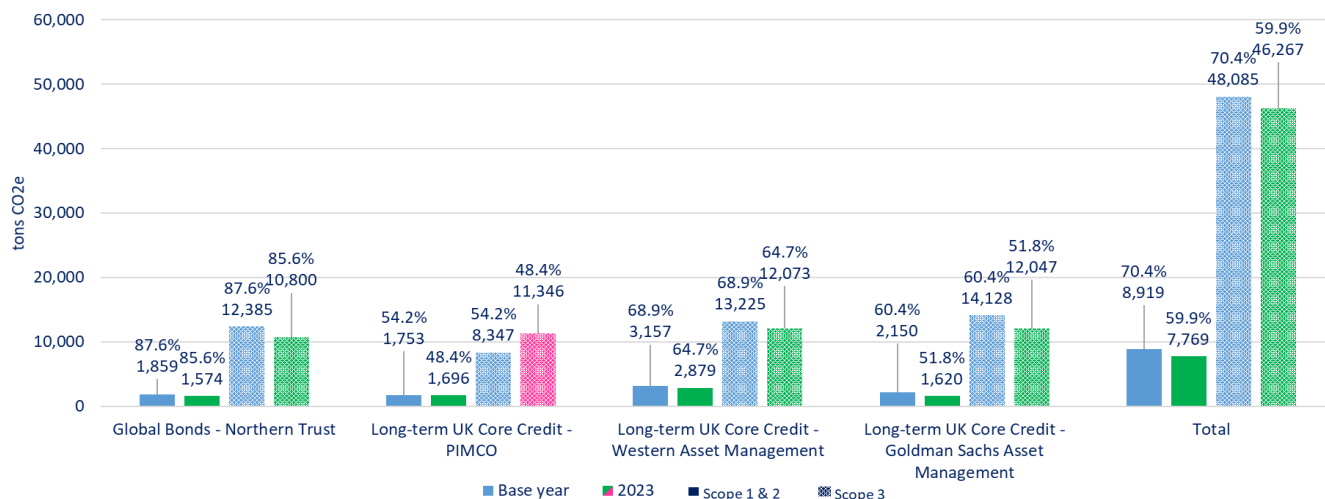
As noted earlier in this section, the Trustee recognises that there are still limitations in the accuracy and availability of emissions information – in particular, for scope 3 emissions. Fluctuations are expected to be observed over time and hence the commentary on the metrics disclosed in this report have focussed on the drivers for the changes in scope 1 and 2 emissions. The scope 1 and 2 emissions are indicated by the solid-coloured bars and scope 3 emissions are indicated in the patterned-shaded bars in the charts shown in this section of the report (where available). The bars are grouped by each fund / mandate or Lifestyle strategy (for the DC Section, as appropriate) that has been analysed.

The Trustee has commissioned Northern Trust, as custodian of the Scheme’s assets, to produce the agreed emissions based metrics, where available. Northern Trust only currently provide reporting for equity and credit mandates and as such have provided the emissions based metrics for the Global Bonds and Long-term UK Core Credit mandates. This enables the Trustee to consider the carbon emissions data in a consistent manner across all the credit mandates, allowing high-level comparison analysis to be carried out and to aid the Trustee with discussions and planning to reduce the Scheme’s carbon exposure. Where possible, the carbon emissions data for the remaining Scheme assets have been provided separately in this section.

Figure 5 below provides a summary of the metrics provided by Northern Trust for the Scheme’s credit mandates. The blue bars in Figure 5 shows the total carbon emissions as at 31 December 2022. The green and pink bars show the total carbon emissions as at 31 December 2023, with a green bar indicating a reduction and a pink bar indicating an increase over the year.

**Figure 5: Absolute emissions of the Scheme’s credit portfolios**

Percentages shown in the chart are coverage of reportable assets



	Global Bonds - Northern Trust		Long-term UK Core Credit - PIMCO		Long-term UK Core Credit - Western Asset Management		Long-term UK Core Credit - Goldman Sachs Asset Management		Total	
Value (£m)	82.1	83.1	51.1	56.3	51.4	56.8	50.9	56.2	235.5	252.4
% of total Scheme assets	8.5	8.8	5.3	5.9	5.3	6.0	5.3	5.9	24.4	26.7

Source: Northern Trust, 31 December 2022 and 31 December 2023

The coverage highlights the weight of companies by market value that report reliable emissions in the portfolio from those asset classes which are covered, i.e. corporate bonds.



The Global Bonds and Long-term UK Core Credit mandates represented around 27% of the Scheme assets at 31 December 2023. As shown, total scope 1 & 2 carbon emissions have fallen materially despite asset values increasing over the year, with decreases in total carbon emissions across all credit portfolios. The four underlying managers: GSAM UK Core Credit, Western UK Core Credit, IBM Global Bond Fund and the PIMCO UK Core Credit Fund have all seen reductions in the scope 1 and 2 total carbon emissions, with GSAM and Western being the largest reductions.

- **GSAM Scope 1 and 2 Total Carbon Emissions:** GSAM's total scope 1 and 2 emissions have decreased from 2,149.7 tCO<sub>2</sub>e in December 2022 to 1,619.5 tCO<sub>2</sub>e in December 2023 (a c. 25% reduction in scope 1 and 2 emissions). This is primarily due to the lower coverage of data in 2023 as Electricite de France SA was delisted (therefore no longer being covered). In addition, the reduced allocation to Holcim Ltd helped reduce emissions.
- **Western UK Core Credit Scope 1 and 2 Total Carbon Emissions:** This reduction in emissions is largely attributed to Electricite de France SA no longer being covered.

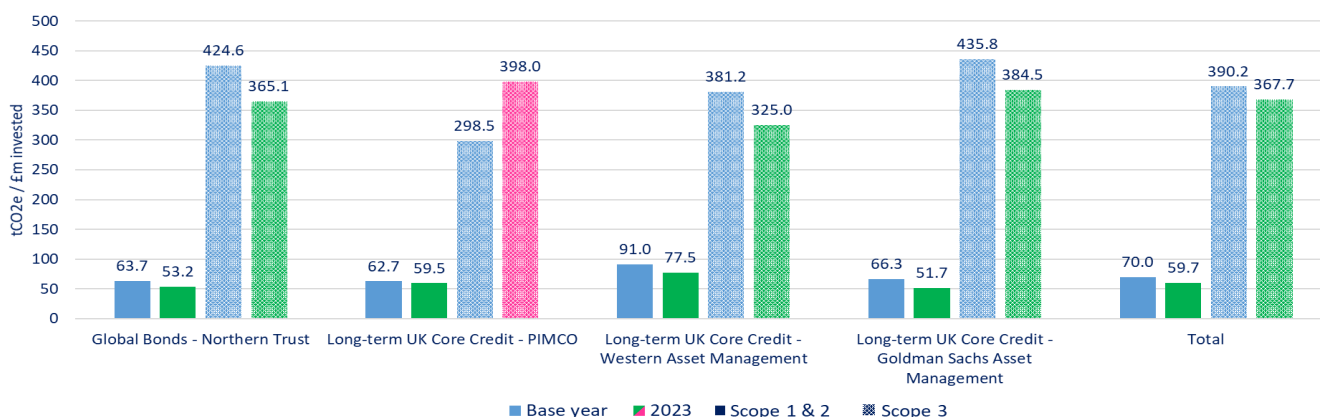
In relation to scope 3 emissions, a reduction was observed across all of the Scheme's credit portfolios, with the exception of the PIMCO UK Core Credit Fund.

The Global Bond portfolio managed by Northern Trust invests in a number of underlying mandates and a breakdown of the carbon exposures of the underlying mandates is not available. The Trustee aims to work with Northern Trust to help with the engagement with the underlying investment managers.

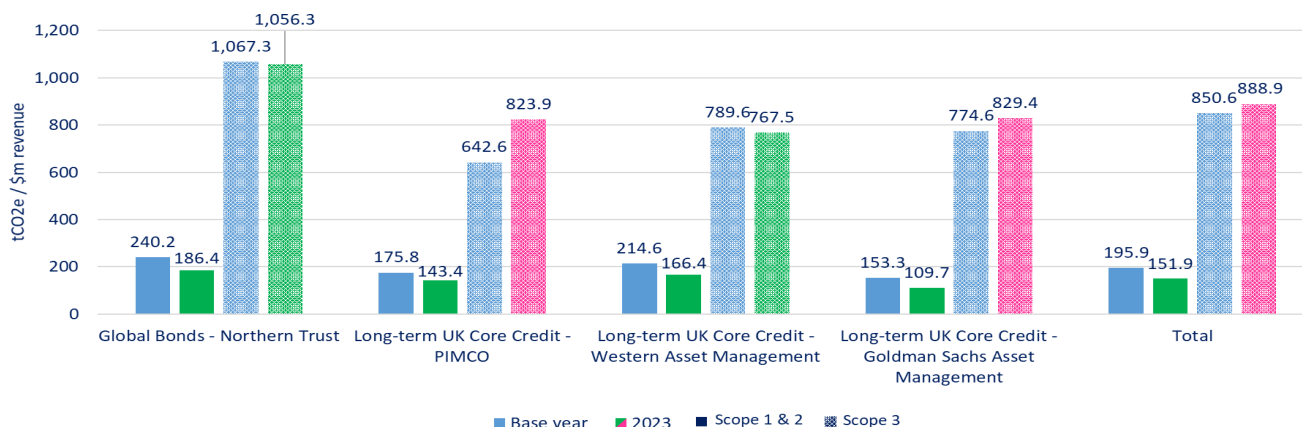
Figure 6 sets out the Carbon Footprint and WACI for the Global Bonds and Long-term UK Core Credit mandates as at 31 December 2022 and 31 December 2023. The green and pink bars show the emissions metrics as at 31 December 2023, with a green bar indicating a reduction and a pink bar indicating an increase over the year. The scope 1 and 2 emissions are indicated by the solid-coloured bars and scope 3 emissions are indicated in the patterned-shaded bars in the charts shown below (where available).

**Figure 6: Carbon Footprint and Weighted Average Carbon Intensity (WACI) of the Scheme's credit portfolios**

### Carbon Footprint



### Weighted Average Carbon Intensity (WACI)



Source: Northern Trust, 31 December 2022 and 31 December 2023

Carbon footprint for scope 1 and 2 emissions decreased across all portfolios. The carbon footprint normalises the total carbon emissions of the portfolio per every million \$ invested, suggesting that the total carbon emissions per million \$ invested has decreased. At a total credit portfolio level, the carbon footprint for scope 1 and 2 emissions has decreased by c.14.7%.

WACI for scope 1 and 2 has also decreased across all portfolios. The weighted average carbon intensity has decreased from 195.9 tCO<sub>2</sub>e / \$m revenue in December 2022 to 151.9 tCO<sub>2</sub>e / \$m revenue in December 2023 (a reduction of c.22.5%) at the total credit portfolio level. This can be largely attributed to Electricite de France SA no longer being covered (to which the GSAM UK Core Credit and Western UK Core Credit mandates had exposure) and the reduced weighting of Holcim Ltd. within the GSAM UK Core Credit mandate. However, there are other underlying factors which could contribute to the decrease in WACI – in particular, this fall is observed over 2023 which is mainly driven by the denominator effect for the calculation of WACI (i.e. higher inflation led to higher revenues, leading to lower intensity emissions, all else being equal). This factor is therefore an additional contributor to the reduction in WACI over 2023 across all mandates.

In respect of scope 3 emissions, at a total credit portfolio level, carbon footprint has reduced by around 5.8% and WACI has increased by around 4.5%. Most of the underlying portfolios observed a reduction in carbon footprint with the exception of the PIMCO UK Core Credit Fund. The WACI increased for the GSAM UK Core Credit and PIMCO UK Core Credit Fund over 2023.

Figure 7 below provides carbon emissions metrics data in respect of the Scheme's LDI portfolio, managed by Cardano, for which data is reportable as at 31 December 2023. This represents around 54% of total Scheme assets. There has been a change in methodology in the approach to disclosing carbon emissions for sovereigns in line with Partnership for Carbon Accounting Financials (PCAF) methodology which considers sovereign emissions in terms of production emissions<sup>5</sup> and consumption emissions<sup>6</sup>, which means that metrics for this reporting period are not directly comparable to prior year. The metrics for the prior year are included in the appendix for reference.

**Figure 7: Climate-Related Metrics in respect of the Scheme's LDI allocation**

Manager	Value (£m)	Proportion of Total Scheme Assets (%)	Proportion of fund that is reportable (%)	Coverage of reportable assets (%)	Total Carbon Emissions		Sovereign Carbon Intensity	
					(tons CO <sub>2</sub> e)		(tons CO <sub>2</sub> e / \$M PPP adjusted GDP)	
					Production Emissions*	Consumption Emissions**	Production Emissions*	Consumption Emissions**
Cardano	509.7	53.8	100.0	100.0	75,483	104,762	120.6	167.3

Source: Cardano, MSCI and Mercer, 31 December 2023.

\*Sovereign emissions data shown are consistent with the PCAF definition of Scope 1 sovereign emissions, aligning with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services. Emissions data include land use, land use change and forestry. Data sourced from MSCI.

\*\*Sovereign emissions data shown are consistent with the PCAF definition of Scope 1, 2, and 3 sovereign emissions, aligning with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services. Emissions data include land use, land use change and forestry. Data sourced from MSCI.

The Absolute Emissions for the funded gilts exposure (£460M) amount to 70,634 tCO<sub>2</sub>e. Additionally, through TRS to UK gilts (£32M), the emissions are 4,849 tCO<sub>2</sub>e. The table above displays the emissions from the total exposure to UK gilts (£491M). Please note that the analysis does not include the exposure to cash (£27M).

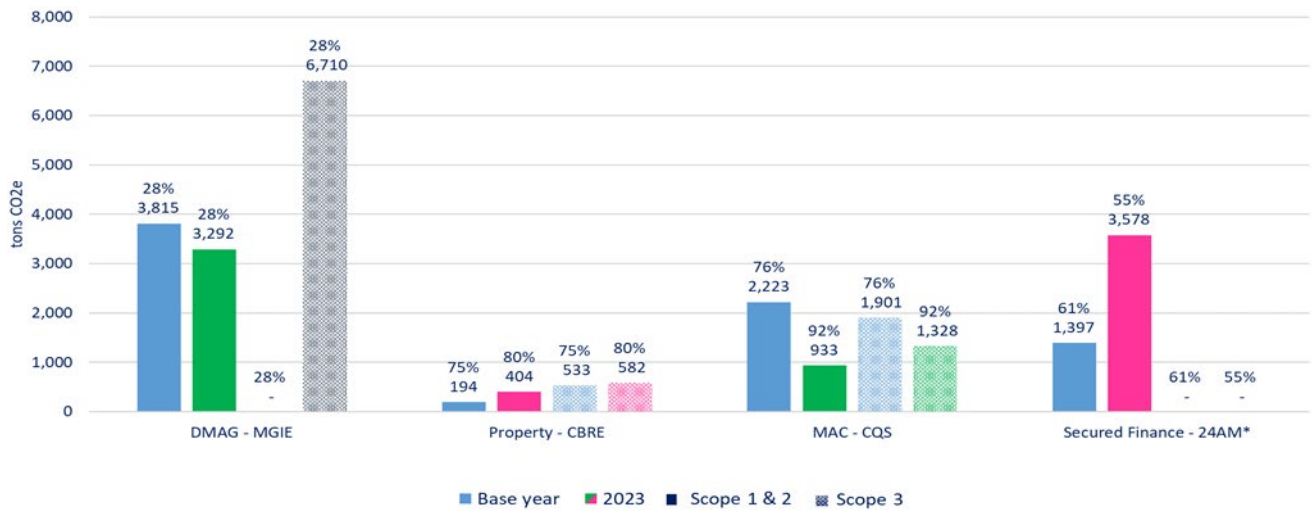
The Scheme invests in growth assets equating to approximately 19% of total invested assets as at 31 December 2023. Figure 8 below, provides carbon emissions data in respect of the following growth assets: MGIE Diversified Multi-Asset Growth (DMAG), CBRE UK Property, CQS Alternative Credit and 24AM Secured Finance holdings. The green and pink bars show the emissions metrics as at 31 December 2023, with a green bar indicating a reduction and a pink bar indicating an increase over the year. The scope 1 and 2 emissions are indicated by the solid-coloured bars and scope 3 emissions are indicated in the patterned-shaded bars in the chart shown below (where available).

<sup>5</sup> Production emissions are emissions attributable to emissions produced domestically and include domestic consumption and exports, as defined by guidance produced by PCAF.

<sup>6</sup> Consumption emissions reflect the demand side of sovereign emissions and account for consumption patterns and trade effects.

**Figure 8: Absolute Emissions in respect of the Scheme's other allocations**

Percentages shown in the chart are coverage of reportable assets



	DMAG - MGIE		Property - CBRE		MAC - CQS		Alternative Credit – 24AM	
	2022	2023	2022	2023	2022	2023	2022	2023
Value (£m)	52.3	45.6	79.2	67.1	27.7	25.7	44.9	38.3
% of total Scheme assets	5.4	4.8	8.2	7.1	2.9	2.7	4.7	4.0

Source: MGIE, CBRE, CQS and 24AM as at 31 December 2022 and 31 December 2023.

“-” indicates data not available.

\* This is estimated based on the industry averages for asset classes of the underlying holdings where carbon emissions information is available.

The Scheme also has a small residual holding in re-insurance arrangements. Due to the complexity of these assets, there is no carbon emissions data available.

There is limited data in relation to the carbon footprint and WACI for the Scheme's mandates within the growth allocation. This is largely due to the type and complexity of the assets held. Figure 9 sets out the information provided by the managers, where the data is available or estimated to provide an indication.

**Figure 9: Carbon Footprint and Carbon Intensity metrics in respect of the Scheme's other allocations**

Manager	Carbon Footprint (Scope 1 & 2)		Carbon Footprint (Scope 3)		WACI (Scope 1 & 2)		WACI (Scope 3)		WACI (Scope 1, 2 & 3)		Sovereign Carbon Intensity (Scope 1 & 2)		Sovereign Carbon Intensity (Scope 3)	
	tons CO2e / \$M invested		tons CO2e / \$M invested		tons CO2e / \$M revenue		tons CO2e / \$M revenue		kgCO2e / m2		tons CO2e / \$M PPP adjusted		tons CO2e / \$M PPP adjusted	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
DMAG – MGIE	108.5	109.4	-	25 (Upstream) / 90 (Downstream)	220.2	207.2	-	59 (Upstream) / 252 (Downstream)	-	-	395.8	386.9	-	-
Alternative Credit – CQS	92.0	50.0	79.0	73.0	90.0	85.0	71.0	112.0	-	-	-	-	-	-
Secured Finance – 24AM	30.9	27.5	-	-	-	-	-	-	-	-	-	-	-	-
Property – CBRE	-	-	-	-	-	-	-	-	-	28.3	-	-	-	-

Source: MGIE, CQS, 24AM and CBRE as at 31 December 2022 and 31 December 2023.

Asset Backed Securities holdings have no revenue, therefore WACI is not available for 24AM.

CBRE are now able to report on WACI but this is not split by scope. The figure cover all scopes (1, 2 and 3) and weighted by year end NAV.

“-” indicates data not available.



MGIE have provided information in respect of the DMAG fund, which shows that the carbon footprint, WACI and sovereign carbon intensity have remained broadly similar between the reporting dates.

Based on the information provided by CQS, there has been a reduction in Carbon Footprint for Scope 1 and 2 emissions, and Scope 3 emissions and a reduction in WACI for Scope 1 and 2 emissions, but an increase in WACI for Scope 3 emissions. CQS have explained that there has been a change in their methodology for calculating metrics over the year to align their carbon metrics with industry standards and expectations of their investors, now that coverage for EVIC has sufficiently increased for the asset classes in which the CQS Credit Multi Asset Fund invests. CQS are using EVIC (Enterprise Value including Cash) to calculate the carbon footprint and absolute carbon emissions, whereas prior to this date, these metrics were calculated using market capitalisation. Furthermore, for scope 3 WACI, a significant proportion of the increase arose from one issuer where CQS had updated their previous proxy estimate with actual carbon data publicly reported by the company (that is not currently covered by MSCI). The actual scope 3 data was significantly higher than the proxy estimate which led to an increase in its contribution to scope 3 Fund WACI.

24AM have noted that data available for their investible universe is currently close to zero. 24AM have been able to estimate numbers based on industry averages for Residential Mortgage Backed Securities, Auto Loans and Consumer Loans (which are counted as zero carbon emissions as investors do not have sight of what consumer loans are used to buy). The figure provided should therefore be considered illustrative. Based on the information provided by 24AM the Carbon Footprint between the two reporting dates are broadly unchanged.

CBRE are unable to provide data for Carbon Footprint or WACI, split out by scope. For Carbon Footprint, CBRE have noted that this is because data on the underlying assets is not available.

## Portfolio alignment metric (SBTi)

The Science Based Target initiative (SBTi) has established an industry standard methodology for companies setting long-term carbon emission reduction targets that are in line with climate science. Companies submit their net zero plans to SBTi, who then act as an independent assessor of the validity of the plans.

The Trustee has chosen this metric because it provides a measure of portfolio alignment with the goals of the Paris Agreement. Underlying funds with a low percentage of companies with SBTi-approved targets could indicate investment in companies or issuers that are not setting targets to align their businesses or activities with net zero, which is a forward-looking indication of climate transition risk.

The Trustee recognises that the SBTi does not currently cover every sector, however it is cognisant that the initiative's coverage across additional companies and sectors is expanding rapidly.

For each of the Scheme's investments where there is data available, Figure 10 sets out analysis on the percentage of companies in a portfolio that have an SBTi-approved target. The Trustee notes that there has been an improvement in the proportion of companies that have an SBTi-approved target in the majority of the Scheme's mandates and this is a positive observation.

**Figure 10: SBTi figures for the Scheme's assets**

Asset Class	Manager / Mandate	2022: SBTi	2023: SBTi
Global Bonds	Northern Trust	19.3%	24.5%
Long-term UK Core Credit	PIMCO	47.5%	51.2%
	Western Asset Management	53.9%	58.1%
	Goldman Sachs Asset Management	42.2%	56.5%
Diversified Multi-Asset Growth	MGIE	-	24.0%
Property	CBRE	-	-
Alternative Credit	CQS	8.0%	12.3%
Secured Finance	24AM	-	-

CBRE have noted that it is not currently possible to have net zero targets validated and verified by SBTi for buildings. CBRE are therefore unable to provide this metric as described at this time. SBTi's guidelines for buildings have yet to be released, although SBTi aligned pathways were published earlier in May 2023. It is CBRE's intention to use the SBTi aligned pathways in future analysis, although CBRE have noted that it will take some time to implement across all portfolios and assets.

24AM can also not provide this data, noting that SBTi's can only be measured based on investee companies, rather than the pools of loans in which they invest. Due to the complexity of the DMAG mandate, in particular its fund of fund structure, SBTi data is not available. SBTi is based on company targets and is therefore not relevant for the Scheme's LDI portfolio.

The Trustee has also reported on Implied Temperature Rise (another portfolio alignment metric), where available. This data is available in the appendix.

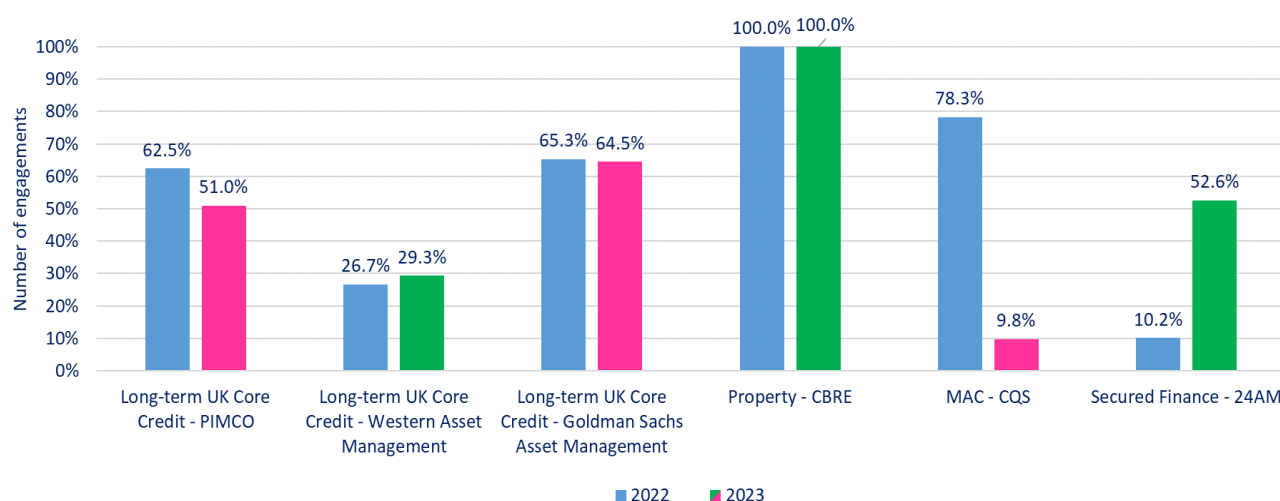
## Non-emissions based metric

Figure 11 sets out the share of portfolio held at year end for which engagement or voting on climate-related risk and opportunities has been a substantive topic, where data was available. At the fund level, the proportion of engagements that are climate-related varies between the funds where data is available. The results below enhances the Trustee's recognition of the importance of encouraging investment managers to engage with companies on climate change.

The Trustee generally expects levels of engagement to increase over time and investment managers will be monitored by this metric, however accepts that there will be instances where this is not the case. The Trustee will be engaging with managers regarding their climate-related engagements with companies and has also included this within the criteria of 'significant votes' which will be reported on within the [Implementation Statement](#).

The blue bars in Figure 11 show climate-related engagements for the credit mandates as at 31 December 2022. The green and pink bars show climate-related engagements for the credit mandates as at 31 December 2023. The green bars show that there has been an improvement in the number of climate-related engagements over the year and pink bars show a deterioration in engagements. Climate-related engagements are defined as the % share of portfolio held at year end for which engagement or voting on climate related risk and opportunities has been a substantive topic.

**Figure 11: Climate-related engagements of mandates within Scheme**



Source: Investment managers, 31 December 2022 and 31 December 2023.

The Trustee notes that the share of climate-related engagements has remained broadly similar or increased for most of the Scheme's managers, except for CQS.

CQS explained that the decrease in climate-related engagements as a percentage of total engagements for the Fund from 2022 to 2023 is largely due to a combination of the higher interest rate environment which led to more governance engagements (37% in 2022 vs. 57% in 2023); and an improvement in carbon emission disclosures for the Fund (42.0% reported emissions coverage in 2022 vs. 54.4% in 2023, both excluding ABS) so this engagement topic was no longer a priority for a number of holdings.

24AM explained that where ESG data is still relatively poor compared to investment grade credit markets, any engagement to gather missing data or to challenge data is counted as engagements. 24AM also include discussions on their expectations for sponsors on climate change at their firm level, and also on the pools of loans for each deal as engagements. 24AM commented further they have carried out work to “*establish the gold standard on ESG reporting*” in the nature of the assets they invest in “*to improve transparency, liquidity and efficiency*” and collaborated with other investors in assembling key ESG questions investors ask the manager of the underlying holdings “*in order to create a comprehensive questionnaire to ensure better and consistent responses from the sector.*”

Engagement data is not available in respect of the Global Bonds and DMAG funds due to the fund-of-funds nature of both mandates. The Trustee has discussed with Northern Trust and set out its aims regarding managers' engagement on climate change.

## Engagement Examples

Over the year to 31 December 2023 the investment managers in which the Scheme invests made a number of climate-related engagements, examples of which are detailed below:

### PIMCO

PIMCO provided a number of engagement examples over the year across different aspects of ESG. One of these engagements concerned a Germany Development bank (Kreditanstalt fuer Wiederaufbau “KfW”) where PIMCO engaged on EU taxonomy implementation and potential revisions to their green bond framework. KfW is seeing robust demand for green bonds and more financing, but the supply of bankable projects is too low. They are also contemplating releasing a new green bond framework with additional categories and project eligibility with categories on biodiversity and corporate climate transition financing. PIMCO suggested to KfW that they screen who is eligible based on climate commitments and an issuer's transition plan.

### Western Asset Management

Western conducted a number of engagements over the year to 31 December 2023. Following a Wall Street Journal investigation into lead sheathed telecoms wires/cables in the US and potential environmental implications, US telco spreads began to widen meaningfully as investors began to assess the potential credit implications. Western engaged with 11 incumbent fixed line telecoms operators to gauge potential legacy environmental issues in Europe. Their preliminary assessment is based on the responses that they received from IR departments. At this time, they do not see material risk to spreads among European issuers and would highlight proliferation of cable coax without lead sheathing, copper decommissioning initiatives in countries with advanced fibre penetration, extensive ducting as well as select adoption of ISO 14001 certification.

### Goldman Sachs Asset Management

GSAM conducted 236 engagements over the year to 31 December 2023. In September 2023, GSAM engaged with Glencore Plc as they had identified the company for engagement under their Climate – Execute Strategy engagement initiative where they seek to engage with companies in high-impact industries on the implementation of a robust and quantifiable climate transition strategy. GSAM had previously engaged with the company in 2022 and 2023 to discuss its climate transition plan and to encourage greater disclosure around its climate strategy and capital allocation. At the 2023 annual meeting, GSAM voted against management's proposal to approve the company's climate transition plan, as they believed it did not provide sufficient disclosure on how its coal transition plan aligned with its stated emissions goals. During this engagement, the company shared updates around the future of its coal business. The company is currently exploring a merger with a diversified natural resources company, and if approved, the company intends to spin off its coal business post-merger. In the event the deal is not approved, the company will proceed with a managed decline of its coal business, and they discussed how the company intends to achieve its net zero goal while still producing unabated coal post 2040.

### CBRE

During 2023, CBRE engaged with 20 underlying funds and their managers, all relating to ESG. Given the nature of CBRE's portfolios, all engagements related to the request for underlying managers to complete the CBRE IM Indirect annual ESG due diligence questionnaire.

### CQS

CQS conducted 334 engagements over the year with 59 being climate-related. CQS met with representatives from ENI for a face-to-face meeting in November 2023. As an energy company, they pushed ENI on Science Based

Targets initiative ("SBTi") validation of targets, lack of CDP Forests disclosure, the practicalities of implementing environmental commitments relative to certain projects and diversity. There is currently no SBTi framework for the Oil & Gas sector, but ENI confirmed that they engaged with SBTi directly on this in 2019 during the first round of consultation. After their meeting, the SBTi announced a new Expert Advisory Group ("EAG") with a request for experts from the industry to join and CQS followed up directly with ENI to understand whether they put forward any employees for the EAG and they confirmed that they opted to apply with representation from the Industry Association IPIECA and its Climate Director.

## 24AM

24AM's ABS team made a number of engagements over the year with over 50% being environment related. One of the climate-related engagement was with Lloyds who is a founding member of the Net Zero Banking Alliance. In their ESG strategy, set out in February 2022 and outlined their 2050 net zero plans, they target a 50% reduction in financed emissions by 2030 and a 41% reduction in the carbon intensity of their residential mortgages by 2030. They highlighted that the key challenges lie within mortgages and agriculture – they only have a limited exposure to fossil fuels (less than 1% of their lending to this sector). Their climate transition plan consists of target setting for both the bank financed emissions, which covers a major proportion of their lending (including oil & gas and power generation but mostly focussed on the motor and residential mortgages division), and the emissions financed through its subsidiary Scottish Widows. 24AM will continue to monitor ESG developments and whether they are meeting their targets in terms of carbon emission reduction.





## Targets

### Disclose the target used to assess climate change-related risks and opportunities in line with strategy and risk management process

The Trustee has set the following target for the Scheme to be measured on an annual basis:

Reduce the Scheme's Weighted Average Carbon Intensity (WACI) by 20% under Scope 1 & 2 emissions over the short-term horizon of 3 years from 31 December 2022 (where the data is available<sup>7</sup>).

The target metric<sup>7</sup> has been chosen as a method of monitoring and reducing the levels of carbon intensity in line with the Trustee's duties to invest in the best financial interests of the Scheme and its beneficiaries.

It should be noted that the target applies to approximately 45% of total Scheme assets where WACI data is reportable.

The target excludes assets such as sovereigns. The majority of carbon exposure relating to sovereign assets is mainly to UK government gilts (within the LDI Portfolio). The Trustee has little control over the carbon intensity of the UK and has concluded that a target set to include sovereign assets would be very difficult to influence and change. Carbon intensity is an available metric for investments in sovereign bonds, but it is measured and expressed in a different way compared to corporate WACI. WACI and sovereign carbon intensity cannot be aggregated.

Please note that the coverage differs for different metrics depending on the data available.

Mandate(s)	Asset allocation	Coverage	Change in Weighted Average Carbon Intensity since 2022
Global Bonds / Global Credit / Long-term UK Core Credit	26.7%	59.9%	-22%
DMAG	4.8%	28.0%	-2%
Alternative Credit	2.7%	91.9%	20%
<b>Total</b>	<b>34.2%</b>	<b>-</b>	<b>-</b>

Whilst the LDI portfolio does not form part of the Trustee's overall target, the sovereign carbon intensity reduced by c.4% over the reporting year.

It should also be noted that any improvement in the consistency, availability, comparability and quality of climate related data is likely to have an impact on the Scheme's carbon metrics.

There has been some progress towards the WACI target in respect of the total credit portfolio, however it should be noted that the full effect of this change is impacted by external and economic factors outside of the Trustee's control. The Trustee will look to consider further analysis to better understand the drivers in relation to such movements in future reports.

The Trustee notes that there has been a decrease in emissions intensity for the alternative credit mandate. This is due to the change in methodology adopted by CQS, to use EVIC rather than market cap in their calculations, given EVIC has sufficiently increased coverage for the asset classes this mandate invests in.

The Trustee believes that the current target remains relevant, however, the WACI target will be reviewed to ensure that this continues to be appropriate on an annual basis.

The Trustee is aware of IBM's net zero target and seeks to align the Scheme as best as possible with the company's sustainability policy. When formulating an approach to climate change and the climate transition, different organisations have different opportunities and constraints. From the perspective of the Scheme, the Trustee invests in a number of underlying companies. The investment managers of those funds have discretion over the underlying investments with investee companies to meet the fund's stated investment objectives.

The Trustee aspires to, but has not yet committed to, a net-zero target due to the quality of data. The Trustee will be exploring net zero target setting over the next 12 months and is working with its investment managers to improve the quality of data. The regulations note that *"whilst long term targets such as 'net-zero by 2050' are ambitious, a long term target with no interim targets would not on its own meet our expectation for trustees to consider and appropriately manage climate-related risk. Therefore, the target which trustees set should not be more than 10 years into the future."*

The Trustee recognises that there is still further progress to be made to consider climate-related risks and opportunities in a balanced and proportionate approach in respect of the Scheme, and that the ultimate responsibility of the Trustee is to pay members their benefits, which the Trustee are aiming to do in as sustainable a way as possible.

The final section of this report sets out the short term and long-term actions to move towards the target and progress against the metrics shown in the previous section.

<sup>7</sup> This includes scope 1 and 2 weighted average carbon intensity emissions data where available for the following mandates: Global Bonds, Long-term UK Core Credit, Diversified Multi-Asset Growth and Alternative Credit.



## Conclusions and next steps

### The key messages from this report are:

- The Trustee and ESG sub-committee are equipped in the knowledge of ESG risks and beliefs through training sessions provided by their Investment Advisor.
- The Trustee has enhanced its stewardship reporting and assessment over the year to consider energy efficiency and DEI, as part of its broader ESG considerations which are directly or indirectly linked to climate change.
- The Trustee will continue to engage with the investment managers on moving towards its WACI target and review the appropriateness in future strategic reviews and as part of annual climate change reporting.
- The Trustee will continue to liaise with investment managers on voting and engagement activity in respect of climate change – in particular, where it has been identified that climate engagements are low (i.e. Western).
- The Trustee believes that the current target remains relevant and will review its appropriateness on an annual basis.

Over the next 12 months following the Scheme year-end, the Trustee expects to carry out the following:

- Continued engagement with investment managers on voting and engagement activity in respect of climate change – in particular, with the manager identified above.
- Consideration of climate change risks and opportunities as part of strategic decision-making for the Scheme (including updating the Scheme's scenario analysis).
- Continue to liaise with investment managers to understand the drivers and movements of changes in emissions metrics and how the changes are attributed.

Over the longer term, the Trustee expects to:

- Regularly review the climate-related risks and opportunities in the Scheme and maintain compliance with regulatory requirements, with support from the Scheme's advisors.
- Ensure that it is well equipped with sufficient knowledge of developments around climate change risk through training and a review of skills.
- Annually consider the suitability of the Scheme's investment arrangements to move to the agreed target reduction in carbon exposure.

The Trustee will continue to monitor integration of ESG factors into its decision making and strive for continued improvement by carrying out regular stewardship assessments.



# Appendix

## Roles and responsibilities of those advising or assisting the Trustee on Scheme governance activities

The Trustee monitors the investment managers on a regular and ongoing basis, including with respect to stewardship activities. The investment managers have been appointed based on their credentials, which includes the integration of sustainability at the strategic asset allocation level and the manager selection level.

The Trustee expects the overall approach to climate-related financial risks and opportunities for each of the Scheme's investment managers to be consistent with the governance and reporting of climate change risk statutory guidance. Disclosures consistent with this guidance are also expected of appointed investment managers. The Trustee works with its Investment Advisor, Mercer, to ensure that the investment managers adopt a consistent approach where possible and the Investment Advisor is assessed by the Trustee on an annual basis to the extent that ESG considerations are considered in investment advice provided to the Trustee (where appropriate).

IBM Pensions Trust, the Scheme's in-house pensions team, supports the Trustee with ensuring climate risks and opportunities are considered throughout the Scheme's governance framework and supports the Trustee's engagement with the investment managers. IBM Pensions Trust also works closely with the Trustee's advisors to consider climate-related risks and opportunities, and report back to the Trustee. The in-house team's performance is regularly reviewed by the Governance Committee which focuses on in-house and advisors' performance across a number of activities and deliverables.

IBM Pensions Trust or Mercer, acting on behalf of the Trustee, will engage with underlying investment managers where they are perceived to be lagging their peers in terms of ESG integration and climate risk management, and to ensure the investment managers are voting and engaging with the investee companies in line with the Trustee's engagement priorities. Over the year, the investment managers have been challenged on how ESG is integrated into their investment processes as part of the Trustee's ongoing stewardship monitoring.

### **Mercer** supports the Trustee by:

- Carrying out climate-related scenario analysis, advice and training on the selection of climate-related metrics for the Scheme;
- Advising on the investment strategy and investment manager appointments (where applicable), including managing and monitoring investment-related risks, such as climate change;
- Providing Mercer's ESG ratings on prospective and current managers, supplementing the Trustee's manager monitoring process and offering an independent view of their climate change credentials;
- Undertaking an annual stewardship review of the investment managers and the mandates in which the Scheme invests.



### **External Advisors**

**Cardano** provides an assessment of the Sponsor's ability and willingness to continue to support the Scheme, taking into account climate-related factors.

**Sackers** provides advice as necessary on legal risks and regulatory developments including those relating to climate change.

**Willis Towers Watson** assists the Trustee in assessing the potential impact of climate-related risk on the Scheme's valuation and funding assumptions.

## Short, medium and long-term drivers of climate risk

Short Term	Medium Term	Long Term
<p><b>Rapid market re-pricing relating to climate transition:</b></p> <ul style="list-style-type: none"> <li>• <b>Scenario pathways become clearer.</b> For example, a change in the likelihood of below 1.5°C scenario occurring becoming higher and driving the transition risk.</li> <li>• <b>Market awareness grows.</b> For example, the implications of the physical impacts of climate change become clearer to markets and impact asset valuations.</li> <li>• <b>If policy changes unexpectedly, it could surprise markets.</b> For example, if a carbon price or significant regulatory requirements are introduced across key markets to which the portfolio is exposed, at a sufficiently high price to impact behaviour.</li> <li>• <b>Substitution of existing products and services with lower emission alternatives</b> may impact part of the portfolio.</li> <li>• <b>Litigation risk</b> relating to dangerous warming becoming more prevalent.</li> <li>• <b>Increases in the energy/heat efficiency</b> of buildings and infrastructure.</li> </ul>	<p>Transition to a low carbon economy are still likely to dominate:</p> <ul style="list-style-type: none"> <li>• <b>Development of technology</b> and low carbon solutions.</li> <li>• <b>Policy, legislation and regulation</b> are likely to also play a key role at the international, national and subnational level.</li> <li>• <b>Technology and policy changes</b> are likely to produce winners and losers both between and within sectors.</li> <li>• <b>Advancement of transition</b> is likely to have started to crystallise stranded asset risks over the medium term.</li> </ul> <p>The Trustee's ability to understand these changes may position it favourably, for example by increasing investments in new emerging technologies. The Trustee will consider this further as part of any future manager appointments and ongoing manager engagement.</p>	<p>Physical risks are expected to come to the fore:</p> <ul style="list-style-type: none"> <li>• <b>The impact of natural catastrophes</b> leading to physical damages through extreme weather events.</li> <li>• A lack of important natural resources such as water and food due to <b>changes in weather patterns</b>.</li> </ul> <p>The Trustee's ability to understand these changes may position it favourably in the future, for example by increasing investments in infrastructure projects that display a high level of climate resilience. A changing climate may directly impact the viability of some assets or business models (for example, flood risk for real estate, or drought / fire risk for timberland assets).</p>



# Climate scenario modelling approach

## Modelling Assumptions

Liability Cashflows based on information from the 31 December 2021 actuarial valuation rolled forward to 30 June 2022 on a gilts + 0.5% p.a. basis.

### Economic model

- Analysis is shown at 30 June 2022
- The assumptions are based on Mercer's Stochastic scenarios.

### Mercer's Assumptions Underlying Climate Scenario Analysis

- The table below shows the 3<sup>rd</sup>, 8<sup>th</sup> and 28<sup>th</sup> year annualised return impacts for each asset class relative to the annualised baseline assumption as at 30 June 2022:

Asset Class	Baseline			Failed Transition			Orderly Transition			Rapid Transition		
	3 Years	8 Years	28 Years	3 Years	8 Years	28 Years	3 Years	8 Years	28 Years	3 Years	8 Years	28 Years
Global Investment Grade Credit	5.7%	5.2%	5.2%	0.1%	-0.3%	-0.1%	0.1%	-0.1%	0.0%	-0.1%	0.1%	0.0%
UK Investment Grade Credit	7.5%	6.3%	5.6%	0.2%	-0.4%	-0.1%	0.2%	-0.1%	0.0%	-0.3%	0.0%	0.0%
Cash	4.3%	4.1%	4.6%	0.0%	0.1%	0.1%	0.0%	-0.1%	-0.1%	0.0%	0.1%	0.0%
UK Real Estate	7.7%	7.6%	7.6%	0.9%	-0.5%	0.0%	0.4%	-0.6%	-1.4%	-0.8%	-0.1%	0.0%
UK Private IG Credit	9.4%	8.7%	8.1%	0.2%	-0.3%	-0.1%	0.1%	-0.1%	0.0%	-0.2%	0.1%	0.0%
UK Floating Rate Note IG Credit	7.5%	6.3%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Global Senior Private Debt	9.4%	8.7%	8.1%	0.2%	-0.3%	-0.1%	0.0%	-0.1%	-0.1%	-0.1%	0.2%	0.0%
Emerging Markets Equity	11.0%	10.8%	11.2%	1.8%	-1.3%	-0.3%	0.3%	-0.4%	-1.7%	-1.0%	-0.1%	-0.1%
UK Sovereign Bonds	4.5%	4.4%	4.4%	-0.1%	-0.1%	0.0%	0.1%	0.1%	0.0%	-0.1%	-0.1%	0.0%
Hedge Fund	6.8%	6.6%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%

The baseline represents what is assumed the market is currently pricing in. In terms of what is priced in today, a weighted assumption has been applied as follows: 10% Failed Transition, 40% Orderly Transition, 10% Rapid Transition and 40% weighting to a range of low impact scenarios.

## Climate scenario narratives

	Rapid Transition	Orderly Transition	Failed Transition
Summary	Sudden divestments in 2025 to align portfolios to the Paris Agreement goals have disruptive effects on financial markets with sudden repricing followed by stranded assets and a sentiment shock.		
<b>Cumulative emissions to 2100</b>	416 GtCO <sub>2</sub> e	810 GtCO <sub>2</sub> e	5,127 GtCO <sub>2</sub> e
Key policy and technology assumptions	<p>An ambitious policy regime is pursued to encourage greater decarbonisation of the electricity sector and to reduce emissions across all sectors of the economy.</p> <p>Higher carbon prices, larger investment in energy efficiency and faster phase out of coal-fired power generation under a 'Rapid' transition.</p>		
Financial climate modelling	Pricing in of transition and physical risks of the coming 40 years occurs within one year in 2025. As a result of this aggressive market correction, a confidence shock to the financial system takes place in the same year.	Pricing in of transition and physical risks until 2050 takes place over the first 4 years.	Physical risks are priced in two different periods: 2026-2030 (risks of first 40 years) and 2036-2040 (risks of 40-80 years).
Physical risk impact on GDP	<p>Physical risks are regionally differentiated, considerable variation in expected temperature increase per region and will increase dramatically with rising average global temperature. Physical risks are built up from:</p> <p>Gradual physical impacts associated with rising temperature (agricultural, labour, and industrial productivity losses)</p> <p>Economic impacts from climate-related extreme weather events</p> <p>Current modelling does not capture environmental tipping points or knock-on effects (e.g. migration and conflict).</p>		
Physical risk impact on inflation	Gradual physical impact (supply shocks) on inflation included through damages to agriculture and change in food prices. Total impact on a Global CPI Index is +2% in 2100.	No explicit modelling of physical risk impact on inflation (supply-side shocks). Impact on inflation follows historical relationship between GDP and CPI.	Severe gradual physical impact (supply shocks) on inflation included through damages to agriculture and change in food prices. Total impact on a Global CPI Index is +15% in 2100

## Limitations associated with climate modelling

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

1. The further into the future that is modelled, the less reliable any quantitative results will be.
2. Looking at average asset class returns over multi-decade timeframes leads to small impacts. The results are potentially significantly underestimated.
3. There is a reasonable likelihood that physical impacts are grossly underestimated. Feedback loops or 'tipping points', like permafrost melting, are challenging to model particularly around the timing of such an event and the speed at which it could accelerate.
4. Financial stability and insurance 'breakdown' is not modelled. A systemic failure may be caused by either an 'uninsurable' 4°C physical environment, or due to the scale of mitigation and adaption required to avoid material warming of the planet.
5. Most adaptation costs and social factors are not priced into the models. These include population health and climate-related migration.

## Impact of climate scenarios on expected returns

Annualised Returns (%)	Rapid Transition		Orderly Transition		Failed Transition	
	Expected Return (Baseline)	Climate Impact	Expected Return (Baseline)	Climate Impact	Expected Return (Baseline)	Climate Impact
Impact at 3 years	5.7%	0.1%	5.7%	-0.1%	5.7%	0.1%
Impact at 8 years	5.2%	-0.1%	5.2%	0.1%	5.2%	-0.1%
Impact at 28 years	5.3%	0.0%	5.3%	0.0%	5.3%	-0.2%

## Summary of the climate scenarios considered in the covenant assessment by Cardano

	Orderly Transition – 1.8°C scenario	Rapid Transition – 1.5°C scenario	Failed Transition - Between 3-4°C scenario
<b>Scenario outline</b>	Global decarbonisation <b>starts now</b> so policies intensify gradually but immediately. Large transition changes will happen quickly	Temperature increase is limited to 1.5°C to achieve carbon neutrality by 2050, but with <b>delayed implementation</b> beginning in 2025	<b>No new transition policies above existing commitments</b> leads to continued increase in greenhouse gas emissions and rise in global temperature
<b>Physical risks</b>	<b>Long-term physical risks are reduced</b> but deviations from present climate still expected	<b>Long term physical risks are reduced</b> but deviations from present climate still expected	More <b>pronounced physical risks</b> , particularly over the longer-term
<b>Transition risk</b>	<b>Highest in the near-term</b> as policies are implemented immediately	<b>Highest in the medium term as policy implementation is delayed</b>	<b>Limited transition risks</b> over and above existing commitments and policies
<b>Macro-economic impact</b>	Overall longer-term <b>impact on GDP growth muted</b> , with assumed long-term benefit from green tech investment	Compressed nature of emission reductions <b>drives material short term macroeconomic disruption in 2025</b> and a sharp fall in GDP	UK and global <b>GDP growth permanently lower</b> with that impact growing over time. Macroeconomic uncertainty increases

## Ongoing risk management activities of the Scheme

<b>Governance</b>	<ul style="list-style-type: none"> <li>The Trustee <b>actively considers ways to further enhance the process of identifying and assessing climate-related risks and opportunities</b>. The <b>Scheme's risk register</b> includes ESG and climate change risks, and is reviewed by the Trustee Board's Governance Committee to ensure that the Scheme's risks are effectively managed.</li> <li>The <b>overall register is reviewed in detail annually</b> in the course of the Trustee's overall risk management approach, with the <b>most prominent risks being reviewed quarterly</b>. It is used to effectively identify, prioritise, manage and monitor risks associated with the Scheme and the escalations of risk are managed by internal controls in place.</li> <li>The <b>Trustee and ESG sub-committee receive training</b> from Mercer as appropriate on climate-related issues, including market and regulatory updates.</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>Climate change-related risks and opportunities are taken into account as part of the <b>investment strategy advice</b> provided by Mercer.</li> <li><b>Climate change scenario modelling</b> (described in the previous section) provides a top down strategic assessment of climate change risks at the asset class level across transition and physical risks, providing the estimated impact of climate change on the Scheme's investment strategy and funding level. The last assessment was carried out in 2021 and the next assessment is expected to take place in late 2024/early 2025.</li> <li>The Trustee has commissioned <b>covenant analysis</b> carried out by Cardano as part of this report, to understand the impact of climate change risk on the covenant of the Scheme's sponsor.</li> <li>The Trustee sees its <b>target to reduce the level of carbon intensity</b> within the Scheme's investment portfolio as a means to manage climate transition risks.</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>A <b>summary of the managers' voting and engagement actions over the year (including examples) are disclosed</b> in the <a href="#">Implementation Statement</a> which is reviewed on an annual basis by the Trustee.</li> <li>The Trustee monitors integration of ESG factors within its investment decision-making through <b>annual RITE assessments</b>.</li> </ul>
<b>Manager monitoring</b>	<ul style="list-style-type: none"> <li>The Scheme's <b>custodian and underlying investment managers have been asked to provide information which covers carbon emissions analysis and non-carbon emissions climate-related metrics</b> (described in the next section). This analysis helps identify key sources of company and sector-level carbon risks, as well as monitoring the continued engagement on climate-related issues. The metrics are reported and monitored on an annual basis.</li> <li>The Trustee recognises that <b>active management by the investment managers will continue to be a very important</b> part of the Scheme's approach to managing these risks. The Trustee expects companies in its portfolio to manage climate change risks. Where relevant, <b>managers are invited to present to the Trustee to explain their approach to climate change risk management</b>, amongst other topics. Stewardship activities can help hold companies to account and ensure they are taking a meaningful approach in this area.</li> <li>The Trustee receives <b>quarterly investment performance reporting</b> and has access to ESG investment manager ratings produced by Mercer for the Scheme's investment managers. These ratings assess the degree to which managers integrate ESG considerations, including climate change, into their investment processes and active ownership activities. If a manager is considered to be "lagging the market", the Trustee will engage with the relevant investment manager(s) to strongly encourage that they improve in policies and practises in this area.</li> <li><b>Mercer carries out an annual Stewardship and ESG Manager Ratings Assessment.</b></li> </ul>
<b>Manager Selection and Retention</b>	<ul style="list-style-type: none"> <li>The Trustee, with advice from Mercer, will <b>consider an investment manager's firm-wide and strategy-specific approach to managing climate-related risks and opportunities</b> when either appointing a new manager, in the ongoing review of a manager's appointment, or as a factor when considering the termination of a manager's appointment.</li> <li>Mercer rates investment managers on the extent of integration of ESG factors (including climate change) into their processes. <b>A manager's stewardship process forms part of the rating assessment</b>. This is considered at the firm level and at the investment strategy/fund level.</li> </ul>



## Climate-Related Metrics: Cardano LDI portfolio (31 December 2022)

Manager	Value (£m)	Proportion of Total Scheme Assets (%)	Proportion of fund that is reportable (%)	Coverage of reportable assets (%)	Total Carbon Emissions (Scope 1 & 2) (tons CO2e)	Sovereign Carbon Intensity (Scope 1 & 2) (tons CO2e / \$M PPP adjusted GDP)
Cardano	478	49.7	100.0	100.0	78,312	136.1

Source: Cardano, MSCI and Mercer, 31 December 2022.

% of fund directly analysed reflects coverage under the MSCI tool used in this analysis.

Sovereign analysis has been conducted in line with the recommended methodology set out in the ongoing PCAF consultation. Intensity formula: Production Emissions / PPP Adjusted GDP (\$M). Data for Production Emissions (GHG) for 2021 sourced from [EDGARv7.0 website](#), Crippa et al. (2021, 2022). Data for PPP Adjusted GDP for the latest available data (2020-2021) sourced from [The World Bank](#).

\*For LDI, absolute emissions in respect of funded gilts exposure (£439M) are 71,863 tCO2e and through TRS to UK gilts (£39M) are 6,449 tCO2e. Emissions from total exposure to UK gilts (£478M) is shown in the table above. The exposure to cash (£38M) was not included in the analysis.

## Portfolio Alignment - Implied Temperature Rise (ITR)

Asset Class	Manager / Mandate	2022: Implied Temperature Rise °C	2023: Implied Temperature Rise °C
Global Bonds	Northern Trust	-	-
Long-term UK Core Credit	PIMCO	-	1.5 – 2.0: 46% 2.0 – 2.5: 11% 3.0 – 4.0: 42%*
	Western Asset Management	-	2.4
	Goldman Sachs Asset Management	-	1.9
Diversified Multi-Asset Growth	MGIE	2.7	3.0
Property	CBRE	-	-
Alternative Credit	CQS	2.6	2.3**
Secured Finance	24AM	-	-
LDI	Cardano	-	-

Source: Northern Trust, Mercer (Diversified Multi-Asset Growth and LDI), CBRE, CQS and 24AM as at 31 December 2022 and 31 December 2023. "-" indicates where data not available.

\* PIMCO are "unable to provide a portfolio number for implied temperature rise due to methodological challenges" and believe that "reporting this metric as per a breakdown across implied temperature rise scores remains best practice".

\*\* CQS ITR figure uses MSCI ITR methodology. Under this methodology, "each issue ITR is 2 plus the Global 2 Degree scenario Carbon Budget multiplied by the transient response to cumulative carbon dioxide emissions factor (TCRE) (that defines the relationship between the absolute additional emissions and temperature increase) multiplied by the proportion of the total budget of the issuer (in tonnes) and the total under/overshoot of the issuer (in tonnes). These are then weighted by the portfolio exposure, such that the covered exposure should be used for reporting purposes (this assumes the uncovered portion of the portfolio will represent the same temperature alignment as the covered portion of the portfolio)." CQS have also provided an additional ITR figure of 1.9°C (2022) / 1.8 °C (2023) which uses CQS's overlay ITR Methodology.

## Disclaimer(s)

### Northern Trust

The Scheme's carbon metrics data has been sourced from the IBM UK Investment Risk & Analytical Services ESG Insights: Climate Focus report provided by Northern Trust, the custodian of the Scheme's assets. The information in the Northern Trust report has been prepared using the best available data. It may also contain information provided by third parties or derived from third party data and/or data that may have been categorised or otherwise reported based upon client direction – Northern Trust assume no responsibility for the accuracy, timeliness or completeness of any such information.

Data Source: Institutional Shareholder Services (ISS)

### Other Investment Managers

The Trustee has obtained data from the Scheme's investment managers (in addition to Northern Trust), where data is available in relation to metrics that are not already calculated and provided by the custodian, and data in respect of the non-emissions based metric. The information provided in this report may be obtained via other third-party sources and is for the sole purpose of preparing the Climate Change-related disclosures report for the Scheme.

### Cardano

The Trustee is required to consider an integrated assessment of the exposure of the Scheme's assets, liabilities and employer covenant to at least two climate related scenarios (one of which must be low warming).

The covenant assessment completed by Cardano sets out a high-level assessment of the potential exposure of the Scheme's employer covenant over three climate scenarios. Cardano's assessment is based on the IBM Group rather than the Scheme's employer (IBM UK) given the integrated nature of the Group.

In preparing this covenant assessment, Cardano have relied on information from numerous sources, including governments, scientific journals and IBM (including the 2023 ESG Report). Cardano have not verified the accuracy of this information or attempted to include it in full in their covenant assessment document.

### Mercer

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