

The TCFD logo consists of the letters 'TCFD' in a bold, white, sans-serif font. A small horizontal line is positioned above the 'T'. To the right of the letters is a vertical line, followed by the text 'TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES' in a smaller, white, sans-serif font.

TCFD

TASK FORCE ON
CLIMATE-RELATED
FINANCIAL
DISCLOSURES

Climate disclosures for year ending 5 April 2024

Produced by: The Trustee Directors (“the Trustee”) of the Plumbing & Mechanical Services (UK) Industry Pension Scheme (“the Scheme”)

Date: May 2024

Introduction

Climate change is affecting the planet, causing extreme weather events, impacting crop production, and threatening the Earth's ecosystems. Understanding the impact of climate change and the Scheme's vulnerability to climate-related risks will help us to mitigate the risks and take advantage of any opportunities.

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

Better climate reporting should lead to better-informed decision-making on climate-related risks. And on top of that, greater transparency around climate-related risks should lead to more accountability and provide decision-useful information to investors and beneficiaries.

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

- **Governance:** The Scheme's governance around climate-related risks and opportunities.
- **Strategy:** The actual and potential impacts of climate-related risks and opportunities on the Scheme's strategy and financial planning.
- **Risk Management:** The processes used to identify, assess, and manage climate-related risks.
- **Metrics and Targets:** The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

This document is the annual TCFD report for the Scheme for the year ended 5 April 2024. It has been prepared by the Trustee.

What is TCFD?

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

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



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Executive summary

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

Summary of findings

Overview of the Scheme

The Trustee aims to invest the assets of the Scheme prudently to ensure that the benefits promised to members are provided in full. Over the reporting year, we have continued to invest into equity, credit, property, inflation protection illiquid securities and a Liability Driven Investment ("LDI") strategy. We continue to hold a bulk annuity policy (a "pensioner buy-in") and have invested in a new infrastructure mandate.

Strategy

We have undertaken quantitative climate change scenario analysis to assess the impacts on all the different asset classes in which the Scheme invests. Through the analysis, we have identified the Scheme exhibits a reasonable level of resilience to climate related risks. The resilience was primarily driven by the Scheme's diversification of assets classes with the low proportion of equities and the high levels of hedging against changes in interest rates and inflation.

From the qualitative analysis, it became apparent that climate related risks and opportunities impact all the different asset classes in which the Scheme invests. Over time, there was a general expectation that the impact of both physical and transition risks increases. Alongside this, climate change provided numerous investment opportunities for the different asset classes.

Risk Management

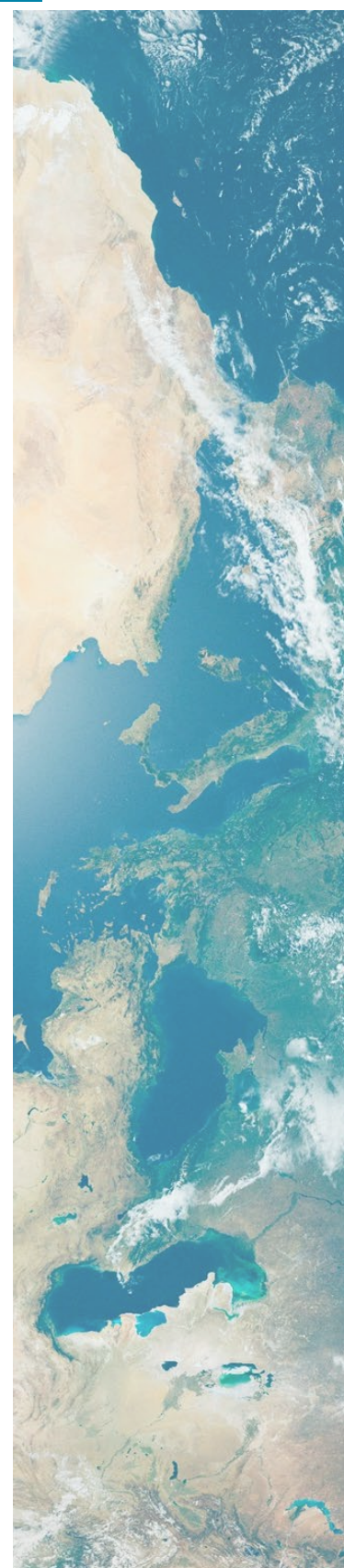
We have integrated the consideration of climate related risks into our policies and processes. We have a clear policy on stewardship outlined in our Statement of Investment Principles, which can be found here:

<https://www.plumbingpensions.co.uk/investments>

We have outlined how we integrate climate related risks within the Scheme's overall strategy on pages 25-30 of this report.

Metrics and Targets

We gathered the carbon metrics data from our investment managers. As required, we have, as far as we are able, collated the data for total greenhouse gas emissions, carbon footprint, data quality and how well the portfolio is aligned with the goal of limiting the increase in the global average temperature to 1.5°C above pre-industrial levels via the Implied Temperature Rise (ITR) associated with the invested assets.



Material investment managers of the Scheme were contacted for carbon metrics information, and we are pleased to note that most of the managers were able to provide full or partial data.

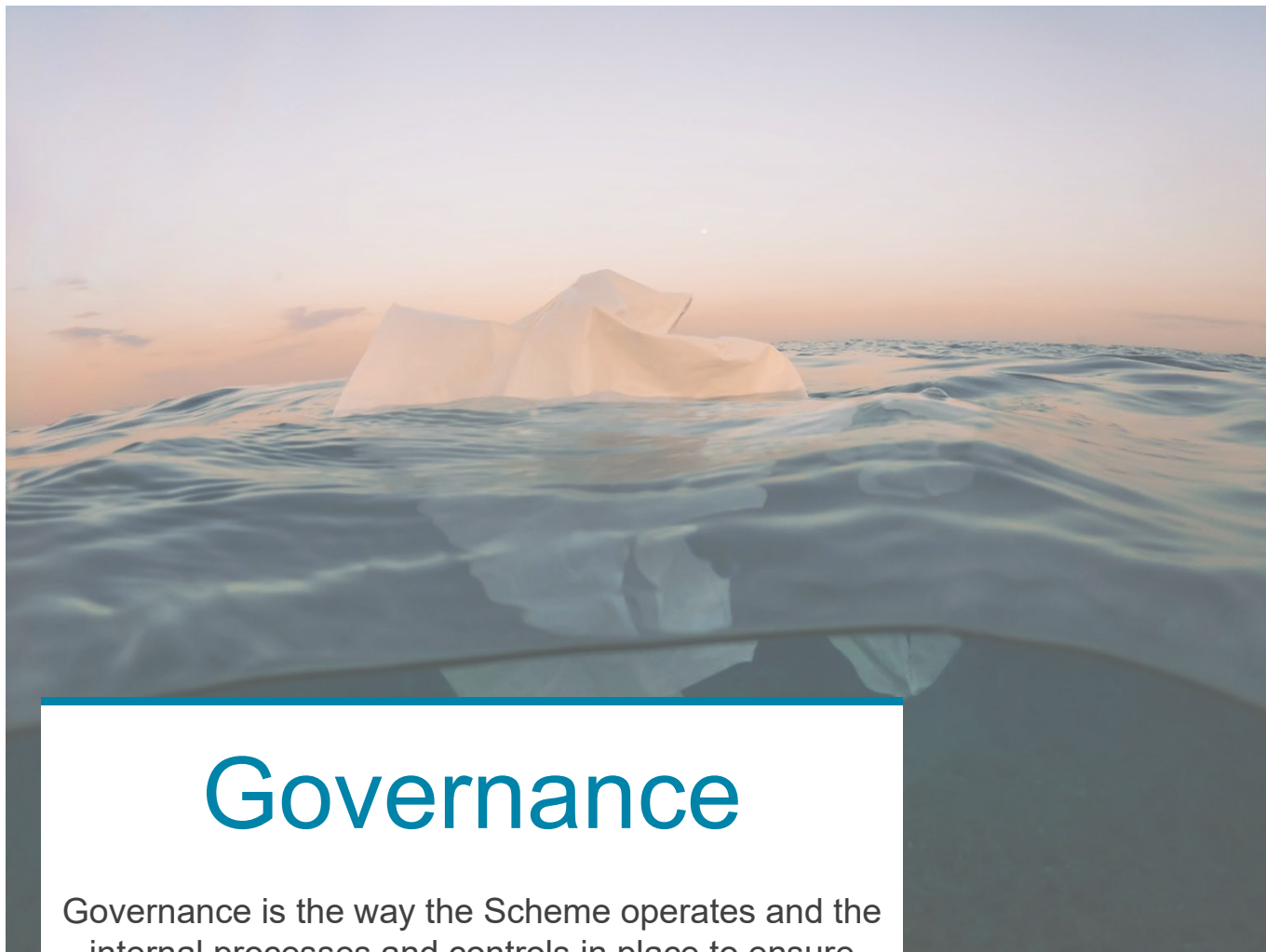
We observed that there was variability of data availability for scopes 1, 2 and 3. This varied between investment managers and also across asset classes.

We also saw an improvement in its data coverage for scope 1 and 2 emissions, however we recognise that more work needs to be done to reach the data coverage target for all of the Scheme's emissions, including scope 3. More detail is provided on pages 31-38.

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

Andy McKinnell

Andy McKinnell, Chair of the Investment, Funding & Covenant Committee on behalf of the Trustee Directors of the Plumbing & Mechanical Services (UK) Industry Pension Scheme.



Governance

Governance is the way the Scheme operates and the internal processes and controls in place to ensure appropriate oversight. Those undertaking governance activities are responsible for managing climate-related risks and opportunities. This includes us, the Trustee and others making Scheme-wide decisions, such as those relating to the investment strategy or how it is implemented, funding, the ability of the participating employers to support the Scheme and liabilities.



Our Scheme's governance

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

We have discussed and agreed climate-related beliefs and the Scheme's approach to managing climate change risk and the opportunities these may present. These are set out in the Scheme's Statement of Investment Principles (“SIP”), which is reviewed at least every three years (or sooner in the event of a significant change in investment policy) by the Trustee.

Our climate beliefs

We believe that the risks associated with climate change can have a materially detrimental impact on the Scheme's investment returns within the timeframe that we are concerned about and, as such, we integrate assessments of climate change risk into our investment decisions.

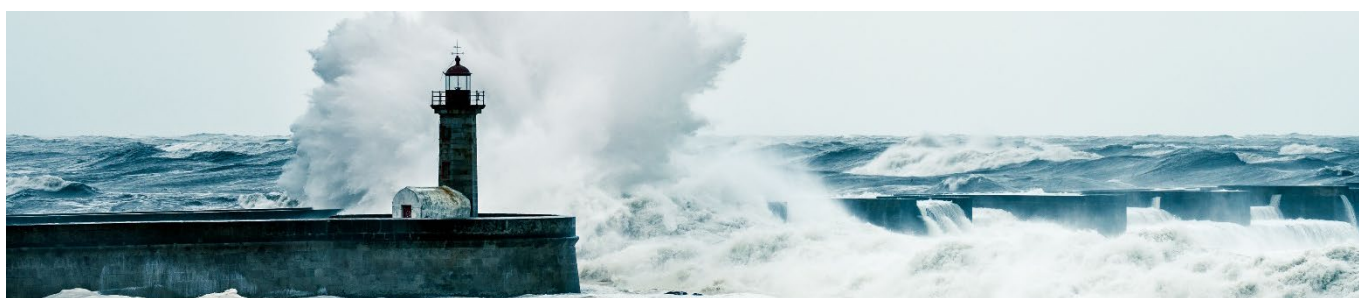
We believe that climate-related factors may create investment opportunities. Where possible, and appropriately aligned with our strategic objectives and fiduciary duty, we will seek to capture such opportunities through the Scheme's investment portfolio.

We assess climate related risks and opportunities over multiple time horizons. We have decided the most appropriate time horizons for the Scheme are:

- short term: 1-3 years
- medium term: 4-10 years
- long term: 11-20 years

Climate-related risks and opportunities are integrated into our risk management framework so we can maintain oversight of the climate-related risks and opportunities that are relevant to the Scheme.

We receive regular training on climate-related issues, when appropriate, to develop the appropriate degree of knowledge and understanding on these issues to support good decision-making.



We expect our advisers to bring important and relevant climate-related issues and developments to our attention in a timely manner, informing us of their relevance to the Scheme and incorporating climate related issues into advice.

We have delegated oversight and day-to-day implementation of the Scheme's climate change risk management framework to an Investment, Funding & Covenant ("IFC") Committee, which is a sub-committee of the Trustee Board.

We regularly monitor and review progress against the Scheme's climate change risk management approach.

Role of the Investment, Funding & Covenant ("IFC") Committee

The IFC monitors and reviews progress against the Scheme's climate change risk management approach on an annual basis. The IFC keeps the Trustee Board apprised of any material climate-related developments through regular updates.

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

- ensuring investment proposals consider the impact of climate risks and opportunities.
- engaging with the Scheme's investment managers to understand how climate risks are considered in their investment approach.
- working with the investment managers to disclose relevant climate-related metrics as set out in the TCFD recommendations.
- ensuring that stewardship activities are being undertaken appropriately on the Scheme's behalf.
- monitoring and reviewing progress against the Scheme's risk management framework.

How we work with our advisors

We expect our advisers and investment managers to bring important climate-related issues and developments to our attention in a timely manner. We expect our advisers and investment managers to have the appropriate knowledge on climate-related matters.

Investment adviser - our investment adviser, Aon, provides investment-related strategic advice and support on our climate-related risks and opportunities. This includes regular training and updates on climate-related issues, climate change scenario modelling and ESG ratings for investment managers.

Scheme Actuary - the Scheme Actuary, Willis Towers Watson, helps us assess the potential impact of climate-related risks on the Scheme's funding where relevant.

Covenant adviser - our covenant adviser, Interpath Advisory, helps us understand the potential impact of climate-related risk on the industry and employer covenant for the Scheme.

Trustee update

In preparation for this report, the Trustee has familiarised itself with the additional TCFD reporting requirements on assessing and managing the aforementioned risks.

Training was received in relation to the regulatory changes occurring in 2022, and how this would impact the Scheme. The training covered the introduction of new metrics, including the portfolio alignment metrics and changes to the additional climate metrics.

This was covered in a IFC meeting in August 2023 with the aim to better equip the Trustee ahead of the preparation of its second year TCFD report.



Strategy

It is crucial to think strategically about the climate-related risks and opportunities that will impact the Scheme if we stand a chance of mitigating the effects of climate change.

Assessing the climate-related risks and opportunities the Scheme is exposed to is key to understanding the impact climate change could have on the Scheme in the future.



What climate-related risks are most likely to impact the Scheme?

In 2022, we carried out a qualitative risk assessment of the asset classes the Scheme is invested in. From this we identified which climate-related risks could have a material impact on the Scheme. We also considered climate-related opportunities. This year, we reviewed the risk assessment and have concluded that it remains appropriate for the Scheme because the investment strategy and the funds the Scheme is invested in has broadly remained unchanged. Last year's assessment is included below.

To help us with our assessment, we surveyed our investment managers asking them to rate the climate-related risks and opportunities they believe their fund(s) is(are) exposed to.

Our investments

The Scheme's investment portfolio is diversified across a range of different asset classes including equities, credit, property, infrastructure, LDI and inflation protecting illiquids.

The Scheme's asset allocation is as follows:

DB section:

Asset Class	LDI	Equities	Property	Infrastructure	Credit	Inflation Protecting Illiquid
Strategic Allocation	49%	5%	9%	6%	23%	6%

Note: asset allocation as at 30 June 2023. Cash excluded from asset allocation but is equal to c.2%.

Trustee update

The climate-related risk and opportunities assessments provided by the underlying managers remain broadly consistent with last year's responses.

Insight has been able to provide its assessment of climate related risks and opportunities for the Asset Backed Securities ("ABS") fund, and LGIM updated its assessment of climate related risks to reflect an improvement in medium to long term risks ratings on the LDI Fund.

Climate related risk assessment

The notion that there are “climate risks” in financial portfolios is now a well-established one. So, what are climate risks? In short, the idea is that climate change impacts the financial performance of companies and therefore also the risk-return profile of the securities they issue. Climate risks are typically categorised along two dimensions described below.

Transition risks

Transition risks relate to the need to transition to a low-carbon economy, including development of, and investment in, new technologies and services that support this transition as well as government policy to aid in the transition. Specific market-based activities comprise the mitigation of carbon emissions, and/or adaptation to be resilient against climate change:

- **Mitigation:** technologies and services that increase energy efficiency, relate to increased renewable energy uptake and decreased demand for fossil fuels, and/or capture or sequester carbon dioxide.
- **Adaptation:** infrastructure resiliency efforts, business model shifts (e.g., changing geographic location of production and/or sales, introduction of new products and services and aligning business models with new environmental conditions).

Potential financial impacts from this transition include:

- **Revenue loss (demand contraction):** reduced demand for fossil fuels, related services, and energy consuming products.
- **Stranded assets:** devaluation/impairment or “asset stranding” of fossil fuel reserves.
- **Revenue growth:** growth in renewable energy, emergence of new industries, including carbon capture and sequestration, smart grid technologies, energy-efficient products, infrastructure adaptations, and green chemistry solutions.
- **Long-term cost reductions:** operational cost reduction from investments in updated infrastructure and technologies that facilitate the transition to a low-carbon, resilient economy.

Furthermore, the transition comes with policy and legal risks, including:

- **Carbon pricing mechanisms** (e.g., carbon taxes), already implemented in over 25 countries.
- **Litigation risk:** driven by the failure of companies to mitigate impacts of climate change, failure to adapt to climate change, and the insufficiency of disclosure around material financial risks.

Physical risks

A changing climate can lead to changes in the frequency and severity of extreme or incremental hazards. The TCFD recommendations refer to these hazards as acute and chronic, respectively. Acute hazards represent severe and extreme events and are location specific (e.g., droughts, heatwaves, storms, wildfire, etc). Chronic climate change represents the background incremental changes in, for example: temperature, precipitation, and sea-level rise over several decades.

Acute and chronic climate-related hazards

Acute	Chronic
Extreme heat	Water stress
Extreme rainfall	Sea level rises
Floods	Land degradation
Droughts	Variability in temperature
Storms (e.g., hurricanes)	Variability in precipitation

How the risk assessment works



Risk categories

In the analysis, the climate-related risks have been categorised into physical and transitional risks.

Transition risks are associated with the transition towards a low-carbon economy.

Physical risks are associated with the physical impacts of climate change on companies' operations.



Ratings

The analysis uses a RAG rating system where:

Red denotes a high level of financial exposure to a risk.

Amber denotes a medium level of financial exposure to a risk.

Green denotes a low level of financial exposure to a risk.



Time horizons

We assessed the climate-related risks and opportunities over multiple time horizons considering the liabilities of the Scheme and its obligations to pay benefits. We decided the most appropriate time horizons for the Scheme are:

- short term: 1-3 years.
- medium term: 4-10 years
- long term: 11-20 years

More details with regards to transition and physical risks can be found in the Appendix.

Key conclusions

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

Passive equities account for a small portion of the portfolio and are expected to experience low levels of financial risk in the short term, influenced by the managers 'green' ratings in the short term for both physical and transition risks. The risks increase in the medium to long terms, which is mainly driven by transitional risks as a result of the adverse effects of climate change.

The property portfolio is likely to experience high physical risks arising from climate change which could lead to property damage and other financially material impacts.

The inflation protection illiquids portfolio is likely to experience relatively low to medium impacts from climate change. This is the result of the fund having a low exposure to climate hazards across all time horizons considered.

Credit also accounts for a significant part of the Scheme's assets, and shows some high-risk areas, particularly in relation to the long-term horizon. The asset backed securities fund experiences low levels of impact due to climate change in the short term but this changes to a more significant impact in the medium to long term. This is because physical risks will become more prevalent to the fund over this time horizon and both regulatory and technology changes as a result of the transition to a low carbon economy will have an adverse impact on this fund.

LDI, which is a significant portion of the Scheme's assets, is deemed a low-risk area in terms of exposure to climate-related risks (particularly in the short term), indicated by the green ratings over both physical and transition risks. However, transition risks are more prevalent in the medium to long-term as policy changes impact demand patterns, which may cause yields to rise explaining the amber rating in the long-term.

Overall, we have taken proactive steps over the year to mitigate climate-related risks, including:

- Close monitoring of stewardship activities carried out by its investment managers (to ensure they are appropriately engaging with investee companies on the management of climate risks);
- Integrating climate considerations into all fund reviews and selections, including the appointment of managers with specific sustainability and climate objectives.

For more a detailed risk assessment by asset class please read on.

Climate-related risk assessment – in detail

LGIM – Passive Equities – 5% of portfolio

Physical Risks

	Acute	Chronic
Short	G	G
Medium	A	G
Long	A	A

The Manager does not expect material climate-related financial impact at a global equity index level in the short term. However, medium term acute physical risk exposure is likely to increase, with chronic risks still not posing a material risk. When approaching the long-term horizon, risks associated with extreme weather events are likely to cause business interruptions and have a negative effect on economic performance, having an overall growing impact at the portfolio level. The Manager believes that uncertainty around future climate pathways could make some geographies 'uninsurable' resulting in write-offs of productive assets.

Transitional Risks

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

The Manager considers the transition risks to be minimal in the short-term but more significant as they approach the long-term across all types of risks. The Manager believes that those that are ill-prepared for adopting low-carbon technologies will face severe risks. The growing demand and supply of key raw materials for low-carbon technologies resulting in a large drop in fossil fuel use is likely to have large financial repercussions at a global equity index level, alongside the rising price of carbon which also poses significant risks going forward. Reputational risks in the long-term are likely, arising from loss of social licenses and social unrest if climate policy is not addressed sufficiently.

DTZ – UK Property – 9% of portfolio

Physical Risks

	Acute	Chronic
Short	N/A	A
Medium	N/A	A
Long	R	R

Physical risks arising from climate change could lead to property damage and material financial impacts, particularly in geographically vulnerable areas. The principal physical climatic risk experienced in the UK is fluvial flooding (categorised as an 'acute' risk). However, the Manager does not see material acute risk in the short or medium term for the portfolio. Over the long-term, the investment manager sees rising temperature and rising sea levels potentially affecting portfolio assets - categorising it as a high risk.

Transitional Risks

	Regulatory	Technology	Market	Reputation
Short	A	N/A	N/A	N/A
Medium	N/A	N/A	R	A
Long	A	N/A	N/A	N/A

In the short-term, the Manager sees emerging climate-related regulatory compliance and enhanced emissions reporting obligations as a medium-term risk. Medium-term transition risks include increased cost of utilities across the portfolio, changing investor behaviour and shifts in customer preferences to more sustainable products and increased stakeholder concern. Evolving regional and national planning requirements have been identified as long-term transition risks for the portfolio.

Note: N/A denotes that the risks do not apply to the asset class over the specified time horizons (or at all).

CBRE – Inflation Protection Securities Fund – 6% of portfolio

Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	G	G

The Fund has a low average exposure to acute and chronic physical climate hazards across all time horizons as indicated by the green rating in the table above. The Manager utilises the Moody’s Physical Risk Tool methodology. Based on this analysis, it was concluded that the portfolio has a medium average exposure to floods, low exposure to hurricanes and typhoons (i.e., extreme winds), and generally no exposure to sea level rise. Individual assets might have different exposures to individual hazards.

Transitional Risks

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

The Manager believes there are reputational risks for real estate managers in medium and long terms due to managers failing to set and meet relevant climate-related targets and reducing emissions. The Manager is managing reputation based transitional risks through underlying asset-level processes from energy performance certificates (EPC) performance management to Carbon Risk Real Estate Monitor (“CRREM”) analysis and green building certifications programs. To effectively manage policy and legal risks, the Manager has its Sustainability and Legal and Compliance teams, as well as external advisors and technical consultants, monitoring for policies and regulations that apply to its business

Insight – Asset Backed Securities Fund – 11% of portfolio

Physical Risks

	Acute	Chronic
Short	G	G
Medium	A	A
Long	A	A

The Manager does not see material financial impacts in the short-term as the risks associated with acute and chronic weather risks such as floods, wildfires and hurricanes have had a limited impact on corporate issuers’ financials. The manager identifies acute and chronic risks becoming a more material impact as we approach the medium to longer-term horizon where these impacts will become increasingly frequent and severe.

Transitional Risks

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

The manager believes policy risks arise mostly from deeper CO2 cuts as a result of policy changes, but that such policy actions are likely to be delayed beyond the medium term. Substitution technologies such as hydrogen-based technology are likely to take time before becoming cost competitive and therefore will be a medium to longer-term disruption to industries at scale.

PIMCO – Multi Asset Credit Fund – 11% of portfolio

Physical Risks

	Acute	Chronic
Short	G	G
Medium	A	A
Long	R	R

The Manager does not see material financial impacts in the short-term as the risks associated with acute and chronic weather risks such as floods, wildfires and hurricanes have had a limited impact on corporate issuers' financials. The manager identifies acute and chronic risk becoming a more material impact as we approach the medium-term horizon where these impacts will become increasingly frequent and severe. Over the long-term the investment manager sees risks from extreme weather events as becoming exacerbated affecting corporate issuers financials and therefore labelling it as a high-risk.

Transitional Risks

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

The manager believes policy risks arise mostly from deeper CO2 cuts as a result of policy changes, but that such policy actions are likely to be delayed beyond the medium term. Substitution technologies such as hydrogen-based technology are likely to take time before becoming cost competitive and therefore will be a medium to longer-term disruption to industries at scale. However, the Manager is aware of the increase in reputational risks even in the short-term with the physical risks of climate change and its associated adverse effects intensifying, classifying this as a high-risk.

LGIM – LDI – 49% of portfolio

Physical Risks

	Acute	Chronic
Short	G	G
Medium	G	G
Long	A	G

The Manager does not see material financial impacts in the short-term and medium-term. These risks are relatively geographically concentrated and not expected to have material financial impact on UK sovereign bonds, although there is some risk over the longer-term.

Transitional Risks

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

Policy changes such as carbon pricing will cause demand patterns to shift over the medium and long terms and may be accompanied by changing market sentiment independent of policy change. It is likely that many fossils fuel exporting countries see relatively larger losses in GDP, depending on the ambition of global policy and resulting demand patterns. As a result, they may see their credit ratings fall and yields increase, with some impact on investors' global sovereign bond portfolios.

KKR – Infrastructure – 6% of Portfolio

KKR were unable to complete the climate risk and opportunities questionnaire. However, they were able to provide their sustainability report that covers how they consider both physical and transition risks on the firm level. We will liaise with KKR and encourage them to provide an assessment in the requested format in the future years of reporting.

Physical risks

On the firm level, the Manager identified that physical risks had potentially higher impacts on specific sectors such as energy, transportation, manufacturing, and real estate. Acute risks associated with increased severity of extreme weather events such as floods and storms are more likely to have an impact on communications technology and healthcare and information. The manager found that physical risks did not have a significant impact on the retail, financial and consumer technology sectors but does highlight these sectors will experience secondary impacts from the other more affected sectors.

Transition risks

On the firm level, the Manager identified that risks associated with transitioning to a low-carbon economy affected sectors such as energy, transportation, manufacturing, and real estate to a greater extent. The manager highlights that these companies have a more pressing need to mitigate these risks as well as gaining greater insights in the extent of these impacts and potential mitigation and adaptation options to ensure these risks are minimal.

Climate-related opportunities

Passive Equity

Industrial, utility, and basic materials sectors are among the most exposed to transition risks but may also see the greatest opportunity going forward. As electric vehicles, renewables and other alternative fuels become cheaper relative to conventional alternatives, companies stand to benefit significantly from this growth. While not all participants in these growing markets are likely to be captured in today's global equity indices, many existing corporates are likely to profit significantly. Within-sector variation in climate-related valuation impact is expected to be large, especially in the most exposed sectors. Those companies that are formulating effective transition plans today and committing the required capital are among the most likely to benefit.

Volume growth and investment returns are not intrinsically correlated. Thematic focus on constraints will be required to protect returns. Investors should focus on three areas to evaluate opportunities and produce targeted investment strategies: geological scarcity, technological innovation, and regulatory change.

Property

The Manager has identified opportunities in relation to the transition to a low carbon economy with respect to the short and medium-term horizon.

- Short-term opportunities
There is an opportunity to develop 'green assets' as well as 'net-zero' investment offerings creating a decarbonisation pathway.
- For medium term opportunities the Manager also identifies energy efficiency such as adopting renewable and other lower-emission sources as a climate-related investment opportunity. Other potential opportunities arise from development of climate-friendly products such as 'green assets' and 'net-zero' products.

Multi Asset Credit

Whilst not the principal driver or main objective of the Scheme's portfolio, climate risks are a consideration in all investments at the manager level. As of 31st December 2023, the Scheme's portfolio held 2.6% in green bonds.

The manager uses a top-down macroeconomic investment approach with bottom-up research to arrive at climate-related opportunities. The Manager also utilises its extensive team comprised of 75+ credit research analysts to assess investments based on several ESG factors.

Inflation Protection Illiquids Fund

The Manager is seeing increasing demand from tenants and the wider market for low carbon and climate resilient buildings. As such, the Manager is developing mitigation plans to address any climate-related risks present in its portfolios. In practice, this means that the Manager will look at investing in low-carbon options, and work with underlying managers to also make these necessary investments. This could include options such as, but not limited to, rooftop photovoltaics, highly energy efficient HVAC systems, sustainable transport options and accessible and healthy buildings.

The Manager is constantly reviewing best practice solutions and technologies in the market and seeks to continuously improve its climate-related analyses and approaches in line with the latest science.

Infrastructure

The Manager recognises that from an investor's perspective, companies that are more likely to be affected by physical or transition climate issues have a more pressing need to, and may be more motivated to, anticipate, mitigate and/or avoid risks, as well as gain greater insights into the extent and complexity of impacts, associated costs, and mitigation and adaptation options. With such companies, there is often an opportunity to create value by engaging and working with them to address climate issues. As part of the Manager's climate action strategy, it is helping its portfolio companies seize these opportunities by developing and sharing resources on key topics such as measuring greenhouse gas ("GHG") emissions, assessing climate risk, and setting climate targets.

LDI

Within-sector variation in climate-related valuation impact is expected to be large, especially in the most exposed sectors. Those governments that are formulating effective transition plans today and committing the required capital to ensure economic prosperity alongside decarbonisation going forward are among the most likely to benefit.

Beyond the low-carbon technologies already in use today, there are also many potential innovative solutions that could present opportunities. These include carbon capture and storage, direct air capture, low- or zero-carbon hydrogen and ammonia production and nature-based solutions.

It should also be said that just as sovereign bond investors are shielded from some of the downside risk from a low-carbon transition compared to equity investors, they will be unable to profit from much of the upside risk of climate-related opportunities.

There were no specific climate related opportunities identified by the Asset Backed Securities Fund Manager.

How resilient is the Scheme to climate change?

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

Under TCFD, scenario analysis must be carried out at least every 3 years, or sooner if there have been significant changes which could impact the Scheme. We have reviewed the scenario analysis from last year and concluded that it is not necessary to refresh the scenario analysis this year because there have been no significant changes to the investment strategy, the liability profile of the Scheme, the modelling techniques, significant shift in policy implementation to tackle climate change or asset data availability.

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

The climate scenarios intend to illustrate the climate-related risks the Scheme is currently exposed to, highlighting areas where risk mitigation could be achieved through changing the investment portfolio.

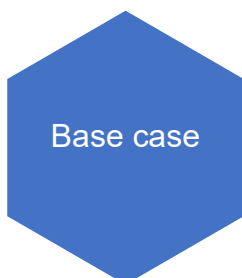
Other relevant issues such as governance, costs, and implementation (including manager selection and due diligence) must be considered when making changes to the investment strategy.

Investment risk is captured in the deviance from the Base Case, but this is not the only risk that the Scheme faces. The Base Case is a global warming path +1.5°C to +2.4°C above pre-industrial averages and is currently priced into markets and Aon's capital market assumptions. Other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

Impact Assessment

The impact assessment shows that the Scheme's investment strategy exhibits some resilience under the three climate scenarios. This is due to the diversification of assets classes and the low proportion of equities and the high levels of hedging against changes in interest rates and inflation.

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



Scenario description:

Emission reductions start now and continue in a measured way in line with the objectives of the Paris Agreement and the UK government's legally binding commitment to reduce emissions in the UK to net zero by 2050.

Degree warming vs pre-industrial levels by 2100	~2°C – 2.5°C
Reach net-zero by	2050
Introduction of environmental regulation	None



In the short term:

No action is taken to combat climate change.

In the medium term:

No action is taken to combat climate change.

In the long term:

While some climate change policies are implemented, global efforts are insufficient to halt significant global warming. The physical effects of climate change become more severe. The headwinds facing the economy and markets grow.

Fund impact:

The worst-case scenario for the Scheme is the no transition scenario. Although initially the funding level improves, after 11 years the funding level starts deteriorating and does not recover by the end of the 30-year modelling period. Although the Scheme's liabilities would be significantly smaller at that time, the Scheme could be materially worse off in terms of surplus relative to the base case, which may place a strain on the Sponsor covenant.

Temperature rises by 2100	+4°C
Reach net-zero by	After 2050
Introduction of environmental regulation	None



Orderly transition

Temperature rises by 2100	1.3°C - 2°C
Reach net-zero by	After 2050
Introduction of environmental regulation	Coordinated

In the short term:

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

In the medium term:


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

In the long term:

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

Fund impact:

Under the orderly transition, the Scheme experiences a fall in the funding level of around 3% before recovering. In this scenario, the projected funding level lags the base case during the time periods assessed.



Disorderly transition

Temperature rises by 2100	< 3°C
Reach net-zero by	After 2050
Introduction of environmental regulation	Late and aggressive

In the short term:

No action is taken to combat climate change.

In the medium term:

Late but coordinated action is taken to tackle climate change. The late timing means it is less effective and more costly to implement.

In the long term:

Adverse effects from climate change become progressively worse. There are high levels of economic damage and the irreversible loss of natural capital.

Fund impact:

Under the disorderly transition, the Scheme initially experiences an increase in funding level, before experiencing a fall in the funding level after around 10 years of around 5% before recovering. However, under this scenario, the projected funding level lags the base case during the time periods assessed.

Effective data of the impact assessment is 30 June 2022.

The liability update and projections shown in the climate change scenario analysis are considered appropriate for the analysis. However, they are approximate, and a full actuarial valuation carried out at the same date may produce a materially different result. The liability update and projections are not formal actuarial advice and do not contain all the information you need to make a decision on the contributions payable or investment strategy.

It is noted that the data used for the Climate Change Scenario analysis is the same as the year 1 reporting. Whilst we do not expect there to be any material change in the scenario analysis over a one-year period, we appreciate that the financial data shown above which was used for the analysis has changed in year 2 of reporting.

The portfolio return statistics are shown relative to a portfolio of gilts that approximate the cashflows from the Scheme and LDI has been modelled to hedge 100% of the assets of the inflation and interest rate risk.

Investment risk is only captured in the deviance from the Base Case, but this is not the only risk that the Scheme faces; other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

The model has been set up to capture recent market conditions and views; the model may propose different solutions for the same strategy under different market conditions.

This report, and the work relating to it, complies with 'Technical Actuarial Standard 100: Principles for Technical Actuarial Work' ('TAS 100'). The model complies with TAS 100.

Covenant Assessment

We recognise the importance of climate change and the risk it poses to the Scheme. We will endeavour to take climate-related risks into account where feasible when determining the Scheme's investment strategy.

Another key risk identified from the analysis is the volatility of the funding level, with the no transition scenario expected to have the most material impact on the funding level. Deterioration of the funding level will place a strain on the Sponsor covenant and participating employers, if they must make up a bigger shortfall through any future deficit reduction contributions. It may also require the Scheme to re-risk in order to stay on track to achieve the funding target or extend the timeframe for achieving this.

We therefore recognise that climate change may have an impact on the employer covenant. We monitor the covenant on a regular basis, with the support of our covenant adviser and maintain a regular dialogue with the participating employers.

The Trustee has undertaken the triennial actuarial valuation as at 5 April 2023. As part of this the Scheme Actuary helped the Trustee assess the potential impact of climate change risk on the Scheme's funding assumptions.

Climate-related issues represent a material risk to the future economic stability in the long term, with potentially wide-ranging impacts on ESG matters. Key risks that can affect the Scheme's funding level are unmatched falls in asset values, members living longer than assumed or a reduction in the strength of the Employer covenant. Each of these particular risks are separately addressed by the Scheme Actuary and were also considered in their dedicated advice paper.



Risk management

We must have processes to identify, assess and manage the climate-related risks that are relevant to the Scheme, and these must be integrated into the overall risk management of the Scheme.

Reporting on our risk management processes provides context for how we think about and address the most significant risks to our efforts to achieve appropriate outcomes for members.



Our process for identifying and assessing climate-related risks

We have established a process to identify, assess and manage the climate-related risks that are relevant to the Scheme. This is part of the Scheme's wider risk management framework and is how we monitor the most significant risks to the Scheme in our efforts to achieve appropriate outcomes for members.



Qualitative assessment

The first element is a qualitative assessment of climate-related risks and opportunities which is prepared by our investment adviser and reviewed by us.



Quantitative analysis

The second element is quantitative in nature and is delivered by means of climate change scenario analysis, which is provided by our investment adviser and reviewed by us.

Trustee update

This process of identifying and assessing climate related risks has been established in the process of producing this TCFD report.

Together these elements give us a clear picture of the climate-related risks that the Scheme is exposed to. Where appropriate, we distinguish between transition and physical risks. And all risks and opportunities are assessed with reference to the time horizons that we have identified as relevant to the Scheme.

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

Our process for managing climate related risks

We recognise the long-term risks posed by climate change and have taken steps to integrate climate-related risks into the Scheme's risk management framework.

We have developed a risk management framework to manage climate-related risk and opportunities. The risk management framework clearly sets out who is involved, what is done and how often. We have delegated a number of key tasks to different committees but retain the final responsibility. The processes for managing climate-related risks and opportunities are summarised in the tables below.

Governance

Activity	Delegated responsibility	Adviser / supplier support	Frequency of review
Climate change governance framework (<i>this document</i>)	Directors	Advisers	Annual
Publish TCFD report and implementation statement	Directors	Advisers	Annual
Review advisor objectives to ensure advisors have appropriate climate capability, and bring important, relevant, and timely climate-related issues to the Director's attention	Directors	Advisers	Annual
Engage with the investment managers to understand how climate risks are considered in their investment approach, and stewardship activities are being undertaken appropriately	Directors	Fund managers, Investment adviser	Annual
Ensure investment proposals explicitly consider the impact of climate risks and opportunities, and seek investment opportunities	IFC	Investment adviser	Ongoing
Ensure that actuarial and covenant advice adequately incorporate climate-related risk factors where they are relevant and material	Directors	Scheme Actuary, Covenant adviser	Triennial

Trustee update

We monitored the above activities as part of our climate related risks and opportunities management. During the year we published our TCFD report and Engagement Policy Implementation Statement.

Strategy

Activity	Delegated responsibility	Adviser / supplier support	Frequency of review
Identify climate-related risks and opportunities (over agreed time periods) for investment & funding strategy and assess their likelihood and impact.	IFC	Advisers	Annual
Scenario analysis - annual review	IFC	Investment adviser	Annual

Trustee update

We have spent dedicated time during the year to analyse climate-related risks and opportunities for the Scheme's various asset classes with the support of our investment adviser.

Risk management

Activity	Delegated responsibility	Adviser / supplier support	Frequency of review
Seek to understand the climate-related risks to the employer over the short, medium, and long term.	Directors	Covenant adviser	Annual
Consider the prioritisation of those climate-related risks, and the management of the most significant risks in terms of potential loss and likelihood.	IFC	Advisers	Annual
Include consideration of climate-related risks in the Scheme's other risk processes and documents, such as the risk register and the SIP, and regularly review these	IFC	Advisers	Ongoing

Trustee update

We have processes in place for identifying and assessing climate-related risks. Climate risk management is integrated into the ongoing risk management activities of the Scheme via this climate risk management plan.

We carry out qualitative assessment of climate risks and quantitative climate scenario analysis, which combined help us to focus on the risks that pose the most significant impact.

Metrics and Targets

Activity	Delegated responsibility	Adviser / supplier support	Frequency of review
Agree/review approach for metrics	IFC	Investment adviser	Annual
Agree/review target	IFC	Investment adviser	Annual
Obtain data for agreed metrics	IFC	Investment adviser, Fund managers	Annual

Trustee update

Previously, directors had training on the Metrics & Targets pillar to understand the requirements and expectations to comply with TCFD reporting that are relevant to the Scheme. Over the course of the year, directors have discussed the financial impact on companies by reducing their carbon footprint and how this would impact the second year of reporting.

Assessing our managers

As part of the assessment of the managers' policies and processes to assess climate related risks, we have posed the "top" questions (as outlined in guidance from the Pensions Climate Risk Industry Group) to the investment managers. The questions were designed to assist us with our assessment of each manager's capabilities and approach to climate management and focused on areas such as TCFD reporting, managers ability to conduct climate scenario analysis, engagement and escalation policies, managers ability to provide carbon related data and align their strategies to a particular temperature level.

The table below summarises the responses from the investment managers. Some managers were excluded on the basis of materiality.

Manager	TCFD report	Climate-related risks analysis	Industry initiatives	Carbon reporting	Temperature alignment
CBRE	✓	✓	✓	✓	✓
Insight	✓	✓	✓	✓	✓
DTZ	✓	✓	✓	✓	✓
KKR	✓	✓	✓	✓	In progress
LGIM	✓	✓	✓	✓	✓
PIMCO	✓	✓	✓	✓	-

Source: Managers.

Key Conclusions

We have seen an increase in climate risk disclosures from our investment managers. Some of the key highlights include:

- An increase in the number of managers carrying out climate-related risk analysis – last year only four managers, whereas this year six managers are.
- Only three managers were producing TCFD reports previously, and this has now increased to all six managers.

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



Metrics & Targets

Metrics help to inform our understanding and monitoring of the Scheme's climate-related risks. Quantitative measures of the Scheme's climate-related risks, in the form of both greenhouse gas emissions and non-emissions-based metrics, help us to identify, manage and track the Scheme's exposure to the financial risks and opportunities climate change will bring.



Our climate-related metrics

We use some quantitative measures to help us understand and monitor the Scheme's exposure to climate-related risks. Measuring the greenhouse gas emissions related to our assets is a key way for us to assess our exposure to climate change.

Greenhouse gases are produced by burning fossil fuels, meat and dairy farming, and some industrial processes. When greenhouse gases are released into the atmosphere, they trap heat in the atmosphere causing global warming, contributing to climate change.

Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.

Scope 1

All direct emissions from the activities of an organisation which are under their control; these typically include emissions from their own buildings, facilities, and vehicles

Scope 2

These are the indirect emissions from the generation of electricity purchased and used by an organisation.

Scope 3

All other indirect emissions linked to the wider supply chain and activities of the organisation from outside its own operations – from the goods it purchases to the disposal of the products it sells.

Last year, we reported on Scopes 1 and 2 emissions only. This year we are required to report Scope 3 emissions as well. Scope 3 emissions are often the largest proportion of an organisation's emissions, but they are also the hardest to measure. The complexity and global nature of an organisation's value chain make it hard to collect accurate data.

For more explanation about GHG emissions, please see the Appendix.



Our climate-related metrics

In our first year of TCFD reporting, we decided what metrics to annually report on. These are described below. This year we reviewed the metrics, and we believe they continue to be suitable for us to report against.



Total Greenhouse Gas emissions

The total greenhouse gas (GHG) emissions associated with the portfolio. It is an absolute measure of carbon output from the Scheme's investments and is measured in tonnes of carbon dioxide equivalent (tCO₂e).

This year we were able to obtain scopes 1&2 and scope 3 emissions from the managers separately.



Carbon footprint

Carbon footprint is an intensity measure of emissions that takes the total GHG emissions and weights it to take account of the size of the investment made. It is measured in tonnes of carbon dioxide equivalent per million pounds invested (tCO₂e/£m).

This year we were able to obtain scopes 1&2 and scope 3 emissions from the managers separately.



Data coverage

A measure of the proportion of the portfolio that the Trustee has high quality data for (i.e., data which is based on verified, reported, or reasonably estimated emissions, versus that which is unavailable).

This has been selected on the basis that it provides a consistent and comparable measure of the level of confidence in the data.



Implied temperature rise¹

An estimate of the potential global temperature rise over the rest of the century based on the pledges, commitments and business strategy changes of the underlying companies and issuers.





It is expressed as a temperature rise in degrees Celsius associated with the GHG emissions from a portfolio.

This metric gives the alignment of the Scheme's assets with the climate change goal of limiting the increase in the global average temperature to 1.5°C above pre-industrial levels.

¹Please note DWP guidance states that the trustee should not be aggregating the ITR, unless the same methodology has been used across the scheme's investments. We have relied on the individual manager data, hence the consistency of methodology cannot be guaranteed. Statutory guidance: [Governance and reporting of climate change risk: guidance for trustees of occupational schemes - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/100000/guidance_for_trustees_of_occupational_schemes.pdf)

In the table below are the climate-related metrics for the Scheme's assets on the asset class level over 2023 and 2022 reporting periods.

The carbon metrics

Asset class	%		 Data Quality (%)		 Total GHG emissions (tCO ₂ e)		 Carbon footprint (tCO ₂ e/£m)		 Implied Temperature Rise
			Scopes 1 & 2	Scope 3 ⁴	Scopes 1 & 2	Scope 3 ⁴	Scopes 1 & 2	Scope 3	(°C)
Equities	3.1%	2023	97.5%	n/a	4,525	-	105.7	-	2.8-3.0
	4.1%	2022	84.2%	n/a	7,453	-	104.7	-	2.8-2.9
Property ¹	5.9%	2023	100.0%	100.0%	532	1,113	6.3	13.2	-
	5.7%	2022	100.0%	n/a	1,410	-	10.0	-	-
Infrastructure ¹	4.1%	2023	92.6%	n/a	44,714	-	813.0	-	-
	0.3%	2022	-	-	-	-	-	-	-
Credit	15.3%	2023	48.6%	n/a	12,053	-	112.8	-	-
	19.3%	2022	30.0%	n/a	19,962	-	57.4	-	-
Inflation Protecting Illiquid ³	4.3%	2023	n/a	60.7%	-	524	-	14.0	-
	3.6%	2022	n/a	76.2%	-	1,085	-	9.0	-
LDI	33.3%	2023	99.8%	n/a	44,625	-	81.9	-	1.9
	38.4%	2022	99.5%	n/a	60,583	-	87.4	-	n/a
Buy-in ¹	32.2%	2023	100.0%	n/a	32,752	-	71.0	-	2.7
	25.6%	2022	100.0%	n/a	34,598	-	75.0	-	n/a

Source: Investment managers / Aon. Asset allocation percentages are as at 30 June 2023.

Scope 3 emissions were not available for 2022 because this is the first year of reporting Scope 3 emissions.

¹Data provided as at 31/12/22.

²Please note that where there is more than one fund within an asset class, we have not aggregated ITR metric. Instead, fund level specific ITR metrics are shown overleaf.

³Note that the carbon emissions were classified as Scope 1&2 last year, but this year the Manager has identified all emissions associated with the fund as Scope 3 emissions. Hence, we have reclassified Scope 1&2 emissions in the first year of reporting as Scope 3 emissions for consistency.

⁴Majority of the managers have not been able to provide Scope 3 data. This is mostly due to the nature of the asset class and the difficulty of obtaining Scope 3 emissions data given the complexity of tracking and quantifying indirect emissions throughout the value chain.





Key Observations

There has been an improvement in data quality across most asset classes, in particular this year our infrastructure manager and one of credit managers was able to provide carbon emissions data which was previously unavailable.

- The total carbon emissions for LDI fell from last year, this is driven by a decrease in the asset allocation and lower carbon footprint.
- Equity emissions have fallen, despite the data coverage and carbon footprint being higher, the nominal value in equities has fallen hence the lower emissions.
- Property's overall emissions have increased, and they are now split between scope 1&2 and scope 3.
- Overall emissions for credit have fallen, this is a result of a significantly lower carbon footprint as well as a decrease in the asset allocation.
- Inflation protection illiquids have seen a fall in data quality, which can be explained by the shortcoming of obtaining Scope 3 emissions data.
- Infrastructure is another significant contributor to the total GHG emissions due to the carbon intensive nature of the asset class³.
- Over the year, the asset allocation to Buy-in has increased, however there has been a decrease in the carbon emissions and footprint.

Detailed breakdown

The table below shows a more detailed breakdown of the emissions from each asset class in the Scheme's portfolio (where available). LDI and buy-in figures are separated as they are not comparable to the main portfolio.

Asset class	%	 Data Quality (%)		 Total GHG emissions (tCO ₂ e)		 Carbon footprint (tCO ₂ e/£m)		 Implied Temperature Rise
		Scopes 1 & 2	Scope 3	Scopes 1 & 2	Scope 3	Scopes 1 & 2	Scope 3	(°C)
Equities	3.1%	97.5%	-	4,525	-	105.8	-	2.8 – 3.0
LGIM MSCI World Minimum Volatility	1.5%	99.8%	-	1,764	-	83.0	-	2.8
LGIM FTSE RAFI 1000	1.5%	99.7%	-	2,761	-	128.2	-	3.0
Baillie Gifford	0.1%	-	-	-	-	-	-	-
Property	5.9%	100.0%	100.0%	532	1,113	6.3	13.2	n/a
DTZ ¹	5.9%	100.0%	100.0%	532	1,113	6.3	13.2	n/a ²
Infra	4.1%	92.6%	-	44,714	-	813.0	-	-
Macquarie	0.3%	-	-	-	-	-	-	-
KKR ¹	3.8%	100.0%	-	44,714	-	813.0	-	-
Credit	15.3%	48.6%	-	12,053	-	112.8	-	-
Insight - Asset backed securities	7.7%	15.0%	-	35	-	2.1	-	-
PIMCO Diversified Income	7.7%	82.1%	-	12,018	-	133.0	-	2.44³
Inflation Protecting Illiquids	4.3%	0.0%	60.7%	-	537	-	14.0	-
CBRE	4.3%	0.0%	60.7%	-	537	-	14.0	-
LDI	33.3%	99.8%	-	44,625	-	81.9	-	1.9
LGIM	33.3%	99.8%	-	44,625	-	81.9	-	1.9
Buy-in	32.2%	100.0%	-	32,752	-	71.0	-	2.7
LGIM ¹	32.2%	100.0%	-	32,752	-	71.0	-	2.7

Source: Investment managers / Aon. Data as at 31/03/23 unless specified otherwise.

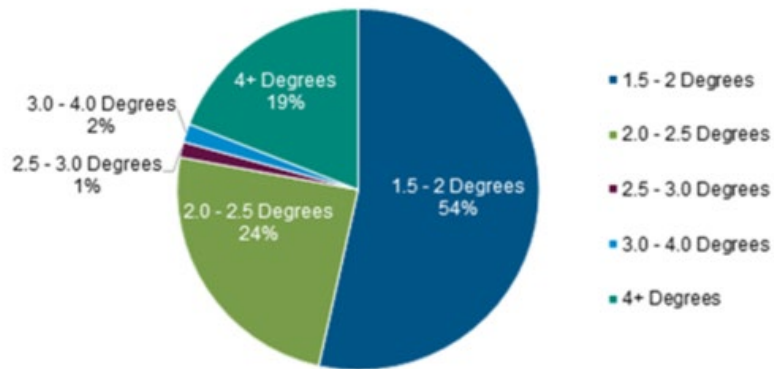
Scope 3 emissions are not available for 2022 because this is the first year of reporting Scope 3 emissions.

¹Data provided as at 31/12/22.

²DTZ Investors has committed to achieving net-zero by 2040 for all discretionarily managed portfolios, including Plumbing Pension Fund. Therefore, this covers all assets and emissions include within the attached. This net-zero target is aligned to a 1.5°C warming scenario but is not currently approved by the SBTi.

³PIMCO was not able to provide an aggregated figure of Implied Temperature Rise Metric. However, the manager has provided the temperature rise attribution for the portfolio's corporate bond holdings provided in Figure 1 below. 2.44°C is an aggregated weighted average ITR calculated by Aon, based on this information pie chart below.

Implied Temperature Rise (Corporates Only)



Source: PIMCO. Data provided as at 30 June 2023.

Notes on the metrics data

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

Availability of data

- Two managers provided scopes 1, 2 and 3 GHG emissions.
- Four managers provided scopes 1 and 2 only.
- Two managers did not provide information on grounds of materiality.
- Two managers provided portfolio alignment data.

Aon does not make any estimates for missing data.

Because not all the Scheme's managers were able to provide all the requested data, the reported emissions metrics do not include all the Scheme's GHG emissions. And so, the metrics show the Scheme's GHG emissions to be lower than they really are.

We expect that in the future better information will be available from managers and this improvement will be reflected in the coming years' reporting. We plan to engage with our managers that were unable to supply emissions data to communicate our expectations for future reporting.

Notes on the metrics calculations

The carbon metrics

Aon calculated the carbon metrics for the Scheme based on the information provided by the managers. The table below shows the broad approach used for calculating each metric.

Metric	Approach
Carbon footprint	The investment manager provided the carbon footprint metrics for the funds.
Total GHG emissions	Using the carbon footprint, we calculated the Scheme's proportion of each investment fund's emissions by calculating <i>carbon footprint x £m Scheme assets invested in the fund</i>
Data quality	The investment managers provided data quality.

Implied temperature rise

Aon requested the implied temperature rise of each fund from our investment managers. The implied temperature rise is presented as a range for each asset class.

Aon does not make any estimates for missing data. The Scheme's implied temperature rise only represents the portion of the portfolio for which we have data.

How we collected the data

Our investment adviser, Aon, collected the carbon emissions data from our managers on our behalf using the industry standard Carbon Emissions Template ("CET"). The CET was developed by a joint industry initiative of the Pension and Life Savings Association, the Association of British Insurers and Investment Association Working Group. The CET provides a standardised set of data to help pension schemes meet their obligations under the Climate Change Governance and Reporting Regulations, and associated DWP Statutory Guidance.

Looking to the future

Our climate-related target

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

We have set a target for improving the data quality metric. Without meaningful data from the investment managers, it is very hard for us to measure our climate-risk exposure. So, it is important to set a target to improve the quality of GHG emissions data from the managers across scopes 1, 2 and 3.



2022 Credit portfolio
Data quality metric
30.0%

2023 Credit portfolio
Data quality metric
48.6%

2025 Credit portfolio
Data quality target
75.0%

2022 Overall portfolio
Data quality metric
81.1%

2023 Overall Portfolio
Data quality metric
85.6%

2025 Overall Portfolio
Data quality target
90.0%

Key Observations

As a result of the collection of data for the second-year reporting period, we are pleased to report an improvement in the credit portfolio data quality metrics which increased by 18.6% over the year.

The overall data quality metric has increased, due to an increase in the number of managers being able to provide emissions data. We expect to see data quality improve further over the coming years in line with the wider industry.

We believe that the targets set above remain appropriate.

What are we doing to reach the target?

The Scheme's performance against the target will be measured and reported on every year. Over time, this will show the Scheme's progress against the target.

To reach our target, we plan to take the following steps:

- Engage with managers who were unable to provide data.
- Ensure managers are providing consistent data.

Appendices

Glossary

- Governance** refers to the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders.² Governance involves a set of relationships between an organisation's management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organisation are set, progress against performance is monitored, and results are evaluated.³
- Strategy** refers to an organisation's desired future state. An organisation's strategy establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy formulation generally involves establishing the purpose and scope of the organisation's activities and the nature of its businesses, taking into account the risks and opportunities it faces and the environment in which it operates.⁴
- Risk management** refers to a set of processes that are carried out by an organisation's board and management to support the achievement of the organisation's objectives by addressing its risks and managing the combined potential impact of those risks.⁵
- Climate-related risk** refers to the potential negative impacts of climate change on an organisation. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, and fires). They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise). Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations.⁶
- Climate-related opportunity** refers to the potential positive impacts related to climate change on an organisation. Efforts to mitigate and adapt to climate change can produce opportunities for organisations, such as through resource efficiency and cost savings, the adoption and utilization of low-emission energy sources, the development of new products and services, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organisation operates.⁷

² A. Cadbury, [Report of the Committee on the Financial Aspects of Corporate Governance](#), London, 1992.

³ OECD, [G20/OECD Principles of Corporate Governance](#), OECD Publishing, Paris, 2015.

⁴ TCFD, [Recommendations of the Task Force on Climate-related Financial Disclosures](#), 2017

⁵ Please refer to the link in reference number 10.

⁶ Please refer to the link in reference number 10.

⁷ Please refer to the link in reference number 10.

Greenhouse gas emissions scope levels⁸ Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.

Scope 1 refers to all direct GHG emissions.

Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam.

Scope 3 refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions could include: the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses), outsourced activities, and waste disposal.⁹

Value chain refers to the upstream and downstream life cycle of a product, process, or service, including material sourcing, production, consumption, and disposal/recycling. Upstream activities include operations that relate to the initial stages of producing a good or service (e.g., material sourcing, material processing, supplier activities). Downstream activities include operations that relate to processing the materials into a finished product and delivering it to the end user (e.g., transportation, distribution, and consumption).¹⁰

Climate scenario analysis is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organisation to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time.¹¹

Net zero means achieving a balance between the greenhouse gases emitted into the atmosphere, and those removed from it. This balance – or net zero – will happen when the amount of greenhouse gases add to the atmosphere is no more than the amount removed.¹²

⁸ World Resources Institute and World Business Council for Sustainable Development, [The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard \(Revised Edition\)](#), March 2004.

⁹ PCC, [Climate Change 2014 Mitigation of Climate Change](#), Cambridge University Press, 2014.

¹⁰ TCFD, [Recommendations of the Task Force on Climate-related Financial Disclosures](#), 2017

¹¹ Please refer to the link in reference number 16.

¹² Energy Saving Trust, [What is net zero and how can we get there? - Energy Saving Trust](#), October 2021

Appendix – Climate scenario modelling assumptions

The climate scenarios were developed by Aon and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty. They consider the exposure of the [Scheme] to climate-related risks and the approximate impact on asset/liability values over the long-term.

The purpose of the model is to consider the long-term exposure of the Scheme to climate-related risks and the pattern of asset returns over the long term.

In particular, the model considers different climate change scenarios and the approximate impact on asset/liability values over the long-term. Our model assumes a deterministic projection of assets and TP liabilities, using standard actuarial techniques to discount and project expected cashflows.

- It models the full yield curve as this allows for an accurate treatment of the liabilities and realistic modelling of the future distribution of interest rates and inflation. It also allows us to truly assess the sensitivities of the assets and liabilities to changes in interest and inflation rates.
- The parameters in the model vary deterministically with the different scenarios.
- Note no allowance is made for expenses, with modelled asset/liability cashflows left unaffected by these factors.

The liability update and projections are considered appropriate for the analysis. However, they are approximate, and a full actuarial valuation carried out at the same date may produce a materially different result. The liability update and projections are not formal actuarial advice and do not contain all the information you need to make a decision on the contributions payable or investment strategy.

The model intends to illustrate the climate-related risks the Scheme is currently exposed to, highlighting areas where risk mitigation could be achieved through changing the portfolio allocation.

Other relevant issues such as governance, costs and implementation (including manager selection and due diligence) must be considered when making changes to the investment strategy.

Investment risk is only captured in the deviance from the Base Case, but this is not the only risk that the Scheme faces; other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

The model has been set up to capture recent market conditions and views; the model may propose different solutions for the same strategy under different market conditions.

This report, and the work relating to it, complies with 'Technical Actuarial Standard 100: Principles for Technical Actuarial Work' ('TAS 100'). The model complies with TAS 100.

Data used

The model projects using the following inputs as at 30 June 2022 (as provided by Willis Tower Watson in their email dated 22 July 2022):

- Market value of assets: £1,342.8M
- Present value of liabilities on the Technical Provisions basis: £1,379.0M
- Benefit outgo in year 1: £25.3M
- Duration of the TP liabilities: 20.6 years
- Contributions: Nil in line with the Scheme's Schedule of Contributions dated 23 April 2021

Appendix – An explanation of climate risk categories

Climate-related risks are categorised into physical and transitional risks. Below are examples of transition and physical risks.

Transition risks

Transition risks are those related the ability of an organisation to adapt to the changes required to reduce greenhouse gas emissions and transition to renewable energy. Within transition risks, there are four key areas: policy and legal, technological innovation, market changes, and reputational risk.

Policy and legal

Examples

Increased pricing of GHG emissions
Enhanced emissions-reporting obligations
Regulation of existing products and services

Potential financial impacts

Increased operating costs (e.g. higher compliance costs, increased insurance premiums)
Write-offs, asset impairment and early retirement of existing assets due to policy changes

Technology

Examples

Cost to transition to lower emissions technology
Unsuccessful investments in new technologies

Potential financial impacts

Write-offs and early retirement of existing assets
Capital investments in technology development
Costs to adopt new practices and processes

Market

Examples

Changing customer behaviour
Uncertainty in market signals
Increased cost of raw materials

Potential financial impacts

Reduced demand for goods and services due to shift in consumer preferences.
Abrupt and unexpected increases in energy costs.
Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations).

Reputational

Examples

Stigmatisation of sector
Increased stakeholder concern or negative stakeholder feedback

Potential financial impacts

Reduced revenue from decreased demand for goods and services.
Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions)
Reduced revenue from negative impacts on workforce management and planning

Physical Risks

Physical risks refer to the physical impacts of climate change on a firm's operations. They directly impact a firm's ability to perform its function due to climate disruption. They fall into two subcategories: acute and chronic; acute referring to extreme climate events such as flooding and wildfires, and chronic referring to trends over time such as an increase in temperature or ocean acidification.

Acute

Examples

- Extreme heat
- Extreme rainfall
- Floods
- Droughts
- Storms (e.g., hurricanes)

Chronic

Examples

- Water stress
- Sea level rises
- Land degradation
- Variability in temperature
- Variability in precipitation



Appendix – Greenhouse gas emissions in more detail







Greenhouse gases in the atmosphere, including water vapour, carbon dioxide, methane, and nitrous oxide, keep the Earth's surface and atmosphere warm because they absorb sunlight and re-emit it as heat in all directions including back down to Earth. Adding more greenhouse gases to the atmosphere makes it even more effective at preventing heat from leaving the Earth's atmosphere.

Greenhouse gases are vital because they act like a blanket around the Earth making the climate habitable. The problem is that human activity is making the blanket "thicker". For example, when we burn coal, oil, and natural gas we send huge amounts of carbon dioxide into the air. When we destroy forests, the carbon stored in the trees escapes to the atmosphere. Other basic activities, such as raising cattle and planting rice, emit methane, nitrous oxide, and other greenhouse gases.

The amount of greenhouse gases in the atmosphere has significantly increased since the Industrial Revolution. The Kyoto Protocol¹³ identifies six greenhouse gases which human activity is largely responsible for emitting. Of these six gases, human-made carbon dioxide is the biggest contributor to global warming.

Each greenhouse gas has a different global warming potential and persists for a different length of time in the atmosphere. Therefore, emissions are expressed as a carbon dioxide equivalent (CO₂e). This enables the different gases to be compared on a like-for-like bases, relative to one unit of carbon dioxide.

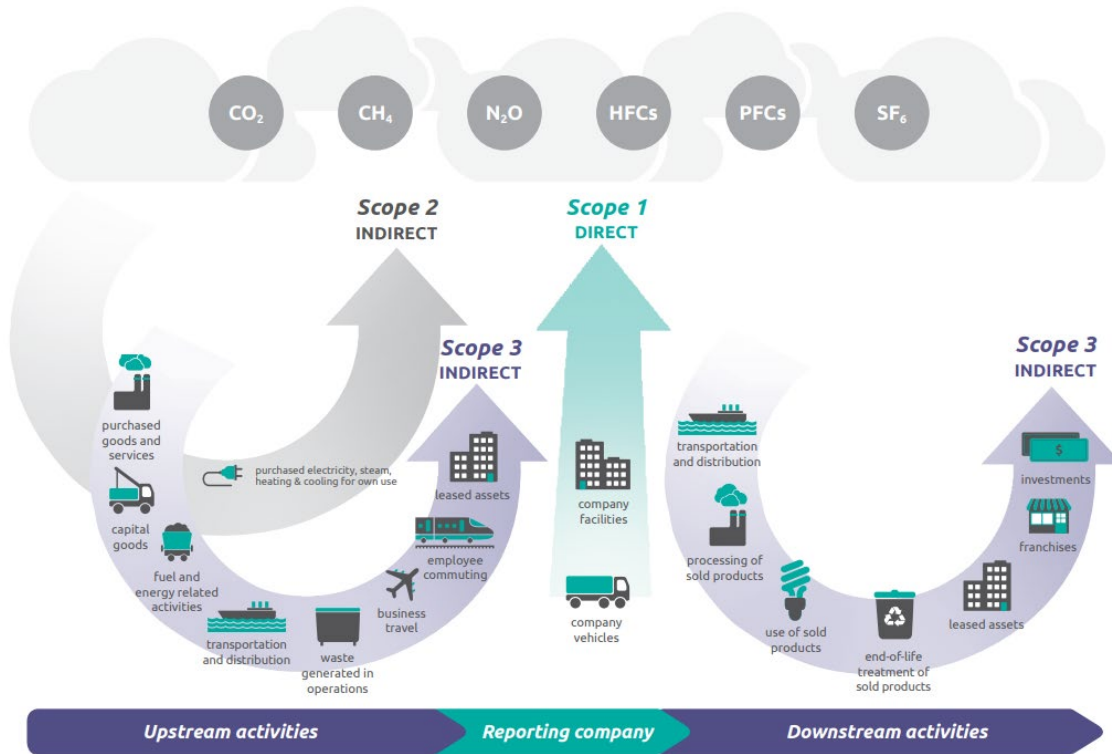
Six main greenhouse gases identified by the Kyoto Protocol

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

¹³ https://unfccc.int/kyoto_protocol

Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard.

Overview of GHG Protocol scopes and emissions across the value chain



Source: Greenhouse Gas Protocol, [Corporate value chain \(scope 3\) Accounting and Reporting Standard](#), 2011