

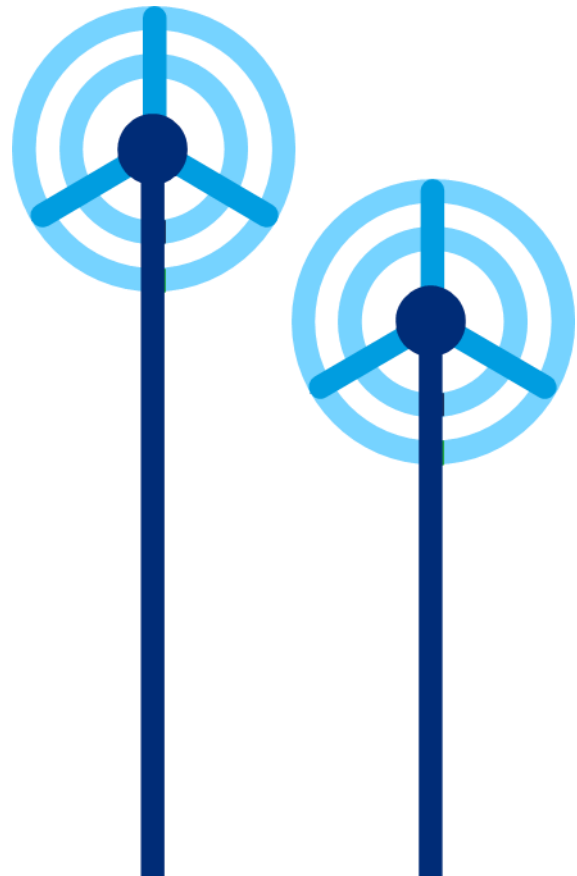
BOC Retirement Benefits Scheme

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

Reporting period: 12 months to 31 March 2024



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Section 1

Introduction

Dear Members,

Welcome to our first climate change report for the BOC Retirement Benefits Scheme (“The Scheme”), formerly the BOC Senior Executive Pension Scheme.

Under the statutory requirements prescribed by the Department of Work and Pensions¹, the BOC Retirement Benefits Scheme is required to prepare climate-related disclosures in line with the Task Force on Climate-related Financial Disclosures (“TCFD”) standard.

This report forms the first such set of disclosures for the Scheme, following the sectionalised merger of the BOC Pension Scheme with the Scheme on 1 July 2023 which resulted in the Scheme’s asset value exceeding £1 billion, the threshold at which it became subject to these requirements.

In the previous accounting period, the BOC Pension Scheme prepared climate-related disclosures. However no disclosures were prepared for the BOC Retirement Benefits Scheme.



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

The Trustee has a fiduciary responsibility to invest the Scheme's assets in the best way possible for its members. 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 Scheme invests and in consideration of the different global warming scenarios we have analysed. This data is subject to change as climate change reporting improves. The climate metrics within this report have been prepared using the latest available information as at 31 December 2023 with 31 December 2021 being used as the baseline (comparator). Climate metrics have been shown at an overall Scheme level, given the similar levels of funding, assets and liabilities of the two Sections of the Scheme. Historic figures have been shown on a consistent basis, including the assets and liabilities of both sections of the Scheme.

The Scheme is required to prepare a scenario analysis at least once every three years. This report incorporates the quantitative analysis prepared for the BOC Pension Scheme as at 31 December 2022, which is considered to be reflective of the impact of climate-related risks for the Scheme as a whole as well as the BOC and SEPS Sections of the Scheme based on their funding levels, assets and liabilities. The BOC Section represents some 90% of the Scheme's total assets and liabilities.

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.

Governance, Strategy and Risk Management disclosures are in respect of the whole Scheme. The Metrics disclosures have been prepared based on the largest 9 mandates, representing c.54% of DB assets (£1.7 billion, including synthetic equity). Inclusion of the illiquid asset, natural catastrophe reinsurance and hedge fund mandates was investigated, however it was not feasible to include them due to data and model limitations. There was an immaterial amount of AVC assets, that we have not included within the disclosures and reporting, and there were no DC assets within the Scheme.

We are pleased to report the continued positive momentum in moving towards the Trustee's greenhouse gas intensity reduction targets. Further details and commentary are provided in the Metrics and Targets section of the report.

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 Scheme;

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 Technical Appendix 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.

Sally Williams

Chair of the Trustee of the BOC Retirement Benefits Scheme

Section 2

Summary

The Trustee believes that environmental, social, and corporate governance (ESG) factors may have a material impact on investment risk and return outcomes, and that good stewardship can create and preserve value for companies and markets as a whole. The Trustee also recognises that long-term sustainability issues, particularly climate change, present risks and opportunities that increasingly may require explicit consideration.

The Trustee's approach to assessing climate-related risks and opportunities is summarised below.

Governance

- The Trustee maintains a robust framework for assessing climate-related risks and opportunities, including clearly identifying the roles that the Trustee and its advisers will carry out.
- Climate change forms an explicit agenda item at least annually for the Trustee and the Joint Investment Committee (JIC). It is also covered within wider discussion of funding or investment strategy, or as part of investment manager appointment and review discussions.

Strategy

- As a long-term investor, the Trustee recognises the risks and opportunities arising from climate-related risks are diverse and continuously evolving.
- The Trustee has undertaken climate scenario analysis to understand how climate-related risks might affect the investment and funding strategy of the Scheme. This includes an assessment of the potential implications on the Scheme under several possible climate change scenarios, as well as quantitative analysis of the potential impact climate change may have on different types of investments. Key findings are set out below (described in more detail in Section 4):

Short Term (5 years)

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.

The Scheme's investment and funding strategy is reasonably resilient to the Rapid Transition scenario, which is the most unfavourable scenario over the next 5 years. However, if this was to coincide with weak economic conditions more generally there is a risk of the funding level falling to below 90% which may necessitate a review of the current strategy.

Medium Term (20 years)

Over the medium term, transition risk and physical risk are both factors, although physical risk under the Failed Transition is more prevalent.

Expected returns are materially impacted under the Failed Transition. If the scenario was to coincide with weak economic conditions more generally this could result in a funding level shock that is sufficiently large to necessitate a review of

the investment and funding strategy. Over this time horizon, transition and physical risks are likely to have resulted in significant reductions to asset values in vulnerable regions and industries.

Long Term

(40 years)

Over the long term, physical impacts become significant, with the Failed Transition resulting in significant falls in asset value relative to the baseline.

It is likely that over an extended time horizon, physical risks will have resulted in significant reductions to asset values in vulnerable regions and industries. Depending on the extent of temperature rise, there may be negative and positive impacts across large parts of the economy, noting that high temperature outcomes are expected to result in an overall negative outcome.

Risk management

- Climate-related risks are considered by the Trustee alongside other financially material risks that may impact outcomes for members. This is supported by regular training on climate-related issues.
- When setting investment strategy, ESG factors, including climate change, will be considered alongside other factors that can influence investment strategy.
- Investment managers have been given full discretion to evaluate ESG factors, including climate change considerations, and to exercise voting rights and stewardship obligations attached to the investments, including undertaking engagement activities, in accordance with their own corporate governance policies and current best practice, including the UK Corporate Governance Code and UK Stewardship Code.
- The Trustee produces this annual report detailing climate-related metrics and progress against targets in respect of Scheme assets. The annual Implementation Statement summarises annual voting and engagement summary for each manager. Both of these documents are available on the Scheme's website.

Metrics and targets

- Metrics have been prepared based on the following 9 liquid asset mandates across the two sections of the Scheme: 5 Equity mandates (including synthetic equity), 1 Emerging Market Debt mandate, 1 Corporate Bond mandate and the 2 Liability Driven Investment mandates. Inclusion of the illiquid asset, natural catastrophe reinsurance and hedge fund mandates was investigated, however it was not feasible to include them due to data and model limitations.
- In terms of overall level of coverage, the 9 liquid asset mandates covered 53.8% of the £3.2bn of Scheme assets (including synthetic equity) invested as at 31 December 2023. Across these mandates, combined coverage was over 95% as at 31 December 2023 for the emissions-based metrics.
- The Trustee has chosen to present climate-related metrics in the following four areas:

Metric category	Selected metric	Further detail
Absolute emissions	Total Greenhouse Gas Emissions	Tonnes of carbon dioxide and equivalents (tCO ₂ e) that the Scheme is responsible for financing.

Metric category	Selected metric	Further detail
Emissions intensity	Carbon Footprint	The amount of carbon dioxide and equivalents (tCO ₂ e) emitted per million dollars of the Scheme's investments.
Portfolio Alignment	% of portfolio companies with targets approved by the Science Based Targets initiative (SBTi)	Assessment of the proportion of portfolio companies/issuers that have set net-zero targets that have been validated by SBTi.
Additional	Data Quality	Represents the proportions of the portfolio for which the Trustee has high quality data.

- The Trustee has set a target level of carbon reduction across its listed equity and credit assets (exc Sovereign), as measured by carbon footprint (scope 1 and 2 emissions), of 25% over the 10 year period from 31 December 2021 (baseline). The other metrics including Sovereign carbon intensity will also be tracked over this period. Over the period from 31 December 2021 to 31 December 2023, the Scheme has seen a 33.6% decrease in carbon footprint.
- This corresponds to a 2.5% per annum rate of reduction, and is equivalent to Linde's "35 by 35" target on a straight line basis. Linde plc has targeted a 35% carbon reduction over 14 years from 2021 to 2035 in its "35 by 35" climate neutrality ambition <https://www.linde.com/sustainable-development/targets-and-performance/35-by-35-climate-neutrality-ambition>
- Given the dominance of UK government exposures within the Liability Driven Investment portfolio, the Trustee has little control over the carbon intensity of the Sovereign assets. However, the expectation is that the Trustee will have greater control over the carbon footprint of the Listed (exc Sovereign) portfolio over time through its investment decision-making, hence the target is applied to this part of the Scheme's assets.

Section 3

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 believes that ESG factors may have a material impact on investment risk and return outcomes, and that good stewardship can create and preserve value for companies and markets as a whole. The Trustee also recognises that long-term sustainability issues, particularly climate change, present risks and opportunities that increasingly may require explicit consideration. The Trustee has taken into account the expected time horizon of the Scheme when considering how to integrate these issues into the investment decision making process.

The Trustee has given appointed investment managers full discretion in evaluating ESG factors, including climate change considerations, and exercising voting rights and stewardship obligations attached to the investments, including undertaking engagement activities, in accordance with their own corporate governance policies and current best practice, including the UK Corporate Governance Code and UK Stewardship Code. The Trustee requires that investment managers explain how they take ESG considerations into account and the Trustee itself lays out in a separate report if and how it complies with the UK Stewardship Code. The Trustee also completes a benchmarking analysis on an annual basis to compare how the managers’ ESG approaches compare to the broader universe.

The Trustee will also consider the investment consultant’s assessment of how each investment manager embeds ESG into its investment process. This includes the investment manager’s policy on voting and engagement, and their investment decisions. The Trustee will use this assessment in decisions around selection, retention and realisation of manager appointments.

The Trustee maintains oversight of ESG, in particular climate related risks and opportunities through the Joint Investment Committee (JIC):

- The Trustee requires that investment managers explain how they take ESG considerations, including climate change into account. The in-house investment team circulated governance letters to all investment managers over the year, including questions on integration of ESG, sustainability and stewardship into their investment processes, as well as ensuring ongoing compliance with regulatory requirements. These responses were subsequently discussed at the JIC.
- Investment managers are expected to evaluate ESG factors, including climate change considerations, exercise voting rights and stewardship obligations attached to the investments in accordance with their own corporate governance policies and current best practice.
- For the Scheme's equity and fixed income managers, the Trustee has increasingly been incorporating ESG as a regular item on update calls, requesting details on progress made in this area from all managers. The Trustee also considered benchmarking analysis conducted by the investment consultant that compared the managers' ESG approaches to the broader universe of equivalent strategies, in order to better understand how those managers were performing.
- The Trustee has been reviewing ESG, climate change and its role in the Scheme's investment strategy with its investment consultant over 2022 and 2023. To date, this work has focussed on understanding where the Scheme currently sits from an ESG perspective, establishing a baseline (with respect to ESG ratings and carbon emissions for example) and considering asset allocation changes to improve the sustainability credentials of the portfolio, whilst remaining cognisant of the fiduciary duty to members.

The Trustee has also reviewed the roles of others undertaking scheme governance activities, in particular the sub-committees that have been established and their respective decision-making powers. The Trustee will consider the recommendations of these sub-committees and will ratify any decisions that require its approval. Of relevance to the oversight of climate-related risks and opportunities are:

In-house investment team

- The Scheme moved to an outsourced CIO (Chief Investment Officer) approach with Mercer from 27 March 2024 and therefore Mercer has assumed some of the responsibilities described below that were previously carried out by the in-house investment team.
- The in-house investment team provide in-house support to the Trustee as well as acting as a liaison between the Trustee and the JIC and the Scheme's investment managers. Their role is to:
 - Monitor and manage the performance of the investment managers;
 - Undertake Scheme governance activities on behalf of the Trustee, such as coordinating required public disclosures;
 - Review quarterly investment performance reports and highlight key information to the Investment Committee for noting or action; and
 - Understand the climate-related risks and opportunities at the strategic asset allocation level and at the sub-investment manager level.

Assessment of in-house investment team: The Trustee expects the in-house investment team to keep them informed about updates and progress within the investment and pensions industry on an ongoing basis. The Trustee attends JIC meetings covering climate change and receives training and updates via their Investment Consultant and investment managers.

Investment consultant

- Advises on investment arrangements, including the investment strategy, 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
- Assists the Trustee in producing the Scheme's TCFD report on an annual basis.

Funding Adviser

- 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; and
- 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.

Covenant Adviser

- Assesses the Sponsor's ability to continue to support the Scheme. Climate-related exposures are considered alongside other factors that could have a positive or negative impact on the strength of the Sponsor's covenant.

Assessment of Advisers: The Trustee 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.

On an annual basis, the Trustee reviews formally the performance of the Scheme's advisers against their strategic objectives. Where relevant, this includes a review of the adviser's performance in relation to climate risks and opportunities.

Time and resources spent on climate change-related matters

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

Climate change will form an explicit agenda item at least annually for the Trustee and the JIC when the Trustee's annual TCFD report is updated. It will also be covered as part of other agenda items as part of a wider discussion of funding or investment strategy, or as part of investment manager appointment and review discussions. The Trustee is satisfied that the amount of governance time spent is reasonable and will allocate more time at future meetings if any analysis or wider industry research requires additional Trustee review and consideration.

There are a number of work streams that are to be completed regularly in order for the Trustee to fulfil its responsibility for managing climate risks and opportunities. It is important to note that many of the work streams 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 Scheme may be facing. The work streams are listed below as well as the frequency of which each task will be carried out:

- Climate change training session (minimum frequency = annual)
- Scenario analysis modelling the investment strategy (minimum frequency = first year and every 3 years thereafter)
- Review appropriateness of undertaking scenario analysis in light of a) data availability changes b) material changes in investment strategy (minimum frequency = annual)
- Metrics data collection (minimum frequency = annual)
- Target setting / target appropriateness review (minimum frequency = annual)
- Progress against target assessment (minimum frequency = annual)
- ESG beliefs (including climate change) update / review (minimum frequency = triennial)
- Stewardship, covered as part of the Trustee's annual implementation statement (minimum frequency = annual)
- Drafting annual TCFD report (minimum frequency = annual)

Where appropriate, the Trustee challenges information provided to them by others undertaking governance activities.

Training

During the year to 31 March 2024, the Trustee and JIC 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:

- Climate scenario analysis and discussion (May 2023)
- TCFD metrics discussion (September 2023)

Section 4

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 Scheme'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 Scheme.

To help with this assessment, the Trustee has defined short-, medium- and long-term time horizons for the Scheme's defined benefit assets, with time horizons of 5, 20 and 40 years respectively.

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 a 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.

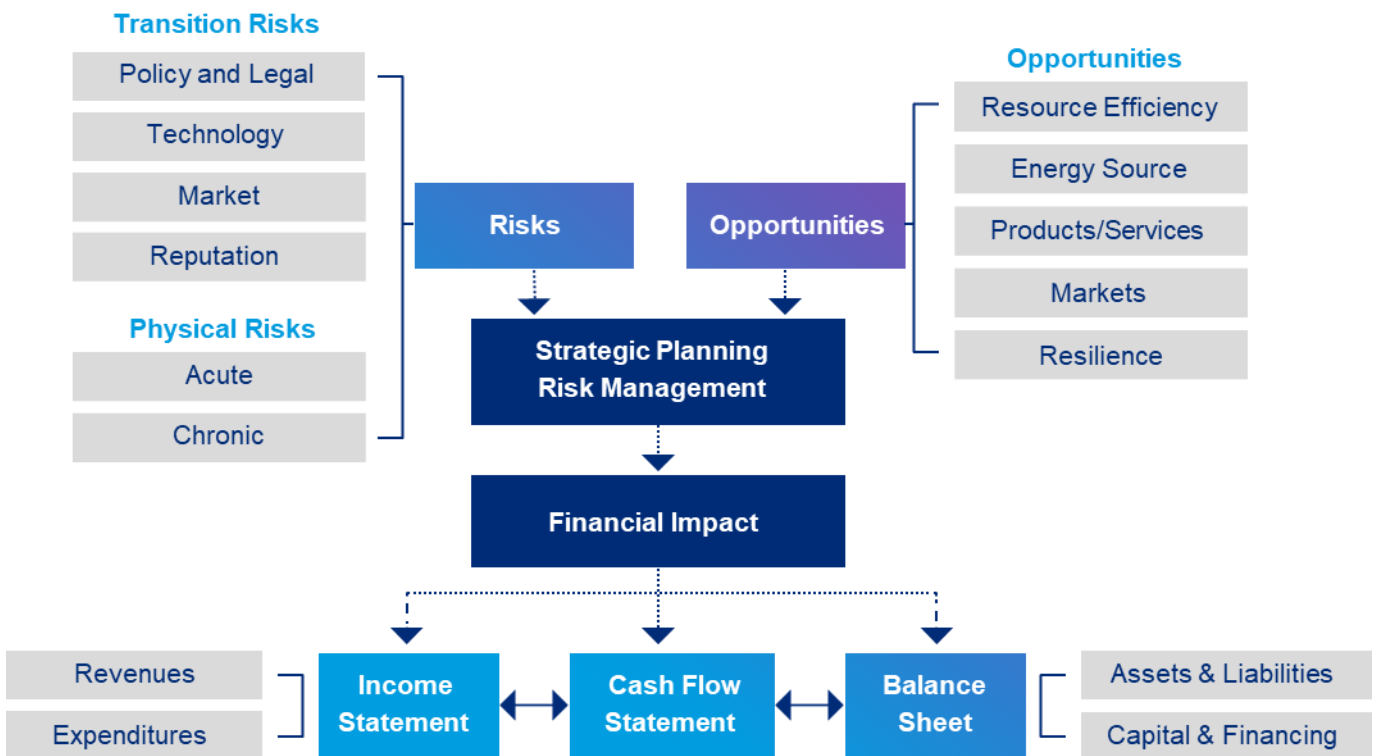
The Trustee’s ability to understand these short-term changes can position the Scheme favourably, for example taking advantage of the climate transition by avoiding and reducing investment in high-emitting carbon sensitive businesses/assets that do not have a business plan that supports the transition 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 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 (out to and beyond 40 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 Scheme

Having taken into account the Scheme's 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.

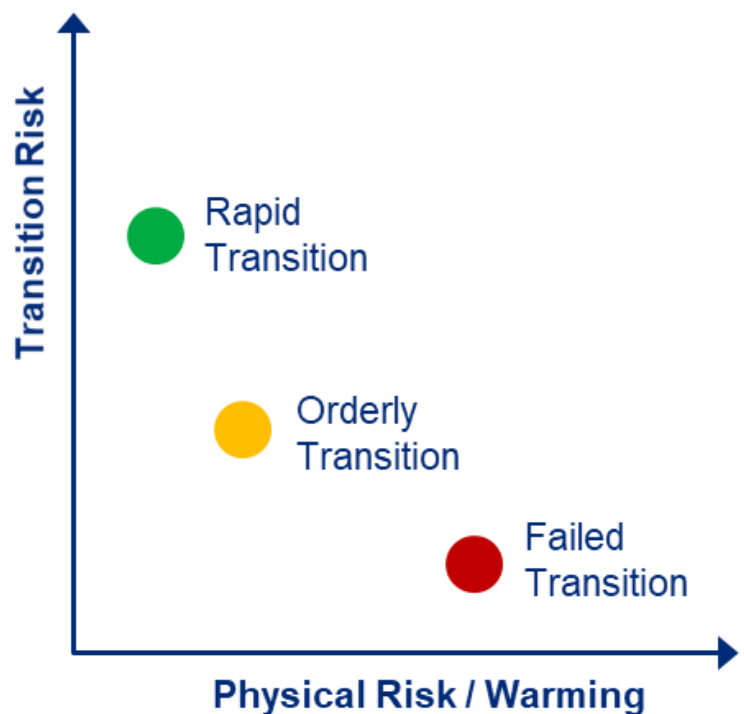
The Trustee has investigated the potential impacts of these risks and opportunities in the scenario analysis that follows.

Testing the resilience of the investment and funding strategy

Scenario analysis

The Trustee has undertaken climate scenario analysis to test the resilience of the Scheme's investment and funding strategy. Quantitative climate change scenario analysis has been undertaken on the Trustee's strategic asset allocation and current arrangements 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.

- **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

Collectively, these scenarios have been chosen to provide a test of the resilience of the investment and funding strategy across plausible future outcomes. In designing scenario analysis a fundamental decision is whether to assume that any climate impacts are priced in today. The analysis in this report is expressed relative to a ‘climate-informed’ baseline; the implication is that all return impacts are presented in terms of how they are different to what we are assuming is priced in today. Further detail on climate scenario narratives, including modelling limitations, is included in the Technical Appendix.

The “baseline” shown in the projections represents an assumption about what market prices of assets currently imply (and which could be viewed as optimistic or pessimistic). 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.

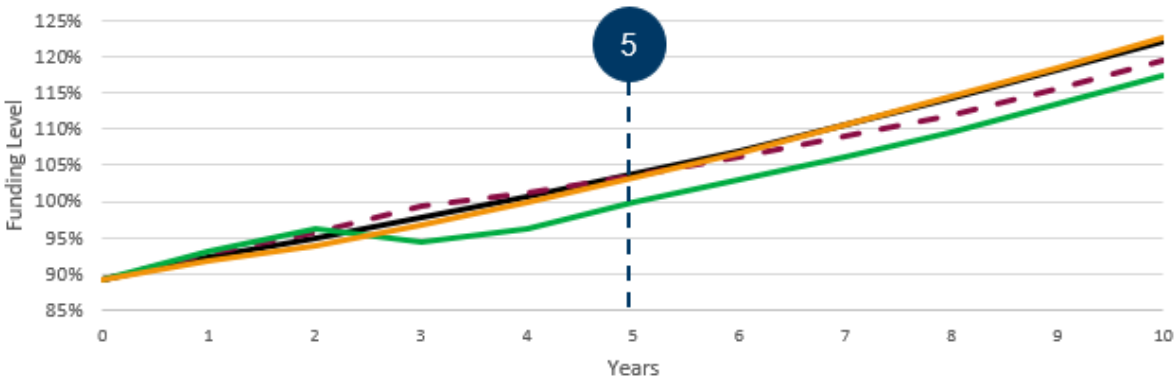
Scenario Analysis Results

The charts below represent the output of the Trustee’s quantitative analysis of the investment and funding strategy of the BOC Section, which represents some 90% of the assets and liabilities of the Scheme. The charts represent projections of funding level and annualised returns from an analysis date of 31 December 2022 over a period of 40 years. Projections ignore the impact of future contributions. Projections assume a static asset allocation that does not allow for future expected de-risking. Further detail on the underlying asset allocations and limitations associated with climate scenario analysis are set out in the Technical Appendix.

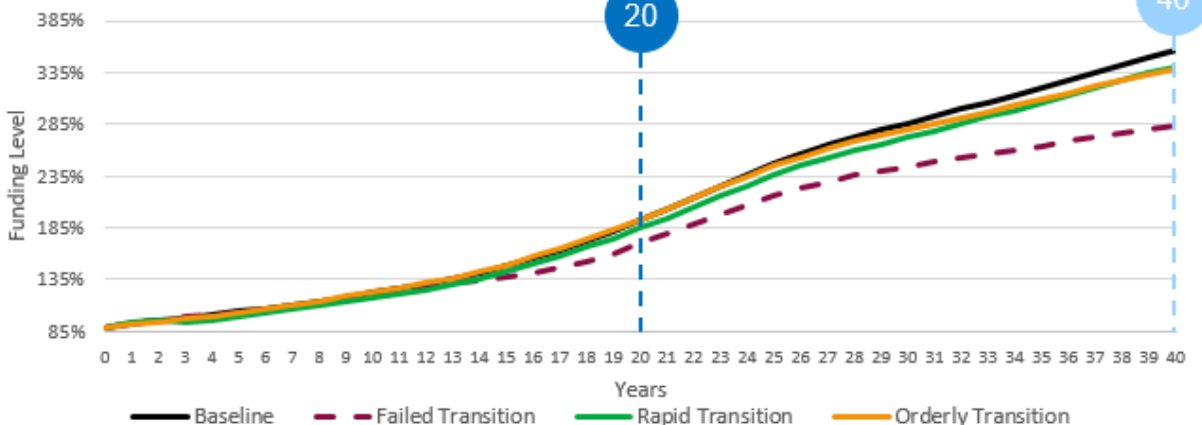
Figure 2

Funding Level Projection

10 Year Projection



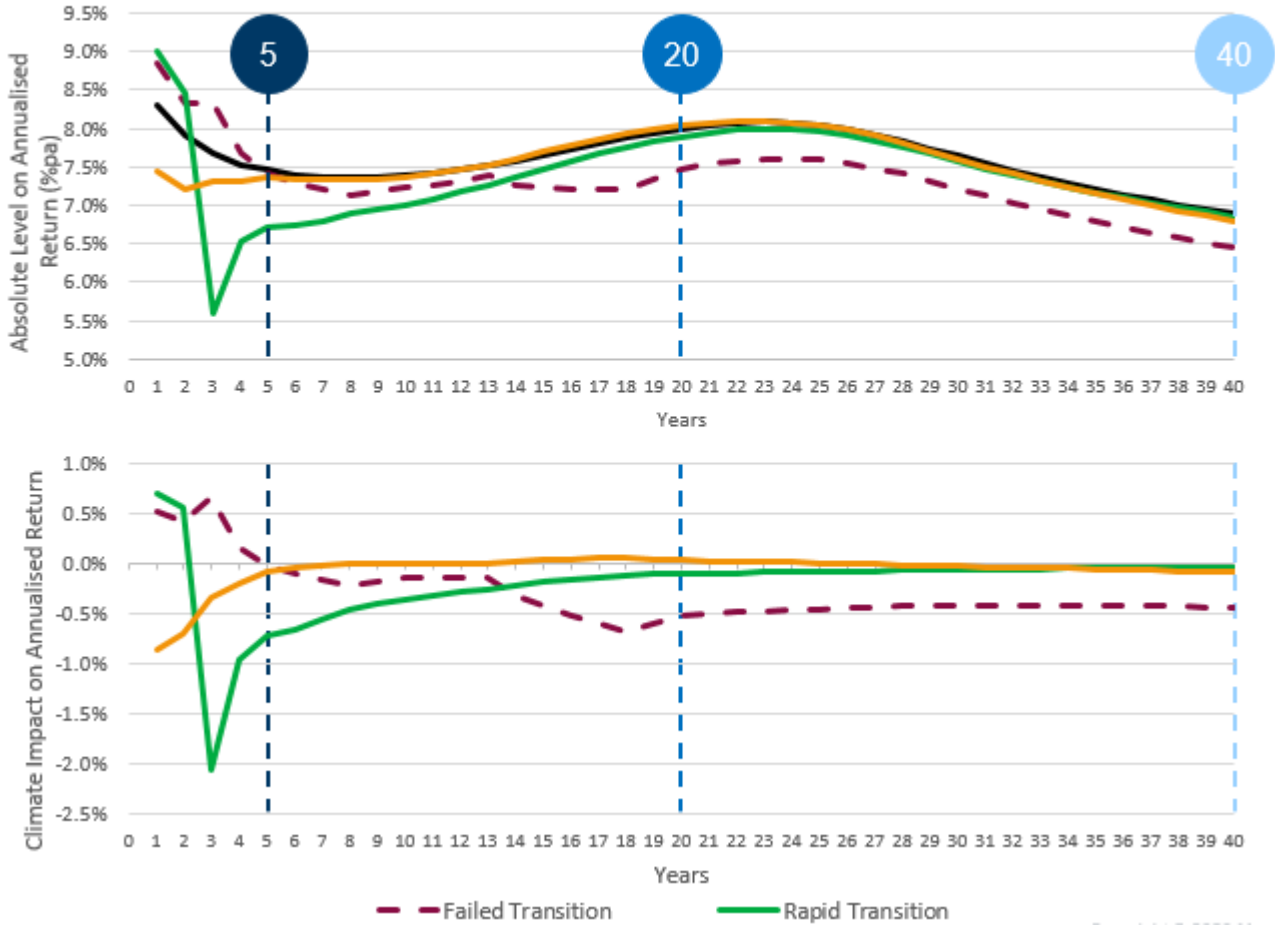
40 Year Projection



Source: Mercer

Annualised Returns

Strategic Asset Allocation



Source: Mercer

Scenario Analysis Findings

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

Short Term (5 years)

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.

The Scheme's investment and funding strategy is reasonably resilient to the Rapid Transition scenario, which is the most unfavourable scenario over the next 5 years. However, if this was to coincide with weak economic conditions more generally there is a risk of the funding level falling to below 90% which may necessitate a review of the current strategy.

Medium Term (20 years)

Over the medium term, transition risk and physical risk are both factors, although physical risk under the Failed Transition is more prevalent.

Expected returns are materially impacted under the Failed Transition. If the scenario was to coincide with weak economic conditions more generally this could result in a funding level shock that is sufficiently large to necessitate a review of the investment and funding strategy. Over this time horizon, transition and physical risks are likely to have resulted in significant reductions to asset values in vulnerable regions and industries.

Long Term (40 years)

Over the long term, physical impacts become significant, with the Failed Transition resulting in significant falls in asset value relative to the baseline.

It is likely that over an extended time horizon, physical risks will have resulted in significant reductions to asset values in vulnerable regions and industries. Depending on the extent of temperature rise, there may be negative and positive impacts across large parts of the economy, noting that high temperature outcomes are expected to result in an overall negative outcome.

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 partly hedged by the Scheme's allocation to Liability Driven Investment holdings. It does not, however, explicitly take into account the impact of changes to mortality.

The Trustee considered if additional analysis of the impact on sponsor covenant and mortality under alternative climate scenarios would be appropriate, beyond what is considered as part of current funding and covenant advice. In light of the additional covenant support provided under the framework agreement with Linde plc and The BOC Group plc, the Trustee felt that covenant scenario analysis was not necessary. Similarly, the Trustee considered that incorporating longevity and mortality impacts under alternative climate scenarios would not materially alter the conclusions of the above climate scenario analysis.

Key conclusions

Conclusion 1 – 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 undertaken highlighted 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. Over the long term, equity portfolios fared materially better under the Orderly and Rapid Transition versus the Failed Transition, as physical impacts have been priced in and listed equities are highly impacted.

Conclusion 2 – Sustainable Allocations Protect against Transition Risk, Growth Assets are highly vulnerable to Physical Risk

Asset class returns vary significantly by scenario depending on their respective exposure to transition and physical risks.

The Scheme has a modest allocation to growth assets in the form of equity. These growth assets are generally more exposed to transition and physical risks. Fixed Income asset classes are less sensitive. Listed Equities and Real Estate are materially exposed to physical risks under a Failed Transition over the longer term.

Conclusion 3 – Sector exposure is key

Climate impacts are naturally sector specific.

Supporting the quantitative analysis undertaken, sector level analysis highlighted that differences in return impact are most visible at an industry-sector level, with significant divergence between scenarios. Oil and Gas, Fossil Fuel Based Utilities and Renewables are most impacted by the transition.

As return impacts in the modelling were 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).

In the Rapid and Orderly Transitions, Low Carbon Electricity, Industrials, IT and Materials are the main sectors to generate positive returns. The Actual Asset Allocation is most underweight in the Financials, IT and Telecom sectors, all low impact sectors which contribute positively to the Scheme's performance under a Rapid Transition. The most overweight sectors are Coal & Manufactured Fuels, Fossil Based Utilities and Industrials, which may have positive returns under the Failed Transition in the short term, but under the Rapid Transition, as markets react to associated policy changes, returns will reduce.

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.

As markets react to new information as a result of changing physical and policy / transition risks, investors will be vulnerable to rapid repricing shocks. Exploring the potential impact that repricing events can have on investment strategy and positioning portfolios ahead of time is critical.

The quantitative analysis undertaken seeks to demonstrate the impacts of such shocks.

The Rapid Transition includes a shock around 2025 pricing in (and initially overreacting to a degree) to transition costs. The Failed Transition includes shocks towards the end of the 2020s and 2030s pricing in future damage. While the exact timing of such shocks is unknowable, considering such shocks is important to risk analysis.

Conclusion 5 - Regional exposures help investors explore physical risks over the long term

Regional analysis helps investors understand physical risk exposures under a Failed Transition.

Regional analysis helps investors understand physical risk exposures under a Failed Transition over the long term. China, Emerging Markets and Developed Asia ex. Japan are the most exposed. Canada and UK are the least exposed.

Section 5

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 Scheme'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 Scheme is exposed to. The Trustee prioritises the management of risks primarily based on its potential impact on the security of members' benefits and prospective investment returns.

Governance

- The Trustee's Statement of Investment Principles is reviewed on at least a triennial basis or following a significant change in investment policy and sets out how investment climate-related risks are managed and monitored.
- The Trustee maintains a risk register which includes explicit climate risks (covering all of the Scheme) and IRM framework to monitor and mitigate financially material risks to the Scheme. The climate-related risks (defined as physical risks and transition risks) are reviewed annually to ensure the assessment of the likelihood and impact continue to remain appropriate for the Scheme given the developing research and understanding on this subject as well as new and emerging risks related to climate change.
- Trustee training on climate-related issues is a standard agenda item and undertaken at least once per year. 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 Scheme's advisers will take climate-related risks and opportunities into account as part of the wider strategic investment advice provided to the Trustee and the JIC at least annually. 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 Scheme's investment process. The Trustee also recognises that long-term sustainability issues, particularly climate change, present risks and opportunities that require explicit consideration. When setting investment strategy, ESG factors, including climate change, will be considered alongside a number of other factors that can influence investment strategy.
- The Trustee has given appointed investment managers full discretion in evaluating ESG factors, including climate change considerations, and exercising voting rights and stewardship obligations attached to the investments, including undertaking engagement activities, in accordance with their own corporate governance policies and current best practice, including the UK Corporate Governance Code and UK Stewardship Code. Climate scenario analysis for the investment and funding strategy of the Scheme will be reviewed at least triennially, or more frequently if there has been a material change to the strategic asset allocation and/or the current arrangements. Key findings from the Trustee's most recent climate scenario analysis are set out in the previous section. Climate scenario analysis is the primary tool to help the Trustee understand the materiality of climate-related risks that could impact the Scheme over time.

Reporting

- The Trustee will receive annual reports of climate-related metrics and progress against targets in respect of the assets held in the Scheme. 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 Implementation Statement. The statement summarises how the investment managers vote and engage on climate-related issues (among other key engagement priorities). The statement is available on the Scheme'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. This assessment includes the investment manager's policy on ESG considerations, voting and engagement, and their investment decisions. The Trustee also completes a benchmarking analysis on an annual basis to compare how the managers' ESG approaches compare to the broader universe.
- 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 6

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 Scheme's investment portfolio and identify areas for further risk management, including investment manager portfolio monitoring, voting and engagement activity and priorities.

Metric category	Selected metric	Further detail
Absolute emissions	Total Greenhouse Gas Emissions	Tonnes of carbon dioxide and equivalents (tCO ₂ e) that the Scheme is responsible for financing.
Emissions intensity	Carbon Footprint	The amount of carbon dioxide and equivalents (tCO ₂ e) emitted per million dollars of the Scheme's investments.
Portfolio Alignment	% of portfolio companies with targets approved by the Science Based Targets initiative (SBTi)	Assessment of the proportion of portfolio companies/issuers that have set net-zero targets that have been validated by SBTi.
Additional	Data Quality	Represents the proportions of the portfolio for which the Trustee has high quality data.

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

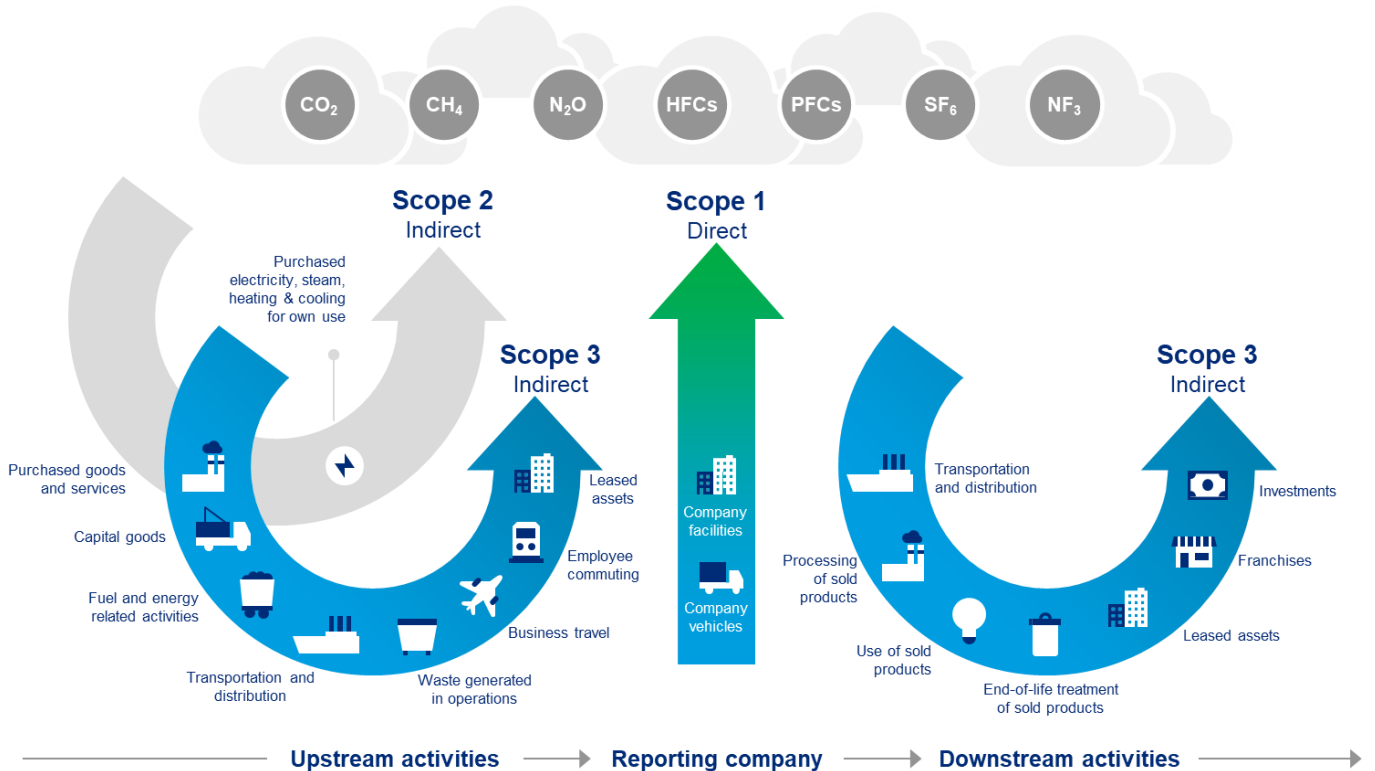
The Trustee recognises the challenges associated with various metrics, tools and modelling techniques used to assess climate change risks. The Trustee aims to work with its investment adviser and investment managers to continuously improve the approach to assessing and managing risks over time

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. The Trustee is tracking combined scope 1 and 2 emissions, and scope 3 emissions separately.

Figure 3



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 grand total Greenhouse Gas Emissions figures.

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

Carbon Footprint

Carbon Footprint is an intensity measure of emissions that takes the Scheme'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 Scheme'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.

The Trustee is tracking this metric based on combined scope 1 and 2 emissions, and scope 3 emissions separately. The Trustee's primary climate-related target is based on progress in reducing this metric based on combined scope 1 and 2 emissions.

% of portfolio companies with net zero targets approved by the Science Based Targets initiative (SBTi)

The Science Based Target initiative (SBTi) has established an industry standard methodology for companies setting long-term carbon emission reduction targets that are in line with climate science. Companies submit their net zero plans to SBTi, who then act as an independent assessor of the validity of the plans.

SBTi use either a sector decarbonisation approach (SDA) or an absolute contraction approach (ACA). Under the SDA approach, SBTi allocate the 2°C carbon budget to different sectors, taking into account differences between sectors today and mitigation potential going forwards (e.g. this takes into account the fact that power generation will likely be able to decarbonise faster than cement production). The ACA approach is a broad assumption that assumes that all companies should decarbonise at the same rate. The ACA approach is the most popular target that companies who submit their targets to the SBTi choose.

The Trustee has chosen this metric because it provides a measure of portfolio alignment with the goals of the Paris Agreement. Underlying funds with a low percentage of companies with SBTi-approved targets could indicate investment in companies or issuers that are not setting targets to align their businesses or activities with net zero, which is a forward-looking indication of climate transition risk.

The Trustee recognises that the SBTi does not currently cover every sector, however, is cognisant that the Initiative's coverage across additional companies and sectors is expanding rapidly.

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 Scheme's actual portfolio.

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

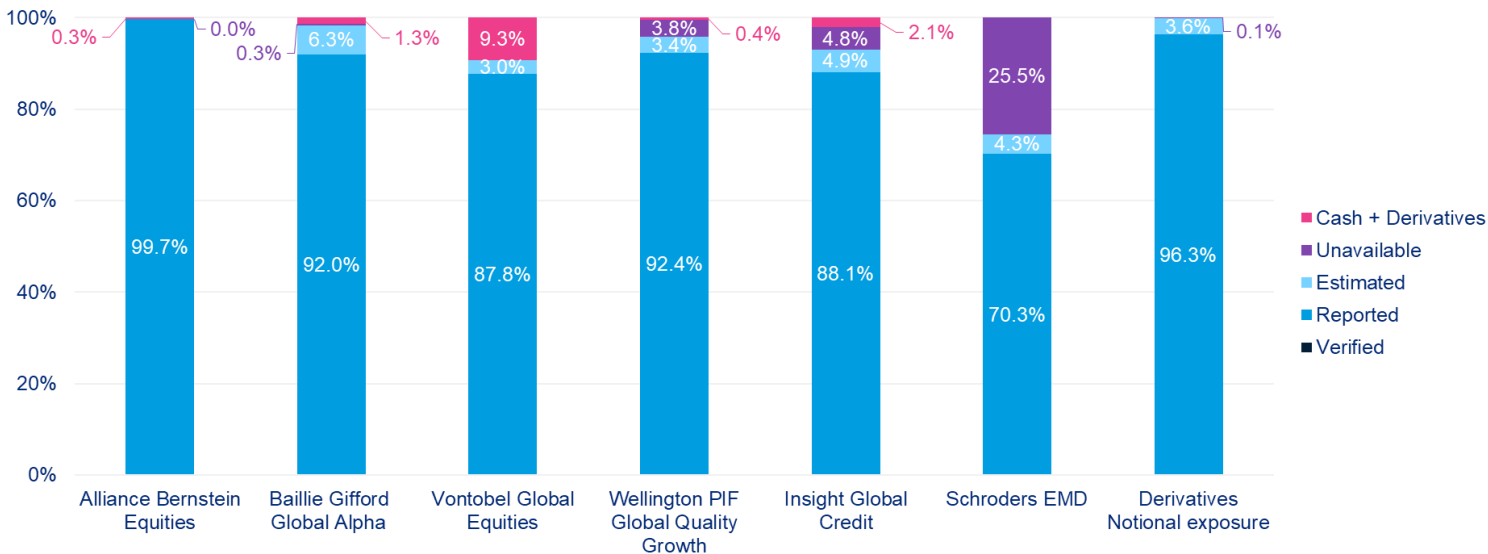
Data collection

Metrics have been prepared based on the following 9 liquid asset mandates: 5 Equity mandates (including synthetic equity), 1 Emerging Market Debt mandates, 1 Corporate Bond mandate and the 2 Liability Driven Investment mandates. We investigated inclusion of the illiquid asset, natural catastrophe reinsurance and hedge fund mandates, however it was not feasible to include them due to data and model limitations. The Trustee will continue to request climate metrics data from these managers, setting increasing expectations on coverage and quality of the data provided.

For these mandates, combined coverage is over 95% as at 31 December 2023 for emissions-based metrics, weighted by value. In calculating absolute emissions figures for these mandates, the metric for the portfolio for which there is coverage has been scaled up to 100% of the portfolio value.

For each of the mandates, the manager provided a security level listing for the portfolio. The equity, corporate bonds, and/or sovereign bonds in each mandate were analysed. Other asset classes, including cash and derivatives, were excluded from the analysis. The resulting stocklist was cross referenced against MSCI’s database to obtain metrics for each security. Not all positions are included within the database, resulting in lower than 100% coverage.

The chart below shows the proportion of each mandate’s holdings that have been reported, estimated or excluded for the purposes of analysing the various metrics. The LDI and synthetic equity mandates have not been shown as their coverage is over 99%, with no estimates being used. For the other mandates coverage was over 95%, with estimates being used to varying degrees.



Summary of Metrics Analysis

The results of the analysis are shown below. In terms of overall level of coverage, **the 9 liquid asset mandates including synthetic equity covered 53.8% of the £3.2bn of Scheme assets invested (including synthetic equity) as at 31 December 2023**. The 46.2% of assets not included comprised 15.4% hedge funds and natural catastrophe reinsurance, 26.5% private debt, and 4.2% cash. The metrics include emissions relating to gilt repo exposures, which are equivalent to 25.3% of assets.

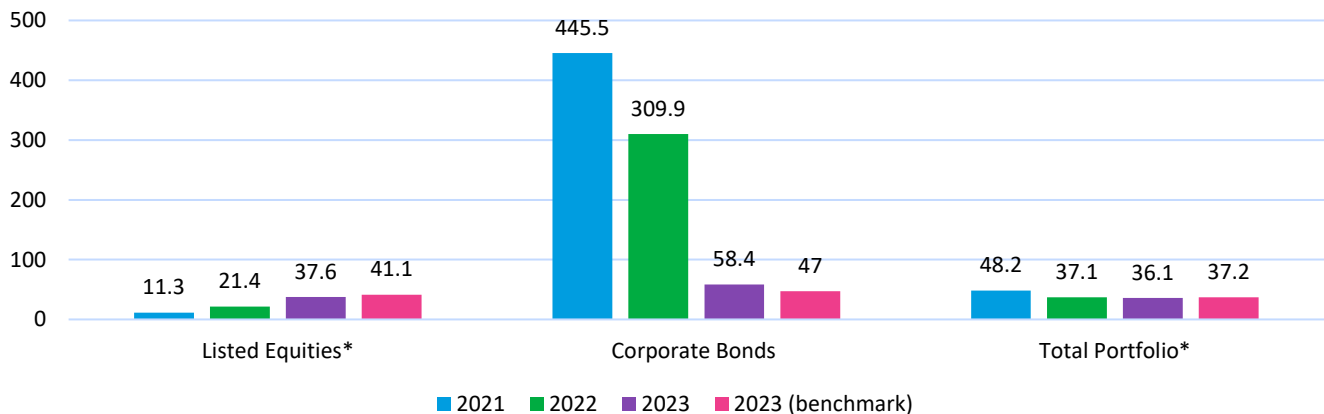
Carbon Footprint – Scope 1 and 2 combined

The carbon footprint of the equity portfolio has increased significantly over the period to 2023. This reflects changes in the stock and sector mix of the portfolio, which is actively managed. Examples of changes that can lead to an increased carbon footprint are lower allocations to technology or healthcare sectors, and higher allocations to the energy or utilities sectors. Of the four active equity managers, Baillie Gifford has the highest footprint and Wellington has the lowest.

Conversely, the carbon footprint of the corporate bond portfolio has reduced significantly since 2021. The primary contributing factor is the introduction of the Insight Global Credit mandate in 2023, and the termination of the PGIM Emerging Market Debt mandate in 2022, resulting in a lower average footprint. The Insight mandate has a significantly lower carbon intensity than the global credit benchmark index. The Schroders Emerging Market Debt mandate has also had a reducing carbon intensity over time.

On an overall basis, the carbon footprint has been declining over time and is lower than that of the benchmark.

Carbon footprint (tCO2e/\$M Invested)

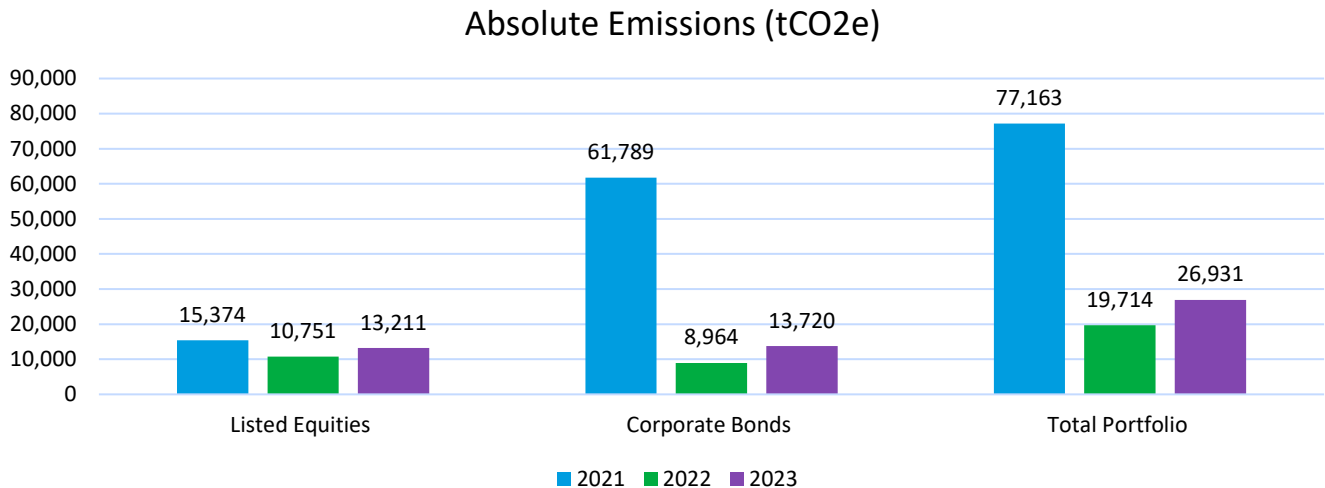


* Includes synthetic equity exposure.

Note corporate bond benchmark shown is based on global credit only, not a blend of global credit and EM debt, which would result in a higher footprint than the 2023 portfolio footprint.

Absolute Emissions – Scope 1 and 2 combined

Absolute emissions have reduced materially since 2021, but have increased in the past year. This largely reflects changes in the value of invested assets (including synthetic equities), and in particular the increase in the carbon footprint of the equities during 2023.



Other metrics

- Portfolio alignment** – this has been assessed using the percentage of companies with SBTi targets (% of portfolio). There is a wide range between portfolios of the percentage of companies with SBTi targets (as low as 0.0% and as high as 43.0%). 43.7 % of the companies in the Listed portfolio have submitted climate transition plans that have been approved by the Science Based Targets Initiative (SBTi). This compares to 32.9% on a weighted average basis in 2022.
- Data Quality** – data quality also varies significantly by fund with coverage for the EM debt mandates lower than for the other mandates. The 9 liquid asset mandates measured cover 51% of Scheme assets, including hedging and synthetic equity exposures. Combined coverage was over 95% as at 31 December 2022 for all emissions-based metrics, weighted by value across the 9 mandates.

Detailed breakdowns of the carbon footprint, absolute emissions and the SBTi score by mandate as at 31 December 2023 are shown in the Appendix. The carbon footprint and absolute emissions are shown both on a Scope 1 and 2 combined basis (as in this section) and on a Scope 3 basis.

The Appendix also shows absolute emissions and a Sovereign carbon intensity for the Scheme's Sovereign bond exposure as at 31 December 2023.

Targets

The Trustee has set a target level of carbon reduction across its listed equity and credit assets (exc Sovereign bonds), as measured by carbon footprint (scope 1 and 2 emissions), of 25% over the 10 year period from 31 December 2021 (baseline). The other metrics including Sovereign carbon intensity will also be tracked over this period.

This corresponds to a 2.5% per annum rate of reduction, and is equivalent to Linde's "35 by 35" target on a straight line basis. Linde plc has targeted a 35% carbon reduction over 14 years from 2021 to 2035 in its "35 by 35" climate neutrality ambition <https://www.linde.com/sustainable-development/targets-and-performance/35-by-35-climate-neutrality-ambition>

Whilst the Trustee will principally monitor Listed (exc Sovereign) carbon footprint for targeting purposes, it will also measure Sovereign carbon intensity (measured as tCO₂e / \$M PPP-adjusted GDP) separately. Given the dominance of UK government exposures within the Liability Driven Investment portfolio, the Trustee has little control over the carbon intensity of the Sovereign assets. However the expectation is that the Trustee will have greater control over the carbon footprint of the Listed (exc Sovereign) portfolio over time through its investment decision-making, hence the target is applied to this part of the Scheme's assets.

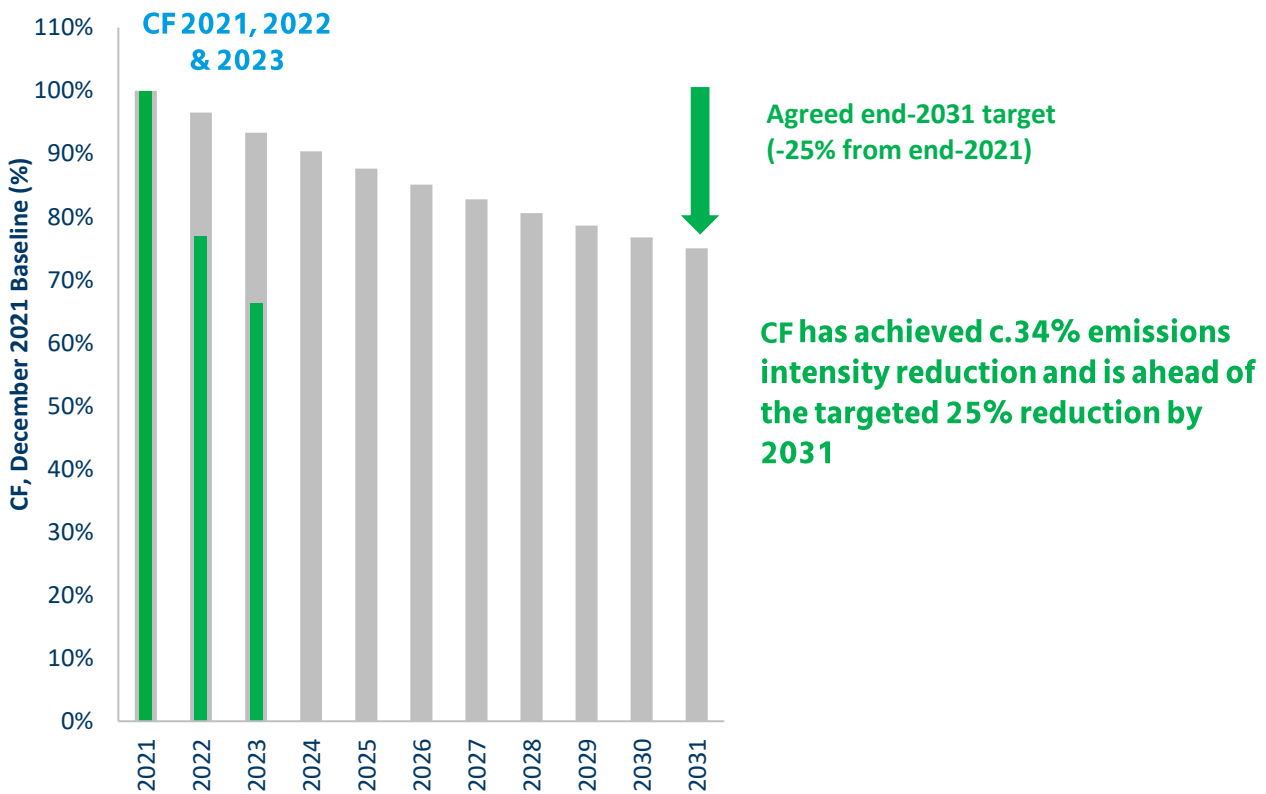
As well as carbon footprint the Trustee will monitor the following metrics: absolute emissions (measured separately for Listed exc Sovereign and Sovereign assets); portfolio alignment (measured as the percentile of companies with climate transition plans that have been approved by the Science Based Targets Initiative); data quality.

The Trustee will review its targets at least annually and may revise the measurement approach or targets as data coverage improves for unlisted assets and as climate risk measurement methodologies evolve.

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.

Decarbonisation

The chart below shows progress to date in terms of the reduction in carbon footprint for listed equity and corporate bonds since the 31 December 2021 baseline date. The end-2031 target reduction of 25% can be seen to be already achieved, reflecting changes in the Scheme’s asset allocation and the mix of assets held within the underlying mandates that are captured by the carbon footprint metric. The Linde Group has committed to be climate neutral by 2050, however the Trustee has not put in place detailed milestones or targets for further reduction in the Scheme’s carbon footprint beyond 2031 at the date of preparing this report. We note that reduction in carbon footprint required to meet a 2050 climate neutrality ambition could be challenging to achieve, particularly if the global economy makes slow progress in reducing its carbon intensity.



Appendix A

Technical Appendix



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 organizations 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: <ul style="list-style-type: none"> 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 31 December 2022.

The return impacts of the climate scenarios represented in this report are relative to a climate-informed '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.

Strategic Asset Allocation(s) modelled

The asset allocation used for the climate scenario analysis is the BOC Pension Scheme's actual asset allocation as at 31 December 2022 as shown below.

		Market Value 31 Dec 2022	Percent of Total Fund	Last Quarter	Last Quarter	Current Target (SIP)	Allowed Range (Guarantee)
		mGBP	%	mGBP	%	%	%
Total Fund		2,693.6	109	2,805.9	103	100	
<small>(excludes Global Equities derivative notional exposure - includes marked to market value within LDI & Cash)</small>							
LDI & Cash		831.2	30.9	526.4	18.8	22	15 - 35
LDI	Insight (Total)	756.3	28.1	557.9	19.9	20	
	Gilts	704.6		506.0			
	Inflation Swaps	3.8		26.7			
	Interest rate Swaps	-4.2		3.2			
	High Grade ABS	2.5		2.5			
	Gilt Collateral	49.7		19.4			
Cash	BlackRock MMF	66.8	2.5	94.9	3.4	2	
	Record (FX Forwards)	9.4	0.3	-120.7	-4.3		
Derivative Overlay valuRecord		-1.3	0.0	-5.7	-0.2	 	
Global Equities		651.2	24.2	631.5	22.5	25	15 - 30
Global Equity	Wellington	103.7	3.8	137.9	4.9		
	Baillie Gifford	98.8	3.7	132.6	4.7		
	Vontobel	102.1	3.8	135.3	4.8		
	Alliance Bernstein	103.7	3.8	134.5	4.8		
	Derivative Notional Exposure	242.9	9.0	91.1	3.2		
Private Debt		824.2	30.6	845.7	30.1	30	20 - 35
Corporate Loans	Barings	291.6	10.8	302.9	10.8		
	Bridgepoint	177.4	6.6	172.5	6.1		
CRE Loans	Insight	4.4	0.2	4.9	0.2		
	Aviva (pooled)	36.8	1.4	36.3	1.3		
	Aviva (segregated)	198.6	7.4	204.2	7.3		
	Ares	115.5	4.3	124.8	4.4		
EM Debt		107.3	4.0	265.4	9.5	8	0 - 15
EM Debt	Schroders	107.3	4.0	183.5	6.5		
	PCIM	0.0	0.0	81.9	2.9		
Liquid Alternatives & NatCat		518.1	19.2	623.5	22.2	15	10 - 20
Credit Fund	Highbridge TCF	100.3	3.7	108.0	3.8	10	
Multi Strategy HF	Highbridge	0.0	0.0	0.7	0.0	 	
	AHL	34.1	1.3	38.0	1.4		
Global Macro	Lynx	43.6	1.6	49.7	1.8	 	
	Wadhvani	61.9	2.3	68.2	2.4		
	Pharo Macro	0.8	0.0	0.8	0.0		
Equity Market Neutral	Arrowstreet	50.7	1.9	87.5	3.1	 	
	Marshall Wace	72.5	2.7	99.2	3.5		
Nat Cat Reinsurance	Elementum	85.9	3.2	94.4	3.4	5	
	LGT	68.3	2.5	76.8	2.7		
Other Assets		4.5	0.2	4.6	0.2	0	
UK Property	CBRE	4.5	0.2	4.6	0.2		

Climate metric analysis approach

Data sources

Climate-related metrics provided by Mercer have been sourced from MSCI using stock list data provided by the investment managers. Other data has been requested directly from the asset managers.

Proxy data

For some asset classes, data coverage is too low (or no data is available) to be able to take a pro rata approach. Use of proxy data (data of other asset classes or funds that broadly represent a given fund) can help provide climate-related data where coverage for an asset class/fund is limited.

The Trustee considered the use of proxy metric data for private debt, real estate, natural catastrophe reinsurance and hedge funds however, the characteristics of the proxy fund would be too different from the invested assets to be able to make any informed investment decisions with the information and be of limited use from an engagement standpoint. For now, no data on these asset classes has been presented. These assets represent c46% of the total actual asset allocation.

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. Obtaining data for emerging market equity and debt can also be challenging due to general disclosure and transparency challenges.
- Many private companies do not currently produce climate-related data and coverage for private markets, such as private equity and private debt, will be low, or zero for mature funds.
- Sovereigns, or governments, may not publish climate-related data in the public domain. This is a particular challenge for emerging market debt. For UK government debt, data is available but there is a delay in the data being published.
- Short-term instruments, such as secured finance assets, have limited data available due to the short-term nature of the individual assets.
- For the long dated property portfolio, the occupiers of the buildings in the portfolio have full operational control and there are no Scope 1 or 2 emissions associated with the investments. The asset managers are looking to improve the collection of Scope 3 emissions data – this includes occupier activities where they have direct utility supplier contracts.

In this report, the Trustee has used a pro rata approach to scale up each climate metric 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 adviser and asset managers to address the data gaps, as far as they are able.

Detailed climate metrics as at 31 December 2023

Listed Equity and Corporate Bonds – Scope 1 and 2 combined

Asset Class	Mandate	Carbon Footprint (tCO ₂ e / \$M invested)			Absolute Emissions (tCO ₂ e)		SBTi	Allocation Weight*
		Metric	Benchmark	Coverage	Metric	Coverage		
Listed Equity	Alliance Bernstein Equities	22.7	44.7	99.7%	3,504	99.7%	54.1%	3.8%
	Baillie Gifford Global Alpha	43.8		98.3%	6,365	98.3%	33.2%	3.6%
	Vontobel Global Equities	15.5		90.7%	2,386	90.7%	55.2%	3.8%
	Wellington PIF Global Quality Growth	6.1		95.8%	956	95.8%	52.6%	3.9%
Total Listed Equity		21.7	44.7	96.1%	13,211	96.1%	49.0%	15.2%
Corporate Bonds	Insight Global Credit**	24.4	47.0	66.3%	4,838	66.3%	33.6%	4.9%
	Schroders EMD***	230.3		61.4%	8,882	62.4%	12.9%	1.0%
Total Corporate Bonds		58.4		65.5%	13,720	65.6%	30.2%	5.9%
Total Listed Equity and Corporate Bonds		32.0		87.5%	26,931	87.6%	43.7%	21.1%
Synthetic Equity	Derivatives Notional exposure****	48.4	48.4	99.7%	13,796	99.9%	43.6%	7.1%
Total Listed Equity and Corporate Bonds Inc. Synthetic Equity		36.1		90.6%	40,727	90.7%	43.7%	28.1%

Source: MSCI and Mercer. All data as at 31 December 2023. Allocation weights represent the actual asset allocation for that mandate or, for Mixed Mandates, the actual allocation to Listed Equity or Corporate Bonds within the mixed mandate.

*Allocation as a percentage of total AUM.

**iBoxx £ Non-Gilts 5+ is used as a benchmark for Insight Global Credit.

***For Schroder EMD these represent a c.25.4% and a c.74.3% allocation to, respectively corporate bonds portion and sovereign bonds. The remainder of the funds is allocated to asset classes not covered by the analysis.

****MSCI ACWI is used as a proxy for the Synthetic Equity.

Sovereign Bonds – Production Emissions

Asset Class	Mandate	Sovereign Carbon Intensity (tCO ₂ e / \$M PPP-Adjusted GDP)			Absolute Emissions (tCO ₂ e)		Allocation Weight*
		Metric	Benchmark	Coverage	Metric	Coverage	
Sovereign Bonds	Insight LDI**	120.5	120.5	100.0%	227,088	100.0%	22.8%
	Schroders EMD***	324.1	344.1	88.9%	37,152	88.9%	2.8%
Total Sovereign Bonds****		143.2		98.8%	264,240	98.8%	25.6%

Source: MSCI and Mercer. All data as at 31 December 2023. Allocation weights represent the actual asset allocation for that mandate or, for Mixed Mandates, the actual allocation to Sovereign Bonds within the mixed mandate.

*Allocation as a percentage of total AUM.

**For Insight LDI absolute emissions in respect of funded gilt exposure (£679M) are 104,285 and additional exposure achieved through repo to UK gilts (£799M) are 122,803 tCO₂. The exposure to cash and liquidity funds (£36M) was not included in the analysis.

***For Schroder EMD these represent a c.25.4% and a c.74.3% allocation to, respectively corporate bonds portion and sovereign bonds. For the sovereign bond the benchmark used is 50% JPM Emerging Market Bond Index and 50% JPM Government Bond Index-Emerging Markets.

****The total Sovereign Bonds Carbon Intensity metric based on market values, whereas sovereign bonds Absolute Emissions metric is based on exposure values including Insight LDI.

Notes: Sovereign emissions data shown are consistent with the PCAF definition of Scope 1 sovereign emissions, aligning with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services. Emissions data include land use, land-use change and forestry. Data sourced from MSCI.

Listed Equity and Corporate Bonds – Scope 3

Asset Class	Mandate	Carbon Footprint (tCO ₂ e / \$M invested)				Absolute Emissions (tCO ₂ e)				Allocation Weight*
		Scope 3 Upstream		Scope 3 Downstream		Scope 3 Upstream		Scope 3 Downstream		
		Metric	Coverage	Metric	Coverage	Metric	Coverage	Metric	Coverage	
Listed Equity	Alliance Bernstein Equities	80.5	99.7%	155.5	99.7%	12,029	99.7%	23,279	99.7%	3.8%
	Baillie Gifford Global Alpha	73.7	98.3%	89.3	98.3%	8,824	98.3%	12,992	98.3%	3.6%
	Vontobel Global Equities	65.4	90.7%	34.4	90.7%	9,341	90.7%	4,816	90.7%	3.8%
	Wellington PIF Global Quality Growth	97.0	95.8%	144.4	95.8%	11,364	95.8%	17,186	95.8%	3.9%
Total Listed Equity		79.3	96.1%	106.4	96.1%	41,557	96.1%	58,272	96.1%	15.2%
Corporate Bonds	Insight Global Credit**	108.1	66.3%	173.5	66.3%	20,944	66.3%	33,616	66.3%	4.9%
	Schroders EMD***	372.6	62.4%	850.8	62.4%	13,954	62.4%	35,879	62.4%	1.0%
Total Corporate Bonds		151.7	65.6%	285.3	65.6%	34,899	65.6%	69,496	65.6%	5.9%
Total Listed Equity and Corporate Bonds		99.6	87.6%	156.5	87.6%	76,456	87.6%	127,768	87.6%	21.1%
Synthetic Equity	Derivatives Notional exposure***	97.4	99.7%	245.5	99.7%	25,080	99.9%	66,304	99.9%	7.1%
Total Listed Equity and Corporate Bonds Inc. Synthetic Equity		99.0	90.6%	178.9	90.6%	101,536	90.7%	194,072	90.7%	28.1%

Source: MSCI and Mercer. All data as at 31 December 2023. Allocation weights represent the actual asset allocation for that mandate or, for Mixed Mandates, the actual allocation to Listed Equity or Corporate Bonds within the mixed mandate.

*Allocation as a percentage of total AUM.

**iBoxx £ Non-Gilts 5+ is used as a benchmark for Insight Global Credit.

***For Schroder EMD these represent a c.25.4% and a c.74.3% allocation to, respectively corporate bonds portion and sovereign bonds. The remainder of the funds is allocated to asset classes not covered by the analysis.

****MSCI ACWI is used as a proxy for the Synthetic Equity.

The scope 3 benchmarks are shown below, and it can be seen that the Scheme's mandates have a lower carbon footprint under scope 3 than the benchmark indices.

Asset Class	Mandate	Carbon Footprint (tCO ₂ e / \$M invested)	
		Scope 3 Upstream	Scope 3 Downstream
		Metric	Metric
Listed Equity	MSCI ACWI ESG Universal	96.6	207.0
	MSCI ACWI	97.4	245.5
Corporate Bonds	iBoxx £ Non-Gilts 5+	110.1	193.8

Source: MSCI and Mercer. All data as at 31 December 2023.

Sovereign Bonds – Consumption Emissions

Asset Class	Mandate	Sovereign Carbon Intensity (tCO ₂ e / \$M PPP-Adjusted GDP)		Absolute Emissions (tCO ₂ e)		Allocation Weight*
		Metric	Coverage	Metric	Coverage	
Sovereign Bonds	Insight LDI**	167.3	100.0%	315,173	100.0%	22.8%
	Schroders EMD***	233.9	92.3%	26,816	92.3%	2.8%
Total Sovereign Bonds***		174.7	99.1%	341,989	99.1%	25.6%

Source: MSCI and Mercer. All data as at 31 December 2023. Allocation weights represent the actual asset allocation for that mandate or, for Mixed Mandates, the actual allocation to Sovereign Bonds within the mixed mandate.

*Allocation as a percentage of total AUM.

**For Insight LDI absolute emissions in respect of funded gilt exposure (£679M) are 104,285 and additional exposure achieved through repo to UK gilts (£799M) are 122,803 tCO₂. The exposure to cash and liquidity funds (£36M) was not included in the analysis.

***For Schroder EMD these represent a c.25.4% and a c.74.3% allocation to, respectively corporate bonds portion and sovereign bonds.

****The total Sovereign Bonds Carbon Intensity metric based on market values, whereas sovereign bonds Absolute Emissions metric is based on exposure values including Insight LDI.

Notes: Sovereign emissions data shown are consistent with the PCAF definition of consumption emissions, equivalent to production emissions, less exported emissions, plus imported emissions. Emissions data include land use, land-use change and forestry. Data sourced from MSCI.

Asset class assumptions

Synthetic equity exposure

Some asset class exposures, like equity, are obtained via the use of derivative instruments. For the purposes of this report:

- Equity futures and equity options are used as a way to manage equity risk on a short-term basis. These exposures have been ignored in the climate scenario modelling and in the climate metrics in order to give a prudent estimation of the exposure to climate-related risks (i.e. by ignoring these instruments, the Trustee is overstating its exposure to climate-related risks associated with public equity).
- Separately, the Scheme uses synthetic equity as a way to increase the exposure to equity markets in a capital efficient manner. The additional exposure to public equity markets has been allowed for in the climate scenario modelling. The climate metric data similarly includes any notional exposure from synthetic equity.

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 2022, published by the UK government, of 410m tonnes of CO₂e.
- Emissions associated with imports (energy and non-energy) have been excluded.
- Figures cannot sensibly be aggregated with emissions data for non-gilt assets due to risk of double counting as UK emissions include corporate and household emissions.
- Scheme's asset position as at 31 December 2023.
- The metrics cover the full economic exposure to UK gilts which will be from the physical gilt holdings and any exposure to repo.
- Gilts posted out as collateral by the Scheme 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	679	104,290
Gilts on repo	799	122,800
Combined gilt exposure	1,478	227,090

Source: Insight, UK Government, DMO, IMF, MSCI

- Total includes network Rail bonds and Cash/liquidity funds

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Mercer

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