

Caterpillar Pension Plan

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

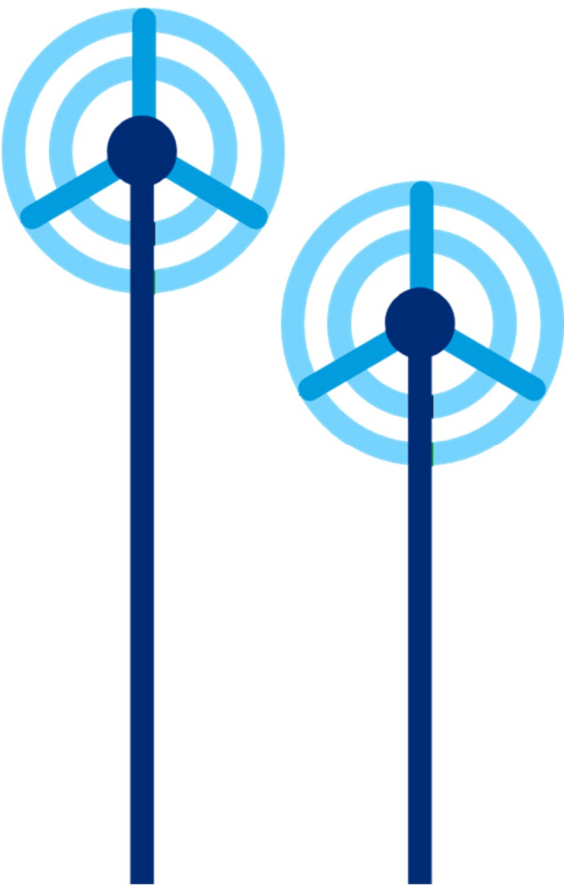
Reporting period: 12 months to 30 September 2023

December 2023



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Section 1

Introduction

Dear Members,

Welcome to our first climate change report, which has been prepared in line with the recommendations of the Task Force on Climate-related Financial Disclosures (“TCFD”) and the statutory requirements prescribed by the Department of Work and Pensions¹.

The Trustee of the Caterpillar Pension Plan (“the Plan”) has a legal fiduciary responsibility to invest the Plan’s assets to make sure that the Plan remains sufficiently funded to meet the expected obligations to the beneficiaries of the Plan. As part of this responsibility, the Trustee recognises climate change as a risk that could impact the financial security of members’ benefits if it is not properly measured and managed. The Trustee also recognises that climate change presents an opportunity, by investing in companies or assets that are expected to perform well in an economy that is positioned to address the challenges associated with climate change.

The Trustee’s assessment of climate-related risks and opportunities has been carried out based on information that is currently available, both in terms of data from the companies and assets in which the Plan invests and in consideration of the different global warming scenarios we have analysed. This data is subject to change as climate change reporting improves.

Climate change is one risk amongst many that the Trustee measures, monitors and manages. To this extent, climate change needs to be considered alongside these other risks in a balanced and proportionate way. The Trustee will therefore continue to invest in companies where there is a sufficiently attractive investment case and the asset manager believes there is an opportunity to engage and influence change in the behaviour and actions of a company.



¹ The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 and the Occupational Pension Schemes (Climate Change Governance and Reporting) (Miscellaneous Provisions and Amendments) Regulations 2021

This report has been split into several sections to help members understand:



Governance: How the Trustee incorporates climate change into its decision making;

Strategy: How potential future climate warming scenarios could impact the Plan;

Risk Management: How the Trustee incorporates climate-related risk in its risk management processes; and

Metrics and Targets: How the Trustee measures and monitors progress against different climate-related indicators known as metrics.

The final section sets out the methodology and assumptions used to produce the information contained in this report.

As always, members are encouraged to contact the Trustee if there are comments you wish to raise.

Adrian Kennett
Dalriada Trustees Limited

Chair of the Trustee of the Caterpillar Pension Plan

Section 2

Governance



Trustee's governance approach

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 Environmental, Social and Corporate Governance ("ESG") factors, such as climate change, as part of its investment decision making. The document is reviewed on at least a triennial basis or following a significant change in investment policy.

The Trustee's key beliefs on ESG and climate change are:

- ESG factors may have a material impact on investment risk and return outcomes.
- Good stewardship can create and preserve value for companies and markets as a whole.
- Long-term sustainability issues, particularly climate change, present risks as well as opportunities that increasingly may require explicit consideration.

Roles of those undertaking scheme governance activities

The Trustee is responsible for understanding and maintaining oversight of the Plan's climate-related risks and opportunities and takes independent advice from its professional advisors and input from its investment managers to assist with this objective.

The Trustee is responsible for agreeing the strategic asset allocation and the funding strategy for the Plan, and will take into account the impact of climate-related risks and opportunities on strategy. The Trustee is responsible for any changes to the Plan's risk register and integrated risk management framework, and for ensuring the applicable climate-related risks are documented.

The Trustee has also reviewed the roles of others undertaking scheme governance activities, in particular the investment sub-committee that has been established and their respective decision-making powers. The Trustee will consider the recommendations of the investment sub-committee and will ratify

any decisions that require its approval. Of relevance to the oversight of climate-related risks and opportunities are:

The Investment Sub-Committee (ISC)

The ISC is responsible for the implementation of the investment strategy for the Plan. This includes the appointment and ongoing review of investment managers and performance considerations. The ISC will support and guide the Trustee's work on ESG related topics, improved engagement reporting, and will ensure compliance with the climate change governance and reporting regulations, which are consistent with the TCFD recommendations.

Roles of advisers

The Trustee has appointed advisers to the following roles:

Investment consultant

The Trustee has appointed Mercer as investment consultant to the Plan. The investment consultant:

- Advises on strategic asset allocation taking into account climate risk, supported through the provision of climate scenario analysis;
- Advises on the choice of climate-related metrics and targets as well as changes to investment mandates;
- Advises on manager selection, taking into account the Trustee's sustainability beliefs and climate-related targets;
- Monitors investment manager performance against relevant climate-related targets;
- Supports the Trustee with stewardship activities, which may be related to climate change, such as monitoring and reporting on voting and engagement activities of the invested assets.
- Liaises with investment managers and other professional advisers to provide training to the Trustee on climate change, as appropriate; and
- To assist the Trustee in producing the Plan's TCFD report on an annual basis.

Actuarial Adviser

The Trustee has appointed Mercer as actuarial adviser (including Scheme Actuary) to the Plan. Roles include:

- Advises on the funding position including an understanding of the potential funding impact resulting from changes to financial or demographic assumptions driven by climate change;
- Advises on funding strategy robustness to climate risk. Provides input to enable strategic asset allocation decisions to be made considering impact of climate risks on funding strategy; and
- Provides input into scenario analysis and advises on funding implications.

Covenant Adviser

The Trustee has appointed Ernst & Young as covenant adviser to the Plan. In their role EY:

- Assesses the Sponsor's ability and willingness to continue to support the Plan. 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 Advisors: The Trustee expects advisers to act with integrity and diligence in fulfilling the set objectives and use meetings with the advisers to assess and challenge them. Where relevant, this includes discussion of the steps taken by advisers to identify and assess any climate-related risks and opportunities.

The approach of the investment consultant to climate change and how it is integrated into its advice and services is assessed as part of the adviser selection and monitoring process. The Trustee sets its investment consultant annual objectives, including ones related to ESG and climate change competency. The investment consultant is formally assessed against these objectives annually.

Time and resources spent on climate change-related matters

The Trustee is responsible for ensuring that sufficient time is allocated for consideration and discussion of climate matters by the ISC and its advisers.

There are a number of workstreams that are to be completed regularly in order for the Trustee to fulfill its responsibility for managing climate risks and opportunities. It is important to note that many of the workstreams will cover wider ESG risks other than just climate change risk, as the Trustee does not consider climate risks in isolation but holistically alongside the various other ESG risks the Plan may be facing. The workstreams are listed below as well as the frequency of which each task will be carried out:

- Climate change training session (expected frequency = annual)
- Scenario analysis modelling the investment strategy and funding strategy (minimum frequency = first year and every 3 years thereafter)
- Metrics data collection (minimum frequency = annual)
- Target setting / target appropriateness review (minimum frequency = annual)
- Progress against target assessment (minimum frequency = annual)
- ESG beliefs (including climate change) update / review (minimum frequency = annual)
- Review of manager ESG ratings, climate policies (minimum frequency = annual)
- Stewardship, covered as part of the Trustee's annual implementation statement (minimum frequency = annual)
- Risk frameworks update/review e.g. risk register (minimum frequency = annual)
- Drafting annual TCFD report (minimum frequency = annual)

Training

During the year to 30 September 2023, the Trustee and ISC received training from the Trustee's Investment Consultant, covering climate-related investment risks and reporting requirements in line with the TCFD recommendations. This included training on general TCFD requirements, net zero target setting, time horizons and metrics analysis.

Section 3

Strategy



As a long-term investor, the Trustee recognises the risks and opportunities arising from climate change are diverse and continuously evolving. In relation to climate-related risks, the Trustee believes it is important to understand how the Plan's exposure to these risks 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 Plan.

To help with this assessment, the Trustee has defined short-, medium- and long-term time horizons for the Plan.

Short Term	Medium Term	Long Term
5 years (2028)	20 years (2043)	40 years (2063)
Assess the potential impact of transition risk causing re-pricing of assets.	Assess the potential impact of physical damage risk that is expected to emerge in the late 2020s and 2030s. Over this timeframe, the Plan is expected to pay out approximately half of its remaining benefits.	Assess the impact over the long term, where physical damage risks dominate. Over this timeframe, the Plan will have reduced in size materially. Over this timeframe, the Plan is expected to pay out over 90% of its remaining benefits.

The Trustee has considered the following short, medium and long-term drivers of risk in relation to climate change:

- Over the short term (out to 5 years), risks may present themselves through rapid market re-pricing relating to climate transition as:
 - Scenario pathways become clearer. For example a change in the likelihood of a well below 2°C scenario occurring (i.e. an increase in probability would be expected to drive additional transition risk).

- Market awareness grows. For example, the cost and impacts of the transition suddenly influence market pricing.
- Policy changes unexpectedly surprise markets. For example, if a carbon price or significant regulatory requirement was introduced across key markets to which the portfolio is exposed, at a sufficiently high price to impact behaviour.
- Market sentiment is shocked. For example, falls in markets could create a downward spiral where economic sentiment worsens and asset values fall.
- Perceived or real increased pricing of greenhouse gas emissions/carbon.
- Substitution of existing products and services with lower emission alternatives may impact part of the portfolio.
- Litigation risk relating to dangerous warming becoming more prevalent.
- Increases in the energy/heat efficiency of buildings and infrastructure.

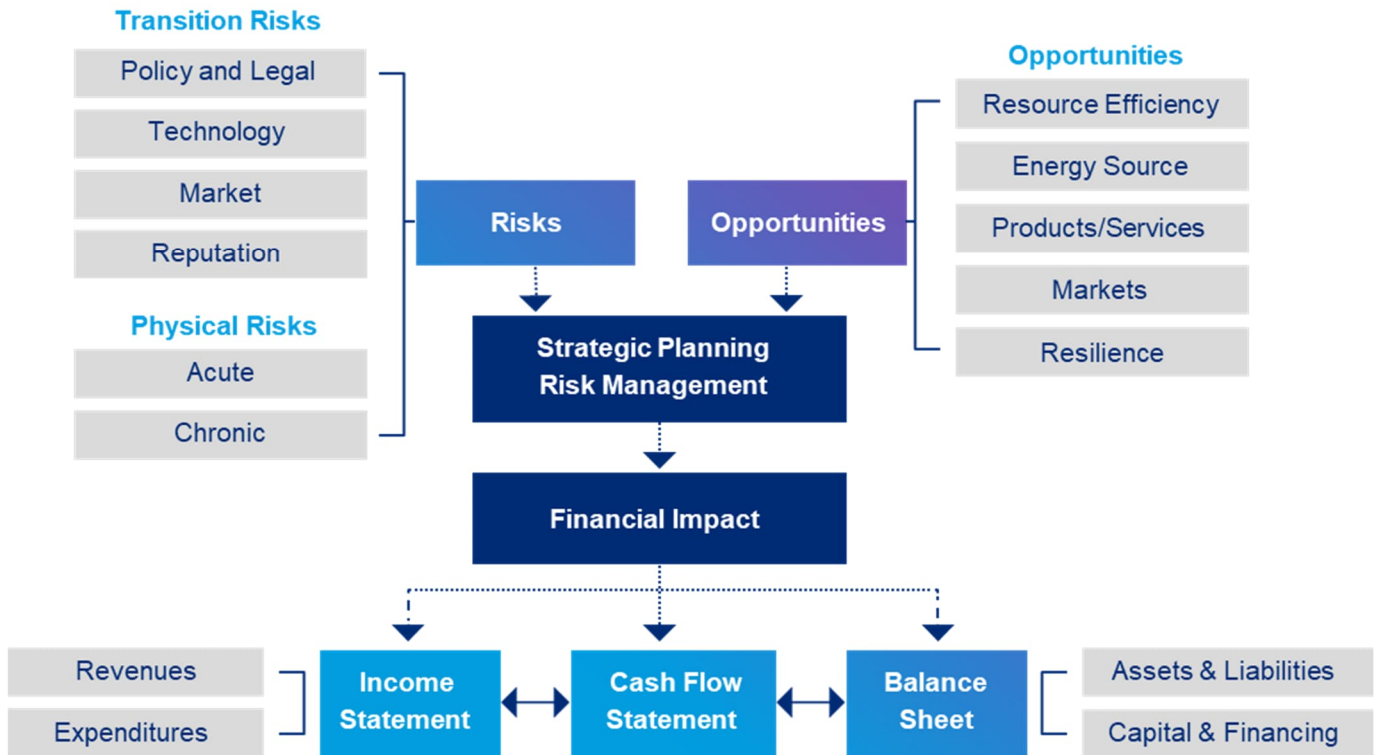
As well as risks associated with these drivers, there could also be opportunities. For example, investing in climate solutions as policy support strengthens.

The Trustee's ability (and that of the Plan's investment managers) to understand these short-term changes can position the Plan favourably, for example taking advantage of the climate transition by avoiding and reducing investment in high-emitting carbon sensitive businesses/assets that do not have a business plan that supports the transition to a low carbon economy.

- Over the medium term (out to 20 years), risks are likely to be more balanced reflecting both transition and physical risk. Over this time period the transition pathway will unfold and the level of anticipated physical damage will become much clearer. While the full extent of the physical damage is unlikely to have occurred markets are likely to be allowing for it to a large degree in asset pricing.

The Trustee's ability (and that of the Plan's investment managers) to understand these changes and evolve the portfolio as the pathway develops should help to control risk and potentially enhance returns. The Trustee seeks to select managers and choose indices that can identify potential emergence of low carbon opportunities and the decline of some traditional sectors.

- Over the long term (beyond 25 years), physical risks are expected to come to the fore. This includes the impact of natural catastrophes leading to physical damages through extreme weather events. Availability of resources is expected to become more important if changes in weather patterns (e.g. temperature or precipitation) affect the availability of natural resources such as water. The impact of global heating on productivity, particularly in areas closer to the equator, will also be a key driver.

Figure 1

Source: TCFD Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, October 2021

Climate-related risks and opportunities relevant to the Plan

Having taken into account the Plan's DB strategic asset allocation, as set out in the technical appendix, the following risks and opportunities have been identified:

- Over the short term, the Trustee has identified the inter-related risk of climate transition risk and asset repricing risk as being most relevant to the investment strategy. Over this time period opportunities are most likely to occur in transition related investment such as climate solutions.
- Over the medium term, the Trustee has concluded that both transition risk and physical risk (particularly in the form of asset repricing to allow for future physical damage) could be material.
- Over the long term, the Trustee has identified physical risk as the key driver of climate-related risk.

The Trustee has investigated the potential impacts of these risks and opportunities in the scenario analysis that follows.

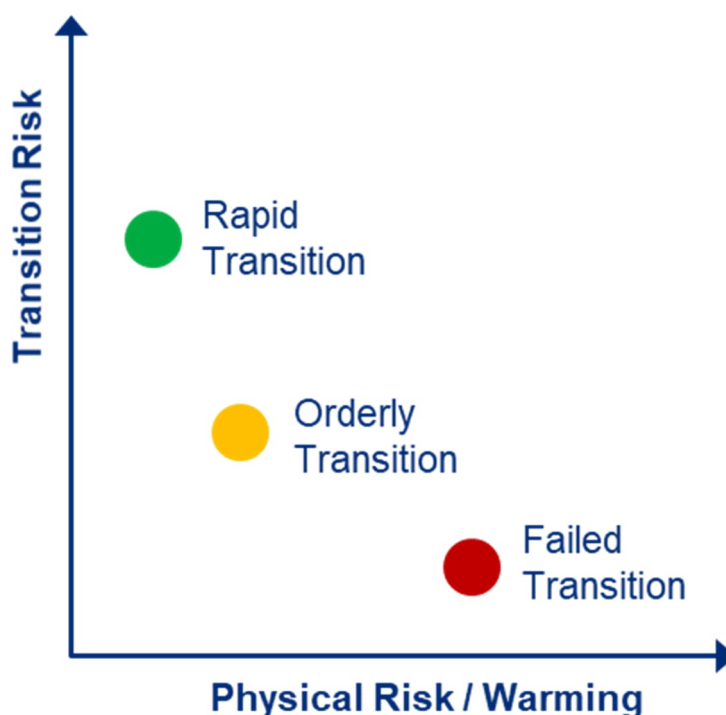
Testing the resilience of the investment and funding strategy

Scenarios analysis

The Trustee has undertaken climate scenario analysis to test the resilience of the investment and funding strategy adopted by the Trustee. Quantitative climate change scenario analysis has been undertaken on the Trustee's strategic asset allocation to assess the potential implications of climate change under three modelled scenarios; a Rapid Transition (1.5°C), an Orderly Transition (less than 2°C) and a Failed Transition (greater than 4°C). The analysis is based on scenarios developed by

Mercer working with Ortec Finance. These scenarios were selected by the Trustee to test a broad range of feasible outcomes and the Plan's exposure to both transition and physical risks.

- **Rapid Transition** – Average temperature increase of 1.5°C by 2100 (relative to pre-industrial average). This scenario assumes sudden downward re-pricing across assets in 2025. This could be driven by a change in policy, consideration of stranded assets or expected costs. The shock is partially sentiment driven and so is followed by a partial recovery. Physical damages are most limited under this scenario.
- **Orderly Transition** – Average temperature increase of less than 2.0°C by 2100. Governments and wider society act in a co-ordinated way to decarbonise and to limit global warming to well below 2°C. Transition impacts do occur but are relatively muted.
- **Failed Transition** – Average temperature increase above 4°C by 2100. The world fails to co-ordinate a transition to a low carbon economy. Physical climate impacts significantly reduce economic productivity and have increasingly negative impacts including from extreme weather events. These are reflected in re-pricing events in the late 2020s and late 2030s.



Source: Mercer

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' baseline²; 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.

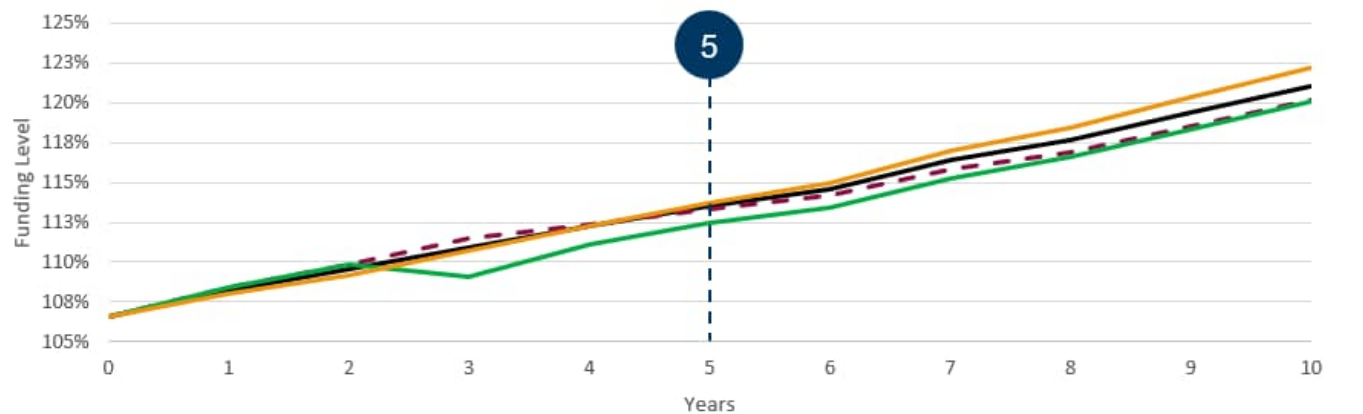
Further detail on climate scenario narratives, including modelling limitations, is included in the appendix of this report.

Scenario Analysis Results

The charts below represent the output of the Trustee's quantitative analysis of the investment and funding strategy. The charts represent projections of funding level (which is based on a prudent funding basis of gilts-0.1%) and annualised asset returns from an analysis date of 31 March 2023 over a period of 40 years. Projections assume a static asset allocation that does not allow for any further future de-risking, given the low risk nature of the Plan's investment strategy. Further detail on the underlying asset allocations and limitations associated with climate scenario analysis are set out in the Technical Appendix.

² The baseline represents what we are assuming the market is currently pricing in. The baseline includes a 10% weight to a **Failed Transition**, 40% weight to an **Orderly Transition**, 10% to a **Rapid Transition** and 40% to a range of **low impact scenarios**.

Figure 2 – Funding level projection analysis



Source: Mercer

Figure 3 – Asset return impact analysis

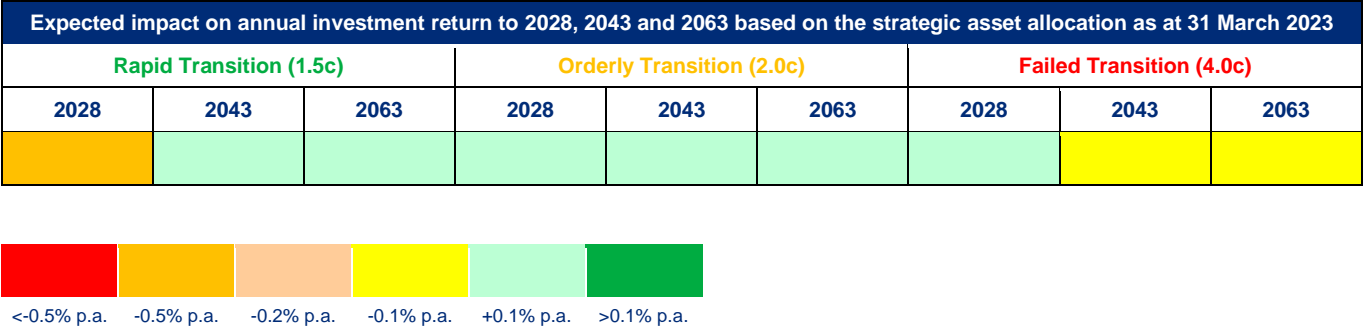


Figure 3 shows the annualised climate impacts on return relative to the baseline returns.

Scenario Analysis Findings

In light of the above quantitative analysis, the Trustee noted the following findings:

Short Term (5 years)	<p>Over the short term transition risk dominates with the Rapid Transition having the biggest impact. An initial fall in asset returns (relative to baseline) is driven by a transition shock impacting the economy and investment markets causing losses. This could be driven by unprecedented policy action, with markets initially overreacting before partially recovering. The actual timing of any shock or recovery is uncertain.</p> <p>For the Plan, the Rapid Transition has a market shock in year 3 that results in the widening of credit spreads (reducing the market value of the Plan's credit holdings). Under this scenario, the funding level at year 5 is 1.1% lower than the baseline scenario, mainly due to expected annualised asset returns falling by 0.2% over the period.</p>
Medium Term (Up to 20 years)	<p>Over the medium term, transition risk and physical risk are both factors. The impact of physical risks under the Failed Transition causes it to become the most impactful scenario.</p> <p>For the Plan, the Failed Transition results in a 5% fall in funding level relative to the baseline scenario, and a 0.1% fall in expected annualised asset returns.</p>
Long Term (Up to 40 years)	<p>Over the long term, physical impacts become significant, with the Failed Transition resulting in significant falls in asset value relative to the baseline.</p> <p>For the Plan, the Failed Transition negatively impacts the funding level, however over this timeframe the Plan is expected to be in significant surplus under the current investment strategy.</p>

Source: Mercer

A key consideration of the Trustee is the impact the scenarios could have on market conditions at the point at which the Plan carries out further buy-in/buy-out activities.

The funding level analysis above takes into account the impact of interest rates and inflation expectations upon the value of the liabilities. Of note, realised inflation is expected to be elevated under the Rapid Transition, resulting from damages to agriculture and change in food prices, increasing the value of benefits with inflation-linked increases. These impacts are to a large extent hedged by the Plan's allocation to Liability Driven Investment holdings. It does not, however, explicitly take into account the impact of changes to mortality.

Given the funding position of the Plan, the low risk investment strategy and the outcomes from the quantitative scenario analysis outlined above the Trustee have not considered the impact of climate change upon Plan mortality. In the UK, mortality changes directly due to climate change (over the Trustee's short term and medium term projection periods used within this report) are not expected to be material in the context of general uncertainty about life expectancy. This position will be re-assessed at the next actuarial valuation as at 30 September 2025.

The Trustee have been provided with the Sponsor's sustainability policy and have considered this in their discussions on the wider impact of climate on the Plan. In addition, the Trustee has engaged a covenant advisor (EY) and the covenant advisor will consider the Sponsor's climate disclosure and the impact on the Plan when advising the Trustee.

Key conclusions

Conclusion 1 – The Plan’s investment and funding strategy is resilient

The Trustee has considered the potential impact of these scenarios over all time horizons and has concluded that the investment and funding strategies for the Plan remains appropriate, having taken into account the wider investment and funding objectives and other risks the Plan is exposed to.

Conclusion 2 – A successful transition is an imperative

Over the long term for nearly all investors a successful transition leads to enhanced projected returns when compared to scenarios associated with higher temperature outcomes, due to lower physical damages under a successful transition scenario.

The quantitative analysis in this report highlights the negative financial impact associated with the Failed Transition and the corresponding need for trustees to invest to support a successful transition within their fiduciary duty.

The Trustee note that due to the fact the Plan is 100% invested in matching assets via LDI and Corporate Bonds, the funding level impacts are not as material for the Plan in comparison to schemes invested in growth assets (e.g. equities). However, the analysis highlights that negative scenarios could materially impact market conditions, and the Trustee will be aware of this at the point it pursues further buy-in/buy-out opportunities for the Plan.

Conclusion 3 – Sector exposure is key

Climate impacts are naturally sector specific.

Supporting the quantitative analysis in this report, sector level analysis highlighted that differences in return impact are most visible at an industry-sector level, with significant divergence between scenarios.

As return impacts in this modelling are expressed relative to a climate-informed baseline, sector-specific impacts are driven both by what happens under the scenarios, but also by what does not happen (but was priced in). For example, there is a positive impact on the low carbon electricity sector under the Rapid Transition, which is an intuitive outcome. Alternatively, there is a positive impact on the oil & gas sector under the Failed Transition, which is a result of the sector performing better than expected in this scenario (i.e. more revenue than expected for underlying companies).

This finding informs Trustee thinking when reviewing the Plan’s Corporate Bond portfolio, and specifically the underlying sector exposures. The Trustee has already consented to one of the Plan’s portfolio managers implementing a coal exclusion policy, and will continue to take account of climate risk across different sectors in future reviews.

Conclusion 4 – Investors should be aware of future pricing shocks

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 that longer-term impacts, including transition impacts and particularly physical damages, could impact portfolios earlier than they occur.

The quantitative analysis in this report seeks to demonstrate the impacts of such shocks.

This finding informs Trustee thinking in relation to managing climate-related risks and in particular the risk of pursuing further buy-in/buy-out opportunities for the Plan at an inopportune time due to climate related impacts on market conditions.

Section 4

Risk Management



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

This section summarises the primary climate-related risk management processes and activities of the Trustee. These help the Trustee understand the materiality of climate-related risks, both in absolute terms and relative to other risks that the Plan is exposed to. The Trustee prioritises the management of risks primarily based on its potential impact on the security of members' benefits/prospective investment returns.

Governance

- The Trustee's Statement of Investment Principles is formally reviewed on a triennial basis (but often more frequently) and sets out how investment climate-related risks are managed and monitored.
- The Trustee maintains a risk register which includes explicit climate risks.
- The Trustee will receive training from time-to-time on climate-related issues. The training allows the Trustee to challenge whether the risks and opportunities are effectively allowed for in its governance processes and wider activities, and to be able to 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.

Strategy

- The Plan's advisors will take climate-related risks and opportunities into account as part of the wider strategic investment advice provided to the Trustee and its ISC. This includes highlighting the

expected change in climate-risk exposure through proposed asset allocation changes, both from the top-down level (via climate scenario analysis) and bottom-up (via climate-related metrics).

- 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 Plan'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.
- Climate scenario analysis for the investment and funding strategy of the Plan will be reviewed at least triennially, or more frequently if deemed appropriate. Key findings from the Trustee's latest climate scenario analysis was set out in the previous section.

Reporting

- The Trustee will receive annual reports of climate-related metrics and progress against targets in respect of the assets held in the Plan. The Trustee may use the information to engage with the investment managers.
- The Trustee receives a voting and engagement activity summary on an annual basis as part of the preparation of the Engagement Policy Implementation Statement. The low risk nature of the Plan's investment strategy (no equities are held) means that the Plan's managers do not vote on issues on behalf of the Plan but the Trustee expect the Plan's managers to engage on climate-related issues (among other key engagement priorities) with the underlying companies they invest in. The statement is available on the Plan's website.

Manager Selection and Retention

- The Trustee, with advice from Mercer in its role as Investment Consultant, will consider an investment manager's firm-wide and strategy-specific approach to managing climate-related risks and opportunities when either appointing a new manager, in the ongoing review of a manager's appointment, or as a factor when considering the termination of a manager's appointment.
- Mercer rates 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 rating assessment. This is considered at the firm level and at the investment strategy/fund level. The ratings are presented in quarterly investment performance reports and are reviewed by the Trustee.

Section 5

Metrics and Targets



Metrics

The Trustee has chosen to present climate-related metrics across four different categories in this report. The climate-related metrics help the Trustee to understand the climate-related risk exposures and opportunities associated with the Plan's investment portfolio and identify areas for further risk management, including investment manager portfolio monitoring, voting and engagement activity and priorities. The metrics in this report relate to the Plan's financed emissions only and exclude emissions associated with the operation of the Plan. The metrics in this report are listed below and where metrics relate to emissions, these cover scope 1 and 2. The Trustee will begin reporting on scope 3 emissions from its next report.

Metric category	Selected metric	Further detail
Absolute emissions	Total Greenhouse Gas Emissions	Tonnes of carbon dioxide and equivalents (tCO ₂ e) that the Plan is responsible for financing.
	Carbon Footprint	The amount of carbon dioxide and equivalents (tCO ₂ e) emitted per million dollars of the Plan's investments.
Emissions intensity	Weighted Average Carbon Intensity (WACI)	The exposure of the Plan to carbon-intensive companies, measuring the amount of carbon dioxide and equivalents (tCO ₂ e) emitted per million dollars of holding company / issuer revenue ³ on average.

³ For sovereign bonds, Greenhouse Gas Emissions are expressed relative to Purchasing Power Parity adjusted Gross Domestic Product (PPP-adjusted GDP), in line with the Partnership for Carbon accounting of Financials guidance (PCAF).

Metric category	Selected metric	Further detail
Portfolio Alignment	Implied Temperature Rise (ITR)	A forward-looking assessment of how aligned the Plan's portfolios are relative to the Paris Agreement's 1.5°C target. This is estimated based on the activities and decarbonisation targets of portfolio companies / issuers, relative to what global decarbonisation needs to be to achieve 1.5°C.
Additional	Data Quality	Represents the proportions of the portfolio for which the trustees have high quality data.

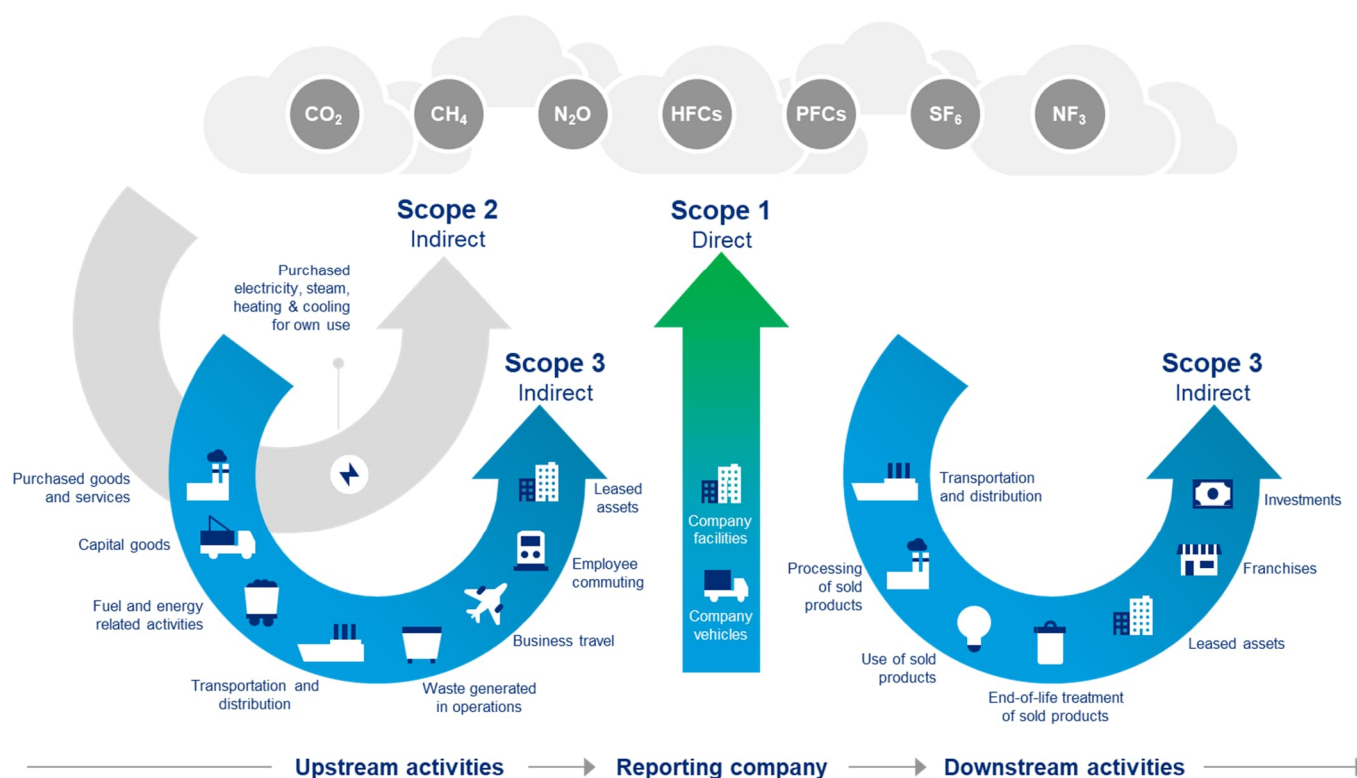
The metrics presented in this report are as at 31 March 2023 and are based on the actual asset allocation at that date.

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

Total Greenhouse Gas Emissions

This metric takes an ownership approach to answer what proportion of a company's or asset's emissions an investor owns and is therefore responsible for financing. It includes the seven types of greenhouse gas ("GHG") (as defined in the Kyoto Protocol), across the three scopes of emissions, as summarized below. Note that this report excludes scope 3 emissions, which will be included from the Trustee's next report.

Figure 4



Source: GHG Protocol

Emissions of the seven greenhouse gases have different impacts on climate change. In order to simplify reporting, each greenhouse gas is calibrated relative to carbon dioxide and is reported as 'carbon dioxide equivalent' emissions (CO₂e). In this way the Trustee can compare companies that emit different amounts of different gases on a consistent basis.

In respect of sovereign debt investments, the Trustee follows the Partnership for Carbon Accounting of Financials ('PCAF') to derive absolute emissions. Recognising the different methodologies used to calculate absolute emissions for sovereigns and corporates, the Trustee reports sub totals at the corporate and sovereign levels as well as a grand total greenhouse gas emissions figures.

The Trustee has chosen this metric to understand the absolute amount of emissions financed by the Plan's investments.

Carbon Footprint

Carbon Footprint is an intensity measure of emissions that takes the Plan's total GHG Emissions figure and normalises it to take account of the size of the investment.

Analysing an investment fund's Carbon Footprint assists the Trustee in identifying carbon-intense sections of the Plan's portfolio. The Trustee has therefore chosen this metric to assist them in prioritising carbon intense parts of the investment strategy for potential re-allocation or engagement as a means of mitigating associated climate-related risks.

Weighted Average Carbon Intensity

Weighted Average Carbon Intensity (WACI) is an alternative intensity measure of emissions that normalises a company's total GHG Emissions figure by its revenue. This metric is calculated by taking the total carbon emissions of the investment and dividing by annual company revenue. A different approach is taken for sovereign bonds, where the specified sovereign GHG Emissions are normalised by Purchasing Power Parity adjusted Gross Domestic Product (PPP-adjusted GDP). A portfolio level intensity metric is calculated as the weighted average of the underlying holdings' intensity metrics.

Analysing a fund's WACI assists the Trustee in identifying how carbon efficient the business models of the companies held within a portfolio are. Alongside Carbon Footprint, the Trustee has chosen this metric to assist them in prioritising carbon intense parts of the investment strategy for potential re-allocation or engagement as a means of mitigating associated climate-related risks.

Implied temperature rise

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.

The calculation of the level of warming is determined by mapping a given company's/issuer's level of over/undershoot (relative to its carbon budget) to a temperature outcome.

The Trustee has chosen this metric to include in this report because of its simplicity in presentation and a useful way to see, at a glance, the positioning of a fund relative to 1.5°C economy. This is also a measure of climate transition risk with greater transition risk highlighted in asset allocations with a higher Implied Temperature Rise.

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 how representative the analysis is of the Plan'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 Plan'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 the basis for engagement.

Data collection

The Trustee notes the following in relation to the data collection for metric report purposes:

- Data was collected for the whole of the Plan's portfolio, i.e. across the Plans two Corporate Bond mandates with Legal & General Investment Management ("LGIM") and Royal London Asset Management ("RLAM") and the Liability Driven Investment ("LDI") mandate with LGIM;
- All data was provided directly by the investment managers, and Mercer analysed and compiled the results;
- While data was provided for the whole portfolio, the managers did not have complete coverage of the companies within the Corporate Bond mandates, as some companies do not yet measure or report on emissions.

Metrics analysis

The table below summarises the carbon footprint and WACI metrics across the portfolio. Across the Corporate Bond mandates, RLAM's metrics were below the benchmark, while LGIM's metrics were at or above benchmark. However, coverage across the RLAM portfolio was notably lower.

Asset Class	Manager/ Mandate	Benchmark	WACI (tCO2e / \$M revenue) or Sovereign Carbon Intensity (tCO2e / \$M PPP-Adjusted GDP)			Carbon Footprint (tCO2e / \$M invested)			Percentage of Strategic Allocation for Asset Class
			Coverage (%)	Fund	Benchmark	Coverage (%)	Fund	Benchmark	(%)
Corporate Bonds	LGIM Buy and Maintain Credit	iBoxx Sterling Non-Gilts Index	88.2%	155.8	76.9	57.3%	37.5	37.9	30.0%
	RLAM Active Credit		73.2%	67.7		44.4%	27.1		10.0%
Total Corporate Bonds			84.4%	133.7	-	54.1%	34.9	-	40.0%
Sovereigns	LGIM LDI	-	100.0%	136.1	-	-	-	-	60.0%

Key: **Green** (significantly below index), **Amber** (in line with index, or within 10% below index), **Grey** (No benchmark), **Red** (Has contributed negatively with above index performance).

Notes: Scope 1+2 only. % of fund directly analysed reflects coverage under the MSCI tool used in this analysis. Sovereign analysis has been conducted in line with the recommended methodology set out in the ongoing PCAF consultation. Data for Production Emissions (GHG) for 2021 sourced from EDGARv7.0 website, Crippa et al. (2021, 2022). Data for PPP Adjusted GDP for the latest available data (2020-2021) sourced from The World Bank.

The table below summarises the Absolute Emissions and Implied Temperature Rise (ITR, where available) across the portfolio. The LDI portfolio has the largest absolute emissions as it is the largest mandate in the portfolio and also uses leverage to achieve additional gilt exposure. The ITR was similar across the Corporate Bond mandates, with both slightly below the benchmark.

Asset Class	Manager/ Mandate	Benchmark	Absolute Emissions (tCO2e)		Implied Temperature Risk (°C)			Percentage of Strategic Allocation for Asset Class
			Coverage (%)	Fund	Coverage (%)	Fund	Benchmark	(%)
Corporate Bonds	LGIM Buy and Maintain Credit	iBoxx Sterling Non-Gilts Index	57.3%	18,644	57.0%	1.7	1.9	30.0%
	RLAM Active Credit		45.1%	4,420	38.8%	1.8		10.0%
Total Corporate Bonds			54.3%	23,065	52.5%	1.7	-	40.0%
Sovereigns	LGIM LDI*	-	100.0%	178,113	-	-	-	60.0%

Notes: Scope 1+2 only. % of fund directly analysed reflects coverage under the MSCI tool used in this analysis.

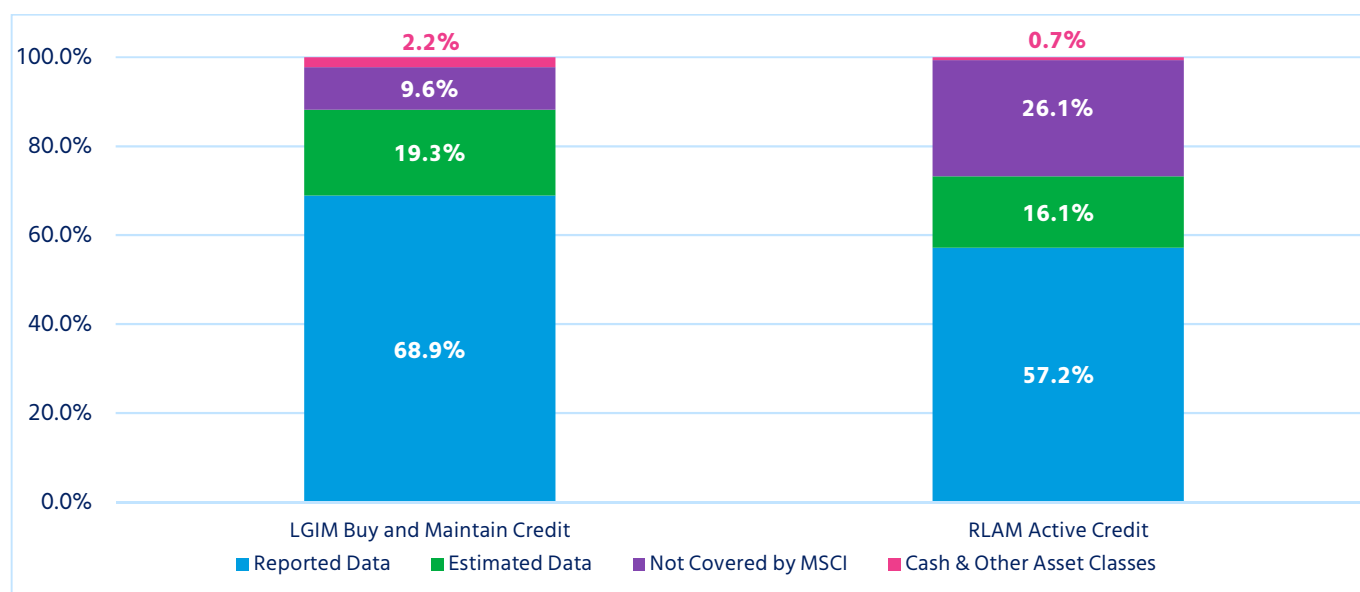
Where there is partial coverage of a portfolio we scale up the absolute emissions to estimate coverage for 100% of the mandate.

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

*For LDI, absolute emissions in respect of Funded Gilt exposure (£655M or c49% of Plan assets) are 110,303 tCO₂e and emissions from Long Gilt TRS Contracts (£403M) are 67,810 tCO₂e. Emissions from total exposure to Gilts (£1,058M) is shown in the table above. The exposure to Cash and Liquidity Funds (£18M) was not included in the analysis.

Data quality

The chart below summarises the data quality of the Credit mandates. Data quality is not measured for the LDI mandate as 100% coverage is assumed under the methodology used.



Key findings

- The largest asset allocation is to the liability hedging assets (Liability Driven Investment) and therefore these funds make up the largest proportion of the Plan's total carbon emissions. These hedging assets provide good protection against changes in interest rates and inflation.
- As at March 2023, the Credit portfolio had a c.7.9% lower Carbon Footprint compared to the iBoxx Sterling Non-Gilts Index Benchmark. The RLAM Active Credit is the mandate within the Corporate Bonds portfolio with the lowest Carbon Footprint.
 - o The LGIM Buy and Maintain Credit fund had a c.1.0% lower Carbon Footprint than the iBoxx Sterling Non-Gilts Index benchmark. For the LGIM fund, the majority of the contribution to the Plan's Carbon Footprint was from Utilities (c.71%). The same occurs for the benchmark, where Utilities contributes c.44% for the total benchmark's Carbon Footprint. Moreover, the LGIM fund had a combined weight of 24% exposed to high carbon intensive sectors, namely Energy, Industrials, Materials and Utilities (while their contribution for the total fund's Carbon Footprint equalled c.74%). These same sectors have contributed c.79% for the total benchmark's Carbon Footprint. This helps to explain why the LGIM fund almost tracked the benchmark performance in terms of Carbon Footprint.
 - o The RLAM Active Credit fund had a c.28.4% lower Carbon Footprint in comparison with the iBoxx Sterling Non-Gilts Index benchmark. The RLAM Active Credit Fund exhibits a lower carbon footprint due to the fact the fund had no exposure to the Materials sector and had a reduced exposure (versus benchmark) to the Energy sector (c.0.3%). Similarly to the LGIM Buy and Maintain Credit fund, the majority of the contribution to the RLAM Active Credit fund's Carbon Footprint was from Utilities (c.64%).
- The Credit portfolio had a c.73.9% higher WACI compared to the iBoxx Sterling Non-Gilts Index Benchmark. The LGIM Buy and Maintain Credit fund was the main driver of the higher WACI due to the c.18% holding in the Utilities sector (which contributed c.73% to the fund's WACI). The calculation of the WACI metric takes into account the revenue of the underlying companies held. As LGIM hold a higher allocation in Utilities versus the iBoxx Sterling Non-Gilts Index Benchmark (LGIM hold c.18% versus the benchmark weight of c.11%), and Utility companies typically having lower revenues (due to regulation constraints), this results in a higher WACI for the LGIM Buy and Maintain Credit fund versus the WACI of the comparator benchmark index.
- The ITR of the Corporate Bonds portfolio was 1.7°C. This is consistent with the Paris Agreement ambition of "well below 2°C" and less than the global policies and pledges expected to result in a 2.6-2.9°C outcome this century.
- Data quality varies significantly by fund with coverage for RLAM's Active Credit Fund the lowest of the three mandates used by the Plan. This is due to the types of asset held within the RLAM Active Credit Fund.

Targets

The Trustee recognises that the low risk nature of the Plan's investment strategy (whereby the majority of the Plan's assets are held in UK government bonds) means that the Trustee is reliant on the UK government meeting its decarbonisation targets. With this in mind the Trustee has set a climate-related target to align its funded gilts (i.e. the gilts the Plan uses to hedge its liabilities) within the Liability Driven Investment portfolio with the UK government target which is a 68% reduction in absolute production emissions by 2030 (compared to 1990 levels⁴). The Trustee will measure Scope 1 and 2 emissions using the definition of emissions intensity (as set out in the table above). The Trustee recognises there is limited action it can take to accelerate the target progress.

The Trustee has been engaging with the Plans Corporate Bond managers (LGIM and RLAM) and will work to define targets with them over the coming 12 months. The Trustee will also continue to work with both managers on the Corporate Bond mandates held by the Plan to obtain better data from the

⁴ 1990 is the baseline year for the UK's Nationally Determined Contributions, submitted to the United Nations Framework Convention on Climate Change

underlying companies. Both LGIM and RLAM are members of The Institutional Investors Group on Climate Change (“IIGCC”).

The Trustee will review its target at least annually. It may set specific targets for other asset classes and include Scope 3 emissions when the available data has improved and there are suitable methodologies.

A wide range of factors will affect whether the Trustee achieves its targets and the Trustee has varying degrees of control over these factors. For example, the quality and availability of data means that the quoted greenhouse gas emissions are likely to change. For the LDI portfolio, the progress of the UK Government in achieving the UK’s decarbonisation commitments will have a significant influence over the timing of reaching net zero by 2050, and interim target at 2030.

Ultimately achieving the desired level of decarbonisation will depend on global economies overall successfully decarbonising. Notwithstanding that there are factors outside of the Trustee’s control, the Trustee’s intention is to meet its targets and it engages with its investment managers to make clear its requirements.

Aims for the Plan year ahead

The Trustee recognises the importance of climate-related risk management for the Plan. Alongside the regular workstreams outlined in Section 2 of this report, and the risk management activities outlined in Section 4, the Trustee aims to progress the following specific items during the Plan year to September 2024:

1. Consider in greater detail the carbon exposure of the Plan’s Buy and Maintain Credit mandate with LGIM;
2. Engage with LGIM on how the Plan could reduce the level of carbon exposure within the LGIM mandates;
3. Engage with RLAM to gain greater detail on the carbon exposure of the Plan’s investment in RLAM and how the data quality could be improved;
4. Discuss the engagement activities that both LGIM and RLAM are carrying out with the underlying companies in which they invest;
5. Work with both LGIM and RLAM to determine suitable targets to implement for the Plan.

The Trustee will outline the progress against the areas outlined above in the Plan’s next TCFD report.

Appendix A

Technical Appendix



Asset Allocations Modelled

Strategic Asset Allocation modelled

The strategic asset allocation as set out in the Statement of Investment Principles:

Portfolio	Modelling Asset Class	Static Asset Allocation (%)
UK Sovereign Bonds (Gilts)	UK Sovereign Bonds	60%
Corporate Bonds	iBoxx Sterling Non-Gilts	40%

Due to the low risk natures of the Plan's asset allocation, it has been modelled as a static allocation with no further de-risking as the Plan matures.

Climate scenario modelling approach

Climate scenario narratives

Investment and Funding Climate Scenario Analysis Assumptions:

	Rapid Transition	Orderly Transition	Failed Transition
Summary	Sudden divestments in 2025 to align portfolios to the Paris Agreement goals have disruptive effects on financial markets with sudden repricing followed by stranded assets and a sentiment shock.	Political and social organisations act quickly and predictably to implement the recommendations of the Paris Agreement to limit global warming to below 2°C above pre-industrial levels by 2100.	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 _{2e}	810 GtCO _{2e}	5,127 GtCO _{2e}
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.	Pricing in of transition and physical risks until 2050 takes place over the first 4 years.	Physical risks are priced in two different periods: 2026-2030 (risks of first 40 years) and 2036-2040 (risks of 40-80 years).
Physical risk impact on GDP	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.	No explicit modelling of physical risk impact on inflation (supply-side shocks). Impact on inflation follows historical relationship between GDP and CPI.	Severe gradual physical impact (supply shocks) on inflation included through damages to agriculture and change in food prices. Total impact on a Global CPI Index is +15% in 2100.

Source: Mercer and Ortec. Climate scenarios as at December 2022.

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

Limitations associated with climate modelling

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

1. The further into the future 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.
5. New and emerging risks, such as the impact of climate change on biodiversity loss, and vice versa, is expected to be integrated into climate scenario modelling over time once the supporting science and impact on econometrics and finance is better understood.

Climate metric analysis approach

Data sources

Climate-related metrics provided by Mercer have been sourced from MSCI using issuer data provided by the investment managers.

Scope of emissions

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 1 and 2 emissions are as defined by the GHG protocol.

Data coverage

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

- Some public listed companies are not publishing climate-related data or are providing poor quality data. This is relevant to public equity and corporate bonds.
- 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.

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. This assumes that the part of an investment fund that does not have data available has the same climate metrics as the part where there is data.

The Trustee is working with the investment advisor and asset managers to address the data gaps, as far as they are able.

Asset class assumptions

Liability Hedging Programme

The following assumptions have been made in the calculation of the climate-related metrics for the Liability Hedging Programme:

- Latest annual data for emissions produced in the UK (i.e. production emissions) as at 31 December 2021, published by the UK government, of 420m tonnes of CO₂e.
- Emissions associated with imports (energy and non-energy) have been excluded;
- Plan's asset position at 31 March 2023.
- The metrics cover the full economic exposure to UK gilts which will be from the physical gilt holdings and any exposure to Long Gilt TRS contracts.
- Gilts posted out as collateral by the Fund are included in the gilt valuations and gilts received as collateral are excluded.
- Interest rate swaps, inflation swaps, futures, cash and money market fund holdings have all been excluded.

Category	Market value of exposure (£m)	Absolute emissions tCO ₂ e
Funded gilts only	655	110,303
Long Gilt TRS	403	67,810
Combined gilt exposure	1058	178,113

Source: LGIM, UK Government, DMO and IMF.

Important notices from data providers

Mercer

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