



# The Shell Contributory Pension Fund

Climate Change Report

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# 1. Chair's introduction

I have pleasure in presenting the second Climate Change Report of the Shell Contributory Pension Fund ('the SCPF' or 'the Fund'). The report is required by the Pension Schemes Act 2021. Our first report set out the Trustee's target of achieving net zero by 2050 or earlier. This report provides more detail on the Trustee's climate policy, including the interim targets the Trustee has set in order to achieve net zero.

The prime objective of the Trustee, Shell Pensions Trust Limited, is what it has always been – to ensure that all benefits due from the Fund are paid on time and in full throughout the life of the Fund. An important part of this is investing the assets of the Fund prudently so that they and the investment return on them are enough to cover the Fund's obligations.

The SCPF is fully funded as measured on the statutory funding basis, as you will have seen from the 2022 Source newsletter. It also benefits from strong support from its Sponsor, Shell, through what is known as the Sponsor covenant – that is the Sponsor's legal obligation and financial ability to provide additional contributions to the Fund, should these be necessary. Because of the current adequacy of funding, our focus as a Board is more on the risks associated with climate change rather than on the investment opportunities that may arise from the necessary changes in the world economy and the energy industry, though these are considered as part of our investment management processes.



## Whats changed since last year's report?

- Further detail agreed on the Trustee's climate policy including interim targets on the path to net zero by 2050 or earlier.
- Primary focus is to use stewardship to drive real-world change in companies in which the Fund invests.
- Significant improvement in funding ratio and reduction in risk in the investment strategy.
- Reduced reliance on Sponsor covenant.

Climate change represents a risk for the Fund, though one which is difficult to quantify with any precision. It is evident that the world is not on track to meet the goals of the 2015 Paris Agreement to limit global warming. A consequence of this is that extreme market movements resulting directly or indirectly from climate change become more likely, but their form and impact become harder to predict. The Trustee believes that the funding ratio will be generally resilient to climate-related shocks but remains conscious that extreme events could have unpredictable results.

At the same time, climate change is not the only risk facing the Fund. The Trustee operates a system of integrated risk management, with the aim of ensuring that all material risks get the appropriate attention and management. Climate change risk has been incorporated in that system for some time. Overall responsibility is with the Trustee Board as a whole given the materiality and interconnectedness of climate change risk. The Trustee has also recently established an ESG Forum to provide greater oversight of the Fund's approach to stewardship and providing input on Environmental, Social and Governance policies (including climate change) to the Trustee. The whole subject area is undergoing rapid development as more information becomes available, as new regulations are put in place and as the challenges of the world meeting its climate change goals become more apparent.

The overarching risk is that of insufficient funds to meet all benefit payments. We refer to this as funding risk and it is affected by changes in liability values, asset values and the ability of the Sponsor to support the Fund.

Given this context we believe that changes to macro-economic factors from climate change, such as interest rates, inflation and life expectancy are likely to have a greater overall impact than the value of individual assets. As a result, we focus on managing funding risk.

As a Board, we look at financial risk from climate change over the short, medium and long term. This is useful because the circumstances of the Fund change quite considerably over time as we reduce the level of investment risk being taken and because the range of possible economic outcomes expands as we look further into the future. There are two lenses that the Trustee uses to consider climate change questions – funding ratio resilience and responsible ownership – and both bring somewhat different perspectives and areas of focus.

To strengthen funding ratio resilience, in 2018 we put in place a plan to move gradually to a low-risk portfolio by 2035 by increasing the extent to which the economic characteristics of our assets closely match our liabilities, with a large proportion of our assets to be held in the form of low-risk assets such as UK government bonds. This de-risking serves as the single most important step we can take to mitigate the Fund's risks from climate change.

In fact, market developments over 2022 improved the funding position of the Fund materially, enabling de-risking steps to be accelerated well ahead of the planned timetable. This has increased the Fund's resilience to market risks, including those posed by climate change. This view is supported by the climate scenario analysis set out later in this report.



With the improved funding ratio resilience, the strength of the Sponsor covenant has become considerably less important. However, Sponsor covenant remains a key area of focus for the Trustee Board in the context of providing support in the event of extreme future shocks that unexpectedly lead to a funding shortfall, including those arising from climate change. The Trustee continues to monitor the success of Shell in navigating the transition to a low-carbon economy through its Powering Progress strategy.

The Trustee Board has set a target of net zero by 2050 or earlier in respect of greenhouse gas emissions associated with the Fund’s assets. We think this is the right thing to do, but we also consider it to be in the long-term interests of our members and it represents a degree of risk mitigation for the Fund.

Over the year, the Trustee has worked to develop its net zero climate strategy. The overall approach of the Trustee is to contribute to the achievement of the goals of the Paris Agreement of limiting global temperature rises to 1.5°C above pre-industrial levels through using its influence as an investor, together with that of like-minded other investors, to encourage enterprises to align their strategy and operations with the Paris Agreement goals. This will be done primarily through engagement and voting but the Trustee will also consider divestment in certain cases. This contrasts with simply divesting from high-carbon companies which may reduce the carbon footprint of the Fund but does not change the actual carbon footprint of the investee companies.

The Trustee has set interim targets for the reduction in carbon footprint of its portfolio which will indicate whether in aggregate the investee companies are making adequate progress. These targets will be used to assess the effectiveness of the Trustee’s approach. The interim carbon footprint reduction targets set by the Trustee are as follows.

Year	Target reduction in Carbon footprint* relative to a 2020 baseline
2025	30%
2030	50%
2050	100%

The Trustee has also set targets relating to the alignment of investee companies’ strategies with the Paris Agreement goals, as well as levels of engagement with investee companies where targets have either not been set or are not being achieved. The Trustee’s intention is to support real-world change through effective stewardship of assets in which it is invested. This in turn will help in meeting the primary target of carbon footprint reductions.

This report contains considerable detail on how we run the Fund in relation to climate-related risks, on investment management and on climate change data related to the Fund’s investment portfolio.

Finally, it is appropriate to note that the influence of a materially de-risked and highly diversified pension fund is very limited compared to the ability of governments to change behaviours in relation to climate change. This becomes increasingly the case for the SCPF in the period beyond 2030. Progress depends much more on governments across the world taking the necessary steps to create the right incentives for economic actors – consumers as well as producers – to operate in a Paris Agreement-aligned manner.

We hope you find the information in the report of interest and value.

**Tim Morrison**

**Chair of the Trustee Board, Shell Pensions Trust Ltd**

\*Defined as CO<sub>2</sub>-equivalent emissions per £1m invested. See Section 12 for further details.



## 2. Purpose of the Climate Change Report

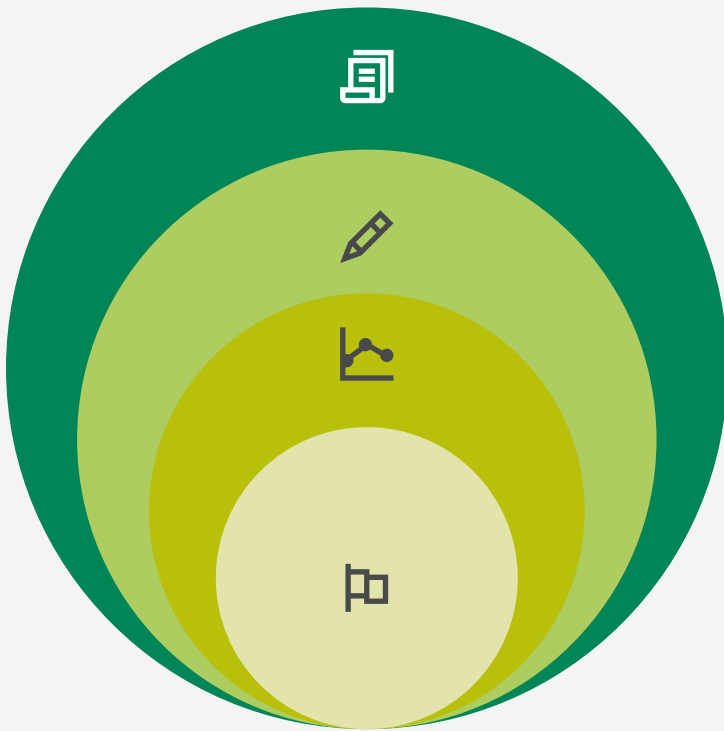
This report is written for members of the Shell Contributory Pension Fund ('the SCPF' or 'the Fund') and is required by the Pension Schemes Act 2021. Its purpose is to inform members about the risks to the SCPF from climate change and about how the Trustee of the Fund, Shell Pensions Trust Limited, is responding to those risks.

The report is shaped by the recommendations of the Taskforce on Climate-related Financial Disclosure ('TCFD') which has developed best practice guidance for climate risk reporting. The Financial Stability Board created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks and opportunities – those related to climate change. UK regulations require the trustees of large pension schemes, including the SCPF, to meet climate change governance requirements and to publish an annual TCFD-aligned report on their pension scheme's climate-related risks.

While the Trustee considers that climate change has the potential to have a materially detrimental impact on funding risk, this risk has reduced since our previous report because of the improved

funding position and significant investment de-risking that has taken place within the Fund. However, climate change, whether managed or unabated, carries direct risks including through physical damage, changes in member health and disruption in the world economy. The various responses to climate change risk by governments, business and consumers also carry consequential risks, for example through the restructuring of economies, regulatory changes, litigation risk (with respect to both assets and covenant strength) and the impact on tax arrangements, public finances and monetary regimes.

This document is the second annual Climate Change Report for the SCPF and is for the year ended 31 December 2022. The Fund operates as a single section for funding and investment purposes, so this document covers the Fund as a whole, but excludes all Additional Voluntary Contribution (AVC) benefits and investments. The core requirements of the TCFD-aligned reporting framework for pension funds are set out on the next page.



**Governance**

The organisation’s governance around climate-related risks and opportunities

**Strategy**

The actual and potential impacts of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning

**Risk Management**

The processes used and manage climate-related risks

**Metrics and Targets**

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

Sections 3 and 4 of this report provide further context on the position of the Fund including the Trustee’s objectives, the funding level and the investment strategy.

A summary of how the TCFD-aligned framework is addressed by this report is set out in the following table:

TCFD framework:					
Report section		Governance	Strategy and Scenario Analysis	Risk management	Metrics and Targets
5	Investment Principles	✓	✓	✓	
6	Risk Management and Climate Change Risk		✓	✓	
7	Scenarios		✓		
8	Covenant Assessment		✓	✓	
9	Net Zero				✓
10	Investment Approach	✓		✓	
11	Governance	✓			
12	Metrics, Targets and Results				✓

In preparing this report, the Trustee has considered the TCFD's Principles for Effective Disclosure.

Other documents relevant to the matters discussed in this Report are available on the SCPF website and include: the 2022 SCPF Annual Report and Financial Statements, the Statement of Investment Principles, the Responsible Ownership Policy, the Implementation Statement and the Annual Review on engagement activity. <https://pensions.shell.co.uk/scpf/resources/scpf-library.html>







## 3. The Trustee's Objectives

The Trustee's primary purpose is to ensure that all benefits promised by the SCPF under its Trust Deed are paid in full and on time throughout the life of the Fund.

This is the fundamental context for its assessment of the risks and opportunities from climate change. It means aiming to ensure resilience in the funding of the SCPF whatever path is followed by the world in tackling climate change. As a large asset owner, the Trustee also seeks to be a responsible investor and is a signatory to the UN Principles of Responsible Investment (UN PRI).

The Trustee must meet the requirements of The Occupational Pension Schemes (Investment) Regulations 2005. This means that, amongst other things, the assets must be invested in the best interests of members and beneficiaries and in a manner to ensure the security, quality, liquidity and profitability of the portfolio as a whole. Investment decision making must take account of the nature and duration of the liabilities of the Fund, ensure proper diversification and avoid concentration of risk.



## 4. The Current State of the Fund

Significant increases in UK Government Bond ('Gilt') yields over the year led to a material reduction in the present value of the liabilities. This reduction occurred not because the benefits to be paid to members fell, but because the discounted present value of the benefit payments reduced as a result of higher Gilt yields.

The Fund's assets deliberately match a proportion of the movement in liabilities in order to reduce funding volatility. As a result, the rise in Gilt yields also led to a reduction in the value of the assets. However, the level of matching at the start of the year was only 50%, meaning that the assets fell by less than the liabilities, leading to significant improvements in the funding ratio.

In line with the Trustee's Journey Plan, this funding ratio improvement enabled the Trustee to reduce risk in the investment strategy as multiple de-risking triggers were met over the course of the year. The original Journey Plan was intended to run until 2035 but all remaining triggers in that plan were met during 2022. By the end of the year, the level of matching had been increased significantly, meaning that future changes in gilt yields and inflation are not expected to lead to such significant movements in the funding level in future.

It is worth noting that while de-risking triggers were met and risk was reduced in the investment strategy, some investments held by the Fund are not currently in line with the Strategic Asset Allocation. This is due to both the nature of the assets held by the Fund and the speed at which the funding level improved.

As part of its investment strategy, the Trustee holds illiquid investments which aim to deliver returns over the longer-term. However, these assets cannot be sold quickly without incurring significant losses in value. Therefore, to reduce overall investment risk, the Trustee instead reduced the Fund's economic exposure to listed equity and non-investment grade credit.

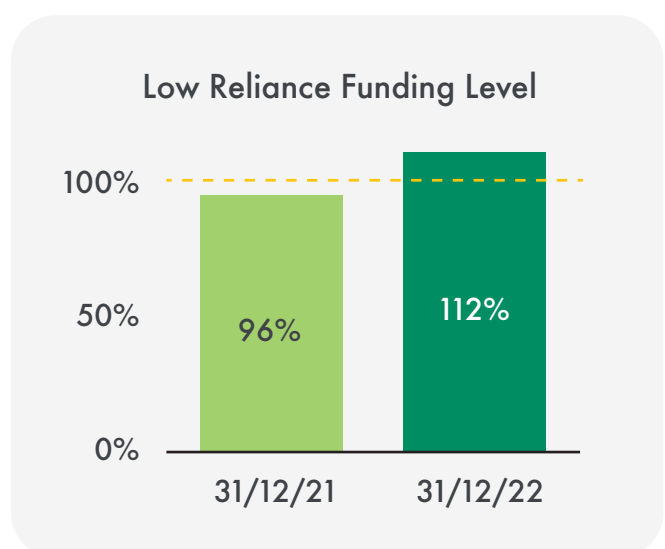
To achieve this de-risking quickly, the Trustee used derivative overlays – a type of financial instrument – to reduce economic exposure while retaining the Fund's physical listed equity and non-investment grade credit holdings. These derivative overlays are expected to be unwound over the next few years as the illiquid portfolio is sold down.



# Funding position

The table below sets out the funding level assessed on the Fund’s ‘Low Reliance’ basis (low reliance means low reliance on the need for future additional support from Shell as Sponsor – although the support is available if needed). This is the basis currently used by the Trustee for long-term strategic purposes, including investment de-risking. This funding measure assumes an even lower level of investment return (i.e. lower risk) than that used in the statutory funding (‘technical provisions’) basis and so shows a smaller surplus.

<b>Low Reliance (£bn)</b>	<b>31/12/21</b>	<b>31/12/22</b>
Assets <sup>1</sup>	17.6	12.9
Liabilities <sup>2</sup>	18.3	11.5
<b>Surplus</b>	<b>-0.7</b>	<b>1.4</b>
<b>Funding level</b>	<b>96%</b>	<b>112%</b>



<sup>1</sup>For the avoidance of doubt, this excludes the Contribution Reserve Account (CRA), valued at £0.8bn at 31 December 2022.

<sup>2</sup>Accrued liabilities on the Trustee’s Low Reliance basis, the discount rate for which is Gilts + 0.5% pa

# Investment strategy

	31/12/21	31/12/22	
	Actual Allocation	Actual Allocation	Strategic Asset Allocation
Liability hedging assets	37%	48%	62%
Investment grade credit	16%	10%	13%
Return-seeking assets	47%	42%*	25%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

\*Economic exposure to return-seeking assets is 25% as a result of derivative overlays.

## Key points to note from the table above are as follows:

- The allocation to liability hedging assets – in particular, UK Government bonds – has been increased, funded from sales of other assets. The Fund’s economic exposure to UK Government bonds has been increased further by a temporary increase in the use of repos<sup>1</sup>. This approach has enabled the Fund’s assets to more closely match its liabilities, reducing future risk. The amount of repos held will be reduced as illiquid return-seeking assets are sold over time, as described earlier.
- The economic exposure to return-seeking assets has significantly reduced. This has been achieved both by the sale of physical assets, as well as the use of derivative overlays to reduce exposure to listed equities and non-investment grade credit.

<sup>1</sup>In this context, a repo is a transaction in which a UK Government bond is sold with an agreement to repurchase it at a later date. The proceeds from the sale are then used to buy additional or replacement UK Government bonds.



## 5. Investment Principles

The Trustee's investment objective is to invest the Fund's assets such that they, together with the return on them and contributions from members and employers, are sufficient to pay all benefits due to members.

In discharging its responsibility to invest the assets of the Fund in the long-term interests of its members, the Trustee believes that it protects and enhances the value of the Fund in the long term by taking environmental, social and governance (ESG) considerations, including climate-related risks and opportunities, into account in its investment decisions and investment oversight.

The Trustee also believes that supporting the most ambitious goal of the Paris Agreement – to limit atmospheric heating to 1.5°C compared to pre-industrial levels – is consistent with that overriding objective as well as being an important part of responsible ownership and a benefit to the Fund's members.

Given the currently insufficient progress made by the world towards meeting the Paris Agreement goals, improving funding ratio resilience in all circumstances and supporting achievement of the Paris Agreement goals by investee companies is the context for the Trustee's work on climate change risk. These two lenses that the Trustee uses to consider climate change questions – funding ratio resilience and responsible ownership of investments – bring somewhat different perspectives and areas of focus.

The main method of improving funding ratio resilience in whatever climate change mitigation path the world actually follows over the coming decades is the de-risking of the investment portfolio of the Fund. The holdings of return-seeking assets such as equities, property and non-investment grade corporate bonds have declined significantly over 2022 and are expected to decline further over the next few years. As such, there has been and will continue to be a sharp decline in the sensitivity of the Fund to the success or otherwise of the underlying companies in meeting the challenges of climate change. Nonetheless the Fund will benefit from both promoting climate change preparedness in its investees and considering the matter whilst reshaping its portfolio.

As a responsible owner of assets, the Trustee uses stewardship to help bring about a particular mitigation outcome (i.e. one consistent with the Paris Agreement goals) while also ensuring the achievement of the Trustee's primary purpose of paying members' benefits and remaining compliant with regulatory requirements<sup>1</sup> in respect of defined benefit pension scheme investment. Further information on the Trustee's approach to stewardship is included throughout the report.

The general approach is incorporated in the **Statement of Investment Principles** and the **Responsible Ownership Policy**.

<sup>1</sup>The Occupational Pension Schemes (Investment) Regulations 2005

# 6. Risk Management and Climate Change Risk

The Trustee has a comprehensive risk management approach, identifying a wide range of risks to the achievement of its objective to pay all pensions on time and in full.

Addressing climate change risk is an integral part of this approach, not least because the risks themselves are in practice frequently interwoven with other risks, as explained below. The Trustee maintains a risk register which records risks, the main risk control and mitigation methods being applied, any matters requiring improvement and actions to deliver that improvement. Risks are assessed by reference to their potential impact and likelihood to ensure attention and resources are focused in the right place. The remainder of Sections 6 to 10 discuss the risks identified to date and how the Trustee has assessed and is managing them. More details about the Trustee's risk management processes, including how the Trustee identifies new risks, follow in Section 11.

Given the purpose of the SCPF, the overarching risk is that of insufficient funds to meet benefit payments as they fall due. The Trustee refers to this risk as 'funding risk'. It is affected by changes in both liability values (principally interest rates, inflation rates and the longevity of members) and asset values. In relation to funding risk, the Trustee operates an integrated risk management approach, incorporating covenant risk, liability risk and investment risk.

<sup>1</sup>Physical risks pertain to the physical impacts that occur as the global average temperature rises. For example, the rise in sea levels could have impacts such as flooding and mass migration. Extreme weather events, such as flooding and fires, could become more frequent and severe, and these incidents could threaten physical assets and disrupt supply chains.

<sup>2</sup>"Transition risks" arise as the world seeks to realign the economic system towards low-carbon, climate-resilient solutions. Changes in industry regulation, consumer preferences and technology will take place and impact on current and future investments.

While climate change originated physical risks<sup>1</sup>, and possibly transition risks<sup>2</sup>, may have an impact on the Fund's operational activities in future, the Trustee considers that it is funding risk which requires focus at this stage. Other more generic matters such as compliance with regulatory requirements and good member communications have a climate risk component but are covered by their own risk management processes.

The Trustee considers that climate change has the potential to have a materially detrimental impact on funding risk, albeit that the scale and likelihood of this risk has reduced since last year as a result of de-risking; this can be seen from the results of the climate scenario modelling in the next section.

Longevity risk is the risk that members live longer than expected and this risk could be impacted by climate change. Longevity is one area where risk has not yet been mitigated, other than through building prudence into the demographic assumptions. The Trustee is considering options to mitigate its longevity risk exposure in the short-to-medium term

The Trustee considers all three areas of its integrated risk management approach (i.e. covenant risk, liability risk and investment risk) when adopting policies for climate-related risks.



The likelihood and gravity of effects increase as the timeframe extends into the future but, as far as return-seeking asset classes are concerned, the Fund is vulnerable to markets repricing financial assets well in advance of the actual events or changes causing damage.

It is also worth noting that the Fund's portfolio now has and will continue to have a very high exposure to UK Government debt. The impact of climate-related risks and opportunities on the Fund's investment approach is also described at an asset class level in Section 10.

Climate change, whether managed or unabated, carries direct risks including through physical damage, changes in member health and disruption in the world economy. The various responses to climate change risk by governments, business and consumers also carry consequential risks, for example through the restructuring of economies, regulatory changes, litigation risk (with respect to both assets and covenant strength) and the impact on tax arrangements, public finances and monetary regimes.

It is worth keeping in mind that financial risk from climate change related risk is not a single risk but a set of different, though often interrelated, financial risks which share a root cause in the progressive heating of the global climate. The financial risks also typically have multiple drivers, not just climate change.

The measurement of liabilities is also a critical element in determining the right investment strategy. For example, climate change may affect the longevity of members through changed climatic conditions, more or less spending available for health and social care or changed vectors of disease. The impact on the economy of necessary adjustments to deal with climate change may lead to changes in inflation and/or interest rates, causing changes to both the valuation of liabilities and the expected returns on assets. Indeed, as far as funding risk is concerned, the Trustee views changes to macro factors such as longevity, interest rates and inflation rates as having a greater overall impact than changes to individual asset values.

As well as risks arising from climate change, it is evident that there are major uncertainties arising from science and technological changes (including the impact of developments in medical science on longevity), from the long-lasting impacts from global health emergencies and from geo-political tensions. All these must also be taken into account.

In terms of scheme specific risks from climate change, because of the nature of the Sponsor's business, the most serious impact that the Trustee is concerned with is the combination of a steep fall in the value of its assets happening after, or at the same time as, a major weakening in the strength of the Sponsor covenant. The Sponsor itself is strongly affected across all of its business activities by climate change and the transition of the energy system to net zero emissions. An extract of Shell's strategy is set out on the next page.

# Context: Shell plc's Strategy

Climate change is one of the biggest challenges the world faces today. In 2022, geopolitical events showed that a secure supply of energy is crucial, and a growing global population is likely to continue to drive demand for energy, including oil and gas, for years to come. This necessitates society's rapid transition to a low-carbon, multi-source energy system.

Shell supports the most ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels. To achieve this, urgent action is needed to reduce emissions across power, transport, buildings, and hard-to-abate industries, such as steel and concrete. Around 140 countries and more than 2,000 companies and organisations have made commitments to get to net-zero emissions by 2050.

Shell seeks to play its part, purposefully and profitably, in the energy transition, while helping to maintain energy security. We are building a resilient business by putting customers at the centre of our strategy, and innovating the products and solutions they need. Our integrated assets and supply chains are designed to deliver value for our shareholders and customers. We aim to manage risk for Shell and our customers as we produce, buy, trade, transport and sell energy products and solutions worldwide.

The energy transition brings risks, involves confronting complex obstacles, and poses great challenges. The energy transition also offers significant opportunities.

We seek to work with our customers to identify available, affordable and low- and zero-carbon energy solutions that meet their changing needs and to help decarbonise the energy system. There will be no single solution that fits all customers. Instead, there will be variations with differing approaches and rates of progress across countries, sectors and markets.

Customers' use of the energy we sell generates most emissions. Helping our customers get to net zero will also reduce our net carbon intensity, and the average amount of green house gas emissions we produce for every unit of energy that we sell and that is used by our customers.

We work with sectors that would benefit from the expertise and experience that energy companies can provide to help them find a path to net-zero emissions. Aviation is one of these sectors. Together with our customers, we are working on changing energy demand and developing ways to help increase the use of low-carbon fuels and decrease carbon emissions from this sector. Meanwhile, on the supply side, in Rotterdam in the Netherlands, Shell is building an 820,000-tonnes-a-year biofuels facility. This is expected to be among the largest in Europe, producing sustainable aviation fuel and renewable diesel made from waste and certified sustainable vegetable oils.

**Source: Shell plc Annual Report and Accounts for the year ended December 31, 2022**





# Time horizons

The Trustee has chosen to assess climate-related risks over multiple time horizons. This is mainly because the risk profile of the Fund changes over time, in particular as risk is reduced in the investment strategy and as the Fund membership matures. It is also the case that uncertainty in economic and other responses to climate change grows over time.

The time horizons have been re-assessed since last year as result of the changes in the position of the Fund. The revised time horizons are shorter than previously and are linked in part to the period over which the illiquid investments, such as private equity and property, are expected to be sold down.

Time Horizon	Time Period	Rationale
Short-term	To 2025	During this period there is good visibility on the Sponsor covenant strength. A proportion of the illiquid assets are expected to be sold over this period.
Medium-term	To 2030	The Fund is likely to have reached a very low risk investment strategy and strong funding level by this point, with little reliance on the covenant.
Long-term	To 2040	The Fund will be very mature by 2040. Emissions will need to be close to net zero by this point if global temperature increases are to be limited to 1.5°C above pre-industrial levels.

In the context of these time frames, the Trustee has considered the key risks and opportunities from climate change, as well as the actions it intends to undertake to address them. This is set out in the following table.

Time period	Key risks	Key opportunities	Actions
Short-term (to 2025)	Exposure to climate-related investment risks may be highest while an allocation to growth / illiquid assets is retained.	Sustainable investment options and stewardship may present opportunities to mitigate climate risks.	<ol style="list-style-type: none"> <li>1. Current project to review the investment strategy following the significant de-risking in 2022 will include consideration of opportunities to reduce climate risk.</li> <li>2. Despite the planned run-off of illiquid assets, for these assets, focus should be kept on increased understanding and robust management of climate risks as long as exposure remains in place.</li> </ol>
Medium-term (to 2030)	Market volatility could cause investment losses and increase time to reach full funding on the long-term objective. Longevity risk also becomes more significant compared to other risks if it remains unmitigated.	<p>Opportunities to de-risk early may help reduce possible climate impacts on the Fund.</p> <p>Climate-aware investment in the Fund's credit holdings could increase the resilience of assets to climate risks.</p>	<ol style="list-style-type: none"> <li>3. Monitor and engage with issuers to ensure they are focussing on transition risk in good time, and monitoring physical climate risk.</li> <li>4. Further consideration of the Fund's Net Zero target and Stewardship approach (for example, taking into account real-world progress by then).</li> </ol>
Long-term (to 2040)	Cost of insurance may increase as insurers allow for climate-related risks in their pricing and reserving bases.	Fund can include ESG and climate considerations in any selection process for insurance.	If Fund is in long term run-off, ensure investment strategy is robust against wide range of risks including climate change.

The approach taken to assess the potential impact of any particular risk depends on the nature of that risk. Given the wide range of risks faced by the Fund and their differing characteristics, it is clear that no single tool can be used to identify and assess the potential impact of all risks. The Trustee assesses and prioritises its response to risk using the combined judgement of its advisers, managers and Trustee Directors as to the potential likelihood and impact of one risk relative to another.



# 7. Scenarios

The Trustee uses scenario analysis to support its judgements about the resilience of its funding strategy and investment strategy over time and its reliance on covenant over the periods considered. Scenario analysis is an approach to analyse how different future events may unfold, although they are based on many assumptions and simplifications.

In March 2023 the Trustee considered a set of Climate Change Scenarios, based on the Fund's position as at 31 December 2022, with the support of our ESG adviser Lane Clark & Peacock LLP (LCP). The scenarios covered three cases (set out in the box below) which were chosen as they represent a broad range of potential outcomes, which can be seen as representing degrees of success in meeting the goal of the Paris Agreement.

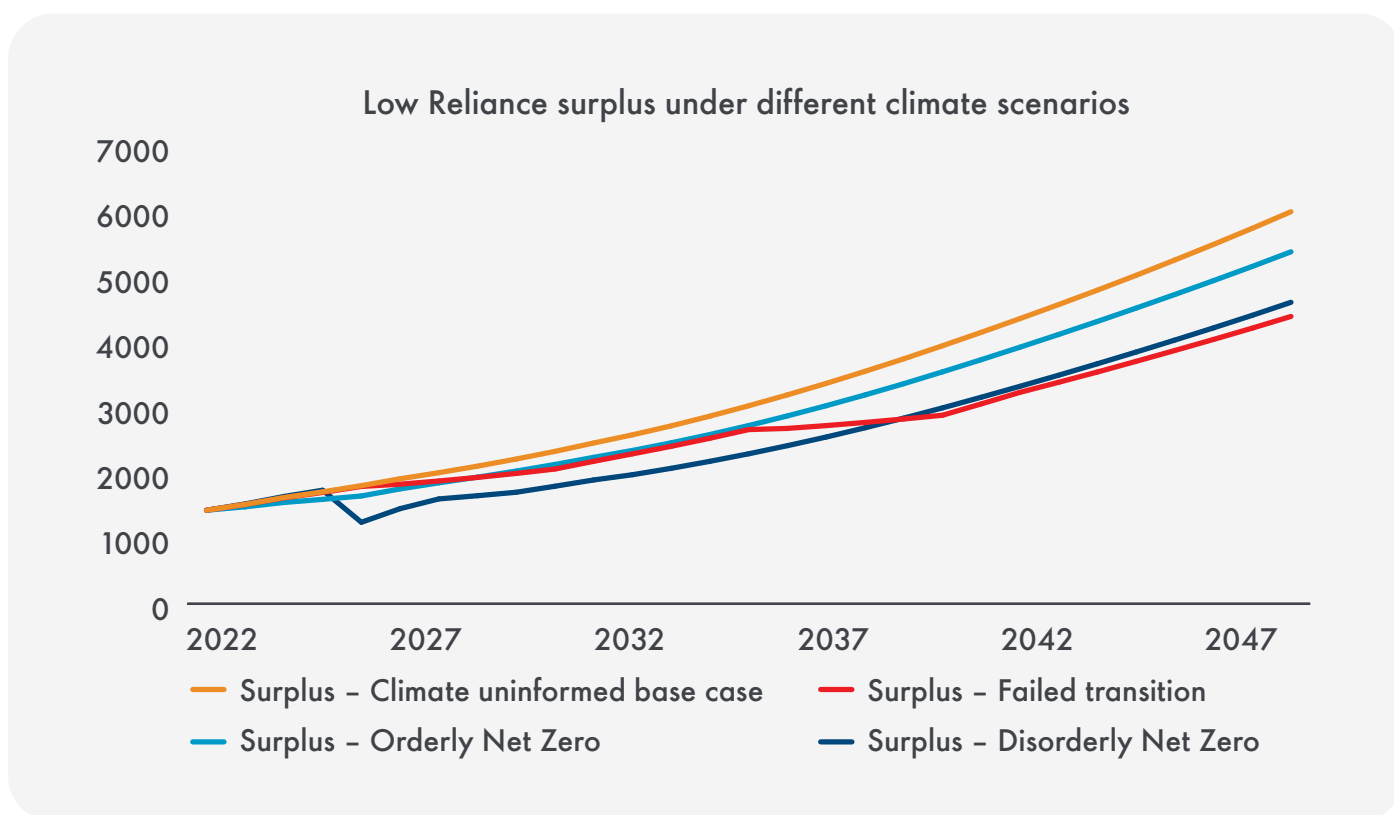
Transition	Description	Why chosen
<b>Failed Transition</b>	Net zero is not met by 2050, or at all; the Paris Agreement goals are therefore not achieved. Only existing climate policies are implemented	To explore what could happen to the SCPF's finances if carbon emissions continue at current levels and this results in significant physical risks from changes in the global climate that disrupt economic activity.
<b>Orderly Net Zero by 2050</b>	Global net zero carbon emissions is achieved by 2050; rapid and effective climate action (including using carbon capture and storage), with smooth market reaction	To see how the SCPF's finances could play out if the global net zero carbon emissions is achieved by 2050, meaning that the economy makes a material shift towards low carbon by 2030.
<b>Disorderly Net Zero by 2050</b>	Same policy, climate and emissions outcomes as the Orderly Net Zero Transition, but financial markets are initially slow to react and then over-react	To look at the risks and opportunities for the SCPF if the global net zero carbon emissions is achieved by 2050, but financial markets are volatile as they adjust to a low carbon economy.

Further details on the scenarios are included in the [appendix](#).

The Trustee acknowledges that many alternative plausible scenarios exist but found these were a helpful set of scenarios to explore how climate change might affect the SCPF in future.

The intricacies of climate systems present considerable difficulties in modelling the impacts on pension schemes’ assets and liabilities. This is particularly true in the Failed Transition scenario when over 2 °C of warming is observed by 2050, increasing to over 4 °C by 2100. Due to the unprecedented nature of such warming, it is challenging to encompass all potential consequences within the modelling process. Simplifications in the modelling, such as not allowing for tipping points, mean the actual impact on pension schemes is likely to be more significant than is currently being modelled. The Trustee has considered the potential impact of such limitations in the modelling. The Trustee believes that, as long as these limitations are understood, the scenarios still provide valuable insights to inform climate risk assessment and management.

To provide further insight, the Trustee also compared the outputs under each scenario to a “climate uninformed base case”, that makes no allowance for either changing physical or transition risks in future. The key results of the scenario analysis are summarised in the chart below.



The chart illustrates the expected funding surplus on the Trustee’s Low Reliance basis as it progresses over future years. The positions illustrated show the median (middle) outcome in a wide range of possible outcomes.

<sup>1</sup>Analysis is as at 31 December 2022 on the Trustee’s Low Reliance basis

<sup>2</sup>The Disorderly Net Zero scenario models a future climate pathway where net zero is achieved by 2050, keeping global temperature rises to around 1.5 degrees above the pre-industrial era. This scenario assumes that the market reaction to what is required to reach net zero is slow initially with an abrupt market re-pricing in 2025/2026 and increased market volatility. This is followed by a partial recovery in 2027 as market volatility gradually reduces. The scenario illustrates the resilience of the funding and investment strategy to sudden repricing, sentiment shocks and increased market volatility.

Under all three scenarios, the impact of climate change is expected to lead to lower investment returns than the climate uninformed scenario and hence, on a relative basis, a negative impact on the funding position. However, on average the Trustee does not expect the Fund to fall into a deficit on the Low Reliance basis in any of the scenarios and, in general, the surplus is expected to increase over time.

Under these median outcomes, the reliance on the covenant of the Sponsor is limited. (Scenario analysis is also used to consider the sponsor covenant; this is discussed in the next section.)

This modelling provides comfort that the Fund has significant funding resilience to the potential future impacts of climate change. This is a material difference to the position last year when the Fund was starting from a deficit on the Low Reliance basis, with the climate scenarios projecting differing levels of improvement/ worsening in this deficit.

Over the long-term, and particularly beyond the time horizon modelled, the largest effects would be felt under the Failed Transition scenario. The chart above suggests that the Fund is resilient even in this scenario. This is partly because the Fund has limited exposure to growth assets such as equities which are expected to be most severely affected by climate change. Moreover, the Fund invests in a way that is designed to make it fairly immune to changes in interest rates and inflation in normal circumstances, which significantly reduces the volatility of its funding position, supporting funding resilience. However, under climate scenarios with major economic disruption – such as the later years of the Failed

Transition scenario – the Fund’s interest rate and inflation protection may break down, leaving it more exposed to climate risks.

The median modelled outcomes do not illustrate this possibility, but the Trustee has considered this risk.

The Trustee continues to remain vigilant with regards to the impact of climate change on funding risk. In particular, none of the scenarios represent a worst case scenario. It is in these most extreme scenarios that reliance is most likely to be placed on the covenant of the Sponsor, particularly in the shorter term while de-risking remains in progress.





## 8. Covenant Assessment

The strength of the covenant could be affected by developments relating to climate change and the energy transition and therefore the processes for assessing the strength of the covenant are an important part of the Trustee's management of the Fund's climate change risk

The main purpose of the covenant assessment is to determine whether the Fund is carrying an acceptable level of funding risk now and into the future. If the Trustee were to decide this was not the case, various mitigants would be available – for example, further de-risking, increasing the level of contributions required from the Sponsor in the short term, or putting in place additional contingent support.

The Trustee compares two measures in assessing the strength of the covenant; one is the Fund's current and potential need for further funding and the second is the ability of the Sponsor to meet those needs.

The current need is primarily measured by reference to any current funding deficit and how that deficit could increase over the next year if a 1-in-20-year downside event happened (this is known as the one-year Value at Risk with a 95% confidence level, based on standard market rather than climate-related assumptions).

- As at 31 December 2022, even after experiencing a 1-in-20-year shock, the Fund would expect to remain in surplus on the Low Reliance basis.

The potential need is determined by reference to the deficit as measured on the solvency basis. This measure in effect shows the maximum possible current call on the covenant at any particular point in time.

- As at 31 December 2022, this was estimated to be £0.9bn.

These amounts are then compared with the financial resources of the company.

The covenant assessment is also forward looking with two distinct features. First, the expected potential need declines as the Fund reduces risk over time and more members retire. Second, the Trustee's ability to assess the covenant strength at any particular time in future becomes more difficult the further out the assessment is made. This is one of the main reasons for establishing the Journey Plan that led to the de-risking of the Fund over 2022.

The Trustee also considers the Shell Scenarios<sup>1</sup> and the insights they and third-party commentary provide on developments.

<sup>1</sup>Shell has been developing possible visions of the future since the early 1970s, helping generations of Shell leaders, academics, governments and businesses to explore ways forward and make better decisions. Shell Scenarios ask "what if?" questions, encouraging leaders to consider events that may only be remote possibilities and stretch their thinking. [See What are Shell Scenarios? | Shell Global](#)

In assessing the value of the Sponsor covenant over the period during which the Fund is de-risking to a low reliance level, views on the lower bounds of demand for oil and gas and of oil and gas prices are of particular interest as these shape the lower case outcomes for the Sponsor's cash flow during this period. For the covenant assessment completed in early 2021, to support the actuarial valuation as at 31 December 2020, the Trustee considered three energy transition scenarios<sup>1</sup> – Waves, Islands and Sky 1.5 – and the likely marginal cost of oil supply. This in turn was used for projections of cash generation of Shell under a number of variables including sustained low oil and gas prices to test the resilience of the covenant to future events. The forthcoming covenant assessment in 2023 will consider the new 'Energy Security Scenarios'<sup>2</sup> called Archipelagos and Sky 2050.

Given the importance of the Sponsor covenant, especially in the short to medium term, the Trustee pays close attention to the progress of the Sponsor in delivering against its Powering Progress Strategy<sup>3</sup> which includes becoming a net zero emissions energy business by 2050.

The Trustee has entered into an Information Protocol with the Sponsor pursuant to which it receives information relevant to the ongoing assessment of the Sponsor covenant. The Trustee also meets with the Sponsor regularly to discuss its progress and outlook and has access to all external reporting made by Shell plc.

It monitors matters such as the Sponsor's published metrics, cashflow forecasts provided confidentially to the Trustee and the profile of Sponsor debt relative to the Fund's reliance over time on the Sponsor covenant. It also considers external and market-based metrics such as credit ratings and credit spreads on the Sponsor's long-term bonds relative to general corporate long-term bond spreads.

As well as considering Shell-specific metrics, the Trustee takes into account changes in government policy, technological and commercial changes in the energy industry and legal developments both in regulation and litigation.

<sup>1</sup>[The Energy Transformation Scenarios | Shell Global](#)

<sup>2</sup>[The Energy Security Scenarios | Shell Global](#)

<sup>3</sup>[Powering Progress – transitioning to net-zero emissions | Shell Global](#)





## 9. Net Zero

### What is the Trustee's climate approach?

The Trustee's policy is to operate the SCPF in a manner that supports the most ambitious goal of the Paris Agreement – to limit atmospheric heating to 1.5°C compared to pre-industrial levels. To support this policy the Trustee has set a target of net zero by 2050 or earlier for the greenhouse gas (GHG) emissions for the entities in which it is invested.

With support from the Trustee's investment manager SAMCo, the Trustee has considered and is adopting an enhanced climate strategy to support its net zero target, including a suite of interim targets. The strategy has been developed with reference to industry guidance such as the Paris Aligned Investment Initiative (PAII) [Net Zero Investment Framework](#) (NZIF) and covers a broad range of areas. This strategy was agreed in 2023 so has not impacted on the assets held at 31 December 2022.

A key principle of the approach is that it **supports the real-world transition to net zero**, as well as managing climate-related risks to the SCPF's assets. That is, the Trustee will focus on using stewardship of investments to improve the net zero alignment of the entities in which it invests, rather than simply divesting from entities that operate in carbon-intensive areas of the economic value chain.

Work supporting the achievement of the net zero target will be carried out in a manner which remains consistent with the Trustee's fiduciary duties and legal obligations relating to the investment of assets.





## What targets have been established for the SCPF?

Taking into account the current availability of data and tools to assess and achieve net zero alignment across relevant asset classes, the Trustee has set various targets for SAMCo in its capacity as investment manager for the SCPF's assets.

- The formal target for the purpose of this Climate Change Report is a carbon footprint reduction (tCO<sub>2</sub>e per £1m invested, for Scope 1 and 2 emissions, from an estimated 2020 baseline) of 30% by 2025, 50% by 2030, and 100% by 2050.
- The Trustee has also set targets in relation to the alignment of investee companies towards Paris-based goals, as well as Trustee engagement targets for investee companies deemed not to be aligning.

Further details on these targets are set out in Section 12. The targets will be regularly reviewed and developed in light of progress and as data and methodologies improve.

The Trustee's previous target was in relation to improving the coverage of its climate-related data; progress against this target is discussed in Section 12. While the Trustee has chosen not to maintain data coverage as a formal target, this remains an important subject for the Trustee. SAMCo continues to strive for improvements in coverage and this will be monitored by the ESG Forum (see below).

## How will the targets be achieved?

From a portfolio perspective, SAMCo considers climate factors, including net zero alignment, in the investment process where relevant to financial risk and return, and in the selection and monitoring of external asset managers. This is expected to result in portfolios that have better net zero alignment than the broader market and for alignment to improve over time. The targets above will be reflected in portfolio construction, to the extent that this is consistent with the Trustee's fiduciary duties. Moreover, the targets will be taken into account for new investments as the Trustee transitions into lower risk assets over time.

The backdrop is also the SCPF's growing allocation to liability-matching assets, largely UK fixed interest and index linked gilts, which by their nature currently sit outside most net-zero targeting frameworks, including the SCPF's. At a headline level, a large part of the reduction in carbon emissions associated with the Fund's total assets comes simply as a result of this de-risking process. However, the Trustee does not intend to rely simply on the de-risking trajectory to achieve its targets, but will use stewardship and targeted portfolio action to drive real-world change in investee companies.

The effect in terms of a reduction in global emissions will be seen more clearly in a reducing carbon footprint of the assets held by the Fund and it is here that the work described below in Section 10 will have an impact.

To help achieve the Trustee's overall carbon footprint target, the Trustee has set targets for its investment manager at the individual asset class level in order to drive improvements in all areas. However, the formal target for the purposes of this Climate Change Report remains at the overall Fund level.

## Operational net zero

The GHG emissions of the SCPF's own operations are much less significant than that of the enterprises in which it is invested. Nonetheless, the Trustee's policy is to reduce the Fund's operational emissions<sup>1</sup> in line with the goals of the Paris Agreement to achieve net zero emissions by 2050. This includes engaging with our suppliers to seek commitments aligned with achieving the objectives of the Paris Agreement and net zero by 2050.

In practice, because almost all of the Fund's activities are carried out by service providers (both within the Shell Group and outside the Shell Group), a net zero position will be achieved when the service providers to the Fund are themselves net zero operators. Many of the Fund's service providers already have net zero plans or aspirations although the details and timelines of these vary considerably.

<sup>1</sup>Currently Scope 1 and 2 and identified elements of Scope 3





# 10. Investment Approach

The assets of the Fund are managed on behalf of the Trustee by Shell Asset Management Co BV ('SAMCo') under the supervision of the Trustee and in line with the investment strategy set by the Trustee.

Because of the different characteristics of the classes of assets in which the Fund invests, it is best to consider the investment approach by asset class rather than as a whole.

The impact of climate-related risks and opportunities on the Trustee's investment strategy depends on the time horizon in question. In the long term, once the Fund is primarily invested in liability-matching bond investments, climate-related risks and opportunities are expected to have a lower impact on the Trustee's investment strategy. The Trustee will be more exposed to climate related impacts in the short to medium term as it continues to hold an allocation to return-seeking assets. The remainder of this section sets out the action the Trustee is taking in relation to these short-term and medium-term impacts.

## Listed Equities

At the end of 2022, the Fund's allocation to listed equities was in line with its strategic benchmark of 8%. However, the Fund's economic exposure to equities has been eliminated through the use of derivative overlays. These overlays were used to implement de-risking swiftly. As proceeds from the sale of illiquid investments are realised, the overlays will be unwound over the next two to three years and debt levels will also reduce.

The primary risk management tool for listed equities is global and sectoral diversification. The equity portfolio is therefore a globally and sectorally diversified portfolio with approximately 50% of the investment implemented on a passive basis.

As a first step to building climate considerations into the Fund's equity investment approach, in 2019 the Trustee mandated the development by SAMCo of custom ESG indices to be provided by MSCI as a basis for listed equity investing. These ESG indices introduced a higher weighting for companies with a strong governance score and adjusted the weighting to reduce the carbon intensity of the portfolio, resulting in an improved governance and climate-risk position for the portfolio. The passive parts of the portfolio track these indices and it forms the benchmark for relevant active parts of the portfolio.

One reason for selecting governance is that the Trustee believes that well-governed companies are more likely to respond well to the risks and opportunities presented by climate change and to participate in the progress towards a low-carbon economy. The custom ESG indices have a 25% lower carbon intensity compared to the standard parent index. The mandate included a requirement that there was no material reduction in the expected risk adjusted return as compared to the standard parent index. The use of these indices has gradually been extended across the listed-equity portfolio and from 2022 to the fixed-income portfolio. The coverage of the custom indices has grown from 0% of the equity portfolio in mid-2019 to 50% by the end of 2021 and 81% by end-2022.

The use of backward-looking metrics was driven by data limitations at the time, with the recognition that forward-looking metrics should be incorporated once sufficiently available. To that end, SAMCo is now calculating metrics which will allow it to observe how the companies in which the Fund invests have developed and implemented plans to achieve the Paris Agreement goals and develop resilience to climate change risks. Along with engagement insights, these metrics provide a basis for the assessment of the progress of SCPF's investee companies toward the goals of the Paris Climate Agreement and the overall positioning of the portfolio in relation to the transition to a lower-carbon economy.

## **Bonds (other than Gilts)**

As at the end of 2022, the Fund had a strategic allocation of 13% of the overall investment portfolio to investment grade bonds and a further 5% of the portfolio to high yield and emerging market debt (together 'non-investment grade credit'). The actual holdings were 10% and 6% respectively. Derivative overlays have been put in place to reduce the exposure to non-investment grade credit to 1%. As proceeds from the sale of illiquid investments are realised, the overlays will be unwound over the next two to three years. The SCPF's portfolio of bonds is broadly diversified with low exposure to any one issuer.

In early 2022, the high yield portfolio transitioned to custom ESG indices. As for listed equities, these ESG indices introduced a higher weighting for companies with a strong governance score and adjusted the weighting to reduce the carbon intensity of the portfolio, resulting in an improved governance and climate-risk position for the portfolio. A similar roll-out of custom ESG indices in the investment grade portfolio was not pursued because this exposure currently consists mainly of structured products, such as collateralised loan obligations, for which ESG data is still insufficiently available.

Through its engagement services partner, the Trustee engages with those companies in which the Fund holds debt with a view to encouraging management to adopt and deliver plans in support of the Paris Agreement. Much of the corporate debt in the portfolio is in any case issued by companies in which the SCPF holds equity. The metrics being calculated to support equity management will also be applicable to future engagements and investment choices in relation to fixed income assets.

## Property

The Trustee has a 4% allocation to Long Lease Property, in line with its strategic benchmark. This asset class is considered a liability hedging asset for strategic purposes. However, in contrast with UK Government bonds, the Trustee has discretion and influence over the assets held. These assets are therefore in scope for the Trustee's climate policy.

The Trustee also has a return-seeking property portfolio comprised of directly held UK properties and a globally diversified portfolio in property funds. At the end of 2022, the Funds' actual allocation was 10% compared to a strategic allocation of 3%. This overweight position is due to de-risking steps in 2022 reducing the strategic allocation to property, but given the illiquid nature of the assets they cannot be sold quickly without incurring losses in value. As a result, derivative overlays have been put in place to reduce the exposure to liquid return seeking assets (listed equity and non-investment grade bonds) until property investments have been reduced. The direct and indirect core property portfolio will be sold when appropriate pricing can be achieved, while the non-core property will be run down, taking advantage of opportunistic sales if pricing allows.

SAMCo has been subscribing to the Global Real Estate Sustainability Benchmark (GRESB) since 2011 and encourages all the underlying property managers to subscribe to get the most complete ESG and climate-related data for the Fund. Furthermore, in 2022 the Property team adopted the harmonised SAMCo external manager ESG assessment framework. According to this framework, managers' incorporation of ESG and climate-related matters is assessed across four dimensions (Policy, Governance, Investment and Risk Management Processes and Reporting). Application of the ESG assessment framework further improved consideration of ESG and climate-related matters in manager selections that took place during 2022.

The framework was also used to assess the existing manager base and led to improved understanding of the climate positioning of the portfolio, including action to ensure robust management of climate-related risks for assets in the run-down phase. This will result in more targeted engagements next year.

## Private Equity/Other Alternatives

At the end of 2022 the strategic weight of the Private Equity and Other Alternatives portfolios comprised 3% and 1% of total assets respectively, with the actual allocations being 10% and 2%. These overweight positions are due to strong investment returns and the illiquid nature of the assets meaning they cannot be sold quickly without incurring losses in value. The current Low Reliance portfolio has no allocation to these assets and so the Trustee has instructed SAMCo to run off these holdings, taking advantage of opportunistic pricing to accelerate sales when possible. Run-off is expected to be completed over the next five years or so.

Both asset classes hold broadly diversified portfolios. For both portfolios, ESG considerations, including climate-related risks, are a recurring topic in monitoring meetings with existing managers. By adopting the SAMCo external manager ESG assessment framework during 2022, the teams have strengthened their understanding of manager incorporation of such matters. This will result in more targeted engagements next year, including ensuring robust management of climate-related risks during the run-down phase. To increase visibility on this, SAMCo is strongly encouraging the managers to improve on ESG and carbon reporting. Some metrics on the carbon emissions and carbon footprint of SCPF assets in these asset classes are now available, though further development is still required.

## Hedge Funds

Approximately 7% of the Fund's assets are currently held in a diversified portfolio of hedge fund assets, compared to the current strategic benchmark of 5%, with the overweight due to strong returns. The hedge fund portfolio is designed to return a modest long-run margin in excess of that obtainable from cash; in other words it is a relatively low-risk component. The nature of the hedge funds invested in (the types of investments, the instruments used, the duration of holding) means it is not possible to carry out the type of engagement undertaken for equities. However, SAMCo is steering its hedge fund managers to fully integrate ESG considerations, including climate change risk, and uses ESG performance and attentiveness to climate change risk as one factor in the selection and monitoring of managers. SAMCo's external manager ESG assessment framework is applied here as well.

Climate data availability for hedge funds is still limited. This is an area which will be kept under review and the Trustee expects SAMCo to encourage managers to improve ESG data reporting, including on climate-related metrics.

## Index Linked Gilts & Nominal Gilts

The liability hedging portfolio is the Fund's largest holding and is largely comprised of UK gilts. The allocation to liability matching gilts has been significantly increased over 2022, partly funded from sales of other assets, as well as by increased use of repos.

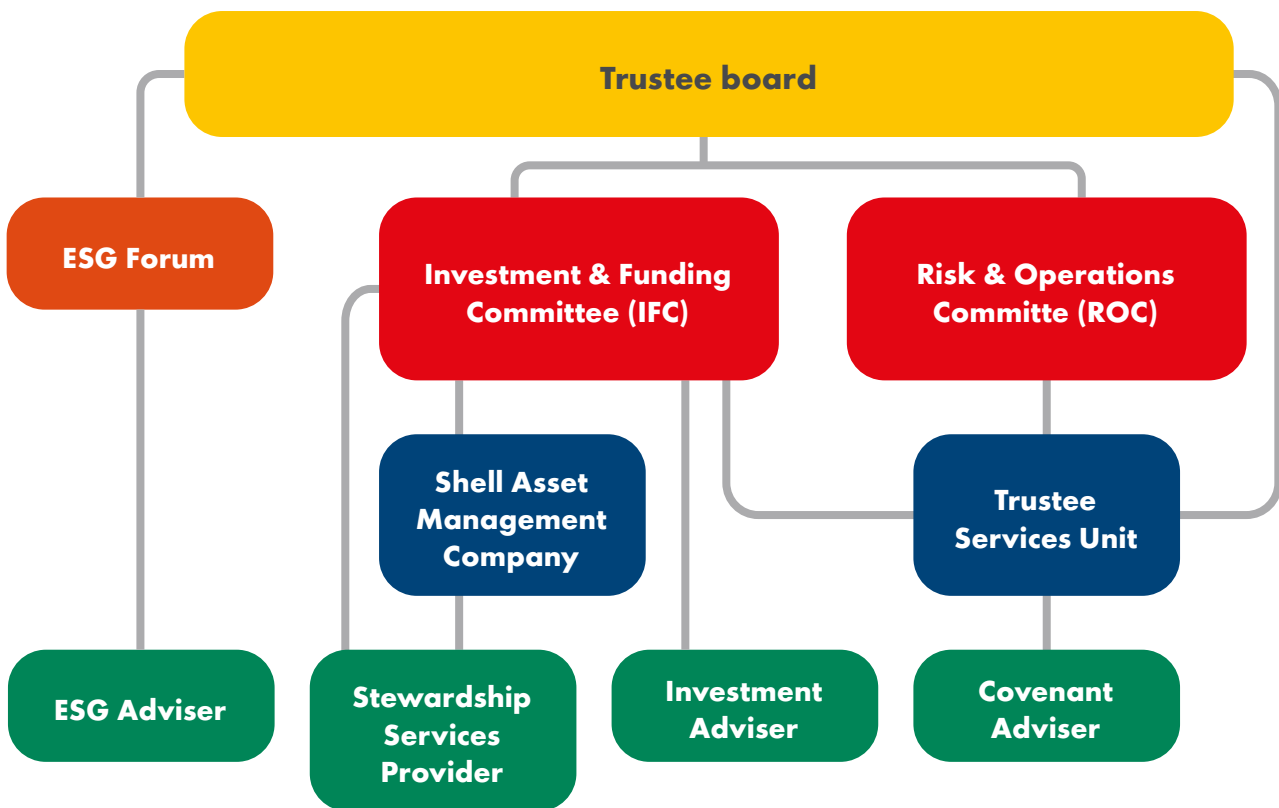
Given the nature of the portfolio and its role in matching liabilities of the Fund, there is no specific action being undertaken or targets being set in relation to climate change risk with respect to the Fund's gilt holdings. This is because the value of the liability hedging portfolio is expected to move in line with the value of the liabilities that it is matching, irrespective of the future climate change path the world actually follows.

Unlike other asset classes, the Trustee has limited choice in selecting issuers for the liability hedging portfolio as this will be dominated by exposure to the UK Government. Therefore, and in line with net zero investment frameworks, the Trustee does not include domestic sovereign bonds within the scope of its overall climate policy. In essence, the Trustee is depending on the UK Government to ensure Paris-Aligned support for this part of the portfolio.

## Opportunities

In considering the optimal asset portfolio for the Fund, the investment manager has been instructed by the Trustee to seek out investment opportunities arising from and supporting climate change mitigation efforts. The custom ESG indices and the attention to resilience should also favour such investments as long as the right level of reward is also available.

# 11. Governance



Note: The ESG Forum has recently been created and will meet for the first time in Q3 2023. The role of the Forum is described in the following pages.

The following sections describe in detail how the Trustee governs matters relating to climate change risk and where responsibility lies for climate-related matters for the Fund. As explained above, the Trustee operates an integrated risk management approach and takes account of a wide range of risks to the achievement of its core objective. The effects of climate change and societal response to them in most cases become incorporated in risks that the Trustee is managing in any case – such as investment performance risk or interest rate risk.

## a. The Trustee Board

Shell Pension Trust Limited, a wholly owned company within the Shell plc group, is the Trustee of the SCPF. The Trustee Board (the 'Board') comprises eight Trustee Directors, of whom four are member nominated Trustee Directors and four are company nominated Trustee Directors.

The Trustee is responsible for oversight of all strategic matters related to the Fund. This includes approval of the governance and management framework relating to environmental, social and governance (ESG) and responsible ownership considerations and the oversight of climate-related risks and opportunities. The Trustee Board is responsible for the implementation and oversight of the Fund's climate change risk management approach, which is integrated into the Trustee's overall risk register. The Trustee Board discusses climate-related risk, responses and reporting regularly. As far as opportunities are concerned, the Board sets investment strategy but delegates investment decision making to its investment manager. The targets relating to net zero, recently defined by the Trustee, will encourage focus in investment selection on opportunities related to the transition to a low-carbon economy as well as defensive positioning against climate-related risks.

The Board has two committees, each comprising four of the Trustee Directors, which are concerned with different aspects of risk management and to which responsibility has been delegated for certain matters as detailed below.

The Investment and Funding Committee oversees investment and funding matters for the Fund. The Risk and Operations Committee is responsible, among other matters, for oversight of the SCPF's risk framework and financial reporting. It is also responsible for making recommendations to the Board on the assessment of the Sponsor covenant, a critical input into the Investment and Funding Committee's deliberations on the strategic asset allocation for the Fund. Both committees meet once each quarter and hold additional ad-hoc meetings as required. At each committee meeting, the risk register is reviewed in order to identify, assess and manage all risks

faced by the Fund, including those related to climate change. The committees report back to the Trustee at each quarterly Board meeting, enabling the Trustee to consider whether the committees have taken adequate steps to identify, assess and manage climate-related risks and opportunities.

In addition, the Trustee has recently created an ESG Forum to strengthen its focus in this area. Three of the Trustee Directors sit on this forum which advises both committees as well as the Trustee Board. Further detail on this forum is described in **11 f** below.

Given the importance of financial risk from climate change and the Fund's integrated risk management approach for investment returns, covenant and liability measurement, the Trustee Board itself takes responsibility for the Fund's approach to climate-related risks and opportunities, rather than delegating to a committee or forum. This includes setting policy, establishing a management framework and monitoring progress.

The Trustee Board receives regular training on climate-related issues to ensure that it has the appropriate degree of knowledge and understanding on these issues to support good decision making. The Trustee has no employees but relevant members of the TSU also receive this training, provided by the Trustee's advisers. In 2022 trustee training has included TCFD reporting, an overview of net-zero frameworks, availability and reliability of climate data for asset holdings, and consideration of possible climate metrics. Training continues into 2023 as developments occur in the area.

Extensive material on climate change developments and reporting is also available in the press and from organisations such as The Pensions Regulator, The Department for Work and Pensions (DWP), the UK's Climate Change Committee, Carbon Tracker and UN PRI. The Trustee also expects SAMCo, LCP, Aon and other advisers to bring important and relevant climate-related issues and developments to the Trustee's attention in a timely manner and at such frequency as is appropriate.



Over 2022, significant time and resources were invested in the regulatory reporting on climate risk, including the associated data collection. This was necessary for the first Climate Change Report produced last year, but also to enable the Trustee to agree its net zero commitment.

Within the management guidelines established by the Trustee Board, day to day activities are delegated to the TSU or the Fund's investment manager, SAMCo. The Trustee Board monitors progress on a quarterly basis. From Q3 2023 onwards, the ESG Forum will monitor progress against climate-related objectives including alignment of and engagement with investee companies. A portfolio-wide climate data metric pack is produced by SAMCo and issued to the Board once a year. Climate-related risks and opportunities at an asset class level are raised by the investment manager and considered by the Investment and Funding Committee during each annual asset class review, with material findings reported to the Board.

The TSU manages the operation of the Fund on behalf of the Trustee and therefore supports the Trustee across a broad range of activities connected with the implementation of the Trustee's climate risk management framework across investments, covenant assessment and monitoring and liability measurement.

The next sections describe the responsibilities of the Trustee's committees, forums and service providers, who undertake, advise and assist the Trustee with Fund governance activities. They describe their roles in identifying, assessing and managing climate-related risks and opportunities relevant to their activities and the processes the Trustee has established to satisfy itself that these entities take adequate steps to identify, assess and manage those risks and opportunities.

## **b. The Investment and Funding Committee**

Under delegated authority from the Board, this committee oversees the work of the investment manager, SAMCo, and makes decisions on matters not reserved to the Board. ESG considerations are integrated into this and climate change risk is one of the most significant components in the ESG work. From Q3 2023, the ESG Forum will provide input to this committee on ESG matters.

Under its Terms of Reference, key activities delegated to the Investment and Funding Committee in relation to climate change matters include:

- Reviewing the effectiveness of the Statement of Investment Principles, making recommendations to the Board for any changes.
- Oversight of the performance of SAMCo, including the integration of financially material ESG considerations.
- Reviewing each asset class on an annual basis. ESG considerations, including identification of potential new climate-related risks, form part of each review.
- Seeking investment proposals from SAMCo and the investment adviser to enhance the ESG and climate change focus of the Fund's portfolio.
- Having taken advice from SAMCo and the investment adviser, identify and assess climate-related risks in relation to Fund investments.
- Commission climate scenario modelling for the Fund from its ESG adviser. The output of the most recent scenario modelling was presented at an ESG workshop in March 2023 and subsequently presented to the Board in June 2023.
- Approving updates to the Investment Schedules of the Investment Manager Agreement, which may include changes to investment benchmarks to reflect ESG considerations.

## c. The Risk and Operations Committee

The two main roles of this committee in connection with climate-related risks and opportunities are the maintenance of the Fund's risk framework and risk matrix, ensuring climate-related risk is integrated into the overall integrated risk management approach, and the monitoring and triennial assessment of the Sponsor covenant. The committee ensures that risk management processes are properly designed and operated. The committee considers the overall register, which includes climate-related risk, at each quarterly meeting.

The committee is also responsible for oversight of communications and ensuring that members are appropriately informed about the approach of the Trustee in this area.

## d. Role of the Trustee Services Unit (TSU)

The TSU supports the Trustee and committees with the implementation of the Trustee's climate risk management framework across investments, covenant assessment and monitoring, and liability measurement. Going forward, the TSU will be a member of the ESG Forum. The TSU seeks to ensure that decisions appropriately consider climate-related risks and opportunities and are appropriate within the context of the Fund's risk framework. Key activities may be summarised as follows:

- Ensuring the climate-related risks are incorporated in the assessment and monitoring of the Sponsor covenant.
- Working with SAMCo to seek investment opportunities which enhance the climate resilience of the Fund's portfolio.
- Ensuring investment proposals explicitly consider the impact of climate risks and opportunities.
- Engaging with SAMCo to understand how climate-related risks and opportunities are considered in its management of the Fund's assets.
- Engaging with the stewardship services provider to ensure that stewardship activities are being undertaken appropriately on the Trustee's behalf.

The work of the TSU is supervised by the Board and the committees.



## **e. Shell Asset Management Company B.V. (SAMCo)**

SAMCo's responsibilities in relation to climate change risk, which are reflected in its engagement terms, are summarised as follows:

- Management of the Fund's assets on behalf of the Trustee, either directly or indirectly through external fund managers, in line with the Trustee's policies on climate change risk and opportunities.
- Implementation of the investment portfolio in line with the Investment Management Agreement.
- Advising the Trustee Board, Investment and Funding Committee and ESG Forum (of which SAMCo is a member) on ESG policy (including climate-related risks) and implementation.
- Ensuring current and proposed investments consider the impact of climate risks and opportunities.
- Identifying investment opportunities which enhance the ESG and climate change focus of the Fund's portfolio, including through the implementation of custom ESG benchmarks in parts of the Fund's portfolio and the development of sustainability risk assessing.
- Engaging with the external investment managers to understand how climate risks are considered in their investment approach and, where appropriate, push for further development in this area, including reporting.
- Providing relevant climate-related metrics as needed for strategic decisions and climate reporting purposes, in addition to other ESG-related metrics.
- Providing training to the Trustee and committees on climate-related issues, climate-related developments and emerging regulatory trends in sustainable finance as well as risks and opportunities.
- Supporting corporate engagement activities undertaken by the stewardship services provider on behalf of the Trustee.

## **f. ESG Forum**

The ESG Forum has recently been created by the Trustee to strengthen its focus on ESG-related matters, including climate change. The Forum is comprised of three Trustee Directors (including the Chair of the Board), as well as representation from both SAMCo and the TSU. The ESG Forum will meet quarterly and will provide support to both the committees, as well as directly to the Board. Input to the ESG Forum will be provided by the ESG adviser, Stewardship services provider, investment adviser and other third parties as appropriate.

### **The ESG Forum's responsibilities in relation to climate risk include the following:**

- Oversee the monitoring and delivery of the Trustee's climate policy and provide recommendations to the Board on any future revisions to the climate policy.
- Oversee the engagement and voting undertaken on behalf of the Fund by the Stewardship service provider, SAMCo and external managers; provide direction and monitor engagement activities to ensure alignment with the Trustee's beliefs and areas of priority, taking action to address any concerns identified.
- Monitor the alignment and engagement of investee companies, with delegated authority to enforce the Trustee's exclusion policy as appropriate.
- Act as custodian of the Trustee's climate and ESG-related documentation, including the Responsible Ownership Policy, Implementation Statement, and this annual Climate Report, recommending to the Board for approval.

## **g. External Advisers**

### **Scheme Actuary**

The Scheme Actuary, employed by Aon Solutions UK Limited (Aon), assists the Trustee in assessing the potential impact of climate-related risk on the Fund's valuation and funding assumptions. Because of the terms of the Trust Deed, the Scheme Actuary also has to make an independent judgement about the adequacy of the funding of the SCPF's liabilities.

At its most recent triennial valuation, the Trustee incorporated the potential expected effects of climate change on liability measurement, based on the advice of its Actuary and to the extent these could be quantified. Some of these effects are incorporated in market derived measures such as interest rates and inflation rates. The most significant other measures are the longevity assumptions for the Fund's membership, affected by many factors not just the effects of climate change, and the expected return assumptions for the various classes of assets the Fund, now and in the future.

### **Investment adviser**

Aon is the Fund's investment adviser. Aon provides advice to the Trustee and the Investment and Funding Committee in respect of the investment aspects of climate-related risks and opportunities. This includes providing advice in relation to the impact of climate-related proposals made by SAMCo on the Fund's investment strategy. Aon may be invited to provide input into and attend the ESG Forum as appropriate.

### **ESG adviser**

LCP were appointed as the Fund's ESG adviser in 2022. This was a new role established by the Trustee to increase focus on ESG matters. LCP provides strategic and practical support to the Trustee, the Investment and Funding Committee and the ESG Forum in respect of the management of climate-related risks and opportunities and the reporting associated with ESG matters. This includes provision of training and updates on climate-related issues and climate change scenario modelling to enable the Trustee to assess the Fund's exposure to climate-related risks.

### **Stewardship services provider**

The Trustee employs EOS at Federated Hermes (EOS) in carrying out stewardship activities in line with the Fund's Responsible Ownership Policy. Climate change action was one of the four priority themes for engagement by EOS during 2022.

The Trustee, supported by the TSU and SAMCo, actively monitors and reviews the stewardship activities of its stewardship services provider, doing so through regular interaction and quarterly voting and engagement reports. From Q3 2023 onwards, the Trustee has delegated monitoring of stewardship to the ESG Forum. The Trustee and SAMCo provide feedback to EOS, for example through participation in the Client Advisory Council.

### **Legal adviser**

Hogan Lovells is the Trustee's external legal adviser and provides advice as necessary on legal risks and regulatory developments including those relating to climate change. The Legal Adviser also meets with the Board once a year in addition to less formal engagements throughout the year as necessary.

## **Covenant adviser**

Interpath (previously part of KPMG) provides support to the TSU and Trustee in relation to the framework for the assessment of the Sponsor covenant. The materials for the reporting to the Trustee are largely compiled by the TSU.

## **Adviser reviews**

The Trustee takes an active role in assessing and reviewing its advisers. Advisers are reviewed on an annual basis and the Trustee's assessment includes consideration of their competency in relation to climate-related advice. For both Aon and SAMCo, the investment consultancy objectives set by the Trustee include "the provision of quality advice in relation to the financial risk from climate change" as an objective; assessment against this objective forms part of the annual review. Feedback on service levels and performance in general is provided periodically both formally and informally. Competency in relation to climate-related advice is also a consideration for the appointment of new advisers.

To strengthen the support available to the Trustee, a new ESG provider was appointed in 2022.





# 12. Metrics, Targets and Results

## Introduction

Metrics can provide data to support the process of identifying and assessing climate-related risks and opportunities which in turn can usefully inform the Trustee's investment considerations.

In 2022, SAMCo continued its work to increase and improve climate-related data available to the SAMCo investment management teams and the Trustee Board. SAMCo purchases additional data from multiple parties so that the climate-related risks of the investment portfolio can be better understood and managed. Significant progress has been made compared to 2021, in particular with regard to the private equity portfolio.

However, data remains incomplete in some areas and in other areas is not sufficiently reliable and has to be estimated. Work to develop climate metrics reporting will continue in the future as the quality and availability of data continues to improve and expand.

A summary of the climate data collected by SAMCo as at 31 December 2022 was presented to the Board in June 2023. The metrics presented covered both backward-looking GHG emissions data for the assets owned by the Fund (such as total greenhouse emissions, carbon footprint (tCO<sub>2</sub>e per £1m invested) and carbon intensity (tCO<sub>2</sub>e per £1m revenue) and forward-looking metrics (such as information on Science Based Targets for GHG reduction, carbon risk rating, implied temperature scores and physical risk scores).

The summary also included comparison of the 2022 results against the equivalent 2021 figures.

The Trustee's chosen metrics for the purposes of this Climate Change Report are set out later in this section, with further information included in the appendix.

## Scope 1, 2 and 3 emissions

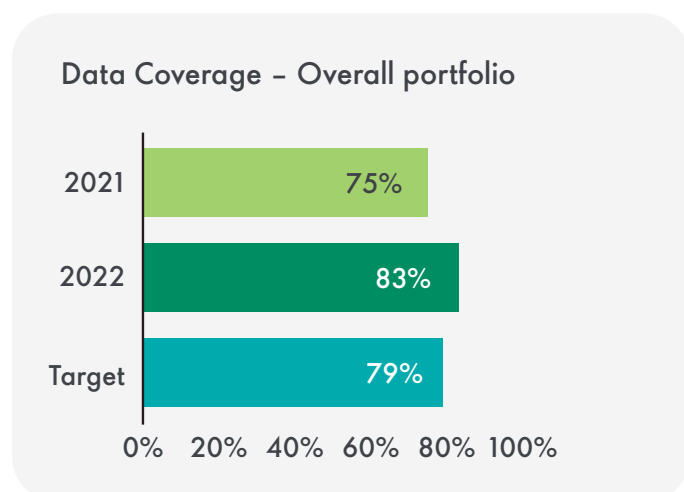
For companies, GHG emissions are classified as Scope 1, Scope 2 or Scope 3 depending on their origin. As required by the regulations, the Trustee is separately reporting its Scope 3 emissions for the first time this year. However, obtaining Scope 3 data for investments is very challenging as many underlying entities do not disclose these emissions and the data that is reported may be incomplete or unreliable. Consequently, most Scope 3 data is currently estimated. Also, data vendors that supply Scope 3 data for investee companies use different in-house estimation methodologies. Because of this, there are large differences in Scope 3 data depending on the source used; at the total portfolio level, this may mean that Scope 3 GHG emissions from one source are up to double those from another source, despite both being from reputable vendors.

SAMCo has opted for data sets which typically lead to estimated portfolio exposure at the higher end of the spectrum. This is in line with their general principle of erring on overstating rather than understating emissions.

Scope 1	Scope 2	Scope 3
These are direct emissions from sources that are owned or controlled by the company.	These are indirect emissions from the generation of energy purchased by the company.	These are all other indirect emissions that come from value-chain-related activities of the company, but occur from sources not owned or controlled by the company.

### Prior Target – Data coverage and quality

In the 2021 Climate Change Report, we set out the Trustee’s one-year target in relation to data coverage as follows: “Increase the data quality and coverage metric on the overall portfolio from 75% at 31 December 2021 to 79% or higher by 31 December 2022”.



Sources: SCPF, SAMCo

We are pleased to report that the actual data coverage at 31 December 2022 was 83%. The overall coverage level has been affected by changes in the Fund’s asset allocation; the increased holding of physical gilts (which have 100% data coverage) has improved the score, while this has been offset to some degree by the sale of listed return-seeking assets (which have high data coverage), with mostly structured products (which have low data availability) remaining in the Investment Grade Credit portfolio.

In general, the quality of the data has also improved. For listed equities for example, reported emissions coverage comprises 86% of data (82% last year), meaning emissions for fewer companies have had to be estimated than previously (14% in 2022 compared to 17% in 2021).

A key improvement since last year is the inclusion for the first time of private equity within the overall data quality metric, with 89% of the private equity portfolio covered (compared to nil coverage last year).

Going forwards, the Trustee has not set a specific target in relation to data. However, work will continue to develop and improve both the quality and coverage of the climate data collected by the Trustee. This will help the Trustee to monitor and adapt its climate strategy and enable better engagement with investee companies, with the aim of supporting the real-world transition to net zero.

Further detail on the data coverage and quality metrics and results is set out in the [appendix](#).

## New Targets – Carbon footprint, Alignment, Engagement

Taking into account the current availability of data and tools to assess and achieve net zero alignment across relevant asset classes, the Trustee has set targets for SAMCo in its capacity as investment manager for the SCPF's assets. These are set out in the table below.

The Trustee's ultimate objective is to reduce its carbon footprint (tCO<sub>2e</sub> per £1m invested) to net zero by 2050 or earlier. Therefore, the primary target for reporting purposes will be the target in relation to carbon footprint (Target 1). Targets 2

and 3 are intended to drive real-world alignment towards the Paris goals, which in turn is expected to help the Trustee in meeting Target 1.

In line with typical market practice<sup>1</sup>, the Trustee has excluded UK government bonds from the targets below. This is because they are held to protect the funding ratio from changes in interest and inflation rates, and climate change is not a relevant factor in this allocation decision (since no other asset class would meet this purpose).

The targets will be regularly reviewed and may be updated in light of progress and as data and methodologies improve.

Target <sup>2</sup>	Detail
1. Carbon footprint reduction	<p><b>Carbon footprint reduction (tCO<sub>2e</sub> per £1m invested, for Scope 1 and 2 emissions) from a 2020 baseline for all assets excluding liability matching UK Government bonds:</b></p> <ul style="list-style-type: none"> <li>• 30% reduction by 2025</li> <li>• 50% reduction by 2030</li> <li>• 100% reduction by 2050 or earlier</li> </ul>
2. Alignment	<p><b>Alignment<sup>3</sup> of assets (based on market value):</b></p> <ul style="list-style-type: none"> <li>• At least 20% of issuers to be aligning by 2025</li> <li>• At least 40% of issuers to be aligning by 2030</li> <li>• 100% of issuers in high climate impact sectors<sup>4</sup> to be aligned by 2040</li> </ul>
3. Engagement	<p><b>Financed emissions within high climate impact sectors which are within carbon budget<sup>5</sup>, are aligning or subject to engagement:</b></p> <ul style="list-style-type: none"> <li>• At least 70% by 2025</li> <li>• At least 90% by 2030</li> <li>• 100% by 2040</li> </ul>

<sup>1</sup> Net Zero Investment Framework: Implementation Guide (2021), p. 14.

<sup>2</sup> All physical holdings of relevant instruments are in scope, except for UK Government bonds held for liability matching purposes (i.e. UK gilts). Relevant instruments are those instruments for which sufficient data is available (as such the pool of 'relevant instruments' should grow as data availability improves across instrument types). Cash and derivatives are not considered relevant instruments, although work is underway to enable the inclusion of derivatives related to individual issuers.

<sup>3</sup> Defined initially for corporate assets as having an emissions reduction target validated by the Science-Based Targets initiative (SBTi). This will be extended to other asset classes and developed into a more comprehensive measure of alignment as data improves.

<sup>4</sup> High climate impact sectors are defined in accordance with the EU Sustainable Finance Disclosure Regulations (SFDR).

<sup>5</sup> Defined initially as within the International Energy Agency's (IEA's) Sustainable Development Scenario (SDS).



## Important note on the 2020 baseline for Target 1

The Fund's present climate reporting framework was developed in 2021 so the availability of consistent and fully comparable data sets for earlier years is limited. However, considerable improvement in the carbon footprint (tCO<sub>2</sub>e per £m invested) of the portfolio was achieved since 2020, with the observed improvement between 2021-2022 (during which a consistent reporting framework was available) being over 30%. Therefore, based on actions to limit the carbon exposure taken by the SCPF since 2020 (for example, the roll-out of custom ESG benchmarks), the Trustee understands there has been at least a 10% reduction in the carbon footprint for the total period 2020-2022. This improvement is considerably less than the observed improvement of 30+% in the interim period between 2021-2022 because the Trustee wants to limit reliance on improvements triggered by de-risking. It should be noted that distinguishing between de-risking and other impacts in general is more art than science. Going forward, the Trustee's focus will be on achieving an additional 20% reduction between 2023-2025, and an additional 40% reduction between 2023-2030.

## Target 1 – Carbon Footprint (tCO<sub>2</sub>e per £1m invested)

Overall portfolio for assets in scope <sup>1</sup>	Scope 1 and 2 emissions tCO <sub>2</sub> e per £m invested <sup>2</sup>	Percentage of Fund assets in scope
2021	96	37%
2022	59	34%
2025 target	47	n/a

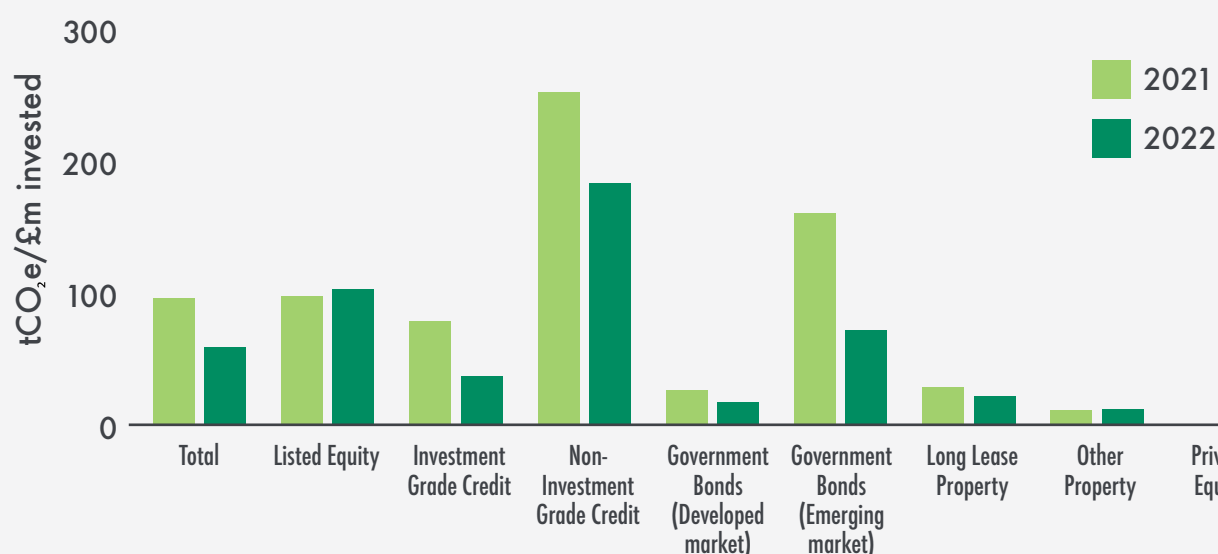
At an overall portfolio level, the carbon footprint (tCO<sub>2</sub>e per £1m invested) decreased by 38% over the year. A significant part of this fall was due to de-risking of the assets. In particular, the reduced allocation to listed equities and investment grade credit – both of which have a relatively high carbon footprint – led to a reduction in the average carbon footprint. This was offset to some extent by the inclusion for the first time of emissions from private equity in the 2022 total.

It should be noted that while the percentage of total Fund assets covered by the carbon footprint metric appears relatively low (34% in 2022), this is because the fund has a significant holding in UK government bonds which are excluded from the metric, as discussed above.

<sup>1</sup> UK Government bonds are excluded, as are hedge funds and other alternatives. Private equity is included for 2022 but not for 2021 (when insufficient data was available). The total carbon footprint figures shown represent an average of the carbon footprint figures for individual assets classes, weighted by the market value of assets for which data coverage was available.

<sup>2</sup> For property, scope 1, 2 and 3 emissions have been used in this metric. See the Appendix for further details.

### Carbon footprint scopes 1 & 2, by asset class



#### Weighting of each asset class in deriving the overall carbon footprint metric

	Total	Listed Equity	Investment Grade Credit	Non-Investment Grade Credit	Government Bonds (Developed market)	Government Bonds (Emerging market)	Long Lease Property	Other Property	Private Equity
2021	46%	13%	10%	n/a	8%	9%	14%	0%	
2022	23%	4%	10%	n/a	4%	12%	21%	26%	

Sources: SAMCo, ISS, MSCI, Factset, Burgiss, GRESB

The chart above sets out the carbon footprint by asset class, as well as the weighting of each asset class in deriving the overall carbon footprint metric.

Listed equity has seen a small increase in the carbon footprint. This is in line with market benchmarks and is largely a result of companies in carbon-intensive sectors such as energy having performed strongly over 2022 relative to the wider market, partly due to the impact of the war in Ukraine on energy markets.

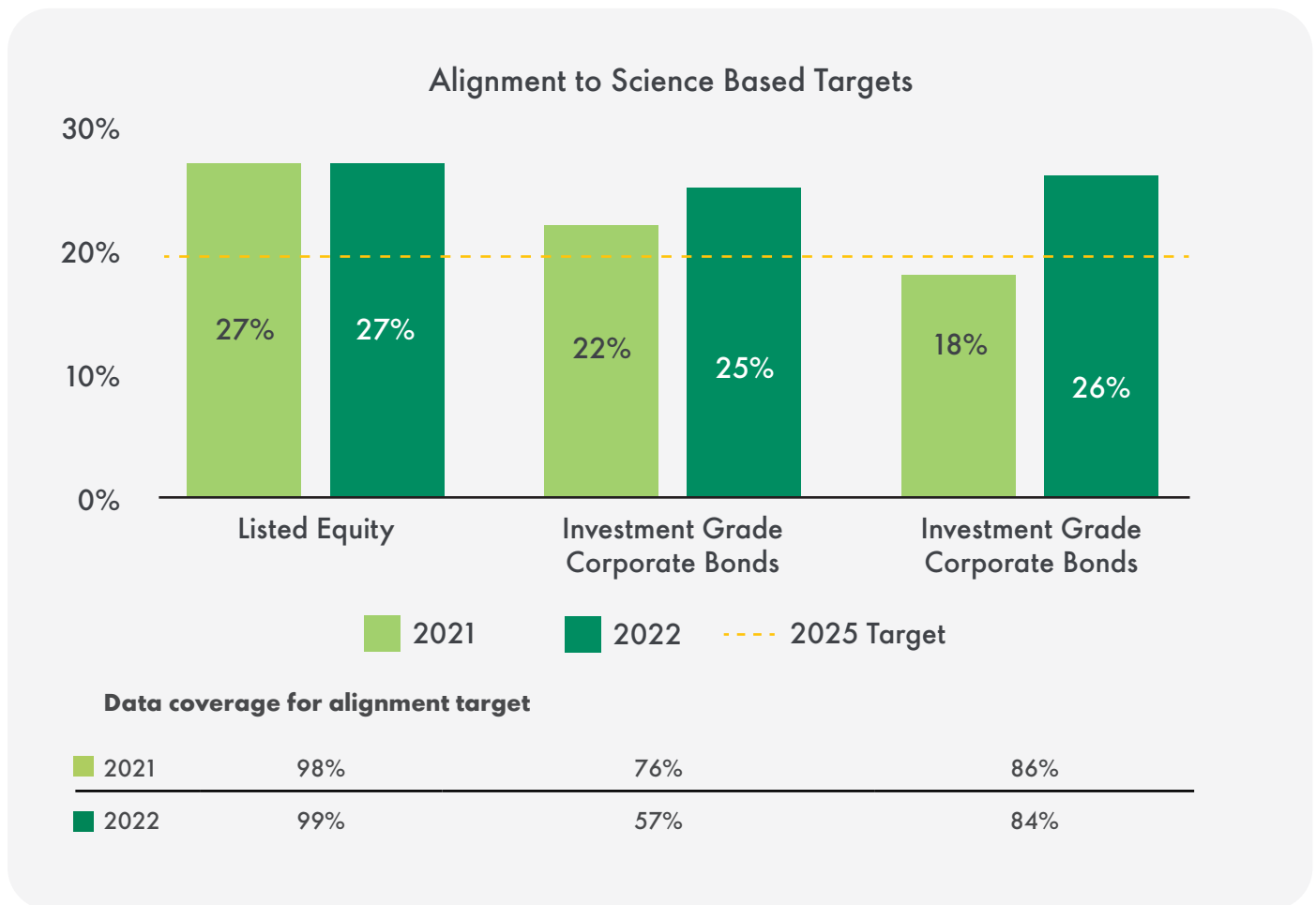
Non-investment-grade credit has a high carbon footprint as manufacturing, energy and utility companies make up a relatively large proportion of the overall non-investment grade credit universe. However, there has been a material reduction in the Fund's carbon footprint for this asset class over the year, in part due to the roll-out of the custom ESG benchmark described in Section 10.

Government Bonds (Emerging Market) also have a high carbon footprint as issuers tend to be manufacturing-oriented countries. The data collected implies that the carbon footprint has more than halved over 2022. However, some of the reduction may be due to a lag in countries' emissions reporting, with COVID-related emissions reductions only becoming visible in the 2022 data.

As noted earlier, private equity is included in the overall metric for 2022 whereas it was not available for 2021. Relative to listed equity, the carbon footprint (tCO<sub>2</sub>e per £m invested) for private equity is lower as technology and healthcare sector companies – both being sectors with relatively lower GHG emissions – are more heavily represented.

It should be noted that disclosed emissions may increase as more data becomes available and is not necessarily caused by a real-world increase in emissions.

## Target 2 – Alignment



Sources: SAMCo, ISS

For the Fund’s corporate (listed) assets, the current exposure to issuers with SBTi-validated reduction targets is 27% for equity, 22% for investment-grade corporate bonds, and 18% for non-investment-grade corporate bonds. For the Fund’s non-corporate (non-listed) assets, alignment information is not yet available. Work is ongoing by SAMCo to extend the definition of alignment to, and obtain alignment information for, these other asset classes.

At the current time, alignment is above the Trustee’s target for equity and close to the target for credit. However, the Trustee has set its target cautiously because it expects the standard required for companies to be considered aligned will increase over time and hence the target will become more difficult to meet. It is conscious that the SBTi will require companies to review, and if necessary revalidate, their targets every five years (starting in 2025) and its requirements have become stricter through time. Moreover, companies can reset ambition levels. Hence, work is required to continue improvements in the alignment of investee companies. At the same time, the alignment targets may be strengthened if the Trustee feels faster progress is feasible based on observed real-world progress.

Data relating to alignment is a fast-evolving area and the Trustee will continue to monitor developments with a view to updating its alignment metric definition if and when appropriate. This includes looking for supporting and/or additional metrics to assess the quality of issuers’ emissions reduction plans and their implementation, rather than basing the alignment assessment on issuers’ emissions reduction targets alone. Further commentary on data coverage is set out in the [appendix](#).

### Target 3 – Engagement

To meet the engagement criteria, an entity from a high climate impact sector must either be within the IEA's SDS carbon budget, have set an emissions reduction target validated by the Science-Based Targets initiative (SBTi), or be subject to engagement by the Trustee.

Preliminary assessment suggests that approximately **72%** of the financed GHG emissions in the Fund's listed equity and corporate bond portfolio associated with high climate impact sectors meet the criteria. This data is indicative only; more formal calculation and monitoring of engagement data will be part of the implementation of the climate policy described in this TCFD report.

At the current date, the indicative data suggests that the Fund is meeting the 2025 target of 70%. However, as carbon budgets decrease and requirements for SBTi targets become stricter over time, work will be required to continue meeting targets going forward. Furthermore, as data methodologies improve and as coverage for other asset classes becomes available, this may make the target more challenging as well. SAMCo are continuing to pursue improvements in data in this area.



# Appendix

Metric	Description and overview of methodology
Total GHG emissions	<p>This measures the portfolio's absolute emissions attributable to investments made by the Fund. This is shown in tonnes (t) of carbon dioxide (CO<sub>2</sub>) equivalent (e). The rationale for adopting the methodologies below is that they are in line with the DWP's statutory guidance, or in the case of emissions related to government bonds, a methodology more comparable to other asset classes.</p> <p>For equities and corporate bonds this is the Fund's share of the emissions of underlying entities, with the emissions being split between the equity and debt investors in the company on a proportional basis relative to the overall enterprise value including cash. For government bonds this is a government's total (production-based) emissions consisting of the operational emissions of the government and emissions attributable to investments made by that government. The emissions are calculated on the basis of the market value of the government bond position divided by the total government debt outstanding and multiplied by the government emissions.</p> <p>For property this is the Scope 1, Scope 2 and Scope 3 emissions for the underlying property assets, as reported by the asset manager, on a proportional basis relative to the Fund's share of the ownership in the property. Scope 3 emissions in the GRESB Assessment are calculated as the emissions associated with tenant areas, unless they are already reported as Scope 1 or Scope 2 emissions (if they cannot be disassociated from emissions from other areas owned or controlled by the organisation). Whether the emissions associated with tenant areas are classified as Scope 3 or under Scope 1 or 2 may also depend on the organizational boundaries chosen by the real estate manager and the type of lease that is in place in relation to a specific asset. Scope 3 emissions reported through GRESB do not include emissions generated through the entity's (real estate manager's) operations or by its employees, transmission losses or upstream supply chain emissions. In view of the above, for its reporting purposes the Fund considers combined Scope 1, 2 and 3 GHG emissions.</p> <p>For private equity, this is Scope 1 and 2 emissions only. For private companies without directly reported data, the GHG emissions are estimated using the relevant sub-industry's average carbon intensity, then using company revenues and valuation to compute carbon footprint and total GHG emissions. As for listed equities and corporate bonds, the emissions are then attributed to the Fund based on the size of the holding relative to the enterprise value including cash of the company.</p>
Carbon footprint	<p>This is the greenhouse emissions of the assets of the Fund per £ 1 million invested. It is the aggregation of the total greenhouse emissions divided by the value of the relevant part of the portfolio (in £ millions).</p>
Alignment	<p>This is defined initially for corporate assets as having an emissions reduction target validated by the Science-Based Targets initiative (SBTi). This will be extended to other asset classes and developed into a more comprehensive measure of alignment as data improves.</p>

Metric	Description and overview of methodology
Engagement	This metric relates to corporate assets in high climate impact sectors, as defined in accordance with the EU Sustainable Finance Disclosure Regulations (SFDR). The targets set by the Trustee relate to the percentage of financed GHG emissions associated with entities from high climate impact sectors where the entity is within the IEA's SDS carbon budget, has set an emissions reduction target validated by the Science-Based Targets initiative (SBTi), or if not, is subject to engagement by the Trustee through its stewardship services provider.
Data coverage and quality	This measure presents the proportions of the various portfolios for which the Trustee has good quality GHG emission data. The table below provides a description of the quality and coverages for the various asset classes.

Note: There is overlap on emissions data between different companies and between companies and governments on some measures. As a result, aggregate total GHG emissions reported across all investments may include some double counting in relation to the actual level of GHG emissions, especially now Scope 3 is included. For example, fossil fuels sold by a producer to a utility to generate electricity would be Scope 3 for the producer, Scope 2 for the electricity consumer and Scope 1 for the utility. In addition, if the basis for attributing emissions to government bonds was total country emissions, they would also be included in the government bond emissions for the relevant country.

## Data coverage and quality metric

Asset class	Description
Equity and corporate bonds	<p>Reported emissions are those disclosed by the company itself and sourced through a third-party data vendor.</p> <p>Estimated emissions are provided by a third-party data vendor where reported emissions are not available or are deemed insufficiently reliable. These may be based on industry averages or other information sources.</p> <p>No coverage is when there is no reported or estimated data for the asset.</p>
Government bonds	<p>Carbon emissions allocated to government bonds are those (production-based) emissions that are financed by the relevant government, rather than total country emissions.</p> <p>The primary model calculates emissions based on a government's direct operations as well as from government financing in other sectors of society.</p> <p>Where data for the primary model is lacking, the secondary model calculates government emissions based on World Bank data on general government final consumption expenditure as part of a country's GDP.</p>

Asset class	Description
Property	<p>Coverage refers to the proportion of underlying funds reporting GHG emissions to the Fund. Additionally, for the underlying asset managers who report GHG emissions, the weighted average of the percentage of floor area (space) covered throughout the investment period is reported to indicate the completeness of the reporting. This additional detail is provided because not all tenants report GHG emissions to the underlying asset manager (as the landlord). The emissions will cover landlord-controlled areas of buildings and tenant-controlled areas only for those tenants who report.</p>
Private equity	<p>Coverage refers to the proportion of underlying funds for which GHG emissions data has been either reported by the manager or where it could be estimated by a third-party data provider.</p> <p>The split between reported and estimated data is not presently available but we will work with our data provider to facilitate its availability in the platform in the future. From the information currently available, we understand that the majority of the data is estimated.</p>

## Greenhouse Gas Emissions and Carbon Footprint

2022	Asset Allocation		Total GHG emissions tCO <sub>2</sub> e		Carbon Footprint tCO <sub>2</sub> e per £1m invested	
			Scope 1 and 2	Scope 1,2 and 3	Scope 1 and 2	Scope 1,2 and 3
Listed Equity	8%	8%	103,000	991,000	103	983
Investment Grade Credit	13%	3%	7,000	59,000	37	326
Other Investment Grade Credit		9%	n/a	n/a	n/a	n/a
Non-investment Grade Credit	3%	4%	76,000	1,132,000	183	2,712
Government Bonds (developed market)	81%	80%	n/a	179,000	n/a	17
Government Bonds (emerging market)	2%	2%	n/a	13,000	n/a	72
Long lease property	4%	4%	n/a	12,000	n/a	22
Other property	3%	10%	n/a	11,000	n/a	11
Private Equity	3%	9%	35,000	n/a	31	n/a
Hedge funds	5%	6%	n/a	n/a	n/a	n/a
Other alternatives	1%	2%	n/a	n/a	n/a	n/a
Cash (incl. repos)	-23%	-38%	n/a	n/a	n/a	n/a
<b>Total</b>	<b>100%</b>	<b>100%</b>				



2021	Asset Allocation		Total GHG emissions tCO <sub>2</sub> e		Carbon Footprint tCO <sub>2</sub> e per £1m invested	
	Strategic	Actual	Scope 1 and 2	Scope 1,2 and 3	Scope 1 and 2	Scope 1,2 and 3
Listed Equity	19%	17%	298,000	2,592,000	98	849
Investment Grade Corporate Bonds	17%	7%	66,000	541,000	78	646
Other Investment Grade Credit		7%	n/a	n/a	n/a	n/a
Non-investment grade corporate bonds	4%	4%	158,000	1,671,000	252	2,664
Government bonds (developed market)	48%	56%	n/a	181,000	n/a	26
Government bonds (emerging market)	4%	3%	n/a	83,000	n/a	160
Long lease property	4%	4%	n/a	17,000	n/a	28
Other property	6%	8%	n/a	11,000	n/a	11
Private Equity	5%	7%	n/a	n/a	n/a	n/a
Hedge funds	5%	5%	n/a	n/a	n/a	n/a
Other alternatives	2%	2%	n/a	n/a	n/a	n/a
Cash (incl. repos)	-14%	-20%	n/a	n/a	n/a	n/a
<b>Total</b>	<b>100%</b>	<b>100%</b>				

Sources: SAMCo, ISS, MSCI, Factset, Burgiss, GRESB

## Notes

- The total GHG emissions shown in the tables above (and, as a result, the carbon footprint shown) only relate to the assets held in the relevant portfolio where the emissions were reported or can be estimated, the proportion of which is shown in the data coverage tables below.
- The actual asset allocations shown on page 12 reflect the value of the holding within each asset class mandate. However, for GHG emissions purposes, on pages 48 and 49 we have shown the actual allocation of the underlying assets across all mandates. This can lead to some differences; for example, an allocation to investment grade credit is currently held within the liability matching mandate.
- The calculation of GHG emissions differs between asset classes, so the results cannot be compared across asset classes. In particular, the methodology for equities and corporate bonds differs from that for government bonds, which differs again for property.
- Non-investment grade corporate bonds are a combination of high-yield debt and quasi-sovereign emerging market bonds. The emission related to quasi-sovereign emerging market bonds instruments are much higher than other corporate high yield debt, which partly explains the high carbon footprint of this asset class. This is because state ownership is often present in strategically important sectors such as energy and mining, which tend to have relatively high emissions.
- Sovereign GHG emissions cannot be classified into Scope 1, 2 and 3 GHG emissions in the same way as corporate emissions. As the estimation methodology includes GHG emissions associated with investments made by the government the Trustee has chosen to represent the emissions under 'Scope 1, 2 and 3', whilst also counting them toward its carbon footprint target (Scope 1 and 2) for the relevant part of its portfolio.
- The emissions data for long-lease property and other property is the aggregate of Scope 1, 2 and 3. This is because the underlying asset managers report the emissions data in different ways depending on organisational boundaries and the type of leasing arrangement. Therefore, the combined Scope 1, 2 and 3 emissions provide a more accurate view than only showing Scope 1 and 2 emissions. It should also be noted that emissions data related to property will be very different for a core property portfolio which is being rented out compared to other portfolios where there is ongoing development or improvements to the property.
- The Fund's strategic asset allocation only specifies a net allocation to liability driven investments. The split shown in these tables between UK Government bonds and cash (repos) is a function of the target hedge ratio and the funding level at that date.

## Data Coverage

As well as seeing the data coverage metric for the overall portfolio increase, improvements in coverage have generally been made at the individual asset classes too, as set out in the following table.

Asset Class	Physical Allocation 2021	Physical Allocation 2022	Data coverage 2021	Data coverage 2022
Listed Equity	17%	6%	98%	99%
Investment Grade Credit	6%	2%	71%	49%
Other Investment Grade Credit	7%	6%	n/a	n/a
Non-investment Grade Credit	4%	3%	84%	81%
Government Bonds (Developed Market)	38%	58%	100%	100%
Government Bonds (Emerging Market)	4%	1%	96%	97%
Long Lease Property	4%	3%	88%	100%
Other Property	7%	7%	74%	77%
Private Equity	7%	7%	n/a	89%
Hedge Funds	5%	5%	n/a	n/a
Other Alternatives	2%	2%	n/a	n/a
<b>Total<sup>1</sup></b>	<b>100%</b>	<b>100%</b>	<b>75%</b>	<b>83%</b>

The most significant improvement was in relation to the coverage of private equity. This is now available for 89% of the private equity portfolio, compared to nil coverage last year.

The observed reduction in investment-grade credit is due to a significant part of the portfolio with good data coverage having been sold as part of the de-risking exercise. Consequently, the average data coverage for this asset class has reduced, even though there has been no deterioration in the coverage of the actual credit investments still held.

<sup>1</sup> The total figure is a weighted average of physical asset holdings, excluding cash and repos, by data coverage.

For this year’s Climate Change Report, emissions data remains unavailable for Other Investment Grade Credit (which includes collateralised loan obligations, mortgage-backed securities, commercial real estate loans and a sub-set of credit

default swaps), Hedge Funds and Other Alternatives. Such assets will be included in the reported figures as soon as data and methodologies become sufficiently available. However, some asset classes such as hedge funds will remain difficult to assess in future due to their nature.

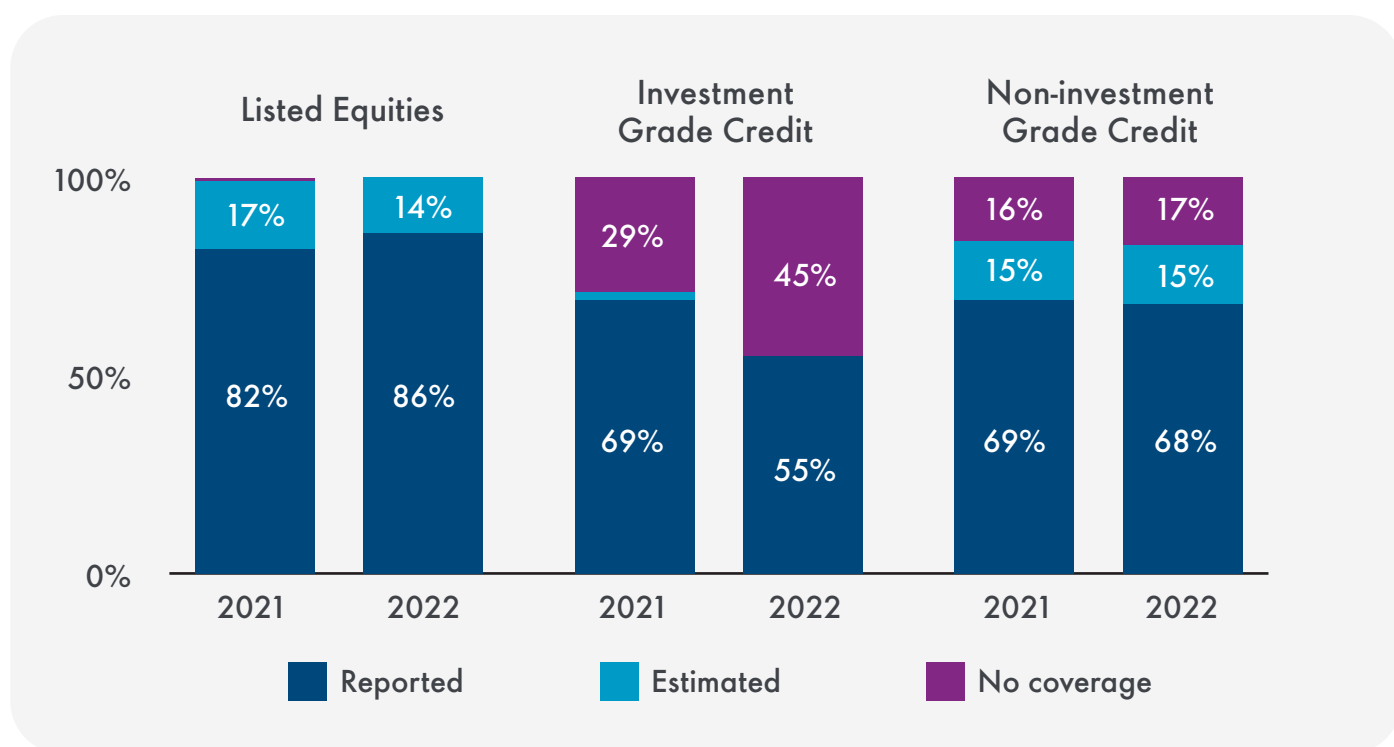
**Explicit steps taken in 2022 to improve data coverage included:**

- Onboarding of the carbon metrics data set for the private equity portfolio.
- Incorporating reporting on climate-related metrics and assessment of climate-related risks into the pre-investment due diligence process relating to prospective externally managed funds and the engagement of existing managers.
- Outreach by SAMCo to CLO (collateralised loan obligation) managers to establish a baseline for their reporting possibilities, if any.

**Data Quality**

In addition to improvements in coverage, the quality of the data obtained by the Fund has also improved over the year.

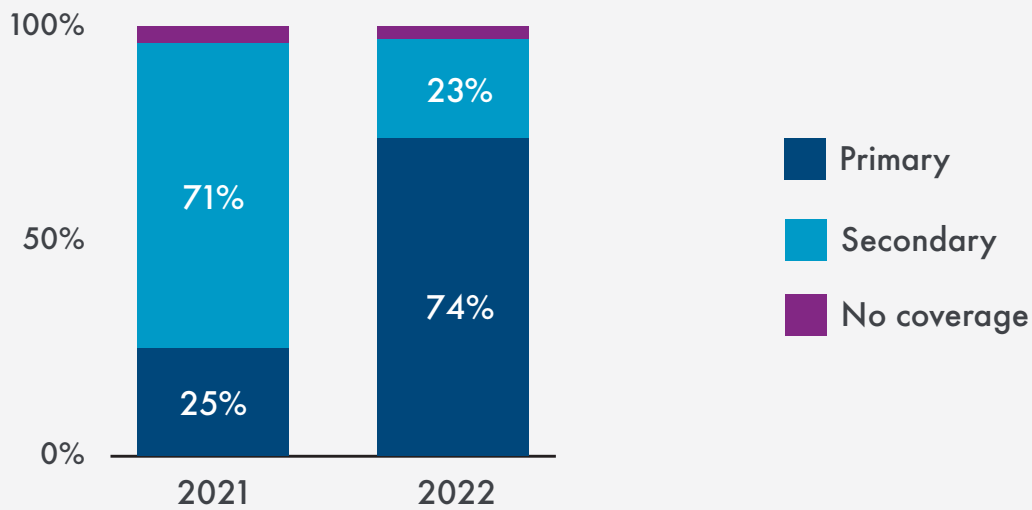
The proportion of reported emissions for listed equities has increased from 82% to 86%, while the proportion with no coverage has fallen from 2% to 1%. For investment grade credit, the reported coverage has fallen from 69% to 55%. However, this is due to changes in the composition of the portfolio as assets with high levels of reported coverage have been sold as part of the de-risking steps; there has been no reduction in reported coverage for assets retained over 2022.



Sources: SAMCo, ISS

As last year, 100% of data for Government Bonds (Developed Market) uses the primary model for emissions reporting. For Government Bonds (Emerging Market), primary model coverage has increased materially from 25% to 74%, with reliance on the “secondary model” reducing accordingly.

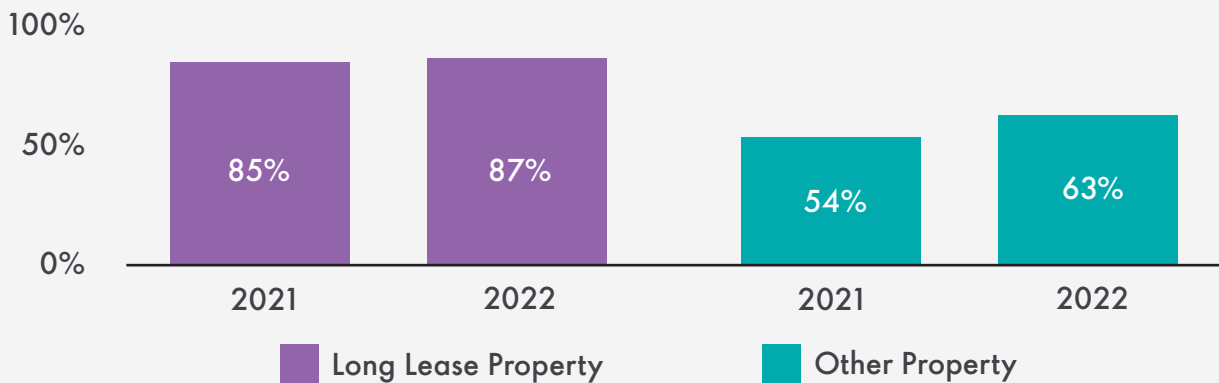
### Government Bonds (Emerging Market)



Sources: SAMCo, ISS

For both Long Lease Property and Other Property, the metric considers coverage through two dimensions: the percentage of the floor area covered through the reporting (space); and the holding time for the relevant asset during the reporting period (time). This is referred to as “coverage across space and time”. Where managers reported data, the “coverage across space and time” had increased for both asset classes compared to 2021.

### Percentage of GHG Emissions Collected (Reporting Funds Only)



Sources: SAMCo, GRESB

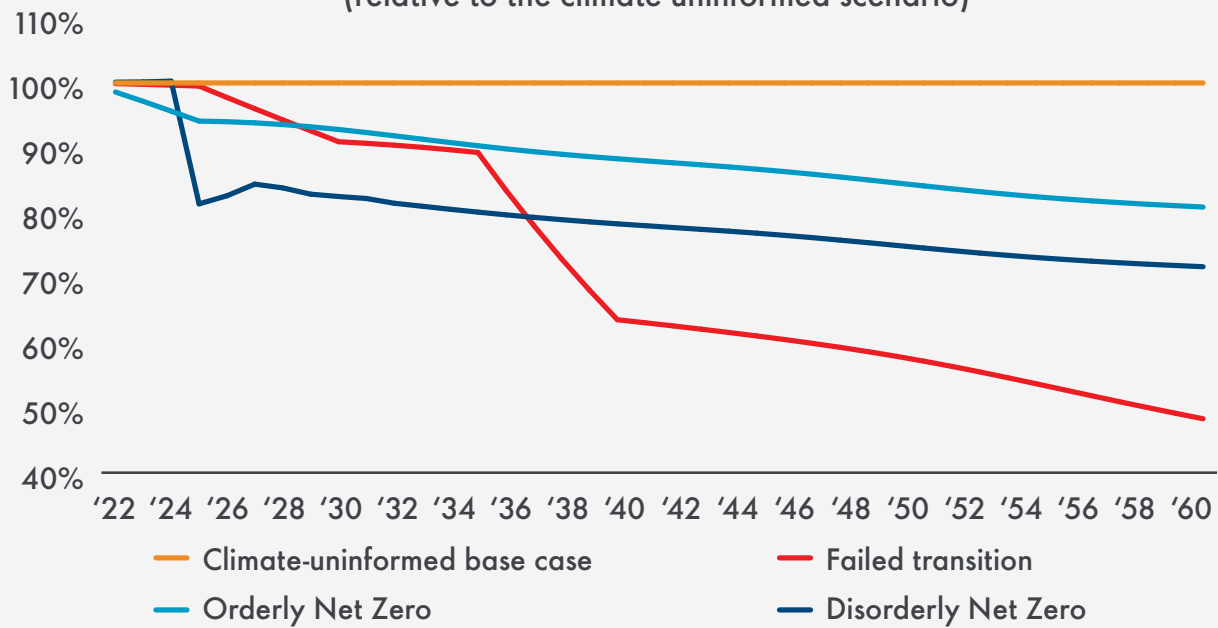
## Scenario modelling

Scenarios as at 31 December 2022 – Key features

Scenarios:	Failed Transition	Orderly Net Zero by 2050	Disorderly Net Zero by 2050
Low carbon policies	Continuation of current low carbon policies and technology trends	Ambitious low carbon policies, high investment in low-carbon technologies and substitution away from fossil fuels to cleaner energy sources and biofuel	
Paris Agreement outcome	Paris Agreement goals not met	Paris Agreement goals met	
Global warming	Average global warming is about 2°C by 2050 and over 4°C by 2100, compared to pre-industrial levels	Average global warming stabilises at around 1.5°C above pre-industrial levels	
Physical impacts	Severe physical impacts	Moderate physical impacts	
Impact on GDP	Global GDP is significantly lower than the climate-uninformed scenario in 2100.  For example, UK GDP in 2100 predicted to be 50% lower than in the climate uninformed scenario (albeit that UK GDP is still projected to double by 2100 in this case).	Global GDP is lower than the climate-uninformed scenario in 2100.  For example, UK GDP in 2100 predicted to be about 5% lower than in the climate-uninformed scenario.	In the long term, global GDP is slightly worse than in the Paris Orderly scenario due to the impacts of financial markets volatility.
Financial market impacts	Physical risks priced in over the period 2026-2030. A second repricing occurs in the period 2036-2040 as investors factor in the severe physical risks	Transition and physical risks priced in smoothly over the period of 2022-2025	Abrupt repricing of assets causes financial market volatility in 2025

These scenarios show that equity markets could be significantly impacted by climate change, as shown in the chart below, with lesser but still noticeable impacts in bond markets. All three scenarios envisage, on average, lower investment returns and a worsening of the funding position.

Cumulative impact on global equity returns  
(relative to the climate-uninformed scenario)



## Modelling methodology and limitations

- The scenario analysis is based on the ClimateMAPS model developed by Ortec Finance and Cambridge Econometrics, and was then applied to the SCPF’s assets and liabilities by LCP. The three climate scenarios were projected year by year, over the next 30 years.
- ClimateMAPS uses a top-down approach that consistently models climate impacts on both assets and liabilities, enabling the resilience of the funding strategy to be considered. The model output is supported by in-depth narratives that bring the scenarios to life to help the Trustee’s understanding of climate-related risks and opportunities.
- ClimateMAPS uses Cambridge Econometrics’ macroeconomic model which integrates a range of social and environmental processes, including carbon emissions and the energy transition. It is one of the most comprehensive models of the global economy and is widely used for policy assessment, forecasting and research purposes. The outputs from this macroeconomic modelling – primarily the impacts on country/regional GDP – are then translated into impacts on financial markets by Ortec Finance using assumed relationships between the macroeconomic and financial parameters.
- Ortec Finance runs the projections many times using stochastic modelling to illustrate the wide range of climate impacts that may be possible, under each scenario’s climate pathway. LCP takes the median (ie the middle outcome) of this range of impacts, for each relevant financial parameter, and adjusts it to improve its alignment with LCP’s standard financial assumptions.
- LCP then uses these adjusted median impacts to project the assets and liabilities of the SCPF to illustrate how the different scenarios could affect its funding level. The modelling summarised in this report used scenarios based on the latest scientific and macro-economic data at 30 June 2022, calibrated to market conditions at 31 December 2022.
- The modelling included contributions assumed to be paid in line with the current Schedule of Contributions, and the Trustee discussed how future planned changes to the investment strategies would impact the analysis. No allowance was made for changes to the investment strategy or contributions in response to the climate impacts modelled.

- As this is a “top-down” approach, investment market impacts were modelled as the average projected impacts for each asset class, i.e. assuming that the SCPF’s investments are affected by climate risk in line with the market-average portfolio for the asset class. This contrasts with a “bottom up” approach that would model the impact on each individual investment held in the SCPF’s investment portfolio. As such, it does not require extensive scheme-specific data and so the Trustee was able to consider the potential impacts of the three climate scenarios for all of the SCPF’s assets.
- In practice, the SCPF’s investment portfolio may not experience climate impacts in line with the market average. The Trustee considers, on an ongoing basis, how the SCPF’s climate risk exposure differs from the market average using climate metrics (which are compared with an appropriate market benchmark) and its annual responsible investment review which considers the investment managers’ climate approaches.
- The Trustee notes that the three climate scenarios chosen are intended to be plausible narratives of how the future could unfold. It therefore illustrates how the centre of the “funnel of doubt” surrounding funding projections might be affected by climate change. It does not consider tail risks within that funnel, nor does it consider how the funnel might be widened by the additional uncertainties arising from climate change. In addition, only three scenarios out of infinitely many have been considered. Other scenarios could give better or worse outcomes for the SCPF.
- Uncertainty in climate modelling is inevitable. In this case, key areas of uncertainty relating to the financial impacts include how climate change might affect interest rates and inflation, and the timing of market responses to climate change. ClimateMAPS, like most modelling of this type, does not allow for all climate-related impacts and therefore, in aggregate, is quite likely to underestimate the potential impacts of climate-related risks, especially for the Failed Transition scenario. For example, tipping points (which could cause runaway physical climate impacts) are not modelled and no allowance is made for knock-on effects, such as climate-related migration and conflicts. In addition, the model presumes that the UK government will remain solvent, thereby making no allowance for credit risk on government bonds. However, in a scenario where global warming exceeds 4°C, this assumption may no longer be valid.



## Glossary

Board	Board of directors of the Trustee
Carbon footprint	Tons of Carbon Dioxide-equivalent emissions per £1m invested
Chair	Chair of the Board of Directors of the Trustee
Covenant	The Sponsor's legal obligation and financial ability to provide additional contributions to the Fund, should these be necessary
DWP	The Department for Work and Pensions
EOS	EOS at Federated Hermes Limited
ESG	Environment, Social and Governance
Factset	FactSet Research Systems Inc.
Fund	Shell Contributory Pension Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gas Emissions
Gilt	UK Government Bond
Greenhouse Gas	Gases that trap heat in the earth's atmosphere, including carbon dioxide, methane, nitrous oxide and fluorinated gases
GRESB	Global Real Estate Sustainability Benchmark
IEA	International Energy Agency
ISS	Institutional Shareholder Services Inc.
MSCI	Morgan Stanley Capital International Inc.
Net zero	A state in which the greenhouse gases going into the atmosphere are balanced by the removal of greenhouse gases from the atmosphere
Paris Agreement	The international treaty on climate change, adopted in 2015
Repo	A transaction in which a UK Government bond is sold with an agreement to repurchase it at a later date. The proceeds from the sale are then used to buy additional or replacement UK Government bonds.
SAMCo	Shell Asset Management Company B.V.

## Glossary

Scope 1 emissions	These are direct emissions from sources that are owned or controlled by the company.
Scope 2 emissions	These are indirect emissions from the generation of energy purchased by the company.
Scope 3 emissions	These are all other indirect emissions that come from value-chain-related activities of the company but occur from sources not owned or controlled by the company.
SCPF	Shell Contributory Pension Fund
SDS	The IEA's Sustainable Development Scenario that aligns with the Paris Agreement
Shell Group	The principal holding companies in the Shell plc group and the employing companies of the members of the SCPF
Sponsor	Shell plc
Stewardship	The use of voting and engagement to influence the actions of companies in which the Fund invests
TCFD	Taskforce on Climate-related Financial Disclosures
tCO <sub>2e</sub>	Tons of Carbon Dioxide-equivalent emissions
Trustee	Shell Pensions Trust Limited
TSU	Trustee Services Unit, the executive function supporting the Trustee
UN PRI	UN Principles for Responsible Investment