



Rolls-Royce and Bentley Pension Fund Taskforce for Climate- Related Financial Disclosures ('TCFD') Report

For Fund year-end 31 March
2024



BENTLEY

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Introduction

This statement sets out the approach of the Trustee of the Rolls-Royce and Bentley Pension Fund (the “Fund”) with regards to identifying, assessing, monitoring, and mitigating climate-related risks and opportunities¹ in the context of the Trustee’s broader regulatory and fiduciary responsibilities to their members. This is the second such report produced and covers the period from 1 April 2023 to 31 March 2024.

The Trustee supports the recommendations set out by the Taskforce on Climate-Related Financial Disclosures (TCFD) on the basis that it will allow the Trustee to more effectively assess, monitor and mitigate climate-related risks on behalf of members.

This statement has been prepared in line with the Department of Work and Pensions’ (“DWP’s”) Climate Change Governance and Reporting requirements, set out in Regulations, and the DWP’s statutory guidance (October 2022), which builds on the recommendations from the Taskforce on Climate-Related Financial Disclosures (“TCFD”).

The statement provides a summary on how the Fund is currently aligning with each of the four elements set out in the regulation. Details on these elements are below:

Element	Description
Governance	This section describes the Trustee’s governance of climate-related risks and opportunities. It describes how climate-related risks and opportunities are integrated into the Fund’s overall investment strategy.
Strategy	This section summarizes the actual and potential impacts of climate-related risks and opportunities.
Risk Management	This section describes the Trustee’s approach to identifying, assessing, and managing climate-related risks.
Metrics and Targets	This section describes the metrics used by the Trustee to identify climate risks and monitors progress made against its selected target.

During the reporting period, the Trustee accelerated progress towards a bulk annuity transaction following continued improvements in the Fund’s funding level. This resulted in significant changes to the investment strategy in preparation for a transaction – these are detailed further in the strategy section of the report. Following the year end, the Fund completed a full buy-in with Standard Life, securing the benefits of 6,008 members. Given this, the Trustee has taken a proportionate approach to this year’s report.

It is expected that this TCFD report may be the last such report for the Fund as the “relevant assets” will be below the threshold for publishing a TCFD report in future years. The term “relevant assets” does not include “relevant contract of insurance” (including annuity contracts).

¹ For brevity, where we refer in this report to the risks and opportunities relating to climate change, we mean this to cover both the risks arising from changes in the climate itself and the risks and opportunities presented by the anticipated transition of economies and society to a lower carbon future.

1. Governance

As with all investment matters, it is the Trustee that is ultimately responsible. This includes matters relating to ensuring the effective governance of climate-related risks and opportunities. A full explanation of individual responsibilities and Trustee oversight is included in Appendix A.

The Trustee has discussed and agreed climate-related beliefs and an overarching approach to managing climate change risk. The details of these are set out in the Statement of Investment Principals (“SIP”) and Climate Policy document (see Appendix B for the Fund’s full Climate Policy), which are reviewed on an ongoing basis.

The Trustee takes independent investment advice to help assess climate-related risks and opportunities. The role of the investment consultant is to provide investment-related strategic and practical support to the Trustee, including relating to climate-related risks and opportunities. This includes provision of regular training and updates on climate-related issues, climate change scenario modelling and climate metrics. The Trustee reviews the climate competency of its advisors and those who support the Trustee in relation to climate risk management to ensure adequate processes are in place. ESG advice, including advice on climate-related considerations, forms one of the formal objectives the Trustee has set for the Fund’s investment consultant, against which the consultant is reviewed periodically.

The Trustee encourages open communication between all relevant parties who work on the management of climate-related factors for the Fund. The majority of the Fund’s advisers and service providers – the Fund’s lawyers, actuary, investment consultant, covenant adviser, and investment managers have contributed to the preparation of this report. This process has encouraged the sharing of data and analysis and regular communication between all these parties.

The Trustee expects its advisors to bring important and relevant climate-related issues and developments to the Trustee in a timely manner. Over the year to 31 March 2024, the Trustee received further technical training on climate scenario analysis – specifically regarding switching the provider of the analysis, and on the DWP’s updated guidance regarding stewardship and engagement. Moreover, the Trustee receives reporting on financially material environmental (including climate-related) issues in quarterly reporting from its investment consultant.

Additionally, the Trustee receives annual ESG analytics reports from its investment consultant, which includes all the climate-related metrics the Trustee has agreed to report as part of its TCFD report, such as a variety of carbon metrics as well as climate scenario analysis. The Trustee questions and, where appropriate, challenges this information from an accuracy and data coverage perspective. Whilst the Trustee recognises this data will have its limitations, it expects to see a progressive improvement in its accuracy and coverage over time. The Trustee believes this time spent to be proportionate and reflective of the Fund’s other strategic priorities – as noted in the introduction, the Fund’s priority during the period was on progressing a buy-in transaction with an insurer.

Climate-related scenario analysis on different parts of the funding strategy is provided by the following advisers:

Fund component	Provider of climate scenario analysis
DB assets	Redington (Investment Consultant)
DB liabilities	Isio (Fund Actuary) and Redington (Investment Consultant)
DB covenant	Cardano (Covenant Adviser)

2. Strategy

The Trustee considers climate-related risks and opportunities and their potential implications for the Fund's investment and funding strategy over the short, medium, and long term. These considerations are incorporated into all aspects of the Trustee's investment process, including mandate and manager selection and ongoing monitoring of the portfolio.

The Trustee acknowledges that the Fund's investment portfolio is exposed to varied climate-related risks. The Trustee considers that the majority of these risks fall into two categories:

- **Transition risk:** Transition risk refers to price risk that would arise from the transition to a low-carbon economy, for example, policy changes, litigation, technology advances, and shifts in supply and demand. The magnitude of this risk is determined, in part, by whether the economic transition towards carbon neutrality is orderly or disorderly. The Trustee believes these risks and opportunities are more likely to begin in the short to medium-term.
- **Physical risk:** Physical risk refers to the price risk that would arise due to changes in climatic conditions and the incidence of extreme weather events, whether directly or indirectly affecting the Fund. The Trustee believes that material impacts of physical risks on the Fund would be more likely to occur in the medium to long-term.

The Trustee notes the assessment of climate-related risks and opportunities may vary depending on the time horizon in question. As such, the Trustee assesses climate risks and opportunities over the following time horizons which they deem appropriate in light of the Scheme's objectives.

Time Horizon	Years	Rationale (at time of analysis)	Risks and Opportunities
Short Term	0-5 years	In line with the Fund's triennial valuation cycle.	<p>The short-term focus allows the Trustee to consider transition risks such as changes in consumer and corporate behaviour; driven by policy and technological change that the Fund will predominantly be exposed over the short and medium term.</p> <p>The Trustee assesses the transition risks by monitoring the impact on the funding level under the PRA "Fast" and "Slow Transition" scenarios.</p>
Medium Term	5-10 years	<p>The Fund has set a target of reducing carbon emissions by 50% by 2030. This medium-term horizon will capture the progress made in relation to this interim target.</p> <p>The medium-term horizon is also in line with the Fund's primary investment objective to reach full funding on a prudent basis by 2030.</p>	

Long Term	10-15 years	This is line with the time period over which the Fund expects to reach a substantially de-risked position, including a possible insurance solution (subject to market conditions).	<p>This longer-term focus helps the Trustee understand the risks that the physical changes associated with climate change might have on the Fund's investments.</p> <p>Over the longer term, we expect that the physical risks associated with climate change will become more financially material. For example, rising sea levels, more frequent severe weather events and deteriorating resource availability may have a knock-on effect on input costs and supply chains negatively impacting the covenant's position.</p> <p>The long-term impact of climate change in the form of heightened physical risk is captured as part of the PRA "No Transition" scenario</p>
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As previously mentioned, given the substantial de-risking process undertaken at the year end, the Fund now has lower exposure to the transition and physical risks and the opportunities outlined above.

Update on the Fund's investment strategy

The Fund's investment allocation was altered significantly during the period in preparation for a bulk annuity transaction. In January 2024, the Fund removed 100% of its synthetic equity exposure. In March 2024, four of the Fund's five liquid return seeking funds (TwentyFour Dynamic Bond Fund, PGIM Absolute Return Bond Fund, GMO Global Real Return Fund, and AQR Diversified Risk Premia Fund) were fully redeemed from with all proceeds invested with BlackRock into the portfolio of government bonds and cash. At 31 March 2024, the Fund held a significant allocation to assets in government bonds and cash, with the remainder of the portfolio in one liquid return seeking fund and residual investments in a number of illiquid holdings.

Following the end of the reporting period, the remaining liquid credit fund (Schroders Alternative Securitised Income Fund) and the BlackRock property allocation (BlackRock UK Property Fund) were fully disinvested from with the proceeds also invested into the government bond and cash portfolio. These assets were subsequently transferred to the insurance company (Standard Life) in June 2024 and the Fund's Longevity Swap was also novated to Standard Life. This bulk annuity contract is a Fund asset. The remaining assets retained in the Fund are a number of illiquid holdings which the Fund was not able to redeem prior to the end of the reporting period or the transaction date with Standard Life. These funds are all in the later stages of their life and are in the process of returning capital to the Fund or the Trustee has submitted redemption forms to fully redeem from them.

Scenario Analysis

There was a significant change in the Fund's investment strategy in 2024 due to the bulk annuity transaction. However, following training from the Fund's investment consultant on scenario analysis, the Trustee concluded that the analysis carried out in 2023 does not need to be updated. The main reason for this decision was that the Fund now has significantly lower funding risk and therefore scenario analysis, which is forward-looking risk analysis, is of lower relevance.

The Trustee recognises that there will be fewer opportunities to further improve the position of the portfolio relative to climate related goals following the bulk annuity contract. Instead, the focus of the Trustee has shifted to the remaining illiquid assets within the portfolio, and to ensure the Fund receives the relevant proceeds within a reasonable timeframe.

The Trustee acknowledges the growing scrutiny of current climate scenario analysis models, considering that climate scenario analysis in the market is based on assumptions which may not accurately reflect the real world. In line with its commitment to align with emerging best practices, the Trustee remains informed about developments via the Fund's investment consultant and will aim to adapt its approach to scenario analysis and climate modelling as methodologies evolve, where possible and relevant for the Fund considering the bulk annuity contract.

It is expected that this TCFD report, as per regulatory requirements, may be the last such report for the Fund, as the "relevant assets" will fall below the threshold for publishing a TCFD report in future years. The term "relevant assets" does not include assets represented by any "relevant contract of insurance" (including annuity contracts).

The previous year's scenario analysis results are reproduced in Appendix D.

3. Risk Management

Climate Risk monitoring

Climate-related risks and opportunities are considered in terms of the physical risks to assets that are expected to result from climate change, and in terms of the transition risks associated with the global shift to a low-carbon economy. Over the next few decades transition risk is expected to be of greater impact than physical risk, but as we approach the middle of the century physical risks are likely to become more significant.

The Trustee has also integrated climate change into the Fund's wider risk management and receives annual climate-related reporting from its Investment Consultant (detailed fund-by-fund reporting). This reporting contains relevant climate metrics as set out under the Department for Work and Pensions' ("DWP") adoption of the recommendations of the TCFD, and includes total absolute carbon emissions, carbon footprint, the Trustee's selected non-emissions-based metric; specifically, the NGFS stress test under the 1.5C 'disorderly' scenario, and the Trustee's portfolio alignment metric, SBTi Alignment. The Trustee reviewed the metrics and undertook training from its advisors during the year, and subsequently decided to alter the non-emissions-based metric to be based on the climate stress tests provided by NGFS rather than PRA to align with the new climate scenario analysis methodology chosen. Further detail on this decision is set out in the metrics section of the report.

The Trustee will continue to review the appropriateness of selected scenarios, metrics and targets on an ongoing basis as industry consensus on relevant methodologies evolves.

Given the Fund's relatively short time horizon, the Trustee is currently prioritising management of climate transition risks over physical risks, as it is judged that these pose the biggest potential for financial loss to the Fund in the short/medium term.

Asset scenario analysis helps to determine the impact that various hypothetical scenarios would have on the Fund's investments. Using this analysis, the Trustee considers how changes to the investment strategy would positively or negatively impact the Fund's climate risk profile, as well as what the largest contributors to the Fund's climate risk are. This analysis can therefore be used to determine where climate risk should be actively managed, including through the following types of action:

1. Changing the Fund's asset allocation
2. Considering climate risk in the mandate and manager selection process
3. Engaging with managers

As at 31 March 2024, the Fund still holds illiquid investments and one liquid investment. The Trustee has developed a climate policy to appropriately factor in climate change risks and opportunities when making strategic asset allocation and manager selection decisions. As part of this, the Trustee requires the appointed investment managers to be cognisant of climate-related risks and opportunities within their investment processes as applied to the assets of the Fund. The Trustee expects the appointed manager of each individual holding to engage with portfolio companies, where possible, in order to manage climate-related risks and take advantage of climate-related opportunities.

The Fund's investment consultant is expected to advise on, and provide objective assessment of, differing approaches to responsible investment to help the Trustee decide on a suitable strategy and adopt appropriate responsible investment, including climate-related, objectives for the Fund. The responsibilities of the investment consultant are set out in more detail in the Governance section of this report. The Trustee also expects the appointed investment managers to be cognisant of climate-related risks and opportunities within their investment processes as applied to the assets of the Fund.

Given the substantial de-risking progress made during the reporting period, the Trustee notes that the actions referenced above are expected to be less relevant going forward. The Trustee considered Standard Life's approach to climate risk management as part of the bulk annuity transaction. This was referenced in the Trustee's Statement of Demand and Needs and Section 36 document which noted that Standard Life's ability to appropriately tackle climate risk and have policies on wider ESG factors will be important. Standard Life have a stated aim of reducing their portfolio carbon emission by 25% by 2025 and by 50% by 2030 and committed to achieving net-zero across Standard Life by 2050. Standard Life also has a detailed and well-developed sustainability strategy and commitment to ESG issues, which includes all aspects of their businesses, including how they factor ESG issues into the products sold to consumers and how they manage their investments.

Engagement and voting to manage climate-related risk

The Trustee believes that stewardship, including engagement and voting, are core components of sound risk management. Engagement is aimed at ensuring companies manage the physical and transitional risks that climate change poses. Direct engagement with underlying companies in which the Trustee owns shares and/or debt is carried out by the Fund's investment managers.

The Trustee's ability to influence investment managers' stewardship activities will depend on the nature of the investments held. With "pooled" mandates, where the Trustee holds units in a fund rather than having any direct ownership rights, the Trustee has more limited scope to directly influence managers' stewardship activities. For "segregated" mandates, where the Fund is the sole investor in a fund, the Trustee has more scope to influence manager stewardship if appropriate to the specific asset class in question. As at 31 March 2024, all the Fund's assets under management except LDI were in pooled mandates, thus limiting the scope for direct engagement.

When selecting a new investment manager, ESG integration (including climate change), stewardship, and engagement are factored into the Trustee's decision-making process in a manner and degree appropriate to the specific asset class in question. The investment consultant's manager recommendations are themselves procured through a process which rigorously assesses managers' ESG (including climate) & stewardship integration. The investment consultant also takes the Trustee's specific objectives and beliefs, as outlined in the Fund's climate policy, into account when making manager recommendations. There were no new manager appointments during the period covered by this report and no planned allocations to new managers in future due to the bulk annuity transaction which completed in June 2024.

4. Metrics and Targets

Metrics Introduction

As noted in the governance section, the Trustee utilises climate metrics to quantitatively assess how the Fund is exposed to climate-related risks and opportunities. These metrics are integrated within the Fund's overall strategic decision making and risk management frameworks.

On an annual basis, the Trustee monitors and reports the following metrics:

Metric Type	Metric	Explanation
Metric 1 – Absolute Emissions	Total Emissions – (tCO ₂ e)	This is the absolute emissions metric recommended by the DWP. Measures the total absolute financed emissions associated with a portfolio. The emissions attributable to the Fund are based on its equity and/or fixed income ownership share across the total capital structure of an underlying issuer, enterprise value including cash (EVIC).
Metric 2 – Emissions Intensity	Carbon Footprint – (tCO ₂ e / £m invested)	This is the emissions intensity metric recommended by the DWP. Measures the total financed emissions of the Fund's investments, normalised by the total value of the portfolio. This metric measures the emissions intensity of a million GBP invested.
Metric 3 – Non-Emissions-Based Metric	Impact on the asset value under the NGFS 1.5°C Disorderly Transition Stress Test	This metric is the output of the asset-side scenario analysis. It provides an indication of the direction and magnitude of climate risk the Fund is exposed to under this specific climate scenario. Further detail on this analysis in Appendix E.
Metric 4 – Portfolio Alignment Metric	Science-Based Targets Initiative (“SBTi”) Score – % Issuers classified as SBTi ² approved	This metric examines whether a voluntarily disclosed company decarbonisation target is aligned with a relevant science-based pathway to align with the goals of the Paris Agreement. The target is verified by the Science-based target initiative.

The Trustee receives these metrics on at least an annual basis from its investment consultant. A full breakdown of the metrics output can be found in Appendix I of this report.

During the year the Trustee decided to update the non-emissions-based metric to consider the impact on assets of the NGFS stress test under the 1.5C ‘disorderly’ scenario, replacing the PRA slow transition scenario test. During the year the Trustee received a training session from its investment consultant (Redington) focussing on the switch to the NGFS modelling. The Trustee acknowledged the advantages of the NGFS modelling over PRA, namely that the new scenarios represent an improvement from the previous methodology as

² More details are available at [How it works - Science Based Targets https://sciencebasedtargets.org/how-it-works](https://sciencebasedtargets.org/how-it-works)

they are updated more frequently, are more granular and rigorous at company/instrument level and also capture upside potential from climate opportunities rather than focusing only on downside risk.

Given these comparative advantages, the Trustee agreed to update the metric for this report and for reports going forward (if applicable).

As industry best practice continues to evolve, the Trustee will review the suitability of the selected metrics to ensure that they remain appropriate, and will consider replacing its metrics with ones that are more appropriate, for example following changes in methodologies or regulatory requirements, changes in data quality/availability, or the emergence of more robust metrics/methodologies.

The Trustee will use the results of its selected metrics to help identify the climate-related risks and opportunities that are relevant to the Fund. These might include, for example, engaging with fund managers who have material carbon intensity levels or with other industry participants, exploring low-carbon alternative investment options, and seeking to challenge their current practices with the goal of making improvements in these areas. Considering the bulk annuity contract and the minimal assets left within the Fund, opportunities for engagement and exploring new investments will be limited.

The Fund's own operational emissions, which are scope 1 and scope 2 emissions directly relating to its business operations, are expected to be immaterial. The analysis for the emissions-based metrics therefore encompasses the Fund's most material scope 3 emissions: financed emissions. The figures below disclose the Fund's financed scope 1, 2 and 3 emissions. A deduplication factor has been applied to scope 3 emissions to overcome double counting (following MSCI's methodology). There is a lack of consensus across the industry on how to manage the issue of double-counting, and a blanket application of a fixed deduplication factor across all funds/holdings may not be suitable. Therefore, we have separated out scope 3 emissions from scope 1 and 2 emissions below and the Trustee will continue to monitor developments with respect to the reporting of scope 3 emissions.

The emissions are defined as:

- **Scope 1** – emissions directly created by a company's operating activities.
- **Scope 2** – emissions indirectly caused by a company's purchase of electricity.
- **Scope 3** – emissions that are not the result of activities from assets directly controlled by a company. These are emissions that a company is indirectly responsible for, up and down its value chain

The table below outlines the Fund's performance against its selected climate-related metrics:

	Proportion of Fund assets	Absolute Carbon Emissions (tCO ₂ e)		Carbon Footprint (tCO ₂ e / £m invested)		NGFS 1.5°C Disorderly Transition impact on asset level	Science Based Targets Initiative Rating
		(Scopes 1+2)	(Scope 3)	(Scopes 1+2)	(Scope 3)		
Total Fund (excl. LDI)	15%	4,623	29,035	38	236	-16.9%	N/A

LDI only	85%	-	-	-	-	N/A	N/A
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Note: Analysis as at 31 March 2024. Total Fund excluding LDI analysis is provided by the Fund's Investment Consultant, Redington Ltd ("Redington").

BlackRock, the Fund's LDI manager, did not provide absolute emissions or carbon footprint metrics for the LDI portfolio. They provided an alternative carbon intensity metric which measures the amount of GHG emissions emitted per million US dollars of GDP. This equalled 138.92t/USD million GDP nominal for the LDI portfolio as at 31 March 2024.

SBTi ratings are unavailable for the Fund's remaining assets due to the lack of line-by-line portfolio holdings data available.

The emissions-based metrics have been calculated using line-by-line portfolio holding information from the Fund's investment managers and climate data from the Fund's ESG data provider MSCI. Where it was not possible to reflect a fund using line-by-line emissions data analysis from the MSCI data feed, the metrics have been modelled at an asset class level by Redington and reviewed by the Trustee. This approach was applied wherever line-by-line data coverage for a particular fund was below 50%. Asset class proxying has been used for all mandates due to the unavailability of line-by-line data. Further information on the data availability for each of the Fund's assets can be found in Appendix I. The Trustee believes using asset class proxying where line-by-line data is not available enables a more holistic view of the Fund's emissions, albeit recognising that the proxy data is not perfect. The Trustee expects data availability to improve following wider adoption of climate metrics and greater industry consensus on appropriate methodologies and the Trustee's investment consultant continues to engage with the Fund's managers on the Trustee's behalf to improve data quality. As this develops, the Trustee will review its approach to calculating climate metrics to ensure that the Fund is aligned with industry best-practice.

Further detail of each metric and the Fund's progress to date is provided in the following sections.

Metrics Results

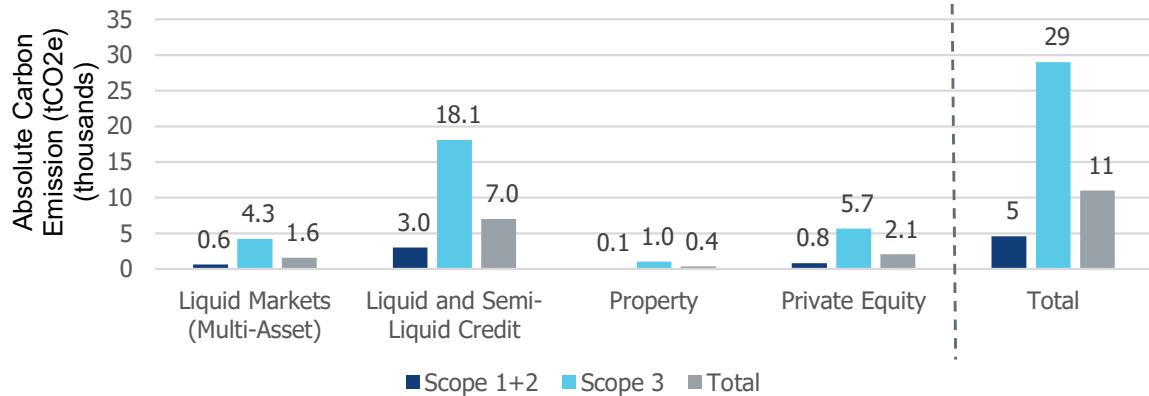
Metric 1 – Total Greenhouse Gas (GHG) emissions (Scope 1, 2 & 3) – Total carbon emissions (tonnes CO2 equivalent)

This metric shows the share of greenhouse gas emissions stemming from the Fund's assets. Given the abundance and prominence of carbon dioxide as a greenhouse gas, all the other gases are considered carbon equivalent.

Total emissions are calculated as aggregated scope 1,2 and 3 emissions, based on the size of the investment relative to the EVIC of the respective company – EVIC is a measure of a company's total value. "Total emissions" is therefore sensitive to the Fund's investment holding size (£m).

The chart below shows the breakdown of the Fund's non-LDI total emissions, showing the contributions to overall emissions from the different parts of the portfolio:

Total carbon emissions for the Fund as at 31 March 2024*



Carbon metrics are proxied where there is insufficient data for funds. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2023 MSCI ESG Research LLC. Reproduced by permission.

*Please note: total carbon emissions / carbon footprint (i.e., scope 1 + scope 2 + scope 3) will equal less than the sum of its parts as scope 3 emissions figures have been adjusted for double counting by applying a de-duplication multiplier of 0.22 to all portfolio companies' scope 3 emissions.

The analysis showed that the second largest allocation, the Schroders Securitised Income mandate, had the largest Total Greenhouse Gas (GHG) emissions. Whilst this information is a useful starting point to understand the Fund's total carbon emissions, it is difficult to compare across asset classes and funds of differing size.

Key takeaway: of the Fund's assets, the Liquid and Semi-Liquid credit portfolio is the largest emitter.

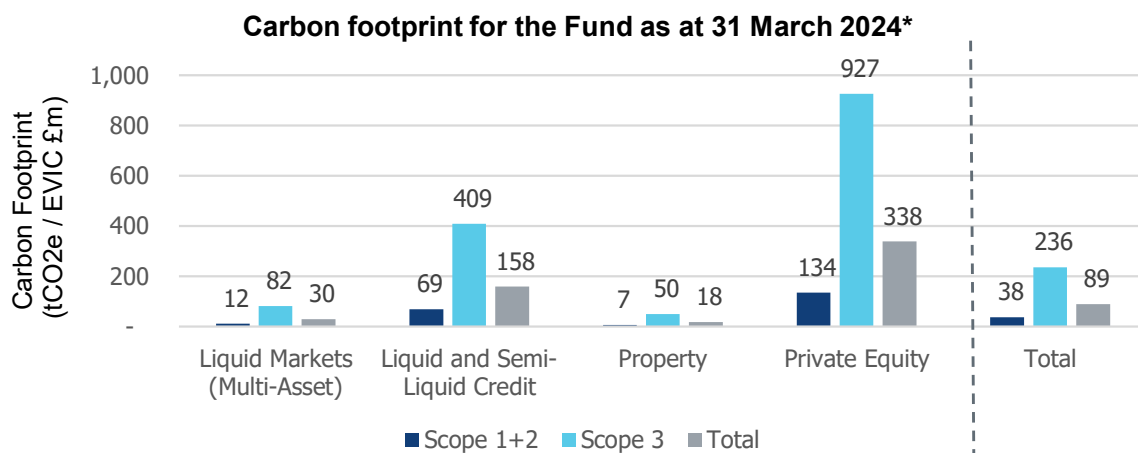
Metric 2 – Emissions intensity (Scope 1, 2 & 3) – Carbon footprint (tonnes CO2 equivalent per million pounds invested)

The Trustee's selected emissions intensity metrics is carbon footprint, which measures the carbon efficiency of a portfolio in terms of emissions per million pounds invested. Carbon footprint can therefore be used to compare carbon efficiency across portfolios of different sizes, where absolute emissions metrics cannot.

At a portfolio level, emissions intensity measures are calculated as the average of the emissions intensity of the underlying holdings, weighted by the value of each holding. A portfolio with a high emissions intensity will have a steeper route towards decarbonisation than a less carbon-intensive portfolio would. Measuring emissions intensity across the Fund is therefore useful to gauge how difficult (or easy) it will be to progressively decarbonise the Fund's portfolio.

Differences in portfolio emissions intensities are largely driven by differences in sector and company exposure. Portfolios with higher exposures to high-carbon sectors such as utilities, non-energy materials, energy and industrials tend to exhibit higher emissions intensities.

The chart below shows the breakdown of the Fund's non-LDI carbon intensity, showing the contributions to overall carbon intensity from the different parts of the portfolio.



Carbon metrics are proxied where there is insufficient data for funds. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2023 MSCI ESG Research LLC. Reproduced by permission.

*See previous note in relation to the calculation of total carbon footprint

Key takeaway: per million pounds invested, the Fund's private equity mandate is the most carbon intensive at an asset class level.

The Trustee will continue to monitor the output for both the absolute emissions and carbon footprint metrics to identify the Fund's largest emitters, engaging with managers where possible to manage climate-related risks.

Metric 3 - Non-emissions-based metric: NGFS stress test under the 1.5C 'disorderly' scenario

For the non-emissions-based metric, the Trustee has updated its analysis to now use the methodology from NGFS rather than the PRA slow transition stress test which was used in last year's report. The Trustee recognises that the third optional metric chosen may differ across pensions schemes. The Trustee selected this metric as it provides a good assessment of climate risk at a strategic level which the Trustee finds helpful to monitor.

	Metric 3: NGFS stress test under the 1.5C 'disorderly' scenario - impact on asset value
Liquid Markets (Multi-asset)	-7.7%
Liquid and Semi-Liquid Credit	-11.0%
Property	-36.1%
Private equity	-73.2%
Total	-16.9%

Key takeaway: The table above sets out the results of the third metric, broken down by asset class. The analysis suggests that all asset classes across the Fund’s portfolio are expected to experience adverse outcomes under this scenario, with the worst outcome for illiquid markets and in particular the private equity mandate.

Metric 4 – Portfolio alignment: Science Based Target’s initiative

The Trustee has selected the Science Based Targets initiative (“SBTi”) as the Fund’s portfolio alignment metric, which captures a company’s progress against a self-developed decarbonisation target using a science-based methodology. The target can be aimed at one or all of: the short term, long term or Net Zero, with each company being scored with a binary yes or no assessment on the following target categorisations: “SBTi Approved 1.5°C,” “SBTi Approved Well Below 2°C,” or “SBTi Approved 2°C.” Each of the categorisations denote the implied global temperature increases that coincide with the decarbonisation target. The SBTi scores disclosed in the table below shows the proportion of assets invested in entities that are classified as being Paris-aligned, broken down by broad asset class.

	Metric 4: Science Based Targets initiative (SBTi) Rating*
Liquid Markets (Multi-Asset)	N/A
Liquid and Semi-Liquid Credit	N/A
Property	N/A
Private equity	N/A
Total	N/A

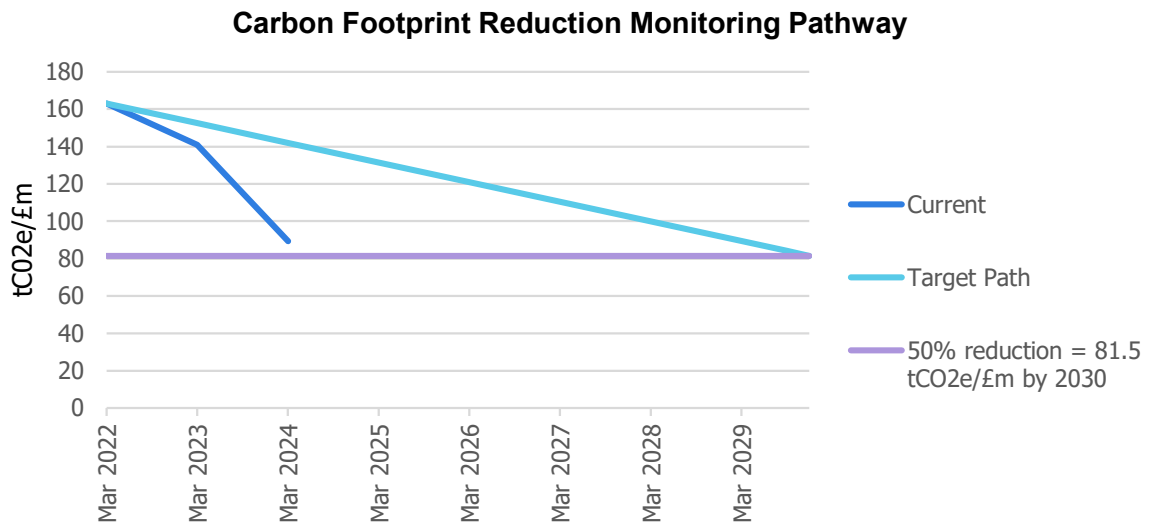
*SBTi ratings are unavailable for all of the Fund’s holdings due to the lack of line-by-line data available.

Key takeaway: The Fund was not able to obtain sufficient data to provide an SBTi score for any of the Fund’s holdings. Last year, four managers provided sufficient data to calculate the SBTi rating and the total coverage has fallen from 6.4% last year to 0% this year. This is due to disinvesting from those mandates over the year. The Trustee is working with managers to ensure improvements in data provision for the next report (if applicable).

Targets

The Trustee has also set an explicit emissions-related target that is aligned with the Trustee’s climate-related beliefs and is complementary to the Fund’s wider objectives. Specifically, this target is to align the Fund’s investment strategy to the goals of the Paris Agreement. In view of this, the Trustee has set a target of a 50% reduction of carbon footprint by 2030 compared to levels as at 31/03/22. This target applies to Scope 1, 2 and 3 emissions of the Fund’s non-LDI assets. The Trustee views this as an appropriate objective given the Fund’s investment time horizon.

The chart below shows the progress that the Fund has made against this target to the year ending 31 March 2024:



Information regarding the methodology used to measure performance against the Fund’s net zero target is provided in Appendix J.

The carbon footprint of the Fund’s investments has fallen by 45% from the baseline to 31 March 2024, towards the target reduction of 50% by 2030. This represents a 37% decrease over year. This decrease was mainly due to the LDI portfolio becoming a significantly larger proportion of total assets (which is assumed to have zero emissions) owing to the preparation for the bulk-annuity transaction and subsequent full divestments from return-seeking assets.

This target is embedded within the governance, strategy, and risk management processes through its inclusion in the ESG reporting that is provided annually to the Trustee. On an annual basis, the Trustee measures performance against this target and furthermore determines whether this target and the way it is monitored remains the most appropriate for managing the Fund’s exposure to climate-related risk and as industry-consensus on relevant methodologies evolves.

APPENDIX A: Individual Responsibilities and Trustee Oversight

	Roles and Responsibilities
Trustee Board	<ul style="list-style-type: none"> • The Trustee has ultimate responsibility for overseeing the Fund's climate-related risks and opportunities and actions taken to manage them. • This includes determining both the strategic climate-related objectives and the detailed climate-related targets, as well as overseeing progress made against them. • The Trustee is responsible for ensuring the Fund's Climate Policy and strategic climate objectives are implemented into the investment strategy. • The Trustee regularly reviews the climate-related metrics and targets as agreed by the Trustee.
The Trustee's advisers	<ul style="list-style-type: none"> • The Fund's investment advisers advise the Trustee on, and provide objective assessments of, differing approaches to identifying, assessing, and managing climate-related risks and opportunities to help the Trustee meet its climate-related objectives for the Fund. This includes informing the Trustee of climate-related risks and opportunities as relevant for the Fund. • The advisers also support in providing manager and portfolio-specific climate risk analysis and engagement. This includes the provision of climate-related metrics selected by the Trustee on an annual basis.

	Trustee Oversight
Oversight of advisers	<ul style="list-style-type: none"> • Climate-related objectives are included in the investment adviser's annual objectives to ensure they are taking adequate steps to identify and assess climate-related risks and opportunities. • The Trustee annually assesses the delivery of this advice using the Competition Market Authority's Investment Consultant Objective framework (CMA Objectives).
Oversight of investment managers	<ul style="list-style-type: none"> • The Trustee expects investment managers to be aware of climate change risks and opportunities within their investment processes. The Trustee expects the investment managers to be aware of the Fund's climate-related objectives when making decisions in relation to the funds in which the Fund is invested.

APPENDIX B: Climate policy – Rolls-Royce and Bentley Pension Fund (as at 31/03/2023)

We, as the Trustee of the Rolls-Royce & Bentley Pension Fund (the “Fund”), recognise climate change as a systematic, long-term material financial risk to the value of the Fund’s investments. Therefore, the Trustee has a fiduciary duty to consider climate change risk when making investment decisions.

Within the context of its fiduciary responsibility, the Trustee is supportive of the Paris Agreement to avoid dangerous climate change by limiting global temperature increases by the end of this century to well below 2°C above pre-industrial levels, and pursuing efforts to limit it to 1.5°C.

Furthermore, in alignment with the Fund’s corporate sponsor whose aim is to “become an end-to-end carbon neutral luxury car brand by 2030”³, the Trustee is supportive – to the extent that it is possible within the confines of the Trustee’s fiduciary duty – of investing in a manner that is aligned to transitioning to a more sustainable, low carbon economy. We will rely on our advisers to provide opportunities for review that are consistent with the Fund’s wider investment objectives.

The Trustee recognises that there are some limitations in the extent to which the portfolio can be further aligned with a sub-2°C world. For example:

- The Fund has an objective to reach a low risk investment portfolio in the medium-term. This may limit the ability to invest in certain illiquid assets with a more favourable climate profile.
- The current investment strategy has a large allocation to contractual credit assets which provide less scope to engage with companies than equity holdings.
- The Trustee delegates all voting and stewardship activity to investment managers.

In this context, the Trustee have adopted the following policy:

- The Trustee will appropriately factor in climate change risks and opportunities when making strategic asset allocation and manager selection decisions;
- The Trustee expects appointed investment managers to recognise climate change risks and opportunities within their investment processes as applied to the assets of the Fund;
- In line with a preference for engagement rather than exclusion, where relevant, the Trustee expects the Fund’s asset managers to actively engage with companies to better manage climate change associated risks. It also expects managers to independently consider whether exclusion or engagement is more appropriate within their investment process, based on their own risk assessment;
- The Trustee supports the Task Force on Climate-related Financial Disclosures (TCFD) and intends to incorporate its recommendations into the Fund’s reporting, subject to availability of data;
- The Trustee supports the further development of effective climate change risk metrics to enhance the ability to assess and minimise climate risks. It is willing to consider whether new practices will improve this for the Fund;

³ Bentley Environmental Mission Statement can be found [here](#).

- The Trustee recognises that climate change will be subject to much further analysis and subsequent policy changes in the coming years. The Trustee is supportive of adopting an evolving policy to ensure relevant developments are captured.

Time horizons for assessing climate risks and opportunities

- In line with the TCFD guidelines, the Trustee assesses climate risks and opportunities over the time horizons outlined on page 7, which it deems appropriate considering the Fund's existing strategic objectives.

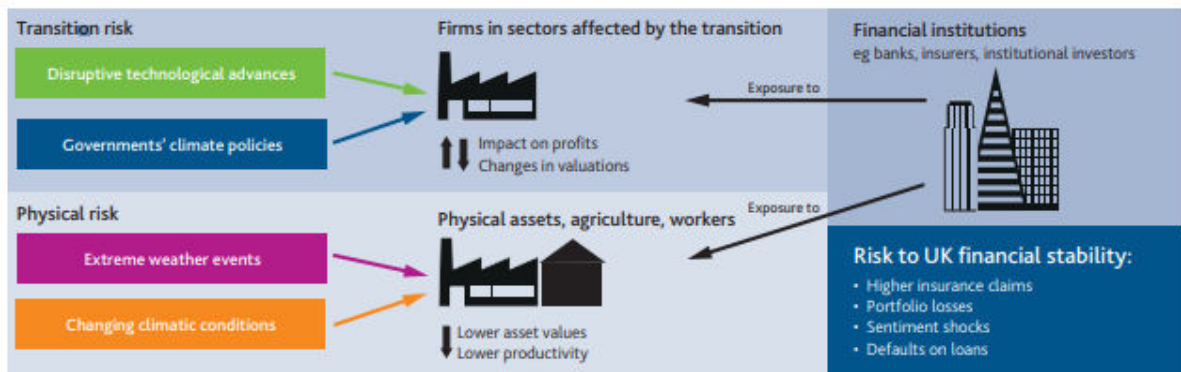
APPENDIX C: Scenario Analysis Methodology

As part of its 2020 biennial stress tests, the Bank of England’s Prudential Regulation Authority (“PRA”) conducted an exploratory exercise to test the impact of future climate change scenarios on the assets and liabilities of (re)insurers, using predictions by the Intergovernmental Panel on Climate Change (“IPCC”) and academic literature as the basis for their modelling assumptions.

In terms of the assumptions made under these scenarios, the PRA recognised that feedback loops between climatic shocks and structural economic change need to be incorporated when assessing the financial impacts on businesses of physical and transition risk under each emissions scenario. However, due to existing modelling and data constraints, this is a complexity that is purposely excluded from the modelling.

There is also an acceptance that the timing and sequence of financial impacts will be complex, as behavioural changes could result in physical risks preceding transition risks and vice versa. For simplicity, where an asset is subject to both physical and transition risk, the shocks are applied consecutively, with the physical shock applied second.

Primary channels for climate related financial risks



Interpreting the results

As a background to interpreting the three hypothetical scenarios, we refer to the 2015 Paris Agreement. The first two scenarios (“Fast” and “Slow” transition) assume that the Paris Agreement targets are broadly achieved, although through different means. In the third scenario (“No Transition”), it is assumed that the targets are not met, resulting in a significant change to the global climate.

To understand how each scenario could impact financial risks we consider two primary channels: physical and transition.

Physical risks for this exercise are defined as risks that arise from weather-related events such as storms, floods, droughts, and sea-level rises. They comprise impacts directly resulting from such events, such as damage to property, and also those that may arise indirectly through subsequent events, such as the disruption of global supply chains.

Transition risks are those that arise from the adjustment towards a carbon-neutral economy – the severity of the impact will depend on whether the transition is orderly or disorderly. Changes in climate policy, technology or market sentiment could prompt a reassessment of the value of a large range of assets as changing costs and opportunities become apparent.

Assumptions

The PRA recognises that feedback loops between climatic shocks and structural economic change need to be incorporated when assessing the financial impacts on businesses of physical and transition risk under each emissions scenario. However, due to existing modelling and data constraints, this is a complexity that is purposely excluded from the modelling.

There is also an acceptance that the timing and sequence of financial impacts will be complex, as behavioural changes could result in physical risks preceding transition risks and vice versa. For simplicity, where an asset is subject to both physical and transition risk, the shocks are applied consecutively, with the physical shock applied second.

Under each scenario, equity and fixed income assets are assumed to suffer a loss in value proportionate to their current value, with the shock parameters discounted to their value today i.e., the scenarios are all instantaneous shifts to the asset price today. The shock to fixed income assets are assumed to be less severe, with a multiplier of 0.15 applied to each shock (so that the impact equals 0.15 times the impact on equities). The magnitude of each of the physical and transition shocks varies across industries under each scenario, meaning some assets may fare better or worse under one scenario as compared to another.

APPENDIX D: Scenario Analysis Output as at 31 March 2023

Scenario Analysis

To aid with the consideration of climate-related risks and opportunities, the Trustee has undertaken scenario analysis, which is intended to show the impact of various climate scenarios on the Fund's assets, liabilities, and sponsor covenant. This analysis has been based on the Bank of England's Prudential Regulation Authority's ("PRA") Life Insurance Stress Tests, as recommended by the Pensions Climate Risk Industry Group ("PCRIG"). Using the PRA's methodology, Redington and Isio have constructed similar tests, which show the impact on the Fund's assets and liabilities under three scenarios. Details on each scenario are below:

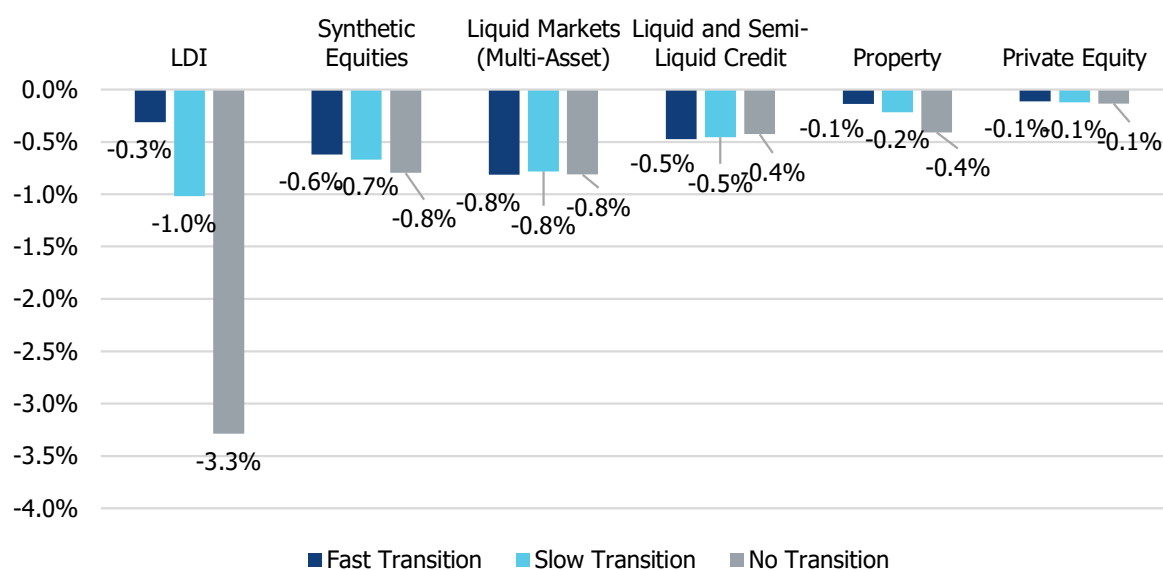
Climate Scenario	Description
Scenario A: Fast Transition	<ul style="list-style-type: none">• A sudden transition, ensuing from rapid global actions and policies, that materialises over the medium term and achieves a temperature increase that remains below 2°C (relative to pre-industrial levels) but only following a disorderly transition.• Shock parameters illustrative of potential impact 3 years from performance of the test.• In this scenario, transition risk is maximised.
Scenario B: Slow Transition	<ul style="list-style-type: none">• A long-term orderly transition that is broadly in line with the Paris Agreement.• This involves a maximum temperature increase being kept well below 2°C (relative to pre-industrial levels), with the economy transitioning in the next three decades to achieve carbon neutrality by 2050 and greenhouse-gas neutrality in the decades thereafter.• Shock parameters illustrative of potential impact in 2050. In this scenario, both physical and transition risks are realised.
Scenario C: No Transition	<ul style="list-style-type: none">• A scenario with failed future improvements in climate policy, reaching a temperature increase in excess of 4°C (relative to pre-industrial levels) by 2100 assuming no transition and a continuation of current policy trends.• Physical climate change is high under this scenario, with climate impacts for those emissions reflecting the higher end of current estimates.• Shock parameters illustrative of potential impact in 2100. In this scenario physical risk is maximised and transition risk is not realised due to no transition taking place.

The tables of results below depict the expected funding level impact on the Fund of asset- and liability-side stresses under each of the three climate scenarios, expressed as the percentage point difference between the Fund's base-case funding level and the stressed funding level. The combined impact on the funding level is then computed by combining the climate stress from each PRA scenario on both assets and liabilities, with the liability stress due to longevity, based on the actuary's analysis of ultimate mortality impacts.

Asset Scenario Analysis

The results of the asset scenario analysis are as follows:

Percentage change in asset values



Impact on assets

(Time horizon assumed for funding shock)	Fast Transition (2025)	Slow Transition (2050)	No Transition (2100)
Change in the Fund's assets As at 31/03/2023	-2.5%	-3.3%	-5.9%

Source: Redington.

The analysis indicates that the Fund's assets are expected to be negatively impacted in all three scenarios, with the greatest anticipated loss occurring under the 'No Transition' scenario. This is due to the adverse effect of realised physical climate risks over the time horizons considered. The Trustee believes the current level of climate risk is acceptable given the Fund's wider risk tolerance as outlined in the Trustee's Pension Risk Management Framework.

Having compared the above analysis against the Fund's agreed risk tolerance, the Trustee is comfortable the investment strategy is sufficiently resilient to the potential impacts of climate change. In line with its long-term objective, the Fund's investment strategy is expected to de-risk and reduce exposure to illiquid assets, and the climate risk associated with them. The Trustee expects this to further reduce the Fund's overall exposure to climate risk, in particular physical risks. As such, the Trustee proposes no changes to the Fund's investment strategy but will revisit asset scenario analysis as the Fund's asset allocation evolves.

Longevity Scenario Analysis

The Trustee has engaged with the Fund Actuary, Isio, to understand how the various climate scenarios described above will impact the Fund's liabilities. The three main risks to the Fund's funding level are inflation, interest rates, and longevity. Both inflation and interest rates are expected to have a minimal impact on the funding level, due to the hedging of these risks implemented through the Fund's LDI portfolio. Longevity risk is only partially hedged, however, and so variations in life expectancy of members may have material effects

on the Fund’s funding level. Longevity risk is partially hedged through the Fund’s longevity swap, hence the impact on the liabilities will be slightly offset by the impact on the longevity swap. However, the impact on the longevity swap is not accounted for in the analysis below.

Each scenario is compared to a base case scenario which represents Isio’s typical best estimate of how mortality is projected to improve over time. This embeds the assumption of future longevity changes in line with the most recently available Continuous Mortality Investigation (“CMI”) tables. The three scenarios considered by Isio are in line with the PRA scenarios used by Redington and are: (1) No Transition, (2) Disorderly (Fast) Transition and (3) Orderly (Slow) Transition.

The results of the longevity scenario analysis are as follows:

(Time horizon assumed for funding shock)	Fast Transition (2025)	Slow Transition (2050)	No Transition (2100)
Change in the Fund’s liabilities (mortality impact only) As at 31 March 2022	+1.0%	0%	-2.0%

Source: Isio. The above analysis is based on data as at 31/03/22. Isio’s house view on the mortality assumptions behind the “no transition” scenario modelling has since been updated. The updated assumptions will be reflected in next year’s report.

The analysis indicates that the Fund’s liabilities are expected to fall under the ‘No Transition’ scenario, due to an assumed fall in life expectancy of c.0.9 years. This is as a result of the UK economy having less resilience to extreme weather events, for example, infrastructure maintenance and issues with NHS/supply chains.

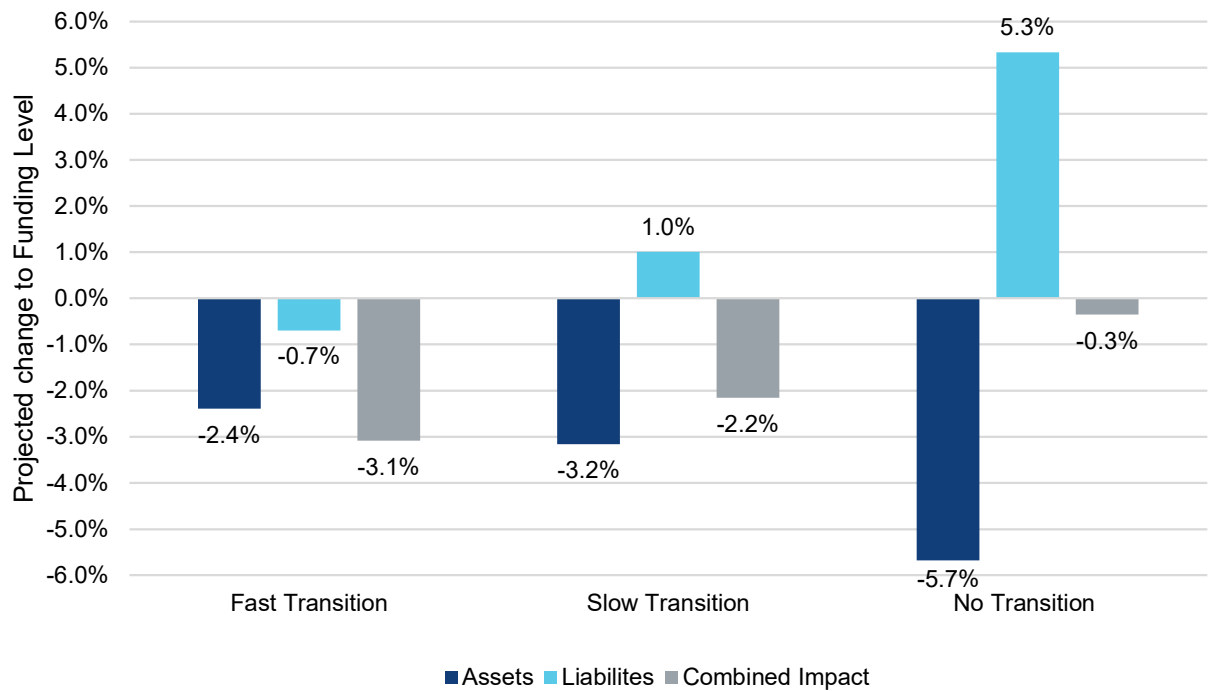
In the ‘Slow Transition’ (the base case) scenario, it is assumed that there is no effect on the Fund’s liabilities. Global growth and market returns are assumed to remain strong relative to the base case in the long-term, supported by a brighter sustainable outlook and the positive spill-over effects from green policy adoption. In the longer-term, better air quality and improved health conditions may lead to higher longevity in this scenario.

In the ‘Fast Transition’ scenario, Isio forecast an increase in life expectancy and subsequent mortality expectations as the decrease in heat related deaths outweighs the increase in cold related deaths. This increases the Fund’s liabilities and further adds to the negative impact from a fall in asset prices.

The degree of expected funding level impact due to mortality, particularly in the context of climate, is highly sensitive to the assumptions built into each of the scenarios. The Trustee will continue to monitor mortality-related risks relative to the Fund’s asset allocation.

The combined impact of asset and liability scenario analysis

Impact of PRA stress scenarios on the Fund's funding Level



The chart above shows the impact of the 3 scenarios on the assets, liabilities, and overall funding level. On the liability basis, the impact incorporates stresses from the market, i.e., changes to interest rates, modelled by Redington, and the mortality impact modelled by the Fund's actuarial adviser Isio.

The scenario that currently poses the greatest risk to the Fund is the Fast transition scenario. That is, little climate action in the short term, followed by a sudden and unanticipated tightening of policy as countries rush to get on track with the Paris Agreement. The predicted impact in this scenario on funding level is an approximate c.3.1% fall. This is the only scenario under which liabilities are expected to increase due to a forecasted increase in life expectancy, and the predicted mortality impact under this scenario equates to a c.1.0% increase in the present value of the liabilities.

The modelled impact under the Slow and No transition scenarios is smaller relative to the Fast transition scenario, with the smallest overall funding level decline of c.0.4% under the No transition scenario. This is in part because there is no transition risk in this scenario (as further policies to encourage a shift to a low-carbon economy are not introduced). The large reduction in the asset values, mainly driven by a c.3.3% fall in the LDI portfolio, is offset by a decrease in the value of the fund's liabilities due to a rise in interest rates and a significant increase in mortality rates as modelled by Isio.

Under the Slow transition scenario, Isio forecast no change to mortality expectations, with the fall in liabilities due to a rise in interest rates, which partially offsets the reduction in asset values, leading to an overall funding level decline of c.2.2%.

The Trustee has determined that its current funding strategy remains appropriate and robust against the relevant climate scenarios, with no changes required. The Trustee expects the Fund's exposure to illiquid assets, and the climate risk associated with these, to reduce over time.

Impact on Longevity Swap

The table below shows the impact on the longevity swap under each scenario.

	Fast Transition	Slow Transition	No Transition
Impact on longevity swap <i>As at 31 March 2022</i>	+2.3%	0.0%	-4.5%

The longevity swap value, which is currently negative, would have a slightly offsetting impact on any change in longevity assumption. For example, under the Fast Transition scenario, which forecasts an increase in life expectancy (i.e., higher liabilities), this is partially offset by a higher longevity swap value as the longevity swap value becomes less negative, reducing the funding level impact under each climate scenario.

Covenant Scenario Analysis

As the Fund progresses towards its long-term investment objective, the Fund's dependency on the Sponsor is expected to decrease. However, a degree of Sponsor dependency nonetheless remains. The Trustee has therefore engaged with the Covenant Adviser, Cardano, to understand how various climate scenarios would impact the strength of the covenant. The adviser has completed a qualitative assessment of the climate-related risks faced by the Sponsor, including the implications of these risks for the Fund, informed in part by the Sponsor's own Sustainability Report.

Over the short (0-2 years), medium (2-8 years), and long (8 years plus) term, Cardano's analysis concluded that the potential business risk over the near and mid-term is low to medium, whilst over the longer term, there is medium to high risk as Bentley's global performance is likely to be impacted by climate change.

The most significant risks identified are supply chain emissions and disruption (i.e., cost pressures from climate hazards and access to raw materials) and the electric vehicle transition. As a car manufacturer, the transition to electric vehicles will be critical for future performance.

The climate risks identified are generally heightened over the longer term in all scenarios considered – the Trustee will therefore consider how its own strategic targets could be accelerated if the covenant weakens sooner than expected as a result of these risks.

The Trustee will look to incorporate these risks into its covenant monitoring processes going forward, and will use the risks identified to inform thinking around how to reduce investment risk to help meet the Fund's current net-zero target of a 50% reduction of carbon footprint by 2030.

The full covenant scenario analysis report is available in Appendix H of this document.

APPENDIX E: NGFS Methodology

The NGFS is a group of 91 central banks and supervisors and 14 observers committed to sharing best practices and developing environment-related risk management in the financial sector to support the low-carbon transition. The NGFS scenarios have been developed to provide a common starting point for analysing climate risks to the economy and financial system. They incorporate important themes including increasing electrification and a spectrum of new technologies to tackle remaining hard-to-abate emissions.

NGFS explores scenarios consistent with the framework (see figure to the right) published in the First NGFS Comprehensive Report covering:

- Orderly (1.5°C or 2°C) - climate policies are introduced early and become gradually more stringent. Both physical and transition risks are relatively subdued.
- Disorderly (1.5°C or 2°C) - higher transition risk due to policies being delayed or divergent across countries and sectors. For example, carbon prices would have to increase abruptly after a period of delay.
- Hot house world - some climate policies are implemented in some jurisdictions, but globally efforts are insufficient to halt significant global warming. The scenarios result in severe physical risk including irreversible impacts like sea-level rise.

Limitations of NGFS scenarios

Current scenario analysis methodologies may not fully account for the short- and medium-term climate risks the Fund could face; the analysis may therefore have limited reliability and usefulness as a decision-making tool.

Stress tests are based on scenarios constructed by the NGFS in June 2021 and therefore present a world view as at that date and have not been updated since.

Stress tests are based on a strategic mapping of the Fund's assets to Redington's generic asset class universe and do not consider the individual composition of the Fund's funds.

Redington proxies are based on index composition as at Dec 2022 and do not allow for changes since. Redington ask users of these stresses to bear this in mind when reviewing stresses of assets with more volatile sector compositions such as those with significant Momentum-style tilts.

APPENDIX F: Carbon Footprint Analysis

Where possible and where there is reasonable data coverage, the Trustee monitors 'line-by-line' emissions reporting for funds. These tend to be more generic, long-only asset classes such as listed equity and corporate credit. However, for funds with less than 50% coverage and illiquid assets, the Trustee monitors 'asset class level' carbon estimates in the absence of reliable, reported line-by-line emissions data from MSCI. The Trustee notes using asset class modelling of emissions for assets where this data is not available enables a more holistic view of the Fund's total portfolio emissions, albeit recognising that the modelled data is not perfect.

The asset class modelling of emissions has been provided by Redington and is based on asset class 'building blocks'. These are either calculated directly using a given index's underlying holdings emissions (such as using MSCI ACWI as a proxy for a broad equity fund) or in some cases these indices are used and extrapolated to other asset classes based on given assumptions (such as using the emissions of infrastructure firms within an index to proxy an infrastructure fund).

Emissions metrics will be calculated in line with the GHG Protocol Methodology, the global standard for companies and organisations to measure and manage their GHG emissions. The GHG Protocol provides accounting and reporting standards, sector guidance and calculation tools. It has created a comprehensive, global, standardised framework for measuring and managing emissions from private and public sector operations, value chains, products, cities, and policies to enable greenhouse gas reductions across the board.

APPENDIX G: Isio output of Impact of Mortality on Climate Change (March 2022/March 2023)

The impact on longevity of the different climate scenarios will affect both the Rolls-Royce & Bentley Pension Fund (the “Fund”) liabilities and the value of the longevity swap, the table below sets out Isio’s estimated percentage impacts.

The estimates have been produced as 31 March 2022 using member data as at 31 March 2022. Calculating the analysis at a different date might result in different results, but the impact of different market conditions is expected to be second order. Isio’s house view on the mortality assumptions behind the “no transition” scenario modelling has since been updated. The updated assumptions will be reflected in next year’s report.

The percentage impacts have been calculated by adjusting the long-term trend rate assumption only within the separate mortality assumption adopted for the Fund liabilities and the longevity swap (as shown in the table below).

	Fast Transition Scenario	Slow Transition Scenario	No Transition Scenario
Long term trend rate	1.50% p.a.	1.25% p.a. (no change)	0.75% p.a.
Impact on Liabilities	+1.00%	0.00%	-2.00%
Impact on longevity swap value	-2.30%	0.00%	+4.50%

Although, the table shows a larger percentage impact on the value of the longevity swap than it does the liabilities of the Fund, the liabilities themselves are significantly larger (in pound amount terms) than the value of the longevity swap. Therefore, the impact on the overall funding level would be closer to the impact on the liabilities, slightly offset by the impact on the longevity swap.

Modelling Assumptions:

The base mortality assumption used in this analysis is as follows:

	Fund liabilities	
	Non-Pensioners	Pensioners
Base table	115%/112% (m/f) of S3PXA standard tables	113%/116% (m/f) of S3PXA standard tables
Mortality Improvements		
CMI model	CMI 2021 model	
Long term trend rate	1.35%	
Smoothing Factor	7	
Initial addition	nil	
w2020	10%	

w2021	10%
Longevity prudence	4%

To reach these conclusions, Isio have discussed their view of the main drivers of future mortality rates for DB members. Namely, temperature change, air pollution, weather events and indirect effects, such as economic impact. There are other drivers of mortality rates in relation to climate change. However, the main drivers discussed are the most widely researched. The Disorderly (“Slow”) Transition scenario is Isio’s current estimate of the baseline scenario, and it is here where Isio expect the current Fund mortality assumption will sit. When carrying out any climate change scenario modelling Isio will then alter the Fund’s long-term trend rate to investigate the impact of the other scenarios.

APPENDIX H: Covenant Scenario Analysis – Full Report (Cardano)

The full report is provided separately in PDF format.

APPENDIX I: MSCI and SBTi Climate Metrics Output

Fund	Fund Value (£m)	MSCI Climate Metrics Coverage %	Absolute Carbon Emissions (tCO2e)						Carbon Footprint (tCO2e / EVIC £m)															
			Current – Scope:			Previous – Scope:			Current – Scope:			Previous – Scope:												
			1+2	3	Total	1+2	3	Total	1+2	3	Total	1+2	3	Total										
Liquid Markets (Multi-Asset)																								
Capula Global Relative Value Fund Limited	52.1	-	624	4,263	1,562	580	3,960	1,451	12	82	30.0	12.0	81.9	30.0										
Liquid and Semi-Liquid Credit																								
Schroders Alternative Securitised Income Fund	44.3	-	3,037	18,078	7,014	2,365	14,078	5,462	69	409	158	68.6	408.5	158.5										
Illiquid Markets																								
BlackRock UK Property Fund	20.8	-	142	1,043	372	152	1,117	398	7	50	18	6.8	50.2	17.9										
Pantheon Private Equity Portfolio	6.1	-	820	5,651	2,063	975	6,722	2,454	134	927	338	134.4	926.9	338.3										
TOTAL PORTFOLIO	123.3		4,623	29,035	11,011	13,231	153,212	46,937	38	236	89	39.7	460.2	141.0										

All "Current Total Portfolio" figures in this table are weighted averages with the exception of "Fund Value" and "Absolute Carbon Emissions (tCO2e)".

"Absolute Carbon Emissions (tCO2e)" is calculated using the notional value of the fund. "Fund Value (£m)" shows the mark-to-market value of the fund. "Previous" figures show climate metrics from 12 months prior to "Current" figures. Fund-level "Previous" figures may not sum to the "Previous Total Portfolio" figures because the "Total Portfolio" values may contain funds that have now been divested from and not reported in this table.

Carbon metrics are proxied where there is insufficient data for funds. In these instances, no figure is shown for MSCI Climate Metrics Coverage.

Scope 3 emissions have been de-duplicated in the "Total" columns by a factor of 0.22.

ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2023 MSCI ESG Research LLC. Reproduced by permission.

Fund	Fund Value (£m)	Science Based Targets Initiative Rating		NGFS 1.5°C Disorderly Transition Stress	
		Current	Previous	Current	Previous
Liquid Markets (Multi-Asset)					
Capula Global Relative Value Fund Limited	52.1	-	-	-7.7%	N/A
Liquid and Semi-Liquid Credit					
Schroders Alternative Securitised Income Fund	44.3	-	-	-11.0%	N/A
Illiquid Markets					
BlackRock UK Property Fund	20.8	-	-	-36.1%	N/A
Pantheon Private Equity Portfolio	6.1	-	-	-73.2%	N/A
TOTAL PORTFOLIO	123.3	-	6.4%	-16.9%	N/A

All "Current Total Portfolio" figures in this table are weighted averages with the exception of "Fund Value" and "ITR" where it is presented. "Previous" figures show climate metrics from 12 months prior to "Current" figures. Fund-level "Previous" figures may not sum to the "Previous Total Portfolio" figures because the "Total Portfolio" values may contain funds that have now been divested from and not reported in this table. Where presented, "Science Based Target initiative" or "TPJ" scores are all based on lookthrough data where it is available and never proxied. "ITR" is only proxied where there is insufficient data. ESG and MSCI Carbon Metrics meet the current minimum UK DWP's TCFD-aligned "Metrics and Targets" regulations. However, regulations are subject to change. Redington monitors developments closely. Certain information ©2023 MSCI ESG Research LLC. Reproduced by permission. Previous metrics for the NGFS are not available as the previous analysis was carried out using a different methodology.

APPENDIX J: Methodology used to Measure Performance against the Fund's Net Zero Target

- Where funds are modelled using underlying holdings and emissions data, uncovered portions of the fund are proxied using the covered portion of the fund.
- Where fund specific holdings or emissions data is not available, we have proxied using Redington asset class proxy data. This data is refreshed and reviewed on an annual basis.
- Cash is assumed to have 0 emissions.
- LDI has been excluded from the Fund level carbon footprint estimate.
- Data received from third parties, MSCI or managers, has not been verified.
- Data has been reported here without ex-post adjustment, to ensure comparability over time.

APPENDIX K: Glossary of Terms (ESG and Carbon Metrics)

Enterprise Value Including Cash (EVIC): Defined as the sum of market capitalisation of shares and book values of total debts and minority interests at fiscal year-end. No deductions of cash or cash equivalents are made to avoid potential negative enterprise values. This is the recommended denominator metric for carbon attribution according to the GHG Protocol, the global standard for carbon accounting endorsed by the European Union and the DWP.

Estimated Total Mandate Carbon Emissions (tonnes): Represents the total share of Scope 1, Scope 2, and Scope 3 carbon emissions a fund is responsible for. Please note the metric is sensitive to the investment holding size in the fund.

MSCI Climate Metrics Coverage: The proportion by value of a fund for which carbon metrics are available from MSCI. Climate metrics are proxied where coverage is low and in this case, the MSCI Climate Metrics Coverage will be assumed to be.

Scope 1 & 2 Carbon Footprint (tCO₂e / EVIC £m): Measurement of the Scope 1 & 2 CO₂e emissions of a fund per million pounds of EVIC. Scope 1 emissions refer to those which are directly connected to the production of a company's product or service. For example, the burning of fossil fuels to power the electricity grid. Scope 2 emissions refer to those from the electricity used to power the facilities and machinery of a company.

Total Carbon Footprint (tCO₂e / EVIC £m): Measurement of the CO₂e emissions of a fund per million pounds of EVIC using Scope 1, Scope 2, and Scope 3 emissions. Given a company's direct Scope 1 emissions will inevitably be another company's indirect Scope 3 emissions, aggregating the individual Scope emissions results in a higher number of emissions than exists. To mitigate double counting, we apply a scaling factor in accordance with MSCI's methodology. This metric may be used to assess a fund's contribution to global warming versus other funds. Previous Total Carbon Emissions (tCO₂e / £m invested) are estimated by looking at the funds' respective holdings and emissions 12 months ago.

Tonnes of Carbon Dioxide Equivalents (tCO₂e): Tonnes of greenhouse gases including methane, nitrous oxide, carbon dioxide, and fluorinated gases. Given the abundance and prominence of carbon as a greenhouse gas, all the other gasses are considered carbon equivalents.

Weighted Average Carbon Intensity (tCO₂e / sales £): A weighted average of the scope 1 & 2 emissions carbon intensity of companies, defined as a company's total emissions divided by its total sales. This metric can be interpreted as a measure of the relative carbon efficiency of a fund, can used for sovereign assets, and is not affected by movements in companies' valuation. However, it is sensitive to movements in price.

SBTi Score: The Science-Based Targets initiative ("SBTi") sets out a framework through which companies can set out their decarbonisation pathway and have them assessed against the goals set out in the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels or well-below 2°C. The SBTi Score is the proportion of assets invested that are classified as being Paris-aligned.

PRA Slow Transition Climate Scenario Analysis: Redington's extrapolation of a stress test constructed by the Prudential Regulation Authority ("PRA") to explore the % impact of future climate change on assets. A slow transition assumes a long-term, orderly transition that is broadly in line with the Paris Agreement out to 2050.