Responsible investment report

Zurich Financial Services UK Pension Scheme

Year ended 30 June 2022

Contents

Introduction

Message from the Trustee Chair

Welcome to the first annual responsible investment report for the Zurich Financial Services UK Pension Scheme ("the Scheme").

The report provides an overview of the Scheme's responsible investment activities during the year as well as future priorities including the Scheme's progress against the 5 year carbon intensity target reduction.

This report addresses the reporting requirements of the Task Force on Climate-related Financial Disclosures (TCFD). From 1 October 2021, new regulations[1] were introduced relating to reporting in line with TCFD recommendations, to improve the quality of governance and the level of action by trustees in identifying, assessing and managing climate risk.

[1] Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021

Scheme's profile

The Scheme is managed by Zurich Financial Services UK Pension Trustee Limited ("the Trustee"). The Trustee has a legal duty to run the Scheme in accordance with the governing Trust Deed and Rules for the benefit of members and their dependents.

The Scheme has two sections: The ZPen Section, with its associated arrangements (ZPen Defined Benefit (DB) and ZPen Defined Contribution (DC), and the ES Executives' Section (ESExec DB). The assets in each section are kept completely separate. Each arrangement requires a different investment strategy that is tailored to meet the investment aims and objectives.

ZPen DB

The ZPen DB arrangement is closed to new entrants and to future accrual. Active members are members of the ZPen DC arrangement. As at 30 June 2022, active ZPen DC members include 1,111 hybrid members who retained a link to final pensionable salary on their ZPen DB benefits. All members in the ESExec DB section are now pensioners.

For ZPen DB, there is a reasonable amount of time before there will be a significant majority of pensioner members, therefore the Trustee invests around 40% of the assets for this arrangement in growth assets (e.g. equities and property). Investing in growth assets provides a higher expected return, but this brings a higher chance of volatility. Over time, whilst the membership profile matures, it is expected the amount of growth assets will reduce accordingly.

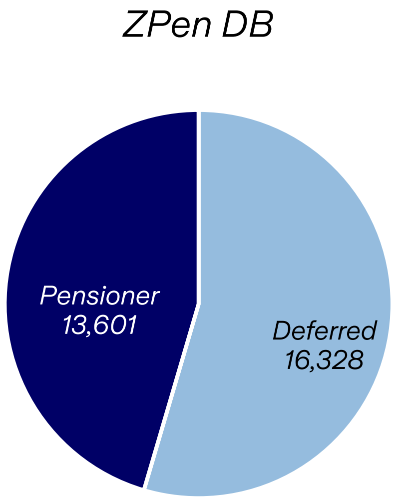
ESExec DB

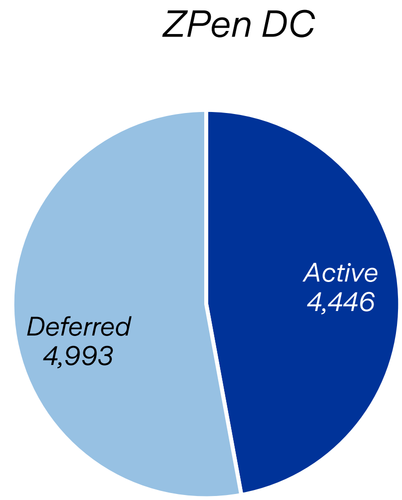
The section is closed to new entrants and future accrual. As all members in the section are pensioners, the Trustee invests around 5% of the assets for this section in growth assets with the majority of investments in "matching" assets (e.g. government bonds). Investing in matching assets means that the assets are chosen because they react to market movements such as inflation and interest rate changes in a similar way to the liabilities of the section.

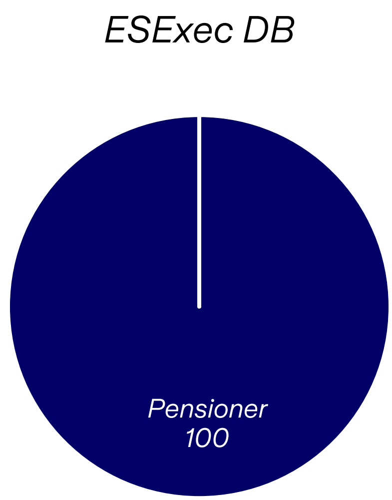
ZPen DC

The Trustee provides default strategies and a number of self-select funds for members. The Trustee believes the default strategies are suitable for the majority of members based on modelling the expected fund values at retirement and how members are expected to take their benefits.

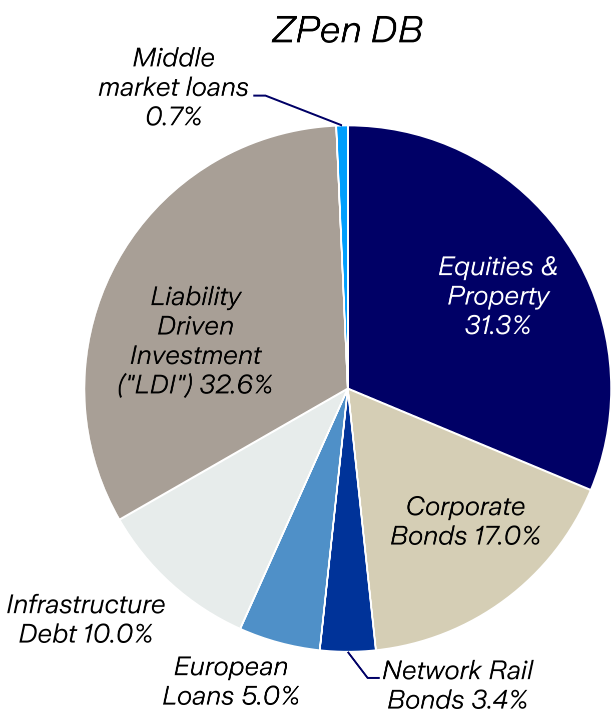
Membership

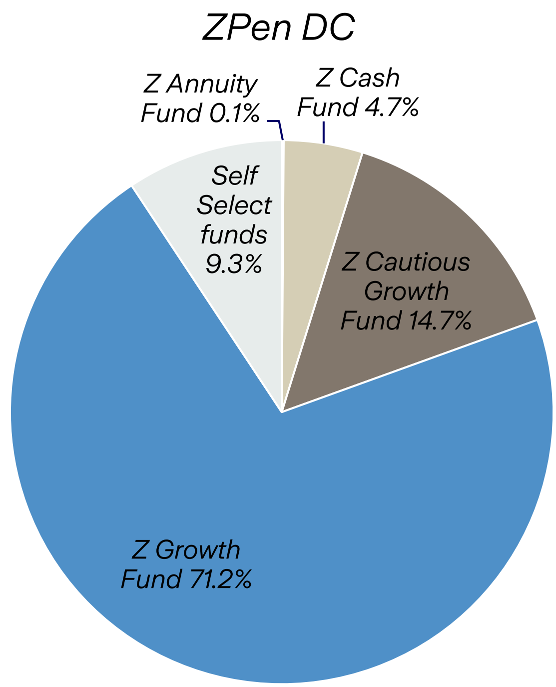

ZPen DB
Pensioner
13,601
Deferred
16,328

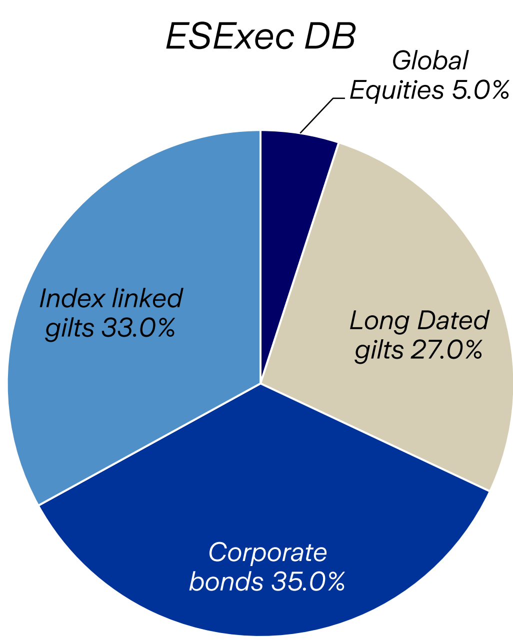

ZPen DC
Active
4,446
Deferred
4,993


ESExec DB
Pensioner
100

Assets


ZPen DB
Middle market loans 0.7%
Equities & Property 31.3%
Liability Driven Investment ("LDI") 32.6%
Corporate Bonds 17.0%
Infrastructure Debt 10.0%
European Loans 5.0%
Network Rail Bonds 3.4%


ZPen DC
Z Annuity Fund 0.1%
Z Cash Fund 4.7%
Self Select funds 9.3%
Z Cautious Growth Fund 14.7%
Z Growth Fund 71.2%


ESExec DB
Global Equities 5.0%
Index linked gilts 33.0%
Long Dated gilts 27.0%
Corporate bonds 35.0%

Governance

Approach to stewardship and responsible investing

The Trustee believes that incorporating responsible investments (RI) into investment decisions improves long term risk adjusted returns. The Trustee has been integrating environmental, social and governance (ESG) factors at various steps in its investment process for many years, and in June 2019 it formalised the Scheme's RI strategy to reflect the changing regulatory landscape. There are five core principles to the RI strategy that has been implemented:

What

We believe that incorporating ESG factors into investment decisions improves long term risk-adjusted returns

We are an active owner – we vote proxies and engage, where appropriate

How

We take a pragmatic approach to responsible investments – we focus on what matters

We note Zurich Group's strategy and will leverage its global resources where it makes sense

When

We will evolve our responsible investment approach over time – and acknowledge that we will never be done

Governance framework

The Trustee is ultimately responsible for oversight of all strategic matters related to the Scheme. This includes defining the governance and management framework relating to ESG considerations and climate-related risks and opportunities. The Trustee is responsible for all material decisions related to climate change and the TCFD disclosure requirements. This includes approving the Trustee's net zero ambition, metrics and targets for the Scheme.

The Trustee directors meet as a full board at least five times a year, occasionally, it is necessary to have additional meetings to consider specific matters. In order to facilitate management of the Scheme, sub-committees of the Trustee board have been formed to concentrate on specific matters and meet on a quarterly basis. The separate committees are the DC Committee and the Funding Committee.

The Funding Committee has been established as part of the overall governance framework that is in place to oversee and manage the DB arrangements of the Scheme.

The purpose of the **Funding Committee** is to manage the investment and valuation matters for the DB arrangements with a view to achieving appropriate funding of the Scheme. The Funding Committee provides oversight and guidance in line with relevant legal and regulatory requirements, including those of the trust deed and rules of the Scheme. The Funding Committee has delegated authority from the Trustee in respect of investment matters, except where a change to Scheme documentation is required e.g. the trust deed and rules, the SIP etc. There is no delegated authority in respect of valuation matters.

The **DC Committee** has been established as part of the overall governance framework that is in place to oversee and manage the DC arrangements of the Scheme. The purpose of the DC Committee is to manage DC arrangements with a view to achieving good member outcomes. The DC Committee provides oversight and guidance in line with relevant legal and regulatory requirements, including those of the trust deed and rules of the Scheme. The Committee has delegated authority from the Trustee in respect of all matters relating to the ZPen DC section and legacy AVC arrangements of the Scheme, except where a change to Scheme Documentation is required.

Both sub-committees work with advisers to support with any decision making, where a decision can't be made, a recommendation is made by the sub-committee to the Trustee board.

See appendix 3 for a diagram of how the Trustee's sub-committees work with advisers.

In addition to investment advice, the Trustee's Legal adviser, Covenant adviser and the Scheme Actuary provide advice to the Trustee on climate-related risks and opportunities.

Resources

The Trustee's Investment Analyst (provided through the agreement between the Trustee and Zurich Insurance Company Ltd) has explicitly included the provision of services to include support for the Trustee on its climate-related risks and opportunities.

DB investment strategy changes include considerations of climate-related risks and opportunities. The Investment Analyst develops the investment strategy, working with the Finance and Investment team, any proposals are challenged by Hymans Robertson, the Trustee's independent investment adviser. Hymans Robertson provide formal advice on any investment strategy changes (under Section 36 of the Pensions Act 1995) to the Trustee.

For the DC arrangements, the DC Manager collaborates with the Investment Analyst and the Trustee's DC investment adviser on the triennial review of the default investment strategies and fund range to ensure they are appropriate for the membership. The last review was completed in September 2020 and implemented in April 2021. As part of this review the Trustee considered how best to incorporate responsible investment into the default arrangement and self-select fund range. The next review will take place in 2023 and will incorporate consideration of climate-related risks and opportunities as part of any proposal to the Trustee. A RI champion was appointed by the Trustee to oversee the day-to-day implementation of the RI strategy. The RI champion is a part of the Zurich Group's network enabling the Trustee access to the Group's resources and expertise. The RI Champion attends any sub-committee or Trustee board meeting where matters relating to RI are discussed. The RI champion has the primary day-to-day responsibility for the way in which climate-related investment risks are currently managed. The RI champion regularly collaborates with the Finance and Investment Manager and DC Manager, who are responsible for overseeing the relationship with the asset managers related to the DB and DC sections. As all assets are mandated with external asset managers, climate-related risk is delegated onwards to the portfolio managers through investment management agreements and fund guidelines. Asset managers are monitored on a regular basis by the sub-committees.

To truly embed RI into the Scheme's priorities, the Trustee has appointed a nominated Trustee for RI to oversee the integration of RI into the Scheme's strategy. The Trustee for RI will collaborate frequently with the RI champion to stay up to date with any RI developments. The RI Trustee will also attend appropriate meetings with asset managers.

Policies

In 2021, the Trustee formalised its approach to climate change risks and opportunities and documented it in the climate change policies available on www.zpen.info. This report explains how the policies have been followed during the financial year.

The Trustee also has a proxy voting policy which was agreed in 2019. The last review of the asset managers' policies was performed in February 2021 and there have been no changes since.

The Trustee is monitoring voting and engagement activities delegated to the asset managers, appendix 4 provides engagement examples for all sections of the Scheme.

Trustee training

All Trustee directors are required to maintain a CPD (Continuing Professional Development) log with a minimum requirement of completing 15 hours per year. Each Trustee director has a personal review with the Chair and the Head of UK Pensions at least annually. This includes a review of their trustee knowledge and understanding and specific development areas. Any training needs, including the topic of climate change, is identified by the assessments and met through tailored training programmes which use a variety of training tools, including interactive workshop sessions, seminars and individual study. Use is made of in-house expertise and the Trustee's own advisers as well as external training programmes and seminars.

The Trustee last received training on RI in May 2021, the session focussed on the Group's RI strategy, the Scheme's RI progress to date and TCFD regulations.

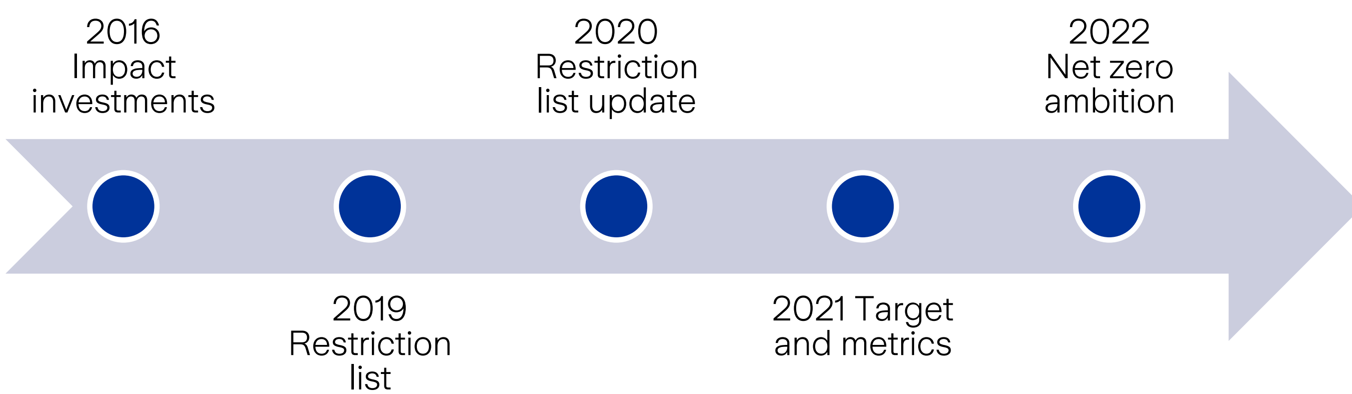
Key areas of strategy development

ZPen DB

The majority of investments held in this arrangement are held directly, rather than through pooled funds, which means the Trustee can directly influence the investment mandate and objectives pursued.

- The Trustee approved an allocation to Infrastructure Debt, which includes social and environmental impact investments.
- The Trustee agreed a restriction list excluding companies mining or generating power from thermal coal, a list which has subsequently been updated to include the consideration of oil sands and shale oil.
- The Trustee agreed a short-term carbon reduction target for its equities and corporate bond portfolios.
- The Trustee has agreed a 2050 net zero ambition.

The chronology of these considerations is illustrated below, and further detail set out in appendix 2.



ZPen DC

All the investments in this arrangement are in pooled investment vehicles with performance of the funds being monitored regularly by the Trustee.

Every three years, the Trustee reviews the funds offered and makes changes if required. The latest comprehensive review was carried out by the DC Committee and ratified by the Trustee at its meeting on 30 September 2020. The work carried out by the Committee included:

- a review of the default strategies and their suitability for the membership.
- analysis of the membership demographics and modelling the expected fund values at retirement and how members are expected to take their benefits.
- input from the Trustee's investment adviser.
- a review of the performance of the default strategies and the underlying funds.
- consideration of the most appropriate way of incorporating RI into the default arrangements.
- consideration of the most appropriate level of investment risk to be taken at different stages of a member's time to retirement.
- analysis of when members were expected to take their benefits.
- a review of the self-select options and take up by members of the differing options.

The Trustee is responsible for setting the investment objectives for the default strategy of the DC arrangements and its underlying funds, as well as for the range of funds to offer to members who want to choose their own investment strategy.

ESExec DB

The profile of this section is the most mature within the Scheme as all members are pensioners. As the liabilities have a shorter duration and the section has a strong funding position, the Trustee has agreed a de-risking investment strategy. In practice, it means the investment allocation to growth assets (in this case equities) is reduced with more assets allocated to liability matching asset classes (corporate bonds and gilts).

Asset manager engagement

The Trustee engages with its asset managers regularly. This includes engagements through the Funding Committee and meetings with Trustee and UK Pensions & Benefits team ("ZPen team") representatives. The Trustee has found direct meetings with asset managers is the most effective way to engage on responsible investment and voting records.

Annual Responsible Investment meetings

ZPen DB & ESExec DB

Annual RI meetings are generally held by five attendees representing the Trustee. This includes the nominated Trustee for responsible investment, the Scheme's responsible investment champion, the ZPen Finance and Investment Manager, the Trustee's investment analyst and a Funding Committee member. The attendees are briefed ahead of each asset manager meeting with key information on each mandate in order to facilitate discussions.

The meetings all follow a similar format and are structured to discuss areas most pertinent to the Trustee's RI requirements topics. For more information on the key topics discussed during the Scheme year, please visit the DB implementation statement available on www.zpen.info.

ZPen DC

The Trustee uses Scottish Widows as its DC platform provider, and as such the Trustee does not have a direct relationship with the DC asset managers; that relationship is held by Scottish Widows. The Trustee has found that direct meetings with Scottish Widows are the most effective way to engage on responsible investment and voting records, and the provision of data required for the Responsible investment report.

For more information on the key topics discussed during the Scheme year, please visit the DC implementation statement available on www.zpen.info.

Strategy

In its climate change policies, the Trustee has outlined how climate-related risks and opportunities could affect DB and DC assets and defined applicable time horizons.

DB assets

The Trustee considers the risk over short, medium and long-term time horizons.

Short-term horizon is up to 5 years and risks are measured using a 5-year scenario analysis

Medium-term horizon is 5 to 10 years by the end of which approximately 80% of the Scheme's liabilities will be in respect of pensioners

Long-term horizon is greater than 10 years when over 80% of the Scheme's liabilities will be in respect of pensioners, which may result of a change in profile of the Scheme's assets

DC assets

The Trustee considers the risk for DC assets over short, medium and long-term time horizons in line with the UN Paris Agreement. The agreement was adopted in December 2015 setting out actions up to 2035 to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

As the Section is open to new entrants and therefore the membership profile is not static, the Trustee has used the time horizons from the UN Paris Agreement.

Short-term horizon is up to 5 years

Medium-term horizon is 5 to 10 years

Long-term horizon is greater than 10 years

Climate related risks and opportunities

The Trustee's Climate change policy details how it identifies and manages the risks and opportunities that might affect the likelihood of meeting its objectives for the Scheme, especially where such risks and opportunities are interdependent.

The transition to a low-carbon economy requires significant changes to be made and will bring a variety of different types of risk. The financial and reputational impacts of such changes will vary depending on the type of organisation, political intervention and a variety of other factors. Depending on the success and speed of the transition, climate change will also pose physical risks, impacting the way organisations operate today. However, climate change is also a business opportunity. Transitioning to a low-carbon economy creates opportunities for efficiency, innovation and growth.

The table on the next page shows a number of different identified risks and opportunities, with the associated impact, as has been initially assessed by the Trustee. The Trustee is currently developing this table as it is working through the triennial valuation cycle. The Trustee's actuarial and covenant advisers have been instructed to consider climate risk as part of formal advice that will be received. This is important as the impact of climate change over the short, medium and long term will impact covenant resilience and therefore could impact the ability of the Scheme to pay members' benefits in full.

<table>
<tr><th rowspan="2">Risk areas</th><th rowspan="2">Identified Risks & Opportunities</th><th colspan="2">Impact</th></tr>
<tr><th>Short term & medium term</th><th>Long term</th></tr>
<tr><td rowspan="3">Investment</td><td>Climate related physical risks</td><td></td><td>Resource scarcity
Extreme weather events
Sea level rise</td></tr>
<tr><td>Climate related transition risks</td><td>Carbon prices
Technological change
Policy tightening
Consumer preferences</td><td></td></tr>
<tr><td>Climate related opportunities</td><td>New market opportunities
'Green' investments</td><td></td></tr>
<tr><td rowspan="2">Covenant</td><td>Climate related physical risk to the Zurich Group</td><td>Investment risk: Valuation changes to investments as a result of climate change (Medium term)

Changes in severity, frequency and geography of extreme weather events leading to:

Larger/more frequent claims (Medium term)
Changes in revenue and costs from changes to supply chain costs and reliability.</td><td>Investment risk: Valuation changes to investments as a result of climate change

Changes in severity, frequency and geography of extreme weather events leading to:

Larger/more frequent claims
Changes in revenue and costs from changes to supply chain.</td></tr>
<tr><td>Climate related transition risk to the Zurich Group</td><td>Financing risk: Potential for increased borrowing costs (Medium term)

Regulatory risks: Requirements set by the PRA / government (Medium term)

Cost of and effective execution of transition, including changes in operating costs e.g. supply chain, compliance and enhanced reporting requirements, new production processes.

Consumer risks: Change in and shift in demand across</td><td>Market risk: Changes in GDP/growth rates, equity movements and currency risks

Financing risk: Potential for increased borrowing costs

Regulatory risks: Requirements set by the PRA / government

Cost of and effective execution of transition, including changes in operating costs e.g. supply chain, compliance and enhanced reporting requirements, new production processes.</td></tr>
</table>

		geographies and lines of businesses (Medium term) Reputational risks: Non-green products or not meeting transition targets could damage the Zurich brand, impact market share, impact new business and have lapse effects on existing business Investment risk: Valuation changes to investments as a result of climate change (Medium term) Asset risk: Write-offs and early retirement of assets (Medium term)	Consumer risks: Change in and shift in demand across geographies and lines of businesses Reputational risks: Non-green products or not meeting transition targets could damage the Zurich brand, impact market share, impact new business and have lapse effects on existing business Investment risk: Valuation changes to investments as a result of climate change Asset risk: Write-offs and early retirement of assets
	Climate related opportunities for the Zurich Group	Changes in products and services to attract customers as they increasingly look for policies/investments that have a positive effect for society and the environment.	By transitioning early to Net Zero by 2030 Zurich could differentiate itself within the market.

Further work is underway as part of triennial valuation to assess climate related risks and opportunities, more information will be provided in the next Responsible Investment report for the Scheme year ending 30 June 2023.

Climate related physical risks

To mitigate this risk, the Trustee engages with its asset managers on a regular basis to ensure sufficient emphasis is put on including these aspects in security selection and the ongoing monitoring process. The Trustee reserves its right to impose specific investment guidelines within its segregated mandates to ensure the Scheme's risks are mitigated and targets are met.

Climate related transition risk

In dialogue with the Group, the Trustee has recognised that certain assets are likely to be subject to transition risk through early policy change, creating the risk of asset stranding. Accordingly, the Trustee has implemented a restriction list described in the Governance section of this report. The list is updated on a quarterly basis and is based on a direct engagement with the investee companies.

This restriction list excludes investment in the equity and debt of companies that:

- generate more than 30% of their revenue from mining thermal coal, or produce more than 20 million tons of thermal coal per year;
- generate more than 30% of their electricity from coal;

- are in the process of developing any new coal mining or coal power infrastructure;
- generate at least 30% of their revenue directly from the extraction of oil from oil sands;
- are purpose-built (or "dedicated") transportation infrastructure operators for oil sands products, including pipelines and railway transportation;
- generate more than 30% of their revenue from mining oil shale, or
- generate more than 30% of their electricity from oil shale.

The Trustee periodically reviews this approach to ensure that the restrictions are appropriate.

From a covenant perspective, the Trustee, alongside its independent covenant adviser as appropriate, will monitor the possible impact of physical and transitional climate risks on the Scheme's covenant and the interaction of the risks with the Scheme's longer term strategy. Where appropriate, the Trustee will consider changes to the Scheme strategy to mitigate any impact on the covenant, whilst noting ongoing risk management being undertaken by the Group.

Climate related opportunities

Since 2016, the Trustee has been increasing its allocation to the Infrastructure Debt portfolio, with additional projects invested in during the financial year ending June 2022. This asset class includes investments extending beyond climate change. The impact investments address social projects in healthcare and social housing as well as green impact investments focusing on cleaner energy and utilities. Valuations of those investments as at 30 June 2022 are shown below.

Social impact

Social investments held by the Scheme contributed towards more affordable housing and an increased number of hospital beds available.

Social housing £34m

Healthcare £20m

Green impact

The green impact investments increased available sources of sustainable energy avoiding emissions of conventional energy production.

Offshore wind £23m

Onshore wind £46m

Ground mounted solar £101m

Utility – waste water £53m

Net zero ambition

Over the last few years, as the Trustee has developed its Responsible Investment strategy for the Scheme, a key consideration has been to set an ambition for the Scheme to achieve net zero by 2050. Net zero represents a position where the carbon emissions generate by economic activity as balanced by the ability of natural and human-developed processes to absorb these emissions. The ambition of the Trustee is to have a similar position within the Scheme's assets.

Climate change is perhaps the most complex environmental risk facing society today. The risks and opportunities associated with climate change are intergenerational, international and interdependent. The Trustee has a duty to pay benefits as and when they fall due and in doing so recognises its responsibility to work proactively to tackle climate change. Setting a Net Zero ambition seeks to align the Scheme with a longer-term transition to a low carbon economy and support the process of change, recognising that climate change is a material financial risk.

The main focus for the Trustee when setting a net zero ambition has been on the Scheme's final salary arrangements due to the size of the fund and impact the Trustee can have in relation to these assets. The Trustee owns the majority of assets directly, meaning it has substantial influence to make a tangible difference by using voting rights and engaging directly with asset managers.

When the Scheme achieves maturity (i.e. a significant number of members are pensioners) the scope of the available assets to invest in may be limited, so, as the Scheme has not reached that position, now is the perfect time to act.

DB assets

To achieve its ambition, the Trustee has agreed a plan based on the following pillars:

Investments	Engagement	Monitoring

Investments

The Trustee recognises different characteristics of the asset classes invested in and availability of data. Once methodologies of measuring emissions are available the Trustee will work to set targets for remaining asset classes. The table below shows the current status and actions to be taken. The metrics currently monitored are based on scope 1+2 emissions. For the asset classes that do not yet have an agreed methodology to account for emissions or reliable data is not available, the Trustee will continue to work with the Zurich Group and the asset managers in order to address these points.

Asset class	Asset allocation	
Equities	26.9%	5 year weighed average carbon intensity (WACI) reduction target set
Real Estate	4.4%	Engagement with CTI on measurement and target setting
Corporate Bonds	17.0%	5 year WACI reduction target set
Infrastructure Debt	10.0%	There is not yet an agreed methodology to account for the emissions
LDI	32.6%	There is not yet an agreed methodology to account for the emissions
Network Rail Bonds*	3.4%	Ongoing engagement with Insight. A target is not required for this asset class as all bonds will have matured by 2047.
European Loans	5.0%	The funds are co-owned with the Zurich Group. The Trustee will work with the Group on measurement and target setting once reliable data is available
Middle Market Loans	0.7%	

*Network Rail Bonds have been subsequently merged into the LDI portfolio

Engagement

The Trustee will continue to delegate engagement with investee companies to its asset managers.

If the Trustee holds the same stock as Zurich Insurance Group ("Group"), the Trustee will leverage from the Group's direct engagement and engage jointly.

Monitoring

Monitoring activities are described in the risk management section of this report.

Operational ambition

From an operational perspective, the aim is to stop adding to the amount of carbon dioxide equivalent emissions that are released into the atmosphere. Significant progress has already been made and there is a clear path to further reduction by, for example, increasing our use of renewable energy and embracing hybrid working, meeting via Teams and travelling in smarter ways.

The Trustee will monitor:

Our suppliers

Our in-house team

The ZPen team is employed by the Group and works in line within the Group's operational model. Therefore, the in-house team is aligned with the Group's 2030 operational net zero target.

Working with the Group

For the Group, responsible investment is about achieving the mission of "doing well and doing good", by not only creating long-term, sustainable financial value, in line with Zurich's fiduciary duty, but, at the same time, also creating non-financial value such as reduction of carbon emissions. Responsible investment is the creation of long-term benefits for all key stakeholders, while remaining true to the proven approach of maximising economic value based on a structured and disciplined investment process.

The Group are transitioning the investment portfolios to net-zero greenhouse gas emissions by 2050, consistent with a maximum temperature rise of 1.5° above pre-industrial temperatures, taking into account the best available scientific knowledge. Science-based interim targets for 2025 have been set for listed equity, corporate debt and real estate. The Trustee has been working with the Group on the Scheme's net zero ambition as it can benefit, especially from the mandates where the Group use the same asset manager.

Scenario analysis

One of the tools employed by the Trustee in the financial management of the Scheme is scenario analysis. The purpose of scenario analysis is to explore how the Scheme's asset and liabilities behave under different stressed conditions and thus assess the overall resilience of the Scheme to different potential future outcomes.

Climate scenario analysis is an extension of this general approach and will help the Trustee to analyse climate-related risks and opportunities. The Trustee acknowledges that, in the current landscape there is no single methodology or tool employed by asset owners to assess the potential impacts of climate change. Further the Trustee recognises that there are different climate policy pathways that would each result in outcomes consistent with 1.5-2°C warming by 2100.

For the purposes of its own analysis, the scenarios assessed will be aligned for all aspects of the Scheme's exposure using three core climate scenarios as follows:

Scenario	Description
Green revolution	Corresponds to a world where there is concerted and collaborative policy action starting now, e.g. carbon pricing, green subsidies with increased public and private spending on "green solutions".
Delayed Transition	Reflects a world where no significant additional policy action is taken in the short-term, meaning the response must be stronger when it does happen. This results in a shorter and sharper period of transition with greater (but delayed) transition risks but similar physical risks in the long term
Reference (BAU) Scenario	Corresponds to a world where currently existing policies for GHG emissions, renewables deployment and energy efficiency are carried out and where no additional policies are implemented compared to what have been legislated as of June 2019. It covers worldwide policies.

The Trustee will monitor ongoing research and developments in this area and might change the above scenarios if more meaningful conclusions could be drawn from alternative scenarios. The different tools and assumptions employed may be changed from time to time at the discretion of the Trustee.

Approach taken by the Trustee

During the year ended 30 June 2022, the Trustee has only focused on asset level scenario analysis. This was driven by the appointment of the new Scheme actuary and the transition of arrangements during the year. Scenario analysis incorporating an assessment of the

Scheme's liabilities will be performed as a part of the 30 June 2022 triennial valuation and will be one of the factors taken into consideration when deriving with the valuation results.

The triennial valuation will be completed before 30 September 2023 and therefore this analysis will be available in the report for the Scheme year ended 30 June 2023.

The Trustee has considered different options for the climate scenario analysis and, in the first instance, decided to assess the Scheme's climate risk exposure for DB and DC assets using the Paris Agreement Transition (PACTA) tool developed by the 2° Investing Initiative (2DII).

The core climate scenario analysis provides answers to the following questions:

1. What share of the portfolio is currently exposed to activities in sectors affected by the transition to a low carbon economy?

2. What is the portfolio's technology mix in climate-relevant sectors expected to look like in five years based on current investment plans of the companies underlying the portfolio, and how does it compare to peers, the market, and a technology mix aligned with the Paris Agreement?

3. What is the potential financial loss that may arise?

4. How aligned are the portfolios with the transition?

This analysis is based on forward-looking asset-level data in the following nine key climate relevant sectors: power, oil & gas, coal mining, automotive, shipping, aviation, cement, steel, and heavy-duty vehicles. Together, these sectors account for around 75% of global CO2-emissions. This data is mapped to financial and ownership data and compared to climate scenarios that provide low-carbon energy transition roadmaps at technology-level.

The PACTA tool uses climate scenarios developed by organisations including the WEO and the IEA. The underlying assumptions will vary to reflect the different policy and associated temperature pathways within the scenario. The Trustee has sought to ensure that the scenarios used in the analysis are broadly consistent with their chosen core scenarios. The analysis reported below uses the following approach:

> **Carbon Balance 2030 scenario.** Governments decide to take drastic policy action in 2030 in order to switch the world onto a more sustainable pathway over a 10-year period. Production in carbon intensive sectors expected to decrease sharply with a similar sharp increase in less carbon intense sectors with market prices being expected to change quickly.

This is broadly consistent with the Trustee's "Delayed transition" scenario.

> **Inevitable Policy Response Forecast Policy Scenario ('IPR ') scenario.** This is based on realistic policy implementation whereby policy announcements are expected to accelerate between 2023 and 2025, followed by significant action. This would result in a temperature rise of around 2°C by 2100.

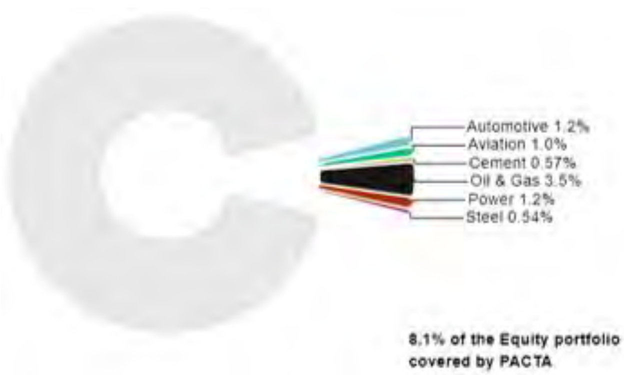
This is broadly consistent with the Trustee's "Green revolution" scenario.

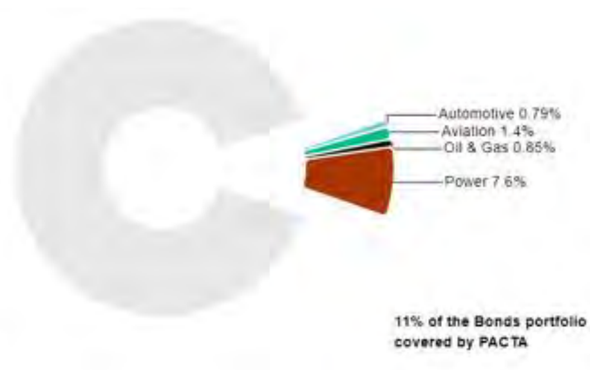
ZPen DB

Scenario analysis for this section was performed for the Equity and Corporate Bond portfolios based on assets as at 31 December 2021. The table and charts below show exposure to the climate relevant sectors and the extent to which this is covered by the analysis. This has been in line with analysis undertaken in December 2020 (Equities: 5.7%, Corporate Bonds 14.0%).

Portfolio	Actual asset allocation	Included in analysis	Proportion in climate relevant sectors
Equity	26.7%	Yes	8.1%
Corporate Bonds	19.3%	Yes	11.0%
Other	54.0%	No	n/a

The allocation is mainly driven by the benchmarks adopted by the Trustee.

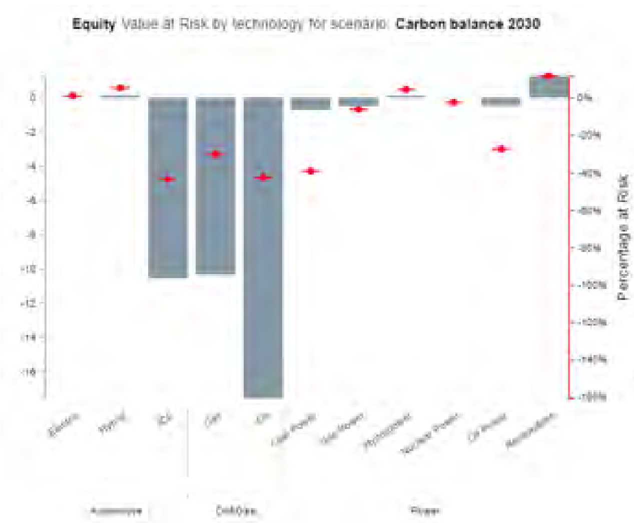


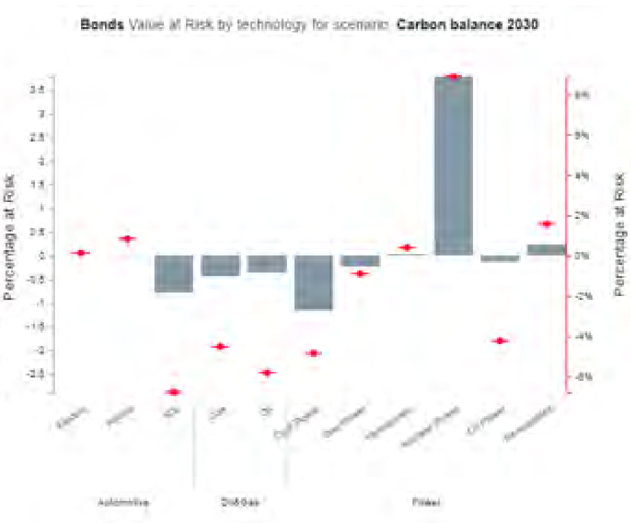


Under the Delayed transition scenario, the potential change that the transition could have on the financial value of the portfolio, split in terms of impact on the equity and bond portfolios, is as follows:

Portfolio	Potential change in value under scenario
Equity	-1.53%
Corporate Bonds	+0.05%

The Trustee has also considered a breakdown of the value at risk by technology. The analysis suggests that the potential financial impact within affected sectors is relatively small, although this is limited by the extent of the assets covered. Analysis indicated that for the equity portfolio, the portfolio was most overweight to the oil & gas sector although within sectors, the mismatch in future technologies is greatest within the automotive sector, creating a risk of a loss of value. Within the corporate bond portfolio, the level of mismatch was lower with limited downside risk within sectors.





Green revolution scenario

The Trustee has also considered the potential alignment of the portfolio with a transition under its most progressive, Green Revolution scenario. This analysis considers the adjustments needed to be made in the portfolio over the period from 2026-2030 relative to changes expected in the portfolio up to 2025. Higher numbers mean that the portfolio is more misaligned with the expected transition, thereby giving rise to greater risk.

The results are shown below for both the equity and corporate bond portfolios. For the equity allocation, some level of transition disruption is expected, but this is broadly in line with the level of disruption envisaged by the scenario. For the corporate bond portfolio, a significantly higher level of disruption is expected, albeit less than envisaged within the scenario.

Under the Green Revolution scenario, the potential change in value of the equity portfolio was -1.43%, broadly similar to the expected change in value under the Delayed Transition scenario. No analysis of the corporate bond portfolio was available.

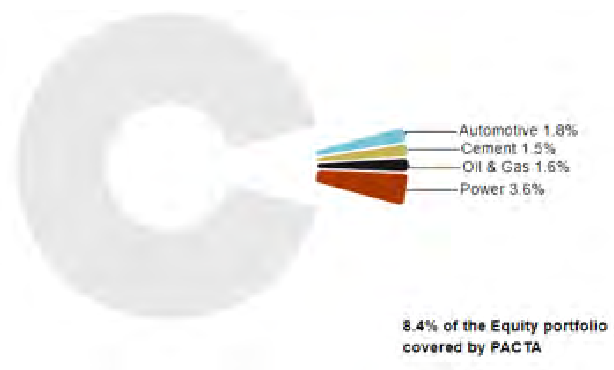
The main limitation of the analysis presented is that it only covers some of the investment portfolio. While the Equity and Corporate Bond allocation to renewables is not significant in comparison to other technologies, the Trustee holds an infrastructure debt portfolio which includes a material share of renewables, these being expected to benefit positively under stressed scenarios.

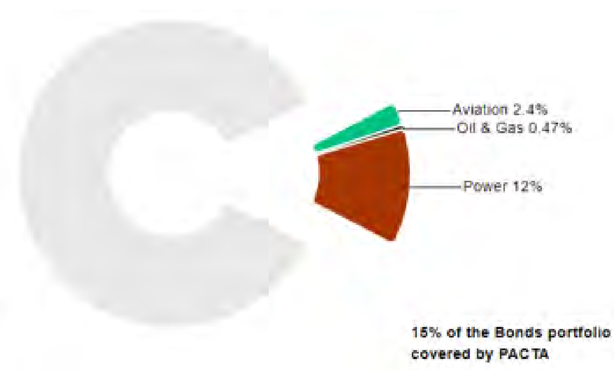
ESExec DB

Similarly to ZPen DB, only Equity and Corporate Bond portfolios have been analysed. Those asset classes are invested using pooled investment vehicles with no direct Trustee impact on the stock selection process. As a result of the investment strategy change implemented during the year ended June 2022, the allocation to the asset classes analysed has decreased.

Portfolio	Actual asset allocation	Included in analysis	Proportion in climate relevant sectors
Equity	5.3%	Yes	8.4%
Corporate Bonds	34.7%	Yes	15.0%
Other	60.0%	No	n/a

The percentage of securities in the climate relevant sectors is similar to the ZPen DB section and is also driven by the benchmark for the funds invested in.





Delayed transition scenario

Under the Delayed transition scenario, the potential change that the transition could have on the financial value of the portfolio, split in terms of impact on the equity and bond portfolios, is as follows:

Portfolio	Potential change in value under scenario
Equity	-1.24%
Corporate Bonds	+0.25%

Green revolution scenario

The Trustee has also considered the potential alignment of the portfolio with a transition under its most progressive, Green Revolution scenario. The results are shown below for both the equity and corporate bond portfolios. For the equity allocation, some level of transition disruption is expected, but this is broadly in line with the level of disruption envisaged by the scenario. For the corporate bond portfolio, a significantly higher level of disruption is expected, albeit less than envisaged within the scenario.

Equity portfolio: Transition Disruption Metric

Corporate Bond portfolio: Transition Disruption Metric

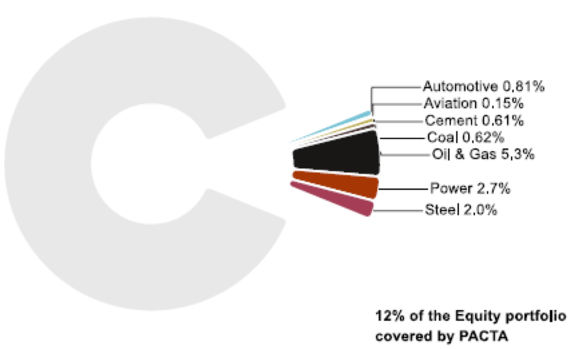
ZPen DC

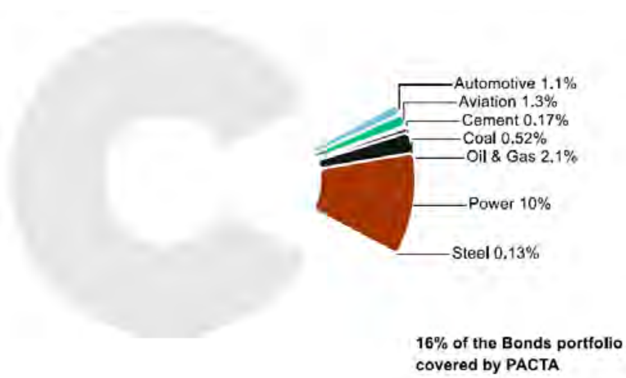
The Trustee has performed scenario analysis for the components of the default funds invested in the Equity and Corporate Bond asset classes. The table below shows which funds were included in the scenario analysis.

Default Fund	AUM	Underlying component	Included in analysis
Z Growth Fund	£314m	LGIM 30/70 Global Equity Currency Hedged Fund	Yes
Z Caution Growth Fund	£65m	55% Z Growth Fund 30% Corporate Bond All Stocks Index Fund 15% Over 15 years UK Gilt Index	Yes Yes No
Z Cash Fund	£21m	Schroder Sterling Liquidity	No
Z Annuity Fund	£0.5m	LGIM Pre-Retirement	No

<u>Delayed transition scenario</u>

Allocations to materially affected sectors are slightly higher for the DC Section compared to the DB section, this being a consequence of the different management approach, with higher allocations to the oil and gas sector particularly notable.





Under the Delayed transition scenario, the potential change that the transition could have on the financial value of the portfolio, split in terms of impact on the equity and bond portfolios, is as follows:

Fund name	Potential change in value under scenario
L&G 30/70 Global Equity Currency Hedged Fund	-2.62%
Corporate Bond All Stocks Index Fund	-0.07%

The potential financial impact under the stressed scenario is slightly higher, again a consequence of the higher allocation to materially affected sectors. As a part of the next fund review, scenario analysis will be considered when assessing climate change risks and opportunities and potential fund choices will be compared on the basis of their resilience to climate risks.

<u>Green revolution scenario</u>

The Trustee has also considered the potential alignment of the portfolio with a transition under its most progressive, Green Revolution scenario. The results are shown below for both the equity and corporate bond portfolios. For the equity allocation, some level of transition disruption is expected, but this is broadly in line with the level of disruption envisaged by the scenario. For the corporate bond portfolio, a significantly higher level of disruption is expected, albeit less than envisaged within the scenario.

Equity portfolio: Transition Disruption Metric

Corporate Bond portfolio: Transition Disruption Metric

Under the Green Revolution scenario, the potential change in value of the equity portfolio was -2.4%, broadly similar to the expected change in value under the Delayed Transition scenario. No analysis of the corporate bond portfolio was available.

Conclusions from Scenario Analysis

The scenario analysis has been limited by the number of sectors covered although has highlighted that materially affected sectors in both the equity and corporate bond portfolios are susceptible to limited downside financial risk and some level of transition disruption, creating the need to engage with companies so as to ensure that risks are being internally managed by the companies in which the Trustee is investing.

The Trustee is aware of the limited scope of this analysis and consequently the conclusions that can be drawn from it. As noted, further more detailed analysis is to be undertaken over the course of the 2022/23 Scheme year which will further inform the Trustee's decision-making.

Risk management

Identifying and assessing climate related risks

The Trustee has included climate change and broader RI consideration into the Scheme's Statements of Investment Principles ("SIP") for DB and DC assets. Implementation statements available on the Scheme's website www.zpen.info/Library/Responsible Investment describe compliance to SIPs during the year.

Various parties support the Trustee in the identification and assessment of climate related risks, including its sub-committees, advisers, investment managers, in-house team. Climate risk is particularly considered within the following processes:

Valuation process, with asset, liability and covenant scenario modelling

The Trustee has instructed its actuarial and covenant advisers to consider climate change risk as part of the formal advice for the triennial valuation as at 30 June 2022. It is expected that:

- The Scheme Actuary will undertake scenario modelling in order to stress-test the resilience of the funding valuation outcomes and investment strategy under different climate scenarios over different time horizons.
- The covenant advisers will provide covenant considerations of the materiality and timing of the sponsor's key ESG risks and opportunities (including climate change), informed by company information and sector insights.

Selection of asset classes and mandates

The Trustee expects that its investment adviser will consider the extent to which any individual asset class will be affected by climate factors in providing advice although recognises that climate factors are currently more likely to arise when considering the mandate design within asset classes.

Selection/Monitoring of asset managers

In both the selection and ongoing evaluation of asset managers, the Trustee uses an internal system set up by the Zurich Group. It forms a part of the Investment Management application capturing scores based on various hard and soft factors that relate to the asset managers performance. Each external asset manager's ESG and climate integration is assessed against the following criteria:

1. Interaction with portfolio manager/relationship manager, and overall responsible investment approach
2. Training
3. Access to information
4. Investment Process
5. Active ownership

For any asset managers that were deemed to be underperforming on the ESG and climate integration criteria, the Trustee will provide feedback to the asset manager in order to request improvements are made. The respective DC/Funding Committees would consider further remedial action if standards are not improved.

Selection of individual assets

Investment managers are expected to take account of climate related factors within their decision making processes and to adopt a forward-looking approach to identify emerging risks.

Monitoring

Regular monitoring

The Trustee receives regular reports from its asset managers to track GHG reduction on a portfolio and asset manager level. The emissions will fluctuate on a short-term basis, but those fluctuations will be analysed by the UK Pensions & Benefits team, any large fluctuations will require engagement with the asset managers.

Annual monitoring

The Trustee instructs its investment adviser to prepare a climate change report covering the ZPen DB and ESExec DB arrangements. The report includes suggested next steps for the Trustee to improve an environmental impact of the Scheme's assets. The data included in this report forms a basis for the Trustee's metrics variance analysis and engagement with the Scheme's asset managers.

Monitoring at a board/sub-committee level

A report is prepared for the Trustee, this includes the Scheme's progress on its net zero journey. The topic will be added to the agenda if there are proposals to be assessed by the Trustee or significant changes to the emissions that need to be reported/discussed.

Monitoring of advisers

The Trustee evaluates its advisers on an annual basis. In order to assess if the Scheme's advisers are meeting expectations, the Trustee and key UK Pensions and Benefits team members provide feedback based on a set of high-level adviser objectives in the five key areas (knowledge, advice, service, relationship management and value for money). Going forward, the Trustee intends to monitor the capabilities of their advisers by using the Investment Consultant Sustainability Working Group climate competence framework.

The Trustee's Investment Analyst (provided through the agreement between the Trustee and Zurich Investment Management) has explicitly included the provision of services to include support for the Trustee on its climate-related risks and opportunities. In addition, the investment consultancy objectives integrate this service and measures the Investment Analyst as part of an assessment annually.

Asset manager engagement

One of the Trustee's five core principles is to be an active responsible investor and vote proxies and engage where appropriate.

This is the Trustee's primary mechanism for the management of climate related risks. In the year ended 30 June 2022 all engagement activities were delegated to the Scheme's asset managers - with the Trustee exercising scrutiny over the managers' activities.

In June 2019, the Trustee agreed a proxy voting policy for the Scheme. As a long-term investor, the Scheme applies a longer-term focus, and will vote in order to support the investee companies' strong and sustainable governance, as well as a long-term oriented strategy and its implementation. Long-term value creation is preferred over short-term gains. Voting rights for financial investments shall be exercised actively following clearly defined voting guidelines. The Trustee reviews its asset managers' proxy voting policies every three years or more frequently if there are any material changes.

The Trustee reports on voting activities during the year via the implementation statements, the most recent documents are saved under www.zpen.info/Library/Responsible Investment

Appendix 4 includes engagement examples from the Scheme's asset managers.

Integration into risk register and integrated risk management (IRM) framework

The sponsor assesses risk through its Total Risk Profiling (TRP) methodology and process. The Trustee has agreed to identify, assess, manage and monitor Scheme risks using the sponsor's TRP methodology, with appropriate adaptations. A separate TRP is considered for DB and DC assets, it documents the most relevant and material risks to the Trustee in meetings its objectives to (i) ensure that the Scheme is run properly, (ii) have sufficient and appropriate assets to pay the promised DB benefits as they fall due, and (iii) create and maintain a framework within ZPen to help members with DC benefits achieve what they consider to be a good outcome when taking their benefits.

Risks are expressed and documented in vulnerabilities, triggers and consequences, and rated in terms of severity and frequency/probability. The risk assessment takes account of existing controls in place to manage risk. Any improvement actions should reduce the severity or frequency/probability of risk scenarios that are above the risk priority boundary. The overall risk categorisation is based on the most relevant and impactful trigger.

For the DB and DC TRP, RI and climate change risks are identified, this ensures that the Trustee classifies, reviews and considers improvement actions that it can take to manage the risks.

The Trustee also has an IRM policy, this helps the Trustee to identify and manage the risks that might affect the likelihood of meeting its objectives for the Scheme, especially where the risks are interdependent. The Trustee recognises the link between covenant, funding and investment, all proposals are considered in the context of IRM.

Metrics and target

Metrics and target selection

ZPen DB and ESExec DB

Metrics

The Trustee has considered a number of factors when determining metrics to measure to have a comprehensive view of the Scheme's emissions. As availability of data varies between the asset classes and characteristics of assets held varies, the Trustee has decided to apply metrics on an asset class basis.

Publicly available data for private asset classes like infrastructure debt and private loan funds is not currently available. The Trustee is working with the relevant asset managers on obtaining the data.

In the table below, the Trustee has mapped metrics against climate change risks and opportunities described in the climate change policies. Ensuring the metrics address climate related risks and opportunities was key to the Trustee to provide a regular and a more holistic view of the investment risks.

	Weighted Average Carbon Intensity (WACI)	Total Carbon Emissions	Low Carbon Transition Score	Climate ESG score	Avoided Emissions
Climate related transition risk	✓	✓	✓	✓	✓
Climate related physical risks				✓	
Climate related opportunities			✓	✓	✓

Target

The Trustee agreed a short-term carbon reduction target for its equities and corporate bond portfolios for the **ZPen DB** assets. A target for a 25% decrease to the WACI metric over a 5 year period measured on a baseline of 31 December 2020.

In order to achieve the WACI reduction target, the Trustee has set out guidance for its asset managers in their investment management agreements on the expected annual reduction to the metric. The target has been defined at an aggregate level leaving asset managers to allocate targets to individual portfolios. It mainly applies to CTI, who manage the equities and one of the Scheme's corporate bond portfolios. M&G was allocated its target as the other corporate bond portfolio manager. The Trustee acknowledges that the change will not be linear and the investee company's carbon exposure is one of the factors taken into consideration during the investment process by the asset manager.

ZPen DC

The Trustee is dependent on Scottish Widows for DC metrics as it owns the primary relationship with asset managers. The Trustee worked with Scottish Widows on agreeing the most suitable metrics for the section.

Metrics data

ZPen DB

The availability of data differs between the asset classes. The table below shows data coverage of the asset classes measured during the financial year.

	Equities	Corporate Bonds*	Network Rail Bonds	LDI	Infrastructure debt
WACI	95%	80%	N/A	N/A	N/A
Total Carbon Emissions	95%	80%	N/A	N/A	N/A
Low Carbon Transition Score	90%	79%	N/A	N/A	N/A
Climate ESG Score	94%	79%-80%	100%	100%	N/A
Avoided Emissions	N/A	N/A	N/A	N/A	100%

*this asset class is managed by two asset managers and the coverage varies between the sub-portfolios

For the year ended June 2022 the Trustee has focused on measuring asset classes for which reliable data is available. Measurement of remaining asset classes has been discussed with the asset managers and next steps are shown in the table included within the net zero section of this report. Asset classes not currently measured are: European Loan Fund, Middle Market Loans and Property Fund. For the asset classes that do not yet have an agreed methodology to account for emissions or reliable data is not available, the Trustee will continue to work with the Zurich Group and the asset managers in order to address these points

Metric name	Metric description
WACI	A measure of a portfolio's exposure to carbon-intense companies. This is expressed in terms of tons of CO2 equivalent emitted per million dollars of revenue, weighted by the size of the allocation to each company.
Carbon Emissions	This represents the portfolios estimated Scope 1 + Scope 2 greenhouse gas emissions. This is expressed in terms of thousand tons of CO2 equivalent emitted by the companies invested in by the portfolio, weighted by the size of the allocation to each company.
Low Carbon Transition Score	Portfolio weighted average of company level scores that measures a company's level of alignment to the Low Carbon Transition. Companies with higher Low Carbon Transition score are more aligned with the Low Carbon Transition compared to the companies with lower scores. (Score: 0-10)
Climate ESG Score	The Environmental Pillar Score at a company level represents the weighted average of all Key Issues that fall under the Environment Pillar. The weight given to each Key Issue is dictated by MSCI's process which determines the relevance of each pillar to a given company and sector. At a portfolio level this is the weighted average of individual company scores by the weight in the portfolio.
Avoided Emissions	Emissions avoided in comparison to a traditional way of producing energy

Metric	Asset manager	AUM	Jun-21	Jun-22	Change
WACI			tCO2e / £m	tCO2e / £m	
Equities	CTI	£1.7bn	98.6	95.5	-3.1%
Corporate bonds	M&G	£0.5bn	152.1	99.6	-34.5%
Corporate bonds	CTI	£0.6bn	97.2	64.1	-34.1%
Combined		**£2.8bn**	**102.2**	**90.3**	**-11.6%**
Total carbon emissions			tCO2e	tCO2e	
Equities	CTI	£1.7bn	76.8	61.7	-19.7%
Corporate Bonds	M&G	£0.5bn	no data	80.2	n/a
Corporate Bonds	CTI	£0.6bn	no data	36.8	n/a
Combined		**£2.8bn**			
Low carbon transition			Score 0-10	Score 0-10	
Equities	CTI	£1.7bn	6.1	6.1	0.0%
Corporate Bonds	M&G	£0.5bn	6.1	6.3	3.3%
Corporate Bonds	CTI	£0.6bn	6.1	6.3	3.3%
Combined		**£2.8bn**			
ESG environmental score			Score 0-10	Score 0-10	
Equities	CTI	£1.7bn	6.2	6.1	-1.6%
Corporate Bonds	M&G	£0.5bn	7.0	7.3	4.3%
Corporate Bonds	CTI	£0.6bn	7.1	7.5	5.6%
Network Rail Bonds	CTI	£0.3bn	4.0	3.7	-7.5%
LDI	Insight	£1.7bn	4.6	4.6	0.0%
Combined		**£4.8bn**			
Avoided emissions			kt CO2e/yr		
Infrastructure debt	Macquarie	£0.5bn	85.9	n/a	

Metrics presented in the table above have mostly improved since June 2021. For a more detailed commentary please refer to appendix 5.

ESExec DB

This section's assets, except for Gilts, are invested in pooled funds. The Trustee doesn't have a direct impact on investment decisions but monitors financial and non-financial performance on a regular basis and challenges the asset manager if required.

The availability of data differs between the asset classes. The table below shows data coverage of the asset classes measured during the financial year.

	Equities	Corporate Bonds	LDI
WACI	97%	78%	N/A
Total Carbon Emissions	97%	78%	N/A
Low Carbon Transition Score	95%	77%	N/A
Climate ESG Score	97%	78%	100%

Metric	AUM	Jun-21	Jun-22	Change
WACI		tCO2e / £m	tCO2e / £m	
Equities	£8.3m	97.8	101.1	3.4%
Equities*	n/a	87.1	n/a	
Equities**	n/a	114.2	n/a	
Corporate Bonds	£60.9m	110.9	68.2	-38.5%
Combined	**£69.2m**	**105.6**	**95.0**	**-10.0%**
Total carbon emissions		tCO2e	tCO2e	
Equities	£8.3m	37.8	42.8	13.2%
Equities*	n/a	139.7	n/a	n/a
Equities**	n/a	116.8	n/a	n/a
Corporate Bonds	£60.9m	no data	37.6	n/a
Combined	**£69.2m**			
Low carbon transition		Score 0-10	Score 0-10	
Equities	£8.3m	6.4	6.3	-1.6%
Equities*	n/a	5.9	n/a	n/a
Equities**	n/a	6	n/a	n/a
Corporate Bonds	£60.9m	6.1	6.2	1.6%
Combined	**£69.2m**			
ESG environmental score		Score 0-10	Score 0-10	
Equities	£8.3m	7.2	7	-2.8%
Equities*	n/a	6.2	n/a	n/a
Equities**	n/a	6.6	n/a	n/a
Corporate Bonds	£60.9m	7.2	7.6	5.6%
Combined	**£69.2m**			

*following the change in the investment strategy the CTI UK Equity fund was sold with proceeds reinvested into the CTI Global Select fund

**following the change in the investment strategy the CTI UK High Alpha Equity fund was sold with proceeds reinvested into the CTI Global Select fund

ZPen DC

Metrics selection for ZPen DC is driven by the platform provider Scottish Widows Limited (SW). The Trustee has discussed its reporting requirements and objectives and worked with SW on the common approach.

The metrics presented below are for the year ending 31 December 2021. The Trustee considers the results as a reference point for the future analysis. The availability of data is measured in the first metric.

Metric name	Metric description
Investments with scope 1 & 2 data	A proportion of investments within the fund with reported and estimated emission data. The higher reported emissions % the more reliable data.
GHG emissions	This represents the portfolios estimated Scope 1 + Scope 2 greenhouse gas emissions. This is expressed in terms of thousand tons of CO_2 equivalent emitted by the companies invested in by the portfolio, weighted by the size of the allocation to each company.
Carbon footprint	A measure of a portfolio's exposure to carbon-intense companies. This is expressed in terms of tons of CO_2 equivalent emitted of a company's most recently available enterprise value including cash, weighted by the size of the allocation to each company.

	Z Growth Fund	Z Cautious Growth Fund	Z Cash Fund
AUM	£351.2m	£74.6m	£19.4m
Investments with scope 1&2 data	83%	66%	81%
- reported	79%	61%	73%
- estimated	4%	5%	9%
GHG emissions	18,064t	2,856t	6t
Carbon Footprint	61.8	58.4	0.4

Metrics data for the DC assets are provided to the Trustee by SW. The Trustee doesn't have a direct impact on which metrics are selected by SW and reported on.

Glossary

Active ownership is when shareholders engage in a company they have invested in to influence the company's strategy and actions. It is a method often used in responsible investing to directly influence a company's decisions and when working with corporate social responsibility.

Engagement - A long-term active dialogue between investors and companies on environmental, social and governance factors. An active dialogue offers investors the opportunity to discuss sustainability risks and opportunities with companies and provides them with insights into investors' expectations of corporate behaviour.

ESG stands for Environmental Social and Governance, and refers to the three key factors when measuring the sustainability and ethical impact of an investment in a business or company. Most socially responsible investors check companies out using ESG criteria to screen investments. The ESG factors are a subset of non-financial performance indicators which include ethical, sustainable and corporate government issues such as making sure there are systems in place to ensure accountability and managing the corporation's carbon footprint.

GHG emissions from human activities strengthen the greenhouse effect, contributing to climate change. Most is carbon dioxide from burning fossil fuels: coal, oil, and natural gas.

Infrastructure investments are a form of "real assets," which contain physical assets we see in everyday life like bridges, roads, highways, sewage systems, or energy. Such a type of asset is quite crucial in a country's development.

Net zero is a balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net zero when the amount we add is no more than the amount taken away.

Proxy voting – most institutional investors do not attend AGMs and EGMs, they are represented through proxy votes, through which they instruct someone who is attending to vote in a certain way.

Responsible investment is a strategy and practice to incorporate ESG factors into investment decisions and active ownership. It considers both how ESG might influence the risk-adjusted return of an asset and the stability of economy, as well as how investment in and engagement with assets and investees can impact society and environment.

Scenario analysis is an approach for the forward-looking assessment of risks and opportunities. Scenario analysis describes a process of evaluating how an organisation, sector, country or portfolio might perform in different future states, in order to understand its key drivers and possible outcomes.

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

Appendices

Appendix 1: Task Force on Climate-related Financial Disclosures (TCFD)

TCFD disclosure	Trustee's response
Governance	The Trustee is responsible for the Scheme's oversight of and action with respect to climate change. For the ZPen DB assets, the Funding Committee supports the Trustee and makes recommendations when appropriate. For the ZPen DC assets, the DC Committee manages investment maters. The Investment Analyst will assist the Trustee in developing and monitoring appropriate metrics and targets to understand and if required address climate-related risks and opportunities, which are likely to have a material impact on the Trustee's strategy and funding. If necessary, the Trustee seeks an external assessment of those proposals from the Trustee's Adviser. The Trustee is accountable for the execution of the Scheme's climate-change policy.
Strategy	In its climate change policies, the Trustee has outlined how climate-related risks and opportunities could affect DB and DC assets and defined applicable time horizons. *DB assets* The Trustee considers the risk over short-, medium- and long-term time horizons. Short-term horizon is up to 5 years and risks are measured using a 5-year scenario analysis Medium-term horizon is 5 to 10 years by the end of which approximately 80% of the Scheme's liabilities will be in respect of pensioners Long-term horizon is greater than 10 years when over 80% of the Scheme's liabilities will be in respect of pensioners, which may result of a change in profile of the Scheme's assets *DC assets* The Trustee considers the risk over short, medium and long-term time horizons in line with the UN Paris Agreement. The agreement was adopted in December 2015 setting out actions up to 2035 to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

	Short-term horizon is up to 5 years Medium-term horizon is 5 to 10 years Long-term horizon is greater than 10 years In its climate change policies, the Trustee has identified climate related risks and opportunities. During the year, the Trustee has taken actions shown below to ensure they're addressed. *Climate related physical risks* To mitigate this risk, the Trustee engages with its asset managers on a regular basis to ensure sufficient emphasis is put on including these aspects in security selection and the ongoing monitoring process. The Trustee reserves its right to impose specific investment guidelines within its segregated mandates to ensure the Scheme's risks are mitigated and targets are met. *Climate related transition risk* The Trustee has implemented a restriction list described in appendix 2 of this report. The list is updated on a quarterly basis and it's based on a direct engagement with the investee companies. *Climate related opportunities* During the last financial year the Trustee has invested in the new infrastructure project increasing its green impact investment portfolio. By agreeing the 2050 net zero ambition the Trustee has formalised a long term commitment to address above climate change risks and opportunities. RI is discussed at least annually at the Trustee Board and sub-committee level. The Scheme's representatives engage with asset managers on at least annual basis specifically on RI matters. The day-to-day implementation of RI strategy is delegated to the Scheme's RI champion, working closely with the RI Trustee Sponsor
Risk Management	The Trustee identifies and manages the risks and opportunities that might affect the likelihood of meeting its objectives for the Scheme, especially where such risks and opportunities are interdependent. The Trustee also considers what should be done should the risks materialise. The Integrated Risk Management (IRM) policy formalises the approach to monitoring, assessing and mitigating risks the Scheme faces. The Trustee uses competent and trusted advisers and suppliers to support its risk assessment. The Trustee

	has defined climate-related risks and opportunities in its DB and DC climate change policies. The Trustee evaluates its asset managers on a quarterly basis using an internal system set up by the Zurich Group. It forms a part of the Investment Management application capturing scores based on various hard and soft factors that relate to the asset managers performance. Each external asset manager's ESG integration is assessed on an annual basis on a portfolio level. The following criteria are being assessed: 1. Interaction with portfolio manager/relationship manager, and overall responsible investment approach 2. Training 3. Access to information 4. Investment Process 5. Active ownership The Trustee evaluates its advisers on an annual basis. In order to assess if the Scheme's advisers are meeting expectations, the Trustee and key UK Pensions and Benefits team members provide feedback based on a set of high-level adviser objectives in the five key areas (knowledge, advice, service, relationship management and value for money) The Trustee's Investment Analyst (provided through the agreement between the Trustee and Zurich Investment Management) has explicitly included the provision of services to include support for the Trustee on its climate-related risks and opportunities. In additional, the investment consultancy objectives integrate this service and measures the Investment Analyst as part of an assessment annually.
Metrics and Targets	Ongoing monitoring of the GHG emissions of the Scheme's investment portfolio and engagement are key to achieving the target set as well as the net zero ambition. The Trustee has acknowledged characteristics of different asset classes the assets are invested in and derived with metrics by asset class described in the metrics and target section of this report.

Appendix 2: RI strategy developments

ZPen DB

2016 Impact investments

The Trustee approved an allocation to Infrastructure Debt, which includes social and environmental impact investments. The portfolio has grown over time with £54m of social impact and £223m environmental impact investments as at 30 June 2022.

2019 Restriction list

The Trustee agreed its first restriction list excluding companies that generate more than 50% of their revenues from mining thermal coal and utility companies that generate more than 50% of their energy from coal.

2020 Restriction list update

The Trustee strengthened the restriction criteria to exclude investment in the equity and debt of companies that:

generate more than 30% of their revenue from mining thermal coal, or produce more than 20 million tons of thermal coal per year;

generate more than 30% of their electricity from coal;

are in the process of developing any new coal mining or coal power infrastructure;

generate at least 30% of their revenue directly from the extraction of oil from oil sands;

are purpose-built (or "dedicated") transportation infrastructure operators for oil sands products, including pipelines and railway transportation;

generate more than 30% of their revenue from mining oil shale, or

generate more than 30% of their electricity from oil shale.

2021 Carbon reduction target and climate change driven metrics

The Trustee agreed a short-term carbon reduction target for its equities and corporate bond portfolios. The total value of the equity and corporate bond portfolios total £3bn as at 30 June 2022.

Time period:	5 year
Reduction:	25%
Metric:	Weighted Average Carbon Intensity (WACI)
Baseline:	December 2020

A selection of metrics have been agreed to measure and report on in this report (see Metrics and target section). The selection of metrics was driven by:

- Different characteristics of each asset class
- Insights provided for the climate related risks and opportunities defined in the Climate Change Policy

- Data availability

2022 Net zero ambition

In September 2022, the Trustee agreed a 2050 net zero ambition. The ambition covers DB investments as well as the Scheme's operations.

For more information, please refer to the 'Net zero ambition' section of this report.

ZPen DC

2021

The Trustee agreed approach to metrics and scenario analysis
The fund review was completed, resulting in the following changes driven by RI

- LGIM 30/70 Global Equity now forms a part of the default fund, one of the reasons for the change was LGIM's strong active ownership activities
- LGIM Future World Fund was added to the self-selection options

ESExec DB

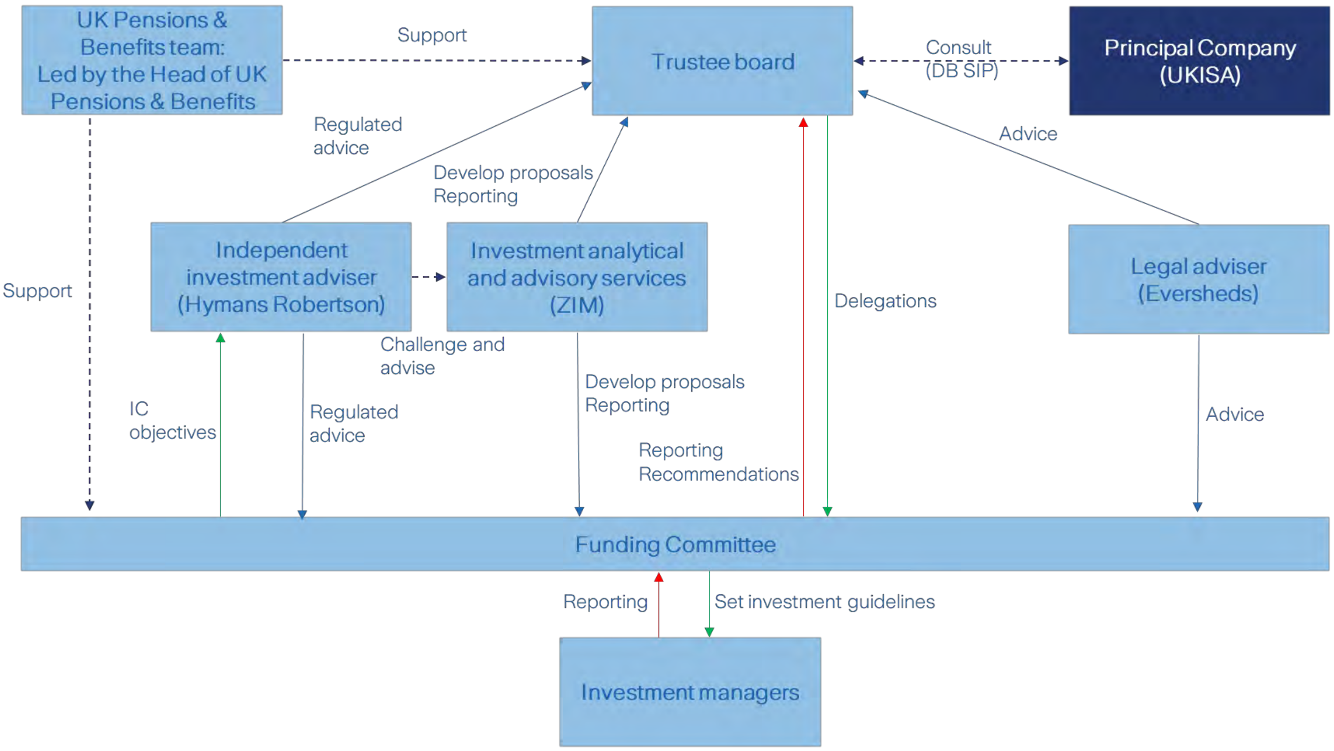
2021

A selection of metrics has been agreed to measure and report on in this report (see Metrics and target section). The selection of metrics was driven by:

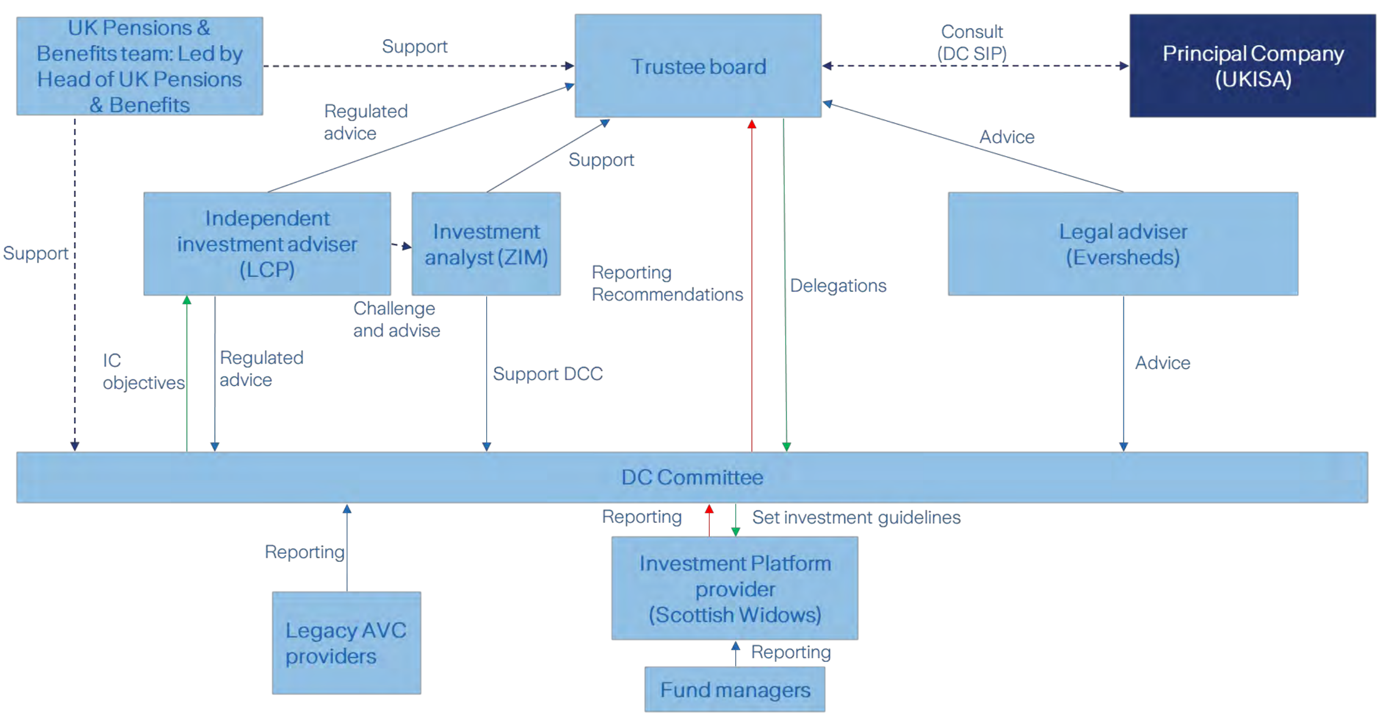
- Different characteristics of each asset class
- Insights provided for the climate related risks and opportunities defined in the Climate Change Policy
- Data availability

Appendix 3: Investment governance

DB Investment governance



DC Investment governance



Appendix 4: Engagement case studies

ZPen DB

Example 1 - ESG thematic engagement

Why the asset manager engaged

Assess governance changes over the year

How the asset manager engaged

Video-conferenced investor relations team. Subsequent call with CEO and sustainability head

What the asset manager learnt

More board changes imminent, audit/compliance committee reformed
Continuing risk from Grenfell inquiry and from associated government action
Planet Passionate products to launch in Q3
Sustainability and circularity ingrained

Outcome

Good meeting with CEO
Disappointed at lack of engagement with new chair, so abstained on his re-election

Example 2 - ESG thematic engagement

Why the asset manager engaged

Introductory meeting with Innovation/Sustainability chief
Reappraise strategy and goals

How the asset manager engaged

Video-conferenced Innovation/Sustainability chief and investor relations

What the asset manager learnt

No immediate change to strategy
Climate targets due late 2023
Targets address portfolio management (product replacements and recycling), product formulation and promotion (tailoring to local regulation)

Outcome

Good introduction
Good progress against targets

Example 3 – active stewardship

Why did the asset manager engage?

The company occupies a strong position in renewable diesel but has been held back by poor quality ESG disclosures. Poor quality targets and disclosures could also prove problematic for investors. Therefore, the asset manager is actively engaging to drive improvement on these issues.

How did the asset manager engage?

Videoconference with General Counsel, Investor Relations and ESG directors.

What did the asset manager learn?

The company is a Climate Action 100+ (CA100+) company and one of the higher greenhouse gas (GHG) emitters in the MSCI ACWI index. As such, the energy transition is financially material.

Net Zero targets are increasingly important to investors. The company, having a diversified and resilient business, would be relatively well placed to set one. The asset manager had previously encouraged the company to produce scenario analysis for a net zero (1.5 degree) scenario. This is being incorporated into the next set of disclosures and will be informative about the business' resilience under a tougher low carbon scenario.

Reliance on unfounded or out of date assumptions is concerning. Despite the fundamental merits of the company: relatively resilient, efficient assets and exposure to renewable diesel, the company is taking unnecessary risks by publishing, or advocating, unfounded or outdated information.

CCS (carbon capture and storage) costs remain unclear until final agreements on additional shippers are concluded.

Attention to how climate risk is reflected in financial statements is increasing.

The company is being challenged by multiple investors due to their reliance on offsets.

What was the outcome/what are the action points for the asset manager?

Consistent with the asset manager's views as a signatory to the CA100+ initiative, in the 2022 AGM, the asset manager will take voting action and abstain from the lead director due to climate concerns.

The asset manager will support a shareholder proposal that requests the company discloses a climate action plan and GHG emissions reduction targets.

Monitor for increased transparency on portion of scope 1 & 2 targets met through efficiency instead of offsets.

Review TCFD publication to see that sources of information are both timely and relevant.

Example 4 – active stewardship

The asset manager met with the company's CEO and CFO to encourage them to propose a 'Say on Climate' resolution at its upcoming AGM. At the company's 2020 AGM, 'Follow This' proposed a very ambitious shareholder resolution which received record-high support from shareholders. The company is considering putting forward a 'Say on Climate' vote at the 2022 AGM to address a number of the points raised within the 2021 'Follow This' resolution. It is likely that 'Follow This' will propose another more ambitious resolution at the next AGM, and the company is trying to advance its own more structured climate plan that it will be tied to by the shareholder vote. In May 2022, the company put their own climate plan to vote at the 2022 AGM - 'Approve Net Zero - From Ambition to Action Report'. The asset manager supported this resolution, along with a total of 89% of shareholders and voted against the less structured 'Follow This' resolution. The 'Follow This' resolution failed to pass, receiving 15% support.

Example 5 – ESG thematic engagement

As part of a Climate Action 100+ collaborative engagement, the asset manager met with the company to make their expectations known. Following on from their successful engagement in 2021 with the multinational chemical major, the asset manager requested that the company considered introducing scope 3 reporting, set short- and medium-term CO2 reduction targets and publish a public commitment to align lobbying with climate goals. A new CEO is about to join the company, although they been present in board discussions on the de-carbonisation strategy so far. They are expected to bring a more proactive approach regarding short-term emissions reduction solutions, such as renewable PPAs. There will be an investor day in early 2023 to update on strategy. In terms of scope 3 emissions, they are engaging with 70% of their suppliers on sustainability issues and have created a sustainability programme, though it is currently in its infancy. The asset manager fed back at their meeting that we would like to see more progress on demonstrating the pathway beyond 2030 in future reporting. On lobbying they are working on an updated position piece that is due out towards the end of the summer. The asset manager will continue to monitor the progress that the company make regarding its decarbonisation strategy and remain actively engaged.

ZPen DC

ESG reports, including voting statistics, for the pooled funds are published on the asset managers' websites. More detailed active ownership information is included in the ZPen DC's implementation statement available on the Scheme website.

Appendix 5: Detailed metric data

ZPen DB

WACI

The Trustee has selected WACI as the metric used for the GHG emissions intensity following the recommendation from TCFD. As the metric is recommended to asset owners this makes it more common and easier for report readers to compare to peers.

The table below represents a change in WACI in comparison to the December 2020 baseline.

Asset class	Manager	AUM	Dec-20	Jun-21	Jun-22	Change vs baseline
Equities	CTI	£1.7bn	97.0	98.6	95.5	-1.6%
Corporate Bonds	M&G	£0.5bn	101.6	152.1	99.6	-2.0%
Corporate Bonds	CTI	£0.6 bn	123.7	97.2	64.1	-93.0%
Combined		**£2.8bn**	**106.8**	**102.2**	**90.3**	-18.3%

Asset class	Manager	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	CTI	£1.7 bn	95.5	164.9	-72.7%
Corporate Bonds	M&G	£0.5 bn	99.6	94.3	5.3%
Corporate Bonds	CTI	£0.6 bn	64.1	94.3	-47.1%

Metrics data source: Hymans Robertson LLP

The asset managers and the Trustee will review the progress semi-annually and discuss any deviations from agreed annual ranges.

The Trustee monitors the change in WACI and engages with the asset managers regularly to understand variances and obtained the following commentary:

CTI:

Equities

• The portfolio is considerably underexposed to carbon, relative to the benchmark, from a total emission and intensity perspective.

• We have minimal or no exposure to sectors like energy, materials, utilities and carbon heavy construction businesses, where product differentiation is often limited, pricing power is difficult to establish, and/or returns are regulated.

• Through our focus on quality, we tend to invest in asset light businesses.

• We continue to integrate ESG and carbon analysis into our research, as this helps us to better understand a company's business model, long-term positioning, opportunities, and risks and therefore expect to continue to decrease our carbon exposure.

Corporate Bond Fund

• Majority of the difference is due to the fund not holding high carbon intensive utility names as the benchmark does.

• Industrial names, particularly in the construction and materials sub-sector, are another area that the benchmark holds quite highly carbon intensive names that the fund doesn't.

  o Transportation names within this sector are another driver for better values as they are typically carbon intensive.

• In relation to improvements, looking back over the previous 12 months to the end of June 2022, we sold out of some of those carbon intensive utility and transport names and continued the downward trend to improving the carbon intensity of the fund.

M&G

On both of the WACI and Total carbon emissions metrics, the utility sector is the dominant contributor within the investible universe. The portfolio started Q2 2022 long of utilities on valuation grounds, and we continued to add to names within the sector over the course of Q3 2022 as opportunities arose.

As a result, with respect to the two metrics, the portfolio figures relative to the benchmark will have increased. It's worth reiterating that we believe many of the WACI and emission numbers assigned to these regulated utility names, particularly in distribution networks, are not a fair reflection of their overall contribution to current emission and their role in climate transition.

Total carbon emissions

Asset class	Manager	AUM	Dec-20	Jun-21	Jun-22
Equities	CTI	£1.7bn	no data	76.8	61.7
Corporate Bonds	M&G	£0.5bn	no data	no data	80.2
Corporate Bonds	CTI	£0.6bn	no data	no data	36.8

Asset class	Manager	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	CTI	£1.7bn	61.7	131.1	-112.5%
Corporate Bonds	M&G	£0.5bn	80.2	74.3	7.4%
Corporate Bonds	CTI	£0.6bn	36.8	74.3	-101.9%

Metrics data source: Hymans Robertson LLP

Commentary for the total carbon emissions metric is included in the WACI metric section above.

Low carbon transition score

Asset class	Manager	AUM	Dec-20	Jun-21	Jun-22
Equities	CTI	£1.7bn	6.1	6.1	6.1
Corporate Bonds	M&G	£0.5bn	6.2	6.1	6.3
Corporate Bonds	CTI	£0.6bn	6.0	6.1	6.3

Asset class	Manager	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	CTI	£1.7bn	6.1	6.1	0.0%
Corporate Bonds	M&G	£0.5bn	6.3	6.3	0.0%
Corporate Bonds	CTI	£0.6bn	6.3	6.3	0.0%

Metrics data source: Hymans Robertson LLP

The metric shows how aligned the investee companies are to the Low Carbon Transition based on the Paris Alignment method. Currently, the metric is in line with the benchmark and the previously reported periods. A deterioration in the score would be discussed with the asset managers.

Climate ESG score

Asset class	Manager	AUM	Dec-20	Jun-21	Jun-22
Equities	CTI	£1.7bn	6.1	6.2	6.1
Corporate Bonds	M&G	£0.5bn	7.0	7.0	7.3
Corporate Bonds	CTI	£0.6bn	7.0	7.1	7.5
Network Rail Bonds	CTI*	£0.3bn	4.9	4	3.7
LDI	Insight	£1.7bn	4.6	4.6	4.6

Asset class	Manager	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	CTI	£1.7bn	6.1	6.4	-4.9%
Corporate Bonds	M&G	£0.5bn	7.3	7.1	2.7%
Corporate Bonds	CTI	£0.6bn	7.5	7.1	5.3%
Network Rail Bonds	CTI	£0.3bn	3.7	no data	n/a
LDI	Insight	£1.7bn	4.6	4.9**	-6.5%

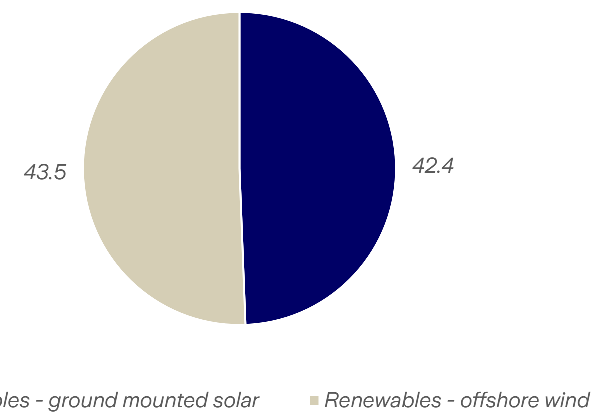
*Since 11th October 2022 Network Rail Bonds are being managed by Insight
** The peer group comparator is the average of the top ten global economies by nominal GDP in 2022 as estimated by the International Monetary Fund.

Metrics data source: Hymans Robertson LLP

The score is calculated using a MSCI's ESG assessment together with the Social and Governance factors. The Trustee monitors changes in the ESG scores and analyses drivers of the variances and if required, engages with its asset managers.

Avoided emissions

GHG Emissions reduction impact (kt CO2e/yr)



The total impact is equivalent to:

9,400 cars driven for a year*

Source: ZIC reporting
*Environmental Protection Agency
**I Z A Institute of Labor Economics
***UK Department of Transport

ESExec DB

WACI

Asset class	AUM	Jun-21	Jun-22
Equities	£8.3m	97.8	101.1
Equities*	n/a	87.1	n/a
Equities**	n/a	114.2	n/a
Corporate Bonds	£60.9m	110.9	68.2
Combined	**£69.2m**	**105.6**	**95.0**

*following the change in the investment strategy the CTI UK Equity fund was sold with proceeds reinvested into the CTI Global Select fund
**following the change in the investment strategy the CTI UK High Alpha Equity fund was sold with proceeds reinvested into the CTI Global Select fund

Asset class	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	£8.3m	101.1	170.4	-68.5%
Corporate Bonds	£60.9m	68.2	95.2	-39.6%
Combined		95.0	105.7	-11.3%

Metrics data source: Hymans Robertson LLP

Total Carbon Emissions

Asset class	AUM	Jun-21	Jun-22
Equities	£8.3m	37.8	42.8
Equities*	n/a	139.7	n/a
Equities**	n/a	116.8	n/a
Corporate Bonds	£60.9m	no data	37.6
Combined	**£69.2m**	**61.4**	**41.9**

*following the change in the investment strategy the CTI UK Equity fund was sold with proceeds reinvested into the CTI Global Select fund

*following the change in the investment strategy the CTI UK High Alpha Equity fund was sold with proceeds reinvested into the CTI Global Select fund

Asset class	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	£8.3m	42.8	110.9	-159.1%
Corporate Bonds	£60.9m	37.6	79.4	-111.2%
Combined		**41.9**	**89.3**	-113.1%

Metrics data source: Hymans Robertson LLP

Low Carbon Transition Score

Asset class	AUM	Jun-21	Jun-22
Equities	£8.3m	6.4	6.3
Equities*	n/a	5.9	n/a
Equities**	n/a	6.0	n/a
Corporate Bonds	£60.9m	6.1	6.2
Combined	**£69.2m**	**6.1**	**6.3**

*following the change in the investment strategy the CTI UK Equity fund was sold with proceeds reinvested into the CTI Global Select fund

**following the change in the investment strategy the CTI UK High Alpha Equity fund was sold with proceeds reinvested into the CTI Global Select fund

Asset class	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	£8.3m	6.3	6.1	3.2%
Corporate Bonds	£60.9m	6.2	6.3	-1.6%
Combined		**6.3**	**6.2**	1.6%

Metrics data source: Hymans Robertson LLP

Climate ESG Score

Asset class	AUM	Jun-21	Jun-22
Equities	£8.3m	7.2	7
Equities*	n/a	6.2	n/a
Equities**	n/a	6.6	n/a
Corporate Bonds	£60.9m	7.2	7.6
LDI	£103.1m	4.6	4.6

*following the change in the investment strategy the CTI UK Equity fund was sold with proceeds reinvested into the CTI Global Select fund

*following the change in the investment strategy the CTI UK High Alpha Equity fund was sold with proceeds reinvested into the CTI Global Select fund

Asset class	AUM	Jun-22 Scheme	Jun-22 Benchmark	Portfolio vs benchmark
Equities	£8.3m	7.0	6.5	7.1%
Corporate Bonds	£60.9m	7.6	7.1	6.6%
LDI	£103.1m	4.6	4.9	-6.5%

Metrics data source: Hymans Robertson LLP