

Novartis UK Pension Scheme

Climate change governance and reporting in line with the recommendations of the Task Force on Climate-related Financial Disclosures (“TCFD”)

Reporting period: 12 months to 31 December 2024

July 2025





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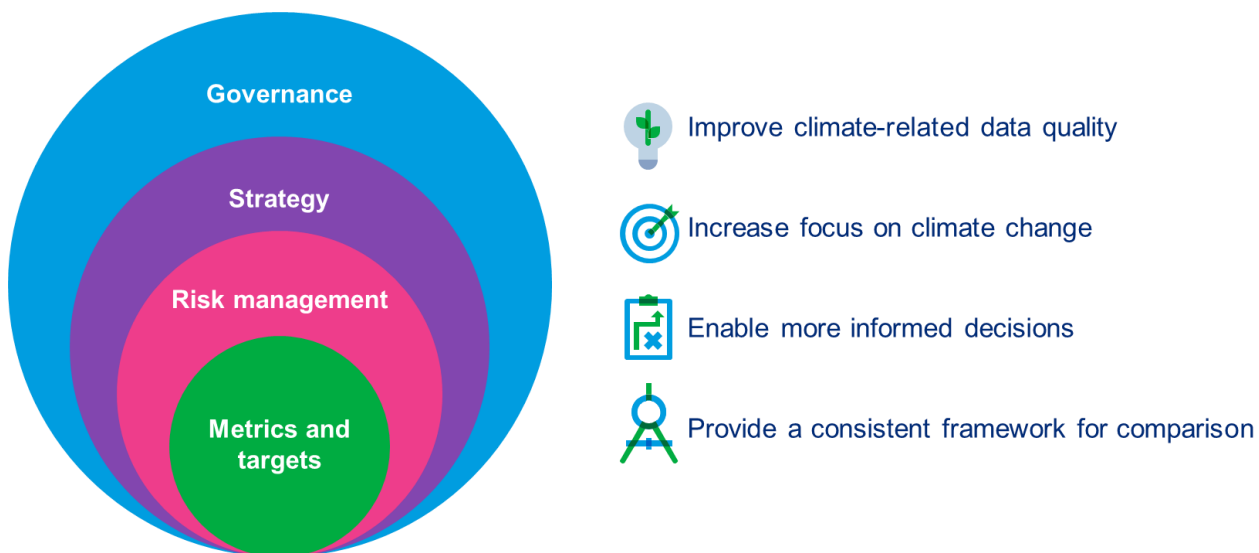
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1. Introduction

The Novartis UK Pension Scheme (“Scheme”) is a UK-registered occupational pension scheme with assets held on behalf of members by Novartis UK Pension Trustees Limited (“the Trustee”).

The Trustee believes that good stewardship and ESG (Environmental, Social and Governance) issues may have a material impact on investment risk and return outcomes. This includes climate change issues. It is committed to developing and implementing ESG and Climate Change related investment governance policies, and adhering to the annual reporting requirements under The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021. These serve as a framework to help manage and report on the actions being taken to identify climate change related risks and opportunities in the Scheme’s portfolio.

This is our third annual report and covers the twelve months to 31 December 2024. It explains how we, the Trustee, have established and maintained oversight and processes to ensure that relevant climate related risks and opportunities are considered appropriately by all stakeholders involved in the day-to-day management of the Scheme. The report is divided into four sections: Governance, Strategy, Risk Management, and Metrics and Targets, consistent with the four pillars of the TCFD framework:



We recognise that climate issues can be more relevant and readily implementable for some parts of the portfolio than others. This report focuses on the areas where the governance of climate risk and opportunities has been applied. We will seek to expand the remit of this reporting to cover the entirety of the Scheme’s portfolio for all metrics monitored as and when the ability to monitor these risks becomes more achievable via improved availability of data.

The remainder of this report considers these four areas in turn. We start with Governance, before considering Strategy, then Risk Management and finally Metrics and Targets. Owing to the requirement for periodic rather than annual updates in some of the key areas, it repeats some of the analysis set out in our first and second reports, where an annual update is not required.

2. Governance

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

The Trustee has ultimate responsibility for ensuring effective governance of climate-related risks and opportunities. The Trustee maintains a **Statement of Investment Principles** ("SIP"), which details the key objectives, risks and approach to considering ESG factors, including climate change, as part of the investment decision making processes. The SIP is reviewed on at least an annual basis and can be found via the following link:

<https://novartis.compendiatouch.co.uk/schemeinformation/>

In addition, following a session on ESG beliefs held in October 2021, the Trustee has adopted **Responsible Investment Beliefs and Policies**, which provides further details on the Trustee's beliefs and policies in relation to ESG factors and the Trustee's commitments around climate change.

The Trustee's intention is to align the Scheme's investments with the targets set under the Paris Agreement (which aims to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels) in relation to greenhouse gas emissions and carbon neutrality, to the extent that this is consistent with overall risk and return considerations (including, for example, avoiding a material detriment to return expectations through the existence of any "green premia" or a concentration of risk that could result from an excessively narrow investment universe).

The Trustee takes independent investment advice to help assess climate risks and opportunities, and looks to ensure that any decisions continue to be integrated into an effective investment strategy that supports the Scheme's ability to provide pensions to members.

Once a year, the Trustee receives a report summarising the engagement activity carried out on its behalf by the investment managers.

The Trustee's overall Responsible Investment beliefs are:

- ESG and stewardship issues, including climate change, create both risks and opportunities that could materially impact the best financial interests of the Scheme's beneficiaries and the Company (Novartis UK Limited) as Sponsor.
- Long-term sustainable investment is consistent with the Trustee's fiduciary duty to members.
- Well governed companies are likely to perform better over the long term.
- It is important that the Trustee's asset managers demonstrate good stewardship of their assets under management.
- Monitoring ESG risks can provide an early warning for other issues relating to the management or financial performance of companies.
- Certain ESG issues represent long-term systemic risks that are likely to impact all assets and geographies.
- The Trustee will seek alignment of interests with beneficiaries and the Company.
- Beliefs should be implemented using integration, i.e. embedded in the Trustee's overall investment decision-making.
- Assessing investee companies' preparedness for the transition to a low carbon economy is likely to be more important than focusing on short-term carbon reduction within the investment portfolio.
- The Trustee should only invest in fossil fuel companies where a low carbon transition commitment is in place.

The Trustee has dedicated a significant amount of time and resource to the governance of climate-related risks and opportunities. The Trustee has a fiduciary duty to act in the best interests of members, and **the Trustee believes that climate-change and other ESG issues may have a material impact on investment risk and return outcomes, which ultimately affect pension outcomes for members.** Therefore, the Trustee will continue to ensure that appropriate governance resources are available for developing and implementing ESG and climate change related governance policies.

Organisational structure

The Trustee has an Investment Sub-Committee ("ISC") that has a specific focus on investments and decision-making powers. The Trustee will consider the recommendations of the ISC and will ratify any decisions that require its approval.

The ISC meets at least three times a year (and more frequently, if deemed required) where investment performance and risk management are reviewed, with climate-related risks forming part of the wider assessment.

Research into how climate-related risks and opportunities impact financial markets is constantly evolving and expanding. The ISC receives training on a regular basis to keep up-to-date with developments, and allocates time on meeting agendas to cover relevant items such as climate scenario analysis, climate metrics reporting, target setting etc. At the March 2025 ISC meeting, the ISC received a presentation from a sustainable investment expert which included an element of training on alternative climate metrics and climate scenario analysis. The Scheme Secretary will liaise with the Trustee's advisers to ensure that relevant items are included on meeting agendas as and when appropriate.

Trustee Advisers

Investment Consultant

The Trustee's appointed investment adviser, Mercer, assists the Trustee in developing and executing its climate related investment policy as follows:

- Providing training and other updates to the Trustee on relevant climate-related matters;
- Helping the Trustee to formulate its investment beliefs in relation to climate change and

reflecting these in the Scheme's investment policies and strategy;

- Advising how climate-related risks and opportunities might affect the different asset classes in which the Scheme might invest over the short, medium and long term, and the implications for the Scheme's investment strategy;
- Advising the Trustee on the appropriateness and effectiveness of the processes, expertise and resources of investment managers in relation to managing climate-related risks and opportunities, given the Trustee's investment objectives and beliefs;
- Advising on the inclusion of climate change in the Scheme's governance arrangements and risk register, working with the Trustee and its other advisers as appropriate;
- Leading on the preparation of the Trustee's TCFD reporting, working with the Trustee and its other advisers as appropriate;
- Assisting the Trustee in identifying and monitoring suitable climate-related metrics and targets in relation to the Scheme's investments, including liaising with the Scheme's investment managers;
- Monitoring, managing and challenging the performance of the investment managers;
- Undertaking investment related Scheme governance activities on behalf of the Trustee, such as coordinating required public disclosures;
- Reviewing quarterly investment performance reports and highlighting key information to the Trustee for noting or action; and
- Assisting the Trustee with understanding climate-related risks and opportunities at the strategic asset allocation level and also at the investment manager and individual portfolio level.

Scheme Actuary & Covenant Advisers

The Scheme's actuarial adviser, Mercer, has provided input into the climate related scenario analysis. Mercer also incorporates climate change related considerations into other actuarial projects such as the triennial actuarial valuations.

The Scheme's covenant adviser, EY, has provided input on the exposure of the Scheme's sponsor to climate-related risks.

Climate related exposures are considered alongside other factors that could have a positive or negative impact on the strength of the sponsor's covenant.

Assessment of Advisers

The Trustee is required to ensure that the advisers that provide support and technical expertise on various climate issues have the appropriate level of climate-related risk expertise and resources to enable them to carry out their duties.

If appropriate, the Trustee will challenge whether the risks and opportunities are effectively allowed for in its governance processes and wider activities, and will challenge its advisers to ensure the governance support and advice adequately covers the consideration of climate-related risks and opportunities. This process also affords the Trustee an opportunity to identify new and emerging risks related to climate change.

The Trustee has set specific expectations for its investment adviser through its Investment Consultant Objectives (the "Objectives"); these Objectives are aligned with the best practice indicators from the Investment Consultants Sustainability Working Group ("ICSWG") guide for assessing climate competency of Investment Consultants. An assessment of the performance of the investment adviser against these Objectives is collated on an annual basis.

Time and resources spent on climate change-related matters

The Trustee, with support from the ISC, is responsible for ensuring that sufficient time is allocated for consideration and discussion of climate matters by the Trustee and its advisers. The Trustee, as part of its regular meeting schedule, will allocate agenda time to climate change topics, amongst other ESG topics, to cover the various workstreams listed below. Those responsible for each workstream will make sure any documents or information is distributed in advance of the meeting to allow the Trustee time to digest the advice.

There are a number of workstreams that are to be completed regularly in order for the Trustee to fulfil its responsibility for managing climate risks and

opportunities. It is important to note that many of the workstreams will cover wider ESG risks not just climate change risk, as the Trustee does not consider climate risks in isolation but holistically alongside the various other ESG risks the Scheme may be facing. The workstreams are listed below as well as the frequency of which each task will be carried out:

- Scenario analysis modelling the investment strategy and funding strategy (minimum frequency = first year of TCFD reporting and every 3 years thereafter).
- Review appropriateness of undertaking scenario analysis in light of a) data availability changes b) material changes in investment strategy / funding strategy (minimum frequency = annual).
- Metrics data collection (minimum frequency = annual).
- Target setting / target appropriateness review (minimum frequency = annual).
- Progress against target assessment (minimum frequency = annual).
- Responsible Investment Beliefs and Policies (including climate change) update / review (minimum frequency = annual).
- Review of manager ESG integration, climate policies (minimum frequency = annual).
- Stewardship, covered as part of the Trustee's annual Engagement Policy Implementation Statement (minimum frequency = annual).
- Risk frameworks update/review e.g. risk register (minimum frequency = annual).
- Climate covenant assessment (minimum frequency = annual).
- Drafting annual TCFD report (minimum frequency = annual).

A photograph of three people in a meeting. A man with glasses and a beard, wearing a light pink shirt, is gesturing with his hands while speaking. He is facing two other people, a woman with dark curly hair wearing a yellow polka-dot top and a man with reddish hair, who are listening. The background is a bright, out-of-focus office environment.

3. Strategy

Analysing the potential impact of climate change on assets, liabilities and the covenant

Climate scenarios

Given the uncertainty around the timing and impact of climate-related transition and physical risks, the Trustee has considered a range of possible climate scenarios to help test the resilience of the Scheme's investment and funding strategy.

This report summarises the analysis of two climate scenarios. These are defined as a 'rapid transition' and a 'failed transition'. Both scenarios are considered plausible and therefore it is important for the Trustee to understand the potential impact of the scenarios on the Scheme.

Climate scenario analysis is an ever evolving space and, as such, the scenarios modelled and reported may be subject to review in future periods. It is important to note that the modelling may understate the true level of risk due to the uncertainty around the future economic impacts of climate change.

Resilience of the Scheme's strategy

This section sets out the scenario analysis that was undertaken as part of the Trustee's first annual report covering the twelve months to 31 December 2022. There have been no material changes in the Scheme's investment and funding strategy since this analysis was undertaken. Further, whilst modelling capabilities continue to evolve, the Scheme's low-risk investment strategy has led the Trustee to conclude that updating the analysis would not meaningfully support investment decision making at this time.

Climate change scenario analysis has been undertaken on the Scheme's strategic asset allocation to assess the potential implications of climate change under two core scenarios and explores a range of plausible futures over periods up to 20 years, rather than exploring tail risks.

The Trustee focuses on the following two core scenarios:

A Rapid Transition – Average temperature increase of 1.5°C by 2100. Sudden divestments are made across multiple securities by investors in 2025 to align portfolios to the Paris Agreement goals. This has disruptive effects on financial markets with sudden repricing followed by stranded assets (e.g. commodities that are no longer "worth" mining) and a sentiment shock. Following this shock there is a partial recovery.

A Failed Transition – Average temperature increase above 4°C by 2100. The world fails to co-ordinate a transition to a low carbon economy and global warming exceeds 4°C above pre-industrial levels by 2100. Physical climate impacts cause large reductions in economic productivity and increasing impacts from extreme weather events. These are reflected in repricing events in the late 2020s and late 2030s.

These scenarios are not predictions, but rather an illustration of plausible scenarios that might occur.

One way to illustrate the scenarios modelled is by plotting the transition risk against the physical risk. This is shown in the chart below, which builds upon the Climate Scenarios Framework developed by the Network for Greening the Financial System (“NGFS”).

The scenarios modelled do not directly map to any of the 7 NGFS long-term scenarios. The scenarios used by the Trustee are tailored to support investment analysis.



A key strength of the scenarios modelled is that they allow for climate impacts to be “priced-in” before they happen. This reflects likely market dynamics and means climate impacts are more likely to fit within investment timeframes (i.e. they are likely to impact on asset values within the Scheme’s investment time horizon).

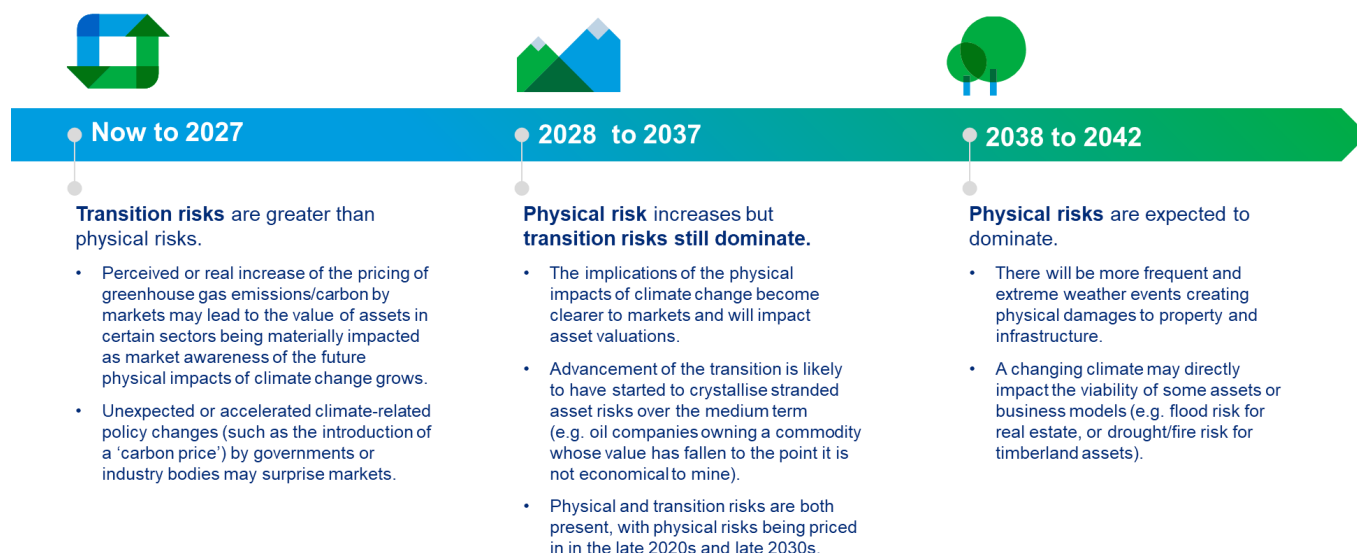
The effects of climate change, and the actions or measures taken by governments, businesses or individuals, will be felt at different times in the future and to different extents. It is important for the Trustee to understand how the Scheme’s exposure to climate-related risks and opportunities may change over time, when the risk exposure may be greatest and what actions can be taken now, or in the future, to avoid those risks becoming financially material to the Scheme.

To help with this assessment, the Trustee has defined short, medium and long-term time horizons for the Scheme. The climate-related risks and opportunities that are relevant to the Scheme will be different over these periods.

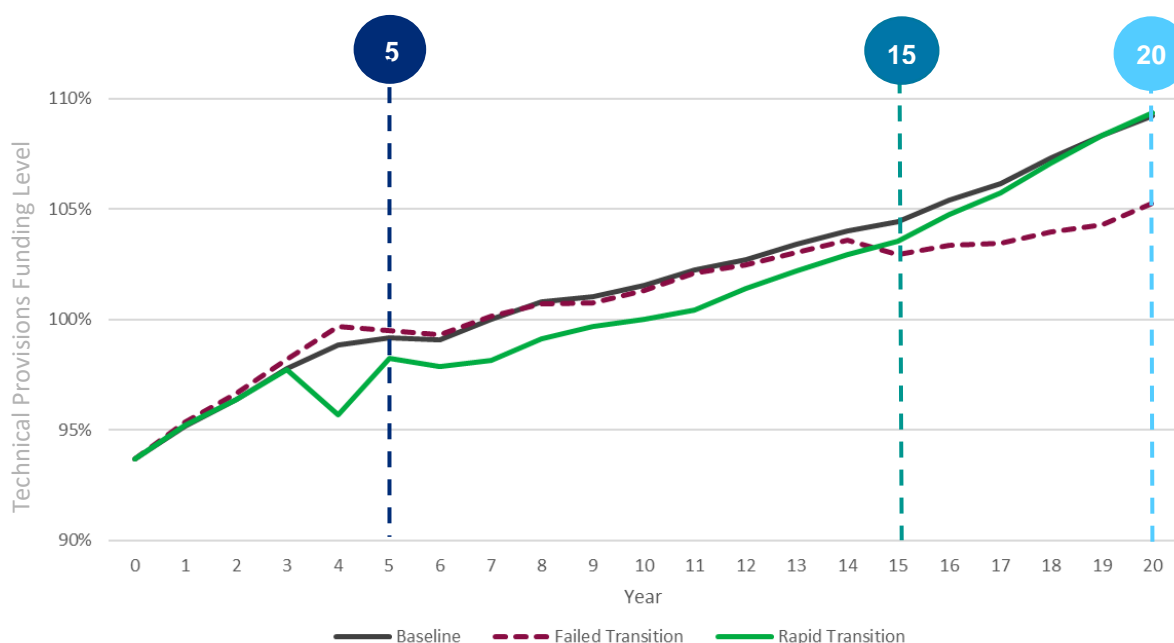


The Trustee acknowledges that the Scheme's time horizon may be shorter in practice than any of the time horizons listed above (particularly the medium term and long term scenarios). As the Scheme matures, the Trustee would anticipate a general preference to reduce or minimise risks, including those posed by climate change. This would naturally include consideration of insured solutions. However, it is considered important to understand these impacts, given the possibility that the circumstances of the Scheme change and that climate-related factors could impact pricing of insurance solutions in future. Also, there is significant uncertainty over when climate risks will become reflected in market prices and the modelled changes, if they transpire, could occur sooner than modelled.

Market impact



Climate scenarios – Summary of results



**Analysis as at 31 March 2022, based on the results of the 2018 actuarial valuation. The starting point for the forward looking projection is 31 March 2022.*

In designing scenario analysis, a fundamental decision is whether to assume that any climate impacts are priced in today. The analysis in this report is expressed relative to a 'climate-informed' baseline; the implication is that all return impacts are presented in terms of how they are different to what we are assuming is priced in today.

Further detail on climate scenario narratives, including modelling limitations, is included in the appendix of this report. As noted above, there were no material changes to the investment or funding strategy over the year and as such the Trustee has not sought to undertake new scenario analysis outside of the mandatory cycle.

Key points at different time frames:

5 Years

- Over this period, transition risks dominate. The model includes a market shock in the rapid transition scenario as transition risks are priced into markets, causing a deterioration of c.3% in funding level terms at year 4 and a recovery to a deterioration of 1% by year 5 (compared to the baseline scenario, which makes an allowance for climate change impacts). The timing of any shock or recovery is uncertain.
- Transition shock impacts credit markets via a widening of credit spreads, followed by a rebound as these spreads largely normalise without a material increase in downgrades or defaults. It is possible that additional downgrades and default experience could limit the rebound.

15 Years

- At this timeframe, transition risks under a rapid transition are muted whilst physical risks are beginning to be priced in, which are more apparent under the failed transition.
- The failed and rapid transitions both show a deterioration of around 1%-2% in funding level over 15 years (compared to the baseline).

20 years

- The failed transition is the worst scenario, potentially reducing the funding level by around 4% (compared to the baseline).

Climate scenarios – Key conclusions

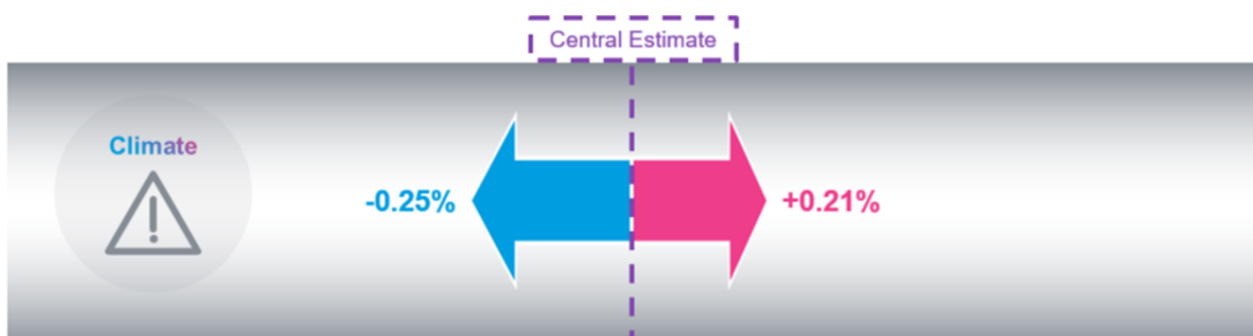
- The analysis illustrates that **a failed transition is by far the worst in terms of long-term funding outcomes.**
- This supports the view that long term investors collectively trying to bring about an effective transition is aligned to their fiduciary duty to seek the best return within risk, liquidity and complexity restraints.
- The Trustee has already taken steps consistent with this both from a policy point of view and in terms of investing in climate aware solutions. The analysis supports continuing to develop this approach.
- Perversely, in the short term taking no action (collectively) has better investment outcomes, but at the expense of the far worse longer term position.
- This analysis focuses on the long term impact of a failed transition on the Scheme. It is not the purpose of this review to remark on the obviously negative consequences for the planet of a failed transition.

Longevity assumptions

The Intergovernmental Panel on Climate Change (“IPCC”) has defined a range of Representative Concentration Pathways (“RCPs”) for greenhouse gas emission. Of those, RCP8.5 represents the most extreme change, with global mean temperature rises of 2°C by 2046-2065 and 3.7°C by 2081-2100. With rising temperatures potentially giving rise to positive and negative effects on human longevity, RCP8.5 has both the greatest potential to contribute to longevity improvements *and* the greatest potential to reduce them, depending on the balance of those positives and negatives.

Mercer’s **central estimate** reflects a balanced view of climatic impact, and in climates like the UK and across the likely term of most DB pension schemes, the impact is most likely to be a very small reduction in general mortality rates. RMS estimate effects to be close to neutral in the UK across the typical time horizon of most DB pension scheme liabilities, with a decrease in cold-related mortality projected to broadly cancel out the projected heat-related mortality.

However, there is some uncertainty around the degree of the positive and negative effects. Mercer applied RMS models of the upper and lower bounds for the net effects of an RCP8.5 pathway, based on research from *Gasparrini et al, 2017*, leading to the range of liability effects represented overleaf:



Major climate change could be positive or negative for members' longevity, but longevity impacts do not appear to be a material funding risk

The Trustee acknowledges that longevity assumptions will be impacted by factors other than hot- and cold-related mortality. For example, in the UK, it may be expected that wider macro-economic, behavioural and health related impacts on longevity from climate change are likely to have a more significant impact (which may be positive or negative). The Trustee will consider this as part of future reporting requirements.

Impact and Opportunities

Now to 2027

- The Scheme's greatest climate-related exposure is through the Buy & Maintain Credit portfolios.
- The Trustee's ability to anticipate these short term changes can position the Scheme favourably, for example, taking advantage of the climate transition by avoiding or reducing investment in high-emitting carbon sensitive businesses that do not have a business plan that supports the transition to a low carbon economy. The Trustee has already engaged with the Buy & Maintain Credit managers to integrate their best thinking on the low carbon transition and physical risks into their mandates over time.
- The climate metrics analysis helps the Trustee to understand which sectors within the Buy & Maintain Credit portfolios are most exposed to climate-related risks and which are best positioned for the transition to a low carbon economy.

2028 to 2037

- The Scheme's high allocation to defensive fixed income assets means the impact of different climate change scenarios is relatively muted.
- Further policy, legislation and regulatory action is likely to be inflationary, to the extent it results in higher costs for consumers and businesses (e.g. through a carbon tax). The Scheme's liability hedging programme will reduce the impact of rising inflation on the funding level.
- Riskier assets such as HLV Property and Multi-Asset Credit are likely to experience negative, albeit muted, return impacts, particularly under higher warming scenarios, as physical risks detract from returns. However, in practice it is unlikely these mandates would be retained over this time period given the well-funded position of the Scheme.
- Investment opportunities remain in investments linked with the development of technology and low carbon solutions, which will be harnessed through the ESG-related Guidelines and targets in place for the Buy & Maintain Credit portfolios.

2038 to 2042

- The Scheme's market exposure will likely be low beyond 2042 as the Scheme matures, and as such the expected impact is limited.
- The Trustee has discussed setting explicit decarbonisation targets and these will be considered further in due course.

Covenant scenario analysis

The Scheme Sponsor, Novartis UK Limited, will be exposed to climate-related risks and opportunities. Given the Scheme's Sponsor is primarily a distributor of pharmaceutical products manufactured by Novartis AG Group ("the Group"), EY has focused its climate risk analysis on the wider Group. EY has considered how the Group's climate strategy and risk mitigations will provide Novartis Pharmaceuticals UK Limited with resilience to climate change risks. EY primarily considered covenant resilience in the context of the rapid transition scenario, given the adverse financial outcomes under the failed transition scenario are not expected to manifest until the mid 2030s, by which time the Scheme may be seeking to reduce risk via a solution with an insurer.

EY's climate risk analysis considers multiple physical and transition risks such as event driven factors such as increased risk of extreme weather, longer term shifts in climate which may adversely impact the efficiency of operations and supply chains, costs associated with transitioning to improved or innovative technology which is more energy efficient or less carbon intensive.

EY considers the Group's climate strategy to provide a good level of assurance to the Trustee that the Group and its subsidiaries are ready to adapt to potential transition risks that may impact the Group (including those that apply under the rapid transition climate scenario). Furthermore, EY have conducted a high level review of two of the Group's pharmaceutical industry peers to identify any potential gaps in the Novartis AG climate strategy, no material concerns were identified as the Group's strategy appears similar to peers.

Further, an independent ESG and corporate governance research and ratings agency has also given Novartis AG Group an ESG risk rating that compares favourably to industry peers, which provides further assurance that the Group's climate strategy is robust.



4. Risk Management

Processes for identifying, assessing and managing climate-related risks and the integration within the Trustee's overall risk management of the Scheme

Climate Change – The big 'known unknown'

The Trustee Board is not composed of climate specialists. However, it is aware of the material challenges facing the planet with regard to climate change and works closely with its investment advisers and their sustainable investment specialists, who have summarised the present challenge as follows, and helped the Trustee develop its beliefs as reflected in the following pages:

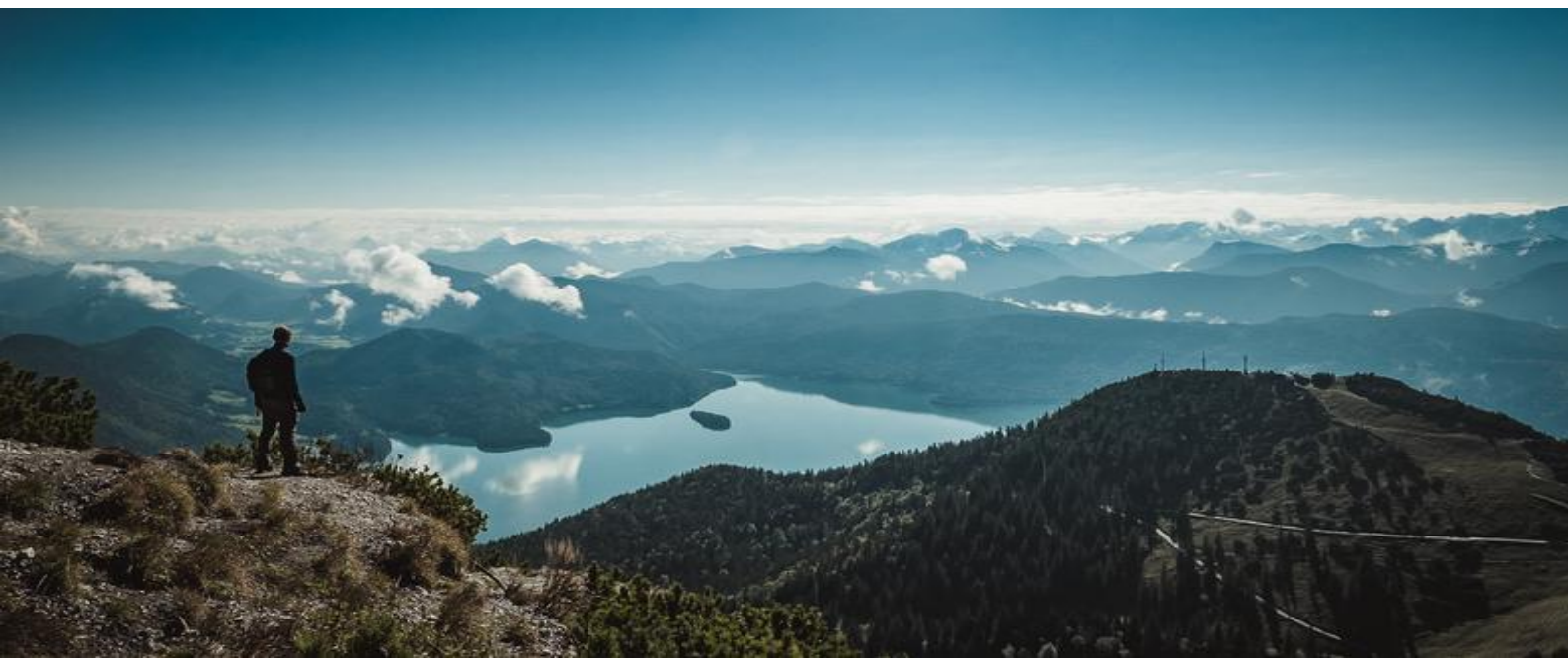
"We are already experiencing climate change and its associated physical impacts today. The average global temperature in 2023 was about 1.3°C above pre-industrial levels. Most of this warming has occurred in the past 35 years, with the seven "warmest" years on record taking place since the start of 2015.

The overwhelming scientific consensus is that the observed climatic changes are primarily the result of human activities including electricity and heat production, agriculture and land use change, industry, and transport.

globally co-ordinated policy response. Despite this, the majority of climate scientists anticipate that given the current level of climate action, by 2100 the world is estimated to be between 2°C and 4°C warmer, with significant regional variations.

This is substantially higher than the 2015 Paris Climate Change Agreement, which reflects a collective goal to hold the increase in the climate's average global surface temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C."

Source: Mercer



What are the climate-related risks and opportunities?

The effects of climate change will be felt over many decades. The Trustee has considered two types of climate-related risks and opportunities in its climate scenario analysis:

1. Transition risks

This covers the potential risks and opportunities from the transition to a low-carbon economy (i.e. one that has a low or no reliance on fossil fuels), in areas such as:

- Policy and legislation
- Market
- Technology
- Reputation.

Risks include the possibility of future restrictions, or increased costs, associated with high carbon activities and products. There are also opportunities, which may come from the development and implementation of low-carbon technologies.

In order to make a meaningful impact on reducing the extent of global warming, most transition activities need to take place over the next decade and certainly in the first half of this century.

2. Physical risks

The higher the future level of global warming, the greater physical risks will be in frequency and magnitude. Physical risks cover:

- Physical damage (storms; wildfires; droughts; floods)
- Resource scarcity (water; food; materials; biodiversity loss).



A key part of the Trustee's role is to understand and manage risks that could have a financially material impact on both the Scheme's investments and the wider funding strategy. Climate change is one of the risks that the Trustee considers alongside other financially material risks that may impact the pension outcomes for members.



This section summarises the primary climate-related risk management processes and activities of the Trustee and the ISC. These help the Trustee understand the materiality of climate-related risks, both in absolute terms and relative to other risks that the Scheme is exposed to.



Governance

- The Trustee's **Statement of Investment Principles** is reviewed at least annually and sets out how climate-related investment risks are managed and monitored.
- The Trustee maintains a **risk register** to monitor and mitigate material risks to the Scheme (both financial and non-financial – for example, regulatory and reputational). The climate-related risks, including physical risk and transition risk, are reviewed annually following any updates to climate scenario modelling and reviews of climate-related metric progress. For example, sudden changes in legislation and/or behaviour to facilitate a low carbon transition, or multiple natural disasters occurring across key markets may lead to a negative impact on the value of assets held by the Scheme. In the risk register, the Trustee uses an 'impact and likelihood' framework to assess which risks pose the most significant potential for loss and are most likely to occur, whereby an 'impact' and a 'likelihood' score are assigned to each financially material risk the Scheme is exposed to. The impact score reflects the financial impact, member impact (negative effect on member benefits) and reputation impact (number of member/media enquiries that may damage the Scheme's reputation). The Trustee dedicates more time and resource to mitigate the risks that score most highly under this framework. Climate-related risks score highly in terms of impact, and as such the Trustee seeks to prioritise and manage these risks over other risks that are awarded a lower score.
- The Trustee and ISC will receive **training** from time-to-time on climate-related issues, including market updates. The training allows the Trustee to better understand how climate-related risks and opportunities can have an impact on the Scheme and allow the Trustee to challenge

	<p>whether the risks and opportunities are effectively allowed for in its governance processes and wider activities.</p> <ul style="list-style-type: none"> • A benchmarking analysis of the extent to which ESG factors are integrated into investment decision making at the portfolio level is undertaken by Mercer on an annual basis via Mercer's Responsible Investment Total Evaluation (RITE) assessment. RITE assesses the extent to which pension schemes integrate ESG factors. The Trustee incorporates recommendations from the RITE assessment framework into its governance and investment strategy implementation activities, and will monitor the score over time with a view to seeking to ensure best practice. Benchmarking analysis is carried out against schemes with a similar level of assets under management and by sector of the Scheme sponsor.
 <p>Strategy</p>	<ul style="list-style-type: none"> • The Trustee believes that good stewardship and ESG issues may have a material impact on investment risk and return outcomes and will therefore be considered as part of the Scheme's investment process. The Trustee also recognises that long-term sustainability issues, particularly climate change, present risks and opportunities that require explicit consideration. When setting investment strategy, ESG factors, including climate change, will be considered alongside a number of other factors that can influence investment strategy. • The Trustee's intention is to align the Scheme's investments with the targets set under the Paris Agreement (which aims to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels) in relation to greenhouse gas emissions and carbon neutrality, to the extent that this is consistent with overall risk and return considerations (including for example, avoiding, a material detriment to return expectations through the existence of any "green premia" or a concentration of risk that could result from an excessively narrow investment universe). Further detail on the Trustee's beliefs and policies in relation to ESG factors and Climate Change is set out in the Trustee's Responsible Investment Beliefs and Policies document. • The Trustee has taken a number of steps to enhance the ESG characteristics of the Scheme's assets at an asset-class level as shown below: <div data-bbox="335 1361 1532 1848">  <div style="display: flex; justify-content: space-around;"> <div data-bbox="335 1635 686 1825"> <p>Oct 2021</p> <p>October 2021, the ISC agreed to implement a 5% strategic allocation to Multi-Asset Credit ("MAC") via Wellington's Responsible Values Multi-Sector Credit Fund (the "RV Fund") reflecting a preference for a fund with explicit ESG aims, especially in relation to climate risk.</p> </div> <div data-bbox="869 1635 1061 1803"> <p>May 2022</p> <p>The ISC adopted climate-aligned guidelines for the Buy & Maintain Credit portfolio managed by LGIM in May 2022.</p> </div> <div data-bbox="1300 1635 1532 1848"> <p>Dec 2022</p> <p>The ISC also adopted ESG-related objectives for the Buy & Maintain Credit portfolio managed by RLAM during December 2022. Initial restructuring of the portfolio was implemented in January 2023.</p> </div> </div> </div> <ul style="list-style-type: none"> • Climate scenario analysis for the investments of the Scheme, and the funding strategy, has been undertaken for the first time in 2023 and will be reviewed at a minimum every three years, with additional reviews if there has been a material change to the strategic asset allocation or there is a material change/update to the scenario modelling approach. The Trustee uses this analysis as a tool to quantify the climate-related risks and opportunities facing the Scheme, which helps the Trustee to prioritise these relative to other risks and

	opportunities. A summary of the Trustee's latest climate scenario analysis is included in the Strategy section of this report.
 Reporting	<ul style="list-style-type: none"> The Trustee receives annual monitoring of climate-related metrics in respect of the assets held in the Scheme. The Trustee, via the ISC, uses the information to engage with investment managers. The Trustee receives annual engagement activity summaries in respect of the Scheme. The reports summarise how the investment managers choose to engage on climate-related issues (among other key engagement priorities). Key information and outcomes from the stewardship monitoring are summarised in the Trustee's annual Engagement Policy Implementation Statement. The Trustee will discuss significant engagement activities with the managers as required. The Trustee may also work with investment managers to engage with companies, or engage with investee companies directly, in order to implement positive change. The Scheme's current investment strategy is composed of fixed income and property portfolios only. These portfolios do not typically have securities that hold voting rights.
 Manager selection and retention	<ul style="list-style-type: none"> The Trustee, with advice from its investment consultant, will consider an investment manager's firm-wide and strategy-specific approach to managing climate related risks and opportunities when appointing a new manager, in the ongoing review of a manager's appointment, and as a factor when considering the termination of a manager's appointment. Mercer assesses investment managers on the extent of integration of ESG factors (including climate change) into their processes. A manager's stewardship process forms part of the assessment. This is considered at the firm level and at the investment strategy/fund level. The outcome of the ESG assessments are presented in quarterly investment performance reports and are reviewed at ISC meetings. A deterioration in the extent to which ESG factors are taken into account in the investment process may (taking into account other factors) lead to an investment manager being put 'on watch' by the ISC.

5. Metrics and Targets

Assessing climate-change related risks and opportunities

Metrics

Climate-related metrics help the Trustee to understand the climate-related risk exposures and opportunities in the Scheme's investment portfolio, and identify areas for further risk management focus, including investment manager portfolio monitoring, and engagement activity.

The Trustee has chosen to present seven climate related metrics across four different categories for the Scheme. These metrics were identified after considering the range of different available options, with a view to ensuring they provide a holistic assessment of the climate-related exposure of the Scheme. In aggregate, the metrics will provide an assessment of the existing/historical climate risk exposure (e.g. through analysing the absolute emissions generated by portfolio companies over the 1 year period), and also the forward looking climate risk exposure (e.g. by assessing what temperature warming scenario the portfolio is currently aligned with).

The chosen metrics in this report are set out in the table below.

Metric	Type of Metric	Description
Absolute Greenhouse Gas ("GHG") emissions	Absolute emissions	Absolute greenhouse gas emissions associated with a portfolio (measured in tonnes of CO2 equivalent "tCO2e")
Production emissions (relevant for sovereign bond holdings only)	Absolute emissions	Domestic GHG emissions (tCO2e) from sources located within the country territory including land use, land use change and forestry
Weighted average carbon intensity ("WACI")	Emissions intensity	Exposure to carbon-intensive companies (tCO2e / \$m revenue)
Implied temperature rise	Portfolio alignment	An indication of how the portfolio aligns to a global temperature warming level (°C) in 2100
% of portfolio alignment with Paris agreement (on a look through basis) % mandate alignment (at a total Scheme level)	Portfolio alignment	% of companies in a portfolio that have submitted climate transition plans that have been approved by the Science Based Targets Initiative A measure of how many of the Scheme's mandates have set targets aligned with the Paris Agreement
Data quality	Additional climate metric	Represents the proportions of the portfolio for which the Trustee has high quality data

The Trustee recognises the challenges with various metrics, tools and modelling techniques used to assess climate change risks. The Trustee aims to work with its investment advisers and investment managers to continuously improve the approach to assessing and managing risks over time as more data becomes available. The Appendix of this report sets out the data limitations and assumptions used in collating these metrics.

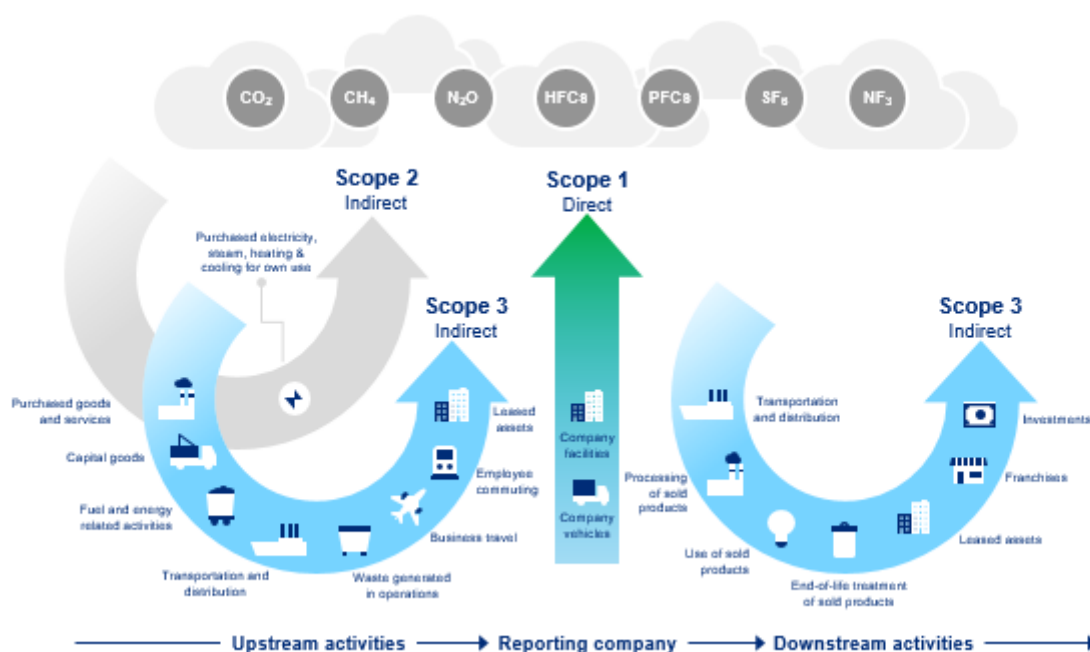
The Trustee sought to source climate metrics data from each of the underlying investment mandates. The data was requested from each of the Scheme's investment managers, however some were unable to provide accurate data. The tables below summarise the outcome for each manager.

Manager	Mandate	Data obtained	Comments where data unavailable or partial data provided
LGIM	Buy & Maintain Credit	✓	
RLAM	Buy & Maintain Credit	✓	
Wellington	Multi-Asset Credit	✓	
Schroders	LDI	✓	For the first time, Schroders were able to provide production emissions data for sovereign bonds held within the LDI portfolio.
LGIM	Cash	✓	
HLV Property	Aviva	✓	

Absolute emissions based metric

The absolute emissions metric is a proxy for the share of GHG emissions that are 'owned' by the Scheme through investing in the underlying companies and issuers, including countries (referred to as 'sovereign exposure') through government debt. Note that the methods used for measuring sovereign emissions are different to those used for corporate emissions.

This metric represents the underlying investee company's or issuer's reported or estimated GHG emissions, where available. It includes various scopes of emissions, which are summarised in the following diagram for a corporate entity.



Source: GHG Protocol

There are seven recognised greenhouse gases, as defined by the GHG Protocol. In order to simplify reporting, each greenhouse gas is calibrated relative to carbon dioxide and is reported as 'carbon dioxide equivalent' emissions (CO₂e).

- **Scope 1 “direct” emissions:** those from sources owned or controlled by the company (e.g. direct combustion of fuel from vehicles); and
- **Scope 2 “indirect” emissions:** those caused by the generation of energy (e.g. electricity) purchased by the company.

Scope 3 emissions are now included in the analysis for most mandates due to improvements in data availability. We note that the inclusion of scope 3 emissions may lead to double counting at an overall portfolio level.

Financed production emissions

This metric is used to report sovereign emissions. The Greenhouse Gas Protocol's definition of scope 1,2 and 3 emissions was initially developed for classification of corporate emissions, rather than sovereigns. Schrodgers have adopted the recommendations of the Partnership for Carbon Accounting Financials (“PCAF”) when reporting sovereign emissions. PCAF's scope definition for sovereign debt is as follows:

Scope 1 – Domestic GHG emissions from sources located within the country territory

Scope 2 – GHG emissions attributable to the import of electricity, steam, heat and cooling from outside the country territory.

Scope 3 – GHG emissions attributable to all other (non-energy) imports from goods or services from outside the country territory.

In this report, scope 1 emissions (production emissions) are presented including land use, land-use change and forestry (“LULUCF”) emissions.

Schrodgers are in the process of expanding the range of sovereign metrics available to investors, including consumption emissions.

Weighted-Average Carbon Intensity (“WACI”)

This metric scales the total carbon emissions of each underlying investee company by the amount of revenues generated by that company. At a total portfolio level, this metric gives an indication of carbon efficiency – for each \$1m revenue generated by each company/issuer, how many tonnes of greenhouse gases have been emitted (stated in tCO₂e). A lower WACI score suggests better efficiency. The Trustee opted to use WACI over Carbon Footprint (a measure of emissions which is weighted to take account of the size of the investment) given WACI is more widely used by corporate bond managers (which constitute a significant proportion of the Scheme's investment strategy) and managers are more comfortable setting WACI reduction targets as opposed to Carbon Footprint based targets.

Implied temperature rise (“ITR”)

This is a forward-looking metric that considers the pledges, commitments and business strategy changes that underlying investee companies/issuers have made. It provides a prediction of the potential temperature rise over the rest of the century based on the activities of those companies and issuers. The metric illustrates the degree of portfolio alignment with the goals of the Paris Agreement (notably to limit warming to well below 2°C by the end of the century).

The Trustee has chosen this metric to include in this report because of its simplicity in presentation and the fact it is a useful way to see, at a glance, the alignment of a fund with a low carbon economy. Funds with high ITR metrics are invested in companies or issuers that are not transforming their businesses or activities in order to reduce the reliance on fossil fuels. This is also a measure of climate transition risk, with greater transition risk highlighted in funds with higher ITRs.

Science based targets (“SBT”): (% of Portfolio Alignment)

A measure of how many companies in a portfolio have submitted climate transition plans that have been approved by the Science Based Targets Initiative (SBTi). For the purposes of this report, a percentage in line or above the market comparator index is viewed as a positive indicator.

It is a measure of how many of the Scheme’s mandates have set targets aligned with the Paris Agreement.

Mandate Alignment

A measure of how many of the Scheme’s mandates have set targets aligned with the Paris Agreement.

Data quality

Data quality aims to represent the proportions of the portfolio for which the Trustee has high quality data. The Trustee has considered whether the underlying emissions data has been verified by a third party, reported by the company, estimated by the data provider, or unavailable to determine the how representative the analysis is of the Scheme’s actual portfolio.

Data quality also assists the Trustee in monitoring quality of reporting over time, as companies are expected to continually improve their reporting on climate-related metrics. As the quality of data improves, the decision usefulness of the climate metrics reported on the Scheme’s portfolio increases. In addition, the Trustee is able to identify the companies in the portfolio that are not currently reporting emissions data and use this as a basis for engagement.

Manager	Mandate	Allocation (%)	Absolute emissions (tCO ₂ e based on value of investment)			WACI (tCO ₂ e/\$million sales)			ITR (°C)	% of Portfolio Alignment ¹	Mandate Alignment ²
			Coverage (%)	Scope 1 + 2	Scope 3	Coverage (%)	Scope 1 + 2	Scope 1 + 2 + 3 ³			
RLAM³	UK Buy & Maintain	23.8	34.5	7,836	53,731	92.9	56.3	259.2	2.2	19.8	x
LGIM	Global Buy & Maintain	19.2	58.1	9,718	77,080	67.8	111.3	1,028.6	2.4	38.9	✓
Wellington	Multi-Asset Credit	7.1	58.6	3,343	12,697	64.1	112.7	570.4	2.8	8.9	x
Schroders⁵	LDI	39.7	100.0	138,056	90,940	n/a			-	-	x
LGIM⁴	Cash	2.3	53.0	30	4,967	61.6	3.2	1,523.2	2.6	10.5	x
Aviva⁶	HLV Property	7.9	89.0	39	1,636	89.0	7.3	318.0	2.6	-	x
Total Buy & Maintain Credit portfolio⁷		43.0	45.1	17,554	130,810	n/a	n/a		2.3	28.4	n/a
Markit iBOXX GBP Non-Gilts index⁸		n/a	88.6	13,095	96,894	90.0	58.5	724.6	1.9	26.4	n/a

Source: MSCI, Mercer and investment managers. Data as at 31 March 2024 unless stated otherwise.

¹The Science Based Target initiative ("SBTi") has established an industry standard methodology for companies setting long-term carbon emission reduction targets that are in line with climate science. Total Buy & Maintain Credit portfolio calculated based on a simple weighted average and does not include allowance for any crossover within the Buy & Maintain Credit portfolios.

²A measure of how many of the Scheme's mandates have set targets aligned with the Paris Agreement.

³Implied temperature rise and % of portfolio alignment is based on figures provided by MSCI. The other metrics are calculated by RLAM.

⁴Absolute emissions for the Cash Fund have been scaled to the Scheme's holding in the Fund (0.34% as at 31 March 2024) and therefore last year's figures have been restated.

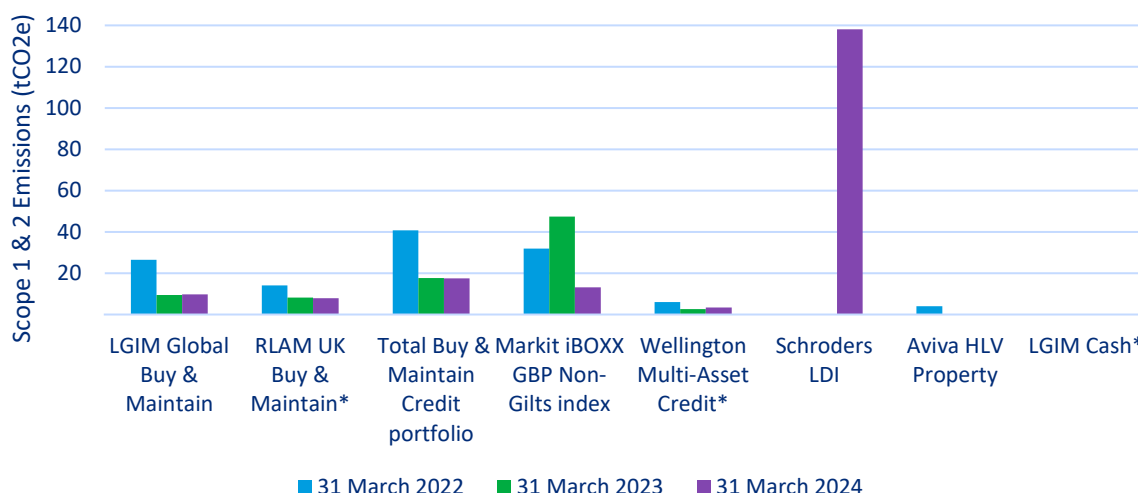
⁵Emissions reflect long gilt exposure within the LDI portfolio. Short positions are excluded for the purposes of calculating emissions, as are cash holdings and derivatives. Scope 1 + 2 emissions represents production based emissions including LULUCF (Land Use, Land Use Change, and Forestry). Scope 3 represents emissions attributable to non energy imports.

⁶Aviva metrics shown above are as at 31 December 2023.

⁷Calculated as a weighted average of the underlying credit portfolio metrics. The calculation for WACI is more complex than a simple weighted average and is therefore not shown. Calculation for ITR assumes that the component ITRs have been calculated assuming a consistent methodology.

⁸This represents a comparator for the Buy & Maintain Credit portfolios. Absolute emissions have been scaled up to reflect the allocation as at 31 March 2024 (c.43% of total Scheme assets) to allow comparison with the total buy & maintain credit portfolio.

Absolute Emissions

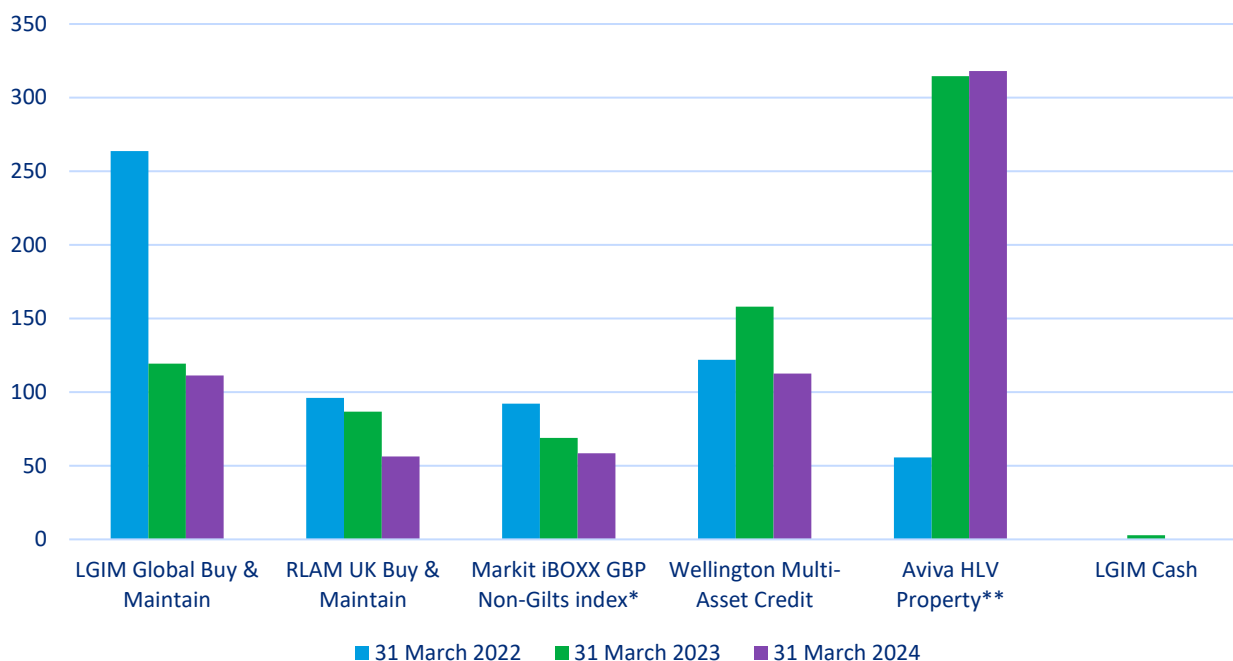


Source: Investment managers. Absolute emissions for the Markit iBOXX index have been scaled up to reflect the allocation as at 31 March 2024 (c.43% of total Scheme assets) to allow comparison with the total buy & maintain credit portfolio.

*Historical data has been restated.

- Both Buy & Maintain Credit mandates have seen little change in emissions compared to the previous year, which is consistent with the broader investment grade credit market.
- Reported scope 1 & 2 emissions for the Aviva Lime Property Fund have, again, fallen dramatically over the year. However, there are 12 fewer assets reported in the Fund this year, compared with 2022, following a sale of underlying properties in order to meet investor redemption requests. Additionally, this Fund primarily consists of assets under full repair and insure leases, meaning energy consumption falls under tenant control. As such, Aviva have categorised the majority of the portfolio's emissions as scope 3 (in line with the GHG Protocol, which provides a consistent framework for GHG reporting).
- Schrodgers reported emissions for the first time this year. The emissions associated with the LDI mandate are much higher than the remainder of the Scheme's asset portfolio. This is not only due to the large allocation in the portfolio (c.39.5% as at 31 March 2024) but also how the emissions are calculated. The emissions associated with gilts reflect the emissions of the UK government's activities, which includes a broad and emission-intensive range of activities such as national infrastructure, defense, public healthcare, energy systems and public buildings. These span almost every sector of the economy, many of which are high emitters. In contrast, a corporate bond reflects only the scope of that individual company's operations.

WACI



Source: Investment managers.

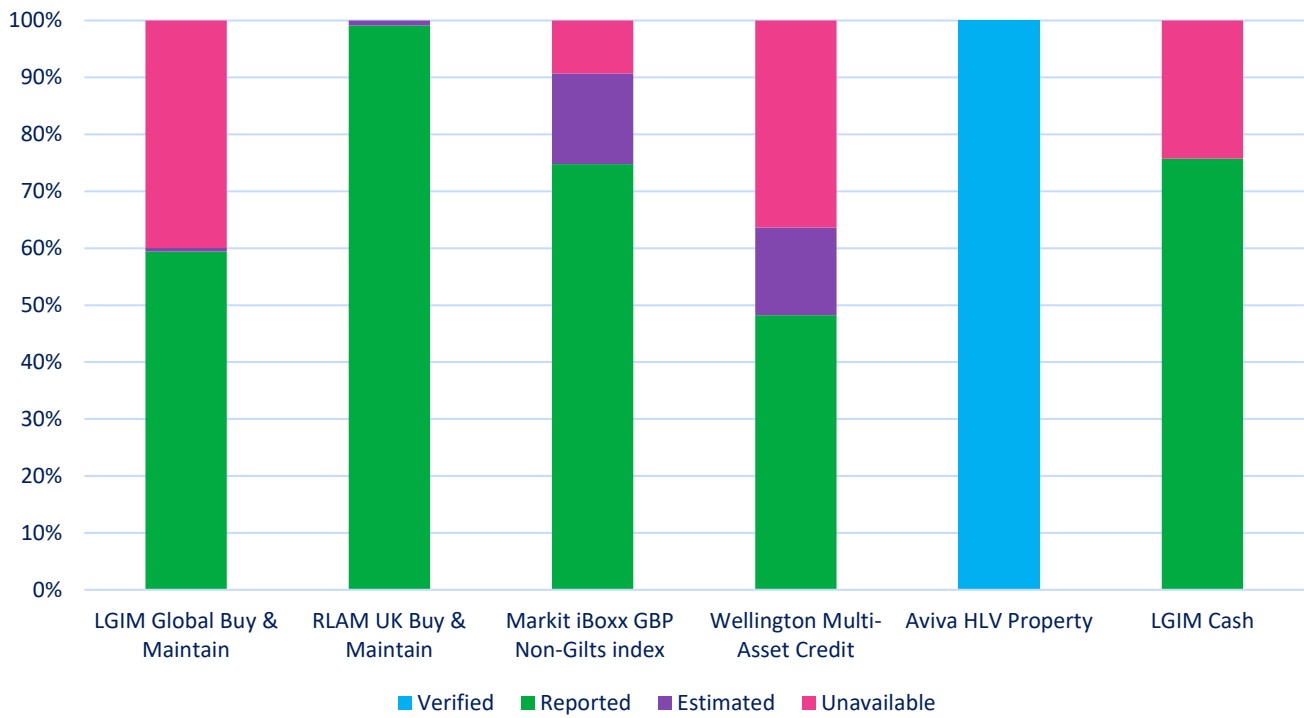
*RLAM restated Markit iBOXX GBP Non-Gilts index 2023 figures and Buy & Maintain mandate figures due to updated methodologies. 2024 data for the index has been provided by Mercer.

**Aviva WACI includes scope 3 emissions and 2022 data has been restated.

- The LGIM and RLAM mandates have demonstrated a significant reduction in WACI compared to the previous year.
- The WACI reported by Wellington decreased over the year, after it increased the year before.
- The Aviva WACI has marginally increased over the year.

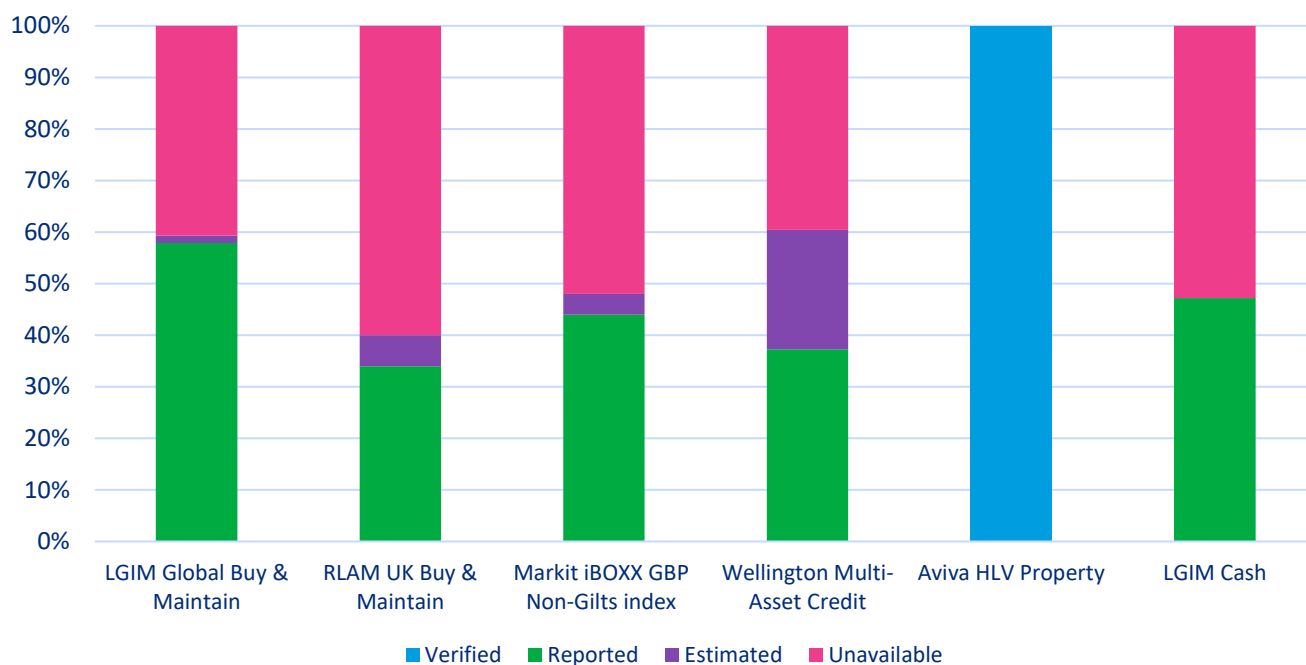
Data quality

31 March 2024



Source: Investment managers and Mercer. Based on absolute emissions data.
Markit iBOXX GBP Non-Gilts index shown to represent a comparator for the Buy & Maintain Credit portfolios.

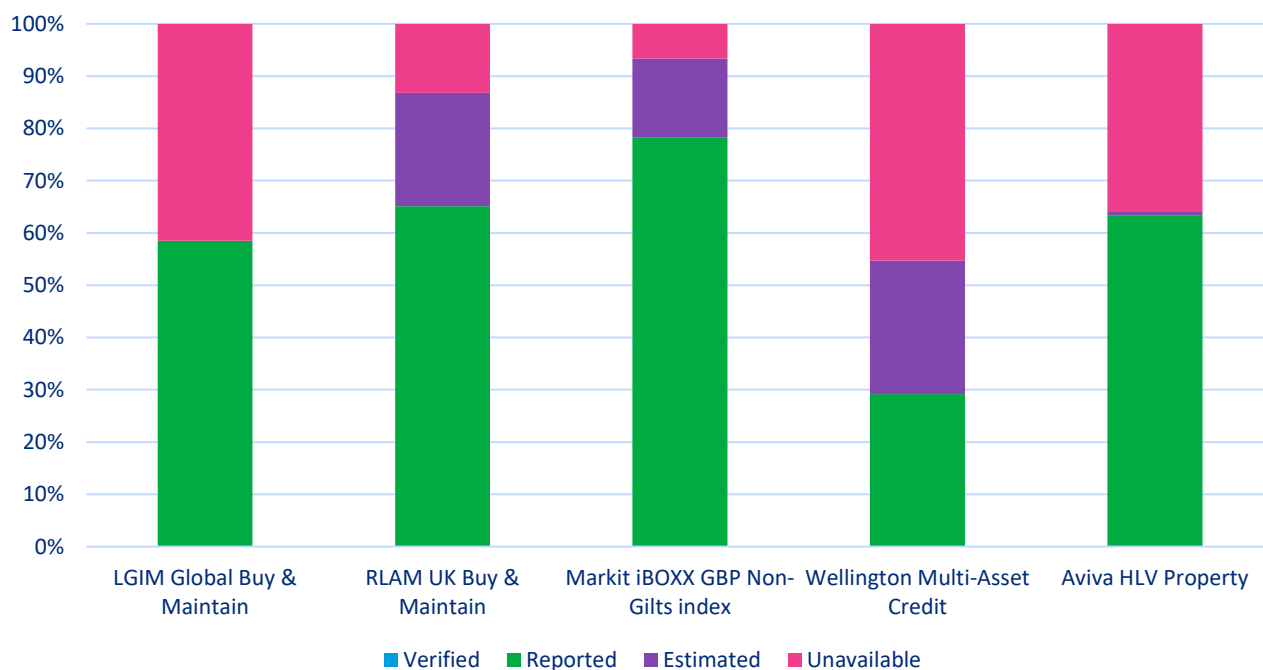
31 March 2023



Source: Investment managers. Based on absolute emissions data.

Markit iBOXX GBP Non-Gilts index shown to represent a comparator for the Buy & Maintain Credit portfolios.

31 March 2022



Source: Investment managers. Based on absolute emissions data (apart from RLAM).

Markit iBOXX GBP Non-Gilts index shown to represent a comparator for the Buy & Maintain Credit portfolios.

RLAM confirmed 2022 coverage data provided was based on WACI rather than absolute emissions (this also applies to the Markit iBOXX GBP Non-Gilts index).

We expect the quality of data provided by the managers to improve over time as underlying portfolio companies are expected to continually improve their reporting on climate-related metrics.

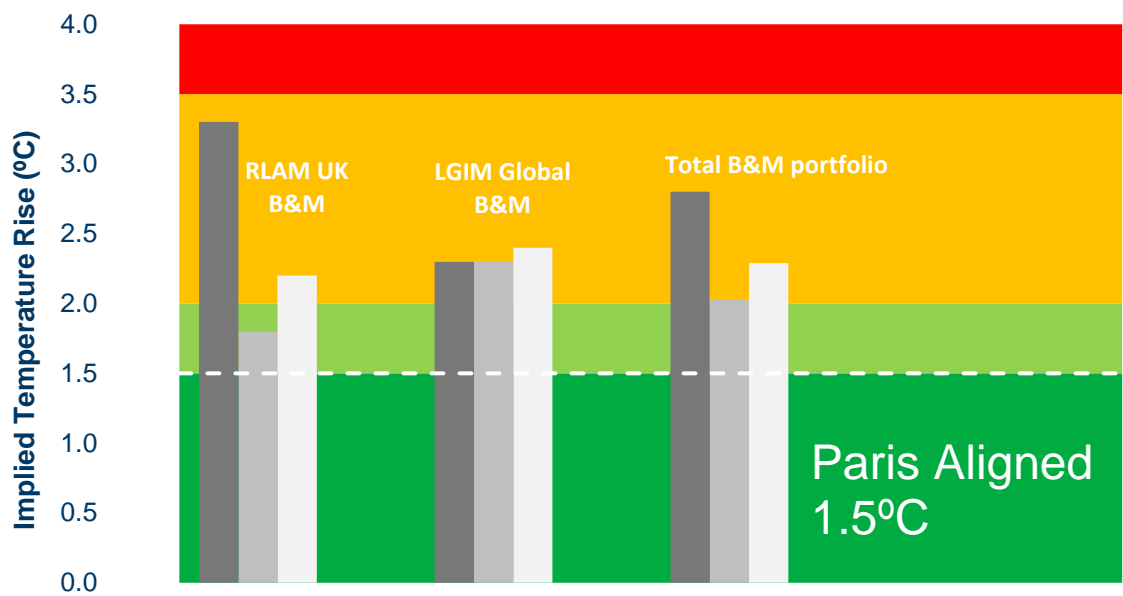
Targets

The Trustee's intention is to align the Scheme's investments with the targets set under the Paris Agreement (which aims to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels) in relation to greenhouse gas emissions and carbon neutrality, to the extent that this is consistent with overall risk and return considerations (including for example, avoiding a material detriment to return expectations through the existence of any "green premia" or a concentration of risk that could result from an excessively narrow investment universe).

The Trustee has engaged with both of the Scheme's Buy & Maintain Credit managers in order to incorporate climate and ESG-related targets in their portfolio Guidelines. The Trustee agreed the relevant updates to the LGIM portfolio Guidelines in May 2022, changes to the portfolio were subsequently implemented over the 3 months that followed. The Trustee agreed the relevant updates to the RLAM portfolio Guidelines in December 2022, an initial restructuring of the portfolio was implemented in January 2023. RLAM will continue to capitalise on transition opportunities within the portfolio structure over time where possible. In order to achieve the targets, the managers will primarily seek to engage with underlying issuers to improve their ESG practices and position their companies for a successful transition to a net zero carbon economy. This will then ultimately feed through to the Scheme's portfolios.

- LGIM target a Weighted Average Carbon Intensity that is at least 40% lower than the Reference Portfolio (LGIM's flagship Buy & Maintain Credit Fund) as at 31 December 2019 (measurements currently include scope 1 and 2 emissions only). LGIM target holding a portfolio by 2030 that is aligned with the Paris Agreement goal of limiting temperature rises to 1.5°C by 2100 (vs pre-industrial levels).
- As at 31 March 2024, the WACI for the LGIM portfolio was 137.7. The WACI of LGIM's flagship Buy & Maintain Credit Fund as at 31 December 2019 was 683.3 (note both WACI figures are in tCO₂e/£million sales, include scope 1 & 2 emissions only and have been scaled up to reflect the % of the portfolio for which there is data coverage in order to provide an indication of WACI for the entire portfolio). LGIM have achieved a c.80% reduction in WACI relative to the baseline and have therefore achieved their WACI target.
- RLAM has adopted ESG-related objectives which target reduction in Weighted Average Carbon Intensity of 20-30% by December 2031, relative to the position as at 31 December 2021 (measurements currently include scope 1 and 2 emissions only).
- As at 31 March 2024, the WACI for the RLAM portfolio was 56.3. The WACI of the RLAM portfolio as at 31 December 2021 was 156.2 (note both WACI figures are in tCO₂e/\$million sales, include scope 1 & 2 emissions only and have been scaled up to reflect the % of the portfolio for which there is data coverage). RLAM have achieved a c.64% reduction in WACI relative to the baseline and have therefore achieved their WACI target.

In addition, the Trustee has agreed to seek improvement in the Implied Temperature Rise of the Buy & Maintain Credit portfolios by 2028. The chart below depicts the Implied Temperature Rise of the Buy & Maintain Credit portfolios from 31 March 2022 to 31 March 2024.



Source: Investment managers. Total B&M portfolio calculated as a weighted average of the underlying credit portfolio metrics, assuming that the component ITRs have been calculated assuming a consistent methodology. The figure shown for RLAM as at 31 March 2022 is the portfolio’s Warming Potential as RLAM were unable to provide Implied Temperature Rise at the time. RLAM have now switched to reporting Implied Temperature Rise as methodologies have improved and convergence was promoted by the Glasgow Finance Alliance for Net Zero.

As shown above, there was an increase over the year in the Implied Temperature Rise reported by both credit managers. For RLAM it is due to MSCI (the data provider) enhancing its methodology. MSCI’s updated model now includes calculation of a sector-specific carbon budget that a company can emit to be aligned with net zero by 2050, limiting warming to 1.5°C. It includes a credibility assessment of corporate decarbonisation targets and adjusts carbon budgets based on market share. MSCI believe these changes enhance accuracy and transparency, providing investors with a more reliable tool for assessing climate progress. The ITR reported by LGIM has marginally increased from last year.

Both managers will seek to achieve their targets primarily by engaging with underlying issuers in order to improve their ESG practices and position their companies for a successful transition to a net zero carbon economy. As such we do not expect to see significant improvements in ITR over a relatively short period of time.

A wide range of factors will affect whether the Trustee is able to achieve its targets and the Trustee has varying degrees of control over these factors. For example, the progress of the UK and other national governments will have a significant influence over the timescale for reaching net zero. In addition, the quality and availability of data improving over time means that the quoted greenhouse gas emissions are likely to change. Ultimately, achieving the desired level of decarbonisation will depend on economies overall being successful in decarbonising.

In addition, significant changes in the investment approach could affect the pace of decarbonisation (for example, a major change in the Scheme’s asset allocation or implementing a solution with an insurer).

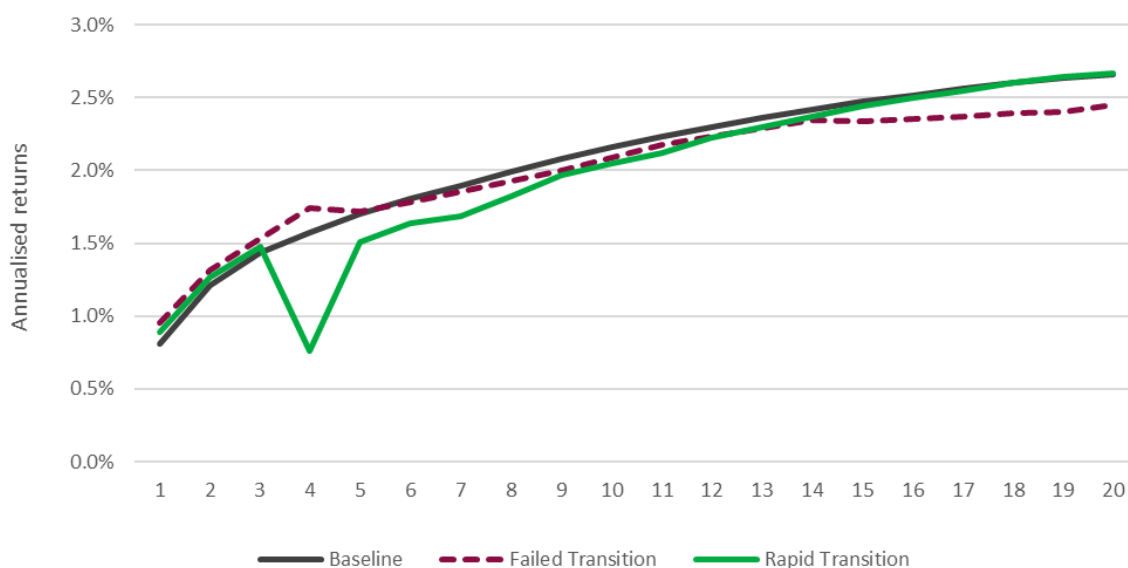
Appendix

Strategy

Commentary on relevant portfolio changes up to and including the reporting period

- In December 2021, prior to the current reporting period, the ISC implemented a 5% strategic allocation to Multi-Asset Credit ("MAC") via Wellington's Multi-Sector Credit Select Fund reflecting a preference for a fund with explicit ESG aims, especially in relation to climate risk. Wellington apply a negative screening process whereby the opportunity set is narrowed to remove issuers that support industries viewed by Wellington as causing harm to society and/or the environment. The Fund has a dedicated 'Impact' sleeve for issuers demonstrating a positive social or environmental impact through their products, services or specific projects. Wellington target a 10% allocation to 'Impact' investments within the Fund, which is comprised of three broad categories: Life Essentials, Human Empowerment and Environment. Wellington seek to reduce the overall carbon footprint of the Fund either on an absolute or benchmark-relative basis, by investing in companies that have less carbon intensive business models. While the Fund does not currently have a net zero target, the portfolio manager is committed to pursuing a path to net zero ahead of the 2050 target.
- In addition, the ISC adopted climate-aligned guidelines for the Buy & Maintain Credit portfolio managed by LGIM in May 2022. LGIM now targets a WACI that is at least 40% lower than the Reference Portfolio (LGIM's flagship Buy & Maintain Credit Fund)) as at 31 December 2019 (measurements include scope 1 and 2 emissions only). LGIM targets holding a portfolio by 2030 that is aligned with the Paris Agreement goal of limiting temperature rises to 1.5°C by 2100 (vs pre-industrial levels).
- The ISC also adopted ESG-related objectives in the Buy & Maintain Credit portfolio managed by RLAM during December 2022. RLAM target a reduction in Weighted Average Carbon Intensity of 20-30% by December 2031, relative to the position as at 31 December 2021 (measurements include scope 1 and 2 emissions only). Initial portfolio restructuring was implemented in January 2023. RLAM also adhere to exclusions lists whereby they do not invest in issuers with more than 10% of revenue from the exploration, extraction and refining of oil, gas or coal, or more than 10% of revenues from any tie to thermal coal, in particular reserve ownership, production, and power generation.

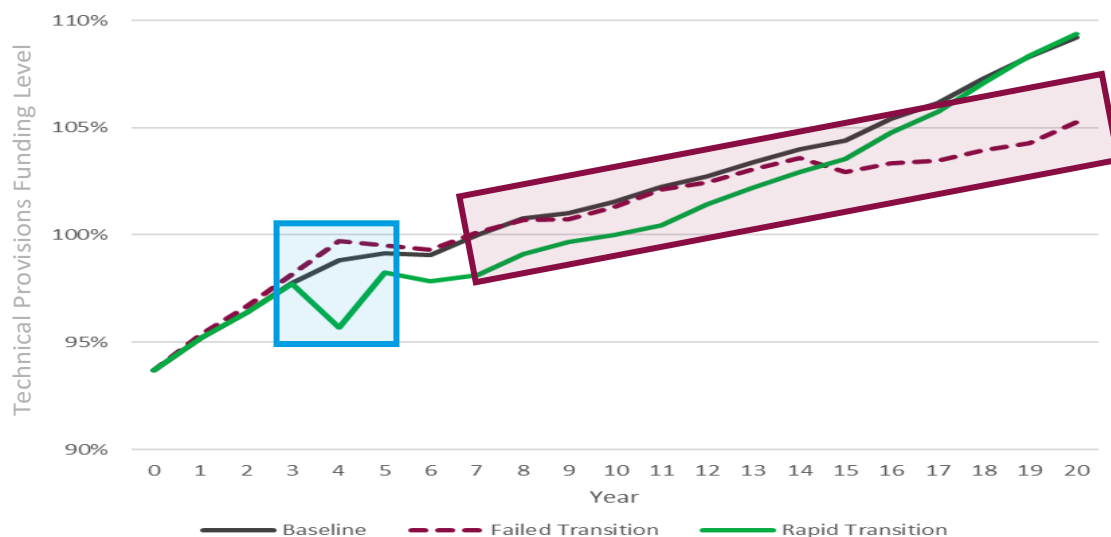
Projection of annualised asset returns



**Analysis as at 31 March 2022.*

Timing of future pricing shocks

20y time frame



Investors, and therefore “the market”, look to predict future events / impacts and allow for them in asset prices.

As particular events become more likely, market pricing will change before the events occur.

This means longer-term impacts, particularly physical damages, could impact portfolios earlier than they occur.

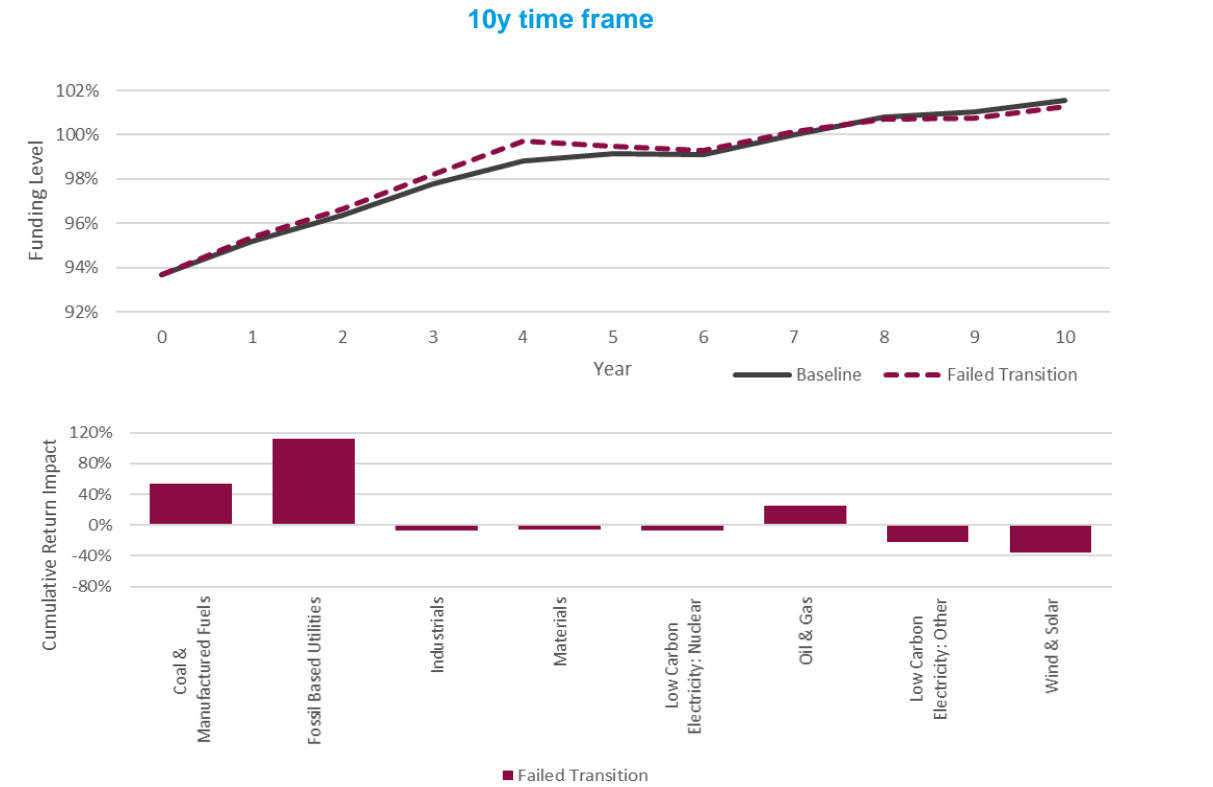
The rapid transition includes a shock around 2025 pricing in (and over-reacting to a degree) to transition costs [see blue box]. The failed transition includes shocks towards the end of the 2020s and 2030s pricing in future damage [see purple box]. In practice these could of course occur sooner.

While the exact timing of such shocks is unknowable, considering such shocks and their potential impact is important to risk analysis.

Current market pricing

The scenario analysis assumes some climate impacts are already allowed for in market pricing. This means the impact of a scenario is driven in part by what doesn't happen in that scenario (but was priced in).

The charts illustrate the **failed transition** impacts over 10 years. Over this shorter timescale, impacts are driven more by the lack of transition than the damage that will ultimately come. Fossil fuel sectors do well as they experience greater demand than expected and renewables perform poorly due to a lack of expected support.

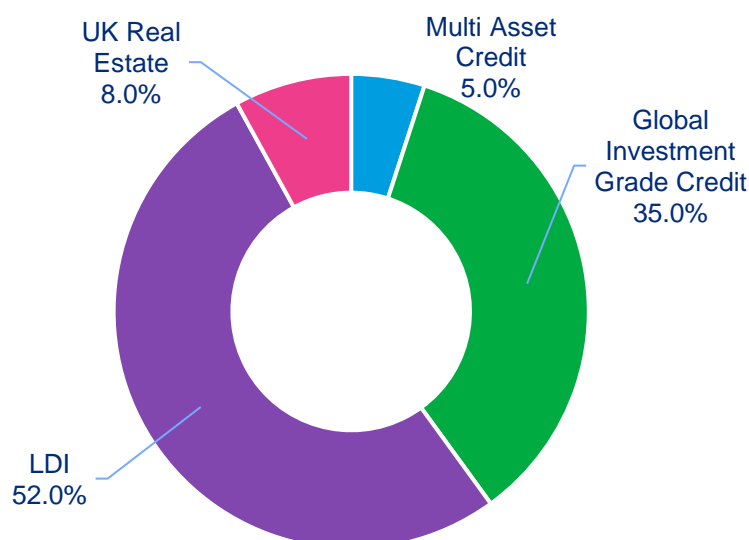


Over the long-term, the failed transition scenario is associated with the worst funding outcomes due to the impact of physical risks.

Asset allocation

Strategy Modelled

The pie chart illustrates the asset allocation modelled in the climate scenario analysis.



- Analysis is as at 31 March 2022, with a starting asset value of £1,503m and liability value of £1,604m (Technical Provisions basis).
- We have assumed a constant hedge ratio of 87% (for interest rates and inflation as a % of gilt-flat liabilities) over the projection period.
- Contributions are assumed to be payable in line with the contribution schedule agreed as part of the 2018 actuarial valuation. The Recovery Plan states that deficit contributions may be reduced or even cease if the funding level exceeds 100% on the Technical Provisions basis for three months. For the purpose of this analysis only we have assumed that deficit funding will cease in 2025.
- The Scheme's investment strategy is expected to evolve over time as the funding level of the Scheme improves. However, given that the future development of the Scheme is currently uncertain, this report focusses on the current investment strategy and all forward looking analysis is based on the current strategy.

Climate scenario modelling approach

Climate scenario narratives

	Rapid Transition	Failed Transition
Summary	Sudden divestments in 2025 to align portfolios to the Paris Agreement goals have disruptive effects on financial markets with sudden repricing followed by stranded assets and a sentiment shock.	The world fails to meet the Paris Agreement goals and global warming reaches 4.3°C above pre-industrial levels by 2100. Physical climate impacts cause large reductions in economic productivity and increasing impacts from extreme weather events.
Cumulative emissions to 2100	416 GtCO ₂ e	5,127 GtCO ₂ e
Key policy and technology assumptions	An ambitious policy regime is pursued to encourage greater decarbonisation of the electricity sector and to reduce emissions across all sectors of the economy. Higher carbon prices, larger investment in energy efficiency and faster phase out of coal-fired power generation under a 'Rapid' transition.	Existing policy regimes are continued with the same level of ambition.
Financial climate modelling	Pricing in of transition and physical risks of the coming 40 years occurs within one year in 2025. As a result of this aggressive market correction, a confidence shock to the financial system takes place in the same year.	Physical risks are priced in two different periods: 2026-2030 (risks of first 40 years) and 2036-2040 (risks of 40-80 years).

	Rapid Transition	Failed Transition
Physical risk impact on GDP	Physical risks are regionally differentiated, consider variation in expected temperature increase per region and increase dramatically with rising average global temperature. Physical risks are built up from: Gradual physical impacts associated with rising temperature (agricultural, labour, and industrial productivity losses). Economic impacts from climate-related extreme weather events. Current modelling does not capture environmental tipping points or knock-on effects (e.g., migration and conflict).	
Physical risk impact on inflation	Gradual physical impact (supply shocks) on inflation included through damages to agriculture and change in food prices. Total impact on a Global CPI Index is +2% in 2100.	Severe gradual physical impact (supply shocks) on inflation included through damages to agriculture and change in food prices. Total impact on a Global CPI Index is +15% in 2100.

Source: Mercer

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

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

Funding level scenario analysis assumptions (cumulative asset returns relative to baseline)

	Failed Transition		Rapid Transition	
Asset Class	31/03/2022			
	10 Years	30 Years	10 Years	30 Years
Credit - Multi Asset	-1.5%	-3.3%	0.8%	0.8%
Credit - Global Investment Grade	-1.1%	-2.5%	0.9%	1.9%
Sovereign Bond - UK	0.6%	-0.9%	-0.6%	1.4%
Real Estate - UK	-8.3%	-34.6%	-5.0%	-3.9%

Metrics – Data limitations and assumptions

Data sources

All climate-related metrics data has been requested directly from the investment managers. Climate-related metrics provided in respect of the RLAM portfolio have been sourced from MSCI using stocklist data provided by the investment managers.

Scope of emissions

For a number of managers only scope 1 and 2 emissions data has been included in this report. This means that for some companies, the assessment of their carbon footprint could be considered an understatement. Scope 3 disclosure remains insufficient to use reliably at present for these managers. Scope 1, 2 and 3 emissions are as defined by the GHG protocol - Greenhouse Gas Protocol (ghgprotocol.org).

The Trustee will continue to work with Mercer and the investment managers to obtain scope 3 data for the different asset classes.

Data coverage

Data coverage refers to the proportion of an asset fund in which the various climate-related metric data is available. There are gaps in the data:

- Some public listed companies or issuers are not publishing climate-related data or are providing poor quality data. This is relevant to public equity and corporate bonds. Obtaining data for emerging market equity can also be challenging due to general disclosure and transparency challenges;
- Many private companies do not currently produce climate-related data and coverage for private markets, such as private equity and private debt, will be low, or zero for mature funds;

- Sovereigns, or governments, may not publish climate-related data in the public domain. This is a particular challenge for emerging market debt. For UK government debt, data is available but there is a delay in the data being published;
- Short-term instruments, such as illiquid credit assets or money market funds, have limited data available due to the short-term nature of the individual assets;
- Real estate (property) assets can have low climate-related data coverage due to the lack of reporting on the individual properties or projects held within the portfolio.

In this report, the Trustee has used a pro rata approach to scale up each climate metric in order to present the data as if full coverage was available for each asset fund. This assumes that the part of an investment fund that does not have data available has the same investment characteristics (for example, same sector or geography) as the part where there is data.

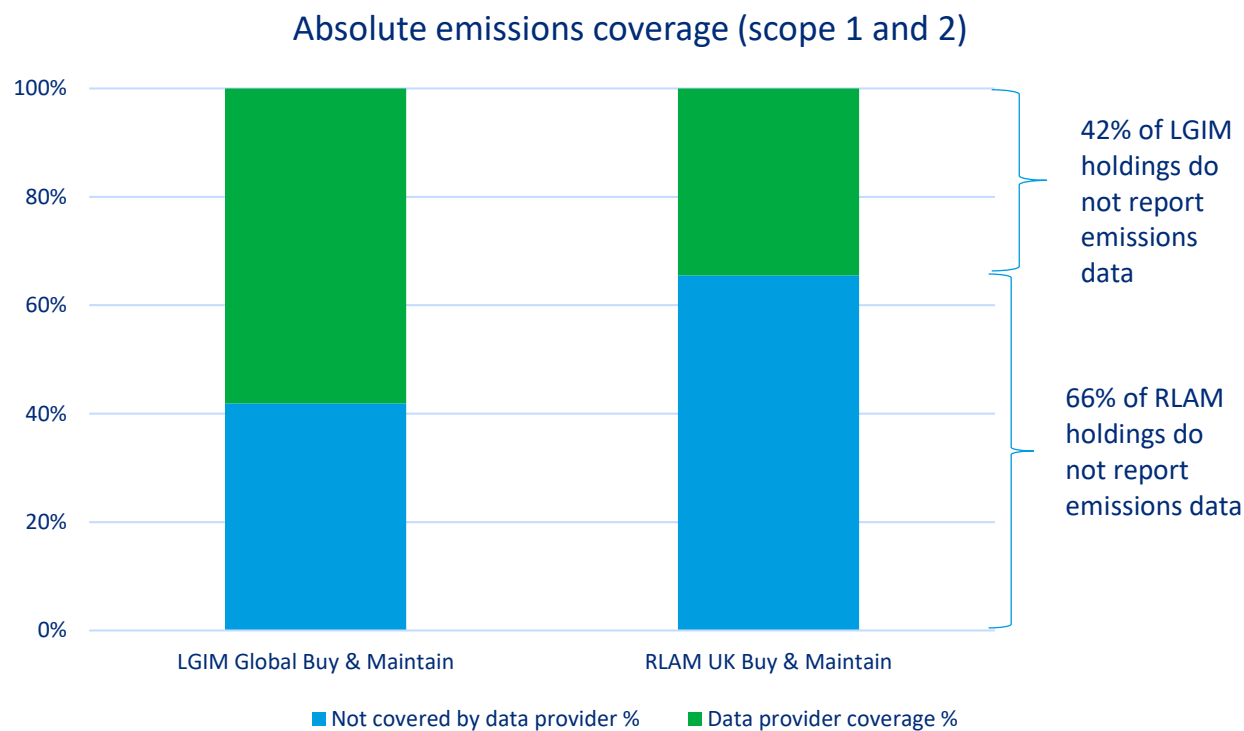
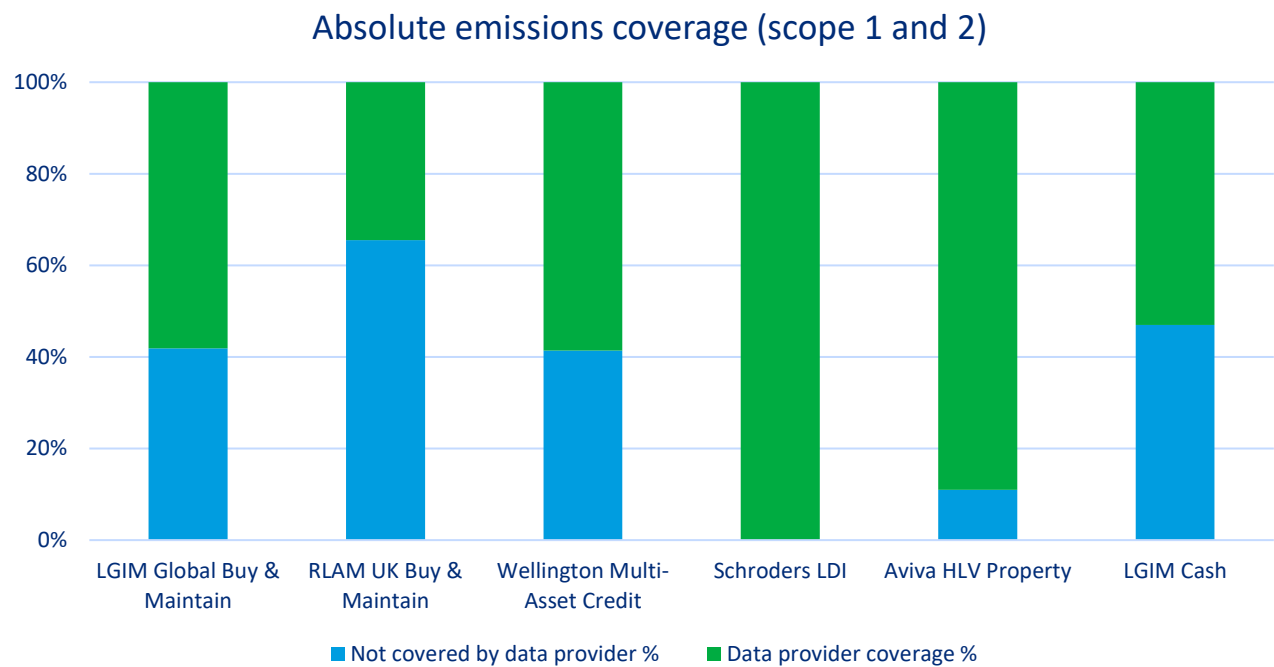
Example calculation :

LGIM absolute emissions for 58% covered holdings = 26,568 tons CO₂e

Scaling up emissions calculation = 26,568 / 58%

Absolute emissions estimated for 100% coverage = 45,807 tons CO₂e

Absolute emissions coverage (scope 1 and 2)



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