The Co-operative Pension Scheme (Pace)

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

October 2023

Reporting period: 12 months to 5 April 2023

Pace pension scheme

Contents

A message from the Chair

On behalf of the Trustee Directors of Pace, I am pleased to share our second climate change risk assessment report, which has been prepared in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the statutory requirements prescribed by the Department for Work and Pensions.[1]

This June saw the hottest average temperatures across the globe since records began in 1850, and a heatwave across southern Europe that has seen catastrophic wildfires in Algeria, Italy and Greece (with thousands of people evacuated from their homes or from holiday resorts). Extreme weather resulting from a warming climate is 'unfortunately becoming the new normal', the World Meteorological Organisation has warned.[2] It is therefore more pressing than ever that investors (including pension schemes) understand and manage climate risk in their investments.

We published our first report in September 2022, covering the Scheme year running from 6 April 2021 to 5 April 2022 and reporting on our carbon footprint for Defined Benefit (DB) assets as at 31 October 2021, and Defined Contribution (DC) as at 31 December 2021. In that report, we set out our objective to achieve net zero greenhouse gas emissions for the Scheme's investments by 2050 or earlier, with a 50% reduction in emissions by 2030 – aligned with a 1.5°C pathway and consistent with the Intergovernmental Panel on Climate Change (IPCC) special report on global warming, and guidance from the Institutional Investors Group on Climate Change (IGCC).

One year is a short time period over which to assess progress against objectives, as carbon metrics are affected by a range of factors. This year's analysis in particular follows a period of volatility in investment markets, with Pace DB rebalancing in early October 2022 in response to the dramatic rise in gilt yields following the 'mini budget' the preceding month. As a result, movements in climate metrics at a total Scheme level reflect changes to asset allocation and significant movements in the value of our assets, as well as actions taken by our investment managers and the companies we invest in.

A more significant change to asset allocation took place after the October 2022 measurement date, with the Bank Section of Pace DB completing an additional buy-in with Rothesay Life in December 2022 (covering all liabilities not already insured as part of the 2020 pensioner buy-in with PIC). As part of the selection of Rothesay Life, the Trustee considered Rothesay Life's approach to sustainability, including Rothesay's commitment to transition to a net zero emissions investment portfolio by 2050 (with an aim to reduce the carbon intensity of its portfolio by 20% by 2025). Because of the timing of the transaction, we have not reported on the Rothesay policy this year, but it will feed into the analysis in the Scheme's 2024 TCFD report.

Pages 26-47 show our climate metrics for Pace DB and Pace DC this year; absolute and weighted emissions for the Co-op Section of Pace DB fell over that period largely due to bonds sold to rebalance the portfolio, while weighted emissions for the Bank Section fell slightly.

[1] The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 as amended, and the Occupational Pension Schemes (Climate Change Governance and Reporting) (Miscellaneous Provisions and Amendments) Regulations 2021

[2] https://public.wmo.int/en/media/news/extreme-heat-rainfall-highlight-need-more-climate-action

For Pace DC, the carbon footprint of investments in bonds fell significantly, which is positive. This was due to L&G introducing Environmental, Social and Corporate Governance (ESG) tilts and exclusions to the underlying fund through their range of Future World Index Funds, which were implemented throughout 2022. However, Pace DC's equity funds have seen an increase in their carbon footprint, in part due to the increase in allocation to the energy sector over 2022 (as strong performance over this period has increased the relative market capitalisation of these stocks – these funds are passively managed and weightings relate to that of the index). Overall, while the time period is short, progress is being made towards targets, and actions such as the changes to the bond funds in Pace DC have had the expected impact. We will continue to report on progress against targets, and this will naturally become more meaningful over longer time periods.

Climate change remains one of the most pressing issues of our time, and the Trustee regards it as an important issue for responsible investors that may pose significant financial risks and opportunities to our investments, and one where investors, businesses and governments all have a responsibility to act. The pensions industry's understanding of how we can all quantify and manage climate risk continues to develop; this year, for the first time we have included 'Scope 3' carbon emissions (see pages 32, 37 and 42), which capture emissions from purchased goods and services and the use of products sold by businesses. This is in addition to the Scope 1 and 2 emissions we have previously reported on, namely, businesses' direct emissions (e.g. burning fossil fuels) and those related to purchased energy (e.g. linked to electricity used by a business).

Scope 3 emissions are important, as for most businesses and public bodies, the majority of their emissions are outside their own operations, and addressing Scope 3 emissions can help advance an organisation's decarbonisation and sustainability journey. However, we recognise that issues with methodology and data quality (and availability) at the moment makes the use of Scope 3 emissions challenging for investors. We will continue to work with our advisers and engage with our asset managers and service providers to increase the depth of coverage and the reliability of Scope 3 disclosures in future reporting.

Chris Martin

Chair of Trustees, the Co-operative Pension Scheme (Pace)

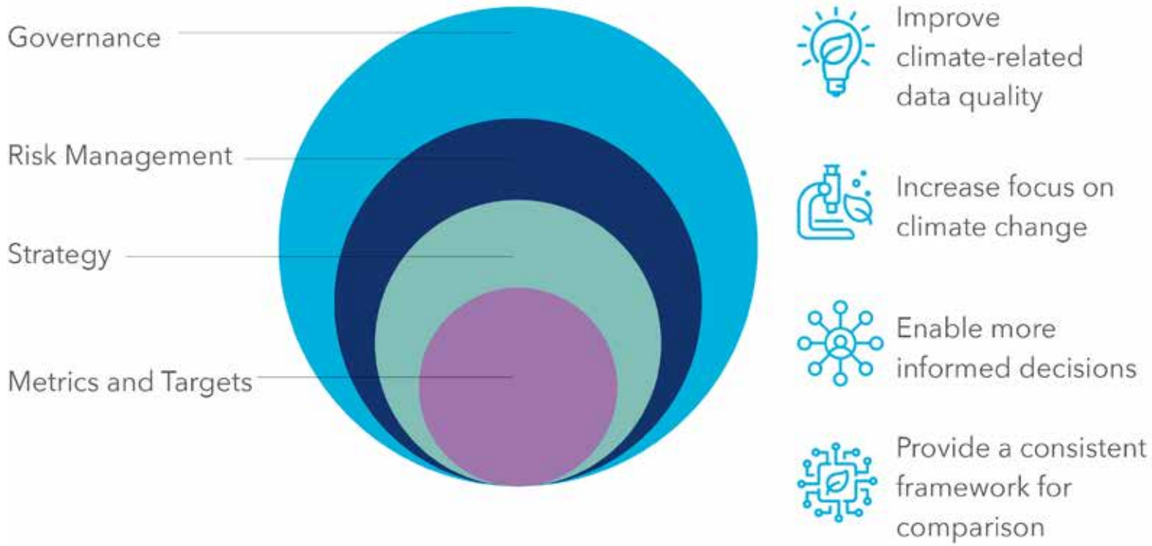
Introduction

The Co-operative Pension Scheme (Pace) ('the Scheme' or 'Pace') is a UK-registered occupational pension scheme with assets held on behalf of members by PACE Trustees Limited ('the Trustee').

The Trustee supports the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) as a framework to help manage and report on the actions being taken to identify climate-change-related risks and opportunities in the Scheme's portfolio.

This report explains how we, the Trustee, have established and maintained oversight and processes to ensure that relevant climate-related risks and opportunities are considered appropriately by all stakeholders involved in the day-to-day management of the Scheme. This is the second annual TCFD report that the Trustee has published and covers the year ending 5 April 2023.

The report is divided into four sections: Governance, Risk Management, Strategy and Metrics and Targets, consistent with the four pillars of the TCFD framework:



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

Since August 2018, the Scheme's assets and liabilities have been legally sub-divided into two sections, with the principal employers being the Co-operative Group Limited ('the Co-op') and The Co-operative Bank ('the Bank') respectively. Investment policy is determined separately for each section. The Co-operative Bank is the only employer in the Bank Section; all other employers participating in Pace are in the Co-op Section.

The Co-op Section and the Bank Section of Pace each provide two types of benefit: a Defined Benefit Section ('Pace DB') and a Defined Contribution Section ('Pace DC'). Pace DB is closed to new entrants. Both Sections, and both DB and DC benefits, are within the scope of this report.

In 2020, the Trustee entered into four separate insurance policies with PIC and Aviva Life in respect of a portion of Pace DB's pensioner liabilities (across both the Co-op and Bank Sections). In December 2022, before the 2022/23 Scheme year end, the Trustee entered into an additional insurance policy with Rothesay Life to match the remainder of the benefits that will become payable to members of the Bank Section of Pace. As part of this latest transaction, the majority of the Bank Section assets were transferred to Rothesay Life; any residual DB assets within the Bank Section are held as cash or in money market instruments as at the end of the reporting period to meet future running costs of the Bank Section.

The Trustee's expectation is that the Bank Section will progress to an insurer buy-out of the Section's liabilities, with the aim of achieving an appropriate discharge of liability in accordance with the Section's governing documentation and relevant legislation. In due course, in order to complete the buy-out transaction, members' benefits will be secured by means of individual annuity policies issued by PIC and Rothesay Life directly to the members, in accordance with the terms of the bulk annuity policies, and the Bank Section will then ultimately be wound up.

In this document we have reported on the DB assets of the Bank Section, where relevant, based on the investment strategy of the Section prior to the transfer to Rothesay Life.

Governance

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

The Trustee has ultimate responsibility for ensuring effective governance of climate-related risks and opportunities.

The Trustee maintains a Statement of Investment Principles (SIP), which details the key objectives, risks and approach to considering environmental, social and governance (ESG) factors, including climate change, as part of their investment decision-making processes. The SIP is reviewed on at least an annual basis and (along with the other documents below) can be found on the **Scheme's website** under 'Pace Investments' in the 'Useful Information' section.

In addition, the Trustee has adopted a Responsible Investment Policy, which provides further details on how ESG issues are accounted for within the Scheme's investment strategy, and the Trustee's commitments around climate change. The Responsible Investment Policy is also available on our website.

The Trustee is a signatory to the updated UK Stewardship Code (which came into force on 1 January 2020). As such, the Trustee also produces an annual Responsible Investment Report, which sets out how the Scheme has implemented its Responsible Investment Policy over the year, and how the Scheme has complied with the principles underlying the UK Stewardship Code; again, this can be found on our website.

The Trustee's overall investment beliefs on sustainability are:

- ESG factors can have a material impact on long-term risk and return outcomes, and these should be integrated into the investment process.
- Taking a broader and longer-term perspective on risk, including identifying sustainability themes and trends, is likely to lead to improved risk management and new investment opportunities.
- Climate change poses a systemic risk, and investors should consider the potential financial impacts of both the associated transition to a low-carbon economy and the physical impacts of different climate-change outcomes.
- Stewardship (or active ownership) helps the realisation of long-term shareholder value by providing investors with an opportunity to enhance the value of companies and markets.

Having worked with the Scheme's Sponsors, the Co-op and The Co-operative Bank, the Trustee has identified three broad issues which they feel reflect the views of the relevant stakeholders, represent particular risk to the Scheme and can be well addressed by the Responsible Investment Policy. These issues are:

- Climate change and the protection of the environment (including deforestation)
- Labour conditions and equal pay
- Corporate governance

Organisational structure

The Trustee

The Trustee has sub-committees that have a specific focus and decision-making powers as set out in their respective terms of reference. The Trustee will consider the recommendations of the sub-committees and will ratify any decisions that require its approval. The relevant sub-committees are listed below:

- TCFD Compliance Working Group
- Manager Monitoring and Implementation Committee
- DC Committee

Research into how climate-related risks and opportunities impact financial markets is constantly evolving and expanding. The Trustee receives training on a regular basis to keep up to date with developments, and allocates time on quarterly meeting agendas to cover relevant items such as climate-related data metrics within quarterly reports. In early 2023, the Trustee received refresher training that recapped on the TCFD framework and in particular on climate Metrics and Targets.

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

TCFD Compliance Working Group

In broad terms, the TCFD Compliance Working Group was initially responsible for understanding the requirements of TCFD on the Scheme, for supporting work towards ensuring the Scheme complies with those requirements, and for undertaking any other actions as delegated to the Working Group by the Trustee or its sub-committees. The TCFD Compliance Working Group operates under terms of reference approved by the Trustee.

The Working Group's remit includes:

- Arranging training the Working Group believes is necessary to improve Trustee knowledge and understanding on climate risk;
- Taking advice on and making recommendations to the Trustee on appropriate climate metrics to monitor;
- Taking advice on and making recommendations to the Trustee on appropriate climate-related targets; and
- Providing input into (and agreeing the scope of) investment and funding (including covenant) climate-related scenario analysis to be provided by advisers (in particular, agreeing in advance the relevant short, medium and long-term time periods to assess, and the scenarios to consider).

Both the Trustee and the Working Group, when appropriate, will question and challenge the information and advice provided to them by their advisers, investment managers and/or insurers in relation to their governance responsibilities.

Manager Monitoring and Implementation Committee (MMIC)

The MMIC consists of senior members of the Co-op Pensions Department and its role, as set out in its formal terms of reference, is to monitor and evaluate the investment manager appointments. These appointments have been made by the Trustee boards of the Co-op sponsored pension schemes to implement their respective investment strategies.

The MMIC meets at least quarterly and has a rolling schedule of meetings with the Scheme's investment managers. Trustee Directors also have a standing invitation to attend these meetings.

In relation to climate risk, the MMIC's remit includes:

- Receiving and reviewing periodic written reports prepared by the Scheme's investment advisers, covering the Scheme's investment managers' investment performance and their integration of ESG risks and opportunities (including climate risk) into their investment processes;
- Meeting with the appointed investment managers in accordance with a schedule agreed with the Trustee (as amended from time to time), to review investment performance, asset allocation and engagement with investee companies (including in relation to climate risk); and
- Reporting back to the Trustee on key issues raised at the Committee, and the exercise of any delegated powers.

DC Committee

The DC Committee consists of two Trustee Directors, with a standing invitation for the other Trustee Directors and representatives of the Co-op and The Co-operative Bank. Its role, as set out in its formal terms of reference, is to provide oversight and stewardship of the Scheme's DC Section and Additional Voluntary Contribution (AVC) arrangements.

The DC Committee has executive power to make strategic and non-strategic decisions on behalf of the Trustee, in relation to all DC and AVC-related matters.

In relation to climate risk, the DC Committee's remit includes:

- Reviewing, developing and approving changes to the Pace DC and AVC investment strategy and the default option (including those in relation to climate risk);
- Considering and recommending to the Trustee Board any required changes to the SIP (including climate-related polices);
- Ensuring that members of the DC Committee are trained and developed as appropriate so as to enable the DC Committee to fulfil its duties; and
- Monitoring development of DC industry practice and assessing suitability of any emerging themes or innovations for the Scheme.

In-house support

In addition to the Committees listed above, the Co-operative Pensions Department (CPD) provides in-house support to the Trustee as well as acting as a liaison between the Trustee and their investment advisers.

Their remit includes:

- Providing challenge to adviser recommendations to ensure advice provided to the Trustee and its sub-committees will facilitate effective and efficient decision making;
- Monitoring, managing and challenging the performance of the investment advisers and the investment managers;
- Undertaking Scheme governance activities on behalf of the Trustee, such as co-ordinating required public disclosures;
- Reviewing quarterly investment performance reports and highlighting key information to the Trustee for noting or action; and
- Assisting the Trustee with understanding climate-related risks and opportunities at the strategic asset allocation level and also at the investment manager and individual portfolio level.

During the Scheme year ended 5 April 2023, CPD held regular meetings with Mercer (investment adviser for Pace DB) to ensure the information presented to the Trustee in relation to climate-related risks and opportunities contained the right level of technical background in order to allow the Trustee to make informed investment decisions. CPD also liaised with both the Trustee and its advisers in relation to finalising the content of and publishing the first TCFD report, which took place over the reporting period.

Trustee advisers

The Trustee has appointed Mercer to the following roles:

Investment adviser for Pace DB

- Providing training and other updates to the Trustee on relevant climate-related matters;
- Helping the Trustee to formulate its investment beliefs in relation to climate change and reflecting these in the Scheme's DB investment policies and strategy;
- Advising how climate-related risks and opportunities might affect the different asset classes in which the Scheme might invest over the short, medium and long term, and the implications for the Scheme's DB investment strategy (at least annually, or as part of any material changes to Pace DB's strategy);
- Advising the Trustee (directly or through the MMIC) on the appropriateness and effectiveness of the processes, expertise and resources of Pace DB's investment managers in relation to managing climate-related risks and opportunities, given the Trustee's investment objectives and beliefs;
- Advising on the inclusion of climate change in the Scheme's governance arrangements and risk register, working with the Trustee and its other advisers as appropriate;
- Leading on the preparation of the Trustee's TCFD reporting, working with the TCFD Compliance Working Group, the Trustee and its other advisers (and CPD) as appropriate; and
- Assisting the Trustee in identifying and monitoring suitable climate-related metrics and targets in relation to the Scheme's investments, including liaising with the Scheme's investment managers/bulk annuity providers and DC investment adviser as required.

Actuarial adviser for Pace DB

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

The Trustee has appointed Lane, Clark & Peacock (LCP) for the following role:

Investment adviser for Pace DC

- Advising how climate-related risks and opportunities might affect the different asset classes in which Pace DC might invest over the short, medium and long term, and the implications for the Scheme's DC investment strategy (at least annually, or as part of any changes to Pace DC's strategy);
- Advising the Trustee on the appropriateness and effectiveness of the processes, expertise and resources of Pace DC's investment managers in relation to managing climate-related risks and opportunities, given the Trustee's investment objectives and beliefs; and
- Assisting the Trustee in identifying and monitoring suitable climate-related metrics and targets in relation to the DC Section's investments, including liaising with the Scheme's DC investment manager regarding provision of the metrics.

In addition, the Trustee has appointed Interpath for the following role:

Covenant adviser for the Scheme

- Providing assessments of the Scheme Sponsors' ability and willingness to support the Scheme;
- Considering climate-related exposures alongside other factors that could have a positive or negative impact on the strength of the Sponsors' covenant.

The Trustee has appointed Aon for the following role:

Risk transfer adviser for the Scheme

- Advising on the merits of longevity risk transfer options for the Scheme;
- Advising on the selection of insurers for bulk annuity transactions, including their credentials in monitoring and managing climate risk.

Assessment of in-house support and Trustee advisers

In-house support

The Trustee expects CPD to keep informed of updates and progress within the investment and pensions industry. They attend training sessions covering climate change-related issues and receive current thought pieces and articles via the DB and DC investment advisers and other industry publications.

Trustee advisers

The Trustee is required to ensure that the advisers that provide support and technical expertise on various climate issues have the appropriate level of climate-related risk expertise and resources to enable them to carry out their duties. In light of this, the Trustee has set specific expectations for its DB and DC investment advisers through its annual Investment Adviser Objectives (the 'Objectives'); these Objectives are aligned with the best practice indicators from the Investment Consultants Sustainability Working Group (ICSWG) guide for assessing climate competency of investment advisers. Feedback on performance of the investment advisers against these objectives is collated on a quarterly basis, and a detailed assessment is performed on an annual basis with results fed back to the investment advisers.

In addition, before commencing any TCFD-related work, the Trustee formally assessed the investment advisers against the ICSWG best practice indicators to ensure they were suitable to conduct the roles expected of them.

Mercer and LCP have provided climate-related scenario analysis and climate-related metrics for the DB and DC Sections of the Scheme, respectively, and will assist the Trustee in producing the Scheme's TCFD report on an annual basis.

The Scheme's actuarial adviser (Mercer) also provided input into the climate-related scenario analysis and as such, they were also assessed by the Trustee against relevant ICSWG best practice indicators.

The Scheme's risk transfer adviser, Aon, considered various different commercial and non-commercial aspects when reviewing insurer RFP submissions. This included assessing the ESG credentials of the potential insurer partners, including their process for monitoring and managing climate risk.

Risk Management

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

Climate change – the big 'known unknown'

We are already experiencing climate change and its associated physical impacts today. The average global temperature as at November 2022 was about 1.2°C above pre-industrial levels.

Most of this warming has occurred in the past 35 years, with the eight 'warmest' years on record taking place since the start of 2015. The overwhelming scientific consensus is that the observed climatic changes are primarily the result of human activities including electricity and heat production, agriculture and land use change, industry and transport.

In order to mitigate the worst economic impacts of climate change, there must be a large, swift and globally co-ordinated policy response. Despite this, the majority of climate scientists anticipate that, given the current level of climate action, by 2100 the world is estimated to be between 2°C and 4°C warmer, with significant regional variations. This is substantially higher than the 2015 Paris Climate Change Agreement, which reflects a collective goal to hold the increase in the climate's average global surface temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

What are the climate-related risks and opportunities?

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

1. Transition risks

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

- Policy and legislation
- Market
- Technology
- Reputation

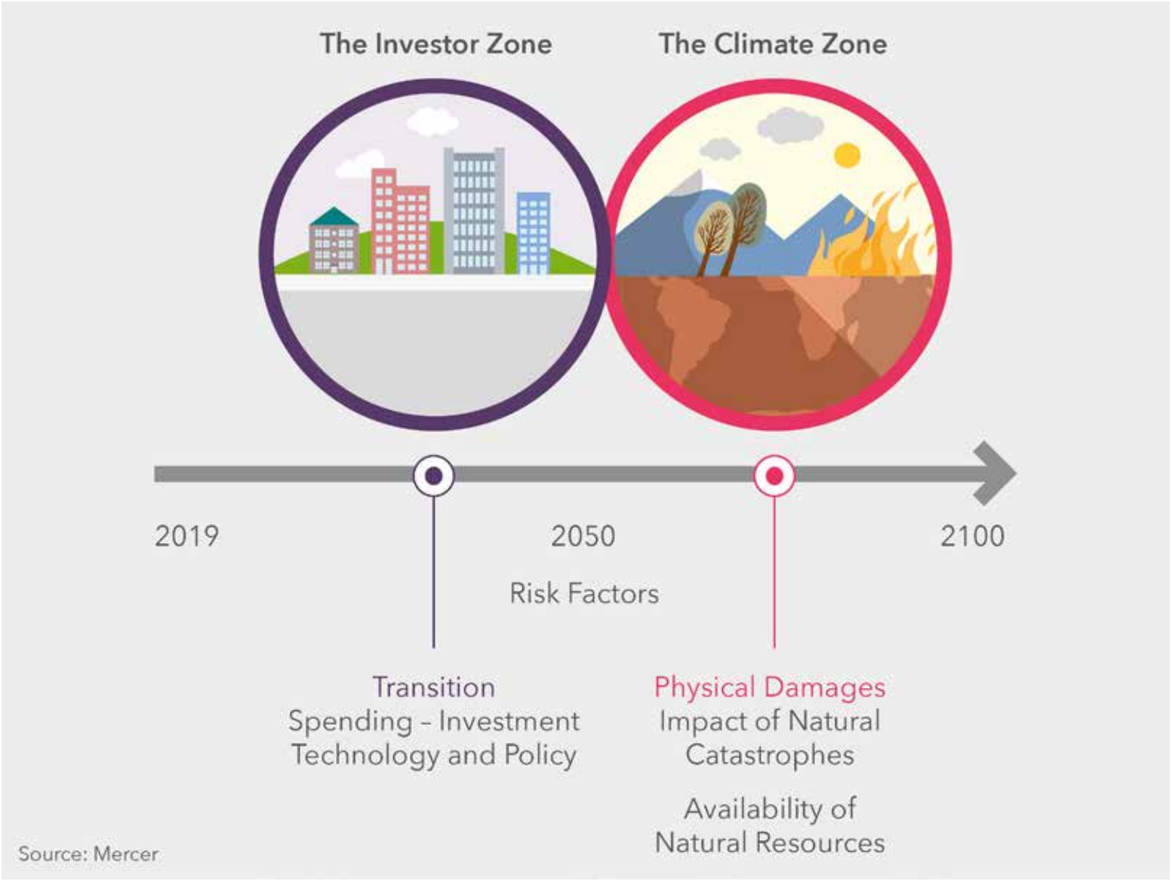
Risks include the possibility of future restrictions, or increased costs, associated with high-carbon activities and products. There are also opportunities, which may come from the development and implementation of low-carbon technologies.

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

2. Physical risks

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

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



Source: Mercer

Physical risks are expected to be felt more as the century progresses (the 'Climate Zone' above), although the extent of the risks is highly dependent on whether global net zero greenhouse gas emissions are achieved by 2050. There are investment opportunities, for example, in newly constructed infrastructure and real estate that are designed to be resilient to the physical impacts of climate change, as well as being constructed and operated in a way that has low or no net carbon emissions. There are also opportunities for investment in those companies or industries that focus on energy conservation and resource efficiency.

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, for the Defined Benefit (DB) Sections of the Scheme, to the wider funding strategy. Climate change is one of the risks that the Trustee considers alongside other financially material risks that may impact pension outcomes for members.

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

Governance

- The Trustee's **Statement of Investment Principles (SIP)** is reviewed at least annually and sets out how climate-related investment risks are managed and monitored.
- The Trustee maintains a **risk register** to monitor and mitigate material risks to the Scheme (both financial and non-financial – for example, regulatory and reputational). The climate-related risks, including physical risk and transition risk, are reviewed annually following any updates to climate scenario modelling and reviews of climate-related metric progress. For example, sudden changes in legislation and/or behaviour to facilitate a low-carbon transition, or multiple natural disasters occurring across key markets may lead to a negative impact on the value of assets held by the Scheme. In the risk register, the Trustee uses an 'impact and likelihood' framework to assess which risks pose the most significant potential for loss and are most likely to occur, whereby an 'impact' and a 'likelihood' score is assigned to each financially material risk the Scheme is exposed to. The impact score reflects the financial impact, regulatory impact (degree of negative interest from Regulators), member impact (negative effect on member perception of the management of the Scheme), reputation impact (number of member/media enquiries that may damage the Scheme's reputation) and time/problem management impact (Trustee time and resource spent on resolving risk events) of each risk. The Trustee dedicates more time and resource to mitigate the risks that score most highly under this framework. Climate-related risks score highly in terms of both impact and likelihood, and as such the Trustee seeks to prioritise and manage these risks over other risks that are awarded a lower score.
- The Trustee and its sub-committees will receive **training** from time-to-time on climate-related issues, including market updates. The training allows the Trustee to a) better understand how climate-related risks and opportunities can have an impact on the Scheme and b) challenge whether the risks and opportunities are effectively allowed for in their governance processes and wider activities.
- A **benchmarking analysis** of the extent to which ESG factors (including climate change) are integrated into investment decision making at the portfolio level is undertaken by Mercer on an annual basis for Pace DB. As at the latest date available (30 September 2022), Mercer's Responsible Investment Total Evaluation (RITE) rating for the DB Sections was A+, compared against an average rating of A for schemes of comparable size. This shows that the portfolio is ahead of its peers in this area. The Trustee incorporates recommendations from the RITE assessment framework into its ESG Implementation Plan, and will monitor the score over time with a view to seeking to ensure best practice.
- RITE assesses the extent to which schemes integrate ESG factors. Schemes are scored on a scale from 0-100, with those scored then mapped to a rating scale of C / C+ / B / B+ / A / A+ / A++, as set out on the right.

Rating	Score
A++	91%+
A+	76 – 90%
A	61 – 75%
B+	46 – 60%
B	31 – 45%
C+	16 – 30%
C	0 – 15%

- Benchmarking analysis is carried out against schemes with a similar level of assets under management and by sector of the Sponsoring Employer. Any rating/score has been determined at the sole discretion of Mercer, as professional adviser to both Sections of Pace DB. Mercer does not accept any liability or responsibility to any third party in respect of these findings. RITE is an evaluation at a point in time, informed by Mercer's Sustainable Investment Pathway; more details on RITE can be found **here**.

Strategy

- The Trustee has adopted a low-risk investment strategy for both the Co-op Section and the Bank Section of Pace DB (with limited growth asset exposure and high-interest rate and inflation hedge ratios). This means Pace DB's investments are expected to be robust with respect to the potential impact of climate change across short and long-term timeframes, and a range of climate scenarios. As noted within the introduction, before the Scheme year end, the Bank Section entered an additional buy-in policy with Rothesay Life in December 2022 covering all remaining uninsured liabilities, and as such investment risk was expected to be minimised to the extent possible from that date. In addition, the Bank Section considered various different commercial and non-commercial aspects when reviewing insurer RFP submissions. This included assessing the ESG credentials of the potential insurer partners, including their process for monitoring and managing climate risk.
- Use of LGIM's Future World Multi-Asset Fund and ESG-tilted equities within the DC default strategy means the default strategy is better positioned to capture a low-carbon transition premium in the event of an 'Orderly Transition' (see **Strategy section** for more details on this), and is expected to be robust in 3°C and 4°C scenarios.
- The Scheme's investment consultants take climate-related risks and opportunities into account as part of the wider **strategic investment advice** provided to the Trustee. 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 has taken a number of steps to enhance the ESG characteristics of the Scheme's assets at an asset-class level. For example, within the DB Sections' segregated Buy & Maintain corporate bond mandates, the Trustee has adopted an exclusions list whereby the investment managers are prohibited from investing in companies that manufacture or distribute controversial weapons, or those in the oil, gas or mining industries that have poor environmental records, or those based in countries with poor human rights records. Both Sections of Pace DB have also implemented an 'environmentally aware' cash fund within their LDI portfolios to house excess cash collateral; this also incorporates an exclusions policy, and a proportion of the management fee is used to purchase carbon credits.
- **Climate scenario analysis** for the investments of the Scheme, and the funding strategy for the DB Sections of the Scheme, was undertaken as part of the first annual TCFD report and will be reviewed each Scheme year if there has been a material change to the strategic asset allocation of a Section or there is a material change/update to the scenario modelling approach. The climate scenario analysis is not required to be updated annually unless there have been material changes to the underlying investment strategy. The Trustee is comfortable that the criteria to update the climate scenario analysis as at the date of analysis was not met and have agreed to report on the latest analysis available. A summary of the Trustee's 2021 climate scenario analysis is included in the **Strategy section** of this report.

Reporting

- The Trustee receives annual monitoring of **climate-related metrics** in respect of the assets held in the Scheme. The Trustee, via its sub-committees and CPD, uses the information to engage with investment managers.
- CPD receives quarterly **stewardship monitoring reports** in respect of Pace DC and annual **voting and engagement activity** summaries in respect of Pace DB. The reports summarise how the investment managers choose to vote and engage on climate-related issues (among other key engagement priorities that are defined by the Trustee). Key information and outcomes from the stewardship monitoring are summarised in the Trustee's annual **Implementation Statement**. CPD, on behalf of the Trustee, will discuss significant votes with the managers as required. The Trustee may also work with investment managers to engage with companies, or engage with investee companies directly, in order to implement positive change. The Trustee believes this engagement activity will make investee companies more likely to be sustainable in the long term.

Manager selection and retention

- The Trustee, with advice from its investment consultants, will consider an investment manager's firm-wide and strategy-specific approach to **managing climate-related risks and opportunities** when appointing a new manager, in the ongoing review of a manager's appointment, or as a factor when considering the termination of a manager's appointment.
- Mercer rates investment managers on the extent of integration of ESG factors (including climate change) into their processes. A manager's stewardship process forms part of the rating assessment. This is considered at the firm level and at the investment strategy/fund level. The ratings are presented in quarterly investment performance reports and are reviewed at MMIC meetings. A downgrade to the ESG rating may (taking into account other factors) lead to an investment manager being put 'on watch' by the Trustee.
- LCP will assess Legal & General's implementation of ESG considerations within the DC Section's chosen funds. LCP presents their advice to the Trustee on the DC default option and self-select fund range.
- The review can highlight gaps in a manager's approach relative to expected market practice, and the Trustee may liaise with an investment manager to drive improvements. During the Scheme year in this report, the focus was on engaging with the asset managers to improve the disclosure of information to help with this assessment.

Strategy

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

Climate scenarios

Climate scenario analysis results are sensitive to the mix of assets on which they are run. Climate scenario analysis is not required to be updated annually unless there have been material changes to the underlying investment strategy and/or modelling approach.

The Trustee has considered this and concluded the criteria to update the climate scenario analysis were not met as at the date of the analysis, and has therefore agreed to report on the latest available (previous) analysis. The remainder of this section therefore focuses on the 2021 climate scenario analysis.

Given the uncertainty around the timing and impact of climate-related transition and physical risks, last year, as part of the 2021 TCFD report, the Trustee considered a range of possible climate scenarios to help test the resilience of the Scheme's investment strategies at the strategic level, and for the DB Section, the funding strategy. The Trustee recognises that, given the direction of travel of Pace DB and the potential for further insurance transactions in coming years, the impact on climate change is expected to be very limited for the DB Section. During the process to select Rothesay Life for the Bank Section buy-in policy implemented in December 2022, the Trustee considered various different commercial and non-commercial aspects when reviewing insurer RFP submissions. This included assessing the ESG credentials of the potential insurer partners, including their process for monitoring and managing climate risk. Upon risk transfer, the climate-related transition and physical risks become the responsibility of the insurer.

This report summarises the analysis of three climate scenarios. These are defined as 'warming pathways', i.e. the expected degrees of warming of the atmosphere by the end of the century relative to pre-industrial levels. This is of particular importance to the DC Section, given its time horizon. While a lower warming pathway (2°C scenario) is one in which governments, businesses and society should aim for, there is a possibility that a failure to reduce greenhouse gas (GHG) emissions quickly enough could set off irreversible feedback loops that significantly warm the planet (as modelled by 3°C and 4°C scenarios). All three scenarios are plausible and therefore it is important for the Trustee to understand the potential impact of the scenarios on Pace.

Climate scenario analysis is an ever-evolving space and, as such, this will be undertaken and reported on using on the latest available models and up-to-date strategies as appropriate in future reports. It is important to note that the modelling may understate the true level of risk due to the uncertainty around the future economic impacts of climate change.

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. Looking at average asset class returns over multi-decade timeframes leads to invariably small impacts. The results are potentially significantly underestimated.
3. 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.
4. 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 adaptation required to avoid material warming of the planet.
5. Most adaptation costs and social factors are not priced into the models. These include population health and climate-related migration.

Resilience of the Scheme's strategy

Climate change scenario analysis was undertaken as part of the 2021 TCFD reporting process on the DB Sections' strategic asset allocation to assess the potential implications of climate change under three modelled scenarios (2 / 3 / 4°C warming) and over three time periods (2030, 2050 and 2100), with 2°C warming acting as the transition scenario required under the TCFD framework (where one scenario must be for warming of 1.5 - 2 °C). The analysis is based on research from Mercer's report in 2019, titled 'Investing in a Time of Climate Change: The Sequel'. The Trustee believes these scenarios provide a range of plausible outcomes that reflect the transition and physical risks facing the Scheme.

2°C Scenario

A low-carbon economy transformation most closely aligned with the successful implementation of the Paris Agreement's ambitions and the greatest chance of lessening physical damages.

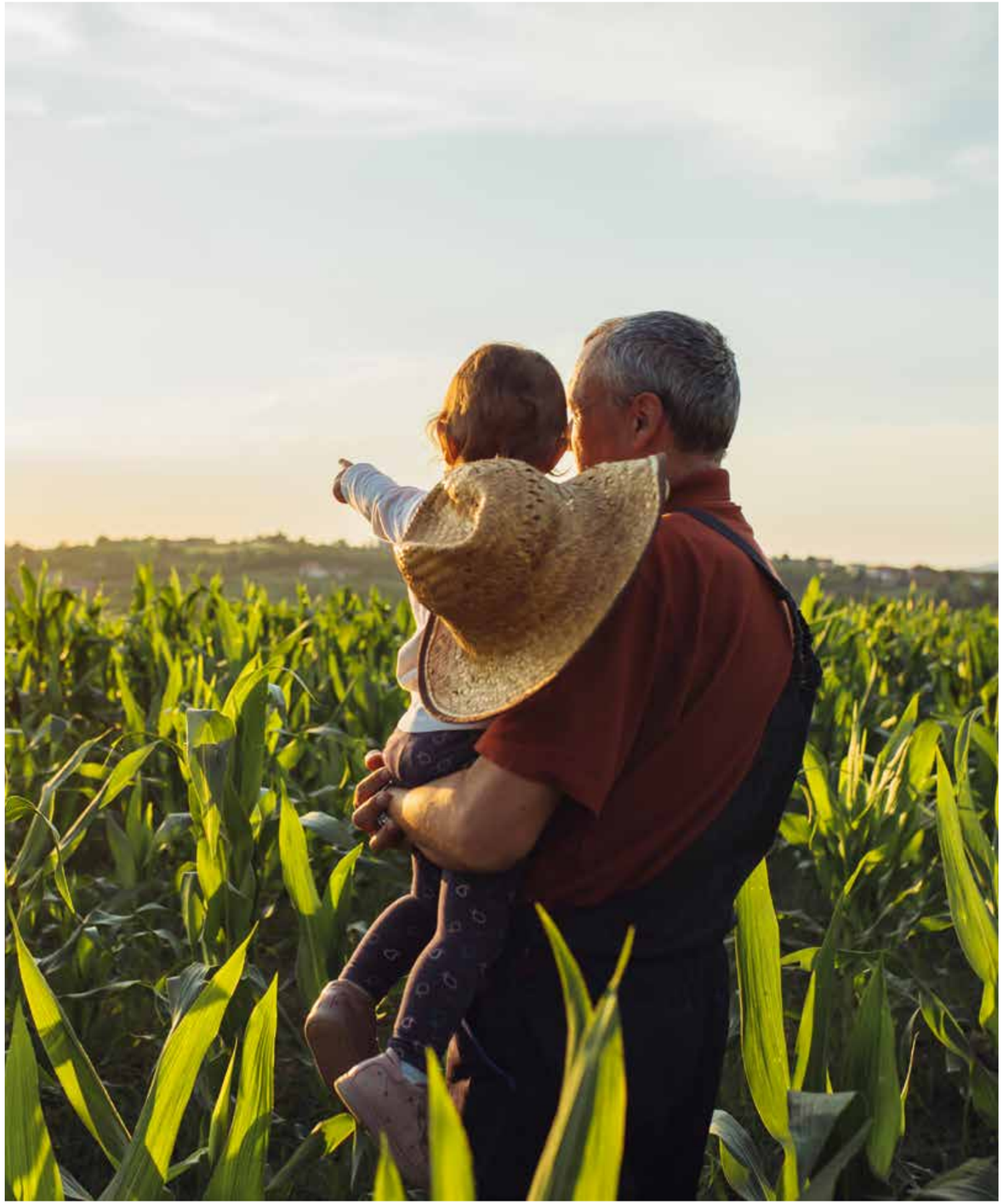
3°C Scenario

Some climate action but a failure to meet the Paris Agreement 2°C objective and meaningfully alleviate anticipated physical damages.

4°C Scenario

Reflecting a fragmented policy pathway where current commitments are not implemented and there is a serious failure to alleviate anticipated physical damages.

The scenario analysis helps the Trustee to understand that asset prices may not fully reflect the financial impact of future physical risks or the transition costs associated with policy action required to limit global warming to 2°C or less, and that asset prices may not fully reflect the technology risk inherent in the transition.



Scenario	2°C	3°C	4°C
Overview	This scenario captures an early transformation to a low-carbon economy, in order to limit global warming to no more than 2°C by the end of the century.	Delayed climate action leads to a failure to meet the Paris Agreement goal of keeping rising global temperatures to well below 2°C by the end of the century.	Fragmented policy pathway where current commitments are not implemented and there is a serious failure to alleviate anticipated physical damages.
Risk factors	Transition risks are high, particularly in the first half of this century. Physical risks are anticipated in the latter half of the century though are less impactful relative to higher warming pathway scenarios.	Transition risks are not experienced until post-2035 but will be more material than under the 2°C scenario. Physical risks are greater in magnitude and will be experienced sooner.	Transition risks are not experienced. Severe physical damages are incurred, which are largely considered irreversible by 2100.
Narrative	Global action starts today, driven by policy and regulation as well as consumer sentiment. Emissions peak in the 2020s and coal is phased out by mid-century. By the middle of the century, the average global sea level is expected to rise, and longer droughts will be experienced in regions across the globe.	Global carbon emissions are flat by 2050, but still high in absolute terms. Coal is still a significant part of the energy mix. Towards the middle of the century, irreversible physical damages will be experienced, including a reduction in available water.	Fossil fuels still represent the vast majority of primary energy sources in 2050. Permanent loss of arctic sea ice. Heatwave and forest fire risk is very high and compromises normal outdoor activities. Risk to marine fisheries and ecosystems and medium-to-high risk of decline in fish stocks, plus negative aggregate impact on agriculture and food production, increases chance of famine and reductions in food supplies and employment.
Market impact	Over the period to 2030, the cost of transition will play through at the sector level with heavy carbon-based industries, such as the energy sector and utilities being most negatively impacted. The renewable energy sector is expected to perform strongly under this scenario, along with raw materials, telecoms and IT.	Out to 2030, low-carbon regulatory and policy changes are less than under a 2°C scenario. While the energy and utility sectors are expected to perform poorly under this scenario, the impact is less relative to the 2°C scenario. Most sectors will experience a marginal drag on performance due to the impact of physical damages and some fragmented policy changes. Beyond 2035, high-carbon sectors will be impacted by strong and swift policy action. Companies in sectors that are reliant on natural resources will be impacted by resource scarcity and will need to adapt or be left behind their competitors.	Over the period to 2030, low-carbon regulatory and policy changes are severely lacking. Real assets, including real estate, infrastructure, agriculture and timberland have the greatest negative sensitivity to the impact of physical damages and resource availability. Companies in sectors that are reliant on natural resources will be impacted by resource scarcity and will need to adapt or be left behind by their competitors. The industrial sector experiences the largest negative impact on performance to 2050.
Asset class impacts	At the asset class level, equities, infrastructure and commodities are most sensitive to climate-related risks. Sustainable allocations to global equity and infrastructure capture the opportunities presented by the transition to a low-carbon economy and avoid exposure to carbon-intensive sectors and/or companies.	At the asset class level, equities, infrastructure and commodities are most sensitive to climate-related risks. The pattern of expected climate impacts to expected return is similar to that under the 2°C scenario except the impacts are much more muted and closer to a 'business as usual' scenario. Under this scenario, increased climate action will take place post-2030.	At the asset class level, equities, infrastructure and commodities are most sensitive to climate-related risks. The 4°C has the worst outcome across all three timeframes evaluated (the periods to 2030, 2050 and 2100). Allocations to sustainability-themed asset classes have no noticeable impact on returns. All sectors, including renewables, have negative return impacts, to 2030 and 2050.

The effects of climate change, and the actions or measures taken by governments, businesses or individuals, will be felt at different times in the future and to different extents. It is important for the Trustee to understand how the Scheme's exposure to climate-related risks 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 DB and DC Sections of the Scheme. The climate-related risks and opportunities that are relevant to the Scheme will be different over these periods.

The Trustee acknowledges that, given the high level of funding for the DB Sections, the time horizon may be shorter in practice than any of the scenarios listed on the previous page (and particularly the medium-term and long-term scenarios). However, it is considered important to understand these impacts, given the possibility that the circumstances of the Scheme may change.

Pace DB

Short Term	**Now to 2030**	Covers the period where the Defined Benefit Sections' Funding Objectives are expected to be met
Medium Term	**2030 to 2050**	Covers the period where the Scheme's decarbonisation and net zero targets are expected to be met
Long Term	**2050 to 2100**	Covers the period where the total benefits from the Scheme would be paid out to members

Pace DC

Short Term	**Now to 2025**	Representative of the risks faced by a member approaching retirement age
Medium Term	**2025 to 2030**	Representative of the risks faced by a member in the mid-career stage
Long Term	**2030 to 2050**	Representative of the risks faced by a member in the 'early-career' stage or yet to join the Scheme

Market impact

Now to 2025	
Transition risks are greater than physical risks.	Perceived or real increase of the pricing of greenhouse gas emissions/carbon by markets may lead to the value of assets in certain sectors being materially impacted as market awareness of the future physical impacts of climate change grows.

2025 to 2030	
Transition risks continue to dominate.	Unexpected or accelerated climate-related policy changes (such as the introduction of a 'carbon price') by governments or industry bodies may surprise markets.

2030 to 2050	
Physical risk increases but **transition risks still dominate.**	The implications of the physical impacts of climate change become clearer to markets and will impact asset valuations. Advancement of the transition is likely to have started to crystallise stranded asset risks (e.g. the risk that fossil fuel companies hold reserves which they cannot now extract and use, impacting the value of these companies) over the medium term.

2050 to 2100	
Physical risks are expected to dominate over the latter half of the century.	There will be more frequent and extreme weather events creating physical damages to property and infrastructure. A changing climate may directly impact the viability of some assets or business models (e.g. flood risk for real estate, or drought/fire risk for timberland assets).

Climate scenarios – summary of results

Pace DB

Both DB Sections demonstrate robustness with respect to the potential impact of climate change across all timeframes and scenarios (both when considering the impact on portfolio returns and on the funding levels). This is not surprising given the de-risked nature of the modelled investment strategies, but is nonetheless reassuring. We note, however, that the modelling may understate the true level of risk and uncertainty is likely to be greater for higher significant warming scenarios.

The impact at the sector level is expected to be more significant, and the Buy & Maintain corporate bond mandates have material allocations to utilities, some of which could be significantly impacted by the implementation of climate-related policies and low-carbon technologies.

Pace DC

The default strategy is well positioned to capture the 'low-carbon transition premium' under a 2°C scenario to 2030 and demonstrates robustness with respect to the potential impact of climate change under the more damaging 3°C and 4°C scenarios.

The decision to allocate to the MSCI ACWI Adaptive Capped ESG Index Fund (an ESG-tilted fund) and the LGIM Future World Multi-Asset Fund is expected to improve outcomes under a 2°C scenario, with no additional material downside under 3°C and 4°C scenarios.

The impact at the sector level is expected to be more significant, and while the current equity portfolio is marginally underweight in energy stocks, it is marginally overweight in utility stocks which, with the exception of renewable utilities, are expected to be negatively impacted under a low-carbon transition.

Covenant scenario analysis (DB Sections)

The sponsors of the Scheme, the Co-operative Group (Co-op Section) and The Co-operative Bank (Bank Section), will be exposed to climate-related risks. At this time, Interpath considers the overall risk exposure to be low, noting that the Co-op and the Bank are proactively engaged in taking steps to manage climate issues and are expected to have a material level of resilience.

Mercer has also considered on a qualitative basis the impact on the covenant, including considering:

- **Transition risks:** Policy and Legal; Market; Technology; and Reputation
- **Physical risks:** Physical Damages; and Resource Scarcity

Sustainability and climate change play a key role in the Co-op's business strategy.

The Co-op has a ten-point climate plan to reduce its climate impact, including aiming for net zero by 2040. This will reduce the impact of any transition risk, as the Co-op aims to be ahead of the curve in tackling climate change.

There will undoubtedly be impacts on the Co-op's everyday businesses as a result of climate change, for example due to impacts on supply chains, and the need to adapt distribution networks and adopt new technologies. However, given the limited reliance on the Co-op given the strong funding position, Mercer believes there are no firm actions the Trustee needs to take at this time in relation to the Co-op Section.

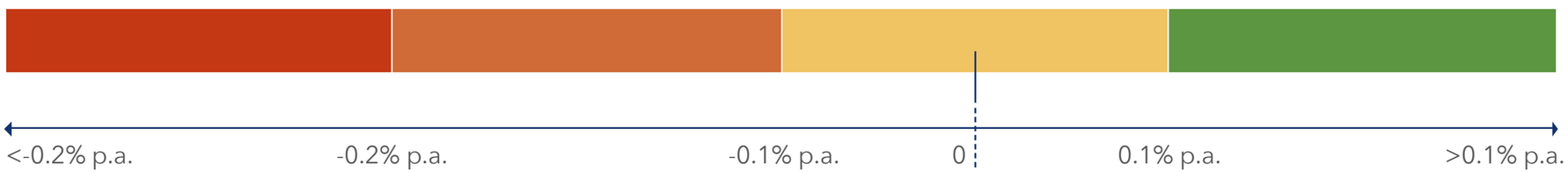
Equally, the Bank has a targeted focus on its environmental impact which includes targeting reductions in carbon emissions and remaining 'beyond carbon neutral'. In 2022, the Bank reviewed its direct and indirect emissions and published a commitment to reaching net zero on its Scope 1 and 2 direct emissions by 2030, and to be net zero on its indirect Scope 3 emissions by 2050.

As the Bank Section is also very well funded and indeed has now implemented an additional buy-in policy covering all remaining uninsured liabilities, the reliance on covenant is reduced and given the anticipated time horizon there should be limited impact on the Scheme should there be a weakening in covenant.

Climate scenario analysis – Pace DB

The table below summarises the results of the climate scenario analysis undertaken on the assets of the DB Sections. The analysis looks at the annualised impact on expected returns over the various time periods under review, using a colour-coding framework set out below the table, where a green rating would represent a more positive impact and a red rating larger negative impacts.

Per annum return impacts out to projection horizon			
Scenario	**Projection horizon**	**Co-op**	**Bank**
2°C	2030		
	2050		
	2100		
3°C	2030		
	2050		
	2100		
4°C	2030		
	2050		
	2100		



Source: Mercer. Modelling based on the strategic asset allocation (excluding the buy-ins). A breakdown is shown in the Technical Section.

Summary

For Pace DB, both Sections are likely to experience a muted return impact under the 2°C, 3°C and 4°C scenarios due to high allocations to investment grade corporate bonds and gilts, which are at the lower end of the risk spectrum from a climate-change perspective. These assets may experience positive performance as yields fall under higher warming scenarios and safe haven assets are sought by investors.

As noted on page 15, the Trustee does recognise that there are limitations to the climate risk modelling process.

Impact on funding strategy (Pace DB)

The 'Network for Greening the Financial System' scenarios have been used to illustrate the potential impact of climate change (physical risk) and climate policy and technology trends (transition risk) on the Sections' funding positions. We have focused on 'Disorderly Transition' and 'Failed Transition' scenarios.

- **Disorderly Transition scenarios** explore higher transition risk due to policies being delayed or divergent across countries and sectors. Carbon prices are typically higher for a given temperature outcome.
- **Failed Transition scenarios**[3] assume that some climate policies are implemented in some jurisdictions, but global efforts are insufficient to halt significant global warming. Critical temperature thresholds are exceeded, leading to severe physical risks and irreversible impacts like sea-level rise.

These scenarios are not designed to be extreme or tail risk events. The Disorderly Transition scenario is consistent with a 2°C or less warming scenario, while a Failed Transition scenario would be consistent with the 3°C scenario.

Analysis on the funding level has been conducted using a maximum of a 10-year scenario (i.e., significantly shorter than the time periods used to assess the impact on the assets of the DB and DC Sections). This is due to the fact that over long time periods, stochastic funding level monitoring becomes less meaningful given the assumptions involved and significant cashflows out of the Scheme.

Under the Failed Transition and Disorderly Transition scenarios, the funding level and therefore funding strategy impact on the Co-op and Bank Sections is expected to be limited. This is consistent with the analysis conducted on the assets of the Sections.

[3] Referred to by the Network for Greening the Financial System as 'Hot house world'

Co-op Section

Funding level projection		
Projection date	**September 2024**	**September 2031**
Base scenario	110.1%	116.4%
Failed Transition	110.1%	115.7%
Disorderly Transition	109.6%	116.1%

*Source: Mercer. Analysis shown as at 30 September 2021. Funding levels are expressed on the Long-Term Ambition (LTA) basis.

- Over three years, transition risks dominate under the Disorderly Transition scenario and this shows a funding deterioration of c.0.5% relative to the base scenario. During this timeframe, physical risk impacts from the Failed Transition are yet to be felt.
- Over 10 years, the Disorderly Transition tends towards the base case, as changes are slowly made to correct initial failures. The Failed Transition scenario worsens over time to a c.0.7% gap. This would suggest limited transition risks, however physical risks begin to be priced into the market.

Bank Section

The below table uses analysis as at 30 September 2021 given the criteria to update the analysis as at 30 September 2022 were not met. However, we note that the Bank Section implemented an additional buy-in policy in December 2022 covering all benefits not already covered by the existing pensioner buy-in implemented in 2020, and therefore climate-related transition and physical risks have become the responsibility of the insurer (other than in relation to cash retained by the Bank Section to meet future running costs).

Funding level projection		
Projection date	**September 2024**	**September 2031**
Base scenario	107.2%	110.1%
Failed Transition	107.2%	109.6%
Disorderly Transition	106.8%	110.0%

*Source: Mercer. Analysis shown as at 30 September 2021. Funding levels are expressed on the Low-Risk Target Basis (LRTB).

- Over three years, transition risks dominate under the Disorderly Transition and the scenario shows a plausible funding deterioration of c.0.4% relative to the base scenario. During this timeframe, physical risk impacts from the Failed Transition are yet to be felt.
- Over 10 years, the Disorderly Transition tends towards the base case, as changes are slowly made to correct initial failures. The Failed Transition scenario worsens over time to a c.0.5% gap. This would suggest limited transition risks as physical risks dominate.

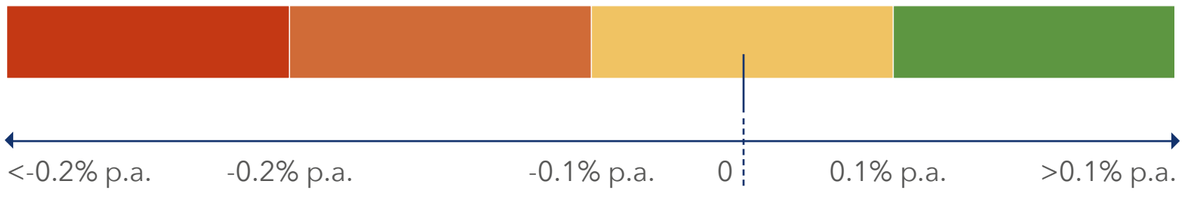
When applying climate change shock scenarios that account for a general decline in markets and a fall in interest rates alongside a rise in inflation (further details of the assumptions are included in the **Technical Section**), the surplus was expected to increase for both the Co-op and Bank Sections at the time the analysis was carried out. This is due to the liability hedging strategy that was in place for both Sections; both the assets and liabilities would increase under this scenario; however, assets were expected to increase to a greater extent than the liabilities given that both Sections are over 100% funded on the Technical Provisions basis and are more than 100% hedged against the liabilities (on the Technical Provisions basis) at the time the analysis was carried out. Therefore, in a scenario of falling interest rates, the hedging assets were expected to increase by more than the liabilities.

As noted above, under both the Failed Transition and Disorderly Transition scenarios, the funding strategy impact on the Co-op and Bank Sections of Pace DB is expected to be limited over the next decade, consistent with the analysis conducted on the two Sections' assets.

Climate scenario analysis – Pace DC

The table below summarises the results of the climate scenario analysis undertaken on the assets within the default investment strategy, which is the DC Section's only 'popular arrangement'[4]. The analysis looks at the annualised impact on expected returns over the various time periods under review, using a colour-coding framework set out below the table, where a green rating would represent a more positive impact and a red rating larger negative impacts.

	Per annum return impacts out to projection horizon	
Scenario	**Projection horizon**	**DC Section**
2°C	2030	
	2050	
	2100	
3°C	2030	
	2050	
	2100	
4°C	2030	
	2050	



Source: Mercer. Modelling based on the strategic asset allocation for the growth phase of the default strategy. A breakdown is shown in the appendix.

[4] A 'popular' arrangement is considered to be one in which £100m or more of the Scheme's assets are invested, or which accounts for 10% or more of the assets used to provide money purchase benefits.

Summary

Under a 2°C scenario to 2030, the current portfolio benefits from the low-carbon transition premium, driven by exposures to ESG-tilted equity. The portfolio suffers the most under the 4°C scenario as listed equity, private equity and infrastructure allocations are sensitive to physical damages. Fixed income allocations offer diversification benefits and are less impacted under higher warming scenarios.

Impact, risks and opportunities

Now to 2030

- Pace DB's greatest climate-related exposure is through the investment grade corporate bond allocations; as noted previously, the impact of climate risk on the funding strategy over this time period is expected to be limited, given the strong funding position, low-risk investment strategy and limited reliance on covenant.
- The Trustee's ability to understand these short-term changes can position the Scheme favourably, for example by avoiding or reducing investment in high-emitting carbon sensitive businesses that do not have a business plan that supports the transition to a low-carbon economy. For the DB Section's segregated investment grade corporate bond mandates, the Trustee has already provided the managers with a list of specific investments to exclude from further purchases, where these investments have been identified as conflicting with the key areas of the Scheme's Responsible Investment Policy.
- Specifically for Pace DB – Co-op section, the climate scenario analysis and climate metrics help the Trustee to understand which sectors within the investment grade corporate bond mandates are most exposed to climate-related risks and which are best positioned for the transition to a low-carbon economy.
- For Pace DC, the greatest climate-related exposure is through the public equity allocation, where maintaining a sizeable equity allocation is typically appropriate given most members' long time horizon up to and through retirement. However the DC Section has allocated to a mix of 'ESG-tilted' equity funds which are expected to outperform conventional equities under various warming scenarios.

2030 to 2050

- For Pace DB – Co-op Section, the very high allocation to defensive fixed income assets means the impact of different climate-change scenarios is relatively muted.
- Further policy, legislation and regulatory action post-2030 is likely to be inflationary, to the extent it results in higher costs for consumers and businesses (e.g. through a carbon tax). The DB Section's liability hedging programme will reduce the impact of rising inflation on the funding level of the Scheme.
- Property and riskier assets such as illiquid credit (held by the Co-op Section only as at the analysis date) are likely to experience negative, albeit muted, return impacts, particularly under higher warming scenarios, as physical risks detract from returns. However, in practice it is not expected these mandates would be retained over the 2030 to 2050 time period, given the well funded position of the Scheme.
- Investment opportunities remain in investments linked with the development of technology and low-carbon solutions, which will be harnessed through the ESG-tilted equity allocation within the DC Section.
- The Trustee seeks to select managers that can identify and benefit from the potential emergence of low-carbon opportunities and avoid the decline of some traditional sectors.

2050 to 2100

- Pace DB's market exposure will likely be low beyond 2050 as the Scheme matures, and as such the expected impact on Pace DB's assets or broader funding strategy is very limited.
- The public equity allocation within Pace DC will need to be positioned towards companies that are less exposed to changes in resources and other supply chain restrictions.
- Within Pace DC's multi-asset fund, opportunities can be captured by increased exposure to infrastructure projects that display a high level of climate resilience. This would need to be driven by the investment manager, given the DC Section's assets are invested in pooled funds.

Metrics and Targets

Assessing climate change-related risks and opportunities

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

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

The chosen metrics in this report are set out in the table. There is now a requirement to report an alignment metric, and as such implied temperature rise (ITR) and percentage of portfolio with science-based targets (SBT) have been reclassified as alignment metrics. Both of these metrics were reported on previously and categorised as additional climate metrics.

Metric	Type of metric	Description	Reported for DB/DC?
Total carbon emissions	Absolute emissions	Absolute greenhouse gas emissions associated with a portfolio (tCO_2e)	DB and DC
Weighted average carbon intensity (WACI)	Emissions intensity	Exposure to carbon-intensive companies (tCO_2e / $m revenue)	DB and DC
Carbon footprint	Emissions intensity	Total greenhouse gas emissions, standardised per $m invested ($tCO_2e$ / $m invested)	DB and DC
Implied temperature rise	Alignment metric	An indication of how the portfolio aligns to a global temperature warming level (°C)	DB and DC
Percentage of portfolio with science-based targets (SBT)	Alignment metric	% of companies in a portfolio that have submitted climate transition plans that have been approved by the Science-Based Targets initiative	DB only
Data quality	Non-emissions metric	Represents the proportions of the portfolio for which the Trustee has high-quality data	DB and DC

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

The metrics have been calculated and reported for all mandates for both Sections of Pace DB, with the exception of the illiquid credit portfolios as the availability of accurate data for this asset class is currently limited. Similarly, for the Pace DC assets managed by LGIM, all metrics have been calculated and reported based on holdings in listed equities, corporate bonds and sovereigns only. LGIM provided data for each fund in which Pace DC invests, however they were unable at the current time to report on the Pace Growth (Shariah) Fund (a self-select fund which represents a small proportion of Pace DC's assets).

The Trustee sought to source climate metrics data from each of the underlying investment mandates. The data was requested from each of the Scheme's investment managers, however some were unable to provide accurate data. Some managers provided some data, but the Trustee decided not to include it. The tables summarise the outcomes calculated by Mercer for each manager that the Scheme had assets invested in over the reporting period.

Pace DB

Manager	Mandate	Data obtained	Scope 1 & 2	Scope 3	Comments where data unavailable or partial data provided
Insight	Buy & Maintain Credit	✓	✓	✓	
RLAM	Buy & Maintain Credit	✓	✓	✓	
LGIM	Buy & Maintain Credit	✓	✓	✓	
ICG	Illiquid Credit	✗	✗	✗	This asset class does not have an agreed methodology for measuring emissions. It is likely that reporting for this asset class will be dependent on data availability and methodology being developed/agreed by the market. The managers (and the Trustee) will continue to monitor progress in this regard.
Insight	Illiquid Credit	✗	✗	✗	
M&G	Illiquid Credit	✗	✗	✗	
24AM	Asset-Backed Securities	✗	✗	✗	Disinvested in early October 2022; as a result, data was not obtained for this reporting period.
PGIM	Alternative Inflation-Linked Property	✗	✗	✗	Ongoing emissions are related to the energy use of the tenants occupying the properties. PGIM does not currently collect data on tenants' emissions data but are working towards a data collection strategy and will update the Trustee with a timeline on this.
BlackRock	LDI	✓	✓	✓	Data reported includes government bonds as well as a small allocation to index-linked corporate bonds in the portfolio.

Insurance provider	Mandate	Data obtained	Scope 1 & 2	Scope 3	Comments where data unavailable or partial data provided
Pension Insurance Corporation (PIC)	Buy-in	✓	✓	✓	Private debt holdings are not covered at this point and PIC is working to develop a methodology to report on this section.
Aviva	Buy-in	✗	✗	✗	Aviva is not able to produce scheme-specific data to support TCFD reporting at this point. They are targeting later in 2023 to be able to report this data for pension schemes.

Pace DC

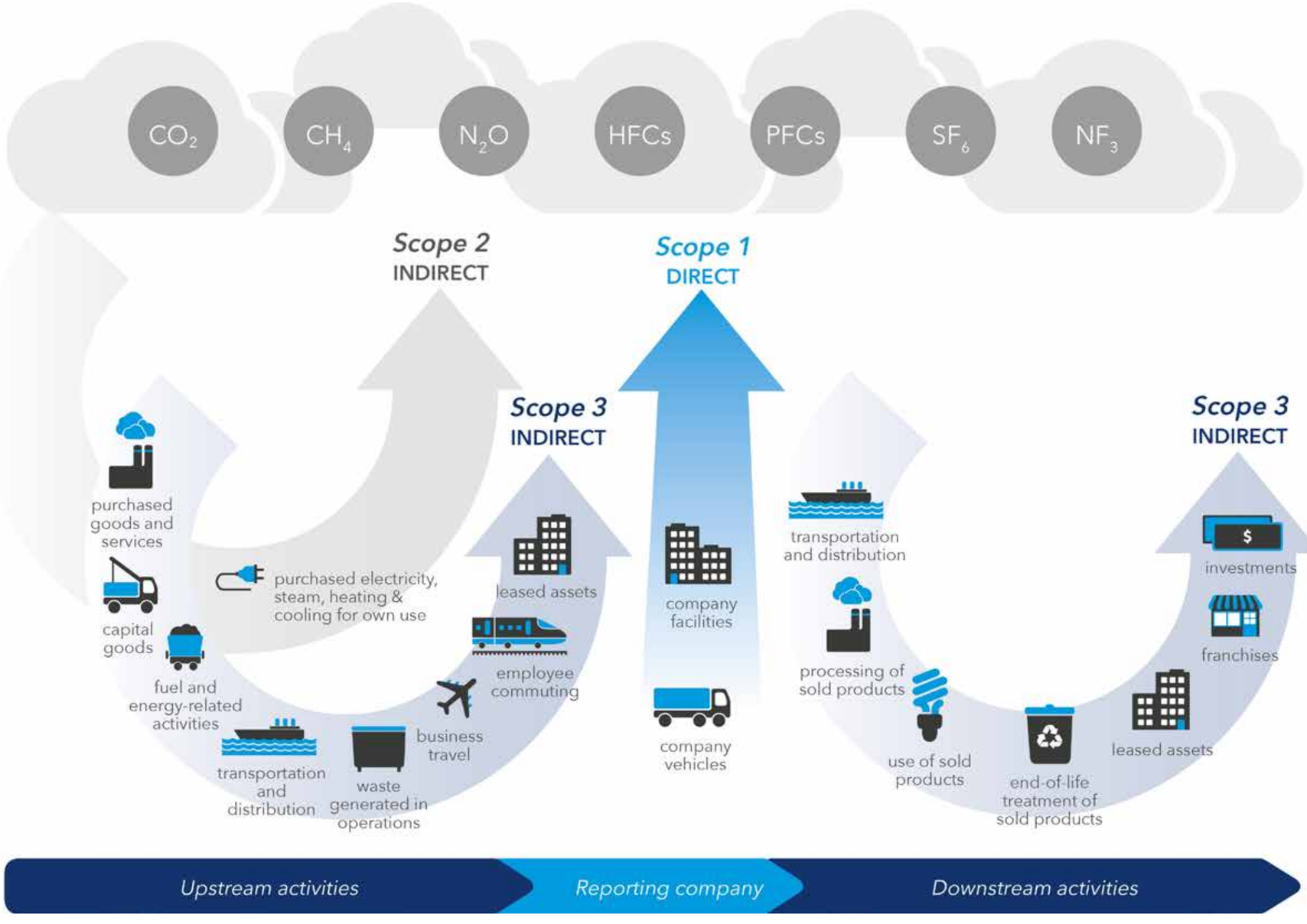
Manager	Mandate	Data obtained	Scope 1 & 2	Scope 3	Comments where data unavailable or partial data provided
LGIM	Pace Growth (shares) 2021 Fund	✓	✓	✓	
LGIM	Pace Growth (Mixed) Fund	✓	✓	✓	
LGIM	Pace Growth (Ethical Shares) Fund	✓	✓	✓	
LGIM	Pace Growth (Shares) Fund	✓	✓	✓	
LGIM	Pace Pre-Retirement Inflation-Linked	✓	✓	✓	
LGIM	Pace Pre-Retirement Fund	✓	✓	✓	
LGIM	Pace Cash Fund	✓	✓	✓	LGIM is currently unable to provide temperature alignment or data quality metrics for this fund.
HSBC	Pace Growth (Shariah) Fund	✗	✗	✗	Not provided

Absolute emissions-based metric

Total carbon emissions

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

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



Source: GHG Protocol

There are seven recognised greenhouse gases, as defined by the GHG Protocol. In order to simplify reporting, each greenhouse gas is calibrated relative to carbon dioxide and is reported as 'carbon dioxide equivalent' emissions (CO_2e).

Scope 1, 2 and 3 emissions have been reported in this year's TCFD report, as required by regulation; in the Trustee's first TCFD report only Scope 1 and 2 emissions were reported.

- **Scope 1 'direct' emissions**: those from sources owned or controlled by the company (e.g. direct combustion of fuel from vehicles);
- **Scope 2 'indirect' emissions**: those caused by the generation of energy (e.g. electricity) purchased by the company; and
- **Scope 3 'indirect' emissions**: emissions associated, not with the company itself, but what the organisation is indirectly responsible for, up and down its value chain.

Scope 3 emissions are included within the metrics analysis of this report. However, given the disclosure of Scope 3 emissions remains in its infancy, Scope 3 metrics have not to date been used by the Trustee for setting any baseline target metrics or for monitoring progress against existing targets. In the view of the Trustee, the availability of Scope 3 disclosure remains insufficient to use reliably in carbon foot-printing analysis, and the inclusion of Scope 3 emissions can lead to 'double counting' at the portfolio level.

The Trustee will continue to work with Mercer, LCP and the investment managers to improve Scope 3 data in future reports.

Intensity-based metrics

1. Weighted-Average Carbon Intensity (WACI)

This metric scales the total carbon emissions of each underlying investee company by the amount of revenues generated by that company. At a total asset class portfolio level, this metric gives an indication of carbon efficiency – for each tonne of greenhouse gas emitted by each company/issuer, how much revenue has been generated (stated in $m). A lower WACI score shows better efficiency.

2. Carbon footprint

This metric reflects total carbon emissions for a portfolio, weighted to take account of the size of the investment (tCO_2e /$m invested).

Portfolio alignment metrics

1. Implied temperature rise (ITR)

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

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

2. Science-based targets (SBT) (DB Sections only)

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

Non-emissions-based metric

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.

Co-op Section (DB) – as at 31 October 2022

Scope 1 and 2

Mandate	Manager	Sub-asset class	Allocation (%)	% of portfolio with science-based targets	Implied temperature rise (°C)	Absolute emissions (tCO_2e based on value of investment)		Carbon footprint (tCO_2e/$million investment)		WACI[5] (tCO_2e/$million sales)	
						Coverage (%)	Scope 1 + 2	Coverage (%)	Scope 1 + 2	Coverage (%)	Scope 1 + 2
LDI	BlackRock	Credit	2.4	7%	1.3*	7%*	6,824*	7%*	38.0*	60%	314.7
		UK Gilts	29.9	-	-	100%	452,182	-	-	100%	136.1
Total LDI			**32.3**	**-**	**-**	**93%**	**459,006**	**-**	**-**	**-**	**-**
Buy & Maintain Credit	Insight	Buy & Maintain	8.2	25%	1.9	60%	22,293	58%	33.9	89%	96.8
	RLAM	Buy & Maintain	7.2	12%	2.0	31%	20,208	30%	36.0	64%	101.2
	LGIM	Buy & Maintain	7.0	33%	2.0	54%	16,164	54%	28.6	83%	222.6
Total Buy & Maintain Credit			**22.5**	**24%**	**2.0**	**48%**	**58,666**	**48%**	**32.8**	**79%**	**140.0**
Credit comparator index***			n/a	25%	2.0	-	-	-	57.5	-	118.3
Buy & Maintain Credit	RLAM	UK Gilts	0.9	-	-	100%	9,326	-	-	100%	136.1
Total Section (excl buy-in)			**55.8**	**-**	**-**	**-**	**526,998**	**-**	**-**	**-**	**-**
Buy-in Policy	PIC**	Buy-in	10.8	5%	2.1	63%	39,925	63%	83	83%	182
Total Section (incl buy-in)			**66.6**	**-**	**-**	**-**	**566,923**	**-**	**-**	**-**	**-**

Source: Investment managers, MSCI, Mercer calculations. Excludes legacy equity holdings (0.0% allocation), Insight, ICG and M&G illiquid credit portfolios (12.1%), 24AM ABS (1.0%), PGIM alternative inflation-linked portfolio (5.1%), the Mercer alternatives portfolio (0.6%) and the Aviva buy-in (14.6%). Numbers may not sum due to rounding. Data is as at 31 October 2022, excluding buy-in allocations which are as at 30 September 2022 and PIC data which is as at 31 December 2022.
Notes: Scope 1+2 only. % of fund directly analysed reflects coverage under the MSCI tool used in this analysis. Sovereign analysis has been conducted in line with the recommended methodology set out in the ongoing PCAF consultation. Intensity formula: Production Emissions /PPP Adjusted GDP ($M). Data for Production Emissions (GHG) for 2021 sourced from EDGARv7.0 website, Crippa et al. (2021, 2022). Data for PPP Adjusted GDP for the latest available data (2020-2021) sourced from The World Bank.

*Caution should be exercised as the coverage for this metric is extremely poor.
** All PIC metrics were provided by the manager.
*** Markit iBoxx Sterling over 5 year non-gilts

[5]The WACI for corporates is calculated as the ratio between carbon emissions (expressed in tCO_2e) and revenue (expressed in $ millions). In turn, following the PCAF methodology, the sovereign intensity metric is calculated as the ratio between country production emissions (expressed in tCO_2e) and PPP-adjusted GDP (expressed in $ millions).

Scope 3

Asset class	Manager/ mandate	Absolute emissions coverage (%)	Absolute emissions (tCO_2e based on value of investment)	Absolute emissions (tCO_2e based on value of investment)	Carbon footprint coverage (%)	Carbon footprint (tCO_2e/ $million investment)	Carbon footprint (tCO_2e/ $million investment)	WACI coverage (%)	WACI (tCO_2e/ $million sales)	WACI (tCO_2e/ $million sales)	Percentage of portfolio allocation for asset class
		Scope 3	Scope 3 Upstream	Scope 3 Downstream	Scope 3	Scope 3 Upstream	Scope 3 Downstream	Scope 3	Scope 3 Upstream	Scope 3 Downstream	(%)
Corporate Bonds	Insight B&M	59.7%	**48,664**	**89,005**	57.8%	**90.4**	**164.0**	85.9%	**190.2**	**302.6**	10.6%
	RLAM B&M	31.2%	**55,642**	**50,645**	29.8%	**103.7**	**97.8**	61.2%	**212.2**	**142.5**	10.2%
	LGIM B&M	53.9%	**33,625**	**38,497**	53.9%	**60.8**	**71.7**	78.1%	**232.8**	**266.9**	10.4%
	Total Buy & Maintain Credit	**48.4%**	**137,931**	**178,147**	**47.3%**	**84.9**	**111.6**	**75.2%**	**211.6**	**238.2**	**31.2%**
	BlackRock LDI Credit	6.6%*	**54,770***	**2,521***	6.6%*	**304.6***	**14.0***	41.5%	**199.6**	**2.4**	3.3%

Asset class	Manager/ mandate	Absolute emissions coverage %	Absolute emissions (tCO_2e based on value of investment)	Carbon footprint coverage %	Carbon footprint (tCO_2e/ $million investment)	WACI coverage %	WACI (tCO_2e/ $million sales)	Percentage of portfolio allocation for asset class
		Scope 3		Scope 3		Scope 3		(%)
Buy In Policy	PIC**	32%	**86,658**	32%	**353**	40%	**886**	-

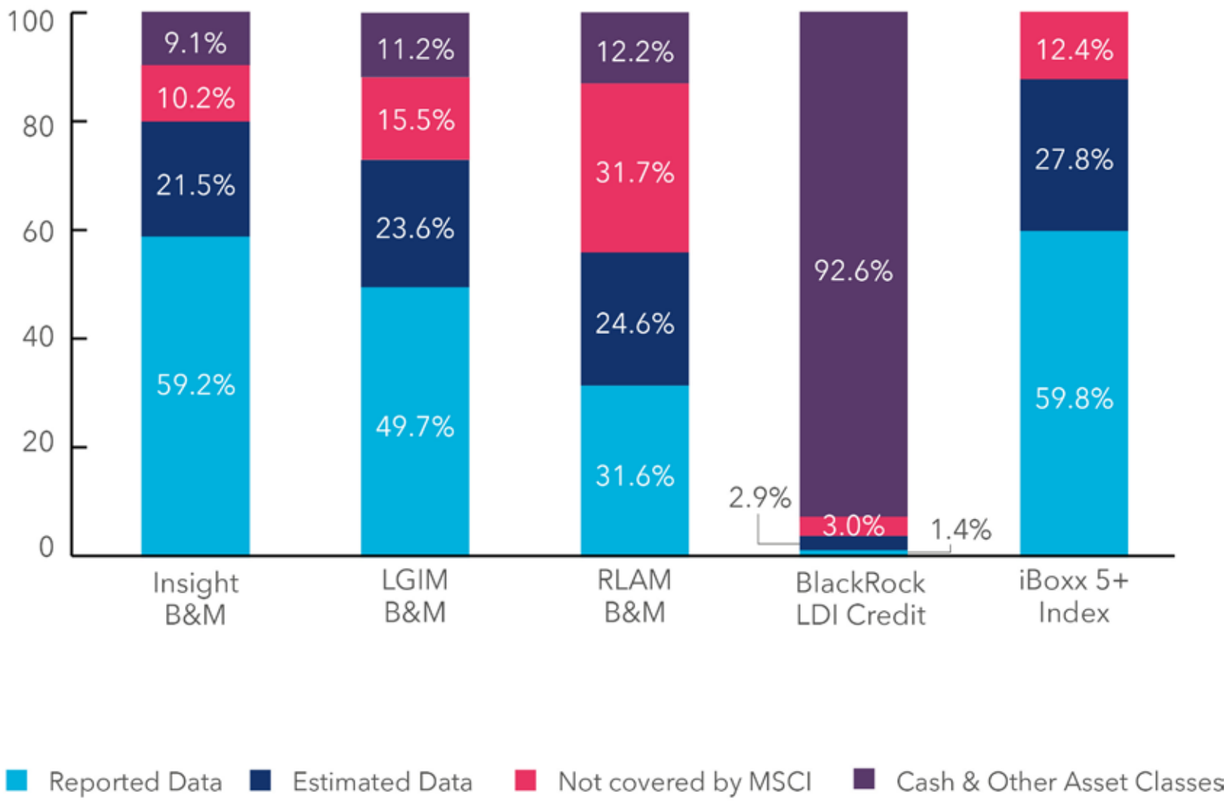
Source: Investment managers, MSCI, Mercer calculations. Data as at 31 October 2022 excluding PIC data which is as at 31 December 2022.
Notes: Only one coverage column for each Upstream and Downstream metric is being displayed as the values in this analysis happen to be the same for both.
*Caution should be exercised as the coverage for this metric is extremely poor.
**All PIC metrics were provided by the manager, with no distinction between Scope 3 Upstream and Downstream.

Scope 3 emissions are shown here separately from other metrics tables as, given that the disclosure of Scope 3 emissions remains in its infancy, Scope 3 metrics are not used by the Trustee for setting any baseline target metrics or for monitoring progress against existing targets.

Upstream emissions come from the production of a business's products or services, while downstream emissions come from their use and disposal.

At the time of writing, data sources are not sufficiently robust in order to provide Scope 3 data for sovereigns. Mercer is working on their methodology in order to calculate this and will provide this when it is sufficient in future reports.

Data Quality

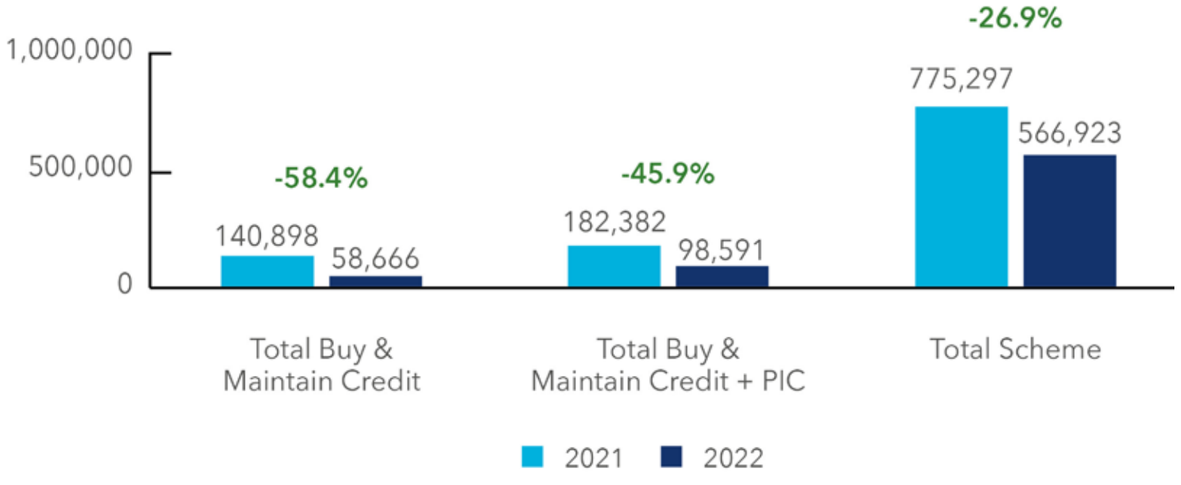


Note: totals may not sum to 100%

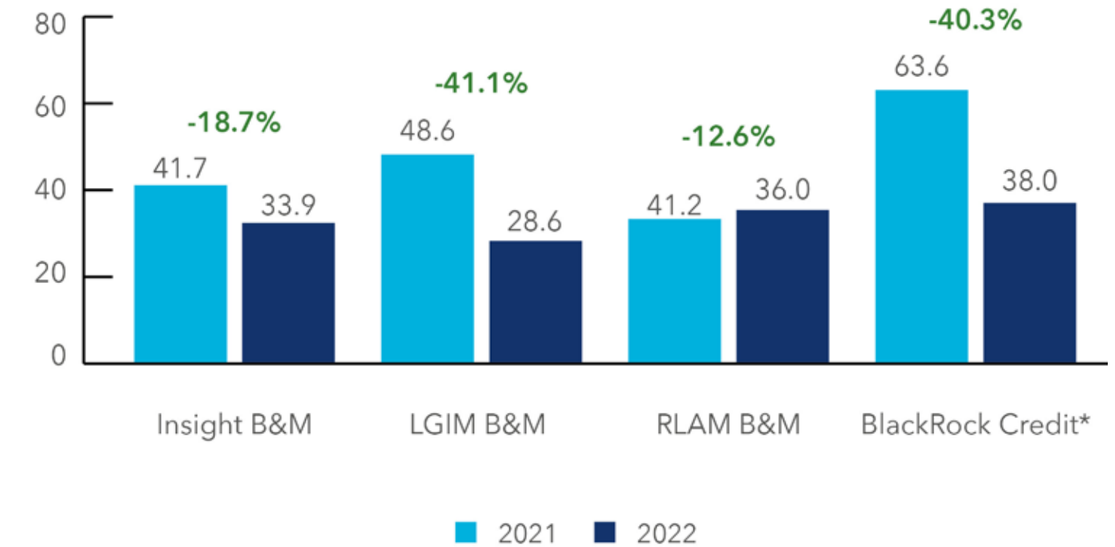
Source: Investment managers MSCI, Mercer calculations. Data as at 31 October 2022.
Note: Only including the corporate bond portion of each mandate. The remainder asset classes are included in 'Cash & Other Asset Classes'. This explains why the majority of the BlackRock LDI mandate is not covered.

Metrics Evolution

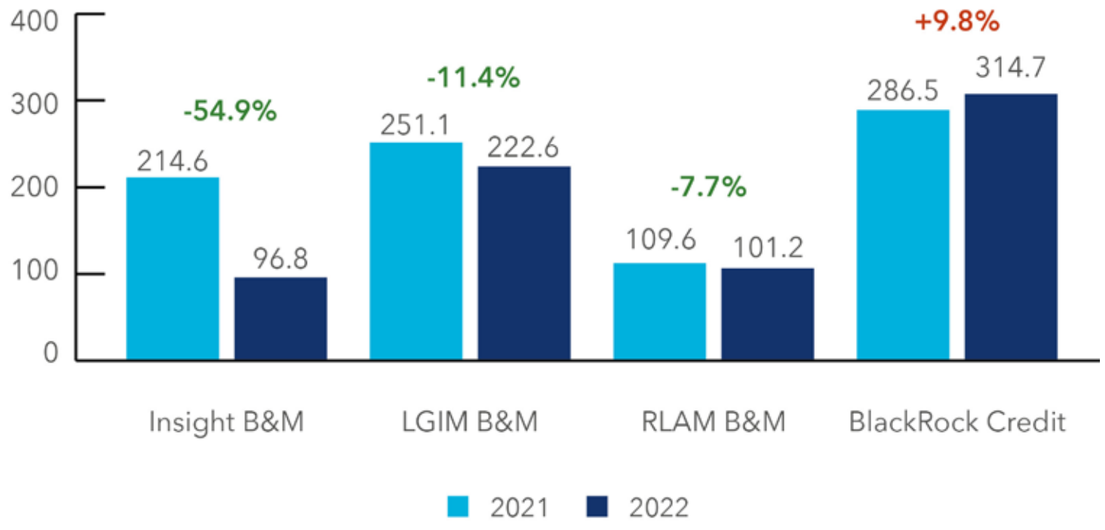
Absolute Emissions:



Carbon Footprint:



WACI:



*Caution should be exercised as the 2022 Carbon Footprint coverage for this metric is extremely poor.

Conclusions

- The Buy & Maintain portfolios display a range of carbon intensities, with RLAM and Insight showing significantly lower weighted average carbon intensity (WACI) than LGIM. The portfolios have an ITR of 1.9-2.0°C, which is encouraging. However, less than 35% of underlying companies have set decarbonisation targets verified by the SBTi.
- Absolute emissions across all mandates have declined since last year. Absolute emissions are based on the value of the investment and therefore will decline as the asset values decrease, all else being equal. Given the significant market volatility over the course of 2022 (and in particular the rise in bond yields), the Scheme has seen a decline in asset values that has contributed to the significant reduction in absolute emissions.
- There has been a significant reduction in WACI within all of the Section's Buy & Maintain mandates. During September and October 2022, as a result of unprecedented gilt yield rises during the 'gilt crisis', the Co-op Section needed to raise cash to help support the collateral headroom positions within its LDI portfolio. This resulted in a number of sales occurring from the Buy & Maintain mandates and in turn a number of carbon-intensive holdings that contributed to the overall WACI were sold. As a result, a lower WACI figure has been reported this year.
- All of the Co-op Section's managers or insurers who invest in credit have a lower carbon footprint than the iBoxx broad market comparator, with the exception of PIC.
- Insight and RLAM exhibit a lower WACI than the comparator. LGIM's comparatively higher WACI is driven by their underlying stock selection, specifically their utilities holdings.
- High exposure to the utilities sector has been shown previously to explain the WACI of managers being higher than the comparator, while their carbon footprint is lower. Carbon footprint metrics have much lower coverage compared to WACI metrics, making comparisons difficult. However, this finding is likely due to utility companies typically having a large capital base (EVIC), and therefore having a large denominator on a carbon footprint basis. Despite their size, owing to the regulated nature of the utilities industry, revenues are typically lower, leading to higher emissions intensity metrics on a WACI basis.

Bank Section (DB) – as at 31 October 2022

Scope 1 and 2

Mandate	Manager	Sub-asset class	Allocation (%)	% of portfolio with science-based targets	Implied temperature rise (°C)	Absolute emissions (tCO_2e based on value of investment)		Carbon footprint (tCO_2e/$million investment)		WACI (tCO_2e/$million sales)	
						Coverage	Scope 1 + 2	Coverage	Scope 1 + 2	Coverage	Scope 1 + 2
LDI	BlackRock	Credit	2.7	7%	1.3	7%*	1,646*	7%*	38.0*	60%	314.7
		UK Gilts *	37.4	-	-	100%	80,947	-	-	100%	136.1
Total LDI			**40.1**	**-**	**-**	**94%**	**82,593**	**-**	**-**	**-**	**-**
Buy & Maintain Credit	Insight	Buy & Maintain	13.1	29%	1.9	66%	5,908	65%	30.8	92%	220.2
	RLAM	Buy & Maintain	11.9	13%	2.1	35%	6,830	34%	35.5	67%	118.9
	LGIM	Buy & Maintain	13.8	32%	2.1	55%	9,485	55%	55.6	84%	341.3
Total Buy & Maintain Credit			**38.8**	**24%**	**2.1**	**52%**	**22,224**	**51%**	**40.3**	**81%**	**222.8**
Credit comparator index***			-	30%	2.0	-	-	-	57.5	-	118.3
Total Section (excl buy-in)			**78.9**	**-**	**-**	**-**	**104,817**	**-**	**-**	**-**	**-**
Buy-in Policy	PIC**	Buy-in	19.4	5%	2.1	63%	15,043	63%	83	83%	182
Total Section (incl buy-in)			**98.3**	**-**	**-**	**-**	**119,860**	**-**	**-**	**-**	**-**

Source: Investment managers, MSCI, Mercer calculations. Excludes Mercer Alternatives portfolio (0.6%) and 24AM ABS (1.1%). Numbers may not sum due to rounding. Data is as at 31 October 2022, excluding buy-in allocations which are as at 30 September 2022 and PIC data which is as at 31 December 2022.
Notes: Scope 1+2 only. % of fund directly analysed reflects coverage under the MSCI tool used in this analysis.
Sovereign analysis has been conducted in line with the recommended methodology set out in the ongoing PCAF consultation. Intensity formula: Production Emissions /PPP Adjusted GDP ($m). Data for Production Emissions (GHG) for 2021 sourced from EDGARv7.0 website, Crippa et al. (2021, 2022). Data for PPP Adjusted GDP for the latest available data (2020-2021) sourced from The World Bank.

*Caution should be exercised as the coverage for this metric is extremely poor.
**All PIC metrics were provided by the manager that they are comfortable with for this asset class.
*** Markit iBoxx Sterling over 5 year non-gilts

Scope 3

Asset class	Manager/ mandate	Absolute emissions coverage (%)	Absolute emissions (tCO_2e based on value of investment)	Absolute emissions (tCO_2e based on value of investment)	Carbon footprint coverage (%)	Carbon footprint (tCO_2e/ $million investment)	Carbon footprint (tCO_2e/ $million investment)	WACI coverage (%)	WACI (tCO_2e/ $million sales)	WACI (tCO_2e/ $million sales)	Percentage of portfolio allocation for asset class
		Scope 3	Scope 3 Upstream	Scope 3 Downstream	Scope 3	Scope 3 Upstream	Scope 3 Downstream	Scope 3	Scope 3 Upstream	Scope 3 Downstream	(%)
Corporate Bonds	Insight B&M	65.0%	**13,893**	**20,189**	63.6%	**81.7**	**121.0**	89.0%	**217.7**	**298.5**	13.8%
	RLAM B&M	35.0%	**17,601**	**26,843**	33.8%	**97.2**	**149.6**	64.5%	**206.9**	**216.4**	14.7%
	LGIM B&M	55.2%	**11,118**	**23,236**	55.2%	**66.4**	**140.1**	79.5%	**239.3**	**346.8**	13.2%
	Total Buy & Maintain Credit	**51.3%**	**42,612**	**70,268**	**50.4%**	**82.3**	**137.2**	**77.4%**	**220.7**	**284.9**	**41.8%**
	BlackRock LDI Credit	6.6%*	**13,214***	**608***	6.6%*	**304.6***	**14.0***	41.5%	**199.6**	**2.4**	3.4%

Asset class	Manager/ mandate	Absolute emissions coverage (%)	Absolute emissions (tCO_2e based on value of investment)	Carbon footprint coverage (%)	Carbon footprint (tCO_2e/ $million investment)	WACI coverage (%)	WACI (tCO_2e/ $million sales)	Percentage of portfolio allocation for asset class
		Scope 3		Scope 3		Scope 3		(%)
Buy-in Policy	PIC**	32%	**32,651**	32%	**353**	40%	**886**	-

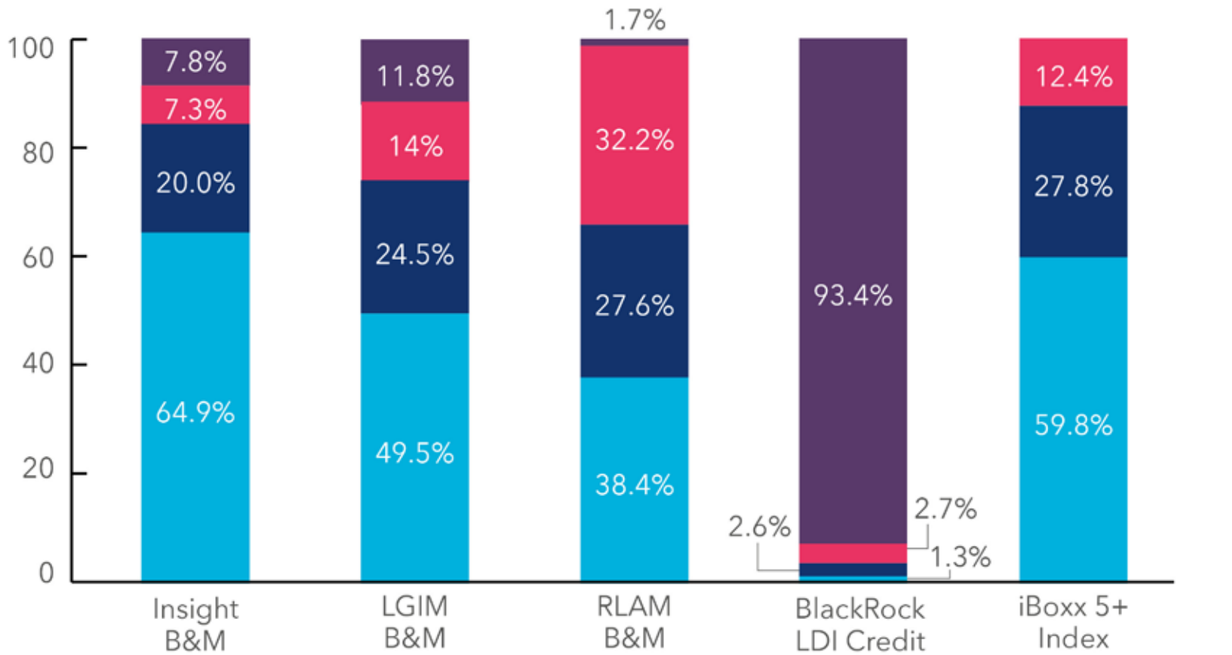
Source: Investment managers, MSCI, Mercer calculations. Data as at 31 October 2022, excluding PIC data which is as at 31 December 2022.
Notes: Only one coverage column for each Upstream and Downstream metric is being displayed as the values in this analysis happen to be the same for both.
*Caution should be exercised as the coverage for this metric is extremely poor.
**All PIC metrics were provided by the manager, with no distinction between Scope 3 Upstream and Downstream

Scope 3 emissions are shown here separately from other metrics tables as, given that the disclosure of Scope 3 emissions remains in its infancy, Scope 3 metrics are not used by the Trustee for setting any baseline target metrics or for monitoring progress against existing targets.

Upstream emissions come from the production of a business's products or services, while downstream emissions come from their use and disposal.

At the time of writing, data sources are not sufficiently robust in order to provide Scope 3 data for sovereigns. Mercer is working on their methodology in order to calculate this and will provide this when it is sufficient in future reports

Data Quality

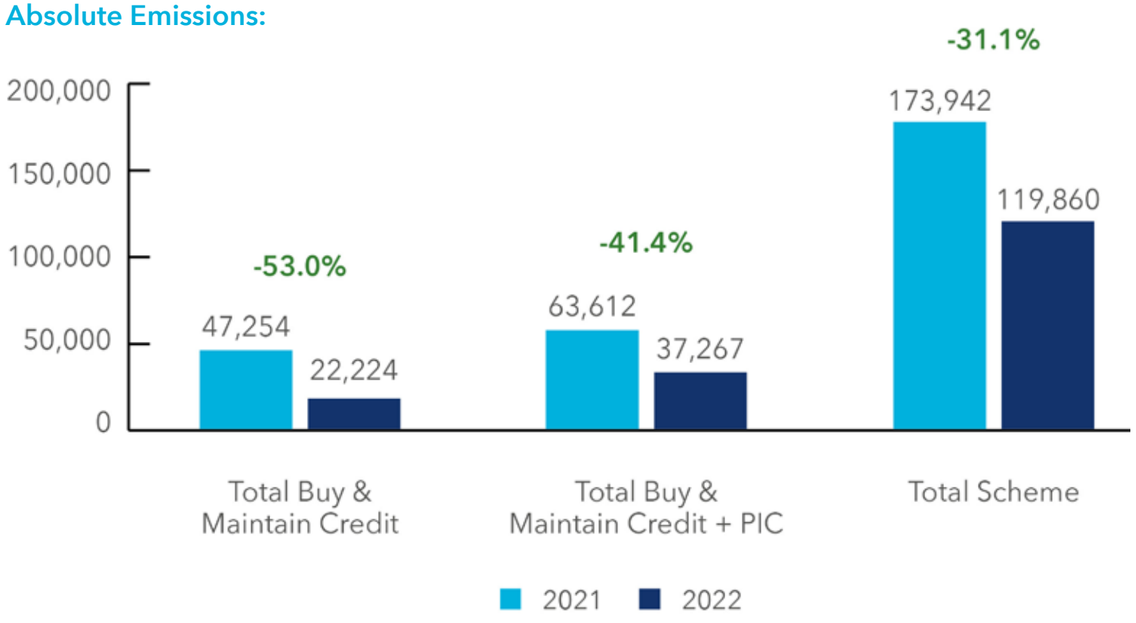


Note: totals may not sum to 100% due to rounding.

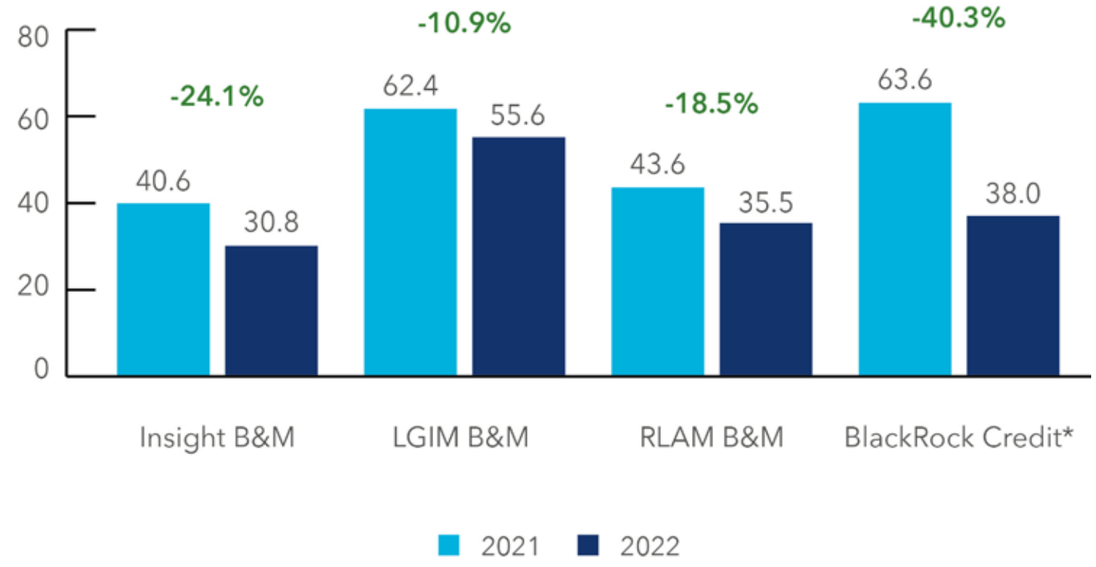
Source: Investment managers MSCI, Mercer calculations. Data as at 31 October 2022.
Note: Only including the corporate bond portion of each mandate. The remainder asset classes are included in 'Cash & Other Asset Classes'. This explains why the majority of the BlackRock LDI mandate is not covered.

Metrics Evolution

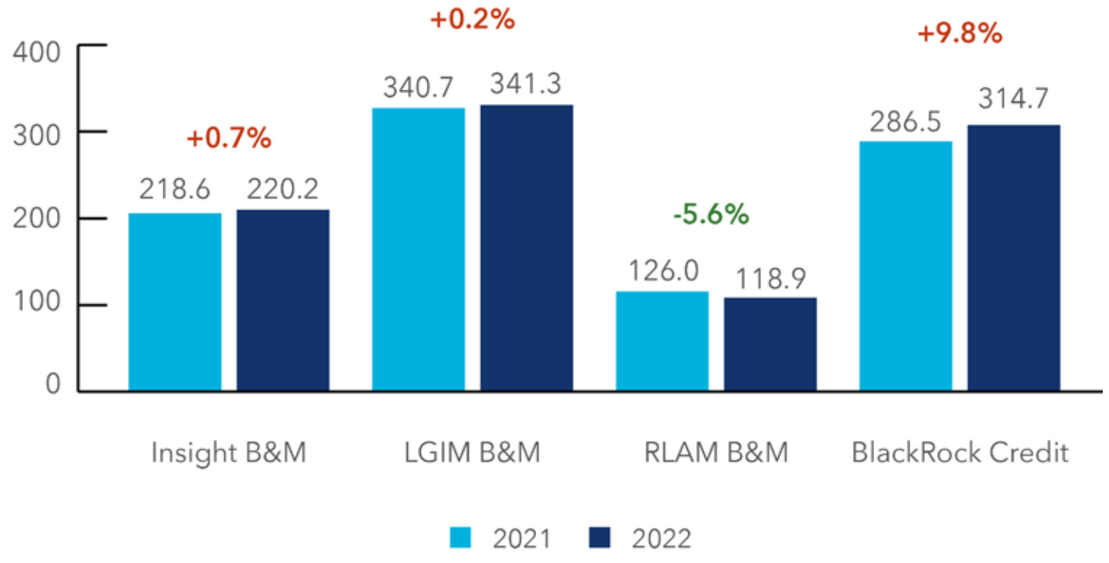
Absolute Emissions:



Carbon Footprint:



WACI:



*Caution should be exercised as the 2022 Carbon Footprint coverage for this metric is extremely poor.

Conclusions

- This data and commentary reflects the allocation as at 31 October 2022; after this date the majority of the Bank Section's assets were transferred to Rothesay Life as part of a buy-in transaction.
- The Buy & Maintain portfolios display a range of carbon intensities, with RLAM showing significantly lower weighted average carbon intensity than Insight and LGIM. The portfolios have an ITR of 1.9-2.1°C, which is encouraging. However, less than 35% of underlying companies have set decarbonisation targets verified by the SBTi.
- Absolute emissions across all mandates have declined since last year. Absolute emissions are based on the value of the investment and therefore will decline as the asset values decrease. Given the significant market volatility over the course of 2022, the Scheme has seen a decline in assets which has contributed to the significant reduction in absolute emissions.
- All of the Bank Section's managers have a carbon footprint that is broadly in line with or lower than the iBoxx broad market comparator, with the exception of PIC.
- Insight's Buy & Maintain WACI is driven by four carbon-intensive utilities companies that contribute to c.62% of the Bank Section's WACI. These specific four utility companies are not included within the Co-op Section stocklist, hence the Co-op Section's WACI has declined more than the Bank Section.
- All of the credit managers exhibit a WACI that is higher than the comparator. The aggregated WACI figure for the Buy & Maintain mandates is then overly influenced by both Insight and LGIM mandates, whose values are significantly higher in the case of the Bank Section (primarily driven by differing underlying stocklist lists which hold different utilities companies when compared to the Co-op Section).

Pace DC

Analysis has been performed as at 31 December 2022. This analysis has been completed by LCP using the underlying holdings data provided by LGIM.

Scope 1 and 2 (including data quality)

Mandate	Corporate/ sovereign	Manager	Allocation (%)	Absolute emissions (tCO_2e based on value of investment) [1]		Carbon footprint (tCO_2e per $1 million EVIC)[1]		WACI [1] [2] (tCO_2e/$million sales)		Implied temperature rise (°C)	
				Coverage	Scope 1 + 2	Coverage	Scope 1 + 2	Coverage	Scope 1 + 2	Coverage	ITR
Pace Pre-Retirement Fund	Corporate	LGIM	0.1%	63	15	63	40.5	65	82.0	N/A	2.3
	Sovereign			100	13	100	73.3	100	142.8	N/A	2.1[3]
Pace Growth (Ethical Shares) Fund	N/A	LGIM	0.8%	98	405	98	54.0	100	123.0	N/A	2.9
Pace Growth (Mixed) Fund	Corporate	LGIM	67.4%	87	27,301	87	55.6	90	155.8	N/A	2.7
	Sovereign			99	14,449	99	126.7	100	262.0	N/A	2.7[3]
Pace Growth (Shares) Fund	N/A	LGIM	0.1%	95	86	95	85.3	98	180.5	N/A	2.9
Pace Pre-Retirement Inflation-Linked Fund	Corporate	LGIM	0.1%	63	10	63	43.8	65	86.8	N/A	2.2
	Sovereign			100	18	100	72.6	100	140.8	N/A	2.0[3]
Pace Growth (Shares) 2021 Fund	N/A	LGIM	22.2%	97	15,990	97	78.8	100	164.3	N/A	3.0
Pace Cash Fund	N/A	LGIM	9.4%	N/A	262	N/A	3.1	N/A	7.4	N/A	2.0

Source: LGIM, LCP. Data as at 31 December 2022; totals may not sum to 100%.

[1]Coverage for Scope 1 and 2 emissions only. [2]WACI stands for Weighted Average Carbon Intensity. [3]L&G has not provided temperature alignment separately for sovereign assets therefore the figure shown in the sovereign row includes all Fund assets.

Aggregated metrics for the popular arrangement is not shown since metrics for the underlying funds used in the popular arrangement are provided (Pace Growth (Shares) 2021 Fund, Pace Growth (Mixed) Fund and Pace Cash Fund).

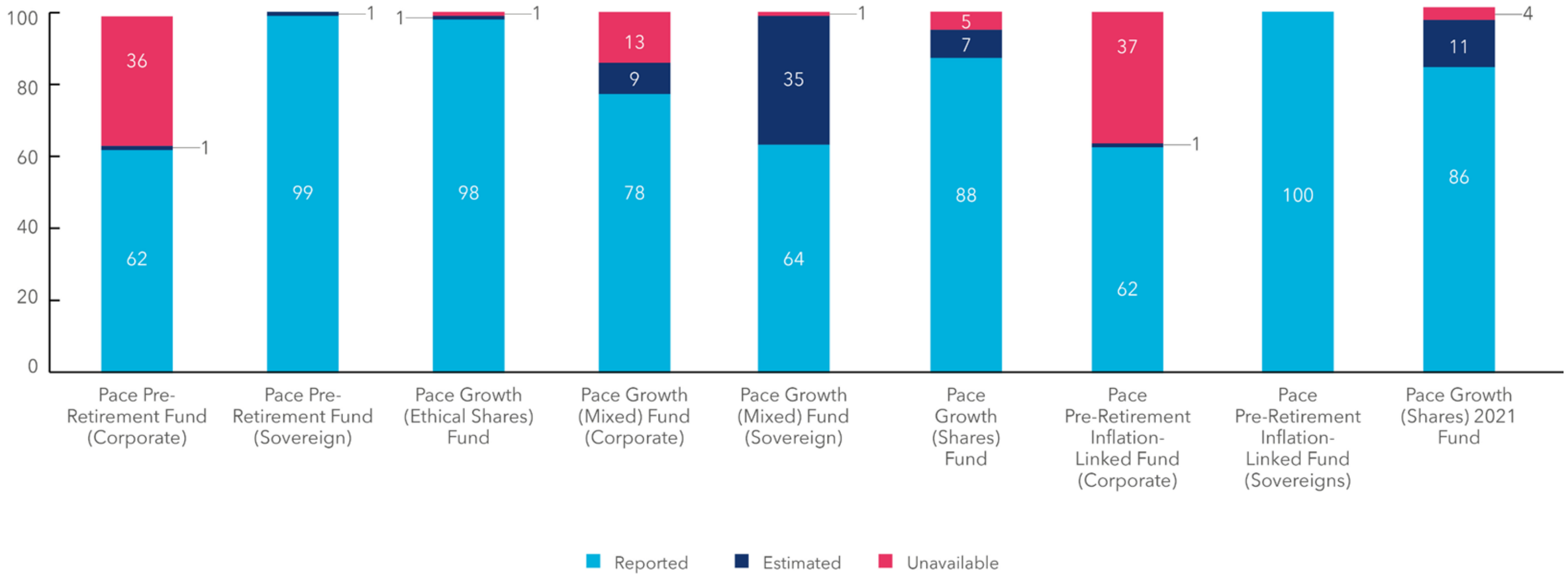
Scope 3

Mandate	Manager	Allocation (%)	Absolute emissions (tonnes CO_2e)	Total carbon footprint (tonnes CO_2e per $1 million EVIC)	WACI (tonnes CO_2e per $1m)
Pace Pre-Retirement Fund	LGIM	0.1	146	397	682
Pace Growth (Ethical Shares) Fund	LGIM	0.8	3,105	418	849
Pace Growth (Mixed) Fund	LGIM	67.4	202,120	411	950
Pace Growth (Shares) Fund	LGIM	0.1	677	692	1,185
Pace Pre-Retirement Inflation-Linked Fund	LGIM	0.1	100	429	734
Pace Growth (Shares) 2021 Fund	LGIM	22.2	126,333	627	1,346
Pace Cash Fund	LGIM	9.4	2,851	58	284

Source: LGIM, LCP. Data as at 31 December 2022. Coverage for Scope 3 emissions was not available at the time of writing.

While estimates suggest that Scope 3 accounts for over 80% of total emissions in the median MSCI World company, we do not believe that Scope 3 data is particularly informative at this stage as data quality is poor. In particular, there are a number of complex challenges around Scope 3 emissions that require careful handling. However, there is a requirement for schemes to report Scope 3 emissions in the second year of TCFD reporting.

Data Quality

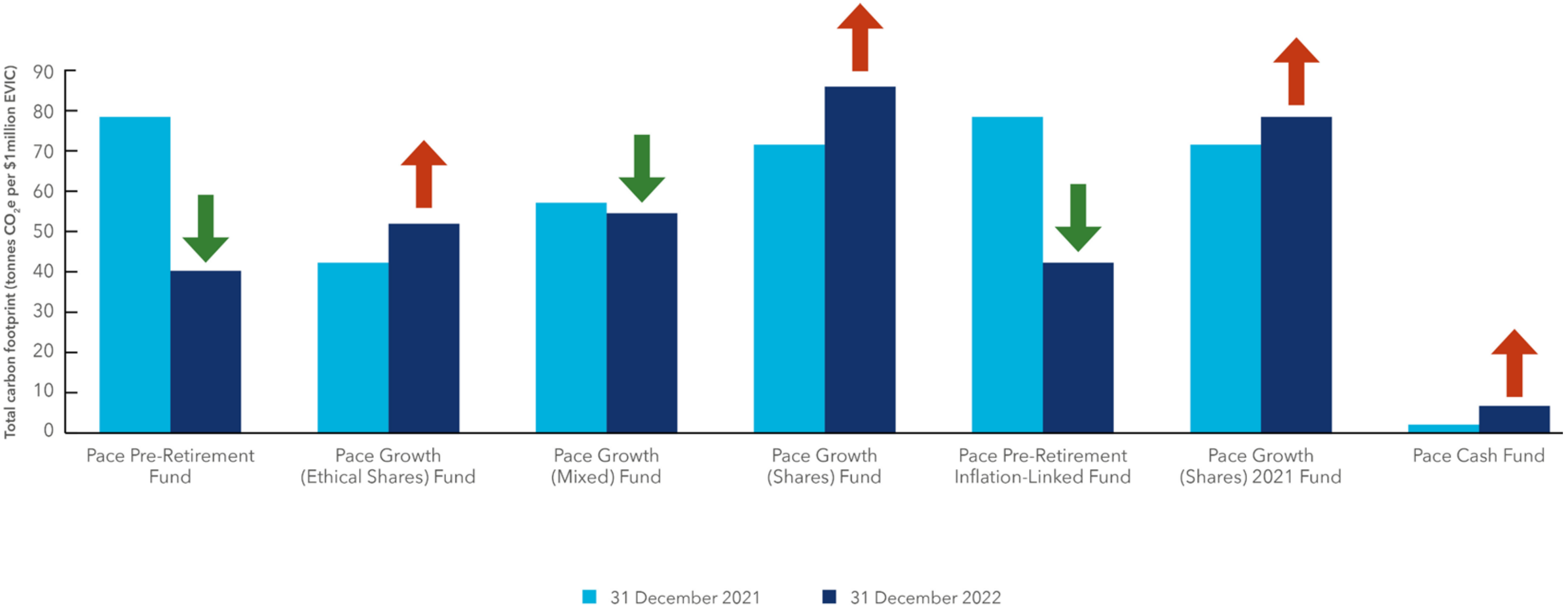


Source: LCP Data as at 31 December 2022.

Metrics Evolution

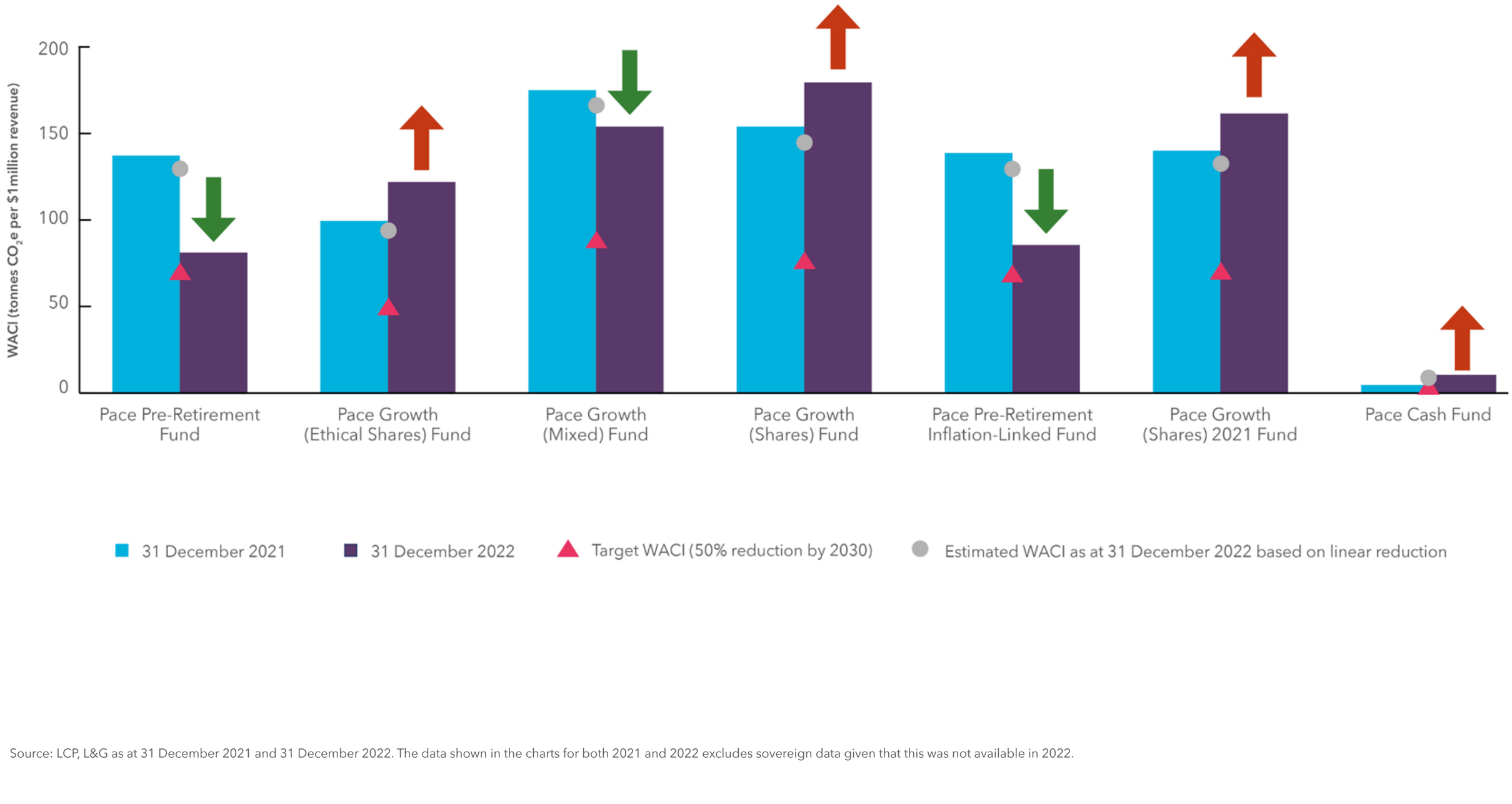
Carbon Footprint

Total Carbon Footprint



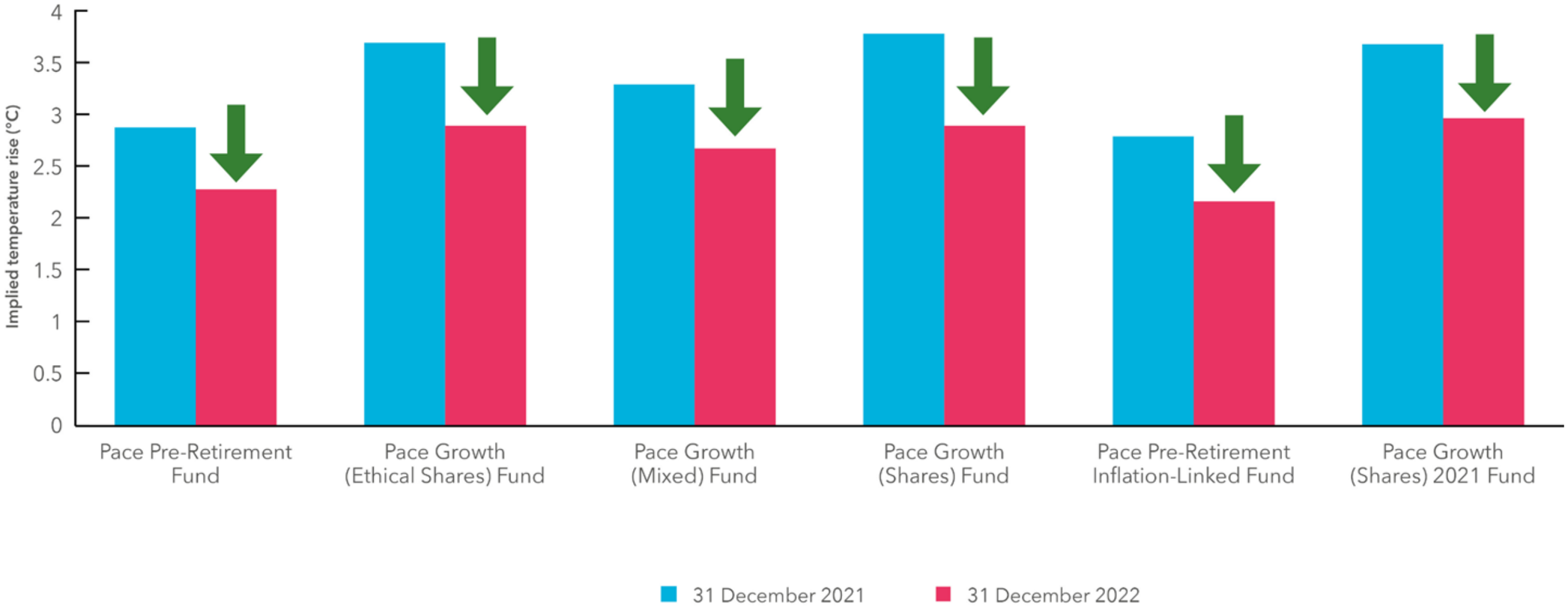
Source: LCP, L&G as at 31 December 2021 and 31 December 2022. The data shown in the charts for both 2021 and 2022 excludes sovereign data given that this was not available in 2022.

WACI



Source: LCP, L&G as at 31 December 2021 and 31 December 2022. The data shown in the charts for both 2021 and 2022 excludes sovereign data given that this was not available in 2022.

Implied Temperature Rise



Source: LCP, L&G as at 31 December 2021 and 31 December 2022. The data shown in the charts for both 2021 and 2022 excludes sovereign data given that this was not available in 2022.
The Pace Cash Fund has been excluded from the Implied Temperature Rise chart as data for 2022 was not available.

Conclusions

- The provision of these metrics is still in its infancy and therefore there are some data gaps.
- The total carbon emissions are given for each of Pace DC's funds. Naturally, the funds with the largest assets have the largest total carbon emissions.
- The Pace Pre-Retirement Fund and Pace Pre-Retirement Inflation-Linked Fund have seen a large reduction in carbon footprint compared to last year, which is positive. This is due to L&G introducing ESG tilts and exclusions to the underlying fund through their range of Future World Index Funds, which was implemented throughout 2022. The equity-dominated funds have seen an increase in carbon footprint, which is likely due, in part, to the higher allocation to the energy sector over 2022, as strong performance from this period would have increased the relative market capitalisation of these stocks. These funds are passive, and weightings relate to that of the index.
- The rationale for the trend in the WACI metric is similar to the carbon footprint metric, as these are both backward-looking metrics.
- Implied temperature rise is a forward-looking metric that is based on company actions and commitments to reducing their carbon footprint now and in the future. There is an encouraging trend in reduction of implied temperature rise across all funds considered, however we note that the implied temperature rise of the funds is still relatively far above the 1.5°C limit in the Paris Agreement.

Targets

Pace DB

The Trustee has adopted a 2050 net zero target for the Scheme's absolute emissions; this target is aligned with scientific consensus and is also in line with the ambitions of the Paris Agreement, with the aim of facilitating a 'well below' 2°C limit on global temperature increases.

The Trustee has also adopted an interim target of a 50% reduction in absolute emissions (Scope 1 and 2) by 2030 (2021 baseline) for the corporate bond holdings. When comparing the progression of the Scheme against these targets using the 2021 baseline, the Trustee agrees progression is as expected and continues to believe the above targets remain appropriate for the Scheme. Scope 1 and 2 metrics have fallen by 26.9% and 31.1% for Co-op and Bank Sections at a total level respectively, due to market movements. Therefore this may be considered extraordinary and may continue to be volatile, and as such the Trustee has no concerns at this time.

The Trustee will continue to monitor decarbonisation targets on both an absolute emissions and WACI basis (based on Scope 1 and 2 data). Scope 3 data remains in its infancy, therefore the Scope 3 metrics have not been used for setting any baseline target metrics.

The emissions reduction targets set out above broadly align with manager analysis and proposals, where discussions have been held at this stage (e.g. with the Buy & Maintain credit managers). Steps the Trustee will take to achieve these targets include engaging with our asset managers, amending investment guidelines, if required, and considering alignment with these objectives when considering further de-risking or asset allocation changes. The Bank Section entered into an additional buy-in during December 2022, covering all remaining uninsured liabilities, and therefore the de-risking and asset allocation points do not apply to this section.

A wide range of factors will affect whether the Trustee is able to achieve its targets, and the Trustee has varying degrees of control over these factors. For example, the progress of the UK and other national governments will have a significant influence over the timescale for reaching net zero. In addition, the quality and availability of data improving over time means that the quoted greenhouse gas emissions are likely to change. Ultimately, achieving the desired level of decarbonisation will depend on economies overall being successful in decarbonising. In relation to the Bank Section, future progress will be determined by Rothesay's investment approach for their asset portfolio, which was considered as part of their appointment. Rothesay's net zero target is broadly consistent with the Trustee's.

In addition, the Trustee may make significant changes in its investment approach which may affect the pace of decarbonisation (for example, based on progress made against the agreed long-term objectives).

Pace DC

Previously, the Trustee has set a long-term target for the DC default option of net zero by 2050 and a short-term target of 50% carbon reduction (Scope 1 and 2) by 2030, using a base year of 2021 and measured using WACI.

This target initially applies to listed equities and corporate bonds, although the Trustee will look to broaden this to other asset classes within the default option as data availability improves.

Despite now having two years of data, it is hard to draw meaningful conclusions from the metrics data alone, given the quality of data that can be obtained.

When comparing the progression of the Scheme against these targets using the 2021 baseline, as discussed earlier in this section, some of the funds have seen a reduction in WACI while others have seen an increase over the reporting period. As a result, the WACI for the growth phase of the default investment strategy has remained broadly flat relative to the 2021 baseline at approximately 160 tCO_2e per $1m[6]. The Trustee has agreed it is comfortable with this and no actions need to be taken for the funds behind the target, given changes in carbon intensity over a one-year period may be driven by a range of factors and progress should be considered over longer time periods. The Trustee will continue to monitor the progression of the WACI as part of the annual TCFD report, and over the coming years will consider whether any action or engagement is required in relation to progress towards the short-term emissions reduction target.

Given Pace DC's assets are invested in pooled funds, the Trustee is engaging with LGIM in relation to the alignment of the funds underlying the Pace DC fund range with this objective.

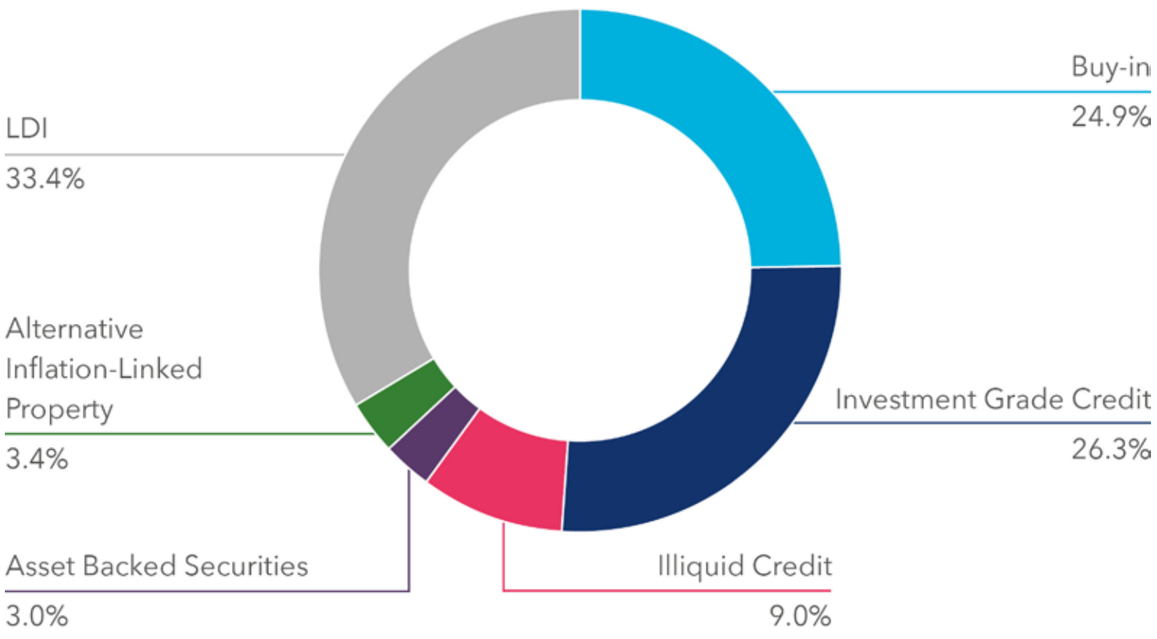
[6]Growth phase default investment strategy calculated on the target allocation of 50% in Pace Growth (Mixed) 50% and 50% in Pace Growth Shares 2021.

Technical Section

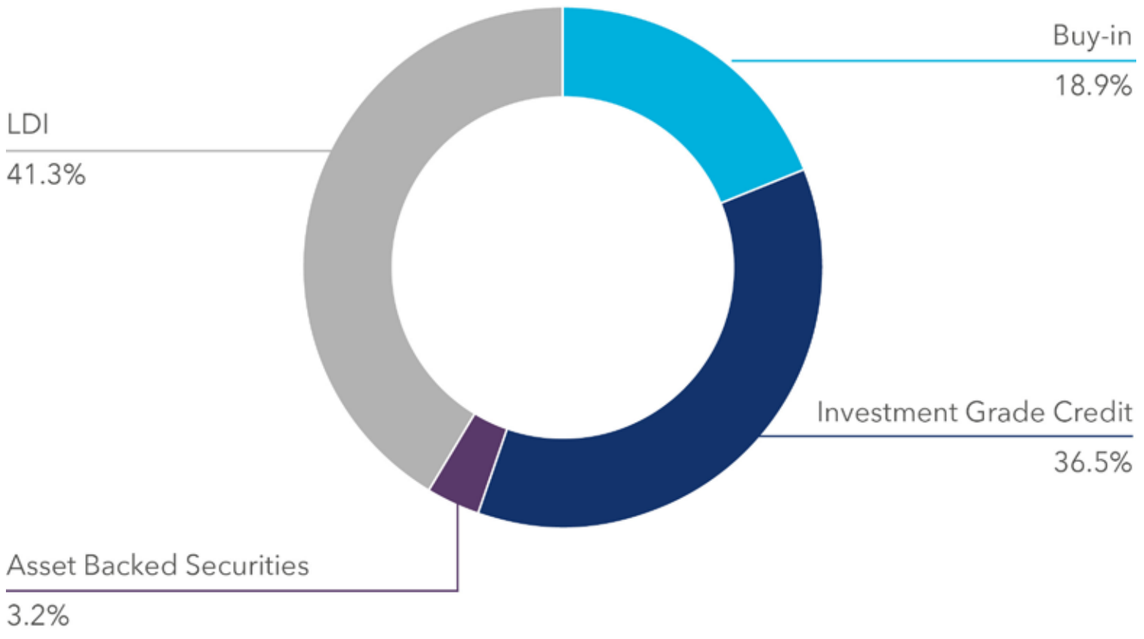
Asset allocation

Defined Benefit Sections

The chart below shows the asset allocation for the Co-op Section. Allocations are derived from the buy-in valuation as at 30 September 2022 and the Section's strategic asset allocation at that date.



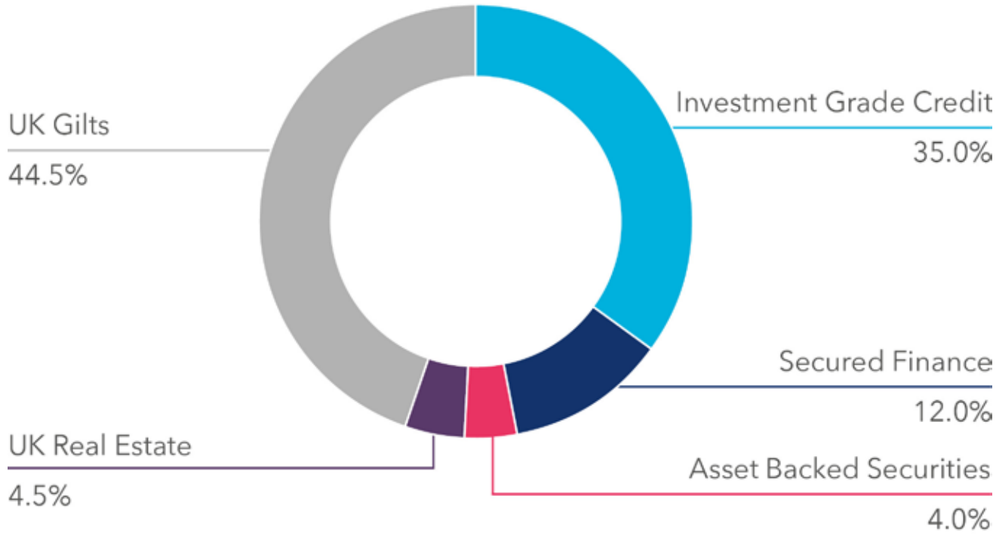
The chart below shows the asset allocation for the Bank Section. Allocations are derived from the buy-in valuation as at 30 September 2022 and the Section's strategic asset allocation at that date, i.e. prior to completing the December 2022 buy-in with Rothesay Life covering remaining uninsured liabilities.



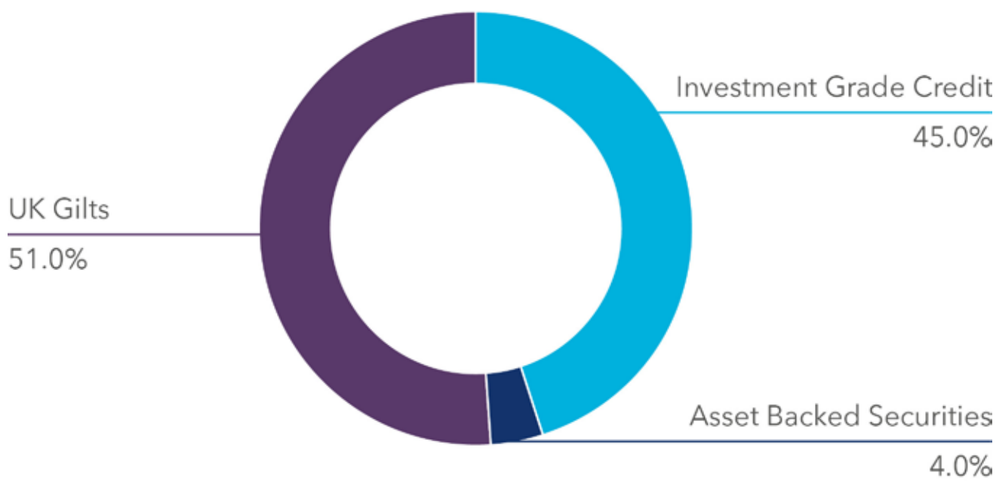
Totals may not sum due to rounding

The charts below set out the strategic asset allocation for each Section (excluding the buy-ins for the DB Sections) as at 30 September 2022.

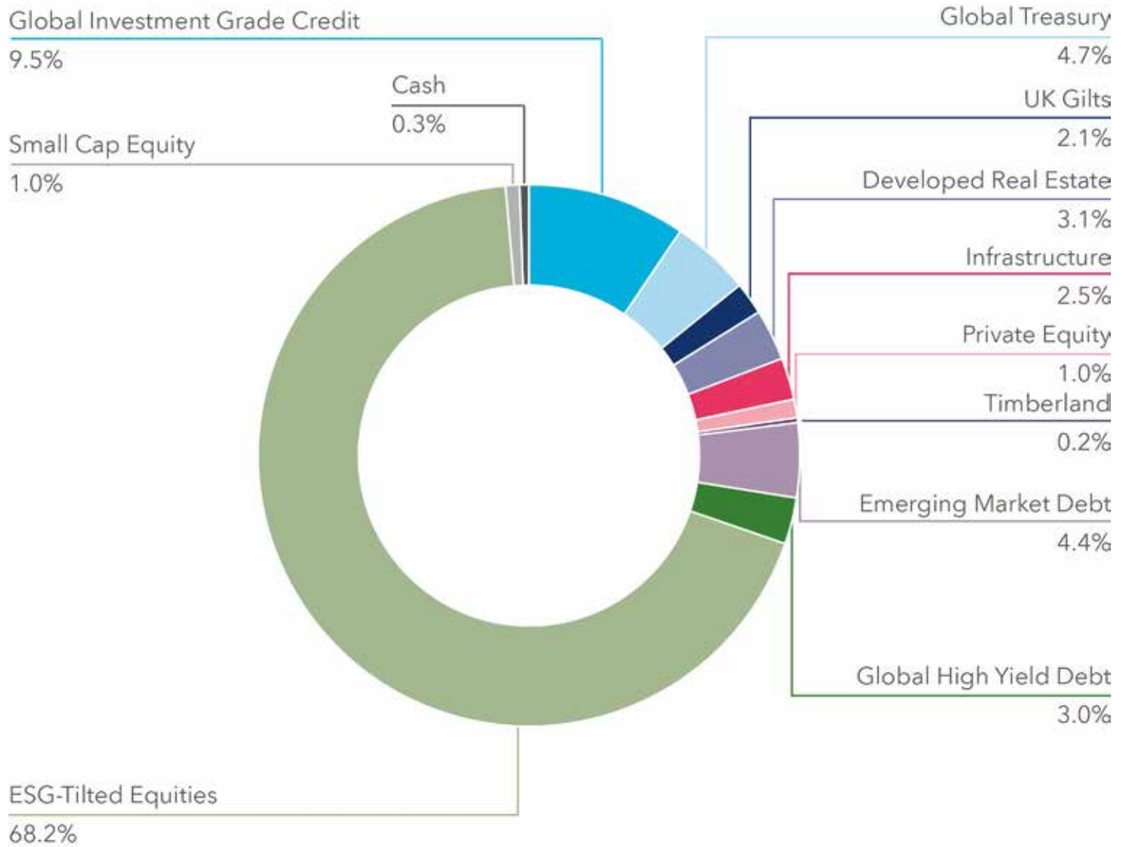
Pace DB: Co-op Section



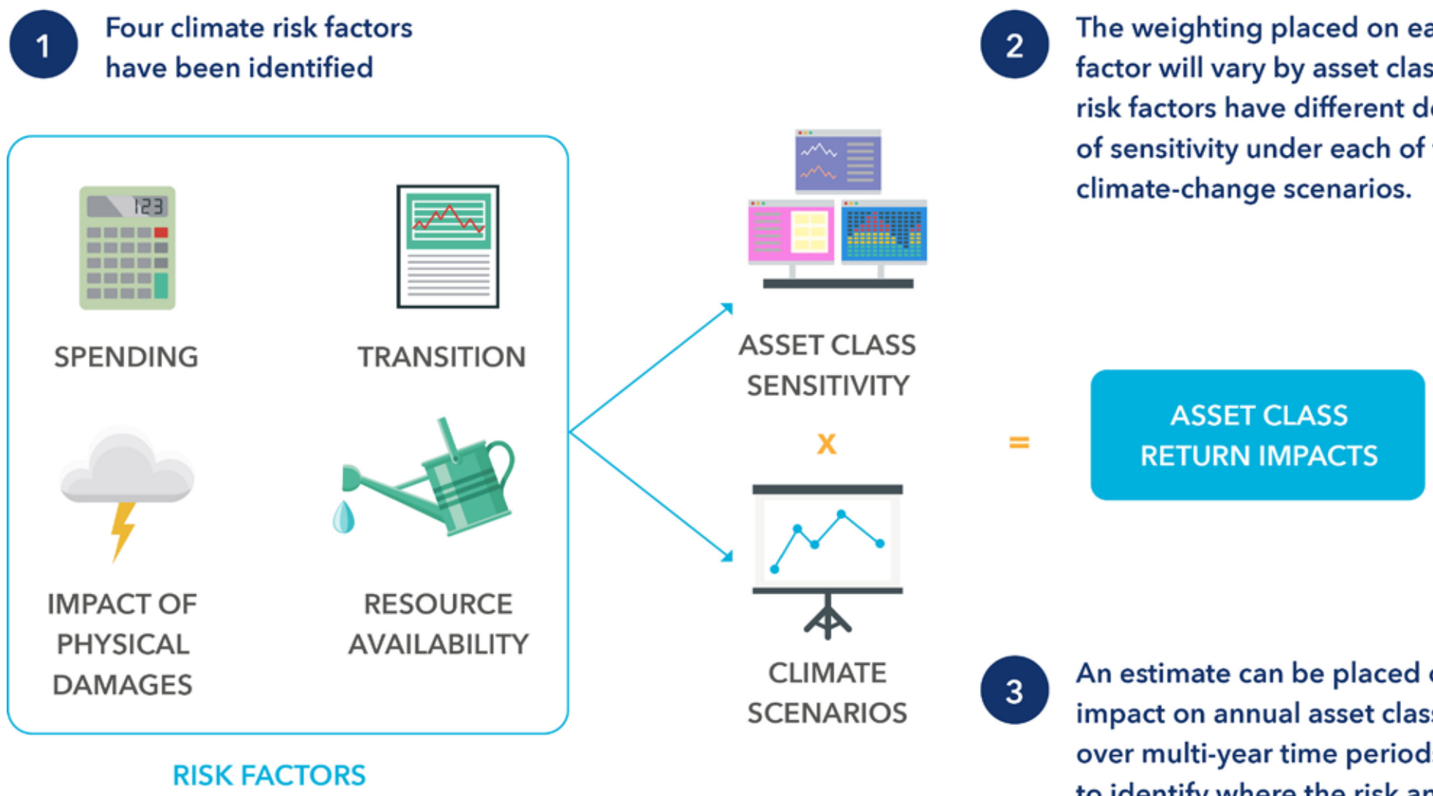
Pace DB: Bank Section (prior to completing the December 2022 buy-in with Rothesay Life covering remaining uninsured liabilities)



Pace DC: (growth phase of the default investment strategy)



Climate scenario modelling approach



Source: Mercer

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

1. The further into the future you go, the less reliable any quantitative modelling will be.
2. Looking at average asset class returns over multi-decade timeframes leads to invariably small impacts. The results are potentially significantly underestimated.
3. 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.
4. 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.
5. Most adaptation costs and social factors are not priced into the models. These include population health and climate-related migration.

Three directions to 2100

TRANSITION

2017-2018	2°C SCENARIO	3°C SCENARIO	4°C SCENARIO
80% of energy	2020: Peak 2080: Net zero	2050: Flat	2050: ↑ 49%
80% not carbon-priced	2050: No coal	2050: Coal ↓ 7% 80% of energy	2050: 84% of energy
6 million	2050: 50% new vehicle sales	2050: 37% new vehicle sales	2050: 25%

PHYSICAL DAMAGES

2017-2018	2°C SCENARIO	3°C SCENARIO	4°C SCENARIO
↑ 1.1°C hotter	2050: ↑ 1.7°C 2100: ↑ 2°C	2050: ↑ 1.9°C 2100: ↑ 3.2°C	2050: ↑ 2°C 2100: ↑ 3.9°C
↑ 22cm	↑ 50cm	↑ 58cm	↑ 70cm
1/2 Great Barrier Reef dead	Daily temp: ↑ 2.6°C Droughts 4+ months	Irreversible damages 30% less water	50% less water Hurricanes ↑ 80%

ANNUAL RETURN IMPACT

SCENARIO PATHWAYS

- How will each risk factor change over time for each scenario?
- Quantitative pathway developed for each risk factor and scenario

X

ASSET SENSITIVITY

- How sensitive is each sector and asset class to each risk factor?
- Risk factor sensitivity assigned, as positive or negative, and a relative magnitude

=

ANNUAL RETURN IMPACTS

- How are different sectors or asset classes impacted on an annual, average basis over multi-year time periods?
- What are the risk and opportunity priorities?

Metrics – Data limitations and assumptions

Data sources

All climate-related metrics data has been requested directly from the investment managers. Climate-related metrics provided in respect of the Insight, RLAM and LGIM Buy & Maintain credit portfolios have been sourced from MSCI using stocklist data provided by the investment managers.

Scope of emissions

Scope 1, 2 and 3 emissions data has been included in this report. While Scope 3 emissions are now included, Scope 3 disclosure remains insufficient to use reliably at present. Scope 1,2 and 3 emissions are as defined by the GHG protocol - **Greenhouse Gas Protocol**.

The Trustee will continue to work with Mercer, LCP and the investment managers to obtain more accurate Scope 3 data for the different asset classes.

Data coverage

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

- Some public listed companies or issuers are not publishing climate-related data or are providing poor quality data. This is relevant to public equity and corporate bonds. Obtaining data for emerging market equity can also be challenging due to general disclosure and transparency challenges;
- Many private companies do not currently produce climate-related data and coverage for private markets, such as private equity and private debt, will be low, or zero for mature funds;
- Sovereigns, or governments, may not publish climate-related data in the public domain. This is a particular challenge for emerging market debt. For UK government debt, data is available but there is a delay in the data being published;
- Short-term instruments, such as illiquid credit assets or money market funds, have limited data available due to the short-term nature of the individual assets;
- Real estate (property) assets can have low climate-related data coverage due to the lack of reporting on the individual properties or projects held within the portfolio.

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

Specific asset class assumptions – DB Sections

This table details the methodology for calculating the absolute emissions and carbon intensity metrics for the asset classes where methodologies differ from the standard calculations detailed in the report.

Investment manager	Sub-asset class	Methodology
BlackRock	Sovereign bonds	Absolute emissions: tonnes of CO_2e per country x (Value of gilts in the portfolio / Public debt). WACI: tonnes CO_2e per USD million GDP nominal. Carbon footprint: tonnes CO_2e per USD million of public debt.
Insurance provider		
Pension Insurance Corporation	Sovereign bonds	Absolute emissions: tonnes of CO_2e per country x (value of gilts in the portfolio / public debt). WACI: tonnes CO_2e per USD million GDP nominal. Carbon footprint: tonnes CO_2e per USD million of public debt.
	Social housing	PIC has taken the value of average emissions per social housing dwelling to be 2.6 tCO_2e, as estimated by The Sustainable Energy Association. PIC then estimates the number of units financed as a proportion of investment. Combining this with the SEA estimate of 2.6 tCO_2e gives a final value of absolute emissions (tCO_2).
	Student accommodation	PIC has used an estimate average m2 per room to be 15m2 given internal data available. The CO_2 emission rate (kg CO_2/m2 per year) for each student accommodation is available online (**https://www.gov.uk/find-energy-certificate**, 2021). This is then multiplied by the Total m2 and converted to tonnes to give absolute emissions (tCO_2e).
	Equity release mortgages	PIC calculates the average Carbon Emissions (tonnes) per house, derived from UK government data for Carbon Dioxide Emissions (tonnes per annum) and Number of Lodgements for each region (this resulted in an average of 4.04 tonnes of CO_2 per house). By dividing average ERM issuance value by the average value of the homes underlying the loans, it is estimated that PIC provides financing to an average of 34% of the property value and so takes accountability for this proportion of the house's carbon footprint. For the $m revenue used in the WACI calculation, PIC uses the interest earned on the loan.

Funding level scenario analysis assumptions

	Disorderly Transition (corresponding to 2° scenario)	Failed Transition (corresponding to 3° scenario)
UK long dated interest rate	-0.25% p.a. compared to the Mercer yield curve	In line with Mercer base case for the next 10 years
Inflation	+0.5% p.a. compared to the Mercer yield curve	In line with Mercer base case for the next 10 years
UK life expectancy	Any changes in life expectancy due to climate change, such as deaths due to extreme heat vs improved mortality due to milder winters, are expected to be largely offsetting in the UK over the next 10 years	
Equity market	Global Equities: -15% Emerging markets: -25% reflecting greater volatility in EM and additional exposure to energy Small Cap: -20% reflecting greater volatility	Global Equities: -10% Emerging markets: -20% reflecting greater volatility in EM and additional exposure to energy Small Cap: -12%
IG Credit spread widening	+0.25% p.a.	+0.15% p.a.
High Yield Debt (HYD) and Multi-Asset Credit (MAC)	-7.5% reflecting low risk compared to equity partially offset by high energy weightings	-5% reflecting low risk compared to equity
Emerging Market Debt (EMD)	-10% significant variation by issuer, assumes worse than HYD reflecting the disorder and its impact on EMD issuers	-8% significant variation by issuer, assumes worse than HYD reflecting the disorder and its impact on EMD issuers
Diversified Growth Fund	-10% reflecting other asset classes	-8% reflecting other asset classes
Hedge funds	-5% significant variation by fund, reflects equity beta of a third	-3% significant variation by fund, reflects equity beta of a third
Phasing	75% of the change is expected over the first 5 years with the remainder spread over the later 5 years	Given the long-term nature of the physical risks, 5% of the change over the first 5 years, increasing annually for the next 5 years

Important notices from data providers

Mercer

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MSCI

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Glossary

In this document, when we say:	We mean:
Alternative inflation-linked property	Investment in property which has inflation-linked income streams as part of the investment terms. This type of investment aims to generate income which keeps up with or exceeds inflation in addition to capital appreciation. These types of properties can include student accommodation and long lease ground rents on commercial properties such as hotels, for example.
Asset backed securities	An asset backed security is the term given to a bond whose value is derived from a pool of underlying assets which together generate income and collateralise the specific pool. Examples include a pool of mortgages or credit card debt.
Buy & Maintain credit	An investment in corporate bonds where the manager aims to select bonds with low default risk that can be held to maturity, and aims to have very low turnover in holdings.
Buy-in	A buy-in policy (also known as a bulk annuity) is an insurance policy that covers a proportion of a pension scheme's liabilities, such as the pensions in payment. The policy pays the scheme an income equal to the benefits of the members covered and therefore removes the risk of there being insufficient assets to meet those future liabilities. A buy-in policy is an investment held by a pension scheme, and the scheme (and its trustees) remains responsible for paying pensions to members.
Equity	An investment in the form of shares in companies (also known as stocks). Owning shares makes shareholders part owners of the company in question and usually entitles them to a share of the profits (if any), which are paid as dividends.
Gilt	A bond issued by the UK Government.
Illiquid Credit	Illiquid Credit investments take the principles of bond investing, lending of money in return for regular interest payments, into less standardised areas which are not actively traded. This results in favourable terms for investors and greater potential gain, which the scheme is able to access as a long-term investor.
Liability Driven Investment (LDI)	An investment approach which focuses on matching the sensitivities of a pension scheme's assets to those of its underlying liabilities in response to changes in certain factors, normally interest rates and inflation expectations.