Associated British Foods | Pension Scheme

CLIMATE CHANGE GOVERNANCE AND REPORTING IN LINE WITH THE RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

Reporting period: 12 months to 5 April 2023

August 2023

Contents

Chair's Introduction

The Trustee of the Associated British Foods Pension Scheme (the "Scheme") presents its first climate change report, which has been prepared in line with recommendations of the Task Force on Climate-related Financial Disclosures ("TCFD") and the statutory requirements set out by the Department of Work and Pensions[1].

Climate change is one of the most relevant issues of our time. The Trustee recognises that climate change presents both risks and opportunities and therefore the potential financial impacts of both the associated transition to a low-carbon economy and the physical impacts of different climate outcomes need to be analysed.

Ultimately, the Trustee aims to invest the Scheme's assets in the best interests of the members and beneficiaries. Climate change is one of the risks that the Trustee measures, monitors and manages. As such, this needs to be considered alongside other risks affecting the Scheme in a balanced and proportionate way.

The Trustee's reporting is expected to continue to evolve as data availability improves and as best practice continues to develop.

Steps taken over the period to 5 April 2023

In preparation for the production of this report, the Trustee has taken the following key steps:

- Received training to understand the TCFD framework and regulatory reporting requirements.
- Carried out climate metrics analysis, which provides an assessment of the Scheme's greenhouse gas emissions exposure.
- Completed climate scenario analysis, which assesses the potential climate risk, over multiple time periods, from different climate change scenarios.
- Set interim targets for reducing greenhouse gas emissions (as measured by the carbon footprint metric) across the whole Equity portfolio, the Fixed Income Goldman Sachs Asset Management (GSAM) portfolio for the Defined Benefit (DB) Section of the Scheme and the Target Date Funds ("TDFs") for the Defined Contribution (DC) Section of the Scheme.
- Reviewed investment consultant objectives in respect of climate and/or TCFD requirements.
- Reviewed other adviser requirements in respect of climate change and/or TCFD requirements (actuarial and covenant).
- Developed a governance policy, which clearly sets out the responsibilities of the Trustee and its advisers in relation to climate risks and opportunities.

[1] The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021, as amended.

- Produced an Implementation Statement (which can be found here) https://www.abfpensions.com/media/ycdnnujt/implementation-statement-2022.pdf which outlines the considerations of climate change-related voting and engagement practices of the Scheme's investment managers.

Members are encouraged to contact the Trustee if there are comments they wish to raise. These can be raised by email at pensions.admin@abfoods.com or by calling **the Pensions Team on 0800 090 2267** (free to call from UK landlines and mobiles).

For calls from outside the UK: +44 (0)20 7636 8111

The team are available Monday to Friday, from 9am to 5pm.

James G West

Trustee Chairman, for and on behalf of the Associated British Foods Pension Trustees Limited as trustee of the Associated British Foods Pension Scheme

Executive Summary

This report sets out the climate change-related disclosures of the Trustee of the Associated British Foods Pension Scheme and covers the Scheme year ending 5 April 2023. This report has been prepared in line with the recommendations of the Task Force on Climate-Related Financial Disclosures and the statutory requirements prescribed by the Department of Work and Pensions. As such, it focuses on the areas of Governance, Strategy, Risk Management and Metrics and Targets.

In summary, this report details:

- The five metrics identified by the Trustee to inform its understanding of climate-related risks and opportunities: (1) total greenhouse gas emissions, (2) carbon footprint, (3) weighted average carbon intensity ("WACI"), (4) implied temperature rise and (5) data quality.

- The Trustee's decision to review the metrics on an annual basis as part of its review of a TCFD dashboard report which includes various climate metrics and reviews the extent to which investment managers are integrating climate considerations into their decisions. The Trustee has liaised with its investment managers and collated data where available. In relation to the DB Section investments, the Trustee notes that data availability has been better for public asset classes (for example equities) compared to others (for example private debt). The Trustee will continue to engage with the investment managers in an effort to improve data availability of the reported metrics.

- The Trustee's decision to set targets to reduce greenhouse gas emissions. The Trustee has set the following interim climate targets, covering the Scheme's whole Equity portfolio and the Fixed Income GSAM portfolio for the DB Section, as well as the Target Date Funds ("TDFs") for the DC Section:

    - Reduce greenhouse gas emissions (Scope 1 and 2) for the whole DB Section Equity portfolio by 40% or more by 30 September 2030. The TCFD framework defines three scopes of emissions. These are set out on page 26 of this document.

    - Reduce greenhouse gas emissions (Scope 1 and 2) for the DB Fixed Income Section GSAM Public Investment Grade Credit portfolio by 50% or more by 30 September 2030.

    - Reduce greenhouse gas emissions (Scope 1 and 2) for the DC TDFs by 20% or more by 30 September 2030.

- Each target is measured against the carbon footprint intensity metric with a 30 September 2021 baseline.

- The targets cover 35% of the assets for the DB Section and 98% of assets for the DC Section.

- The key findings from the Trustee's climate change scenario analysis and climate metric analysis.

- The Trustee's processes to identify, assess and mitigate climate change risk.

- Key aspects of the Trustee's Climate Governance Policy, which outlines the roles and responsibilities of the Trustee, the Investment Sub-Committee ("ISC"), the Associated British Foods in-house pensions team

("in-house pensions team") (which comprises certain individuals employed by the sponsor to assist the Trustee in managing the Scheme) and professional advisers with respect to climate-related activities.

- The Trustee's beliefs with respect to environmental, social and corporate governance ("ESG") considerations, including in the area of climate change.

- The training received by the ISC and Trustee at multiple meetings over the year from its investment adviser and investment managers, particularly in relation to TCFD-related regulation and setting climate-related targets.

The TCFD Framework

The Financial Stability Board, an international body established by the G20 that monitors and makes recommendations about the global financial system, created the Task Force on Climate-related Financial Disclosures ("TCFD") framework in 2015. TCFD was created to improve and increase reporting of climate-related financial information that can promote more climate-informed investments.

The recommendations are in four key areas:

Governance
The Scheme's governance around climate-related risks and opportunities.

Strategy
The actual and potential impacts of climate-related risks and opportunities on the Scheme's investment and funding strategies, and financial planning.

Risk Management
The processes used by the Scheme to identify, assess and manage climate-related risks.

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

From 1 October 2021, the UK Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021, as amended, and the (Climate Change Governance and Reporting) (Miscellaneous Provisions and Amendments) Regulations 2021 introduced new requirements for certain pension schemes relating to climate change governance and reporting in line with the TCFD recommendations.

The Regulations are intended to ensure there is effective governance with respect to climate change and there is appropriate disclosure regarding the identification, assessment and management of climate risk. The Government has also published statutory guidance to accompany the regulations, which sets out how the Trustee should meet the requirements and report in line with the TCFD recommendations.

Asset owners like the Scheme sit at the top of the investment chain and, therefore, have an important role to play in influencing the organisations through which they invest (such as asset managers) and companies in which they ultimately invest to provide better climate-related financial disclosures. Disclosure of climate-related risks and opportunities by asset owners allow beneficiaries and other audiences to assess the asset owner's investment considerations and approach to climate change.

The Trustee believes that their climate-related financial disclosures can help to encourage better disclosures across the investment chain — from asset owners to asset managers to underlying companies.

Governance

The Trustee's approach to climate-related risks and opportunities

The Trustee has ultimate responsibility for ensuring effective governance of climate-related risks and opportunities. However, the ISC undertakes specific actions, especially in relation to considering investment strategy and liaising with investment managers. To assist the Trustee in carrying out this responsibility, the Trustee receives support from the in-house pensions team and advice from its external professional advisers. The Trustee also delegates certain responsibilities to its appointed investment managers. The purpose of which is to support and guide the Trustee's work on compliance with the regulatory requirements and TCFD recommendations. The Trustee's approach to the oversight and management of climate-related risks and opportunities is consistent with its approach to considering other financially material risks and opportunities facing the Scheme: the Trustee's Statement of Investment Principles (the "SIP") details the key objectives, risks and approach to considering environmental, social and corporate governance factors, including climate change and stewardship, as part of its investment decision making. The SIP is reviewed at least on a triennial basis or more frequently as required.

The Trustee holds the following responsible investment beliefs which are set out in the SIP:

ESG integration: good stewardship and environmental, social and governance issues may have a material impact on investment performance and risk, and that good stewardship can create and preserve the value of companies and markets.

Climate change risk: Long-term sustainability issues, particularly climate change, present risks and opportunities that increasingly may require explicit consideration.

Stewardship (or active ownership): Good stewardship can create and preserve value for companies and markets as a whole, which has the potential to benefit Scheme members in the long term. Engagement and voting are influential and can be effective in changing behaviour and increasing returns. The Scheme's investment managers are best placed to manage risks related to ESG, to engage with companies and to effect change on the Trustee's behalf on a day-to-day basis. The Trustee expects its FCA registered managers to comply with the UK Stewardship Code. The Trustee encourages its non-FCA authorised managers to adhere to the Stewardship Code on a best-efforts basis. The Trustee is taking steps to communicate these views with its investment managers.

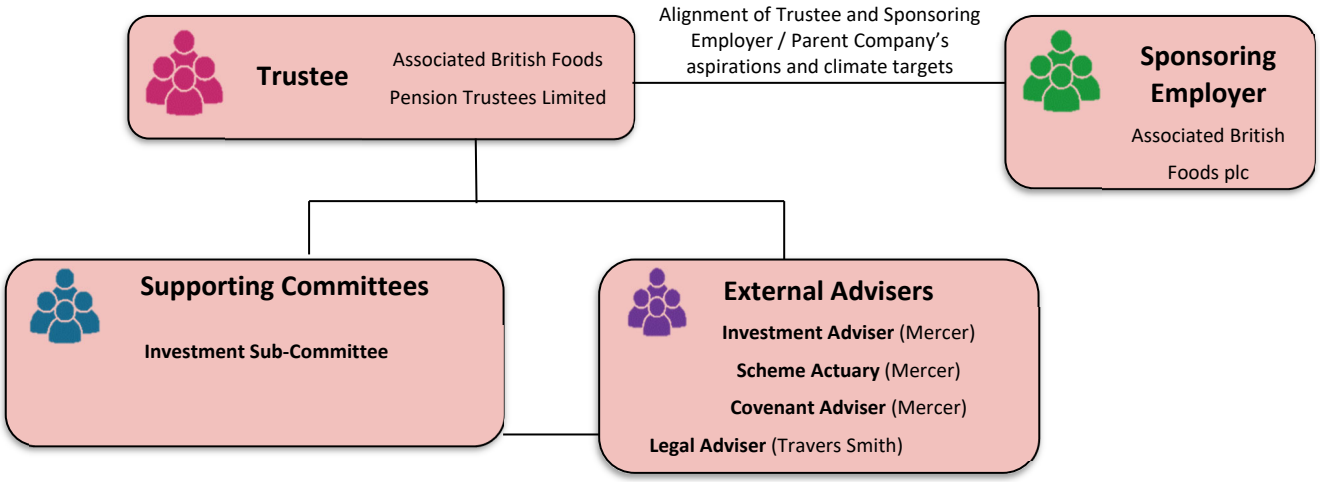
The Trustee has reviewed in detail the roles and responsibilities of those undertaking or advising the Trustee on the Scheme's governance activities and produced a Climate Governance Policy, which outlines the roles of the Trustee, ISC, in-house pensions team and relevant professional advisers in respect of climate-related risks and opportunities, and the governance processes around this. The Trustee maintains oversight of climate-related risks and opportunities through TCFD items and training being regularly discussed at the ISC, with key summaries provided at full Trustee Board meetings. Further details of the roles and responsibilities of those parties advising or assisting the Trustee, together with a summary of the training received, are provided later in this section.

The Trustee expects all advisers to act with integrity and diligence in fulfilling the set objectives and uses meetings with the advisers to assess and challenge them. Where relevant, this includes discussion of the steps taken by advisers to identify, assess and manage any climate-related risks and opportunities. The investment consultant's approach to climate change and how it is integrated into its advice and services is assessed as part of the adviser selection and monitoring process. The Trustee sets its investment consultant's objectives, including objectives related to ESG and climate change competency. The investment consultants are formally assessed against these

objectives annually. The Trustee will consider adopting a similar approach for other relevant advisers, including the scheme actuary, covenant adviser and in-house pensions team as appropriate.

Key Trustee responsibilities and oversight of climate change risks

Figure 2: Key parties involved in overseeing climate change risks for the Scheme



The Trustee has ultimate responsibility for ensuring effective governance of climate change risks and opportunities in relation to the Scheme's investment and funding strategies.

The ISC undertake specific actions, especially in relation to considering investment strategy and liaising with investment managers.

To aid the Trustee in carrying out this responsibility, the Trustee receives support from the in-house pensions team, advice from its external professional advisers and delegates certain responsibilities to its appointed investment managers. The ISC undertakes scheme governance activities on behalf of the Trustee in respect of climate-related risks and opportunities and receives advice and assistance from the Trustee's in-house pensions team and external advisers as set out in further detail below.

Over the reporting period, the Trustee's relevant **professional advisers** were:

Mercer, as the investment consultant, who:

Advised on strategic asset allocation taking into account climate risk, greenhouse gas emissions targets and changes to investment mandates and monitored investment managers;

Provided climate-related scenario analysis, advice and training on the selection of climate-related metrics for the Scheme;

Produced the annual TCFD dashboard report for the Trustee which includes various climate metrics, outlines climate-related risks or opportunities on an ongoing basis and monitors progress against climate-related targets; and

Liaised with investment managers and other professional advisers to provide training to the Trustee and the ISC on climate change.

James Bourne of Mercer, as the Scheme Actuary, who:

Advised on the funding position of the Scheme including an understanding of the potential funding impact resulting from changes to financial or demographic assumptions driven by climate change;

Advised on funding strategy robustness to climate risk. Provided input to enable strategic asset allocation decisions to be made considering the impact of climate risks on funding strategy; and

Provided input into scenario analysis and advised on funding implications.

Mercer, as the covenant adviser, who:

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

Provided input into scenario analysis and advises on covenant implications.

Mercer, as part of the advisory cycle and at least annually. provide information on climate change as appropriate to the Trustee for consideration.

Over the reporting period, the Trustee was also supported by the **ABF in-house pensions team**, who:

Assisted with the organisation of meetings;

Facilitated reporting to the Trustee Board;

Facilitated appropriate communications to members;

Assisted the Trustee in the general running of the Scheme and undertook Scheme governance activities on behalf of the Trustee, such as coordinating required public disclosures and the work outputs of the relevant professional advisers; and

Liaised with investment managers and professional advisers to provide training to the Trustee and the ISC on climate change.

In addition, **Travers Smith**, as the legal adviser, provided advice as necessary on legal risks and regulatory developments including those relating to climate change.

Training and climate competency

Overall, resources and time committed were significant over 2022/2023 given this represents the first year that the Scheme is subject to the TCFD regulations. The Trustee and ISC meet at least quarterly, and within these meetings discuss climate-related risks and opportunities. The Trustee include discussions on climate governance and reporting on their agenda items where appropriate, to question and challenge information provided to them.

The Trustee works with the Scheme's advisers to identify the training needs of ISC committee members (and the wider Trustee Board) and make training recommendations to the Trustee to help them achieve an appropriate

degree of knowledge and understanding relating to climate change and the requirements of the TCFD regulations. The Trustee received the following training in relation to the TCFD:

- **Taking action on climate risk**, covering background on the TCFD regulations, climate risks and opportunities and training on Scope 1, 2 and 3 emissions as well as the different types of climate metrics;
- **TCFD planning**, reinforcing the TCFD regulations, developing a TCFD action plan and an update on TCFD metrics;
- **TCFD update**, covering provisional Scheme specific climate metric data; and
- **TCFD training**, covering an update on the Scheme specific climate metric data, the steps involved in climate scenario analysis and how to set climate targets;
- **TCFD scenario modelling – covenant considerations**, covering the potential impact of different climate change scenarios on the Scheme; and
- **Pensions Team planning meeting with Mercer and Travers Smith,** covering the TCFD initiative and the disclosure requirements.

Strategy

The Trustee's approach to managing strategic climate change risks and opportunities

Summary of Scheme's Assets - DB Section

The table below sets out the actual asset allocation as at 30 September 2022 and the Strategic Asset Allocation. It also includes a Self-Sufficiency Target allocation, which the Trustee intends to transition to over the next 3 to 5 years.

Figure 3: DB Section asset allocation

Asset Class	Actual Asset Allocation	Strategic Asset Allocation	Self-Sufficiency Target Allocation
Equity (Artemis, Calamos, Liontrust, Schroders, Veritas)	33.8%	31.5%	16%
UK Property (Internally managed)	10.3%	10.0%	6%
Fixed Income • Public Investment Grade Credit *(GSAM)* • Public Credit *(Beach Point, CQS)* • Bonds - Private Debt (Beach Point, Ares, Haymarket Financial, MezzVest, Arcmont, HIG Capital, Neuberger Bergman, Cordet, EQT, Muzinich, MSIM, Alcentra) • Liability Driven Investment & Cash *(Insight, BlackRock)*	55.9%	58.5%	78%

The actual asset allocation has been used as the starting point for the DB section scenario analysis. Given the DB Section's funding position, the Trustee and ABF are also considering transitioning the investment strategy to a lower risk, self-sufficiency portfolio over the next 3 to 5 years. Self-sufficiency is an approach which aims for the Scheme to meet all of the promised benefits without receiving further contributions from the Company. The scenario analysis assumes the current allocation transitions to the Self-Sufficiency Target allocation over the 5 year period to 30 September 2027.

As part of the transition to the self-sufficiency portfolio the Trustee will increase the interest rate and inflation hedge ratio, as such the scenario analysis assumes a fixed 80% interest rate and inflation hedge ratio. These ratios aim to mange the impact of interest rate and inflation changes. As at 30 September 2022 the Scheme had interest rate and inflation hedge ratios of 53% and 74% respectively.

Summary of Scheme's Assets - DC Section

The Scheme's DC default investment arrangements are Target Date Funds ("TDFs") managed by Alliance Bernstein, by way of an insurance contract using an investment platform with Mobius Life. All other investments for the DC Section are also held on the same investment platform.

As a minimum, the scope of reporting for DC arrangements is expected to cover popular arrangement(s), which is considered to meet one of the following criteria:

£100m or more of invested DC assets; or

Accounts for 10% or more of the assets used to provide money purchase benefits.

Based on this definition, the Scheme's only popular arrangement is the AllianceBernstein TDF 2035-37.

However, in order to show the impact of climate change on a range of member ages, climate scenario analysis has been completed for the following additional TDFs:

Figure 4: TDFs considered for DC Section scenario analysis

Member approaching retirement:	Members mid-way through the retirement journey:	Younger member:
2023-2025 TDF	2035-2037 TDF (popular arrangement)	2050-2052 TDF
	2038-2040 TDF	2062-2064 TDF
		2071-2073 TDF

Assets within the above TDFs represent 33% of the total DC Section assets.

Climate change timescales

The Trustee believes that sustainability issues, including climate change, present risks and opportunities, which increasingly require consideration. Climate change is identified and described as a systemic risk, which may materially affect the financial performance of the Scheme's investments and/or be material to its DB funding strategy.

The Trustee has considered the following time horizons:

Figure 5: Timeframes of short, medium and long-term horizons to identify relevant climate-related risks and opportunities.

DB Section		
From 30 September 2022		
Short term	2027 (5 years)	Aligns with the possible transition period to a self-sufficient investment strategy
Medium term	2037 (15 years)	Aligns with broad peak cash flow of the Scheme
Long term	2047 (25 years)	Beyond the average duration of the active and deferred liabilities

DC Section		
From 30 September 2022		
Short term	2027 (5 years)	Aligns with a member who is approaching retirement.
Medium term	2042 (20 years)	Aligns with a member who is approximately half way through their journey to retirement.
Long term	2062 (40 years)	Aligns with a member who is just beginning their journey to retirement.

Over the short term, transition risks (i.e. risks and opportunities relating to transitioning the economy to emit lower levels of greenhouse gasses) are expected to dominate and may present themselves through rapid market re-pricing as:

- The likelihood of different levels of global warming occurring, and different approaches to transitioning the economy, change.
- Market awareness of climate risks grows. For example, the implications of the physical impacts of climate change become clearer to markets.
- If policy changes catch markets by surprise. For example, if a carbon price is introduced across key markets to which the portfolio is exposed, at a sufficiently high price to impact behaviour.

Over the medium term, physical risks are increasingly priced in but transition risks are still expected to dominate and will be associated with the transition to a low-carbon economy. These include the development of technology and low-carbon solutions (i.e. transition risks can also present opportunities). Policy, legislation and regulation are likely to also play a key role at the international, national and subnational levels. Technology and policy changes are likely to produce winners and losers both between and within sectors and lead to stranded asset risks.

Over the long term, physical risks are expected to come to the fore. This includes the impact of natural catastrophes leading to physical damage through extreme weather events. Availability of resources is expected to become more important if changes in weather patterns (e.g. temperature or precipitation) affect the availability of natural resources such as water.

The Trustee, through the ISC as appropriate, from time to time considers approaches to climate change risks and opportunities as part of its ongoing investment strategy and funding strategy. The climate scenario analysis (and climate metrics) will help the Trustee to consider how the Scheme is exposed to climate-related risks and opportunities.

Climate-related risks and opportunities relevant to the Scheme over the time periods that the Trustee has identified and the impact of these on the Scheme's investment strategy

Climate-related Risks

One of the greatest impacts to the Scheme from climate change is investment risk. The performance of the Scheme's portfolios is directly aligned with the value of the underlying assets, which are increasingly impacted by climate-related risks.

The Trustee seeks to ensure that the Scheme's investment strategy is well-diversified and that the investment managers have an appropriate understanding of both the companies and assets in which they invest and the risks to which they are exposed. The Trustee has set carbon reduction targets for the DB Section's Equity and Fixed Income GSAM portfolio as well as the DC Section's TDFs. The Trustee is engaging with managers to make them aware of these targets and will monitor the managers against them. As data availability improves the Trustee will be able to consider extending such targets to the Scheme's other managers.

The Trustee monitors on an annual basis the carbon intensity of the Scheme's assets and how this changes over time, where the information is available. The carbon intensity for each of the Scheme's assets and impact on the Scheme's investment and funding strategy has been reported (where available) within the Scenario Analysis section below and the Metrics section of this report.

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

Over the short term (out to 5 years), risks may present themselves through rapid market re-pricing relating to climate transition as:

- Scenario pathways become clearer. For example a change in the likelihood of a well below 2°C scenario occurring and driving the transition risk;
- Market awareness grows. For example, the cost and impacts of the transition suddenly influence market pricing;
- Policy changes unexpectedly surprise markets. For example, if a carbon price or significant regulatory requirement was introduced across key markets to which the portfolio is exposed, at a sufficiently high price to impact behaviour;
- Substitution of existing products and services with lower emission alternatives may impact part of the portfolio;
- Litigation risk relating to dangerous warming becoming more prevalent; and
- Increases in the energy/heat efficiency of buildings and infrastructure.

Over the medium term (out to 15-20 years), risks are likely to be more balanced reflecting both transition and physical risk. Over this time period the transition pathway will unfold and the level of anticipated physical damage will become much clearer. While the full extent of the physical damage is unlikely to have occurred, markets are likely to be allowing for it to a large degree in asset pricing.

Over the long term (beyond 25 years), physical risks are expected to come to the fore. This includes the impact of natural catastrophes leading to physical damages through extreme weather events. Availability of resources is expected to become more important if changes in weather patterns) affect the availability of natural resources such as water.

Climate-related Opportunities

There are significant opportunities for investing in companies and assets that may benefit the Scheme's portfolio as the economy transitions to a lower carbon environment. For example, over the short term, taking advantage of the climate transition by avoiding and reducing investment in high-emitting carbon sensitive businesses/assets that do not have a business plan that supports the transition to a low carbon economy.

The Trustee has given its investment managers discretion when evaluating ESG factors (including climate change considerations). The Trustee is taking steps to communicate its expectations to its investment managers to therefore consider the impacts of climate change on risk and return, including any opportunities that may arise, when managing the Scheme's assets. The Trustee seeks to select managers and choose indices that can identify potential emergence of low carbon opportunities and the decline of some traditional sectors.

Climate risks and opportunities will be considered as part of future investment strategy reviews for the DB and DC Sections where appropriate.

Climate change scenarios

This section considers the impact of three climate scenarios, relative to a base case scenario[2], where financial markets behave in line with Mercer's capital market assumptions as at 30 September 2022. These are defined as 'warming pathways': the expected degrees of warming of the atmosphere by the end of the century relative to pre-industrial levels.

Figure 6: Mercer's climate change scenarios

	1.5°C Scenario – Rapid Transition	<2.0°C Scenario – Orderly Transition	4.0°C Scenario – Failed Transition
Overview	Average temperature increase of 1.5°C by 2100 in line with the Paris Agreement. This scenario assumes sudden large-scale downward re-pricing across multiple securities in 2026. This could be driven by a change in policy or realisation that policy change is inevitable, consideration of stranded assets or expected cost. To a degree the shock is sentiment driven and is therefore followed by a partial recovery across markets. The physical damages are most limited under this scenario.	Average temperature increase of less than 2.0°C by 2100. This scenario assumes political and social organisations act in a quick, predictable, co-ordinated way to implement the recommendations of the Paris Agreement to limit global warming to well below 2°C. Transition impacts do occur but are relatively muted across the broad market.	Average temperature increase above 4°C by 2100. This scenario assumes the world fails to co-ordinate a transition to a low-carbon economy and global warming exceeds 4°C above pre-industrial levels by 2100. Physical climate impacts cause large reductions in economic productivity and increasingly negative impacts from extreme weather events. These are reflected in re-pricing events in the late 2020s and late 2030s.

[2] See Appendix 2 for more detail on the base case scenario.

These scenarios align with those recommended in the Department for Work and Pensions in its statutory guidance on pension scheme TCFD reporting. Running analysis against lower and higher warming pathways allows the Trustee to explore the potential impact of both transition risks and physical risks.

Climate scenario analysis is an evolving space and, as such, the scenarios modelled and reported may be subject to review in future periods. Appendix 2 provides further information on the key assumptions and limitations of the climate scenario modelling. 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.

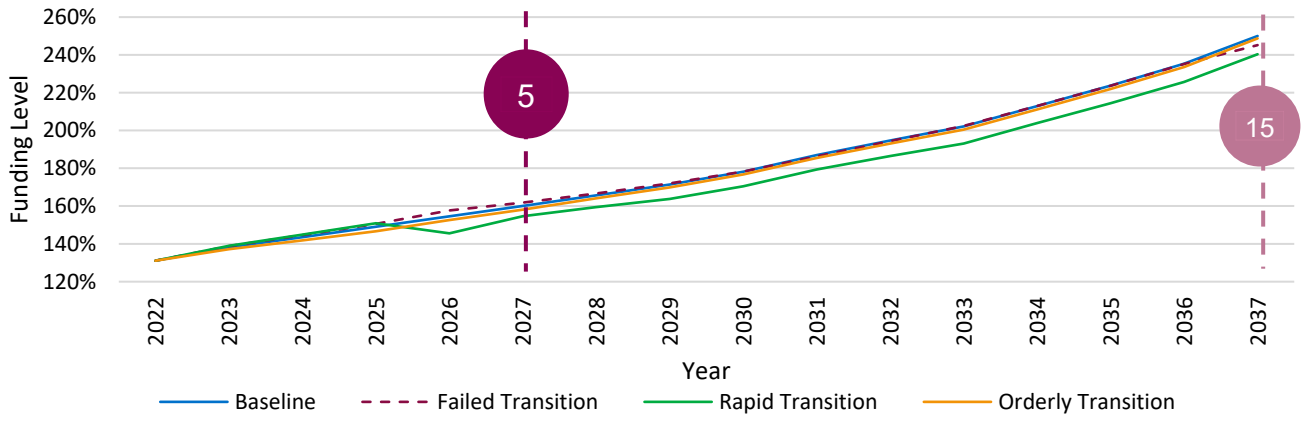
Impact on DB Section investments and funding

The DB Section is due to undergo a transition to a self-sufficiency portfolio over the next 3 to 5 years. As there is reasonable certainty over the transition to the self-sufficiency portfolio (albeit the final allocations and timing may be subject to change), this transition is reflected as part of the climate scenario analysis. Specifically, in producing the analysis, the asset allocation has been phased over a period of 5 years from the actual asset allocation as at 30 September 2022 to the Self-Sufficiency Target allocation. Once the Self-Sufficiency Target allocation is reached the asset allocation is assumed to remain static.

In addition, given the strong funding level of the DB Section, the Trustee is in the process of agreeing a contribution abatement with the Sponsor. As such, it has been assumed there are no further DB contributions hence future DB Section contributions have not been included as part of the analysis.

The funding level projections are heavily influenced by the starting funding position, which is very strong. As a result, the projections show the funding position reaching very high levels over the medium to long-term. The Trustee notes that the important aspect of the scenario analysis is the funding level relative to the baseline, as opposed to the actual funding level in each scenario. Further, as part of the evolution of the self-sufficiency approach, actions will be taken to maintain the funding level at appropriate levels.

Figure 7: DB Section - 15 year projection

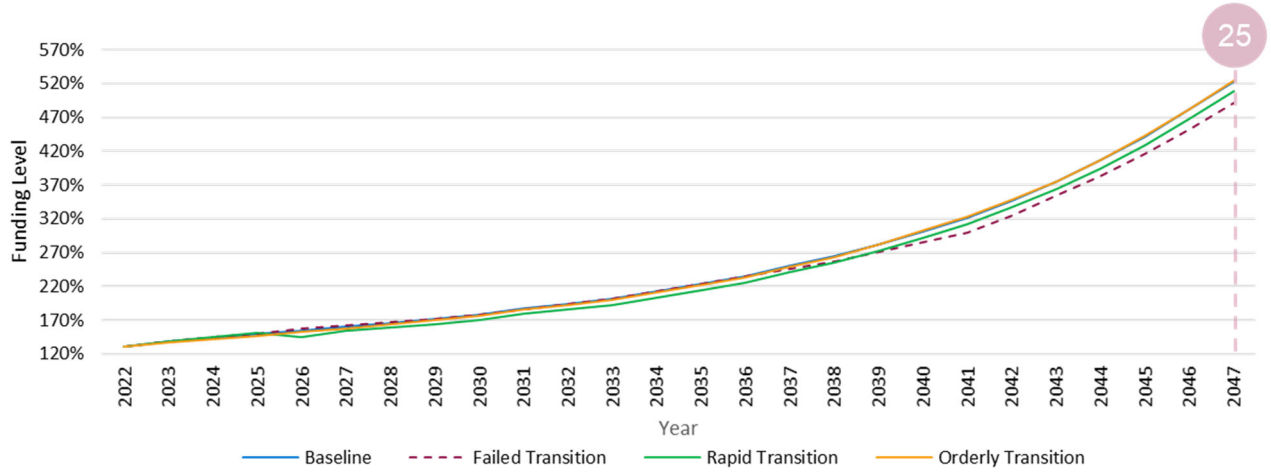


In the **short term** (5 years), transition risk dominates, with the Rapid Transition having the largest impact. A funding level loss of c.5.5% is projected (i.e. over the short term, the funding level under a Rapid Transition scenario is 5.5% worse than in the central, baseline scenario), due to a reduction in expected investment returns of c.0.7% p.a., as unprecedented policy action causes markets to initially overreact. All asset classes within the Scheme's investment strategy experience losses except LDI and cash. The market is then assumed to largely recover in subsequent years. The credit mandates contribute to the rebound on the basis of limited additional defaults. In the short term, the DB Section performs best in the Failed Transition, with a projected funding level gain of c.1.7% relative to the baseline. This is a result of the markets not re-pricing and as a result growth assets

like equities performing well. Overall, the Trustee considers the Scheme to be resiliant to climate risk over this period.

Over the **medium term** (15 years), physical risks begin to be priced in. At this point it is projected that all scenarios experience a drop in funding level relative to the baseline. The largest impact is seen in the Rapid Transition, with a funding level fall of c. 9.6% relative to baseline (i.e. over the medium term, the funding level under a Rapid Transition scenario is 9.6% worse than in the central, baseline scenario). This is due to the large transition impact on equity valuations which, over this timeframe, have not experienced the benefit of lower physical impact of the Rapid Transition. The Orderly Transition has a marginally negative impact, with a cumulative loss of c.1.3% relative to the baseline. This is due to these impacts being (a) relatively small and (b) priced in to an extent. Overall, the Trustee considers the Scheme to be resiliant to climate risk over this period. The Failed Transition scenario lies in between the other two scenarios, as physical risks begin to be priced in.

Figure 8: DB Section - 25 year projection



Over the **long term** (25 years), the DB Section assets fare better under the Orderly Transition versus the baseline with a funding level rise of c.1.2% projected (i.e. over the long term, the funding level under an Orderly Transition scenario is 1.2% better than in the central, baseline scenario). Over this longer period physical impacts are lower in both the Orderly and Rapid transition due to temperature rises being limited. Therefore both these scenarios perform materially better than the Failed Transition (by 33.1% and 17.6% in funding level terms respectively), where physical impacts are most accutely felt given higher temperature rises. However, under all scenarios the funding level is significantly above 100% and therefore the Scheme is considered to be resliant to climate risk over this longer period. A summary of the results is provided in the table below.

Figure 9: DB Section – funding level projections relative to baseline[3]

	Funding level projection relative to baseline		
	Short term (5 Years)	**Medium term (15 years)**	**Long term (25 years)**
Rapid Transition	-5.5%	-9.6%	-14.3%
Orderly Transition	-2.0%	-1.3%	+1.2%
Failed Transition	+1.7%	-4.8%	-31.9%

[3] See Appendix 2 for a summary of how the DB Section assets perform in the different scenarios over time.

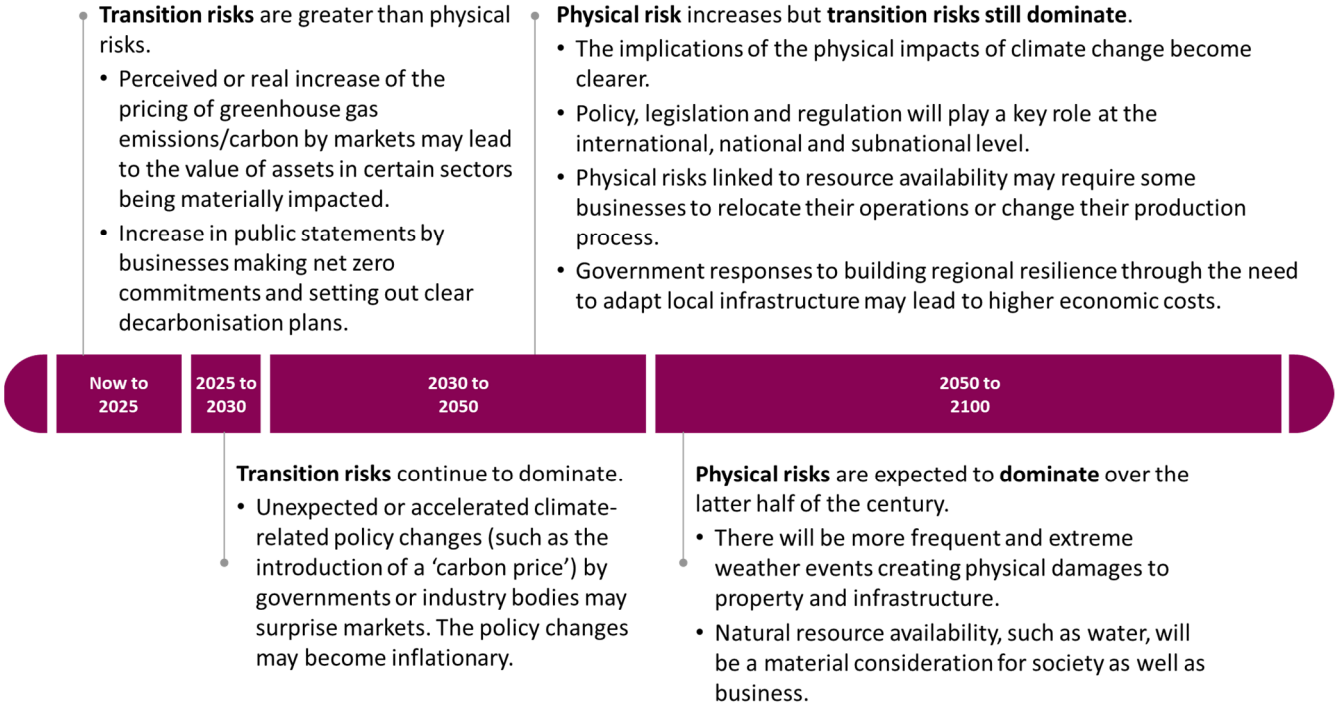
Overall, the Trustee believes the DB Section's investment strategy and funding level demonstrate robustness with respect to the potential impact of climate change across the scenarios over each of the timeperiods considered. The Trustee notes this is largely due to the current strong funding position of the Scheme and the de-risking that will occur as a result of the transition to the Self-Sufficiency Target allocation.

Impact on life expectancy

The analysis above ignores any impact that these scenarios might have on life expectancy of pension scheme members.

The Trustee has carried out a seperate analysis of potential mortality impacts from climate-related scenarios, this analysis covers both the transition and physical risks described previously. The balance between these will vary over different time horizons as set out below.

Figure 10: DB Section - Impact of transition and physical risks on mortality over time



The scenarios considered by the Trustee are in line with those detailed in Figure 6 of this report, i.e. Rapid Transition, Orderly Transition and Failed Transition. We also show one further scenario, 'Middle of the Road', which falls between the Orderly and Failed Transition scenarios.

In modelling scenarios for mortality impacts, the Trustee's advisors have made use of:

- Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSPs) as defined by the UN Intergovernmental Panel on Climate Change (IPCC), including estimated projected temperatures.
- Relationships between each SSP and a range of socioeconomic and other variables as published by the UK Climate Resilience Program and modelling of how changes to those variables would affect UK mortality rates.
- UK-based climate projections from the Met Office, with correlations between past climate data and mortality rates being used to predict future influences.

Our modelling indicates the following scenario outcomes, each compared to mortality assumptions constructed with no explicit allowance for climate-related risks[4]:

Figure 11: DB Section - Impact of climate scenarios on life expectancy

SSP	RCP	Likely temperature increase to 2100 vs pre-industrial	Scenario	Life Expectancy Change		Scheme Liability Impact
				Age 25	Age 65	
1	1.9	Within ~ 1.5 °C	Rapid Transition	+ 1 month*	+ 22 months*	+ 6.5%
1	2.6	Within ~ 2 °C	Orderly Transition			
2	4.5	Within ~ 3 °C	Middle of the Road	- 13 months*	+ 12 months*	+ 3.3%
3	7	Within ~ 4 °C	Failed Transition	- 62 months*	- 3 months*	- 1.9%

In the Scheme's DB Section, the youngest member (ignoring dependants) is aged 38 and the oldest pensioners are over age 100. For reference, in the DC Section, the youngest members are aged 18, while the oldest members are over age 65.

Based on the range of scenarios above, climate-related longevity uncertainty is higher in respect of younger generations, though there is more funding risk associated with climate-positive scenarios and their implications for improved shorter-term mortality for current pensioners. Key drivers of differences in life expectancies between the scenarios include GDP growth and health care provision, in addition to the impact of temperature rises.

Based on this analysis, mortality changes arising from the direct and indirect impact of climate change may be material to the funding position longer term. The Trustee regularly reviews the funding position of the Scheme as part of its integrated risk management framework.

Impact on the sponsoring employer

ABF Group has an ambition to become net zero by 2050, certain businesses within the Group have set challenging interim targets to reduce emissions by 2030.

In 2022 ABF worked with third party experts (South Pole) to perform scenario analysis on a range of different scenarios, including <2˚C and 4˚C, to assess Group resilience. Risks and opportunities have been considered over three time horizons: Short-term (by 2025), Medium-term (by 2030) and Long-term (by 2050).

To date, the Group has prepared largely qualitative disclosures in relation to TCFD (quantitative assessments are expected in future years). Consequently the work that the Trustee can reasonably undertake with respect to the impact of climate change on the employer is also based on a qualitative assessment.

[4] It is important to note that these "Results" are based on longevity projection models and third-party data which may produce output that differ materially from actual outcomes. The Results are set out for informational purposes only and should not be used for any other purpose. In particular, the Results should not be relied upon and they are not suitable for repurposing, copying, redistributing or modifying. The model provider disclaims all liability and makes no representations about the suitability for any purpose of the Results and such content is supplied on an as is basis, without any warranty of any kind.

Climate-related risks are considered integral to ABF's long-term success and as such have been fully integrated into the Group's strategic plans. ABF has a diverse portfolio that spans multiple geographies. Therefore, the Trustee and its covenant adviser anticipate the Group will be able to manage the risks faced over the short- to medium-term.

The DB Section is currently well funded and as such there is a low reliance on sponsor covenant today (sponsor covenant is the commitment from the Company to support the Scheme and meet its pension obligations). Rather than seek a buy-out of the Scheme's liabilities, removing covenant reliance and the Scheme's exposure to ABF's climate risks, the Trustee and the Company intend to "run-on" the Scheme. Over time, should the Scheme's funding surplus reduce, its level of covenant reliance may increase. The Trustee will therefore continue to monitor the Company's climate risk exposure on a proportionate but frequent basis.

Impact on the DC Section

As noted earlier, DC scenario analysis has been completed for the 2035 – 37 TDF (the popular arrangement) as well as 5 other TDFs (see Figure 4) to cover a broad range of member ages. The table below shows the impact on returns of the Target Dated Retirement Funds under the 3 climate scenarios. The figures below are the cumulative impact on a member's return relative to the baseline scenario. For example, in 20years' time, the value of a DC member's assets invested in TDF 2050-2052 is projected to be -19.9% lower under a failed transition scenario than under the baseline scenario:

Figure 12: DC Section – cumulative impact on returns relative to baseline

	Rapid Transition			Orderly Transition			Failed Transition		
	Year 5	Year 20	Year 40	Year 5	Year 20	Year 40	Year 5	Year 20	Year 40
TDF 2023-2025	-2.6%			-1.1%			0.9%		
TDF 2035-2037	-6.2%	-4.2%		-2.0%	-1.2%		1.8%	-8.8%	
TDF 2038-2040	-6.7%	-4.5%		-2.3%	-1.6%		1.9%	-10.2%	
TDF 2050-2052	-9.7%	-6.4%	-6.0%	-2.8%	-2.7%	-5.7%	2.5%	-19.9%	-23.4%
TDF 2062-2064	-9.7%	-6.1%	-5.2%	-2.8%	-3.0%	-7.7%	2.5%	-25.7%	-32.1%
TDF 2071-2073	-9.7%	-6.1%	-4.7%	-2.8%	-3.0%	-8.6%	2.5%	-25.7%	-34.4%

Over the **short term** (5 years), transition risk dominates. The Rapid Transition is the most impactful scenario, meaning this scenario has the most negative impact on member's asset value relative to the baseline. Under this scenario there is a shock to returns in year 4 followed by a partial recovery the following year. The Failed Transition is marginally positive due to expected transition costs not materialising.

Over the **medium term** (20 years) physical damages begin to be priced in, the Failed Transition becomes the most impactful scenario.

Over the **long term** (40 years), physical damages are the dominant driver and the Failed Transition is by far the worst scenario. In addition, we see the additional warming and hence damage in the Orderly Transition (compared to the Rapid Transition) meaning it becomes a more negative scenario.

Key assumptions for the scenarios used and the key limitations of the modelling are detailed in Appendix 2.

Risk Management

The Trustee recognises that climate-related risks can be financially material and that due consideration of climate risk falls within the scope of the Trustee's fiduciary duty. Given the long-term nature of the Scheme's investments and the timeframe in which climate risks could materialise, a total portfolio approach to risk management covering all sectors and all relevant asset classes has been taken, coupled with funding and covenant analysis for the DB Section.

This section summarises the primary climate-related risk management processes and activities of the Trustee. These help the Trustee identify and understand the materiality of climate-related risks, both in absolute terms and relative to other risks to which the Scheme is exposed, and to integrate this within the Trustee's overall risk management framework.

Governance

The Trustee reviews climate change developments to identify risks and opportunities for the Scheme regularly. In particular, the Trustee reviews the DB Section's investment managers' ESG ratings quarterly and the DC Section's manager annually. Climate-related risks are referenced in the Trustee's risk register.

The Trustee reviews the advice and services provided by its advisers as part of the selection and monitoring process, and questions and challenges the advice it receives where appropriate.

Strategy

The Trustee has carried out climate change scenario modelling which provides a strategic assessment of climate change risks and opportunities. This focused on the Scheme's potential exposure to both transition and physical risks.

Whilst the Scheme has low reliance on its sponsor covenant, given its very strong funding position, the Trustee has also consulted with its covenant advisor, Mercer, regarding the impact of climate change on the Company. This indicated that climate-related risks are considered integral to ABF's long-term success and as such have been integrated into the Group's strategic plans. Furthermore, ABF has a diverse portfolio of businesses that spans multiple geographies. Therefore, the Trustee anticipates the Group will be able to manage the risks faced over the short- to medium-term.

Metrics and Targets

As set out later in this report, the Trustee has assessed the Scheme using a number of climate-related metrics to identify potential areas of risk and to inform Trustee consideration of how these risks can be appropriately assessed and managed.

Considering the importance of climate risk compared to the other risks that the Scheme faces, the Trustee has set targets to reduce greenhouse gas emissions, which broadly align with the Paris Climate Change Agreement. The Trustee will monitor progress against these targets annually. The Trustee believes that this will help it to take steps to reduce climate-related risk over time.

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 consultants and investment managers to improve its approach to assessing and managing risks over time.

Manager selection, monitoring and retention

The Trustee relies on third-party investment managers to manage Scheme assets. Part of the managers' day to day functions includes looking at climate change related risks on specific assets, as relevant. Therefore, the managers in turn are regularly assessed, including as to ESG and climate risk effectiveness, using the Trustee investment consultant's ESG investment manager research ratings and as part of the annual TCFD report and Implementation Statement. ESG credentials also factor into the decision-making process when appointing new investment managers.

Where relevant, managers are invited to present to the ISC to explain their approach to climate change risk management, amongst other topics.

Active stewardship

The Trustee recognises that active ownership by the investment managers will continue to be a very important part of the Scheme's approach to managing these risks. The Scheme's voting rights are exercised by its investment managers in accordance with their own corporate governance policies. The Trustee expects its FCA registered managers to comply with the UK Stewardship Code. The Trustee encourages its non-FCA authorised managers to adhere to the Stewardship Code on a best-efforts basis. The Trustee is taking steps to communicate these views with its investment managers. The Trustee may, from time to time, ask the Scheme's Investment Managers to explain their corporate governance policy and practices and review their voting activities. In particular, the Trustee asks the Investment Managers to provide annual reports indicating the overall level of voting activity and detailing any instances where they have not voted in line with their stated policy.

Metrics

Key metrics for climate change related risks

Climate risk metrics aid the assessment of potential climate-related risks to which the Scheme is exposed and help to identify areas for further risk management, including engagement and fund manager monitoring.

The Trustee recognises that the availability of accurate data for some asset classes or methodology is an industry-wide issue and will engage with the investment managers to improve their climate reporting.

The Trustee has chosen to report on the following metrics:

Figure 13: Summary of chosen metrics

Metric type	Description
1. **Absolute emissions**: Total greenhouse gas emissions	The total greenhouse gas emissions (in metric tons) of the Scheme's investments
2a. **Emissions intensity**: Carbon footprint	Total greenhouse gas emissions (in metric tons) weighted to take account of the size of the investment made (in US $million)
2b. **Alternative emissions intensity**: Weighted Average Carbon Intensity ("WACI")	The average, based on the size of the Scheme's holding in each investment, of the greenhouse gas emissions (in metric tons) divided by revenue (in US $million) associated with each investment
3. ***Portfolio Alignment***: Implied temperature rise ("ITR")	An estimate of the level of global warming consistent with the Scheme's investments. Alignment is measured relative to the Paris Agreement goal of limiting the increase in global average temperature to 1.5°C above pre-industrial levels.
4. **Additional metrics***:* Data quality	Proportion of the portfolio for which emissions data is verified, reported, estimated or unavailable.

The Trustee has chosen **total greenhouse gas emissions as its absolute emissions metric** and **carbon footprint as its emissions intensity metric** in line with the Department for Work and Pensions recommendations. In addition to carbon footprint, the Trustee has also chosen to report **WACI as an additional emissions intensity metric**. This is currently the preferred intensity metric for a number of the Scheme's investment managers and has been chosen given the higher levels of data coverage for this metric.

In terms of emissions-based metrics (total greenhouse gas emissions, carbon footprint and WACI), given data availability and the regulatory requirements, the Trustee is reporting on aggregate Scope 1 and 2 emissions only at this stage. Scope 1, 2 and 3 emissions are defined as follows:

- **Scope 1 "direct" emissions**: those from sources owned or controlled by the Company (e.g. direct combustion of fuel from vehicles); and
- **Scope 2 "indirect" emissions**: those caused by the generation of energy (e.g. electricity) purchased by the Company.
- **Scope 3 "indirect" emissions**: In this category go all the emissions associated, not with the company itself, but that occur in the value chain of the reporting company.

The reporting of Scope 3 emissions is not required in the first reporting year. In line with regulations this will be provided in the Scheme's second statutory report, subject to data availability and regulatory requirements.

The Trustee has chosen **ITR as its portfolio alignment metric** because of its simplicity in presentation and as it is a useful way to see, at a glance, the positioning of a Scheme towards a low carbon economy. Investments with high ITR metrics are likely to have a greater transition risk.

The Trustee has also chosen **data quality as an additional non-emissions-based metric** as it quantifies the overall data coverage and helps identify mandates where the Trustee should work further with its investment managers to increase the coverage of data reported.

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.

Results – DB Section

Data assumptions and limitations; overall summary

The dashboard presented overleaf shows metrics data as at 30 September 2021 (the "baseline") and 30 September 2022, across the Scheme's DB public assets. Data requests were sent to all non-legacy DB managers, but data was not received from the following:

- UK Property internally managed (10% strategic target) due to lack of data availability on the underlying assets;
- BlackRock Currency Hedging due to the short term nature of the contracts and lack of direct carbon emissions.;
- Ares and Muzinich Private Debt mandates could not provide data at time of writing;
- The abrdn allocation as at 30 September 2022 given this was fully redeemed; and
- Bridgepoint (EQT), Haymarket Financial, Cordet and HIG Capital Private Debt mandates due to lack of data availability on the underlying assets.

Given data coverage is much better for public assets, the dashboard focuses on DB public assets. The darker grey colouring in the table shows that a specific metric is not yet reported by that investment manager.

The Insight LDI data coverage figure reflects the net UK Government bond position, i.e. total physically held UK Government bonds as a proportion of the total value of the LDI portfolio.

Where managers have provided carbon footprint normalised by invested value in a currency other than USD, Mercer has converted this metric to USD for consistency across all investment managers, based on the exchange rate as at 30 September 2021 and 30 September 2022 (source: Refinitiv).

The rationale for the approaches taken by the Trustee is that these were considered to be proportionate in year 1, having regard to data limitations.

The Scheme's actual asset allocation has been used to compute the Scheme's aggregate metrics where relevant.

Given issues with data quality and coverage, the Trustee has not engaged the managers of the Private Debt portfolio on the validity of responses. The Trustee will engage with these managers to improve data quality as part of future reports.

Figure 14: Metrics summary as at 30 September 2021 (DB Public Assets)

Asset Class	Manager	Allocation (£m)	Climate related metrics				
			Total GHG Emissions (tCo2e)	Carbon Footprint (tCo2e/US $M invested)	WACI (tCo2e/US $M sales)	Implied Temperature Rise (ºC)	Data coverage
Equity *(31.5% strategic allocation)*	Liontrust	369.6	95,533	192	137	-	99%
	Artemis	251.9	37,547	112	168	2.5	99%
	Schroders	250.4	30,498	90	-	-	100%
	Calamos	296.0	36,481	98	-	2.3	79%
	Veritas	234.3	1,967	7	38	1.8	100%
Fixed income *(58.5% strategic allocation)*	GSAM	70.5	4,738	50	123	-	75%
	Beach Point	298.2	71,728	134	111	-	93%
	CQS	199.1	18,533	91	87	-	79%
	Insight	791.5	231,452	159	-	1.5-2.0	30%
Total assets analysed		**2,761.5**					**75% coverage**
Percentage of DB assets		**65%**					**48% total assets**

Source: Investment Managers and Mercer.

Figure 15: Metrics summary as at 30 September 2022 (DB Public Assets)

Asset Class	Manager	Allocation (£m)	Climate-related metrics				
			Total GHG Emissions (tCo2e)	Carbon Footprint (tCo2e/US $M invested)	WACI (tCo2e/US $M sales)	Implied Temperature Rise (ºC)	Data Coverage[5]
Equity *(31.5% strategic allocation)*	Liontrust	277.2	35,616	116	104	-	98%
	Artemis	213.5	19,391	82	116	2.1	97%
	Schroders	245.8	18,737	68	-	-	97%
	Calamos	254.6	12,837	45	-	3.0	83%
	Veritas	218.1	1,524.3	7	46	1.8	100%
Fixed income *(58.5% strategic allocation)*	GSAM	8.5	12 5	1	6	-	100%
	Beach Point	362.3	71,771	178	137	-	96%
	CQS	178.4	11,015	78	86	-	71%
	Insight	562.8	164,957	201	-	1.5-2.0	26%
Total assets analysed		**2,321.2**					**76% coverage**
Percentage of DB assets		**65%**					**49% total assets**

Source: Investment Managers and Mercer.

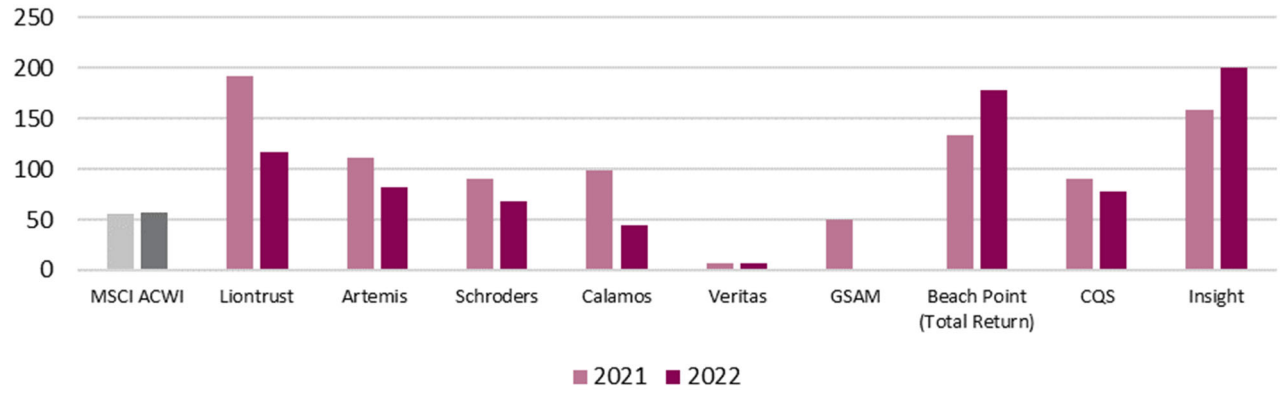
[5] Data coverage based on reported and estimated data.

Carbon footprint

The Trustee monitors Scope 1 and 2 carbon metrics against a benchmark or comparator index, which helps identify broad market trends and enables the Trustee to monitor their investment managers in context of these trends. Over the year to 30 September 2022, the Trustee makes the following observations:

- The carbon footprint of most strategies reduced over the year to 30 September 2022, with the exception of Beach Point Total Return and Insight LDI; the latter due to a fall in the value of government bonds as opposed to an increase in emissions
- The carbon footprint for the Fixed Income GSAM portfolio has fallen dramatically due to the trading activity on 30 September 2022, which resulted in the holding being predominantly cash on this day.
- With the exception of Veritas, the DB Section's Equity managers have a higher carbon footprint than broad global equities (as measured by the MSCI ACWI index) in both 2021 and 2022.

Figure 16: DB Section carbon footprint summary as at 30 September 2022



Source: Investment managers.

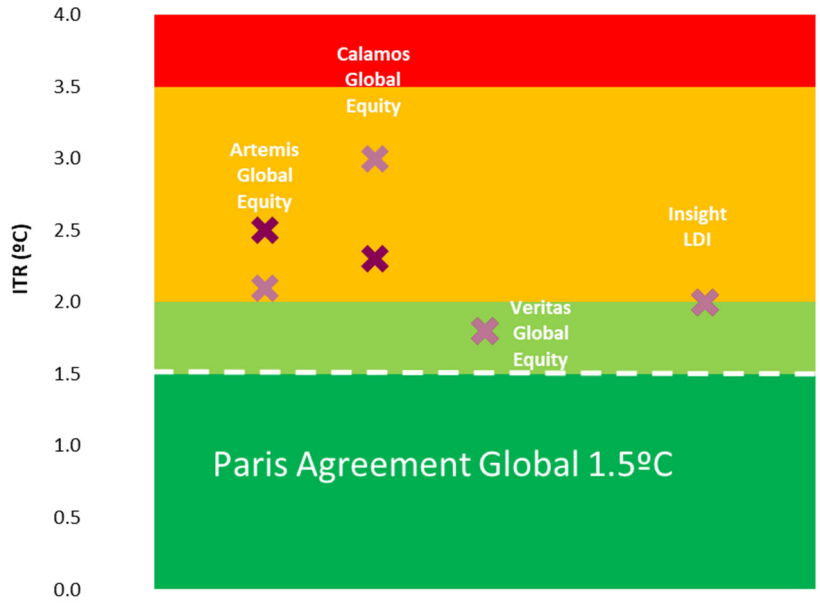
Implied temperature rise

The majority of managers are currently unable to calculate an Implied Temperature Rise (ITR), and consequently the Trustee is not able to calculate a portfolio alignment metric for these assets where the ITR data is currently unavailable. For those assets where ITR data is available, the ITR ranges between 1.8°C and 2.9°C, reflecting underlying companies at different stages of transitioning towards a low carbon future but also a range of methodologies for computing ITR. Figure 17 below plots the 2021 and 2022 ITRs for the managers who were able to share ITR data. The Trustee makes the following observations:

- The Veritas and Insight ITR metrics are unchanged between 2021 and 2022.
- The Artemis ITR reduced between 2021 and 2022, whilst the Calamos ITR increased.
- None of the DB Sections ITR scores are currently consistent with a 1.5oC target, but Veritas and Insight are consistent with a 2°C target.

There are currently multiple methodologies for calculating ITR and these can have variable results. We expect there to be greater consensus on methodologies over time, but it is important to be aware that the results can be materially different based on the methodology chosen. Where multiple temperatures are provided by the manager, we have plotted the highest figure.

Figure 17: DB Section ITR summary as at 30 September 2022



✕ = 2021 ITR; ✕ = 2022 ITR

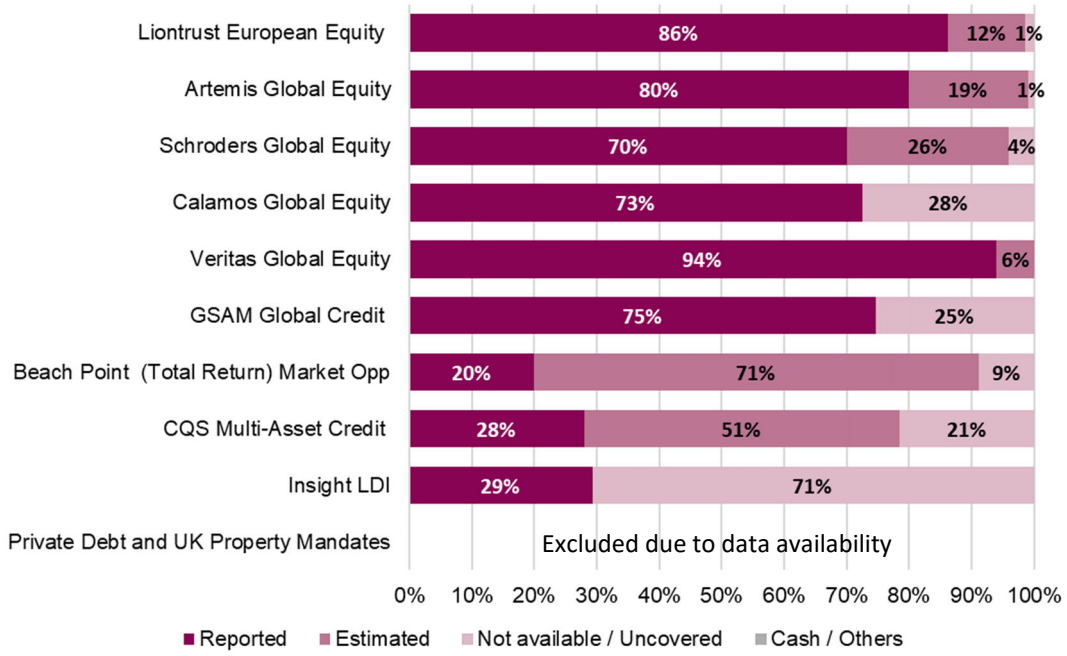
Source: Investment managers.

Data quality

The Trustee monitors the development of data quality year on year and expects this to increase over time. The charts below show the data quality for those managers where quality is determined to be of sufficient value. The Trustee notes that:

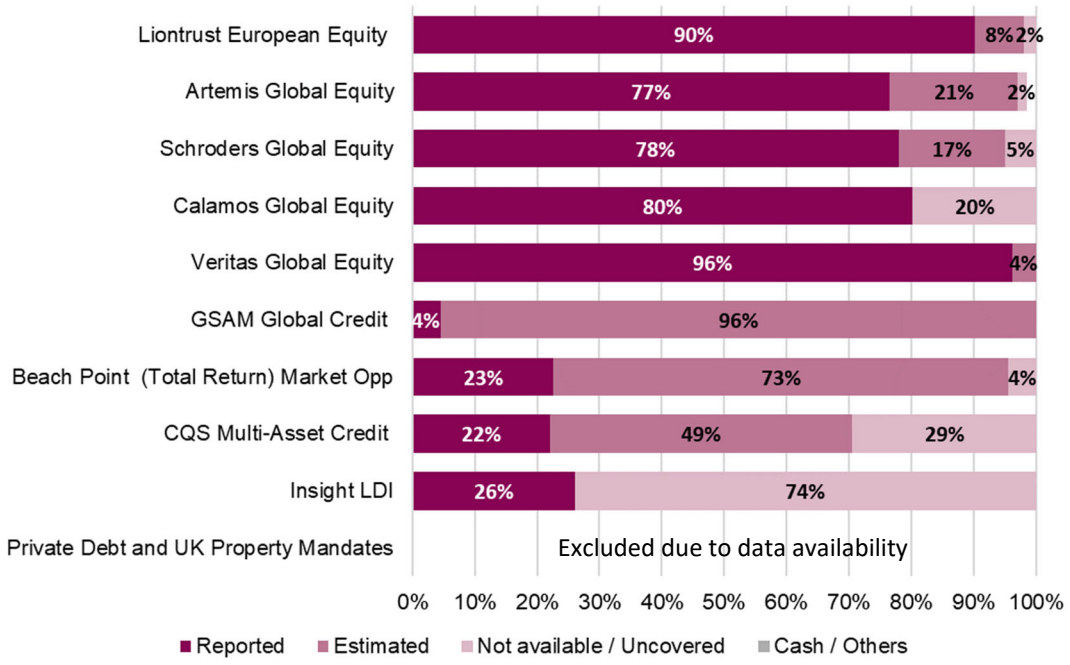
- Data quality for the Liability Driven Investment (LDI) mandate is based on the proportion of the gilt exposure that is fully funded (the LDI mandate is a strategy which aligns investment portfolios with future liabilities).
- For the rest of the Scheme's assets, data quality is mixed, with equity mandates having the largest proportion of reported data and with only a limited number of Private Debt mandates providing data.
- There appears to be little improvement in data availability over the year with non-equity mandates in particular continuing to rely heavily on estimated data.

Figure 18: DB Section data quality as at 30 September 2021



Source: Investment managers.

Figure 19: DB Section data quality as at 30 September 2022



Source: Investment managers.

Results - DC Section

The majority of the Scheme's DC assets are managed by AllianceBernstein in the TDF range, which represents 98% of the total DC Section assets. AllianceBernstein produces the agreed emissions-based metrics. This enables the Trustee to consider the carbon emissions data in a consistent manner across the DC mandates.

The Trustee is required to provide metrics data for all popular DC arrangements which are funds or Lifecycle arrangements that meet certain criteria; they either make up more than 10% of the total DC assets or are valued at over £100m. As noted previously, there is only one popular DC arrangement within the DC Section, however the metrics for all of the DC TDFs have been included within this report for complete analysis of members at different stages of the lifecycle.

The DC TDF's are shown in Figure 20 below and Figure 21 overleaf. As at 30 September 2022, c.11% of the DC assets were held in the popular arrangement, the 2035-37 TDF.

Please note that most metrics shown in this report are not representative of 100% of assets within a certain arrangement but are based on the proportion of assets for which climate metrics are available (the "coverage"). Coverage figures may vary depending on the specific climate metric shown.

Figure 20: Analysed Funds in the DC Section as at 30 September 2021

Vintage	Total Assets (£m)	% of total assets	Total greenhouse gas (GHG) emissions (tCo2e)	Carbon footprint (tCo2e/US $M invested)	Weighted Average Carbon Intensity (tCo2e/US $M revenue)	Implied temperature rise (°C)	Data Coverage
2011-2013	0.5	0.1%	110	214	133	2.4	42%
2014-2016	2.3	0.3%	455	199	130	2.4	42%
2017-2019	6.5	0.8%	1,200	185	128	2.4	44%
2020-2022	22.9	2.7%	3,954	174	126	2.4	46%
2023-2025	36.8	4.3%	5,434	148	129	2.3	52%
2026-2028	56.0	6.6%	6,657	120	140	2.3	62%
2029-2031	66.9	7.9%	6,537	98	144	2.3	68%
2032-2034	81.1	9.6%	6,552	81	142	2.3	73%
2035-2037	91.0	10.7%	6,585	73	142	2.3	81%
2038-2040	83.4	9.8%	5,779	70	141	2.3	87%
2041-2043	79.2	9.3%	5,319	68	138	2.3	93%
2044-2046	72.7	8.6%	4,827	67	136	2.3	97%
2047-2049	68.0	8.0%	4,518	67	136	2.3	97%
2050-2052	60.0	7.1%	3,984	67	136	2.3	97%
2053-2055	50.9	6.0%	3,382	67	136	2.3	97%
2056-2058	34.0	4.0%	2,254	67	136	2.3	97%
2059-2061	15.7	1.9%	1,043	67	136	2.3	97%
2062-2064	3.9	0.5%	260	67	136	2.3	97%

Vintage	Total Assets (£m)	% of total assets	Total greenhouse gas (GHG) emissions (tCo2e)	Carbon footprint (tCo2e/US $M invested)	Weighted Average Carbon Intensity (tCo2e/US $M revenue)	Implied temperature rise (°C)	Data Coverage
2065-2067	0.4	0.0%	25	67	136	2.3	97%
2068-2070	0.0	0.0%	1	67	136	2.3	97%
2071-2073	0.0	0.0%	0	67	136	2.3	97%
Total	**832.2**	**98.2%**	**68,875**				

Source: AllianceBernstein

Figure 21: Analysed Funds in the DC Section as at 30 September 2022

Vintage	Total Assets (£m)	% of total assets	Total greenhouse gas (GHG) emissions (tCo2e)	Carbon footprint (tCo2e/US $M invested)	Weighted Average Carbon Intensity (tCo2e/US $M revenue)	Implied temperature rise (°C)	Data Coverage
2011-2013	0.2	0.0%	10	64	83	2.2	41%
2014-2016	1.7	0.2%	109	64	84	2.2	41%
2017-2019	4.9	0.6%	315	65	86	2.2	42%
2020-2022	15	1.9%	999	67	90	2.2	43%
2023-2025	31.8	4.0%	2,188	69	94	2.2	47%
2026-2028	50.6	6.3%	3,654	73	103	2.3	56%
2029-2031	58.3	7.3%	4,569	79	112	2.3	66%
2032-2034	72.8	9.1%	5,757	79	114	2.3	72%
2035-2037	85.1	10.7%	6,817	80	116	2.3	80%
2038-2040	79.7	10.0%	6,307	78	115	2.3	87%
2041-2043	76.5	9.6%	5,861	75	112	2.3	92%
2044-2046	70.5	8.8%	5,246	73	110	2.3	94%
2047-2049	66.4	8.3%	4,943	73	110	2.3	94%
2050-2052	59.1	7.4%	4,403	73	110	2.3	94%
2053-2055	50.9	6.4%	3,707	73	110	2.3	94%
2056-2058	34.9	4.4%	2,545	73	110	2.3	94%
2059-2061	17.4	2.2%	1,264	73	110	2.3	94%
2062-2064	5.8	0.7%	425	73	110	2.3	94%
2065-2067	0.6	0.1%	46	73	110	2.3	94%
2068-2070	0.0	0.0%	3	73	110	2.3	94%
2071-2073	0.0	0.0%	0	73	110	2.3	94%
Total	**782.2**	**98.0%**	**59,159**				

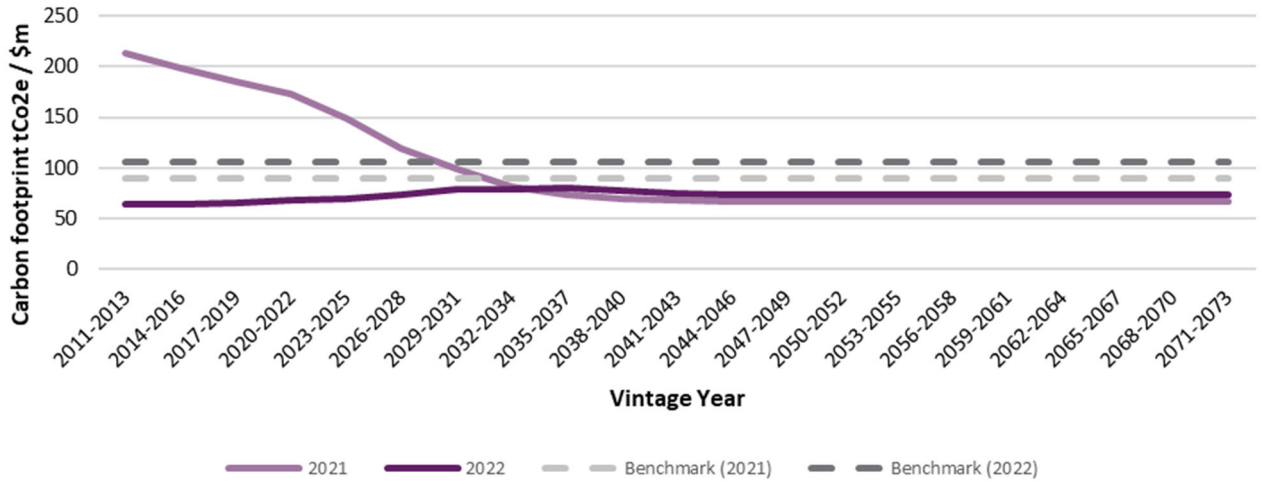
Source: AllianceBernstein

For TDFs prior to 2034, the carbon footprint fell between 2021 and 2022. The main driver for this is moving the short-dated credit fund from Vanguard to Amundi, which enabled ESG screens and the removal of or tilt away from controversial business activities. The new allocation to Amundi has a much lower carbon footprint of 60 metric tons per million invested.

More generally, the carbon footprint for the benchmark and later TDFs increased slightly. Data coverage fell across all TDFs.

Carbon footprint

Figure 22: DC Section carbon footprint evolution



Source: AllianceBernstein, 30 September 2021 and 30 September 2022.

Data quality

Figure 23: DC Section data quality as at 30 September 2021

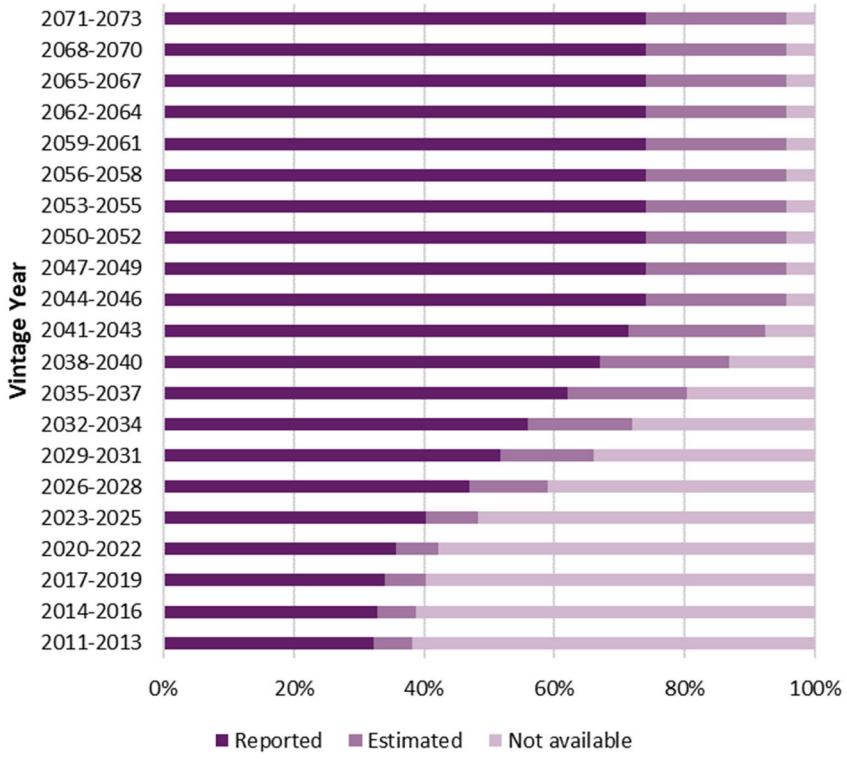
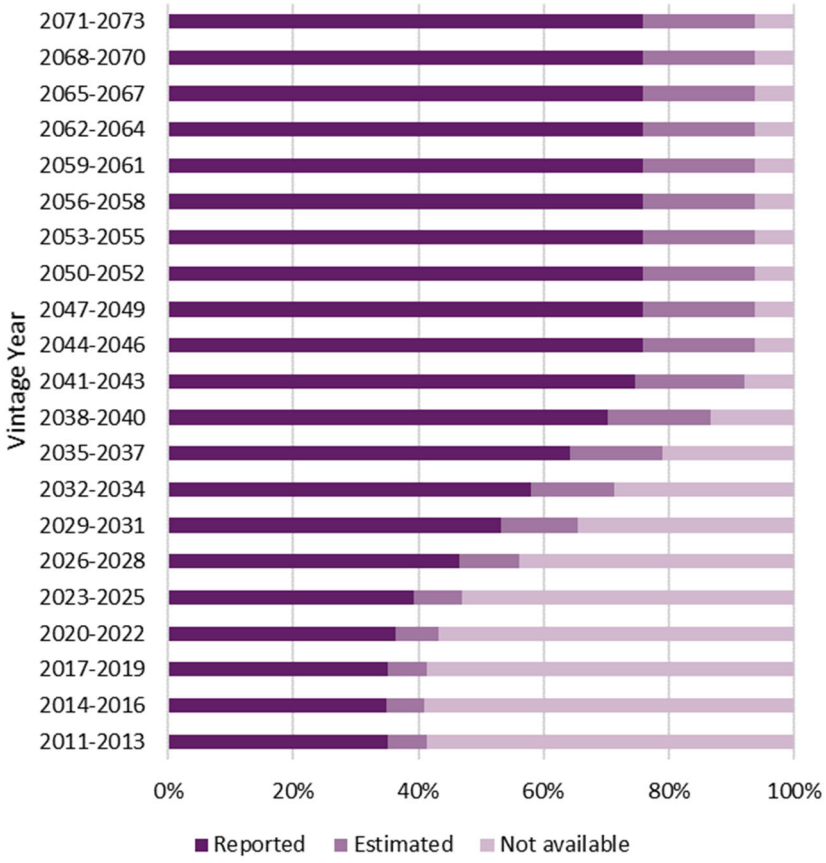


Figure 24: DC Section data quality as at 30 September 2022



Source: AllianceBernstein, 30 September 2021 and 30 September 2022.

Data quality is broadly similar across the two years but reported data is marginally higher in 2022, particularly at earlier vintages. Data quality is worse for earlier vintages, which reflects the higher allocation to bonds.

Targets

The Trustee has set the following interim climate targets, covering the Scheme's whole Equity portfolio and the Fixed Income GSAM portfolio for the DB Section, as well as the TDFs for the DC Section:

- Reduce greenhouse gas emissions (Scope 1 and 2) for the aggregate DB Equity portfolio by 40% or more by 30 September 2030.
- Reduce greenhouse gas emissions (Scope 1 and 2) for the DB Fixed Income GSAM portfolio[6] by 50% or more by 30 September 2030.
- Reduce greenhouse gas emissions (Scope 1 and 2) for all DC TDFs by 20% or more by 30 September 2030.

Each target is measured against the carbon footprint intensity metric with a 30 September 2021 baseline.

As noted above, the targets are designed to be broadly aligned with the Paris Climate Change Agreement.

In relation to the DB Section, targets have been put in place where the underlying data is considered of sufficient quality, the threshold for which has been determined as more than 75% of the underlying data being directly reported (as opposed to estimated or not available). Targets have been set for all DC TDFs, as this is consistent with the broader approach being taken by AllianceBernstein, who manage the TDFs.

The targets cover 35% of the assets for the DB Section and 98% of assets for the DC Section.

The LDI portfolio is excluded from the targets for the DB Section. This portfolio predominantly holds UK Government bonds, which are an integral part of the Trustee's wider risk management approach. The Trustee notes that the UK Government is targeting being net zero by 2050.

The Trustee has decided not to set targets for other DB Section mandates and asset classes at present due to lack of data availability. The Trustee will engage with these managers to consider the feasibility of setting climate targets in future. The Trustee recognises that due to the pooled fund nature of certain mandates, it cannot directly influence portfolio holdings, but instead will seek to engage with the investment managers.

The Trustee will, as required by regulations, review its progress against the above targets at a Trustee meeting at least annually. The updated metric data and progress update will be reviewed and discussed at an ISC meeting, ahead of any Trustee review. The Trustee may also consider setting specific targets for other asset classes, when the available data has improved and there are suitable methodologies.

Over the year to 30 September 2022, the Trustee and the respective investment managers made the following progress against their climate targets:

- 40% carbon footprint reduction for the whole DB Equity portfolio.
- 1% carbon footprint reduction for the DB Fixed Income GSAM portfolio.
- 10% carbon footprint reduction for all the DC TDFs.

The Trustee notes that the carbon footprint reduction for the whole DB Equity portfolio was broadly in line with its interim 2030 target. Whilst this is promising in terms of reducing greenhouse gas emissions, the Trustee notes that data quality in this area is continuously evolving and improving. We may therefore see fluctuations in the

[6] A target is only set for the Fixed Income GSAM portfolio at this stage due to data quality issues for the other Fixed Income mandates

metric data in early years. As such, the Trustee intends to maintain the target of reducing carbon footprint by 40% by 2030 but will continue to monitor the data and trends in this area.

A wide range of factors will affect whether the Trustee achieves its targets and the Trustee has varying degrees of control over these factors. Ultimately achieving the desired level of decarbonisation will depend on global economies successfully decarbonising as a whole. Despite factors outside of the Trustee's control, the Trustee's intention is to meet its targets and it has engaged with its investment managers to make clear its requirements. Currently, the targets are not formally included in the manager's investment guidelines, but the Trustee may consider incorporating them in the future. Where targets have been set, the Trustee will review the managers' progress against their respective targets at least annually and will engage with the managers accordingly, should there be any progress concerns.

Summary and Next Steps

Climate change is one of the most relevant issues of our time. The Trustee recognises that long-term sustainability issues, particularly climate change, present risks and opportunities that increasingly require explicit consideration.

Key Actions taken over year to 5 April 2023

As such, the Trustee has carried out significant work in this area over the year, much of which is summarised in this report. Specifically, the Trustee has, amongst other things:

- Identified five metrics to inform its understanding of climate-related risks and opportunities.
- Reported on these five metrics, covering 65% of the Scheme's DB and 98% of the Scheme's DC assets as at 30 September 2021 and 30 September 2022.
- Set greenhouse gas emissions (Scope 1 and 2) targets that cover 35% of the Scheme's DB and 98% of the Scheme's DC assets.
- Carried out scenario analysis for both the DB and DC sections across a range of climate scenarios over a time period of 40 years.

Summary of results

Metrics

In carrying out this work the Trustee has identified that progress has been made towards their greenhouse gas emissions target, in particular within the DB Equity portfolio, as set out in the table below:

Figure 25: Summary of greenhouse gas emissions target and reduction to 30 September 2022

Portfolio	Greenhouse gas emissions target [7]	Greenhouse gas emission reduction to 30 September 2022 [8]
DB Equity	40% reduction	40%
DB Fixed Income GSAM portfolio	50% reduction	1% [9]
DC Target Date Funds	20% reduction	10%

Source: Investment managers.

The Trustee does note that, of those managers able to provide data, none of the DB managers were aligned with a 1.5oC warming scenario and the majority of the DB managers had a higher carbon footprint than broad global equities. The DC Target Date Funds had a lower carbon footprint across all vintages as at 30 September 2022, following a significant reduction in this metric over the year for earlier vintages.

Data quality did not improve over the year and continues to be low within private markets.

[7] By 2030 relative to the 30 September 2021 baseline

[8] Relative to the 30 September 2021 baseline

[9] Greenhouse gas emission taken as at 31 August 2022 given transition activity occurring as at 30 September 2022.

Climate Scenario Analysis

The DB investment strategy demonstrated robustness with respect to the potential impact of climate change across the scenarios and timeperiods considered. The Scheme's DB assets were projected to be significantly in excess of the DB liabilities across all scenarios and timeperiods considered. The Trustee notes this is largely due to the strong starting funding level and the future transition to the self-sufficiency portfolio, which has lower exposure to equity and other growth asset classes that typically have a higher exposure to climate risk.

The Scheme's DC assets are expected to be impacted more by climate risk due to the higher allocation to growth assets (compared to the DB assets). In particular, listed equity is materially exposed to physical risks under a Failed Transition. This can be seen by the material impact of the Failed Transition on later TDF vintages over longer time periods. The TDFs include an allocation to sustainable investments which is expected to provide some protection from these risks. Climate risk is considered amongst other risks as part of the investment strategy decisions in accordance with the Scheme's Statement of Investment Principles from time to time and the results from the climate scenario analysis will be considered as part of the review of the DC arrangements taking place in 2023.

Actions over the coming year

The Trustee intends, during the next reporting period, to continue to monitor and consider climate risk and to identify any opportunities climate change may bring to the Scheme's investment and/or DB funding strategies as applicable. This will be done in a proportionate way alongside the other relevant risk exposures and opportunities of the Scheme and having regard to resources. In light of this the below key actions are planned over the course of the year to 5 April 2024:

- **Monitoring:** The Trustee will continue to assess the carbon exposure of the Scheme's investments against the greenhouse gas emissions targets set. Monitoring will also continue to be carried out on the wider ESG credentials of the Scheme's investment managers on an ongoing basis.
- **Data quality:** The Trustee will continue to engage with managers, in particular within the DB Private Debt portfolio in order to improve data quality. The Trustee aims to report on this data and consider the scope for setting appropriately informed climate metric targets for the portions of the Scheme's assets where this is not currently carried out once the data quality is sufficiently high. The Trustee will also work with investment managers to report on Scope 3 greenhouse gas emissions for upcoming reports subject to regulatory requirements.
- **Stewardship and engagement:** Carry out further work with a view to developing the Trustee's key engagement priorities and engage with selected relevant managers on these priorities and how they are incorporated into their voting and engagement policies and practices.
- **Training:** Ongoing training and review of skills in conjunction with the investment adviser, to ensure the Trustee is equipped with sufficient knowledge of developments around climate change risk and regulatory changes.

The Trustee expects this report, and the analysis and data contained therein, to continue to evolve as data availability improves, and as best practice continues to develop.

Appendix 1: Climate Related Risks and Opportunities

We are already experiencing climate change and its associated physical impacts today. The average global temperature in 2022 was about 1.2°C above pre-industrial levels[10]. 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 than pre-industrial levels, with significant regional variations. This is substantially higher than the 2015 Paris Climate Change Agreement objectives, which reflect 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.

There is considerable uncertainty regarding the future warming pathway, which is highly dependent on the actions of governments, industries, businesses and individuals.

The effects of climate change will be felt over many decades. Two broad types of climate-related risks and opportunities that have been considered by the Trustee in its climate scenario analysis: transition risk (and opportunities) and physical risks (and opportunities).

Transition risks and opportunities

These cover the potential financial and economic risks and opportunities from the transition to a low-carbon economy (i.e. one that has a low or no reliance on fossil fuels), such as:

- Policy and legal
- Market
- Technology
- Reputation

These risks cover the possibility of future bans, or high costs, associated with high-carbon activities or products as well as opportunities that may come from the development 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.

Physical risks and opportunities

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

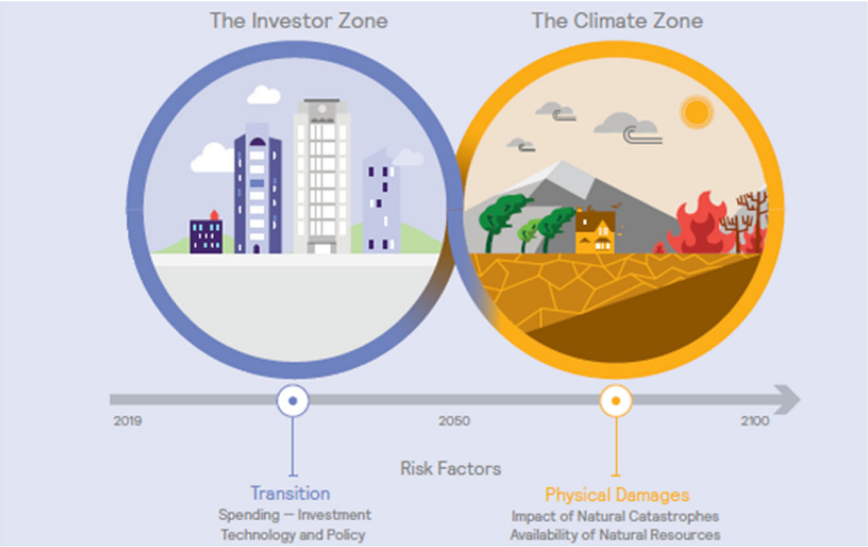
- Physical damage (storms, wildfires, droughts, floods)
- Resource scarcity (water, food, materials, biodiversity loss)

[10] https://public.wmo.int/en/media/press-release/past-eight-years-confirmed-be-eight-warmest-record

The Trustee expects physical risks to be felt more as the century progresses, though the extent of the risks is highly dependent on whether global net zero greenhouse gas emissions are achieved by 2050.

There may be potential investment opportunities 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 may also be opportunities for investment in those companies or industries that focus on energy conservation and resource efficiency.

Transition and physical damages



Source: Mercer

Appendix 2: Scenario Analysis Assumptions, Limitations and Further Detail

Narratives

	4.0°C Scenario – Failed Transition	1.5°C Scenario – Rapid Transition	<2.0°C Scenario – Orderly Transition
Summary	The world fails to meet the Paris Agreement goals and global warming reaches 4.3°C above pre-industrial levels by 2100. Physical climate impacts cause large reductions in economic productivity and increasing impacts from extreme weather events.	Sudden divestments in 2026 to align portfolios to the Paris Agreement goals have disruptive effects on financial markets with sudden repricing followed by stranded assets and a sentiment shock.	Political and social organizations act quickly and predictably to implement the recommendations of the Paris Agreement to limit global warming to below 2°C.
Temperature change	Average temperature increase of >4°C by 2100.	Average temperature increase stabilises at 1.5°C around 2050.	This scenario includes additional economic damage consistent with 1.8°C of average temperature rise – peaking in 2070.
Cumulative emissions	5,127 GtCO2 (2020-2100)	416 GtCO2 (2020-2100)	The additional damage under this scenario could be associated with further human emissions or greater impacts from feedback loops and tipping points.
Key policy & tech assumptions	Existing policy regimes are continued with the same level of ambition.	An ambitious policy regime is pursued to encourage greater decarbonization of the electricity sector and to reduce emissions across all sectors of the economy. Higher carbon prices, larger investment in energy efficiency and faster phase out of coal-fired power generation. This is earlier and more effective under a Rapid Transition than the Orderly Transition, which allows for less investment in energy efficiency and bioenergy with carbon capture and storage.	
Financial climate modelling	Physical risks are priced in two different periods: 2026-2030 (risks of first 40 years) and 2036-2040 (risks of 40-80 years).	Pricing in of transition and physical risks of the coming 40 years occurs within one year in 2025. As a result of this aggressive market correction, a confidence shock to the financial system takes place in the same year.	Pricing in of transition and physical risks associated with 1.5°C up to 2050 takes place over the first 4 years. The additional damage, beyond 1.5°C, impacts asset performance on a year-by-year basis with no advance pricing in.
Physical risks considered	Physical risks are regionally differentiated, consider variation in expected temperature increase per region and increase dramatically with rising average global temperature. Physical risks are built up from: Gradual physical impacts associated with rising temperature (agricultural, labour, and industrial productivity losses) Economic impacts from climate-related extreme weather events Current modelling does not capture environmental tipping points or knock-on effects (e.g., migration and conflict).		

Capital market assumptions – cumulative climate return impact

	Failed Transition			Rapid Transition			Orderly Transition		
Asset Class	30/06/2022								
	5 Years	15 Years	40 Years	5 Years	15 Years	40 Years	5 Years	15 Years	40 Years
MSCI World Equity	3.1%	-8.9%	-38.1%	-12.0%	-10.4%	-7.0%	-3.3%	-4.1%	-10.3%
MSCI Paris Aligned Equity	1.6%	-11.0%	-39.8%	-5.9%	-3.2%	1.4%	-2.9%	-2.8%	-8.1%
Europe Equity	2.4%	-8.8%	-35.9%	-12.5%	-10.5%	-7.2%	-2.1%	-2.3%	-6.6%
Multi asset credit	-0.3%	-2.0%	-1.5%	-3.1%	-4.7%	-5.4%	0.0%	0.7%	-1.4%
Global IG Credit	-0.2%	-2.0%	-2.1%	-1.5%	-1.8%	-2.4%	0.1%	1.6%	-1.3%
UK Sovereign Bonds	0.3%	0.3%	-0.8%	0.2%	-0.2%	1.0%	-0.4%	0.1%	0.3%
Global Senior Private Debt	-0.4%	-2.4%	-4.4%	-2.1%	-1.6%	-2.6%	0.5%	1.7%	-2.9%
Global Private Debt	0.1%	-2.9%	-2.8%	-6.9%	-6.7%	-8.4%	0.3%	1.7%	-3.7%
Cash	-0.3%	-2.3%	-5.7%	0.2%	2.0%	2.0%	0.3%	2.0%	-0.9%
UK Real Estate	0.8%	-11.9%	-38.9%	-6.3%	-3.4%	0.9%	-1.7%	-0.8%	-4.5%

Capital market assumptions – annualised baseline returns

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

Asset Class	30/06/2022		
	5 Years	15 Years	40 Years
MSCI World Equity	8.9%	9.1%	9.0%
MSCI Paris Aligned Equity	8.9%	9.1%	9.0%
Europe Equity	6.9%	7.4%	7.7%
Multi asset credit	9.9%	9.5%	8.9%
Global Investment Grade Credit	5.5%	5.3%	5.1%
UK Sovereign Bonds	4.6%	4.7%	3.8%
Global Senior Private Debt	9.1%	8.6%	7.3%
Global Private Debt	10.7%	10.1%	8.7%
Cash	4.2%	4.4%	4.1%
UK Real Estate	7.8%	7.9%	7.0%

Capital market assumptions – annualised scenario returns for the DB Section

	Annualised returns		
	Short term (5 Years)	**Medium term (15 years)**	**Long term (25 years)**
Baseline	7.7%	7.2%	7.1%
Rapid Transition	7.0%	7.0%	7.0%
Orderly Transition	7.5%	7.2%	7.1%
Failed Transition	7.9%	7.0%	6.8%

Limitations

Climate scenario modelling is a complex process and the Trustee recognises that there will inevitably be limitations in the modelling. 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 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' 4oC 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.

The above assumptions may be updated from time to time. The Trustee will consider additional scenario analysis as and when appropriate.

Appendix 3: Climate Change Glossary

Carbon footprint: The amount of carbon dioxide (or other greenhouse gasses) released into the atmosphere as a result of the activities of a particular individual, organization or community. Carbon footprint is calculated for each company as (Scope 1 and 2 carbon emissions / US $m investments). See also Scope 1, 2, 3 emissions and Weighted Average Carbon Intensity (WACI).

Carbon intensity: The amount of emissions of carbon dioxide (or other greenhouse gasses) released per unit of another variable such as revenue, gross domestic product (GDP), per US $1million invested etc. See also Weighted Average Carbon Intensity (WACI).

Carbon price: The price for avoided or released carbon dioxide (CO2) or CO2-equivalent emissions. This may refer to the rate of a carbon tax, or the price of emission permits. In many models that are used to assess the economic costs of mitigation, carbon prices are used as a proxy to represent the level of effort in mitigation policies.

Carbon neutrality: Achieved by offsetting emissions by paying for credits (usually certified via new forestry equivalents that provide carbon removal). Carbon neutrality is similar to net zero targeting – though the latter requires actual emissions reductions to meet targets (rather than purchasing offsets). See also Net Zero CO2 emissions.

Decarbonisation: The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically refers to a reduction of the carbon emissions associated with energy, industry and transport.

Global warming: The estimated increase in global mean surface temperature expressed relative to pre-industrial levels unless otherwise specified. See also Pre-industrial.

Greenhouse gases: Gases in the planet's atmosphere which trap heat. They let sunlight pass through the atmosphere but prevent heat from leaving the atmosphere. Greenhouse gases include: Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur Hexafluoride (SF6), Nitrogen Trifluoride (NF3).

Inevitable policy response: A scenario that expects an acceleration of climate-related policy announcements in 2023–2025, which has been supported by the Principles for Responsible Investment (PRI).

Mitigation (of climate change): A human intervention to reduce emissions or increase the capacity of natural or artificial systems to absorb and store greenhouse gases.

Mitigation strategies: In climate policy, mitigation strategies are technologies, processes or practices that contribute to mitigation, for example, renewable energy (RE) technologies, waste minimization processes and public transport commuting practices.

Net zero greenhouse gas emissions: Net zero greenhouse gas emissions (represented as a CO2 equivalent, or CO2e) are achieved when emissions are balanced globally by removals over a specified period. The term "net zero" is also typically associated with the 2050 date or earlier, as this is aligned with the scientific recommendations to achieve a 1.5°C scenario. See also Carbon neutrality (which differs slightly).

Paris Agreement: The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) was adopted on December 2015 in Paris, at the 21st session of the Conference of the Parties (COP) to the UNFCCC. The agreement, adopted by 196 Parties to the UNFCCC, entered into force on 4 November 2016 and as of May 2018 had 195 Signatories and was ratified by 177 Parties. One of the goals of the Paris Agreement

is “Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”, recognising that this would significantly reduce the risks and impacts of climate change. Additionally, the Agreement aims to strengthen the ability of countries to deal with the impacts of climate change.

Physical risks: Dangers or perils related to the physical or natural environment that pose a threat to physical assets e.g. buildings, equipment and people. These are typically grouped into the impact of natural catastrophes (for instance sea level rise, flooding, wildfires, and hurricanes) and resource availability (particularly water). See also Transition risks.

Pre-industrial: The multi-century period prior to the onset of large-scale industrial activity around 1750. The reference period 1850–1900 is used to approximate pre-industrial global mean surface temperature.

Principles for Responsible Investment (PRI): Non-profit organisation, which encourages investors to use responsible investment to enhance returns and better manage risks. It engages with global policymakers and is supported by, not but part of, the United Nations. It has six Principles for Responsible Investment that offer a menu of possible actions for incorporating ESG issues into investment practice.

Scope 1, 2, 3 emissions: Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Transition risks: Risks from policy changes, reputational impacts and shifts in market preferences, norms and technology as the economy moves to a low carbon approach. See also Physical risks.

Weighted average carbon intensity (WACI): The carbon intensity of a portfolio, weighted by the proportion of each constituent in the portfolio. Carbon intensity is calculated for each company as (Scope 1 and 2 carbon emissions / US $m revenue). See also Carbon footprint.

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GSAM

MSCI ESG Research collects carbon emissions (greenhouse gas emissions) data for the companies in their coverage universe once per year from most recent corporate sources, including Annual Reports, Corporate Social Responsibility Reports or websites. In addition, MSCI ESG Research uses the carbon emissions data reported through CDP (formerly the Carbon Disclosure Project) or government databases when reported data is not available through direct corporate disclosure. When companies do not disclose data, MSCI ESG Research uses proprietary methodologies to estimate carbon emissions.

Data has been scaled up to cover 100% of the portfolio, i.e. metrics are market value weighted over only the proportion of the portfolio that has available data.

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CQS Disclaimer: By way of disclaimer, please note that the Weighted Average Carbon Intensity ("WACI") is estimated using Scope 1 & 2 available disclosures or proxy estimates based on comparative data from MSCI. For proxy estimates, we apply a waterfall approach which requires a minimum of 10 issuers within the proxy estimate group. If there are not 10 issuers in the proxy estimate group, it changes to a broader category group to increase the number of comparable issuers and continues moving to a broader group until a minimum group size of 10 issuers are obtained or 'sector' level is reached. The order is sub-industry first, then industry, then industry group, then finally sector. Please note that the Carbon Metrics do not include hedges for efficient portfolio management purposes.

Insight

Carbon emissions data based off provisional UK emissions sourced from the UK Government; total UK Debt sourced from the UK Debt Management Office and converted to market value by Insight; and the proportion of funded gilt exposure within the ABF portfolio.

Implied temperature rise based on analysis by Germanwatch and Climate Action Tracker on the UK's ability to hit net zero

AllianceBernstein

For illustrative purposes only. Historical analyses do not guarantee future results.

Carbon metrics are based on most recently reported or estimated scope 1 + 2 greenhouse gas emissions and do not include estimates for scope 3 emissions. Scope 3 emissions include indirect emissions resulting from activities such as business travel, distribution of products by third parties, and downstream use of a company's products (i.e. by customers). Data availability and quality with respect to scope 3 emissions is currently poor and therefore has not yet been incorporated. Total carbon is measured in metric tons of CO_2e. Weighted Average carbon intensity is measured as tons CO_2e/USD Millions of Sales and applied to corporate holdings only. The comparator we use is the MSCI All Country World Index, which represents a broad opportunity set for investing in a globally diverse universe of large and medium sized corporates. This comparator has been selected to reflect the wider coverage and range of corporate ESG measures, as well as the role of equities across the entire TDF glidepath.