

Taskforce on Climate-related Financial Disclosures (TCFD) Report

Lloyd's Register Superannuation Fund Association (LRSFA)

Reporting year ending 31 March 2024

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Summary

Trustee statement

Statement from the Chair

The Task Force on Climate-related Financial Disclosures (“TCFD”) is an international institution that has developed a framework to improve and increase reporting of climate-related financial information. This report sets out our response across the four TCFD pillars of Governance, Strategy, Risk Management, and Metrics and Targets. These pillars collectively underpin our response to climate-related risk and opportunities.

We continue to recognise climate as a material and dynamic source of risks and opportunities. Climate change is expected to affect our members, financial markets and society at unprecedented levels, and we recognise managing the associated risks and opportunities form part of our fiduciary duty to members.

During the year, in the Defined Benefit Section, we have undertaken work exploring low carbon options with managers of the Liability Driven Investment (“LDI”) and Buy & Maintain (“B&M”) solutions and will continue to review the appropriateness of our investments in the context of climate change going forward. In the Defined Contribution section, we have initiated a review of the default investment strategy in we are considering climate change as a key factor.

During our second year of reporting, we have seen improvements to emissions data coverage. Working with our Investment Advisor we also challenged our LDI manager, Schroders, on their low emissions data coverage. They have responded positively and expect to be able to provide climate metrics data during 2024, which would lead to a significant increase the overall portfolio emissions coverage.

As the Trustee, our aim is to fulfil our primary objective of securing the future pension obligations of our members, central to which is consideration of the possible impact of the world’s changing climate. We continue to take proportionate steps to ensure we are doing our part, as a Fund, on behalf of our members. We will continue to review the appropriateness of our approach, and provide annual reporting to keep members informed on our climate-related actions.



The TCFD Framework encompasses four pillars:

Governance: Governance of climate-related risks and opportunities.

Strategy: Assessing the actual and potential impacts of climate-related risks and opportunities.

Risk Management: The identification, assessment and management of climate-related risks.

Metrics and Targets: Disclosure of climate metrics and targets.



Introduction

Why is climate change important?

Climate change presents a systemic risk for financial markets and could have a material impact on member investments. We will seek to identify, assess and manage risks arising from the transition to a low carbon economy alongside the physical risks from climate change.

Climate change has arisen from emissions being released into the atmosphere, including through the production of energy and use of transport, which trap the sun's energy and warm the planet. In 2015, global governments agreed to limit average temperature rises to well below 2°C, with ambition towards 1.5°C, this century. It is clear that more action is needed: early this year, it was announced that average global temperatures in 2023 exceeded 1.5 °C over pre-industrial temperatures for the first time.

Responding to the climate emergency presents both risks and opportunities for the Lloyd's Register Superannuation Fund Association (the Fund). The main risks fall into two categories – transition costs are expected to be incurred from decarbonisation action, and physical damages will be incurred should global temperatures continue to rise (see below definitions). The higher the transition risks (decarbonisation action), the lower the expected physical damages from climate change – and vice versa. Member investments will be exposed to climate-related risks, regardless of global climate outcomes. Global decarbonisation efforts are, however, also expected to offer opportunities for the Fund. The Fund's Investment Committee, on behalf of the Trustee, will assess the appropriateness of these opportunities in conjunction with other financially material considerations.

Transition risks from climate change



To decarbonise the global economy, near-term policies, technologies and market preferences will shift in favour of low-carbon solutions.

Physical risks from climate change



Include both sudden onset natural disasters and slower shifts in weather patterns and their impact on assets, infrastructure and economies, due to the expected scale up over time as temperatures rise.

This report analyses climate-related risks and opportunities for the Fund, with a section for each TCFD pillar: Governance, Strategy, Risk Management, and Metrics and Targets. This report is aimed to be a resource for our members to better understand the actions of the Trustee in terms of climate-related risks and opportunities. We include analysis of the Defined Benefit Section and the Defined Contribution Default Arrangement (the Defined Contribution self-select funds and any legacy defaults do not currently fall under scope of the regulatory requirements due to the amount of assets invested.)

There remain limitations to our ability to identify, assess and manage climate-related risks and opportunities. For example, data coverage poses a significant challenge across the industry. Despite this, data coverage has improved since last year and we have made efforts to engage with managers to further improve availability and quality of data. We will also continue to monitor the evolving industry and regulatory landscape to improve our climate-related reporting in future.

TCFD Summary



Governance

Governance of climate-related risks and opportunities

Our climate beliefs are set out in the Fund's Statement of Investment Principles. We believe climate change poses a systemic risk for financial markets.

Our governance processes include the setting out of roles and responsibilities in respect to climate change, as laid out in the Fund's Climate Governance Statement (summarised below):

- **Trustee** – Has ultimate responsibility for the oversight of the Fund's climate-related risks and opportunities. The Chair ensures that the Fund allocates adequate time and resources to climate change.
- **Investment Committee** – Although overall responsibility lies with the Trustee, some climate-related activities are delegated to the Investment Committee (IC). This includes reviewing climate provisions in governance arrangements, strategy and mandates, the risk management framework, and the TCFD report, annually.
- **Investment Advisor** – Provides climate-related advice to the IC, covering all aspects of the TCFD requirements for pension schemes.
- **Actuary** – Provides climate-related advice to the IC regarding the Fund's liabilities, funding position and conducts scenario analysis on liabilities.
- **Other Advisors** – The Fund's Covenant Advisor and Legal Advisor provide climate-related advice to the Trustee on the covenant and regulation, respectively.
- **Investment Managers (including DC Provider)** – Responsibility for managing climate-related risks and opportunities in relation to the Fund's investments.

We also ensure we remain up-to-date with climate matters via training.



Risk Management

The identification, assessment and management of climate-related risks

We employ various climate-related risk management processes, drawing on existing risk management tools, which allow the identification of the Fund's most material climate-related risks, with consistent controls to assess and manage these. The focus is on:

- **Risk prioritisation** – Determined through Trustee training and the relative materiality of climate-related risks, as set out in the risk register
- **Investment strategy** – Climate scenario analysis is used to understand the types of climate-related risks, alongside climate risk integration within mandates
- **Climate risk monitoring** – Conducted via biennial assessments of Investment Manager's climate capabilities, climate metrics, and climate scenario analysis.
- **Stewardship** – Is one of the main tools for improving climate-related integration of Investment Managers, on an annual basis

The risk register is the primary governance document for the management of climate-related risks, across the facets of:

- Investment risk
- Funding risk
- Operational risk
- Governance risk

Beyond the risk register, we receive regular advice from our Advisors on climate considerations. The Investment Advisor has also supported us with annual engagements with Investment Managers to improve their climate capabilities, as well as identifying the materiality of climate-related risks, across asset classes.

TCFD Summary



Strategy

Actual and potential impacts of climate risks and opportunities

To quantify the potential impacts on the Fund's investment and funding strategy, we have identified key relevant time horizons (based on climate-related events, member demographics, and investment timescales), analysing these across different climate scenarios to better understand climate-related risks and opportunities. We anticipate that transition risks will be greatest in the short-term, whilst physical risks from climate change will be greatest in the long-term. In the previous reporting year, we undertook quantitative scenario analysis modelling related to climate change. As there have been no material DB or DC strategic changes during the year, this analysis remains relevant to the Fund and has not been updated.

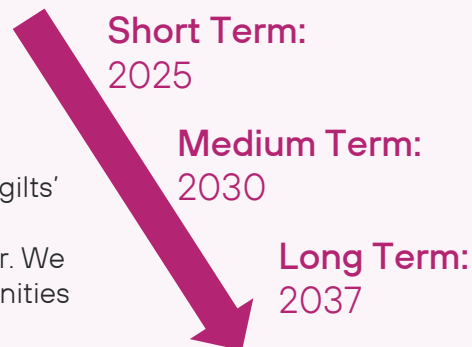
We will continue to review the need for refreshed analysis. Below, we summarise the previous report's findings according to the relative exposure to risks arising from the transition and physical damages from climate change, across the scenarios and timeframes.

Risk	DB Assets	DB Liabilities	Sponsor
Transition risk (short-term, to 2025)	Average		
Physical risk (long-term, to 2037)	Average	Low	High

Defined Benefit (DB) Section

The investment strategy is vulnerable to both transition and physical risks.

During the reporting year the Trustee began to explore possible options for investing into 'green gilts' through the Fund's LDI manager and low carbon credit investments with the Fund's B&M manager. We will continue to seek out climate-related opportunities across the asset allocation.



Risk	DC Assets	
Transition risk (short-term, to 2032)	Average	Low
Physical risk (long-term, to 2067)	Average	High

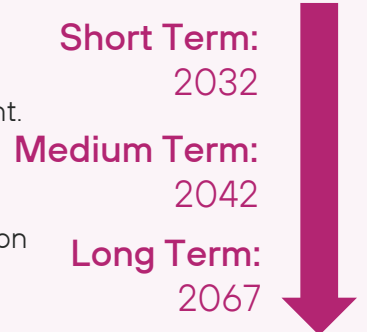
Defined Contribution (DC) Default Arrangement

The Fund uses a lifestyle approach, which de-risks the member investments via a shifting asset class allocation towards retirement.

Given the longer timeframes to 2067, physical risks scale up through time, becoming particularly significant for younger members who are further from retirement. Upfront decarbonisation costs create drags in the short-term, and this can limit the full potential of member savings in the long-term.

In Q1 2024, we initiated a default strategy review with their investment advisor. ESG was a key criteria taken into consideration and accounted for in the overall score when reviewing the existing and new proposed strategies.

Until the review is complete, we are comfortable that the quantitative scenario analysis undertaken last year continues to be appropriate and still accurately reflects the current investment strategy as at 31 March 2024.



TCFD Summary



Metrics & Targets

Climate-related metrics and targets

We have selected, gathered and assessed the four climate metrics in the table below. Due to the nature of the DB Section's investment strategy (which has a material allocation to illiquid assets and liability driven investments) coverage of climate metrics is currently limited, and improvements remain slower than for the rest of the industry. However, relative to the previous reporting year, the coverage improved across the DB Section mainly due to the Fund's direct lending mandates now providing TCFD metrics data.

We have set data quality based targets for both the DB and the DC Sections, the DC Section has made good progress against the targets set whilst the DB Section still has some way to go. In order for the DB Section to hit its target, our Investment Advisor will continue to engage with the Investment Managers to improve data disclosure. The IC will continue to monitor the Fund's progress against the DB and DC target annually.

Metrics	Total GHG emissions (scope 1 & 2)		Carbon footprint (scope 1 & 2)		Implied Temperature Rise		Data quality (carbon footprint, scope 1 & 2) % of scope 1 & 2 emissions that are:				Target: Data coverage & quality	Baseline	Current	Target
	Metric tCO ₂ e	Coverage	Metric tCO ₂ e/\$m	Coverage	Metric °C	Coverage	Verified	Reported	Estimated	Unavailable	(Sep 2022)	(Sep 2023)		
Total Portfolio	19,965	28%	44	28%	2.4	22%	0%	27%	1%	72%	Total portfolio	21%	28%	60%

Metrics	Total GHG emissions (scope 1 & 2)		Carbon footprint (scope 1 & 2)		Implied Temperature Rise		Data quality (carbon footprint, scope 1 & 2) % of scope 1 & 2 emissions that are:				Target: Data coverage & quality	Baseline	Current	Target
	Metric tCO ₂ e	Coverage	Metric tCO ₂ e/\$m	Coverage	Metric °C	Coverage	Verified	Reported	Estimated	Unavailable	(Sept 2022)	(Sept 2023)		
LR Adventurous	8,868	85%	58	85%	2.2	85%	33%	48%	4%	15%	LR Adventur's	6%	85%	50%
LR Diversified Growth	4,251	53%	111	53%	2.3	53%	13%	36%	4%	47%	LR Diversified Growth	22%	53%	30%
LR Index Linked Gilts	1,104	100%	145	100%	2.8	100%	0%	0%	100%	0%	LR Index Linked Gilts	100%	100%	100%

■ Strong coverage (>70%)
 ■ Acceptable coverage (>50%)
 ■ Poor coverage (<50%)
 No data coverage

Moving Forward



Consider furthering exposure to climate opportunities

We will continue to consider climate-related opportunities that can be integrated within our investment strategies. We have particularly made progress integrating climate consideration within the DC default arrangement, given the nature of the assets invested and the long time horizon. For example, we have moved to more sustainability-focused mandates, particularly within the growth phase of the default where the majority of our members' assets are invested. Over the last year, we have also initiated a full default investment strategy review within which ESG is a key consideration.



Engaging our Investment Managers on climate action

We conduct a biennial assessment of our managers' Environmental, Social and Governance (ESG) capabilities, and especially, climate change. As part of this process, with our Investment Advisor, we engage with all of our managers to improve their climate-related processes and actions, with the expectation of improving how these managers address climate-related risks and opportunities across the portfolio.



Focus on improving data coverage and quality

We recognise that for good climate risk management, we need to expand the availability of data (coverage), as well the reliability of that data (quality), both of which are currently low. Accordingly, we have set targets to improve data coverage across both the DB Section and DC default arrangement, by 2025. The Trustee, via its Investment Advisor, is continuing to engage with our Investment Managers within the DB section to seek improvement in the quality and availability of carbon emissions intensity data. Coverage across the DC section improved significantly this year due to the Provider being the data source (instead of the Investment Manager). However, the reliability of that data (quality) could still be improved further.



Understanding best practice climate reporting

Climate-related reporting continues to evolve, and recent reviews by the regulator of early TCFD reports have provided new insight into best practice climate reporting. We will aim to evolve our reporting along with these norms.

Main Report

Governance

Governance

Describe the Trustee Board's oversight of climate-related risks and opportunities

Climate-related beliefs

We maintain an ESG Policy as part of our Statement of Investment Principles, which sets out our ESG beliefs and how these are implemented. In the previous reporting year, we agreed additional climate-specific beliefs to ensure climate change is considered as part of how the Fund operates (see box). The policy remains appropriate and there has not been a need to make further changes to the ESG policy in the 2023/2024 reporting year.

Governance responsibilities and delegation by the Trustee Board

Governance activities apply to the Fund as a whole. Whilst overall responsibility lies with the Trustee, some investment decisions are delegated to the IC, including the identification, assessment, and management of ESG and climate-related risks.

We also delegate some climate-related responsibilities to Advisors and Investment Managers. These responsibilities are communicated via ongoing email communications and as part of annual engagements. We measure the Investment Advisor against agreed objectives annually. In 2022, two additional objectives were included relating to effective advice on ESG risks and opportunities, and TCFD reporting.

Resources dedicated to climate change

We aim to ensure sufficient time and resources are awarded to such matters. The Trustee Board annually agrees an ESG and climate change plan and budget to guide their oversight. To ensure sufficient time is awarded to climate change, TCFD matters were tabled at four IC meetings (in the year to 31 March 2024), with all climate-related decisions also escalated to the Trustee Board for approval. This year, the IC dedicated additional resource to exploring the possibility of green gilts and more carbon friendly credits in their B&M portfolio. We will continue to review the resource allocation to ensure it remains appropriate.

Climate-related training

During the report year, we received detailed training sessions on the Fund's climate metrics and strategy considerations. Quarterly meetings act as a forum for discussion of climate-related matters with the Fund's Advisers, through which the Trustee ensures they have sufficient knowledge to make informed climate-related decisions.

ESG Policy: highlights



We believe climate change poses a systemic risk for financial markets and investors.

Investment Approach

The Fund will seek to identify, assess and manage climate change risks and opportunities [as well as understand how Investment Managers do so].

Risk Management

Climate change risk poses significant investment risks which will become incrementally more severe over time...[and] will be considered, alongside other investment risks, at all stages of the investment journey.

Stewardship

The Trustee expects its Investment Managers to exercise voting rights...[as well as] engaging with managers on financially material ESG factors, such as climate change factors.

Reporting

The Trustee will review the ESG and climate capabilities of Investment Managers.

Governance

Describe the Trustee Board's role in assessing and managing climate-related risks and opportunities

Summary of responsibilities

Here we provide an overview on responsibilities in relation to climate-related risks and opportunities, as set out in the Climate Governance Statement. (We provide a summary of the Climate Governance Statement on the following slide.) Ultimately, the Trustee Board retains ultimate responsibility for the oversight of climate-related risks and opportunities, but delegates some activities to the IC, with some further delegation to the Fund's Advisors and Investment Managers, as relevant.

Accountability processes

We have established processes to ensure those undertaking climate-related governance activities, or those advising on such activities, take adequate steps to identify, assess and manage climate-related risks and opportunities. For the Investment Managers, these include biennial assessments of the Investment Managers' climate-related capabilities. On the back of these assessments we engage with Managers, clearly communicating where they are falling short of our expectations. Investment Managers' and Advisers' responsibilities are clearly documented and communicated via the Climate Governance Statement. We also have the opportunity to challenge Advisers during quarterly meetings. Furthermore, Advisers' climate-related responsibilities are set out within adviser agreements and the objectives that advisers are annually assessed against.

LRSFA Trustee Board

Ultimate responsibility for the running of the Fund, including oversight of climate-related risks and opportunities

LRSFA Investment Committee

Delegated authority from the Board to review investment-related matters, including TCFD outputs and reporting

Investment Advisor: Isio

Provides investment advice to the Trustee, including on climate-related risks and opportunities.

Actuarial Advisor: LCP

Provides actuarial advice to the Trustee, including the impact of climate change on the Fund liabilities and funding position

Legal Advisor: Hogan Lovells International LLP

Provides legal advice to the Trustee, including in relation to TCFD regulatory requirements

Covenant Advisor: EY Parthenon

Provides covenant advice to the Trustee, including on the impact of climate change on the strength of the covenant

Investment Managers (including DC Provider)

Manage the day-to-day running of fund investments, whilst integrating climate-related risks and opportunities

Governance

Describe the Trustee Board's role in assessing and managing climate-related risks and opportunities

Climate Governance Statement

In 2022/2023, we produced a Climate Governance Statement which sets out the governance processes and the roles and responsibilities of various stakeholders in identifying, assessing and managing climate-related risks and opportunities. This applies to both the DB and DC Sections of the Fund. The Trustee has the ultimate responsibility for ensuring Fund-level climate-related risks and opportunities are governed well. The Trustee Chair has responsibility for ensuring that climate change is awarded sufficient time and consideration by the Trustee and advisers. The Climate Governance Statement remains appropriate for the Fund and there have been no changes during the current reporting year. Please find below a summary of the statement.

Trustee	<ul style="list-style-type: none"> – Receiving regular training on climate-related risks and opportunities. Agreeing and reviewing climate beliefs and strategy – Setting and implementing roles set out in the Governance Statement. Incorporating climate-related considerations into strategic decisions across the DB and DC Sections. – Using Board meetings as an opportunity to question and/or challenge TCFD reporting produced by external advisers, to ensure the advice remains appropriate for the Fund and its members – Keeping informed of climate related risks and opportunities using climate scenario analysis and climate-related metrics, and its integration into strategic considerations. 	Investment Advisor	<ul style="list-style-type: none"> – Support the Trustee and IC in identifying, assessing and managing climate considerations within the Fund's governance arrangements, investment strategy and risk management, annually. – Reviewing the Fund's Investment Managers from an ESG and climate perspective to manage climate risks, providing reporting to the Trustee and engaging on areas for improvement. – Assisting the Trustee in selecting and presenting climate metrics and targets, annually, and climate scenario analysis at least triennially – Providing annual training on relevant climate-related matters. – Ensure IC kept informed of relevant industry and scientific updates.
Investment Committee (IC)	<ul style="list-style-type: none"> – Reviewing climate provisions in governance arrangements, beliefs, strategic direction and policy, as well as risk management framework. – Ensuring climate change and ESG criteria are applied during Investment Manager selection and retention processes. – Identifying climate-related risks and opportunities for the Fund, and how these will play out over various relevant time horizons – Undertaking analysis of various climate scenarios, at least triennially. – Receiving updates on the Fund's investments from the Fund's Investment Advisor, including data on climate metrics and progress against any targets set in relation to these metrics, annually. – Overseeing delivery of TCFD reporting, annually. 	Actuarial Advisor	<ul style="list-style-type: none"> – Assessing climate-related risks and opportunities in relation to the Fund's liabilities and funding position, via scenario analysis reporting..
		Covenant Advisor	<ul style="list-style-type: none"> – Identifying and assessing how climate-related risks and opportunities could affect the employer's covenant, via scenario analysis reporting.
		Legal Advisor	<ul style="list-style-type: none"> – Ensuring Trustee fulfils legal obligations in respect to climate change, and a legal review of the TCFD Report.
		Investment Managers (including DC Provider)	<ul style="list-style-type: none"> – Identifying, assessing and managing climate-related risks and opportunities in relation to the Fund's investments. – Exercising voting rights and engaging with portfolio companies. – Providing information on climate change capabilities and reporting in relation to the Fund's investments, including climate metrics.

Strategy

Strategy

Setting the scene

Climate change is a systemic risk for financial markets and may have a material impact on member investments. As part of the Fund's strategic direction, and on behalf of our members, we will seek to identify, assess and manage risks arising from the transition to a low carbon economy and physical risks from climate change.

Transition risks – risks arising from the transition to a low-carbon economy, which are expected to be strongest in the short term given climate-related regulatory developments, market trends and decarbonisation action. The timing and the speed of the transition are important in determining the extent of costs, which can arise through e.g. costs of complying with new regulation or stranded assets.

Physical risks – risks arising from the physical impacts of climate change (including both sudden natural disasters and slower shifts in weather patterns). These risks are expected to scale up in the long term as global average temperatures increase, with the potential to cause operational disruption and physical damage to the Fund's assets.

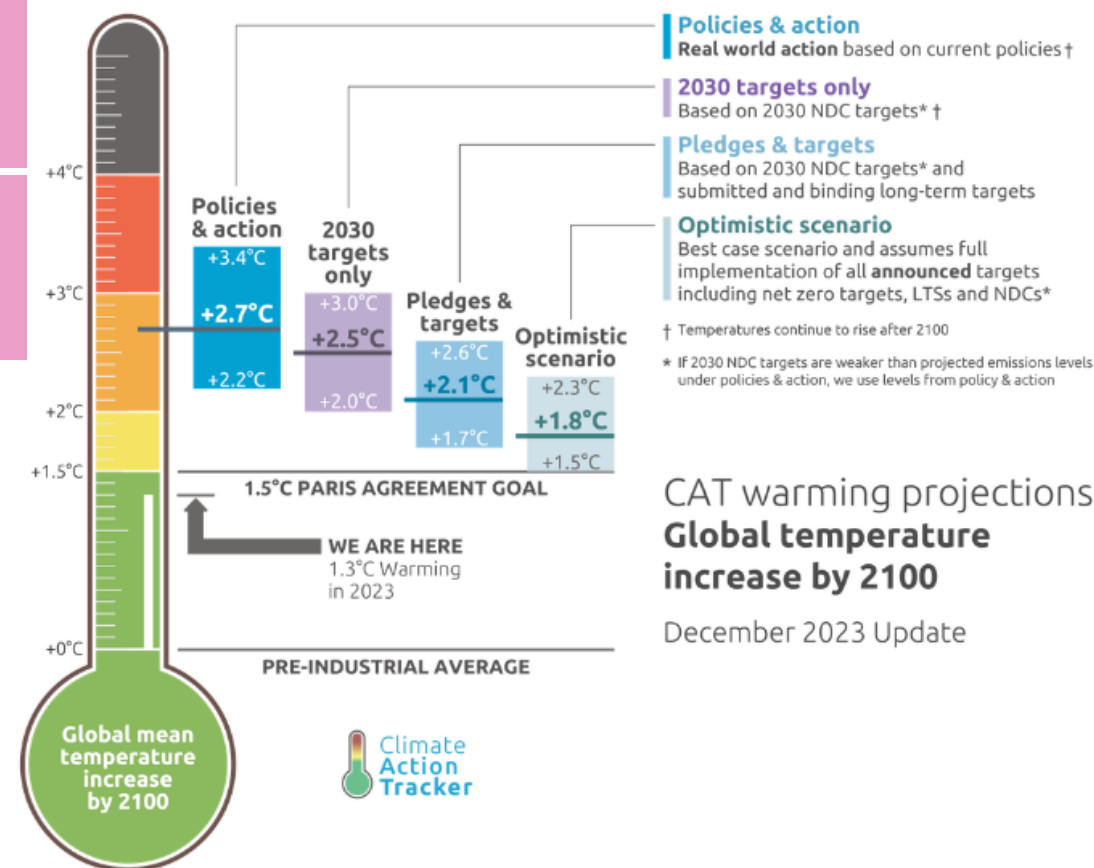
Climate scenario analysis

This analysis looks at hypothetical futures, which can apply different levels of decarbonisation action and produce a different combination of physical and transition risk outcomes.

To set the context, the Paris Agreement (agreed by global governments in 2015) sets the tone on climate action, aiming towards a well below 2°C scenario, with ambition towards 1.5°C, this century. However, in 2023, for the first time this reporting year, average global temperatures exceeded 1.5°C.

Beyond the climate scenario analysis, we are also measuring strategic exposure to climate risks and opportunities via climate metrics and targets (see final section).

The Fund's target is aiming to improve emissions data coverage, towards the setting of a Fund decarbonisation strategy and target in time, once data improves.



CAT warming projections
Global temperature increase by 2100

December 2023 Update

Strategy

Climate scenario analysis

This was carried out for the Fund's 2023 TCFD report, and forms part of our strategic decision-making on an ongoing basis. As per the regulations, we must undertake scenario analysis no less than every three years. In each of the two years following that analysis, we must review whether refreshed scenario analysis is required to adequately assess climate-related risks to the Fund.

Since scenario analysis was carried out, there have been no material changes to the Fund's investment and funding strategy, so we consider that the scenario analysis remains relevant and useful for decision making. The quantitative analysis in the remainder of this section presents the analysis originally completed for the 2023 TCFD report.

To enhance its understanding of the Fund's strategy from a climate-related perspective, the IC undertook qualitative strategy analysis during the reporting year, particularly through exploring potential climate opportunities for the Fund.

For the DB Section, the IC explored firstly, whether green gilts could be used in the Fund's LDI portfolio, and secondly, whether the Fund's B&M mandate could invest into lower carbon credits. However, following the initial analysis and conversations, the IC determined that neither opportunity currently aligns with the Fund's key strategic objective. However, the IC intends to continue to review further opportunities going forward as part of their ongoing commitment to improving the Fund's climate-related exposures.

Strategic considerations

DB Section	DC Section
Climate Opportunities	Off-the-shelf ESG review
<ul style="list-style-type: none">• LDI Portfolio: Explore exposure to green gilts	<ul style="list-style-type: none">• The Standard Life equities allocation integrates ESG considerations (and this is also coming online for credit) which is accompanied by strong stewardship efforts
<ul style="list-style-type: none">• Corporate bonds: Lower carbon corporate bonds, sustainable diversified private markets or renewable infrastructure	<ul style="list-style-type: none">• The long-term climate target built into default

Strategy

Describe the resilience of the Fund's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

In order to understand the Fund's resilience to climate-related risks and opportunities, we analysed the following climate scenarios:

Climate scenarios

Net Zero 2050

- Paris aligned scenario with temperatures kept to a 1.5°C rise this century.
- Policies are implemented immediately to reduce emissions in a co-ordinated manner, resulting in high transition costs, particularly in the near term.
- Physical damages are limited.

Divergent Net Zero

- Paris aligned scenario with temperatures kept to a 1.5°C rise this century.
- Divergence in decarbonisation policies across sectors results in a more disorderly transition to a low carbon economy, resulting in high transition costs.
- Physical damages are minimised.

Current Policies

- World largely fails to meet the ambition set out in the Paris Agreement, resulting in 3.8°C of warming this century.
- Current policies continue, but no attempt to ramp up climate policy ambition overtime resulting in lower transition costs.
- Higher physical risks arise as a result of rising global temperatures.

These scenarios were selected to analyse transition risks and opportunities for the Fund

This scenario was selected to assess physical risks and opportunities for the Fund

To feed into the Fund's climate strategy, we assessed the potential impact of climate change on the Fund's investment and funding strategy for the DB Section as well as considering the impact on the size of members' pots within the DC Section. All scenarios were assessed as the relative divergence to a 'Baseline scenario', which essentially assumes the absence of climate change.

Limitations to climate scenario analysis

We accept there are limitations of the climate scenario analysis conducted and would therefore recommend to focus on relative magnitude as opposed to absolute figures, as well as the relative importance of transition and physical risks across scenarios. Further detail on the assumptions are provided in the Appendix. We conducted separate scenario analysis for the DB and DC Sections given their differences (including selection of different time horizons).

Strategy – DB Section

Describe the climate-related risks and opportunities the Trustee has identified over the short, medium and long term

Timeframes

We identified timeframes that are relevant to the Fund from the investment, member, and climate change, perspectives. We consider material climate-related risks and opportunities that are relevant under each of these. For example, to generalise, we anticipate that **transition risks will be greatest in the short-term, whilst physical risks from climate change will be greatest in the long-term**. However, it is clear that natural disasters are increasing in frequency today, whilst decarbonisation risks may continue out to 2050 and beyond for the hardest to decarbonise assets and sectors.

Timeframes	Short-term 2025	Medium-term 2030	Long-term 2037
Investment considerations:	<ul style="list-style-type: none"> Actuarial review conducted every 3 years Review of the long-term objective and illiquid mandates 	<ul style="list-style-type: none"> Long-term objective Consideration of insurance options 	<ul style="list-style-type: none"> Duration of the Fund's liabilities
Climate considerations:	<ul style="list-style-type: none"> Companies set decarbonisation targets Improvements in climate data quality The Inevitable Policy Response, in light of the ramping up of climate targets to meet the Paris Agreement goals 	<ul style="list-style-type: none"> Companies hitting interim decarbonisation targets The world monitors progress against delivery of the 2030 SDGs, & delivery of the 2030 goals under the Global Biodiversity Framework 	<ul style="list-style-type: none"> Monitoring whether companies are on track for 2050 net zero ambitions Measuring progress towards 2050 biodiversity targets, under the Global Biodiversity Framework Physical risks ramping up, over time

Table notes:

- The timeframes adopted differ to those of our Actuarial Advisor, LCP, and we set out their timeframes alongside their liability analysis, later in this section.
- The United Nations Principles for Responsible Investment (PRI) is an international body furthering ESG considerations by investors. As part of their Inevitable Policy Response, they predict low-carbon policies will accelerate in 2023–2025, in order to close the gap towards the Paris Agreement goals.
- The Sustainable Development Goals (SDGs) are a set of 15 goals adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.
- The Global Biodiversity Framework was agreed by global governments in 2022, and sets the tone for action on biodiversity, including 2030 and 2050 milestones and targets to conserve nature and combat biodiversity loss.

Strategy – DB Section

Describe the resilience of the Fund’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

DB Section - Impact on funding strategy



To understand the resilience of the Fund’s funding strategy to climate-related risks, the IC, in conjunction with its Advisors, carried out climate scenario analysis, across its DB Section (including all asset exposures and cash holdings).

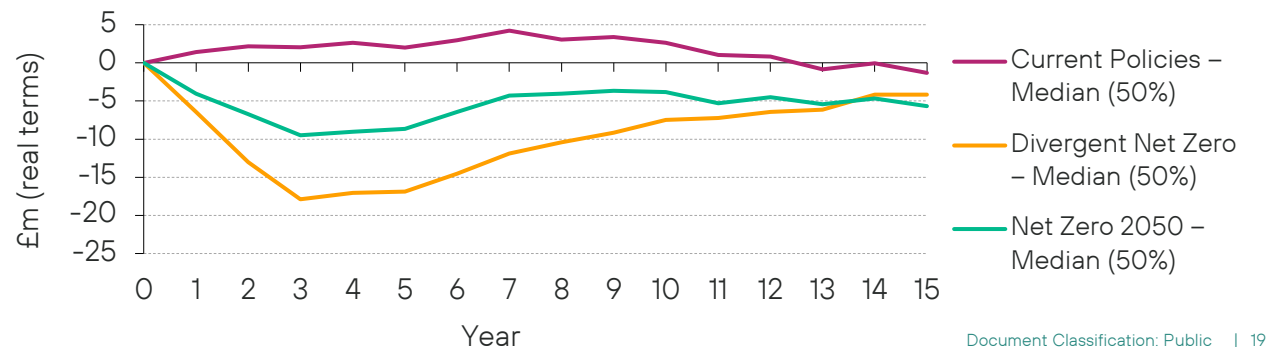
Over the long-term time horizon to 2037, and under each climate scenario, the funding strategy is expected to underperform relative to the Baseline scenario (or the absence of climate change). From the funding position perspective, as the Fund hedges a high proportion of the liabilities (against interest rate and inflation movements), some of the effect on liabilities from gilt yield changes caused by climate change is expected to be mitigated, dampening some of the potential climate-related underperformance. However, the liabilities are subject to the potential impact of longevity risk, as we discuss later in this section.

In the “Net Zero 2050” and “Divergent Net Zero” transition scenarios **out to 2025 and 2030, transition risks dominate**, resulting in investment return drags, as the costs of decarbonisation show through to investee company bottom lines (as these companies transition to meet decarbonisation industry norms and government regulation). The impact is more pronounced in the “Divergent Net Zero” scenario. We recognise this modelling is based on assumptions and more detail is provided in the Appendix.

Physical risks scale up through time, but there is a limited Fund impact in the high carbon “Current Policies” scenario to 2037. This reduces the immediacy of the Fund’s physical damage risks and the associated management of these.

In response, in 2023, the IC reviewed its long-term strategic allocation. We have considered introducing climate-related objectives in the B&M and LDI mandates. At the same time, the IC, along with its Investment Advisor, will continue to work with the Investment Managers on improving their climate-related capabilities.

Projected surplus/deficit vs Baseline (£m, median)			
Scenario	2025	2030	2037
Net Zero 2050	-9	-4	-6
Divergent Net Zero	-18	-9	-4
Current Policies	2	4	-1



Source: Isio

Note: Additional detail on scenario analysis assumptions and limitations can be found in the following slide and in the Appendix

Strategy – DB Section

Describe the resilience of the Fund's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

DB Section - Impact on investment strategy & asset classes



The Fund's assets are diversified and will react differently to various climate scenarios. Over the long-term to 2037, under the high carbon "Current Policies" scenario, the investment strategy experiences an annual return drag of -0.3%.

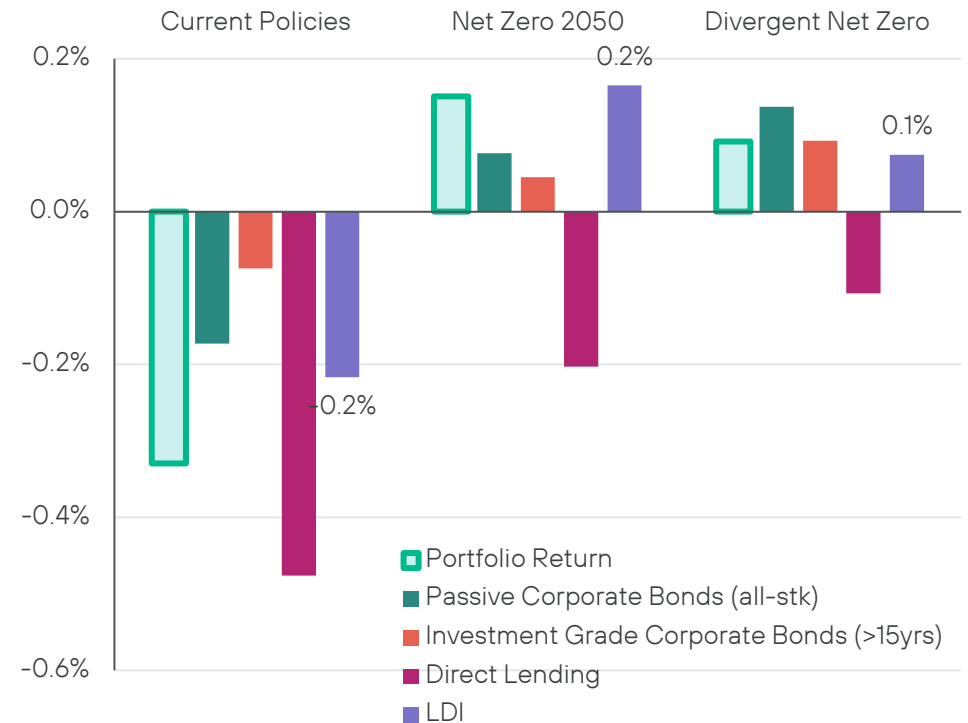
This is primarily being driven by the direct lending allocation (-0.5% p.a.), whose illiquid positions are slower in adapting to decarbonisation, shifting weather patterns and increasing natural disasters. **Diversification is beneficial in buffering the investment strategy impact**, as a whole, given the other asset classes experience a lesser return drag.

Over the same time horizon, under the "Net Zero 2050" and "Divergent Net Zero" transition scenarios, the investment strategy experiences a positive +0.2 to +0.1% annual return premium, respectively. However, to 2025, the impact is more negative at -0.6% to -0.1%, respectively, given transition risks are primarily short-term in nature. The LDI portfolio reacts positively across timeframes, in light of the **flight to quality in response to climate forces in credit markets**. Direct lending experiences the strongest negative return drags, as the illiquid assets are less responsive to pressures to decarbonise, given the lower (but growing) level of climate-related scrutiny.

The asset class results help the IC to understand which allocations might contribute more or less to the Fund's climate risk. With the greatest exposure in the direct lending allocation, the IC notes that the allocation will reduce over time as part of the de-risking process.

(See the risk management section for relative materiality of climate risks by asset class and an assessment of the climate-related capabilities of the managers).

The annual return drag of the Fund's investment strategy and asset classes, under different climate scenarios (vs Baseline scenario), to 2037



Source: Isio

Note: Additional detail on scenario analysis assumptions and limitations can be found in the appendix. Annualised return drags are shown but costs and impacts in reality won't be uniform. Whilst we have modelled the potential physical and abatement costs over the next 15 years, in theory, markets may price these in sooner. The model's projections are sensitive to the underlying methodology and assumptions. No guarantee can be offered that actual outcomes will fall within the range of simulated results. There were no data gaps when completing the scenario analysis.

Strategy – DB Section

Describe the resilience of the Fund’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

DB Section – Impact on liabilities



Potential changes in longevity assumptions are a material risk for the Fund. The Fund’s Actuarial Advisor is responsible for modelling climate-related impacts on the Fund’s liabilities, over time. Life expectancy will influence how long members are expected to draw their pensions from the Fund (longevity risk) as a potentially material source of risks and opportunities to the funding level. To the extent more deaths are experienced than assumed, the liability will reduce over time – equally, less deaths would result in an increase in liabilities.

The Fund’s liabilities are well hedged and protected from movements in yields and inflation. Therefore, some of the effect on liabilities is expected to be mitigated and should somewhat protect the funding position during times of adverse market movements.

The table on the right illustrates how **life expectancies might change under the different climate scenarios**. The Actuarial Advisor has mapped the assumed liability impacts to the assessed climate scenarios, using their own timeframes. Overall, liabilities are expected to increase under the “Net Zero 2050” and “Divergent Net Zero” transition scenarios. Whilst under the “Current Policies” scenario, liabilities are expected to decline. These trends are more pronounced with time, and greatest in the long-term to 2050.

It is worth noting that these projections are subjective and mortality outcomes will depend on multiple complicated interactions between various factors. (See the Appendix for further details on the assumptions and limitations of the analysis).

Approximate Impacts on Values of Liabilities (cumulative %)		
Timeframes	Net Zero 2050 / Divergent Net Zero	Current Policies
	No significant change in extreme weather events , investment in low carbon technology and more active lifestyles limits the impact of additional deaths from some aspects of climate change.	More severe weather conditions, a fall in health services and a lack of pursuit of an active lifestyle leads to additional deaths from adverse effects of climate change.
Medium-term to 2035	+1%	-1%
Long-term to 2050	+3%	-3%

Source: LCP

Note: Additional detail on the assumptions and limitations can be found in the Appendix. The liability impact is relatively similar across the “Net Zero 2050” and “Divergent Net Zero” scenarios, therefore these two scenarios are analysed together. Cumulative liability impacts are shown. Whilst we have modelled the potential impacts over the next ~30 years, in theory, liabilities are not static and will continue to evolve in response to market movements. This analysis focuses on the deviation around your current assumptions for mortality due to temperature and air pollution. The model’s projections are sensitive to the underlying methodology and assumptions. No guarantee can be offered that actual outcomes will fall within the range of simulated results.

Document Classification: Public | 21

Strategy – DB Section

Describe the resilience of the Fund's strategy, taking into consideration different climate-related scenarios

DB Section - Impact on the sponsor and covenant

Due to the nature of the sponsor's business area, it is expected to be exposed to climate opportunities due to increased demand resulting from decarbonisation regulations.

We have engaged with our Covenant Adviser to assess and monitor the potential impact of climate risks and opportunities on the covenant's strength over the short, medium and long term in all three scenarios modelled. Given the timeframes considered, the Covenant Adviser focused on the transition risks and opportunities the Fund may be associated with, under the anticipation there would be minimal physical risks exposure in the (15 year) long-term timeframe.

Resilience Factor	EY Commentary
Scheme Climate Scenario Funding Requirement	<ul style="list-style-type: none">In the short-term to 2025, for the Net Zero 2050 and Divergent Net Zero scenarios, the increasing cost of decarbonisation regulation would result in a reduction in the Fund's funding position of c.£9.5m and c.£18m respectively. This could result in c.£2m to c.£4m deficit repair contributions (DRCs) p.a. from the Group (assuming a 5 year recovery plan) to the Fund to protect the funding position.In the current policies scenario, there appears to be no funding risk as the scheme is expected to be fully funded for the majority of the 15 year timeframe.
Employer Underlying Affordability	<ul style="list-style-type: none">Based on the Group's projected EBITDA profits and the historical liquidity position, the Covenant Adviser believes the Fund would be able to support the additional c.£2m-4m of DRCs p.a. required, under the 2050 Net Zero and Divergent Net Zero scenarios, to 2025.
Climate Scenario Assumptions and their Potential Impact on the Employer	<ul style="list-style-type: none">The expected increase in decarbonisation regulations, as well as an increase in the pace of climate change transition in the global shipping industry, could lead to an overall increase in demand from ship owners and operators for the Group's advisory and vessel verification services. It is unlikely that demand for ship-based transportation will fall as alternative means of transport would be significantly more expensive than shipping.Overall, this suggests decarbonisation regulation represents a net opportunity for the Group however it has not yet been possible to quantify this opportunity.

Source: EY Parthenon

Notes: all calculations related to the funding position are calculated on a Technical Provisions basis.

Strategy – DC Default Arrangement

Describe the climate-related risks and opportunities the Trustee has identified over the short, medium and long term

Timeframes

The timeframes adopted for the DC Section differ from those in the DB Section, given the differing investment/member context. The DC Section adopts longer-term timeframes to reflect the longer time horizon until (the youngest) members' benefits are paid.

The **longer term timeframes will increase the relative importance of physical risks for the DC default arrangement** (as compared with DB Section investments). This is under the expectation that physical risks will scale up significantly towards the end of the century – with shifting weather patterns and increasing natural disasters becoming the new normal. Given the analysis projects out over several decades, to 2067, we can capture some of these physical changes.

Timeframes	Short-term 2032	Medium-term 2042	Long-term 2067
Investment considerations	<ul style="list-style-type: none"> • Oldest members have retired • Start of the final de-risking phase for the average member 	<ul style="list-style-type: none"> • Average member retires • Significant proportion of current membership approach retirement 	<ul style="list-style-type: none"> • Youngest members, or members entering the Fund, approaching retirement
Climate considerations	<ul style="list-style-type: none"> • Companies hitting interim decarbonisation targets • Monitoring whether the 2030 SDGs were delivered • Monitoring delivery of biodiversity goals under the Global Biodiversity Framework 	<ul style="list-style-type: none"> • Monitoring whether actors are on track for 2050 net zero ambitions • Measuring progress towards the 2050 biodiversity targets • Physical risks will scale up, towards mid-century 	<ul style="list-style-type: none"> • Net zero targets have been achieved or have failed to be achieved • Potential unprecedented shifts in physical risks, with extreme weather events increasing in magnitude and frequency, e.g. flooding and cyclones

Table definitions

- The Sustainable Development Goals (SDGs) are a set of 15 goals adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.
- The Global Biodiversity Framework was agreed by global governments in 2022, and sets the tone for action on biodiversity, including a set of 2030 and 2050 milestones and targets to conserve nature and combat biodiversity loss.

Strategy – DC Default Arrangement

Describe the resilience of the Fund’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

DC Default Arrangement - Impact on investment strategy



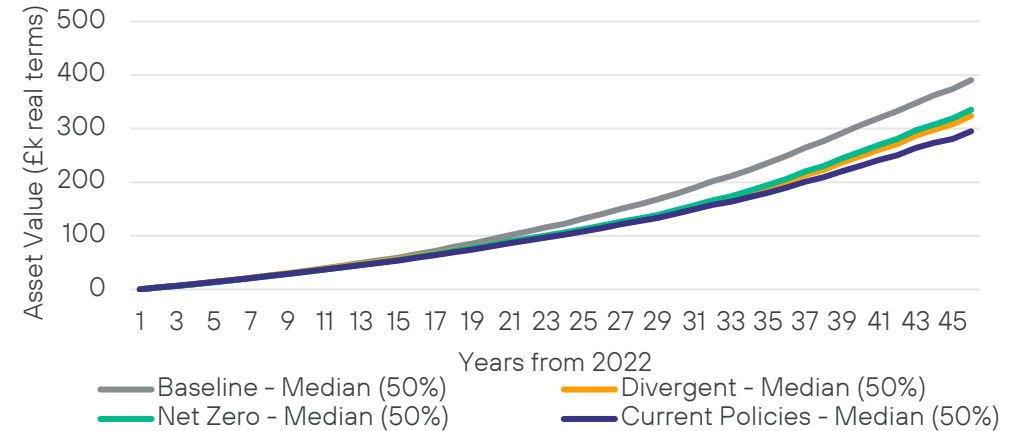
We conducted climate scenario analysis on the DC Section, focusing on the DC default arrangement (as the only DC assets captured by the requirements). The exposure to investment and climate-related risk varies over the glidepath of the LR Flexible Retirement Fund, and the impacts on members are likely to differ, according to time to retirement. Under each climate scenario, the DC default arrangement is expected to underperform (vs Baseline scenario assuming the absence of climate change), with all members impacted by climate change.

To 2032, the projected impacts are small under most of the climate scenarios. Transition risks are most prevalent in this timeframe, as seen by the results for the “Net Zero 2050” and “Divergent Net Zero” scenarios. But given the short-term timeframe, the cumulative impacts of the return drags will not be as significant (as compared with the longer timeframes).

Youngest member: The projected impacts for this member are significant overall due to the longer time period until the member retires, in circa 2067. Given the longer-term time horizon, physical risks become more important, as weather patterns shift and natural disasters scale up, as seen in the “Current Policies” scenario results. (Physical risks are relatively more important for the youngest members vs oldest members, where the exposure to physical risks may be more limited given time horizons are >30 years shorter). Given the compounding effects of return drags over time, upfront decarbonisation costs from the transition could also limit the full potential value of member pots for the youngest DC members over time (see chart).

As part of the annual strategy review, the IC reviewed its existing investment arrangements in Q1 2024. The climate alignment of some of the underlying funds (see next slide) helps to buffer the total impact. The IC recognises that as the Fund’s approach to ESG evolves, it will continually review the climate-related approach of the default arrangement.

Projected asset values of the youngest member’s pension pot (invested in the LR Flexible Retirement), under different climate scenarios and timeframes, relative to the Baseline scenario (first chart, £k real terms; second chart, ann. bps)



LR Flexible Retirement	2032	2042	2067
Net Zero 2050	-39	-110	-97
Divergent Net Zero	-130	-152	-107
Current Policies	-75	-148	-129

Source: Isio

Note: Additional detail on scenario analysis assumptions and limitations can be found in the appendix. We model the youngest members’ pot of assets, out to 2067. Annualised return drags are shown but costs and impacts in reality won’t be uniform. Whilst we have modelled the potential physical and abatement costs over the next 45 years, in theory, markets may price these in sooner. The model’s projections are sensitive to the underlying methodology and assumptions. No guarantee can be offered that actual outcomes will fall within the range of simulated results. Document Classification: Public | 24

Strategy – DC Default Arrangement

Describe the resilience of the Fund's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

DC Default Arrangement – Impact on asset classes

The Fund uses a lifestyle approach to manage investment risk across the members' pension journey, reducing their allocation to the riskier assets in the growth phase as the member approaches retirement. Importantly, these risks at asset class level will be considered as the Fund progresses along its de-risking journey.

The LR Adventurous Fund, mainly invests in **equities, which are expected to have the greatest exposure to climate risk**. The emerging market equity exposure will experience increasing costs of decarbonisation in the "Net Zero 2050" and "Divergent Net Zero" scenarios, as a result of the strong reliance on high carbon energy in these markets, as well as unprecedented natural disasters in the "Current Policies" scenario. A member's allocation to this Fund will however reduce as they approach retirement.

In an attempt to reduce the equity allocation's climate-related risks, and **increase exposure to climate opportunities**, the IC introduced the ASI sustainable global equity targeting lower carbon intensity and increased green revenue exposure. In addition, the diversified growth fund within the LR Adventurous and LR Diversified, targets 1.5°C alignment and year-on-year decarbonisation targets. This and the diversified nature of the strategy hold the potential to partially buffer climate risk.

The LR Index Linked Gilts Fund is least exposed to climate-related risk, with a marginally positive reaction to all climate scenarios in 2032, moving to slightly negative by 2067. The allocation increases as members approach retirement.

We are comfortable this analysis is still appropriate and reflects the default investment strategy as at 31 March 2024. However, in Q1 2024 we initiated a strategy review that will assess ESG integration and the potential for future developments, upon the completion of which further analysis may be necessary.

The annual return drag of different climate scenarios vs the base case, for the LR Flexible Retirement strategy (the default) and underlying Funds, to 2067



Source: Isio

Note: See notes on the prior slide for high-level details on the assumptions. Additional detail on scenario analysis assumptions and limitations can be found in the appendix.

Risk Management

Risk Management

Describe the Trustee's processes for identifying, assessing and managing climate-related risks

Climate-related risk management

We employ various climate-related risk management processes, drawing on existing risk management tools, which allow the identification of the Fund's most material climate-related risks, with consistent controls to assess and manage these risks, across the Fund as a whole.

Climate-related risks are assessed according to their relative materiality. This enables us to prioritise such risks, including in relation to non-climate-related risks, within the wider risk management framework.



Risk identification & prioritisation

- **Risk register:** We review climate-related risks at least annually. We reviewed the risk register during year and determined the register to still be appropriate for the Fund.
- **Roles & responsibilities:** We agreed with the Fund's Advisors and Investment Managers their various responsibilities for the identification, assessment and management of climate-related risks. This includes risks to the investments, liabilities and employer covenant.
- **Training:** We receive climate training to understand potential impacts of climate risks, including both transition risks and physical risks.



Investment strategy impact

- **Climate scenario analysis:** The IC seeks to quantify the potential impact of climate change on the Fund's investment and funding strategy (DB) and on members' pots (DC), in terms of the potential impacts of the transition and physical risks to the Fund.(see Strategy section).
- **Climate integration:** Where possible, the IC ensures ESG and climate-related considerations are integrated within investments. For example, in the DC Section, the BlackRock Market Advantage Fund seeks to align with a 1.5°C scenario with year-on-year decarbonisation targets, whilst the ASI Sustainable Equity Fund targets improvements in emissions intensity and green revenue exposures.



Climate risk monitoring

- **Assessing Investment Managers:** The IC assesses the ESG and climate-related capabilities of our Investment Managers, on a biennial basis, setting priority areas for improvement.
- **Assessing climate metrics:** The IC monitors a set of climate-related metrics on an annual basis, in line with TCFD recommendations, The focus is on metrics measuring transition risks that the Fund will face in the nearer term (vs physical risks that will scale up in the long-term).
- **Climate scenario analysis:** Beyond a focus on the strategy, this seeks to identify the impacts of the transition risks and physical risks from climate change on the Fund's asset class exposures.



Stewardship

- **Assessing Investment Managers:** As part of biennial manager assessments, the IC via its Investment Advisor engages with its Investment Managers on how they vote and engage to ensure these align with the Fund's own climate beliefs. Voting and engagement is also reported as part of the annual Implementation Statement.

Risk Management

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the Trustee's overall risk management

Risk register

In 2022, we agreed the following additions to the risk register, to ensure climate considerations are embedded into the Fund's ongoing governance and risk management processes. During the year, we reviewed the risk register and determined that no additions were required. The aim of the process of identifying the main risks, and considering how they could be mitigated, is to reduce the severity of these climate-related risks for the Fund, as a whole. Risk management is prioritised based on the relative materiality of these risks. For example, in the short-term, the costs of transitioning to a low carbon economy will be material for investment returns, We are therefore assessing the feasibility of further climate integration within our DB Section as well as across the whole Fund, by setting targets to improve data coverage. The DC Section is further advanced in this process due to the nature of the assets invested in, for example through the incorporation of more ESG-focused mandates in the default option.

	Potential issues:	Potential mitigating actions:
Investment risk	<ul style="list-style-type: none"> • Macroeconomic impacts from climate change impact on investment returns, including both transition risks and physical risks from climate change. • Asset mispricing or asset price bubbles arise from ESG or climate-related risks, resulting in re-pricing events and lower investment returns. • Investment Managers and DC default arrangements fail to adequately integrate climate-related risks into their risk management frameworks. 	<ul style="list-style-type: none"> • Conduct a climate scenario analysis at least triennially, to understand climatic impacts on the portfolio • Annual review of climate-related metrics and targets as well as consideration of other ESG related metrics • Annual ESG impact assessments, to assess the climate capabilities of Investment Managers
Funding risk	<ul style="list-style-type: none"> • The funding position is adversely impacted by climate change, with higher costs and greater uncertainty on the impacts on investments and liabilities. • Climate-related risks deteriorate the strength of the covenant. 	<ul style="list-style-type: none"> • Regular advice from actuary on potential impact of climate change on liabilities and funding position, including climate scenario analysis. • Reviews on the strength of the covenant in response to climate change
Operational risk	<ul style="list-style-type: none"> • Investment Managers do not provide adequate data for TCFD reporting purposes, in particular climate-related metrics. • TCFD reporting is insufficiently clear for member communication purposes. 	<ul style="list-style-type: none"> • Develop baseline understanding of manager climate-related metric reporting capabilities • Understand evolutions in industry TCFD reporting best practice
Governance risk	<ul style="list-style-type: none"> • ESG and climate governance responsibilities are not established, leading to a lack of oversight regarding ESG and climate risks. • Knowledge gap on climate issues and regulations, preventing effective oversight 	<ul style="list-style-type: none"> • Regular review of SIP and climate governance statement to ensure the climate governance framework remains fit for purpose. • Regular training on climate issues, including regulatory developments,

Risk Management

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the Trustee's overall risk management

Asset class materiality

We assess the materiality of different climate-related risks on different asset classes using climate scenario analysis.

In the DB Section, corporate credit allocations are most impacted by climate-related risks. Government bonds are less impacted, given the ability to use monetary and fiscal levers to respond to such climate-related risks. However, the scaling up of physical risks this century may place a burden on government budgets, including e.g. flood defence spending, resulting in drags realising in the long-term.

For the DC default arrangement, equities, including those held in Diversified Growth funds, experience first wave impacts as climate change risks are priced into markets. The impact is most severe in the emerging market equity fund and the IC is engaging with Vanguard to proactively manage its climate risks.

Stewardship controls

We recognise the importance of stewardship in driving change across investee companies and the wider pensions industry. A summary of Fund stewardship activity is published in the Fund's annual Implementation Statement found [here](#).

We delegate stewardship responsibilities to our Investment Managers, to engage and vote on climate issues, in the best interests of members. Our Investment Advisor also engages with Investment Managers in turn, to improve their climate-related capabilities (see next page). A key emphasis moving forward will be to engage managers on improving resiliency to physical risks from climate change, which is less considered today vs transition risks.

Risk	Time frame	Assets			Liabilities
		Government Bonds	Corporate Bonds	Direct Lending	
Transitional (net zero scenario*)	Short term (3 years)	Low	Average	Low	High
	Medium term (8 years)	Low	Average	Low	
	Long term (15 years)	Low	Average	Low	
Physical (current policies scenario)	Short term (3 years)	Low	Average	Low	High
	Medium term (8 years)	Low	Average	Low	
	Long term (15 years)	Low	Average	Average	
Expected allocation change		↑	↑	↓	

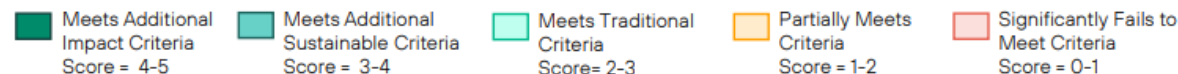
Risk	Time frame	Assets			
		Government Bonds	Diversified Growth (Climate aware)	Global Equity (Climate aware)	Emerging Market Equity
Transitional (net zero scenario*)	Short term (10 years)	Low	Average	Average	High
	Medium term (20 years)	Low	Average	Average	High
	Long term (45 years)	Low	Average	Average	High
Physical (current policies scenario)	Short term (10 years)	Low	Average	Average	High
	Medium term (20 years)	Low	Average	Average	High
	Long term (45 years)	Average	Average	Average	High
Glidepath changes		↑	↑ ↓	↓	↓

Low Average High

Expected allocation change reflects the expected change in asset mix as the Fund's funding position improves (DB Section) and the member journey across the glidepath (DC default arrangement).

Risk Management

Key:



Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the Trustee's overall risk management

Assessing Investment Managers

Whilst the Trustee retains overall responsibility, we delegate day-to-day management of the investments to Investment Managers, and we expect the Investment Managers to be identifying, assessing and managing climate-related risks on an ongoing basis on the Fund's behalf.

We undertake a biennial review of each of our manager's ESG and climate change capabilities. This results in a report with each mandate allocated an ESG score of between 0 and 5 as well as an explicit climate score. The Investment Managers are assessed across the five key areas below (which are aligned with our ESG and climate beliefs):

Assessment category	Example evaluation criteria
Investment approach	Is there a climate change policy and does the Fund integrate climate-related KPIs or impact investments?
Risk management	Can the manager demonstrate the impact of climate change on the Fund, across scenarios, and across transition and physical risks?
Voting & engagement	Is climate change an explicit stewardship priority for the manager, and can they evidence climate-related engagements?
Reporting	Can the manager report relevant TCFD metrics, and are they taking steps to improve data coverage and quality?
Collaboration	Is the manager a member of key initiatives, such as the TCFD, Net Zero Asset Manager Initiative, or others?

In the most recent review in March 2023, the DB and DC Sections had the following results at the mandate-level. Our Investment Advisor engages with the Investment Managers on areas of improvement to increase the climate-related ambition of the managers over time. For example, they are engaging with the one of the DB Fund's direct lending managers to introduce a climate policy and 2050 net zero target, and LDI portfolio manager to introduce the required TCFD metrics reporting. Following engagement, the LDI manager expects TCFD metrics to become available during our next reporting year.

Mandate (asset classes)	Climate score
DB Section	
Direct Lending manager 1	Significantly Fails to Meet Criteria (Score = 0-1)
Direct Lending manager 2	Partially Meets Criteria (Score = 1-2)
Buy & Maintain	Meets Additional Sustainable Criteria (Score = 3-4)
LDI	Partially Meets Criteria (Score = 1-2)
DC Default Arrangement	
Sustainable Global Equity	Meets Traditional Criteria (Score = 2-3)
Emerging Markets Equity	Partially Meets Criteria (Score = 1-2)
Sustainable Diversified Growth	Meets Traditional Criteria (Score = 2-3)
Index Linked Gilts	Partially Meets Criteria (Score = 1-2)

Metrics and Targets

Metrics and Targets

Disclose the metrics used by the Trustee to assess climate-related risks and opportunities in line with its strategy and risk management process

Climate metrics selection & monitoring

The IC monitored four climate metrics during the year:



Absolute emissions metric: Total greenhouse gas emissions (Scope 1 & 2 and Scope 3). This seeks to attribute investee company emissions to the Fund, based on the value of investments in the company.



Emissions intensity-based metric: Carbon footprint (Scope 1 & 2 and Scope 3). Absolute emissions are normalised per £1 million invested, to understand the relative emissions intensity of different mandates.



Portfolio alignment metric: Implied temperature rise (“ITR”). The temperature pathway the mandate aligns to, expressed as an increase in global average temperatures by the end of the century.



Additional climate change metric: Data quality. The proportion of emissions data that is directly reported by companies, which has been independently verified, or which has been estimated. (This is calculated for the carbon footprint.)

The absolute emissions and emissions intensity metrics are recommended metrics within regulations. The final two metrics were selected based on their potential to add value to the Trustee and IC’s decision-making. We are comfortable that these metrics remain appropriate, and will continue to assess these climate-related metrics at least annually, to monitor climate-related risks and opportunities, and as a tool to engage with the Investment Managers. Further detail on the chosen climate metrics, as well as an overview of what different emission scopes mean, can be found in the Appendix.

Why monitor emissions?

Greenhouse gas emissions result from a number of economic activities, primarily as a result of burning fossil fuels. These emissions trap the sun’s energy, resulting in a “greenhouse effect” and relative warming. Slowing and reducing the release of emissions into the atmosphere is therefore important.

Why assess portfolio alignment?

It’s vital to assess how companies could evolve in the future, as emissions are inherently backward-looking. This ensures we have a longer-term focus for climate-related decision making. For example, understanding a fossil fuel energy company might be carbon intensive today, but has credible plans to align with low carbon goals and transition to renewable energy, in the future.

Why explore data quality?

It’s important to understand whether the emissions data we are using to measure the materiality of decarbonisation risks are credible. This in turn allows robust decision-making and target-setting.

Metrics and Targets - Overview

■ Metric improved over the year
 ■ Metric unchanged over the year
 ■ Metric deteriorated over the year

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

How have the Fund's metrics changed since last year?

DB Section	Total Portfolio 2022/2023	Total Portfolio 2023/2024	Change
Total GHG emissions (scope 1 & 2) tCO ₂ e	33,289	19,965	-13,324
Total GHG emissions (scope 3) tCO ₂ e	N/A	10,640	-
Carbon footprint (scope 1 & 2) tCO ₂ e/ £1m	92	44	-48
Carbon footprint (scope 3) tCO ₂ e/ £1m	N/A	120	-
Implied Temperature Rise (°C)	2.6	2.4	-0.2

In the DB Section: positively, there has been a decline in Fund emissions, as well as a decline in the implied temperature rise..

In the Fund's second report, we have expanded emissions coverage to include scope 3 emissions (i.e. the value chain emissions of investee companies) alongside the scope 1 & 2 emissions that were reported last year (i.e. emissions arising from direct operations or the purchase of electricity).

In the DC Section: the source of the climate metrics collated for the DC section changed from last year and hence the results aren't directly comparable to last year's figures. However, as a result there has been a significant increase in data coverage this year. We are now comfortable this provides a more accurate picture of the DC default arrangement and will allow us to make fair trend comparisons going forwards.

DC Section	Total Portfolio 2023/2024
Total GHG emissions (scope 1 & 2) tCO ₂ e	14,224
Total GHG emissions (scope 3) tCO ₂ e	107,192
Carbon footprint (scope 1 & 2) tCO ₂ e/ £1m	72
Carbon footprint (scope 3) tCO ₂ e/ £1m	542
Implied Temperature Rise (°C)	2.2

Metrics and Targets – DB Section

Strong coverage (>70%)

Acceptable coverage (>50%)

Poor coverage (<50%)

No data coverage

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Carbon metrics

We gathered climate metrics for the DB Section from its Investment Managers as at 30 September 2023 (or the best-available proximate date). The results are set out in the below table. The portfolio-level carbon footprint (excluding the LDI portfolio) has fallen by significantly from the previous year (from 92 to 44 tCO₂e/ £1m). This is mostly as a result of improved data coverage across the direct lending mandates. However, we anticipate significant volatility in emissions as coverage continues to improve over the near future.

Mandate	Total GHG emissions (scope 1 & 2)		Total GHG emissions (scope 3)		Carbon footprint (scope 1 & 2)		Carbon footprint (scope 3)	
	Metric, tCO ₂ e	Coverage	Metric, tCO ₂ e	Coverage	Metric, tCO ₂ e/ £1m	Coverage	Metric, tCO ₂ e/ £1m	Coverage
Abrdn – Sterling Fund	-	-	-	-	-	-	-	-
Alcentra – European Direct Lending II	297	51%	2,726	32%	6.9	51%	71.6	32%
LGIM – Buy & Maintain Bond Mandate	16,959	63%	-	-	56.0	63%	-	-
Partners Group – Private Market Credit Strategies 2015	1,088	37%	-	-	137.3	37%	-	-
Partners Group – Private Market Credit Strategies 2018	1,621	25%	7,913	25%	17.1	25%	140.5	20%
Schroders – LDI	-	-	-	-	-	-	-	-
Trustee Cash	-	-	-	-	-	-	-	-
Total Portfolio 2023/2024	19,965	28%	10,640	4%	44	28%	120.4	4%
Total Portfolio 2022/2023	33,289	21%	N/A	N/A	92	21%	N/A	N/A

Source: Investment Managers, Isio calculations.

Notes: Further caveats and detail can be found in the Appendix. Data as at 30 September 2023, except for Alcentra, data is produced annually as at 30 December 2023 and 31 December 2022 for Partners Group. The Fund's data has been aggregated at the DB Section level. Methodology: the totals use a sum for total GHG emissions and weighted average for other metrics, using only the reporting portion of the portfolio. The coverage numbers are based on a weighted average across the total portfolio. The mandate absolute emissions have been scaled up to represent 100% of the stated mandate. Portfolio alignment metric methodologies differ across managers, albeit further information has not been provided by the Investment Managers on the precise methodology..

Metrics and Targets – DB Section

■ Strong coverage (>70%)
 ■ Acceptable coverage (>50%)
 ■ Poor coverage (<50%)
 No data coverage

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Data quality and Implied Temperature Rise

We completed metrics reporting in February 2024, with a focus on improving both the coverage and accuracy of data from the previous reporting. Following engagement with managers on improving their prior Scope 1 & 2 metrics, the portfolio coverage has improved for all reported TCFD metrics, most prominently on the Direct Lending mandates with Alcentra and Partner’s Group. We will continue to push for data improvements and, following engagement with the LDI manager, expect to be able to begin reporting LDI-level metrics from the Fund’s next report onwards.

Mandates	Data quality % of scope 1 & 2 emissions intensity that are:				Implied Temperature Rise	
	Verified	Reported	Estimated	Unavailable	Metric (°C)	Coverage
Abrdn – Sterling Fund	-	-	-	100%	-	-
Alcentra – European Direct Lending II	-	39%	12%	49%	-	-
LGIM – Buy & Maintain Bond Mandate	-	63%	0%	37%	2.4	64%
Partners Group – Private Market Credit Strategies 2015	-	37%	-	63%	-	-
Partners Group – Private Market Credit Strategies 2018	-	25%	-	75%	-	-
Schroders – LDI	-	-	-	100%	-	-
Trustee Cash	-	-	-	100%	-	-
Total Portfolio 2023/2024	-	27%	1%	72%	2.4	22%
Total Portfolio 2022/2023	-	2%	1%	97%	2.6	21%

Source: Investment Managers, Isio calculations.

Notes: Further caveats and detail can be found in the Appendix. Data as at 30 September 2023, except for Alcentra, data is produced annually as at 30 December 2023 and 31 Dec 2022 for Partners Group. The Fund’s data has been aggregated at the DB Section level. Methodology: the totals use a sum for total GHG emissions and weighted average for other metrics, using only the reporting portion of the portfolio. The coverage numbers are based on a weighted average across the total portfolio. The mandate absolute emissions have been scaled up to represent 100% of the stated mandate. Portfolio alignment metric methodologies differ across managers, albeit further information has not been provided by the Investment Managers on the precise methodology.

Metrics and Targets – DC Default Arrangement

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Carbon metrics

We also gathered climate metrics for the Fund's DC Default Arrangement from the DC provider as at 30 September 2023. The results are set out in the below table and on the following page.

In the year to September 2023, there has been a reduction in the total GHG emissions (scope 1 & 2) for the default, a decline in the implied temperature rise and an increase in carbon footprint.

We are pleased to have significantly improved coverage compared to last year as a result of sourcing the data directly from the Provider instead of the Investment Managers. However, we also acknowledge that TCFD metric trends could be attributable to the change in the reporting source. For the DC Section's emissions metrics, we focus on Scope 1 & 2 emissions in this year's report, as well as disclosing Scope 3 emissions.

Mandates	Total GHG emissions (scope 1 & 2)		Carbon footprint (scope 1 & 2)		Total GHG emissions (scope 3)		Carbon footprint (scope 3)	
	Metric, tCO ₂ e	Coverage	Metric, tCO ₂ e/ £1m of EVIC	Coverage	Metric, tCO ₂ e	Coverage	Metric, tCO ₂ e/ £1m of EVIC	Coverage
LR Adventurous	8,686	85%	58	85%	94,187	85%	620	85%
LR Diversified Growth	4,251	53%	111	53%	12,346	53%	321	53%
LR Index Linked Gilts	1,104	100%	145	100%	660	100%	87	100%

■ Strong coverage (>70%)
 ■ Acceptable coverage (>50%)
 ■ Poor coverage (<50%)
 No data coverage

Source: Standard Life

Note: Data as at 30 September 2023. Methodology: the totals use a sum for total GHG emissions and weighted average for other metrics, using only the reporting portion of the portfolio. The coverage numbers are based on a weighted average across the total portfolio. Country emissions data will adopt a combination of verified, reported, and estimated data, and we simplify this to 100% estimated data. Standard Life was not able to provide data for index-linked gilts, however we had access to the data independently and therefore included this data ourselves. The mandate absolute emissions have been scaled up to represent 100% of the stated mandate.

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Metrics and Targets – DC Default Arrangement

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Data quality and Implied Temperature Rise

We are pleased to have materially improved coverage compared to September 2022 as a result of sourcing the data directly from the provider instead of the Investment Managers. Coverage is now above 50% on all mandates, and 100% coverage has been achieved in the Index-Linked Gilts fund.

We nonetheless will continue to push for improvements in coverage over the coming year.

Mandates	Total GHG emissions (scope 1 & 2)	Data quality % of scope 1 & 2 emissions intensity that are:				Implied Temperature Rise	
	Metric, tCO ₂ e	Verified	Reported	Estimated	Unavailable	Metric (°C)	Coverage
LR Adventurous	8,686	33%	48%	4%	15%	2.2	85%
LR Diversified Growth	4,251	13%	36%	4%	47%	2.3	53%
LR Index Linked Gilts	1,104	0%	0%	100%	0%	2.8	100%



Source: Standard Life

Note: Data as at 30 September 2023. Methodology: the totals use a sum for total GHG emissions and weighted average for other metrics, using only the reporting portion of the portfolio. The coverage numbers are based on a weighted average across the total portfolio. Country emissions data will adopt a combination of verified, reported, and estimated data, and we simplify this to 100% estimated data. Standard Life was not able to provide data for index-linked gilts, however we had access to the data independently and therefore included this data ourselves. The mandate absolute emissions have been scaled up to represent 100% of the stated mandate.

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Metrics and Targets

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Climate risks and opportunities

We have used the metrics analysed to identify climate-related risks and opportunities. Our key findings are as follows:



The Carbon Footprint assesses the carbon efficiency of investments. We will continue to monitor the Carbon Footprint metric to track our decarbonisation journey. We will use this analysis to engage with the Fund's Investment Managers to ensure the decarbonisation of investments over time.



The portfolios' Implied Temperature Rise provides a forward-looking focus, whereas emissions metrics are backwards-looking in nature. The Implied Temperature Rise will also be used to assess transition risk exposure, and to understand the Fund's alignment with global aims under the Paris Agreement to decarbonise in line with a scenario below 2°C and towards 1.5°C, in the future. Currently, mandates are not aligned with this global policy outcome. This is however a commonality seen across the industry. We will monitor the mandate's developments, over time.



The data quality metric will be used to understand how reliable the Carbon Footprint results are and hence enable us to understand our ability to adequately monitor decarbonisation risks. Given the low data quality of the Carbon Footprint (or the low proportion of emissions for which data is directly reported by companies), the data reliability may currently be low. The aim will be to boost data quality over time to improve reliability. Over the reporting year, data coverage has increased for both the DB and DC Funds, with the DC exceeding the data quality target set by the Trustee most likely attributable to the change in reporting source. Please see the next page for further details.



During the year, we considered the potential greening of the DB Fund's LDI portfolio using green gilt issues which could be used as an avenue to increase the Fund's exposure to transition opportunities, namely low carbon investments and/or also increase the proportion of the Section's assets that are aligned with low carbon outcomes. In the DC Default Arrangement, the exposure to sustainable global equity is already fulfilling this role (with further data required to assess this in practice).

Metrics and Targets

Describe the targets used by the Trustee to manage climate-related risks and opportunities and performance against targets

Progress against target

Emissions data coverage is currently too low to allow for the setting of meaningful decarbonisation targets, therefore we focus on the improvement of emissions intensity (carbon footprint) data, across the DB Section and DC Default Arrangement. The baseline data was gathered from the Investment Managers. We annually calculate the proportion of the portfolio for which emissions are verified, reported, estimated or unavailable. We also annually review the appropriateness of the set targets, as they are important for measuring progress. To achieve the target on data quality that we have set, we challenged our LDI manager, Schroders, on their emissions data coverage. They agreed to improve this in the summer of 2024, which would lead to a significant increase the portfolio emissions coverage overall.

From a governance, strategic and risk management perspective, the Trustee has ultimate oversight for the delivery of the target, including in partnership with the IC and Investment Advisor leading on manager engagements.

DB Section: We have set a target to increase carbon footprint (Scope 1 and 2) data coverage and quality to 60% over the next 3 years (i.e. by 30 September 2025). The DB Section coverage has increased to 28%, which is equivalent to a +7% increase in the year to 30 September 2023. The main reasons for this improvement were the meaningful development in data capabilities from Partners Group, LGIM and Alcentra. However, we note this remains significantly behind the 2025 target and will continue to engage with Investment Managers, in particular Schroders.

DC Default Arrangement: The Trustee set individual targets to increase the coverage and quality of the carbon footprint (Scope 1 & 2) data for each of the underlying funds in the DC Default Arrangement over the next 3 years (i.e. to 30 September 2025).

As at September 2023, coverage across all three underlying funds has increased significantly and met the target, most likely attributable to the change in reporting source.

Carbon footprint data coverage	Baseline 30/09/2022	Current 30/09/2023	2025 Target
DB Section	21%	28%	60%

Carbon footprint data coverage	Baseline 30/09/2022	Current 30/09/2023	2025 Target
DC Default			
LR Index Linked Gilts	100%	100%	100%
LR Adventurous	6%	85%	50%
LR Diversified Growth	22%	53%	30%

Source: Investment Managers and Standard Life.

Notes on methodology for baseline and target calculation: We calculate the data coverage on the basis of a weighted average approach, based on investment values. The data shown includes all reported, verified or estimated data, but excludes unavailable data. Therefore estimation is included in the target measurement approach. We note the data quality of the LDI portfolio (for the DB Section) and LR Index Linked Gilts (for the DC Default Arrangement) are uncertain, given the underlying data providers use a combination of reporting and estimation to build up a picture of sovereign emissions, which is not easy to separate. No target has been set for 10+ years into the future as the data coverage for the DB Section and DC Default Arrangement as at 30 September 2023 is too low to set any meaningful targets.

Appendix

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Climate model overview

The modelling was delivered by our Investment Advisor, who partnered with Moody's to undertake the climate scenario analysis.

The climate model incorporates a variety of climate change scenarios, to understand the potential impacts of rising transitional and physical costs associated with climate change.

The model is composed of various building blocks.

1. The climate model: composed of MAGICC 6 for modelling climate outcomes and REMIND-MAGPIE for modelling socioeconomic outcomes
2. Economic scenario generator developed by Moody's, to understand different possible economic futures
3. Isio's SOFIA model, to isolate the investment implications of climate change

Please see the following slides for an overview of the:

- Climate scenarios
- Investment assumptions
- Actuarial assumptions

DB Section member assumptions: The climate scenario analysis adopted a total portfolio approach, covering all DB member assets.

DC Default Arrangement member assumptions: The climate scenario analysis is based on an illustrative youngest member assumptions:

- Starting age: 20
- Retirement age: 65
- Starting pot size: £500
- Starting salary: £25,000, increasing annually in line with inflation
- Contributions: 13.0% p.a.
- Strategy: LR Flexible Retirement Strategy (see lifestyle pathway below)



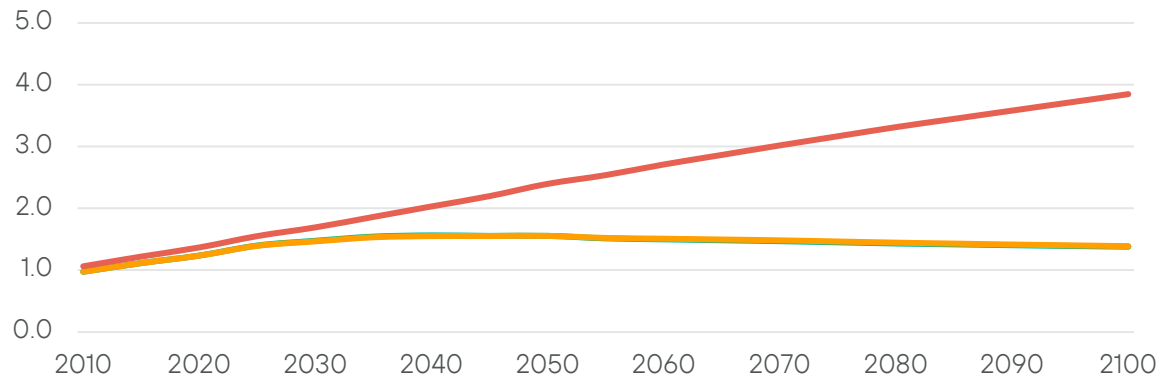
	Growth (%)	De-risking (%)
abdrn Sustainable World Equity	63	
Vanguard Emerging Market Equity	7	
BlackRock Market Advantage	30	70
BlackRock iShares Index Linked Gilts		30

Strategy

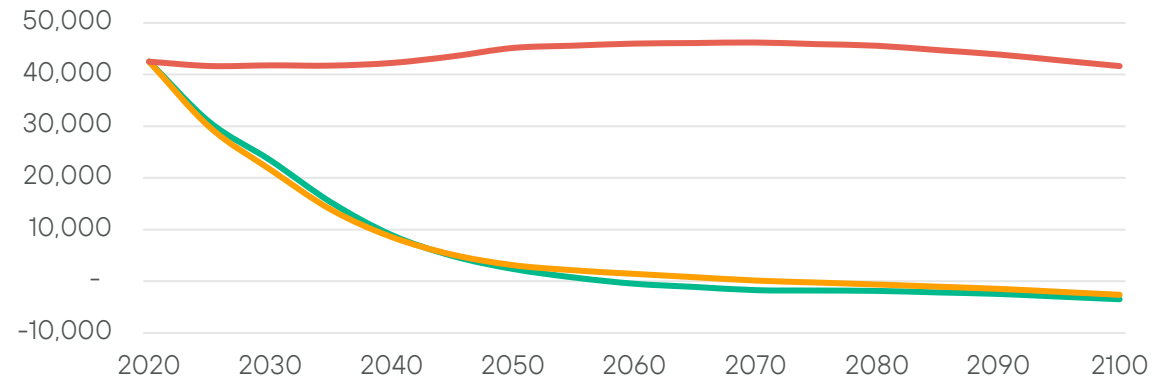
Scenario analysis appendix

Climate scenario assumptions

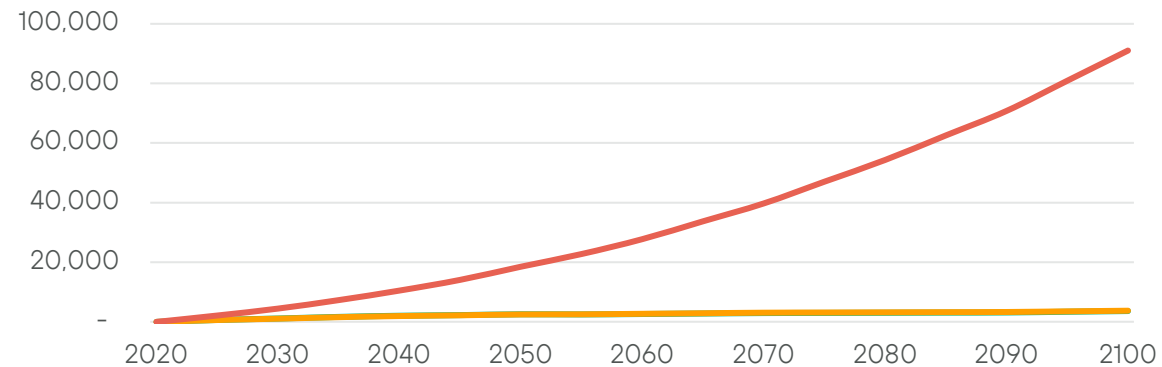
Temperature change (°C)



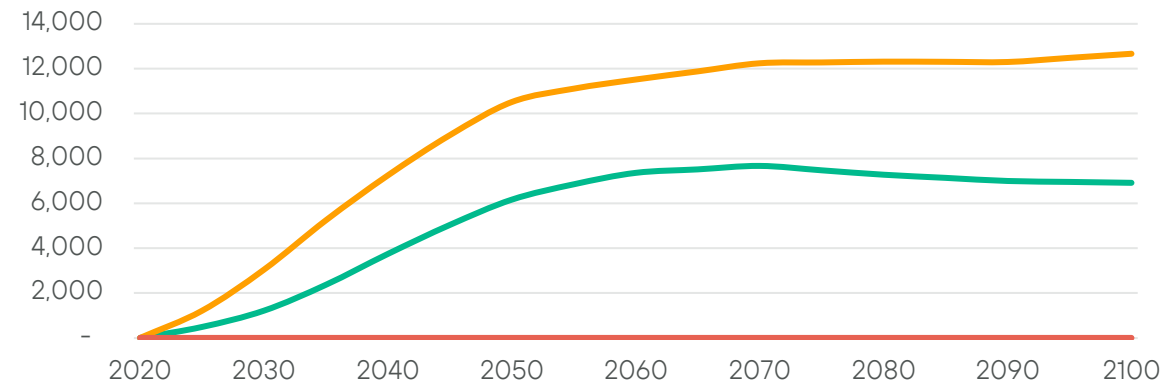
Global emissions



Physical damages



Abatement costs



Source: Moody's

Net Zero 2050 Divergent Net Zero Current Policies

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Scenario analysis appendix

Modelling Principles

- In this report, we only show the median results from the climate scenario analysis, whilst acknowledging there exists a range of possible outcomes from best case to worst case.
- SOFIA is a stochastic model that simulates a large number of possible future economic outcomes, in which financial conditions develop in a number of different ways, defined by assumptions for average outcomes, range of variability, and inter-dependency between different markets.
- The high-level market scenarios are generated by a third-party Economic Scenario Generator (ESG) provided by Moody's Analytics. The ESG is an industry-standard tool that is widely used by financial institutions (e.g. insurers, asset managers, and investment banks). Both the climate scenarios and the underlying economic impacts are provided by Moody's Analytics.
- Based on the scenarios generated by the ESG, SOFIA simulates asset-class returns calibrated to Isio Investment Advisory's asset-class assumptions.
- SOFIA takes the initial starting position of the assets, and projects these values forward under the simulated scenarios, taking into account any relevant inflows and outflows.
- Different investment strategies are modelled in order to illustrate the effects of different allocations. In each case, SOFIA assumes that the strategy remains constant over the full projection period. Assets are annually rebalanced back to the original allocations.
- The modelling in this report has been carried out on a "best estimate" basis, taking into account the model's expectations for future investment returns and interest rates.
- The modelling has not been performed in line with the Statutory Money Purchase Illustrations ('SMPI') which apply when projection results are provided to Fund members. Different assumptions apply in respect of SMPI calculations. The modelling output contained in this report should not be provided to Fund members as it is not compliant with SMPI requirements.

Modelling Results

- The results of the projections are shown by ranking the calculated results from best to worst in each year, and presenting the following outcome
 - Median: this is the middle outcome and can be thought of as the "expected result". Half of the modelled outcomes are better than this and half are worse.
- Please note that the assumptions have a subjective element, particularly for asset classes with less history and greater reliance on active management.
- These assumptions are the "baseline" assumptions, before climate impacts are accounted for within the non-baseline scenarios.
- Asset class assumptions are: Annualised (i.e. geometric averages), rounded to the nearest 0.1%; Expressed relative to the yield on fixed interest gilts (the annual yield at the 10-year tenor on the Bank of England spot curve). This yield was 2.3% at 30 June 2022; Net of management fees; Before tax. UK pension Funds are exempt from tax on investments. The impact of taxation may reduce returns for other investors. Volatility assumptions are based on the standard deviation of annual returns over a 10-year period.

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Scenario analysis appendix

Compliance Statement

- This report, and the work relating to it, complies with “Technical Actuarial Standard 100: Principles for Technical Actuarial Work” (“TAS 100”).
- This report has been prepared for the purpose of assisting the addressee in quantifying climate risk and feeding into a TCFD report. If you intend to use it for any other purpose or make any other decisions after considering this report, please inform Isio and we will consider what further information or work is needed to assist you in making those decisions.

Material Assumptions

- Isio Investment Advisory’s central asset-class assumptions are assessed and revised at each calendar quarter-end.
- Certain assumptions are sourced directly from the Moody’s Analytics ESG and available market data, or set via adjustments to these sources. Where required or deemed to be more appropriate, assumptions are entirely determined by Isio Investment Advisory. The assumption setting process is subjective and based on qualitative assessments rather than a wholly quantitative process. Where judgement is required, input is received from Isio’s internal asset-class research teams.

Limitations and Risk Warnings

- The only risk factors considered in our modelling are those that affect the values of pension fund assets. The modelling results should be viewed alongside other qualitative considerations including portfolio complexity, governance burden, and liquidity risk.
- The model’s projections are sensitive to the starting position and the econometric assumptions. Changes to the assumptions can have a material impact upon the output. There can be no guarantee that any particular asset class or Investment Manager will behave in accordance with the assumptions. Newer asset classes can be harder to calibrate due to the lack of a long-term history.
- The modelling analysis is based on portfolios containing a range of asset classes and different approaches to fund management. Clients should not make decisions to invest in these asset classes or approaches to fund management based solely on the modelling analysis.
- Portfolios that make use of derivatives are exposed to additional forms of risk and can experience losses greater than the amount of invested capital.
- No guarantee can be offered that actual outcomes will fall within the range of simulated results. Actual outcomes may be better than the simulated 95th percentile or worse than the simulated 5th percentile.

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Scenario analysis appendix

Actuarial assumptions

- The scenarios and outputs being considered are generated by modelling. There is, of course, significant “model risk” – the risk that the model does not fully capture the way the world works, either economically or physically.
- Mortality assumptions are typically set as part of an actuarial valuation based on data, experience and research available at that time (an illustrative projection of liabilities based on existing assumptions is illustrated by the green line opposite).
- There is uncertainty on the timing of any impact on liability values due to climate change and any change in mortality due to climate change is expected to emerge over time. It is therefore likely that views of the future will only become clearer as time passes, so any deviation from current assumptions for mortality rates (ie a change in mortality assumptions) will emerge as the impact of climate change is observed, more knowledge is accumulated and we see how the world adapts (ie a shift in view to the pink line).
- Liability impacts are approximate given the life expectancy of the LRSFA membership under each scenario, over the medium term to 2035 and over the long term to 2050. A positive figure represents an increase in life expectancy and liability which would lead, all else equal, to a deterioration in the funding level
- The timing of the impacts represent a step-change in assumption setting once it is clear which climate pathway we are on.
- There is considerable uncertainty and a wide range of possible outcomes. The actual outcome could be more extreme than the scenarios shown in this paper.
- The focus is on the change to value of liabilities but there could be offsetting or compounding factors on asset values.
- The analysis focuses on the deviation around your current assumptions for mortality due to temperature and air pollution.
- The analysis allows for indirect factors that are harder to quantify and could be material. However, there may be other unknown factors that emerge over time
- The relationships between temperature, air pollution and mortality are complex and may change over time.
- Arguably, the current correlation between cold temperatures and higher number of deaths is lower than over the previous century – improvements in housing conditions and healthcare will have contributed to this. Future changes in government policies due to climate change, and changes to the economy will also affect the relationship.
- It is also uncertain how the UK population will adapt over time to changing temperatures, more extreme weather and higher air pollution, eg flood defences, installation of air conditioning, insulation, alternative methods of energy, etc.

Strategy

Scenario analysis appendix

Actuarial assumptions (cont.)

Scenario	Net Zero 2050 / Divergent Net Zero	Current Policies
Global warming	Paris aligned scenario – temperatures kept to a 1.5°C rise this century	The world largely fails to meet the ambition set out in the Paris Agreement, resulting in 3.8°C of warming this century
Economic Growth	UK sees GDP rise to \$8,800 bn by 2100. Global GDP rises to \$600,000 bn by 2100.	UK sees GDP rise to \$7,500 bn by 2100. Global GDP rises to \$530,000 bn by 2100.
Air quality	Air pollution improves over the next 50 years Fine particles (PM _{2.5}) fall by around a third over the next 30 years Hazardous ground level ozone (O ₃) falls by around 15% over the next 50 years	Air pollution deteriorates over the next 50 years Fine particles (PM _{2.5}) fall by around a third over the next 30 years Minimal change in hazardous ground level ozone (O ₃) over the next 50 years

Metrics and Targets

Metrics appendix

Climate metrics definitions

The IC selected and monitored four climate metrics during 2023:

- 1. Absolute emissions metric:** Total greenhouse gas emissions (scope 1, 2 & 3)
Total amount of greenhouse gas emissions emitted by the underlying portfolio companies and total indirect emissions that occur in the value chain, attributed to the investor based on the total investment in each company.
- 2. Emissions intensity-based metric:** Carbon footprint (scope 1, 2 & 3)
An intensity measure of direct and indirect emissions that assesses the level of greenhouse gas emissions arising from a \$1 million investment in a company.
- 3. Portfolio alignment metric:** Implied temperature rise ("ITR")
The temperature pathway the mandate aligns to, expressed as a projected increase in global average temperatures by the end of the century. A Paris-aligned strategy should have an ITR of 1.5°C.
- 4. Additional climate change metric:** Data quality
Exposure to emissions data that is verified, reported, estimated and unavailable:
Verified: Data that has been independently verified.
Reported: Data directly reported by the company.
Estimated: Data that has been estimated by the Investment Manager or an ESG data provider.
Unavailable: Data that is not available under any of the other categories.

Throughout, where we refer to emissions, we mean GHG emissions.

Climate metrics supporting information

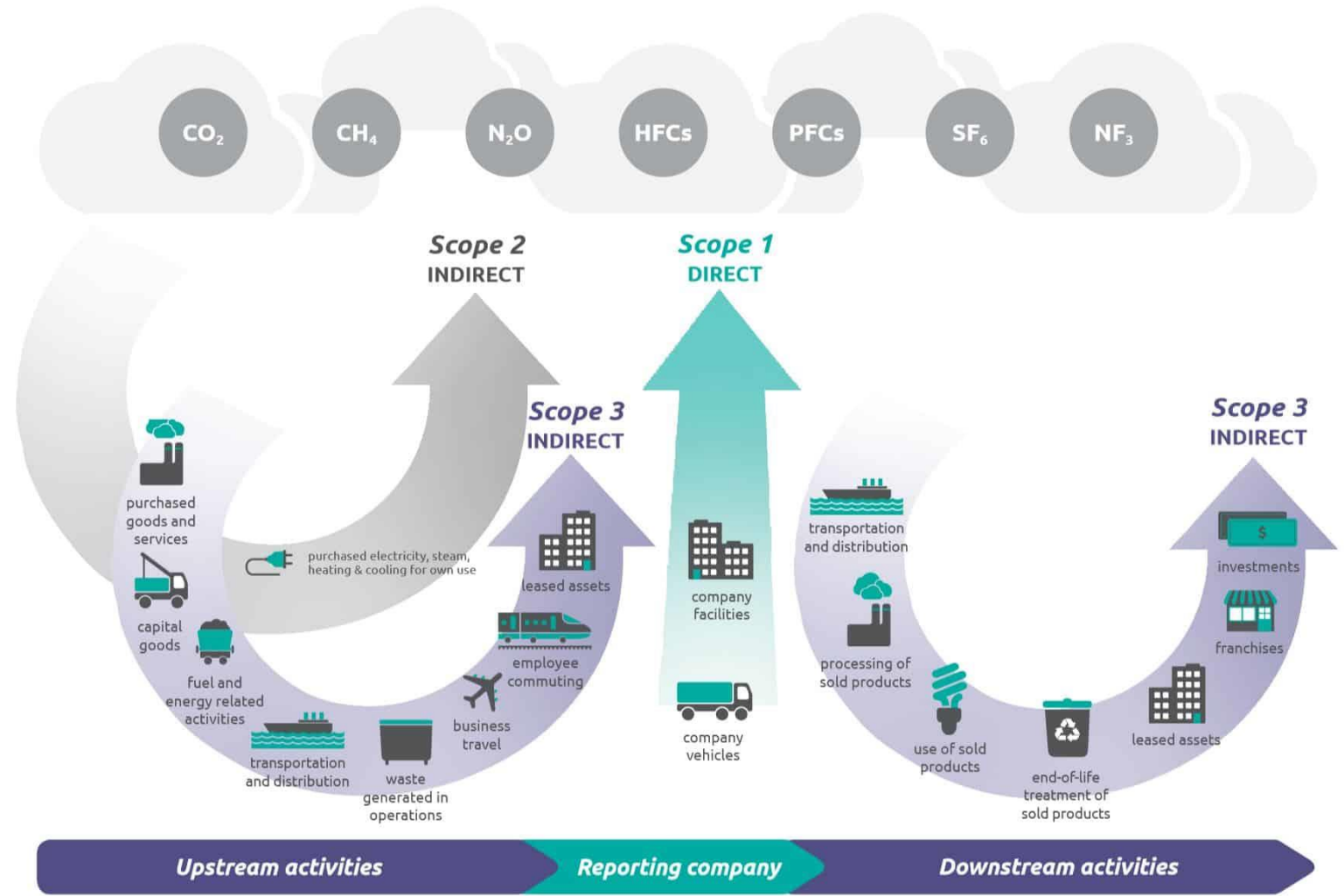
The following caveats support the tables in the Metrics and Targets section:

- tCO₂e: Tonnes of carbon dioxide equivalent, where CO₂e expresses the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same degree of warming.
- EVIC: Enterprise value including cash.
- Coverage: Denotes the percentage of each fund where data is available.

Metrics and Targets

GHG emissions from a particular company can be split across three levels, as shown in the diagram.

- **Scope 1** are direct emissions from company owned or controlled sources – this includes heating/cooling of offices/factories and fleet vehicles.
- **Scope 2** are indirect emissions from purchased energy – emissions are created during the production of the energy which is eventually used by the company.
- **Scope 3** are all indirect emissions that occur in the value chain – this includes emissions from the production of purchased goods and services and the use of sold products. There are currently industry-wide issues with reporting scope 3 emissions.



This report has been prepared for the sole benefit of the Trustee of the Lloyds Register Superannuation Fund Association and based on their specific facts and circumstances and pursuant to the terms of Isio Group Limited's services contract. It should not be relied upon by any other person. Any person who chooses to rely on this report does so at their own risk. To the fullest extent permitted by law, Isio Group Limited accepts no responsibility or liability to that party in connection with the Services.

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