



The Royal London Group Pension Scheme

How we manage climate-related risks and opportunities for the Scheme

A report for members by the Trustee of the Scheme, RLGPS Trustee Limited,
for the year ending 31 December 2023

Why have we written this report?



Dear Scheme members

The Trustee believes that good management of Environmental, Social and Governance (“ESG”) issues is important for the Scheme, its members and wider society. Accordingly, we place significant focus on ensuring the companies that we invest in are managing these issues well.

It is pleasing to note that the Trustee and Royal London are very well aligned in this belief.

Our second annual report provides you with the opportunity to find out more about the work carried out by the Trustee in relation to climate change over the year to 31 December 2023. We’re particularly pleased that by setting strong targets for our investment manager, we have significantly increased the level of engagement with companies that we invest in on their plans to reduce carbon emissions (see pages 19 and 22 for further information). We also proactively reduced the overall level of investment risk in the Scheme by moving further from equities into bonds, helping to reduce our assets’ overall carbon emissions and lessen the Scheme’s exposure to negative climate outcomes.

Although this report is required by legislation, the monitoring of our investment manager’s engagement with companies on strategic and ESG matters is a core part of our stewardship responsibilities.

We recognise that the content of this report is quite technical. We have used plain English wherever possible, but a glossary is included in Appendix 3 to help you understand the more technical terms.

We hope that you find it informative, and we would welcome any feedback – please contact the Trustee via the Scheme’s administrators, Willis Towers Watson using email royallondongroup@wtwco.com or by phone on 0113 394 9307.

Andrew Evans

Chair of the Trustee

The Trustee's net zero ambition



The Trustee believes that climate change is a financially material factor for the Scheme. It represents a systemic risk to society, the economy and the financial system, although the transition to a low carbon economy also presents opportunities.

In managing the risks and opportunities associated with climate change, the Trustee decided in 2022 that an appropriate approach to addressing this is to align the Scheme's investments to achieve net zero¹ by no later than 2050.

In seeking to achieve this, the Trustee acknowledges that its current investment manager (Royal London Asset Management, RLAM) has the objective of achieving net zero across its investment portfolios by 2050, and an interim target of reducing carbon emissions by 50% no later than 2030². This pathway will involve a process of decarbonisation in conjunction with active engagement with portfolio companies.

The Trustee intends to work closely with RLAM to achieve this transition pathway³, and to seek opportunities to accelerate it where possible, provided it is consistent with the Trustee's duty to members.

Should the Trustee decide to invest with any additional managers, the Trustee will ensure that the manager is able to invest in line with this ambition.

1. A 'Net Zero' economy is one where the overall level of greenhouse gases that is being emitted globally is the same as the level of carbon dioxide that is being absorbed globally.

2 The commitment is baselined on the year 2020.

3. Based on the expectation that governments and policymakers deliver on commitments to achieve the 1.5c temperature goal of the Paris Agreement.

Overview

The Trustee of the Royal London Group Pension Scheme views climate change as a risk to society, the economy and the financial system, but also recognises that reducing carbon emissions throughout the economy presents opportunities.

These risks and opportunities may impact the Scheme's financial position, for example by impacting the businesses the Scheme invests in. The Trustee monitors this potential impact and takes steps to reduce climate-related risks for members.

This report describes how the Trustee has identified, assessed and managed climate-related risks and opportunities to the Scheme during the Scheme year to 31 December 2023.

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Key messages (how we manage climate change)

1. **Governance** – the Trustee has a strong framework for managing the Scheme. This includes setting clear expectations and responsibilities in relation to climate change.



A Climate Governance Statement sets out responsibilities of everyone involved

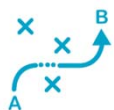


Climate-related risks and opportunities are reviewed regularly



The Scheme's advisers support the Trustee on climate-related matters

2. **Strategy and Risk Management** – the Trustee has taken steps to understand how climate change might affect the Scheme and to control the risks it brings. The Trustee expects that climate change will have a bigger impact on the Scheme over the longer term. It aims to reduce the risks to the Scheme by:



Reducing investment in riskier assets (eg equities) as the funding position improves



Investing responsibly, in line with the Trustee's policy on environmental, social and governance factors



Regularly reviewing the Scheme's investment manager's climate practices



Using the Scheme's influence as an investor to encourage positive climate action by companies

3. **Metrics and Target** – the Trustee has collected and reviewed information about the Scheme's assets, to help it understand the level of climate risks in the Scheme. It has set a target to increase the proportion of companies the investment manager engages with significantly on climate change.



Collected and reviewed greenhouse gas emissions data for the Scheme's investments



Reported proportion of investments with no data or estimated data



Target to increase significant engagement with companies on climate change

Governance - oversight of climate-related risks and opportunities

How the Trustee maintains oversight of climate-related risks and opportunities

Establishing responsibilities

In June 2022, the Trustee agreed a full Climate Governance Statement which clearly lays out the division of responsibilities between the Trustee, its Investment Committee (“IC”), and the Trustee’s advisers (across actuarial, investment and employer covenant). This helps to maintain appropriate oversight of the climate-related risks and opportunities relevant to the Scheme and so that the Trustee can be confident that its statutory and fiduciary obligations are being met.

The Trustee’s role

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

As the Trustee has ultimate responsibility for scheme governance activities, its role is to review and discuss any information, decisions and proposals that have been made by the IC and/or its advisers. Having done so, the Trustee will then confirm or amend any decisions or proposals made, and ensure the decisions are implemented appropriately, having consulted with Royal London.

All decisions are approved by the Trustee, including but not limited to decisions relating to climate change.

The Trustee role also includes:

- agreeing training requirements and scheduling them into the business plan to ensure sufficient knowledge and understanding of climate change;
- putting effective climate governance arrangements in place;
- allowing for climate-related considerations when assessing and monitoring the strength of the sponsoring employer’s covenant;
- ensuring the Scheme’s advisers have clearly defined responsibilities in respect of climate change; and
- communicating with Scheme members and other stakeholders on climate change where appropriate.

The role of the Investment Committee

The IC provides the Trustee with regular updates and guidance following the reviews it has carried out and sets out any decisions that are required.

It does this by:

- reviewing, discussing and reporting all investment and funding advice received, including ensuring appropriate consideration of climate change;
- identifying and assessing the main climate-related risks and opportunities for the Scheme over various time periods and documenting the management of them;
- incorporating climate-related considerations into the Scheme’s risk management framework;
- ensuring the Scheme’s investment manager is managing climate-related risks and opportunities; and
- selecting and regularly reviewing metrics to inform the Trustee’s assessment of climate-related risks and opportunities, and setting and monitoring targets to improve these metrics over time where appropriate.

The role of the Royal London pensions team

The pensions team’s role is to ensure that the Trustee Board, IC and its advisers have full access to all the information needed on the Scheme and to help implement any decisions made. Members of the pensions team attend the Trustee’s climate-related training sessions.

Governance - oversight of climate-related risks and opportunities

Oversight activities

By the Trustee

At its regular meetings each quarter, the Trustee receives and reviews:

- an update from the IC which includes any recent review of the Scheme's risk register. Where appropriate this includes updates in relation to the climate-related risks and opportunities identified; and
- an update from the IC and investment adviser on the Scheme's investments. Where appropriate these include updates in relation to the investment manager's climate policies, and its assessment of relevant climate-related risks and opportunities.

By the Investment Committee

The IC considers climate-related risks and opportunities within each investment topic and individual mandates as and when they arise at quarterly meetings.

Over 2023, the IC received quarterly updates from the Scheme's investment adviser on the environmental, social and governance scores of each of the investment mandates, which includes an assessment of climate risk. These reports were used to engage with the investment manager on areas of particular significance.

The IC also regularly reviews:

- the Scheme's governance arrangements, investment beliefs and policies in relation to climate change (including a "roadmap" for the next 12 months);
- a report from the investment consultant that reviews the investment manager in relation to environmental, social and governance factors, climate change and overall engagement activity with companies;
- data on climate-related metrics and progress against the target set in relation to these metrics (including whether the target remains appropriate);
- whether it is appropriate to carry out scenario analysis that illustrates how the Scheme's assets and liabilities might be affected under various climate change scenarios (and time periods);
- the Scheme's consultants' climate competency including assessing how they have performed against their climate responsibilities.

Other activity

The Trustee also considers climate-related risks and opportunities whenever the following activities are undertaken:

- actuarial valuation of the Scheme;
- review of the investment strategy for the Scheme; and
- assessment of the sponsoring employer's covenant.

Appointments

Whenever it reviews its agreements, or appoints new consultants, the Trustee also considers and documents the extent to which the consultants' climate-related responsibilities are included in the agreements and/or any consultant objectives set.

In particular, the following objectives have been set for the investment consultant that are relevant to climate considerations:

- help and advise the IC and Trustee on how to set a clear journey plan that is focussed on a long-term funding target;
- help and advise the IC and Trustee to implement an investment strategy that integrates its policy on ESG (including climate change) and stewardship;
- help the IC and Trustee to have a good understanding of the range and nature of investment risks to which the Scheme is exposed;
- help and advise the IC and Trustee on how to develop and define its investment beliefs;
- monitor and manage risk on a regular basis and alert the IC and Trustee to any change in the risk profile and emerging risks; and
- advise the IC and Trustee to monitor appropriately and manage the performance of the investment manager relative to its targets.

Governance - oversight of climate-related risks and opportunities

Oversight activities (continued)

Annual business plan

When setting its annual business plan, the Trustee ensures appropriate coverage of ESG and climate-related topics.

In addition, the Trustee Directors assess their knowledge and understanding of climate risks and opportunities and identify any training requirements needed to ensure they have the skills required to manage these risks and opportunities.

Climate-related training sessions typically include an annual update on recent developments, with extra training on any time-critical developments. They may also include training in support of specific agenda items at Trustee meetings. The training undertaken is documented in the Trustee's training log.

Activities undertaken

During 2023, the Trustee and IC allocated significant additional meeting time to climate-related topics and commissioned additional advice in order to deepen their understanding of climate change, enhance the Scheme's management of climate-related risks and opportunities, and satisfy their regulatory obligations. The box on the right shows the agenda items discussed by the IC and Trustee at various meetings.

Allocation of resources

The key idea behind allocating resources to this area is that the Trustee believes that environmental, social and governance (ESG) factors are likely to be one area of market inefficiency and so the investment manager may be able to improve risk-adjusted returns by taking account of ESG factors which include factors relating to climate change. In addition, careful management of ESG risks by the investment manager is very important.

Climate-related agenda items during 2023

- *Dedicated sessions focussed on managing climate risk and opportunities in the investment grade credit mandate (which represented the Scheme's largest asset allocation), as well as an update from the investment manager on its approach to company engagement.*
- *Training on a global equity strategy with a greater focus on aligning the assets with a net zero transition; the Trustee plans to decide whether to allocate to this strategy in 2024.*
- *Ensuring compliance with various climate-related requirements, including updated calculation of climate metrics and long-term climate scenario analysis.*
- *In relation to climate scenario analysis, the Trustee considered the limitations of forecasting highly uncertain future outcomes, and was comfortable that the analysis remained useful for highlighting potential downside risks of climate change, which could then be used to help inform future investment decisions.*
- *Reviewing the Trustee's key "engagement themes" that it would like the investment manager to engage with companies on its behalf, which features a strong focus on climate change.*
- *Reviewing the Scheme's climate metrics. This included an assessment of progress of the Scheme's assets vs the "significant engagement" target, set out in more detail on page 23.*
- *Planning a roadmap for Responsible Investment in 2024, with a particular focus on climate-related objectives.*
- *The Trustee received advice from its investment consultant to reduce and consolidate the Scheme's equity allocation into a single global portfolio. The Trustee implemented this change toward the end of 2023. As part of this decision, the Trustee considered the expected impact on the equity carbon footprint (and was satisfied it was expected to lead to a reduction in portfolio emissions).*
- *In early 2024, the Trustee invested in a partial pensioner buy-in (insured by Royal London Mutual Insurance Society, "the insurer"). In the lead up to this decision, the Trustee (with their appointed buy-in adviser) considered the insurer's approach to Responsible Investment and was satisfied that the risks and opportunities associated with climate change would be addressed appropriately by the insurer.*

Governance - oversight of climate-related risks and opportunities

How the Trustee incorporates climate-related risks into its Statement of Investment Principles

The Trustee incorporates its beliefs and policies on climate-related risks into its Statement of Investment Principles.

Climate beliefs within the Statement of Investment Principles (dated December 2022)

...the Trustee's key investment beliefs, which influenced the setting of the investment arrangements, are as follows: ...

- environmental, social and governance (ESG) factors are likely to be one area of market inefficiency and so managers may be able to improve risk-adjusted returns by taking account of ESG factors including factors relating to climate change;*
- responsible investment in well governed companies and engaging as long-term owners can reduce risk over time and may positively impact Scheme returns;*
- long-term environmental, social and economic sustainability is one factor that trustees should consider when making investment decisions.*

The Statement of Investment Principles in force over the period of this report was dated December 2022. The Trustee has since reviewed and updated this document in March 2024, although we note that the Trustee's climate beliefs have not changed from those stated above.

Governance - oversight of climate-related risks and opportunities

The processes the Trustee has established to satisfy itself that adequate steps are being taken and that third parties are taking adequate steps to identify, assess and manage those risks and opportunities

The Trustee seeks input from its investment, actuarial and covenant advisers to ensure that it is able to identify, assess and manage climate risks and opportunities.

From time to time, the Trustee will review the climate competency of its advisers and take appropriate action if any concerns are identified.

In March 2024, the Trustee reviewed its investment consultants against the agreed strategic objectives and concluded that the advisers had worked well with the Trustee to help further develop the Scheme's approach to ESG and related matters, including consideration of climate change where appropriate.

With appropriate advisers in place, the Trustee ensures that climate-related risks and opportunities are considered as part of any relevant advice, such as the actuarial valuation process, investment strategy review and assessment of the sponsoring employer's covenant, with climate change included in the agenda items for each of these at the relevant meetings.

The Trustee and IC satisfy themselves that their consultants take adequate steps to identify and assess climate-related risks and opportunities which are relevant to the matters on which they are advising by ensuring the consultants (where appropriate):

- are set clearly defined responsibilities in respect of climate change;
- have documented their responsibilities in relevant agreements, such as investment consultants' strategic objectives and service agreements;
- have adequate expertise and resources, including time and staff, to carry these out;
- are adequately prioritising climate-related risk.

The Trustee also acknowledges that the investment manager plays a key role in assessing and managing climate risks and opportunities for the Scheme. The Trustee and IC satisfy themselves that the investment manager is taking adequate steps in this regard by:

- maintaining the written investment management agreement (and considering whether to include specific portfolio objectives with respect to climate change);
- reviewing investment manager performance on a quarterly basis, including portfolio scores with respect to ESG and trends over time;
- receiving a report on stewardship activities and outcomes in relation to the Scheme's investments on an annual basis; and
- assessing the level of investment manager activity relative to the agreed significant engagement target.

The Trustee also ensures that the IC has suitable experience in considering climate risk alongside appropriate training, to ensure that the risks are suitably considered, documented, reviewed and kept up to date.

Strategy and Risk Management

Introduction

The Trustee has implemented a framework for identifying, assessing and managing climate-related risks and opportunities, including climate scenario analysis, monitoring of metrics and targets and stewardship, as well as ensuring its advisers have processes in place to help it research its investment managers' climate-related practices.

This framework has helped the Trustee consider issues such as:

- the materiality of climate change risks to the Scheme;
- how to take account of transition and physical risks; and
- how climate change affects the Trustee's risk appetite.

The framework is used to identify the key risks that the Trustee should focus on. The Trustee then ensures these risks are fed into its investment decision processes for the Scheme as well as feeding into the covenant and funding processes. It also feeds into the Trustee's risk register to ensure all risks are being monitored and managed consistently and proportionately.

The Trustee has used climate scenario analysis as a key tool for identifying, assessing and managing climate-related risks and opportunities. In particular, it has used the analysis to identify the time horizons over which the physical and transition risks could materialise. It has then considered what the possible impacts of climate change could be over each of these time horizons and whether its current funding and investment strategies are likely to be robust against these risks (or able to take advantage of any opportunities).

Climate scenario analysis was carried out for the Scheme in August 2022 (see Appendix 1). The Trustee will carry out scenario analysis at least every three years and check annually if the review should be carried out sooner. The results of the analysis are fed into the risk management of the Scheme through specific covenant, investment and funding focused considerations and the interaction of these. The Trustee revisited the August 2022 analysis in 2023 and was satisfied that the Scheme's investment strategy and assumptions underlying the analysis had not changed sufficiently throughout the year to justify a full recalculation. Instead, the Trustee took the opportunity to consider the limitations of forecasting highly uncertain future outcomes and was comfortable that the analysis remained useful for highlighting potential downside risks of climate change, which could then be used to help inform future investment decisions.

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

Time horizons	For the purpose of identifying and assessing climate-related risks and opportunities, the Trustee has defined the following time horizons for each section of the Scheme. These time horizons have informed the Trustee's climate-related considerations and decisions during the year.
Short term	Up to 3 years – In line with typical actuarial valuation cycle and therefore aligns decision making processes.
Medium term	2035 – Aligned with long-term funding target and significant de-risking of assets expected to be achieved by this date.
Long term	2050 – Broadly aligned with recognised industry objective to achieve Net Zero emissions by 2050 (the UK Government's target), or sooner.

Strategy and Risk Management

Overview of the climate-related risk and opportunities relevant to the Scheme that the Trustee has identified

The Trustee has identified and assessed the risks and opportunities to the Scheme within each of these time horizons, as summarised below.

These risks and opportunities are considered further in the following sections where we discuss further the Trustee approach to investment, covenant and funding risks and opportunities.

Investment risk - overview

The Trustee considers climate risk as part of discussions on further de-risking of the investment strategy.

The Trustee and sponsoring employer have a pre-agreed plan to gradually reduce the Scheme's target holdings in equities as and when the level of return needed to achieve the Scheme's long-term target reduces.

During 2023, the Scheme reached a de-risking trigger and the Trustee accordingly reduced the Scheme's target equity allocation by 5% to 10%, in favour of investment grade corporate bonds (35% to 40%).

The Trustee regularly reviews the Scheme's exposure to climate-related risks in each individual investment portfolio and considers ways to limit its exposure.

In particular, during 2023, the IC carried out an assessment of its investment manager's approach to climate risk, with the Trustee's investment adviser. A summary of the process followed and findings is provided overleaf.

The IC also meets with the investment manager regularly and these meetings include a review of the manager's ESG activities (including climate change) and how these align with the Trustee's expectations.

The IC continues to monitor climate-related investment risks and opportunities that arise, with a current focus on the corporate bond portfolio (given this mandate is expected to form a material portion of the Scheme's assets as part of the long-term target investment portfolio).

	Key risks	Key opportunities
Short term	Exposure to climate-related investment risks may be highest while the Scheme retains an allocation to growth assets (eg equities).	Climate-aware equity portfolios could help protect against transition risks and provide exposure to transition opportunities.
Medium term	Market volatility could cause investment losses and increase time to reach full funding on the long-term funding target.	Climate-aware corporate bond mandates should increase the resilience of assets to climate risks.
Long term	A failed energy transition could result in sustained high price inflation, reducing the value of some pension payments in real terms. Physical climate change risks have the potential to be significant in the context of demographic experience, either directly or through their wider effect on societal and economic activity.	Pension Schemes are long-term investors, meaning allocations can be made to assets like sustainable infrastructure to support the green energy transition.

Strategy and Risk Management

Approach to Stewardship, Investment Monitoring and Responsible Investment Review

Stewardship

The Trustee uses stewardship to help manage climate-related risks. Voting and engagement activities are delegated to the investment manager. The investment manager has its own ESG policies, which include assessment of climate-related risks and policies on voting on climate-related resolutions.

In order to monitor how the investment manager is exercising voting rights and undertaking engagement on behalf of the Trustee, the IC:

- periodically meet with the investment manager, to engage on how it has considered ESG issues (including climate change) within its stewardship activities and will seek to challenge the investment manager on these matters where they think this is in the best interests of members (the Trustee met with the investment manager during 2023 to discuss these issues);
- further monitor the investment manager by receiving a stewardship report (which is independently reviewed by the Trustee's investment consultant) on an annual basis; and
- Recently agreed to arrange a dedicated Stewardship "deep dive" session with the investment manager in 2024 to further assess the approach taken to engagement and ensure this is aligned with the Trustee's own views.

Investment monitoring

The Scheme's investment adviser provides quarterly investment performance monitoring reports (including ESG scoring). Any concerns in relation to the investment manager are monitored as part of this process.

The IC is responsible for carrying out an annual responsible investment review (see opposite) and also receives and reviews detailed climate monitoring (including the chosen climate metrics) from its investment adviser and investment manager, on an annual basis.

The calculations and reporting of these metrics, along with other climate risk exposures, were discussed during the second half of 2023. The reporting included a comparison of the climate characteristics of each mandate with the climate characteristics of a suitable market-based index.

Annual Responsible Investment Review 2023 (and key findings)

The Trustee reviewed the investment manager's approach to managing ESG issues in 2023. This evaluation revealed several key aspects:

- For global equities, the investment team performs a forward-looking climate assessment at the individual company level that results in a rating for each company based on their commitment toward achieving Net Zero. This informs the size of investment that is made in each company.
- For sub-investment grade credit, the investment manager has demonstrated improvements in integrating ESG analysis into their investment process. This is pleasing to see, given it was an area identified for improvement by the investment consultant in 2022. Where the investment team faces challenges in sourcing information for non-public assets, they use a policy where inadequate data provision from a company leads to a lowest "ESG score", which encourages companies to improve their data provisions.
- For the investment grade credit mandate, the investment manager has been increasing its focus on the types of corporate projects that are being financed through the money being borrowed. This helps to better manage the risk of default (loans not being repaid) and encourages positive change in relation to how borrowed money is "spent" by companies.
- For the UK property mandate, the investment manager has set ambitious Net Zero targets of 2030 for directly owned properties. Strategies to achieve these include Net Zero audits of buildings and tenants, studies into renewable energy, and ensuring new property developments are aligned with Net Zero. Improvements are still needed in data collection and engagement, but this is an issue across the entire property market.

Overall, the Trustee was pleased to see advancements in ESG integration across the Scheme's assets and the investment manager's proactive approach towards managing climate risks. However, there remain areas for continued improvement, particularly in data collection, engagement strategies, and the establishment of clear Net Zero targets in certain mandates. The Trustee is seeking to address some of these improvements over 2024, with a particular focus on the investment grade credit mandate.

Strategy and Risk Management

Covenant risk and monitoring and DB funding risk

Covenant and risk monitoring

The Trustee considered the sponsoring employer's covenant and how this might interact with the Scheme under different climate transition outcomes.

In particular, the sponsoring employer has carried out significant research showing that its customers care about climate change and therefore believe that the best outcome for customers is that, collectively, it invests to achieve the goals of the Paris agreement.

As part of this commitment, the sponsoring employer is seeking to achieve net zero across its investment portfolio by 2050.

The commitment is based on the expectation that governments and policy makers will deliver on commitments to achieve the 1.5°C temperature goal of the Paris Agreement. It also assumes this action does not contravene the sponsoring employer's fiduciary duty to its customers. The commitment is baselined on the year 2020.

The Trustee believes that, by the sponsoring employer aligning itself with a net zero objective by 2050, the covenant risks associated with the potential financial outcomes of climate change over short, medium and longer-term periods on the Scheme are reduced. In addition, the sponsoring employer integrates climate-related risk into its overall risk management framework and moving fairly to a sustainable world is a core part of the employer's purpose and strategy.

When assessing the employer's covenant, the Trustee will ensure that climate risk has a specific focus. This will enable the Trustee to determine whether the employer's risks relating to climate change could impact the level of support available for the Scheme, especially when this support is most needed.

The Trustee last considered this risk in detail in 2022 when the sponsoring employer presented on its plans to achieve its net zero commitment, alongside the investment manager.

Funding risk

The Trustee has considered the funding strategy of the Scheme in light of the scenario analysis and discussions around covenant and investment.

In particular, the current funding strategy is considered to be somewhat resilient to climate change as it is targeting a more de-risked position by the time the Scheme is considered to be relatively "mature" (by 2035).

The funding position will still be susceptible to shocks over the short term from climate change being priced-in. If the Scheme is negatively impacted by such market shocks, the de-risking journey may be affected.

The Trustee will continue to monitor progress towards this more de-risked position to ensure that climate risks (and other risks) continue to be managed and where possible mitigated along the journey. This monitoring is carried out through regular funding updates, investment performance reviews, and an explicit "trigger framework" monitored daily to help the Trustee determine when it is affordable to de-risk the Scheme's assets whilst maintaining on track for its long-term funding objectives.

The Trustee has considered the impact of climate change on member mortality, noting that there is a significant level of uncertainty on the impact of climate change. There are both positive and negative factors that could impact the Scheme under the scenarios considered.

The Trustee will ensure that mortality is considered in the context of climate risks as part of the next Actuarial Valuation when more information and/or scenario modelling may be available on the potential impacts.

Strategy and Risk Management

Risk register

Trustee's risk register

The Trustee maintains a risk register covering the wide range of risks run in the Scheme. The IC maintains and updates the investment components of the risk register, with any amendments notified to the full Trustee Board. The Trustee's risk register includes a number of specific climate risks to ensure that the Trustee manages these as part of its regular risk reviews. Climate risk areas included in the risk registers are:

- Knowledge and understanding of climate risks
- Compliance with climate risk legislation
- Regular review of climate risks relevant to the Scheme
- Covenant and underfunding risk due to climate risks
- Reputational risks of not tackling climate risk appropriately
- Inadequate communication with members on climate risk

These are reviewed regularly to consider if any further risks need adding or amending, to assess any significant priority risks to manage and to ensure regular action is maintained in monitoring and mitigating these risks.

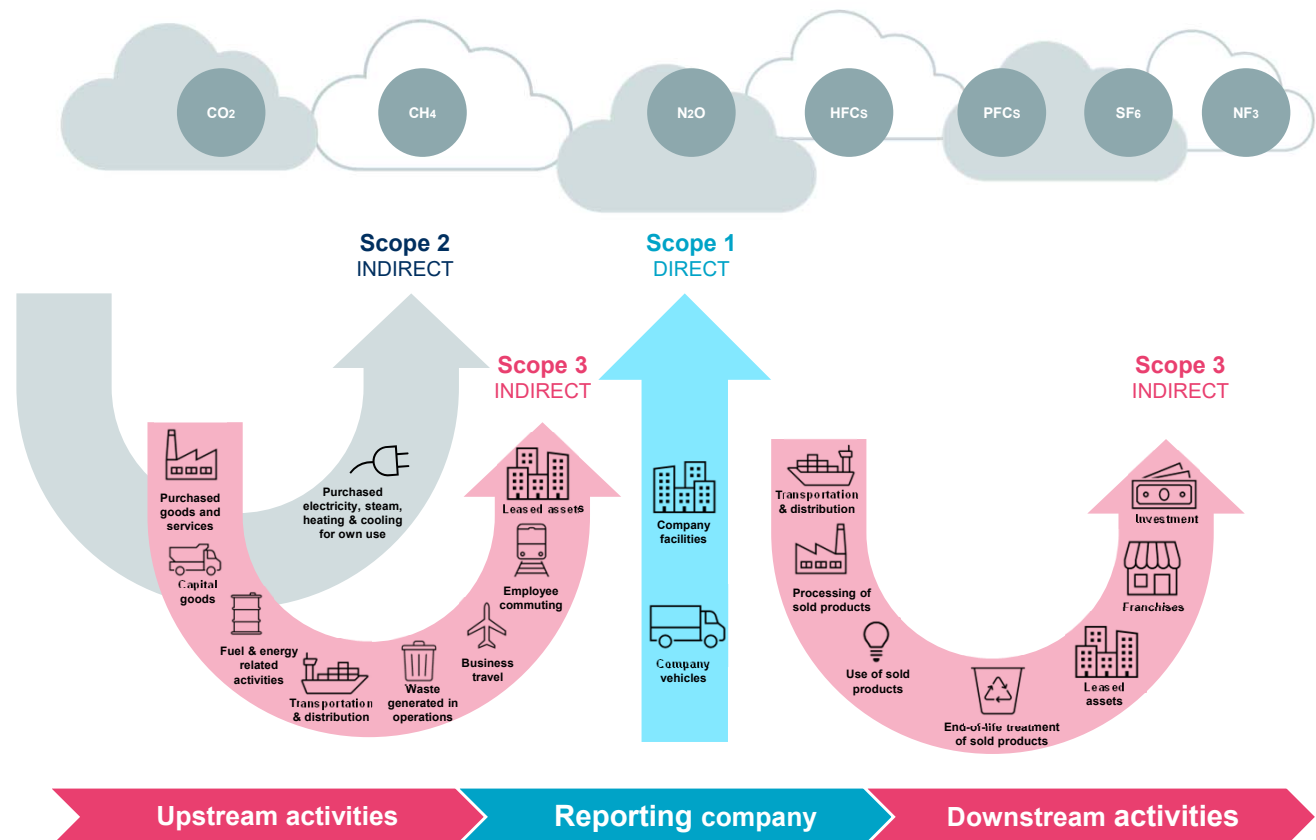
The Trustee's current assessment, based on consideration of their impact and likelihood, is that climate-related risks are well managed for the Scheme, with respect to both investment and scheme funding. They should continue to be monitored in accordance with the current monitoring processes, alongside considering ways of integrating more climate aware investment approaches within the Scheme's equity and corporate bond mandates.

Metrics and targets

Emissions metrics relate to seven greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃). The figures are shown as “CO₂ equivalent” (CO₂e) which is the amount of carbon dioxide that would be equivalent to the excess energy being stored by, and heating, the earth due to the presence in the atmosphere of these seven greenhouse gases.

The metrics related to greenhouse gas emissions are split into the following three categories: Scope 1, 2 and 3. These categories describe how directly the emissions are related to an entity's operations, with Scope 1 emissions being most directly related to an entity's everyday activities and Scope 3 referring to indirect emissions in an entity's value chain. Scope 3 emissions often form the largest share of an entity's total emissions, but are also the ones that the entity has least control over.

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



Metrics and Targets

Metrics

The Trustee has chosen five climate-related metrics to help it monitor climate-related risks to the Scheme. These are listed below and reported on the following pages (as far as the Trustee was able to obtain the data).

Metric	High-level methodology
1. Absolute emissions: Total greenhouse gas emissions	The sum of each company's most recent reported or estimated greenhouse gas emissions attributable to the Scheme's investment in the company, where data is available. Emissions are attributed evenly across equity and debt investors. Reported in tonnes of CO ₂ equivalent. This methodology was chosen because it is in line with the statutory guidance.
2. Emissions intensity: Carbon footprint	The total greenhouse gas emissions described above, divided by the value of the invested portfolio in £m, adjusted for data availability. Emissions are attributed evenly across equity and debt investors. Reported in tonnes of CO ₂ equivalent per £1m invested. This methodology was chosen because it is in line with the statutory guidance.
3. Data quality	The proportion of the portfolio by weight of companies for which greenhouse gas emissions data is reported (verified* or otherwise), estimated or unavailable. This approach was chosen because it is in line with the statutory guidance.
4. Significant engagement	The proportion of the portfolio by weight of emissions that the investment manager has carried out significant engagements with respect to climate change. In this context, "significant" is defined as covering the most high impact companies and being made on the basis of change rather than just to collate information. The Trustee chose this metric because it was considered an effective route to reduce real-world emissions as engagement is more likely to lead to action than disinvestment, and this metric naturally will focus on addressing the heaviest emitters in the Scheme's investments.
5. Portfolio alignment (binary target)	The proportion of the portfolio by weight of companies that have a validated carbon emissions reduction target by the Science Based Targets initiative (SBTi) or equivalent**. This measures the extent to which the Scheme's investments are aligned to the Paris Agreement goal of limiting global average temperature rises to 1.5°C. Reported in percentage terms. The Trustee chose this metric because it is the simplest and most robust of the various portfolio alignment metrics available.

*Reported emissions are reported by the emitting company, and may or may not have been verified by a third party.

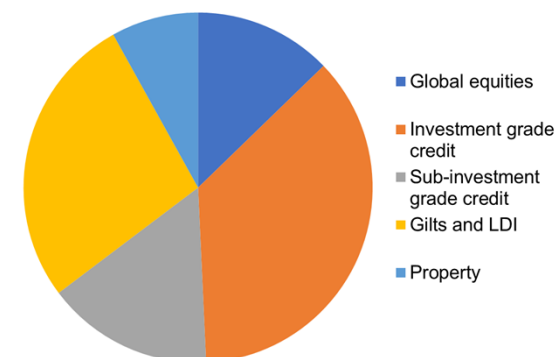
**The UK has a net zero by 2050 target written into law, with carbon budgets set based on advice from the independent Committee on Climate Change, so we regard UK government bond exposure as having a credible SBT. As such, we have treated UK government bonds as 100% SBT-aligned for the purposes of our metric assessments.

Metrics and Targets

Metrics

The data has been calculated using portfolio holdings as at 30 September 2023 where available, sourced from the Scheme's investment manager (with exception of the government bonds and LDI portfolio, which has been sourced from the Trustee's investment consultant).

Scheme asset allocation as at 30 September 2023



Asset class (% allocation)	Details of missing data or estimations
Equities (13%)	See Appendix 2. Data coverage is high for the Scheme's global equity portfolio.
Credit (52%) – both investment and sub-investment grade	See Appendix 2. The level of data coverage within the corporate bonds is lower than some other assets. This is mainly because MSCI (who provided the data) does not provide certain information for corporate bonds that are not traded publicly, of which RLAM does hold a reasonable amount. The Trustee's investment consultant has previously asked MSCI to address this and are continuing to engage with MSCI. They have said that they are increasing coverage of corporate bond issuers, but the Trustee's investment consultant is not aware of a noticeable improvement at the time of writing. MSCI have been sent example portfolios to illustrate the types of data gaps that investors are generally seeking to address, with the intention that this will translate into action in future.
Government bonds and LDI (27%)	See Appendix 2. Government bond metrics are calculated on a different basis to other mandates, so cannot be compared with them. The emissions intensity has been calculated as "total greenhouse gas emissions produced in the UK" divided by "UK GDP using PPP methodology" using publicly available data sources, consistent with guidance from the Partnership for Carbon Accounting Financials ("PCAF"). Note that this methodology is different to that used to calculate these metrics for the previous reporting period, in light of developing market practice. Total greenhouse gas emissions have been calculated as "value of your investment in gilts" multiplied by "emissions intensity". Note that there can be double counting across the portfolio where UK country emissions include UK company emissions already accounted for within the credit portfolio. In calculating metrics for the LDI exposure, we have treated derivatives as an investment in an equivalent gilt. Greenhouse gas emissions have been calculated for the gilt exposure (including the repo loan amount) but not the swap positions. This is in line with our understanding of the typical interpretation of the DWP guidance by investment managers and consultancies as not requiring calculation of emissions for swap exposures at this time.
Property (8%)	RLAM has quoted a 100% coverage for carbon intensity of the property assets. In achieving this, where insufficient data coverage was available for a property, RLAM has applied GRESB [^] CO2e intensity benchmarks to the total floor area to estimate emissions.

The Trustee engages regularly with the investment manager to determine key areas of missing data, and better understanding how to improve the quality of data over time (see page 21 for further details).

[^]GRESB stands for Global Real Estate Sustainability Benchmark. It is an industry-driven organisation that assesses the environmental, social, and governance (ESG) performance of real estate assets around the world.

Metrics and Targets (comparison and interpretation)

The Trustee, with its investment consultant considered the climate metric information and used it to identify key trends / changes in metric between 2022 and 2023.

Key trends identified were an overall improvement in asset coverage (with exception of investment grade credit), no material change in asset carbon footprints, a reduction in data quality for equity and property assets, and a significant increase in the level of investment manager engagement with portfolio companies.

Following these discussions, the Trustee's investment consultant posed several questions to the investment manager, asking them to comment on reasons for any trends or material changes over the period. The table below sets out a summary of the Trustee's findings and the investment manager's response.

Further information on the Scheme's climate metrics and targets can be found across the following pages.

High level summary

Asset class	Coverage	Carbon footprint	Data quality (Scope 1 & 2)	Portfolio alignment	Significant engagement	Investment manager response to Trustee questions
Global developed equities	Remains very high	Broadly unchanged	Reduced (<i>manager was then questioned</i>)	Improved	Improved significantly	<i>Active stock-picking may lead to temporary dips in metrics. It is long-term improvement that is most pertinent, and is a greater focus for the investment approach.</i>
Emerging market equities	Improved	Broadly unchanged	Improved	Improved	Improved	
UK Real Estate / Property	Improved	Broadly unchanged	Reduced (<i>manager was then questioned</i>)	n/a	n/a	<i>Data quality will naturally vary year on year depending on the data received through quarterly data collection.</i>
MAC	Improved	Reduced	Improved	Improved	Improved	
IG credit	Reduced (<i>manager was then questioned</i>)	Broadly unchanged	Improved	Slightly reduced (<i>manager was then questioned</i>)	Improved significantly	<i>The fall in data coverage can be explained by a reduced investment in publicly listed companies (which generally have greater covers vs private companies).</i>

Conclusions

Ultimately, **the Trustee accepts that there will be near-term fluctuations in data quality, carbon footprint, and portfolio alignment**, given the actively managed nature of the Scheme's investment portfolios (meaning that company holdings will change over time depending on the investment manager's views). However, **over time the Trustee still expects to see improvements across all these metrics** as data quality in the investment industry improves and companies improve to take better account of climate risks and opportunities. **The Trustee is pleased to see a significant increase in the proportion of companies where the investment manager has engaged with on climate change** and the Trustee expects the investment manager to continue engaging with these companies to monitor the resulting improvements in business practices.

Metrics and Targets

Metrics – Equities and Property

(Figures in brackets denote figures from the 2022 TCFD report)

Portfolio	Market value (exposure) ⁷	Scope 1 and 2 emissions (for holdings with data)				Scope 3 emissions (for holdings with data)				Portfolio alignment (SBTi) ⁵	Significant engagement (% financed emissions) ⁶
		Coverage	Emissions (tonnes CO ₂ e) ¹	Carbon footprint (tonnes CO ₂ e per £m invested) ¹	Data quality (% covered assets with reported emissions) ¹	Coverage	Emissions (tonnes CO ₂ e) ¹	Carbon footprint (tonnes CO ₂ e per £m invested) ¹	Data quality (% covered assets with reported emissions) ¹		
Global equities	£163m	99% (100%)	11,157 (14,653)	69 (66)	65% (82%)	99%	100,462	622	0%	34% (31%)	41% (24%)
Global equity futures	(£6m)	99% (100%)	315 (-1,378)	55 (56)	82% (89%)	99%	2,584	450	0%	42% (31%)	n/a
UK equity futures	(£55m)	99% (98%)	4,716 (10,562)	87 (93)	100% (98%)	99%	54,338	1066	0%	49% (49%)	n/a
Emerging markets	£9m	100% (90%)	905 (1,658)	106 (108)	90% (80%)	100%	3,268	384	0%	18% (6%)	8% (n/a)
UK Real Estate*	£130m	100% (78%)	79 (106)	1 (2)	92% (96%)	100%	768	6	20%	n/a	n/a
UK Property*	£59m	100% (64%)	46 (127)	1 (1)	87% (99%)	100%	633	11	1%	n/a	n/a

Footnote references are explained on page 23. We have taken a proportionate approach to the Scheme's (relatively small) global equity futures positions and assumed the climate characteristics are consistent with the benchmark of the Scheme's global diversified equity portfolio. Scope 3 emissions data across the Scheme's non-LDI and government bond assets has been estimated. Coverage for global equity futures and UK equity futures for Scope 3 emissions has been assumed to be identical to that of Global equities, given information was not readily available from RLAM at the time of writing.

Metrics and Targets

Metrics – Credit, Government Bonds and LDI

(Figures in brackets denote figures from the 2022 TCFD report)

Portfolio	Market value (exposure) ⁷	Scope 1 and 2 emissions (for holdings with data)				Scope 3 emissions (for holdings with data)				Portfolio alignment (SBTi) ⁵	Significant engagement (% financed emissions) ⁶
		Coverage	Emissions (tonnes CO ₂ e) ¹	Carbon footprint (tonnes CO ₂ e per £m invested) ¹	Data quality (% covered assets with reported emissions)	Coverage	Emissions (tonnes CO ₂ e) ¹	Carbon footprint (tonnes CO ₂ e per £m invested) ¹	Data quality (% covered assets with reported emissions)		
MAC	£281m	48% (20%)	5,178 (4,172)	38 (59)	83% (45%)	48%	50,958	377	0%	8% (1%)	16% (n/a)
IG credit	£645m	38% (42%)	13,423 (19,359)	55 (55)	97% (90%)	36%	77,284	321	0%	8% (12%)	69% (34%)
Index linked gilts	£439m	100% (100%)	59,676 (91,287) [^]	136 (136) [^]	100% (100%)	100%	37,552	85	100%	100% (100%)	n/a
Gilt futures	(-£21m)	100% (100%)	-2,847 (-4,388) [^]	136 (136) [^]	100% (100%)	100%	-1,792	85	100%	100% (100%)	n/a
Hedging portfolio	(£615m)	100% (100%)	83,482 (98,557) [^]	136 (136) [^]	100% (100%)	100%	52,531	85	100%	100% (100%)	n/a

Footnote references are explained on page 23.

[^]Please note that last year's carbon footprint and emissions metrics for index-linked gilts, gilt futures, and the hedging portfolio have been restated to reflect the most current industry-standard methodology for calculating carbon intensity related to sovereign debt emissions. This update enables direct comparisons between this year's and last year's emissions figures.

Metrics and Targets

Progress vs previously agreed targets and potential next steps

Portfolio	Significant engagement (% financed emissions)		Target by 2027	Progress	Comments and next steps
	2022	2023			
Global developed equities	24%	41%	70%	On track	The investment manager is on track to achieve this objective, and the Trustee therefore considers it appropriate to retain the current target.
IG credit	34%	69%	70%	Broadly achieved	IG credit has been a primary focus for the investment manager at a firm level, and it is pleasing to see this come through in strong engagement progress. The Trustee intends to review whether to amend the target during 2024, alongside wider strategic changes.
MAC	n/a	16%	n/a	n/a	Given the more recent availability of data for this asset class, the Trustee is working with the Scheme's investment manager and investment consultant to determine an appropriate long-term engagement target for this portfolio.

Reasoning for the chosen targets

The climate reporting carried out for the Scheme during the year included an assessment of the current level of significant engagement made by the investment manager with the companies held within the global equity and UK corporate bond mandates. This measure is weighted by financed emissions – ie it provides an indication of the total financed emissions of the portfolio that is actively being engaged with on climate change.

“Significant” is defined as the most high impact companies and being made on the basis of change rather than just to collate information.

The rationale for the preferred target was:

- Setting an engagement target weighted by financed emissions naturally focusses action on the “worst emitters”, which is viewed as an effective route to reduce real-world emissions.
- The investment manager already has a robust plan for engaging with portfolio companies as part of its own de-carbonisation plans (however the Trustee target has been set to stretch these existing plans further).
- Setting alternative portfolio alignment targets (ie to simply reduce financed emissions) could potentially lead to some counter-productive actions (eg companies selling “less green” parts of their business to new owners who are less incentivised to reduce emissions).

The following steps are being taken to achieve the target:

- The Investment manager is regularly invited to present at Trustee meetings as part of the existing monitoring process. When meeting with the Scheme's investment manager, the Trustee will ask the manager how it expects the engagement with portfolio companies to change over time and encourage the manager to engage with portfolio companies, prioritising those with the highest carbon footprint.
- The investment manager has the goal of net zero emissions by 2050 or earlier. This includes the use of effective voting (where applicable) and engagement with portfolio companies to encourage achievement of net zero. The investment consultant continues to engage with the manager on this topic and will encourage them to use its influence with portfolio companies to increase the engagement with the worst emitters.
- The Trustee will review progress towards the target each year and consider whether additional steps are needed to increase the chance of meeting the target.
- Each year, the Trustee may decide to apply a similar target to other parts of the assets, once data availability increases.

Metrics and Targets

Footnotes / points to note in calculating metrics

¹ Figures relate only to the assets for which data is available. Total emissions are for the Scheme's assets, not the whole pooled fund where one is used.

² Gilts metrics are calculated on a different basis to other mandates shows, so cannot be compared with them. The emissions intensity has been calculated as "total greenhouse gas emissions produced in the UK" divided by "UK GDP using PPP methodology" using publicly available data sources. Total greenhouse gas emissions have been calculated as "value of your investment in gilts" multiplied by "emissions intensity". Note that there can be double counting across the portfolio where UK country emissions include UK company emissions already accounted for within the credit portfolio.

³ In calculating metrics for your LDI exposure, we have treated derivatives as an investment in an equivalent gilt. Greenhouse gas emissions have been calculated for the gilt exposure (including the repo loan amount) but not the swap positions. This is line with our understanding of the typical interpretation of the DWP guidance by investment managers and consultancies as not requiring calculation of emissions for swap exposures at this time.

⁴ In calculating metrics for the index-linked bond portfolio, we have assumed all bond holdings are issued in the UK. In practice, the actual proportion in these bonds is c98%.

⁵ SBTi targets are the near-term targets and only include companies that already have targets, not those which have committed to set them. The UK has a net zero by 2050 target written into law, with carbon budgets based on advice from the independent Committee on Climate Change, so UK government bond exposure has been treated as having a credible science-based target.

⁶ RLAM defines significant engagement as "covering the most high impact companies and being made on the basis of change rather than just to collate information".

⁷ Market values for non-LDI portfolios exclude the value of any cash and sovereign bond holdings. Therefore, carbon footprint data also applies to the same market value.

*The emissions and valuations for the Royal London Property Funds are shown as at 30 September 2022 due to the availability of data.

LCP Sources for LDI metrics below. LCP has calculated metric figures in line with DWP and PCAF guidelines.

GHG Emissions – Climate Watch (climatewatchdata.org)

Government debt – OECD Data (data.oecd.org)

GDP (PPP adjusted) – World Bank (data.worldbank.org)

United States CO2 emissions – Our World in Data (ourworldindata.org)

Global CO2 emissions – OECD Stat (stats.oecd.org)

UK government debt – Office for National Statistics (ons.gov.uk)



Appendices

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- Appendix 2 – Data provided by RLAM / LCP Page 30
- Appendix 3 – Glossary of terms Page 33

Appendix 1 – Climate scenario analysis

Scenarios considered and why the Trustee chose them

The Trustee last carried out a full climate scenario analysis as at 31 March 2022 with the support of their actuarial and investment consultants. The analysis looked at three possible scenarios:

Transition	Description	Why the Trustee chose it
Failed Transition	Global net zero carbon emissions not reached by 2050; only existing climate policies are implemented and temperatures rise significantly.	To explore what could happen to the Scheme's finances if carbon emissions continue at current levels and this results in significant physical risks from changes in the global climate that disrupt economic activity.
Orderly Net Zero by 2050	Global net zero carbon emissions is achieved by 2050; rapid and effective climate action (including using carbon capture and storage), with smooth market reaction.	To see how the Scheme's finances could play out if global net zero carbon emissions are achieved by 2050, meaning that the economy makes a material shift towards low carbon by 2030.
Disorderly Net Zero by 2050	Same policy, climate and emissions outcomes as the Orderly Net Zero scenario, but financial markets are initially slow to react and then over-react.	To look at the risks and opportunities for the Scheme if global net zero carbon emissions is achieved by 2050, but financial markets are volatile as they adjust to a low carbon economy.

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

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

The scenarios' key features are summarised overleaf.

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

General note on global warming: The 1.5C warming target in the Paris Agreement refers to temperatures in 2100. There are plausible climate scenarios that exceed 1.5C temporarily ("overshoot") and then fall back again. Looking ahead, recent temperatures indicate that the world is warming more quickly than expected, so limiting temperature rises to 1.5C (both in & before 2100) is becoming less likely. However, the Trustee notes that this is not an "all or nothing" target. In other words, if temperature rises cannot be limited to 1.5C, it's still better to limit them to 1.6C than allow them to rise 1.7C.

Appendix 1 – Climate scenario analysis

The climate scenarios considered by the Trustee

Scenarios as at 31 December 2021 – key features

Scenarios:	<i>Failed Transition</i>	<i>Orderly Net Zero by 2050</i>	<i>Disorderly Net Zero by 2050</i>
Low carbon policies	Continuation of current low carbon policies and technology trends	Ambitious low carbon policies, high investment in low-carbon technologies and substitution away from fossil fuels to cleaner energy sources and biofuel	
Paris Agreement outcome	Paris Agreement goals not met	Global net zero achieved by 2050; Paris Agreement goals met.	
Global warming	Average global warming is about 2°C by 2050 and 4°C by 2100, compared to pre-industrial levels	Average global warming stabilises at around 1.5°C above pre-industrial levels	
Physical impacts	Severe physical impacts	Moderate physical impacts	
Impact on GDP	Global GDP is significantly lower than the climate-uninformed scenario in 2100. For example, UK GDP in 2100 predicted to be 50% lower than in the climate uninformed scenario.	Global GDP is lower than the climate-uninformed scenario in 2100. For example, UK GDP in 2100 predicted to be about 5% lower than in the climate-uninformed scenario.	In the long term, global GDP is slightly worse than in the Orderly Net Zero scenario due to the impacts of financial markets volatility.
Financial market impacts	Physical risks priced in over the period 2026-2030. A second repricing occurs in the period 2036-2040 as investors factor in the severe physical risks	Transition and physical risks priced in smoothly over the period of 2022-2025	Abrupt repricing of assets causes financial market volatility in 2025

Appendix 1 – Climate scenario analysis

Modelling approach

- The scenario analysis is based on a model developed by Ortec Finance and Cambridge Econometrics. The outputs were then applied to the Scheme's assets and liabilities by LCP.
- The three climate scenarios are projected year by year, over the next c30 years.
- The results are intended to help the Trustee to consider how resilient the funding and investment strategy is to climate-related risks.
- The Trustee discussed how future planned changes to the investment strategy would change the analysis.
- The three climate scenarios chosen are intended to be plausible, not "worst case". They are only three scenarios out of countless others which could have been considered. Other scenarios could give better or worse outcomes for the Scheme.
- The results discussed in this report have been based on macro-economic data at 31 December 2021, calibrated to market conditions at 31 March 2022.

For more information about the modelling approach, see next page.

Modelling limitations

- As this is a "top-down" approach, investment market impacts were modelled as the average projected impacts for each asset class. This contrasts with a "bottom up" approach that would model the impact on each individual investment held by the Scheme's investment portfolio. As such, the modelling does not require extensive scheme-specific data and so the Trustee was able to consider the potential impacts of the three climate scenarios for all of the Scheme's assets.
- In practice, the Scheme's investments may not experience climate impacts in line with the market average.
- Like most modelling of this type, the modelling does not allow for all potential climate-related impacts and therefore is quite likely to underestimate some climate-related risks. For example, tipping points (which could cause runaway physical climate impacts) are not modelled and no allowance is made for knock-on effects, such as climate-related migration and conflicts.

Appendix 1 – Climate scenario analysis

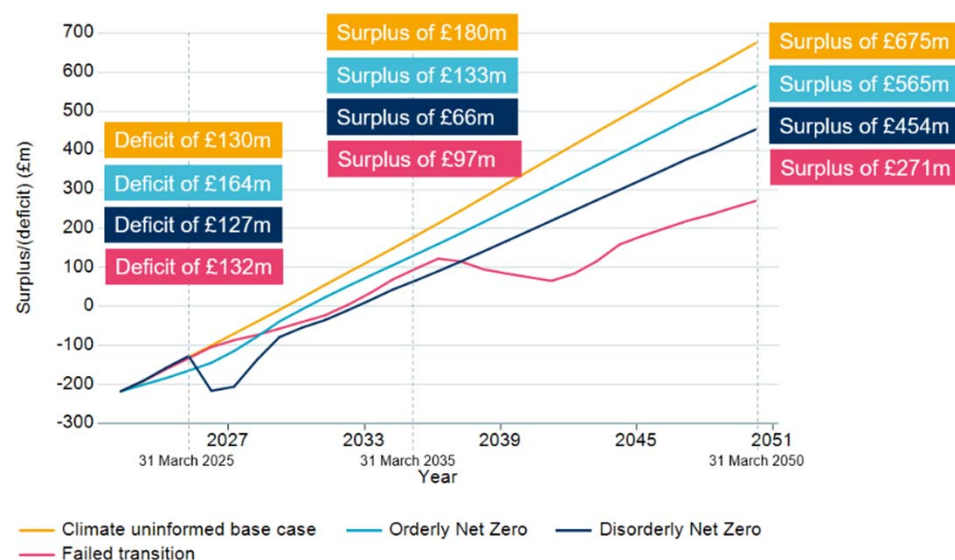
Modelling approach – more details

- The scenario analysis is based on the ClimateMAPS model developed by Ortec Finance and Cambridge Econometrics, and was then applied to the Scheme's assets and liabilities by LCP. The three climate scenarios were projected year by year, over the next c30 years.
- ClimateMAPS uses a top-down approach that consistently models climate impacts on both assets and liabilities, enabling the resilience of the Scheme's funding strategy to be considered. The model output is supported by in-depth narratives that bring the scenarios to life to help the Trustee's understanding of climate-related risks and opportunities.
- ClimateMAPS uses Cambridge Econometrics' macroeconomic model which integrates a range of social and environmental processes, including carbon emissions and the energy transition. It is one of the most comprehensive models of the global economy and is widely used for policy assessment, forecasting and research purposes. The outputs from this macroeconomic modelling – primarily the impacts on country/regional GDP – are then translated into impacts on financial markets by Ortec Finance using assumed relationships between the macroeconomic and financial parameters.
- Ortec Finance runs the projections many times using stochastic modelling to illustrate the wide range of climate impacts that may be possible, under each scenario's climate pathway. LCP takes the median (ie the middle outcome) of this range of impacts, for each relevant financial parameter, and adjusts it to improve its alignment with LCP's standard financial assumptions.
- LCP then uses these adjusted median impacts to project the assets and liabilities of the Scheme to illustrate how the different scenarios could affect its funding level. The modelling summarised in this report used scenarios based on the latest scientific and macro-economic data at 31 December 2021, calibrated to market conditions at 31 March 2022.
- The modelling assumed no further cash contributions and the Trustee discussed how future planned changes to the investment strategy for the Scheme would change the analysis. No allowance was made for changes to the investment strategy or contributions in response to the climate impacts modelled.
- As this is a “top-down” approach, investment market impacts were modelled as the average projected impacts for each asset class, ie assuming that the Scheme's investments are affected by climate risk in line with the market-average portfolio for the asset class. This contrasts with a “bottom up” approach that would model the impact on each individual investment held in the Scheme's investment portfolio. As such, it does not require extensive scheme-specific data and so the Trustee was able to consider the potential impacts of the three climate scenarios for all of the Scheme's assets.
- In practice, the Scheme's investment portfolio may not experience climate impacts in line with the market average. The Trustee considers, on an ongoing basis, how the Scheme's climate risk exposure differs from the market average using climate metrics (which are compared with an appropriate market benchmark) and its regular responsible investment reviews which considers the investment managers' climate approaches.
- The Trustee notes that the three climate scenarios chosen are intended to be plausible, not “worst case”, and the modelling is based on median outcomes. It therefore illustrates how the centre of the “funnel of doubt” surrounding the funding projections might be affected by climate change. It does not consider tail risks within that funnel, nor does it consider how the funnel might be widened by the additional uncertainties arising from climate change. In addition, only three scenarios out of infinitely many have been considered. Other scenarios could give better or worse outcomes for the Scheme.
- Uncertainty in climate modelling is inevitable. In this case, key areas of uncertainty relating to the financial impacts include how climate change might affect interest rates and inflation, and the timing of market responses to climate change. ClimateMAPS, like most modelling of this type, does not allow for all climate-related impacts and therefore, in aggregate, is quite likely to underestimate the potential impacts of climate-related risks, especially for the Failed Transition scenario. For example, tipping points (which could cause runaway physical climate impacts) are not modelled and no allowance is made for knock-on effects, such as climate-related migration and conflicts.

Appendix 1 – Climate scenario analysis

Potential impacts under each scenario

- The chart below illustrates the projected funding position of the Scheme (on a “self-sufficiency” basis) in each of the three scenarios considered, as well as in the “climate uninformed base scenario”.
- Under the Paris Orderly Transition (bright blue line), there is minimal impact to the funding position as the costs and benefits of the transition are modelled as broadly cancelling out.
- Under the Paris Disorderly Transition (dark blue line), there is market volatility as the market reprices in the mid 2020s, which has a material impact on the funding position (as the investment strategy currently includes a reasonable holding in assets classes that are expected to be most exposed to climate risk, eg equities).
- Under the Failed Transition (pink line), there would be a more significant impact on the funding position, but not until after 2035 (ie the point at which the Trustee is aiming to have carried out significant de-risking of the assets).



Scenario outcomes

The scenario analysis highlighted a number of potential financial impacts for the Scheme including:

- The Scheme is expected to be fully funded on a self-sufficiency basis (regardless of climate outcome) by 2035.
- Near term risks exist in relation to a market correction for a “disorderly net zero” transition, primarily with respect to equity and property holdings. The Trustee will work with its investment consultant and investment manager to ensure exposure to these risks are managed carefully
- Longer-term risks exist for a “failed transition”, although the Trustee is aspiring to achieve a low risk investment strategy ahead of these full effects potentially being felt in markets.

Impact of climate change on life expectancy

If a member lives longer, the Scheme pays the member’s pension for longer and therefore needs more assets to make the payments. Like the economic impacts, the impact of climate change on life expectancy is highly uncertain.

As part of the discussions on the climate scenario analysis, the Trustee considered the various possible drivers for changes in mortality rates with both positive and negative impacts expected in each of the scenarios considered.

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

Given the level of uncertainty, the Trustee noted that no specific allowance has currently been made in the scenario analysis, but that it would keep up to date on developments in this area and consider it further at the next actuarial valuation.

Appendix 2 – Data provided by RLAM / LCP

Methodological and data assumptions, limitations, and disclaimers

Our disclosed metrics are subject to potential limitations due to the emerging nature of climate data applications and methodologies in finance. Low levels of data coverage may give inaccurate fund statistics. All data is supplied for information purposes only and should not be relied upon for investment decisions. We endeavour to improve climate data in finance through our engagement with companies and data providers. We believe that technological innovations will make data more easily accessible and auditable in the future. We are also working with regulators, such as through the Climate Financial Risk Forum (CFRF) in the UK, to support disclosure standardisation.

Although Royal London Asset Management Ltd's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the ESG parties), obtain information from sources considered reliable, none of the ESG parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose.

We have found three areas where limitations are most evident:

1. Issuers' carbon emissions data is incomplete and can be inconsistent across sectors, asset classes and regions.

Most greenhouse gas disclosures are voluntary, relative to financial data, and are subject to less rigorous auditing. Issuers disclose emissions with different levels of transparency, coverage and methodologies, making disclosures less comparable. For example, they may aggregate all greenhouse gases into CO₂ equivalent values or reveal their operations' carbon intensity and not the absolute emissions. Furthermore, there are instances in which emissions are inherently hard to monitor and measure, such as methane emissions that leak from oil and gas infrastructure. Specific countries, such as the US and China, are further behind in disclosure along with relatively low emitting sectors such as financials.

When issuers don't report scope 1 and 2 emissions, data providers' estimation methodologies that allow for further coverage make emission data less reliable. Methodologies to estimate emissions can be based on a company's production data, historical companies' emissions reports or by using the subindustry segment intensity average. We have enhanced scope 1 and 2 emissions with in-house research for fixed income sterling credit instruments based on detailed knowledge of the issuers, capital structure considerations and underlying assets.

Given the lack of issuer data and inconsistencies in reporting we selected to disclose our holdings' scope 3 emissions as estimated by data providers following the GHG Protocol methodology. The scope 3 estimation methodologies cannot follow the GHG Protocol entirely as it would require complete understanding of each company's entire value chain and market. Nonetheless, the methodologies are based on bottom-up company-specific data when available but can also use top-down sector intensities. The scope 3 emission estimates are particularly weak for financials.

The comparability and timeliness of companies' disclosures is limited by data providers' research cycles and the rapidly moving landscape of corporate and policy climate pledges. Timing of disclosure varies across jurisdictions and companies, with announcements on climate strategy or emissions targets not necessarily following the financial disclosure schedules. This is compounded by data provider schedules (the workflow by which they prioritise companies' research). The result is that carbon data is often 12-18 months out of date.

2. Issuers' financial data can be inconsistent.

The financial data standardised by ESG data providers used in this report may differ to data used in our internal financial analysis. For example, conversion rates and differences in tax system reporting make data less comparable. To assess companies' performance, we use the financial data from various data providers, including the ESG data vendors used in this assessment. This includes revenue, market capitalisation and enterprise value used in this analysis. We cross refer these data sets to ensure the financial data quality of our investable universe, but some uncertainties persist.

3. Metrics that stress-test the value of financial instruments due to climate change transition and physical risk are still evolving. Climate Value at Risk (C-VaR), our selected metric, relies on necessary climate model, socioeconomic assumptions and cost and valuation calculations that reduce confidence in the metric.

The metric consists of three models, policy C-VaR, physical C-VaR and technology C-VaR. For each climate impact is calculated at asset-level and translated into impact on cost or return for the next 15 years.

i Policy C-VaR calculations make necessary assumptions on how much a company may need to reduce its greenhouse gas emissions due to climate policy and how much this may cost.

- Assumptions include countries adequately disclosing their plans to the United Nations Framework Convention on Climate Change (UNFCCC) and implementing them. Carbon prices used to estimate costs are taken from IPCC referenced integrated assessment models (IAM) and scenarios. IPCC and NGFS IAM scenarios assumptions are openly auditable and can be considered the latest science which informs policy. However, these models have assumptions around GDP growth, technology uptake, and marginal abatement costs which mean inherently each scenario for which a carbon price is taken will show only one possible alternative future.

ii Physical C-VaR makes assumptions on the climate impact on a company's assets from climate change and how costly this could be in terms of increased business interruptions and/or asset damage.

- It uses climate impact models that include chronic hazards such as gradual temperature, precipitation, and snowfall changes as well as acute hazards such as coastal flooding and cyclones. The impact of emissions on warming has lower uncertainties than the planet's warming effects on weather and climate and its implications in specific locations. Beyond the difficulty of accurately estimating the increase in vulnerability of assets due to climate change, estimating how much this may cost the business has additional assumptions, for example how costs are aggregated from asset to business balance sheets, assumptions of companies' lack of adaptive capacity and insurance costs.

iii Technology C-VaR has embedded various assumptions on green technology ownership and uptake to estimate how much a company may benefit from transitioning to a low carbon economy.

- For this analysis, millions of low carbon patents granted by various patent authorities are assessed. Using current green revenues and patent analysis to understand companies' low carbon innovation, a model simulates which companies may benefit when policies from IPCC and NGFS IAM models that reach different warming goals are implemented globally. Assumptions are made on: technology uptake, the returns these technologies will yield and crucially that patent ownership and citations are a good starting point to understand transition opportunity.

Appendix 2 – Data provided by RLAM / LCP

Methodological and data assumptions, limitations, and disclaimers

The metrics we disclose are following requirements captured in the United Kingdom Financial Conduct Authority and the Department for Work and Pensions climate disclosures regulations. Our climate scenario analysis uses the Network for Greening the Financial System (NGFS) climate scenarios. The NGFS is a network of 121 Central Banks including the Bank of England.

We follow the Taskforce for climate-related Financial Disclosure (TCFD) and Climate Financial Risk Forum (CFRF) industry recommendations.

MSCI disclaimer

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Appendix 2 – Data provided by RLAM / LCP

Notes for data sourced from LCP calculations based on publicly available data in respect of government bonds.

Government bond metrics are calculated on a different basis to other asset classes, so cannot be compared with them and should not be aggregated with them. They are typically much higher than emissions metrics for corporate debt.

Note that manager estimates of emissions data may differ materially from those calculated by LCP due to differences in methodologies, sources of data and/or dates of calculation.

The Scope 1+2 emissions intensity has been calculated as:

$$\frac{\text{total GHG emissions produced in Country A}}{\text{PPP-adjusted GDP of Country A}}.$$

Scope 3 emissions intensity has been calculated similarly, except that the emissions are those embodied in goods and services imported by the country and consumed within the country (rather than re-exported), rather than emissions produced in the country.

In both cases, Total greenhouse gas emissions have been calculated as:

$$\text{emissions intensity} * \text{value of your investment in government bonds}.$$

These are measures of the country's reliance on greenhouse emissions. There can be issues of double counting across the portfolio where the country's emissions double count the country's company emissions already accounted for within other asset classes.

Appendix 3 – Glossary

Actuarial valuation – an actuarial valuation estimates the amount of money a pension scheme needs today to be able to pay all future promised benefits to members. The difference between this amount and the actual level of assets, is referred to as the funding level. This is typically performed every three years. In making this estimate, various assumptions are used such as the level of investment return that might be made on the assets (on a prudent basis) and future inflation expectations.

Alignment – in a climate change context, alignment is the process of bringing greenhouse gas emissions in line with 1.5°C temperature rise targets. It can be applied to individual companies, investment portfolios and the global economy.

Asset class – a group of securities which exhibit broadly similar characteristics. Examples include equities and bonds.

Avoided emissions – these are reductions in greenhouse gas emissions that occur outside of a product's life cycle of value chain, but as a result of the use of that product. For example, emissions avoided through use of a wind turbine or buildings insulation.

Bond – a bond is a security issued to investors by companies, governments and other organisations. In exchange for an upfront payment, an investor normally expects to receive a series of regular interest payments plus, at maturity, a final lump sum payment, typically equal to the amount invested originally, or this amount increased by reference to some index.

Carbon emissions - These refer to the release of carbon dioxide, or greenhouse gases more generally, into the atmosphere, for example from the burning of fossil fuels for power or transport purposes.

Carbon footprint – In an investment context, the total carbon dioxide or greenhouse gas emissions generated per amount invested (eg in £m) by an investment fund. Related definitions are used to apply the term to organisations, countries and individuals.

Climate change adaptation – steps taken to adapt to the physical effects of climate change such as improving flood defences and installing air conditioning.

Climate change mitigation – steps taken to limit climate change by reducing greenhouse gas emissions, for example by shifting to renewable sources of energy – such as solar and wind – and by using less energy and using it more efficiently.

Covenant – the ability and willingness of the sponsor to make up any shortfall between a DB scheme's assets and the agreed funding target.

Credit – long-term debt issued by a company, also known as corporate bonds. Corporate bonds carry different levels of credit risk which is indicated by their rating and credit spread.

Defined Benefit (DB) – a pension scheme in which the primary pension benefit payable to a member is based on a defined formula, frequently linked to salary. The sponsor bears the risk that the value of the investments held under the scheme fall short of the amount needed to meet the benefits.

Debt – money borrowed by a company or government which normally must be repaid at some specified point in the future.

Default strategy – the fund or mix of funds in which contributions in respect of a DC member will be invested in the absence of any explicit fund choice(s) of that member.

Environmental, social and governance (ESG) – an umbrella term that encompasses a wide range of factors that may have been overlooked in traditional investment approaches. Environmental considerations might include physical resource management, pollution prevention and greenhouse gas emissions. Social factors are likely to include workplace diversity, health and safety, and the company's impact on its local community. Governance-related matters include executive compensation, board accountability and shareholder rights.

Equity – through purchase on either the primary market or the secondary market, company equity gives the purchaser part-ownership in that company and hence a share of its profits, typically received through the payment of dividends. Equity also entitles the holder to vote at shareholder meetings. Note that equity holders are entitled to dividends only after other obligations, such as interest payments to debt holders, are first paid. Unlike debt, equity is not normally contractually repayable.

Appendix 3 – Glossary

Fossil fuels – fuels made from decomposing plants and animals, which are found in the Earth's crust. They contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of fossil fuels.

Funding position – a comparison of the value of assets with the value of liabilities for a DB pension scheme.

Gilts – bonds issued by the UK government. They are called gilts as the bond certificates originally had a gilt edge to indicate their high quality and thus very low probability of default

Global warming – a gradual increase in the overall temperature of the earth's atmosphere generally attributed to increased levels of carbon dioxide and other pollutants.

Greenhouse gas (GHG) emissions (scopes 1, 2 and 3) – gases that have been and continue to be released into the Earth's atmosphere. Greenhouse gases trap radiation from the sun which subsequently heats the planet's surface (giving rise to the "greenhouse effect"). Carbon dioxide and methane are two of the most important greenhouse gases.

Investment mandate – see pooled mandate and segregated mandate

Integrated risk management – Integrated risk management is an approach used by DB pension scheme trustees to identify, manage and monitor the wide range of risks (relating to investment, funding and covenant) which might impact the chances of meeting their scheme's overall objectives

Liabilities – obligations to make a payment in the future. An example of a liability is the pension benefit 'promise' made to DB pension scheme members, such as the series of cash payments made to members in retirement. The more distant the liability payment, the more difficult it often is to predict what it will actually be and hence what assets need to be held to meet it.

LDI (Liability Driven Investment) – an investment approach which focusses more than has traditionally been the case on matching the sensitivities of a DB pension scheme's assets to those of its underlying liabilities in response to changes in certain factors, most notably interest rate and inflation expectations.

Net zero – this describes the situation in which total greenhouse gas emissions released into the atmosphere are equal to those removed. This can be considered at different levels, eg company, investor, country or global.

Offsetting – the process of paying someone else to avoid emitting, or to remove from the atmosphere, a specified quantity of greenhouse gases, for example through planting trees or installing wind turbines. It is sometimes used to meet net zero and other emission reduction targets.

Paris Agreement – the Paris Agreement is an international treaty on climate change, adopted in 2015. It covers climate change mitigation, adaptation and finance. Its primary goal is to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels.

Physical risk – these are climate-related risks that arise from changes in the climate itself. They include risks from more extreme storms and flooding, as well as rising temperatures and changing rainfall patterns.

Pooled mandate – a feature of a collective investment vehicle whereby an investor's money is aggregated (ie "pooled") with that of other investors to purchase assets. Investors are allotted a share of those assets in proportion to their contribution. Ownership is represented by the number of "units" allocated – eg if the asset pool is worth £1m and there are 1m units then each unit is worth £1. Pooled funds offer smaller investors an easy way to gain exposure to a wide range of investments, both within markets (eg by buying units in a UK equity fund) as well as across markets (eg by buying units in both a UK equity fund and a UK corporate bond fund).

Portfolio alignment metric – this measures how aligned a portfolio is with a transition to a world targeting a particular climate outcome, such as limiting temperature rises to well below 2°C, preferably to 1.5°C, as per the Paris Agreement. Assessments using these metrics consider companies' and governments' greenhouse gas (GHG) emissions reduction plans and likelihood of meeting them, rather than current, or the latest reported, GHG emissions.

Appendix 3 – Glossary

Responsible Investment (RI) – the process by which environmental, social and governance (ESG) issues are incorporated into the investment analysis and decision-making process, and into the oversight of investments companies through stewardship activities. It is motivated by financial considerations aiming to improve risk-adjusted returns.

Science-based targets – targets to reduce greenhouse gas emissions that are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement.

Science-Based Targets initiative (SBTi) – an organisation that sets standards and provides validation for science-based targets set by companies and investors.

Scenario analysis – a tool for examining and evaluating different ways in which the future may unfold.

Scope 1, 2 and 3 – a classification of greenhouse gas emissions.

Segregated mandate – a segregated investment approach ensures that an investor's investments are held separately from those of other investors. This approach offers great flexibility – for example, the investor can stipulate the precise investment objective to be followed and can dictate which securities can or cannot be held.

Stakeholder – an individual or group that has an interest in any decision or activity of an organisation. The stakeholders of a company include its employees, customers, suppliers and shareholders.

Statutory obligations – statutory obligations are those obligations that do not arise out of a contract, but are imposed by law.

Stewardship – stewardship is the responsible allocation, management and oversight of capital to create long-term value for clients and beneficiaries leading to sustainable benefits for the economy, the environment and society. It is often implemented via engagement with investee companies and exercising voting rights.

Sustainable investing - an approach in which an assessment of the environmental and social sustainability of a company's products and practices is a key driver in the investment decision. ESG analysis therefore forms a cornerstone of the investment selection process.

Taskforce on Climate-related Financial Disclosures (TCFD) – a group of senior preparers and users of financial disclosures from G20 countries, established by the international Financial Stability Board in 2015. The TCFD has developed a set of recommendations for climate-related financial risk disclosures for use by companies, financial institutions and other organisations to inform investors and other parties about the climate-related risks they face.

Transition risk – these are climate-related risks that arise from the transition to a low-carbon economy and can include changes in regulation, technology and consumer demand.