USS *For members, for the future.*

Universities Superannuation Scheme

TCFD Report 2024

We are the **principal pension scheme** for universities and other higher education institutions in the UK.

Front cover image: Bruc Cartago A2 photovoltaic (PV) complex in the province of Seville, Spain.

1 Chair's message

At a time when more needs to be done to deliver net zero ambitions, we are committed to playing our part.

Dame Kate Barker
Chair of the Trustee Board

Welcome to the 2024 Task Force on Climate-related Financial Disclosures (TCFD) Report from the trustee of Universities Superannuation Scheme (USS)[1].

We believe climate change presents a significant financial risk and that a low-carbon world will likely be a more financially stable one, which is why we have set an ambition for our investments to be net zero by 2050, if not before. We continue to embed this ambition into our culture and ways of working. Managing climate risks and opportunities continues to be central to our investment strategy. This report sets out how we do this. You can find a summary version of this report on our website: **https://www.uss.co.uk/how-we-invest/responsible-investment/our-journey-to-net-zero**.

Note

1. We have used the terms 'USS' and, 'the scheme' to refer to Universities Superannuation Scheme. The scheme's corporate trustee is Universities Superannuation Scheme Ltd, and we refer to it as 'the trustee', 'we' and 'our'. We refer to its board of directors as the Trustee Board.

Details of the progress we have made in the past year are set out in the following tables. We would like to highlight two particular achievements.

Firstly, working with the University of Exeter, we created the *No Time to Lose* report that calls for a radical and urgent shift in the climate scenarios used by investors, governments and businesses to address climate change. The report presents four narrative global climate scenarios out to 2030 that we believe better reflect the real-world risks and opportunities that will inform our investment decision making. These consider changes in politics, economics, asset prices and extreme weather events and recognise that climate risks cannot be looked at in isolation. We are committed to working to achieve net zero and to putting the new climate scenarios from the University of Exeter into practice. Climate scenario analysis is a vital tool to help us integrate climate risks and opportunities into investment decision making and to assess the financial risks we face as investors under various future climate scenarios. We look forward to continuing our work with the University of Exeter in the coming year to develop sector and financial heat maps, and we expect more details of this to feature in our next report. You can read more about our plans in section 5.

Secondly, to help define a longer-term ambition for responsible investment (RI) at USS and ensure that USS Investment Management Ltd (USSIM), the scheme's investment manager, is clear on what to deliver for the scheme, we introduced an RI Beliefs and Ambition Statement which was approved and adopted by the Trustee Board in 2023. These beliefs acknowledge the systemic risks that climate change presents, and that we cannot diversify our way out of these. Hence, we believe that integrating financially material RI issues into our investment process and engaging in high-quality stewardship across all asset classes will contribute to better outcomes for members.

We set out the following areas of focus in our 2023 report, and have made the following progress against these:

Last year's focus areas	The progress we've made
Improved integration of carbon and other climate data into our investment decision making and stewardship	During 2023, we transitioned circa £4 billion in equity assets from passively managed, highly diversified portfolios into an internally managed active portfolio focusing on high-quality, developed markets businesses expected to deliver attractive risk-return characteristics for the scheme over the long term. RI has been built into every stage of the investment process for this portfolio. A thorough assessment of environmental, social and governance (ESG) issues, including climate change is integrated to ensure appropriate consideration of material risks and opportunities. Alongside this, the low emissions intensity of the companies in the portfolio supports our ambition for our investments to be net zero by 2050, and the concentrated nature of the mandate means that our stewardship activities can be a real focus. See page 27 for more information.
Stewardship of our assets: engaging with the highest emitters	We have engaged with Tripod Tech Corp, ranked among our top 10 Global Emerging Markets (GEMs) portfolio emitters in 2023 (noting that it is in GEMs where the emissions intensity of the portfolio is highest). Engagement has resulted in positive developments, including Tripod issuing comprehensive sustainability reports in English, disclosing emissions from all three of their manufacturing sites and setting specific GHG reduction targets for their three main campuses. See page 24 for more information.
Improved scenario analysis	Working with the University of Exeter, we developed a new set of global climate scenarios. These scenarios better reflect the real-world risks and opportunities that will frame our investment decision making to 2030. See page 14 for more information.

Last year's focus areas	The progress we've made
Improved data collection and management	In our effort to improve our data quality, we had a substantial increase in reported data on the absolute emissions and emissions intensity of our defined benefit (DB) assets, including private markets investments. Emissions data for 64% of our assets came from fully or partially reported sources, up from 52% last year. See page 27 for more information.
Increasing allocation to renewables and other low-carbon assets	We have continued to support the growth of Bruc Energy. In 2023, Bruc added 155MW of solar photovoltaic (PV) installed operating capacity, contributing to the creation of 269 jobs. In total, Bruc generated more than 1,842GWh of renewable energy, enough to power circa 500,000 homes for a year and avoid the emission of 408,000 tonnes of CO_2. See the case study on page 23 for more information. In 2023, we made our first direct investment into the Sustainable Growth mandate, providing growth capital to eco-friendly battery producer Northvolt. See the case study on page 23 for more information.
Defined our longer-term ambitions and priorities	To help define a longer-term ambition for RI at USS and ensure alignment between the Trustee Board and USS Investment Management Limited (USSIM), the Trustee Board approved and adopted the RI Beliefs and Ambition Statement in July 2023. In May 2024, both the Trustee Board and its Investment Committee (IC) discussed the key RI priorities for the year ahead. See page 11 for more information.

Our target is to reach portfolio net zero by 2050, if not before. Our interim net zero target is to reduce the emissions intensity of our non-sovereign assets, across public and private markets by 25% by 2025, and by 50% by 2030 (relative to a 2019 baseline)[2]. With an emissions intensity of 55 tCO_2e per £ million invested, a reduction of 16 tCO_2e per £ million since December 2022, we are now 39% lower than our 2019 baseline and well ahead of our 2025 interim target. The portfolio emissions (Scope 1 and 2 emissions) of the non-sovereign assets in our portfolio as at December 2023 were 2.6 $MtCO_2e$. This is a reduction of 0.7 $MtCO_2e$ since the previous year.

We have a legal duty to make sure we can pay our members' pensions when they are due, and we will continue to make decisions that are in the best financial interest of our members. We would also like to see a world worth retiring into. Transitioning to net zero poses a significant challenge, involving a shift away from the energy system that has been powering the global economy for over a century. Investors, businesses, policymakers, regulators and individuals all need to play a part to ensure that we enable the shift to a low-carbon future.

At a time when more needs to be done to deliver net zero ambitions, we are committed to playing our part. After all, we have *No Time to Lose*.

Dame Kate Barker
Chair of the Trustee Board

Note
2. Scope 1 and 2 emissions

2 What this report is for

The purpose of this report

The purpose of this report is to fulfil the requirements of the DWP's Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 (DWP TCFD Regulations). The Regulations require us to explain the governance and actions the trustee has taken to identify, assess and manage climate-related risks and opportunities. This is our third mandatory TCFD Report.

About USS

USS was established in 1974 as the principal pension scheme for universities and higher education institutions in the UK. We work with around 330 employers to help build a secure financial future for 554,000 members and their families. We are one of the largest pension schemes in the UK, with total assets under management of £77.9 billion (as at 31 March 2024). We are a hybrid scheme offering both defined benefit (DB) and defined contribution (DC) pension benefits.

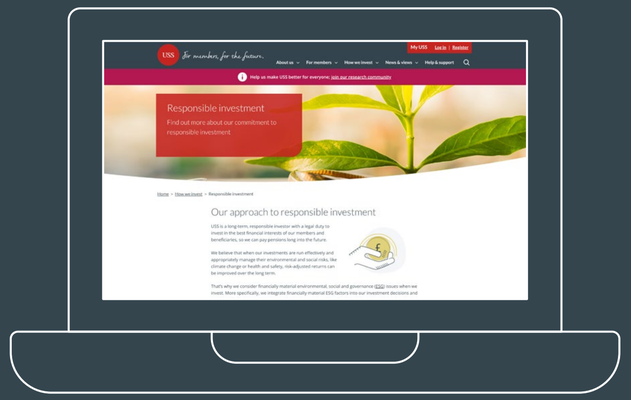
Information for members on USS and climate

While some members may wish to read this full report, we have created a **TCFD summary** specifically for members. Our net zero ambition and progress so far can also be found on our **net zero web page**.

Further information on how we invest responsibly

Please see our **website** for more information, including **our approach to responsible investment** and our **Stewardship Report**.

uss.co.uk



3 TCFD disclosures at a glance

TCFD disclosures

4 Governance

a) Oversight of climate-related risks and opportunities

The trustee's oversight of climate-related risks and opportunities includes approving the scheme's overall climate-related strategy, regular reporting from USS Investment Management Limited (USSIM), and an annual review by the Investment Committee (IC) of USSIM's approach to managing climate risk.

See page 8 for more information.

b) Assessing and managing climate-related risks and opportunities

By formal delegation, USSIM implements the trustee's investment strategy within set parameters, which include Risk Appetite Statements and Key Risk Indicators for climate risk. The USSIM Net Zero Steering Committee and Working Groups oversee and co-ordinate all activities associated with addressing climate change.

See page 10 for more information.

5 Strategy

a) The climate-related risks and opportunities identified over the short, medium, and long term

Our assets are vulnerable to transition and physical risks over the short, medium, and long term.

b) The impact of these on our strategy

These risks can affect our investment returns, the life expectancy of our membership, and the covenant provided by our sponsoring employers. This will influence the Technical Provisions the scheme needs to target to meet current liabilities, the balance between contributions and investment returns, and the cost of future benefits being built up within the scheme.

c) The resilience of our strategy, taking into consideration different climate-related scenarios

Our 2021/22 analysis showed our long-term returns to be impacted in all scenarios. We identified limitations with this approach and felt it could be developed further. We have, therefore, worked with the University of Exeter on a collaborative project developing four new climate scenarios that we believe are more useful for investment decision making to 2030. The scenarios recognise that the short-term dynamics and implications of climate action will be influenced by the volatility of politics, economics, markets, technology, and consumer behaviour.

See page 14 for more information.

TCFD disclosures

6 Risk management

a) Our processes for identifying and assessing climate-related risks

Our Enterprise Risk Management Framework allows us to take a top-down approach to identify and prioritise high-level risks. The framework includes Risk Appetite Statements (RASs) set by the trustee, and Key Risk Indicators (KRIs), including those for climate risk. We also take a bottom-up approach, in which the Group Risk team assesses each business area's operating risk registers.

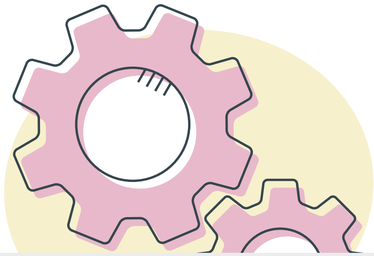
b) Our processes for managing these risks

Our Investment Framework includes an investment balanced scorecard, which uses the investment RASs and the subset of associated KRIs specifically focused on investment risks. The IC uses this scorecard to assess how USSIM manages risk, including climate risk.

c) How these processes are integrated into overall risk management

These tools are integrated into our overarching Risk Management Framework, in which we also assess climate risk impact on the covenant and liabilities.

See page 18 for more information.



7 Metrics and targets

a) The metrics we use to assess climate-related risks and opportunities

We report on: portfolio emissions, emissions intensity, portfolio alignment, and data quality.

b) Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas emissions and related risks

Scope 1 and 2 where available: DB assets, excluding sovereign debt		Scope 3 where available: DB assets, excluding sovereign debt	
Portfolio emissions	2.6 $MtCO_2e$	Portfolio emissions	8.5 $MtCO_2e$
Emissions intensity	55 tCO_2e per £m invested		
Portfolio alignment	45%		
Data quality	64%		

c) The targets we use to manage climate-related risks and opportunities and performance against targets

Our target is to reach portfolio net zero by 2050, if not before. Our interim net zero target is to reduce the intensity of Scope 1 and 2 emissions of the non-sovereign assets in our portfolio by 25% by 2025, and by 50% by 2030 (relative to a 2019 baseline). We have not set interim targets for our sovereign debt portfolio. With an emissions intensity of 55 tCO_2e per £ million invested, we are now 39% lower than our 2019 baseline and well ahead of our 2025 interim target.

See page 26 for more information.

Case studies throughout the report will be designated with a magnifying glass symbol.

4 Governance

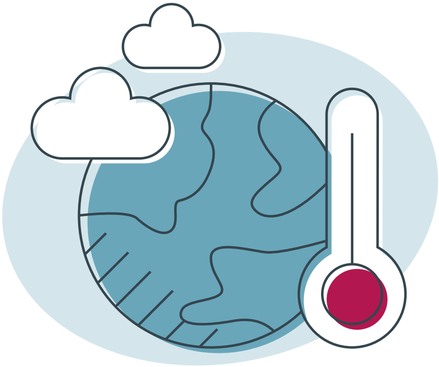
This section covers how USS oversees, assesses and manages climate-related risks and opportunities.

Climate-related risks and opportunities: who is responsible, and how do they exercise oversight

Universities Superannuation Scheme Limited (USS): the scheme trustee

The Trustee Board

The board of directors of the scheme's trustee is responsible for the comprehensive oversight and management of climate-related risks and opportunities relevant to the scheme. We refer to it as the Trustee Board in this TCFD Report. This includes assessment, documentation and integration into investment strategies and monitoring.



How the Trustee Board maintains oversight of climate-related risks and opportunities:

The Trustee Board delegates implementation of its investment strategy to its in-house investment manager USS Investment Management Limited (USSIM), a wholly-owned subsidiary of the trustee. To oversee the implementation, the Trustee Board:

- Approves the scheme's overall climate-related strategy, including scenario analysis, metrics and targets and short-, medium- and long-term time horizon
- Approves USSIM's approach to responsible investment (RI) and climate-related risk
- Formally reviews the RI team's activities every year, signing off focus areas and policies
- Sets and approves the USSIM RI-related Risk Appetite Statements (RASs) and associated Key Risk Indicators (KRIs), as recommended by the Investment Committee (IC)
- Incorporates additional climate change reporting into USSIM's reporting frameworks, and reviews this regularly, including biannual responsible investment reporting
- Approves specific climate-related decisions (such as the outcome of scenario analysis) based on advice from USSIM, and following detailed consideration and recommendations from the IC
- Along with the IC, the Trustee Board challenges USSIM on how it manages climate-related risk and opportunities, and any recommendations it makes about this

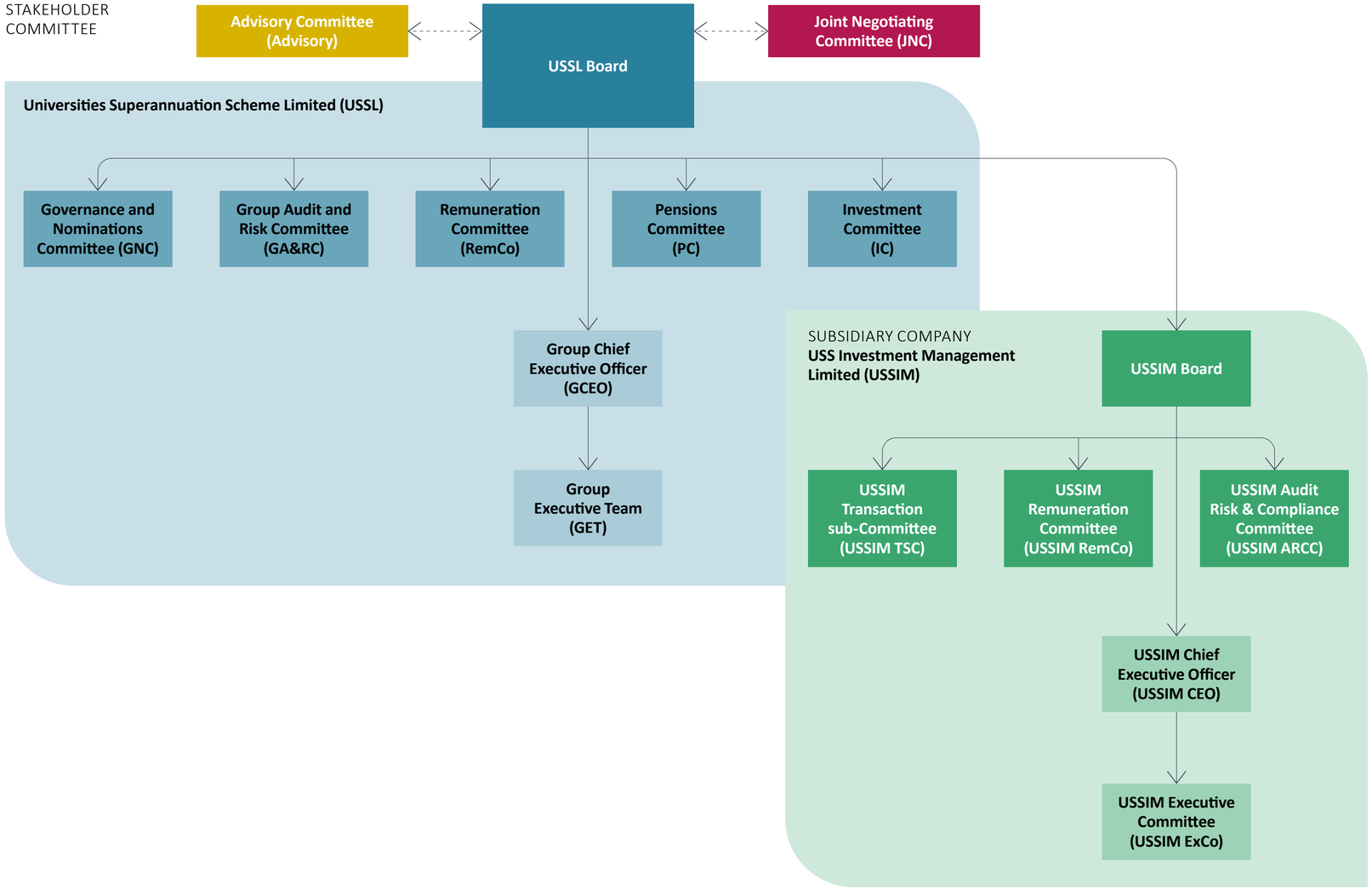
Investment Committee (IC)

By formal delegation from the Trustee Board, the IC makes recommendations and oversees the implementation of the scheme's climate-related strategy. This involves:

- Reviewing and assessing the implementation of the strategy
- Reviewing and assessing RI-related RASs and KRIs
- Reviewing the scenario analysis in each scheme year
- Reviewing biannual reports on responsible investment progress and sharing these with the Trustee Board
- Determining whether to undertake new scenario analysis. Challenging USSIM on how it manages climate-related risk and opportunities, as well as reviewing any subsequent recommendations

The IC also has oversight of the scheme's climate metrics and targets, and the relevant time horizons, and the IC assesses USSIM's investment performance each year, using an investment balanced scorecard approach. This scorecard includes an assessment of USSIM's performance in responsible investment, which includes a KRI in relation to USSIM delivering on the trustee's net zero ambition.

Figure 1: USS Group corporate governance structure – main boards and committees



USS Investment Management Limited (USSIM)

By formal delegation from the Trustee Board, under an Investment Management and Advisory Agreement, USSIM implements the Trustee Board's investment strategy. USSIM manages around 70% of investment in-house and oversees external managers to manage the rest. In both its advisory and investment management activities its role includes:

- Managing climate-related risks
- Identifying investment opportunities that the transition to a low-carbon future presents
- Allocating investment mandates to external managers where appropriate

USSIM is authorised and regulated by the Financial Conduct Authority (FCA). It is overseen by its own board of directors.

USSIM Chief Executive Officer

The USSIM CEO is responsible for ensuring that USSIM effectively implements and delivers the Trustee Board's investment strategy. The USSIM CEO reports to the USSIM board. There is further information about the USSIM CEO's role in the risk management section.

USSIM Net Zero Steering Committee (NZSC) and Net Zero Working Groups (NZWGs)

The NZSC oversees and manages efforts to achieve portfolio net zero. The steering committee includes the heads of the asset class teams across USSIM. It provides planning, governance and oversight of the activities associated with achieving net zero. This includes overseeing the work of the NZWGs. There are seven NZWGs – one for each asset class as well as for specific support functions. Each working group makes sure USSIM teams and support functions have a specific focus on achieving net zero. The working groups are accountable to the NZSC.

USSIM Responsible Investment (RI) team

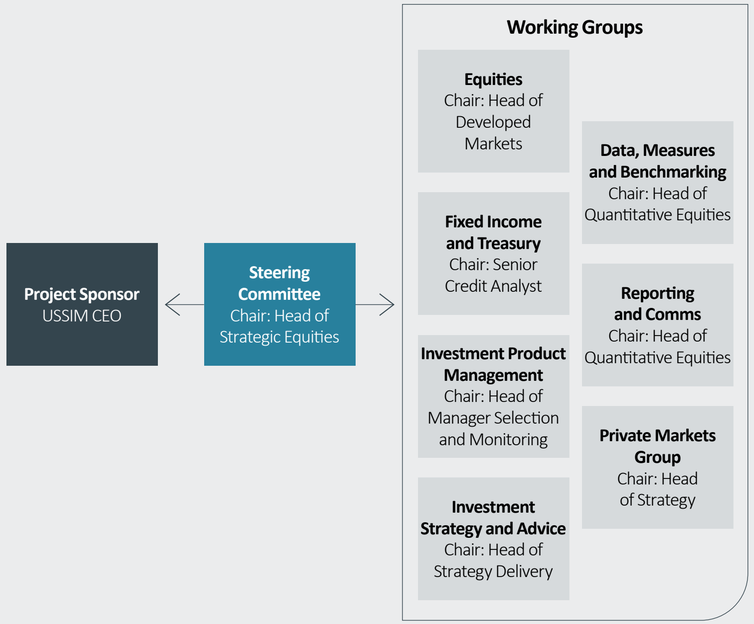
USSIM's RI team supports the implementation of the trustee's climate strategy. It works with USSIM's investors to integrate climate change and other ESG factors into investment decision making across asset classes. It also leads USSIM's collective and systemic engagement and works collaboratively with investment teams on material one-on-one engagement with the investments and external fund managers.

The RI team's work is overseen by the Head of Responsible Investment, who is a member of USSIM's Executive Committee.

Net Zero Steering Committee

In May 2021, we announced our ambition for our investments to be net zero by 2050, if not before. To ensure that we manage the delivery of this, USSIM has established a Net Zero Steering Committee and Net Zero Working Groups for each asset class, as well as for specific support functions. Each Working Group makes sure that USSIM investment teams across asset classes have a specific focus on the steps they will take to achieve this ambition, and that support functions also play their role. The NZWGs are accountable to the Net Zero Steering Committee, consisting of senior investment executives. See Figure 2.

Figure 2: Net zero governance structure



Responsible investment beliefs and ambitions

The Trustee Board has set our responsible investment beliefs and ambitions, developed by both the Trustee Board and the RI team.

Our beliefs include that the integration of ESG factors and high-quality stewardship in all asset classes will contribute to better outcomes for members.

Our ambitions include to be seen as the leading UK asset owner with respect to responsible investment, and among the leading asset owners globally, in areas that are key priorities for our scheme.

These beliefs and ambitions benefit the scheme in many ways, including that by being clear about what we want to achieve, we will help stakeholders measure our success in our efforts and feel confident we are delivering positive outcomes for members.

See our full **Responsible Investment Beliefs and Ambition Statement**.

External advisers

Actuarial, investment and covenant advisers
The Trustee Board takes advice from external advisers where appropriate. It makes sure these advisers:

- Have clearly defined responsibilities in respect of climate change, such as including climate analysis in their advice to the Trustee Board
- Have adequate expertise and resources to carry out these responsibilities
- Take adequate steps to identify, assess and prioritise any relevant climate-related risks and opportunities

How the Trustee Board and Investment Committee are informed about climate-related risks and opportunities

Given the systemic implications of climate change, climate-related risks and opportunities are topics which the Trustee Board and its Investment Committee dedicate significant time and resources to. Over the prior year, such activities have included:

- **Regular updates from USSIM's RI team** Including reporting on progress made in achieving the trustee's net zero ambition, ESG integration and changes to the proxy voting guidance. Read more in our Stewardship Report
- **Sessions at the IC's Away Day** Attended by the IC, together with other members of the Trustee Board and USSIM board, and advisers, which this year included climate-focused discussions on:
  - The development of the trustee's RI Strategy, priorities and its implications
  - Progress in our net zero ambition and next steps
  - A review of the trustee's RASs and KRIs (including those relating to RI and climate change issues)
  - An external speaker from the University of Exeter discussed climate scenarios and tipping points. A round-table discussion on the No Time To Lose – New Scenario Narratives for Action on Climate Change (see Creating decision-useful climate scenarios with the University of Exeter on page 14 for more details) to consider each scenario and the possible implications for USS
- **Annual investment balanced scorecard assessment** The IC uses an investment balanced scorecard to assess the performance of USSIM in managing and advising the trustee for both the DB and DC parts of the scheme's investments. This scorecard includes an assessment of USSIM's performance in responsible investment, which includes a KRI in relation to USSIM delivering on the trustee's net zero ambition. See the scheme's Report and Accounts and the Risk management section of this report for more information
- **Specific climate-related reporting and approvals** The Trustee Board and IC consider and approve specific climate-related reporting provided by USSIM. This includes the approval of reporting (TCFD and Stewardship Reports) and other specific actions, such as approving the outcomes of climate scenario analysis, metrics and targets when required and climate-related risk appetite statements
- **RI Ambition and Priorities review 2023** To help define a longer-term ambition for RI at USS and ensure alignment between the Trustee Board and USSIM, the Trustee Board approved and adopted the RI Beliefs and Ambition Statement in July 2023. In May 2024, both the IC and Trustee Board discussed the key RI priorities for the year ahead and the three-year plan

Climate-related training opportunities

Trustee training
In 2023, trustee training was focused on the Trustee Board's consideration of its RI ambition (and how peer schemes, asset owners and advisers approach this) and the IC Away Day sessions on climate scenarios.

Internal training for USSIM investment teams
Mercer, who are an independent adviser to the IC, delivered fundamental climate training to all USSIM staff and support staff outside USSIM, which covered topics such as the different emission scopes, with the purpose of further embedding climate knowledge to support our ambitions and targets.

Induction training for new joiners
All new staff attend an induction session and all new Trustee Board and USSIM board directors have individual induction training. This includes a session on responsible investment, which covers the impact of climate change on the scheme and how we engage with investee assets.

Lunch and learn
Leaders across the business run informal training sessions. These have covered topics such as integrating financially material ESG factors into our Global Emerging Markets teams and building emissions data into scenario analysis for equity valuations.

Setting an RI Beliefs and Ambition Statement

In July 2023, USSIM advised the Trustee Board on, and the Trustee Board adopted, an RI Beliefs and Ambition Statement to help define a longer-term ambition for RI at USS. USSIM also shared its proposed approach to help the Trustee Board fulfil its ambition, and the methodology for USSIM to identify RI priorities. To help inform USSIM in providing advice on the statement, it carried out market research and split out USS into its three main roles. These included its roles as:

1. A Universal Owner (USS)
2. A multi-asset Investment Manager (USSIM)
3. An Investment Adviser (USSIM) to a large pension fund

USSIM worked with peer schemes to aid its understanding of market standard versus best practice and engaged an investment consultant to provide an external view of RI at USS versus other clients.

Following adoption of the statement by the Trustee Board in July 2023, USSIM has been advising the IC and helping it develop a plan for how USSIM will implement and prioritise the actions arising from the RI Beliefs and Ambition Statement.

5 Strategy

This section covers a recap of our 2021/22 climate scenario analysis, the implications for the scheme, and the development of our new decision-useful climate scenarios.

We have only included this recap to meet reporting requirements. Please see page 14 for our work on our new scenarios.

A brief recap of 2021/22 climate scenario analysis

We ran detailed scenario analysis in 2021/22. However, as climate science continues to evolve, we concluded that we could develop updated and enhanced scenario analysis to better inform investment decision making. We have since developed decision-useful climate scenarios with the University of Exeter and we will re-run scenario analysis using these new scenarios for 2024/25. Because of this, the IC and the Trustee Board approved that USSIM would not undertake new climate scenario analysis for this year's TCFD reporting cycle.

Please see our **2023 TCFD Report** for the full detail on our 2021/22 scenario analysis.

The scenarios and time horizons used in the 2021/22 analysis

We considered three climate scenarios in our 2021/22 climate scenario analysis:

- **The Orderly Transition scenario:** Transition is assumed to occur as smoothly as possible. Physical impacts occur up to 1.5/2°C which are greater than today but still much less than under a Failed Transition.
- **The Disorderly Transition scenario:** Transition has disruptive effects on financial markets with repricing followed by a sudden sentiment shock and stranded assets in 2024/25. Physical impacts occur up to 1.5/2°C which are greater than today but still much less than under a failed transition.
- **The Failed Transition scenario:** Limited transition impact – economies follow a business-as-usual path. Severe physical impacts occur and continue to increase in frequency over time – both gradual physical changes, as well as more frequent and severe extreme weather events.

The time horizons we used were:

- Short term: 5 to 10 years
- Medium term: 15 years
- Long term: 30 years

Risks and opportunities, and the resilience of our investments and funding strategies in these scenarios

The Defined Benefit (DB) part of the scheme – Retirement Income Builder

Impact on assets: The analysis found that risk-adjusted returns vary across assets, scenarios and time horizons.

The implications of climate change can also be illustrated by comparing the expected asset returns across different scenarios. In particular, the analysis showed a 23% difference (0.7% per annum) in the 30-year projected return for the DB fund between the most optimistic (Orderly Transition scenario) and most pessimistic (Failed Transition scenario), which can be interpreted as the expected financial cost of failure to act to prevent the consequences of climate change.

Impact on liabilities: Climate change is expected to affect mortality rates, which in turn affect our liabilities. Our scenario analysis suggested the Failed Transition scenario would potentially result in higher mortality rates than in the Orderly or Disorderly Transition scenarios, where expected rates are similar.

Impact on covenant: We cover the impact of climate change on covenant in the risk management section.

The Defined Contribution (DC) part of the scheme Investment Builder

The extent to which the value of a member's DC pot is affected by climate change is a function of its allocation to equity-like, property and infrastructure assets. The younger the member, the longer they will be invested in the growth portfolio throughout the analysis period, and therefore the greater the impact on returns. This impact is due to physical risk exposure in the long term.

This is clearly visible in the Failed Transition pathway: a 30-year-old member will be significantly more affected than a 50-year-old member. This is because, when the 2050 to 2100 physical risks start to be priced in, the older member will have reduced their allocation to higher risk assets, if not completely switched to lower risk ones.

Figure 3: Cumulative median real returns

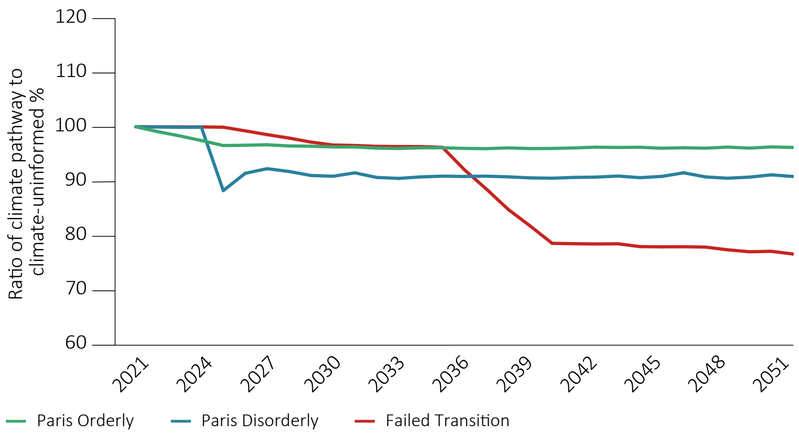
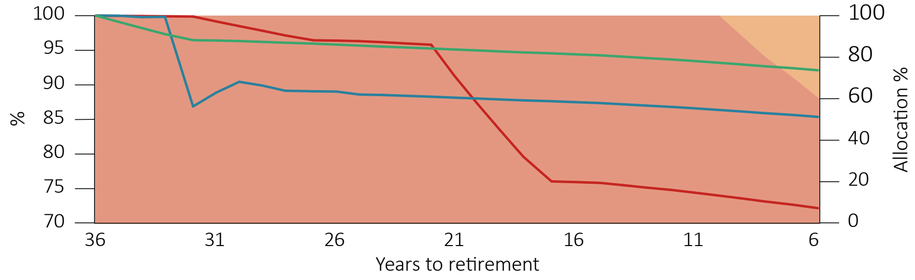
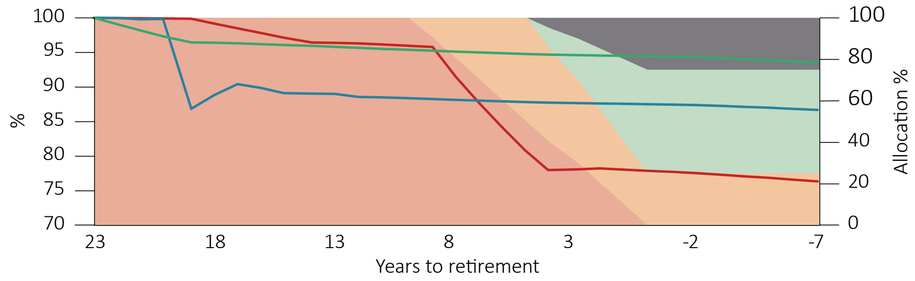


Figure 4: DC example member experience: cumulative median nominal returns

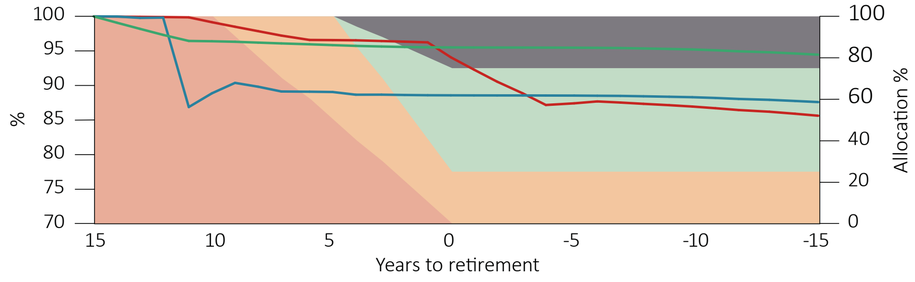
Aria – Age 30, USS member for 3 years



Bryn – Age 43, USS member for 8 years



Chloe – Age 51, USS member for 18 years



Paris Orderly — Paris Disorderly — Failed Transition
Growth — Moderate — Cautious — Cash

Source: USSIM and Ortec Finance (GLASS)

Limitations of this scenario analysis

These include the potential underestimation of physical risk impacts (as the various climate tipping points are not well captured) together with the focus on long run climate pathways, which fail to capture shorter-term dynamics arising from the interaction between climate transition and other macro factors such as geopolitical, macroeconomic and technological developments. Reflecting on this scenario analysis was one of the reasons we developed new climate scenarios with the University of Exeter, which aim to be decision-useful and draw from the expertise of a multi-disciplinary team of academics and industry practitioners.

Creating decision-useful climate scenarios with the University of Exeter

We have worked with the University of Exeter on a collaborative project developing four new climate scenarios. Together, we have produced the report **No Time To Lose – New Scenario Narratives for Action on Climate Change**, which sets out the new scenarios.

The scenarios better reflect the real-world risks and opportunities that frame our investment decision making to 2030. They move away from climate pathways and towards changes in politics, economics, asset prices and extreme weather events. They range from optimistic, with drivers working in harmony and rapid decarbonisation, to pessimistic, where a toxic political climate compounded by dysfunctional markets frustrates progress. They give us a wider and more realistic range of scenarios on which we can base our investment decisions.

The development of this new approach to climate scenarios is less focused on precise estimation. It is focused more on understanding how real-world dynamics could play out in a complex world where climate risks cannot be looked at in isolation from political, economic and technological factors.

We believe these new scenarios enhance the previous scenario analysis. We will use these new scenarios in the climate scenario analysis we run for our 2024/25 TCFD Report.

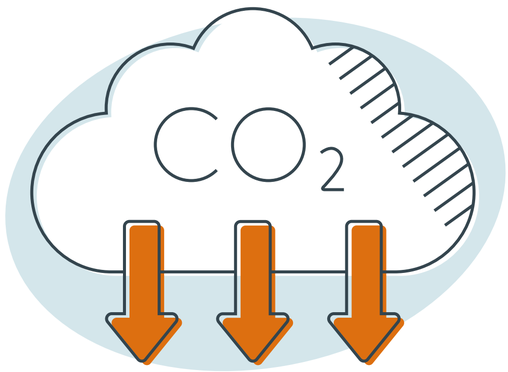


Figure 5: Our four scenarios

Scenario 1
Roaring 20s (R20) – policy and markets align

Proactive climate policies and dynamic markets create powerful positive feedback loops. More extreme weather events focus minds and create a sense of global solidarity around a recognition of humanity's mounting debt to nature. Constructive competition between nations accelerates technological progress and deployment.

Scenario 2
Green Phoenix (GP) – market-driven, while policy lags

Climate action is initially upended by stagflation, the geopolitical fallout of a stalemate in Ukraine and badly-handled weather shocks. Popular anger builds and civil society gradually emboldens more enlightened businesses and local governments to step up and roll out mature green technologies, but progress is patchy and erratic.

Scenario 3
Boom and Bust (BB) – policy steps up after fossil fuel surge bursts

A Ukraine peace deal and easing of global geopolitical tension triggers an initial surge in economic growth which leads to overheating in major economies and higher fossil fuel prices. Policy is tightened in response, which leads to a bust, forcing governments to step in to provide support. A just green transition is driven by proactive policies to ease private sector frictions and support the emerging world.

Scenario 4
Meltdown (M) – policy failures compound weak growth

Climate policy is the casualty of mounting geopolitical tension and protracted recession. A Republican victory in the US elections is followed by Ukraine being partitioned. Tension with China undermines global decarbonisation efforts and technological progress. Extreme weather events are badly handled, triggering famines, mass migration and political instability.

Scenario drivers and implications

When looking to 2030 rather than the Network for Greening the Financial System's (NGFS) preferred 2050 horizon, climate risk scenarios entail quite different drivers and narratives (Figure 6). With global heating largely a given, our scenarios focus instead on uncertainties over human action and how it interacts with frequent extreme weather events. What matters most are transition drivers, which fall into two key groups:

1. **Politics and policy**
2. **Economics and markets**

Figure 7 shows the scenarios based on these key drivers.

Politics and policy: On the vertical axis, the first driver is the degree of policy activism. Aggressive action through fiscal policy or government regulation will probably be the biggest factor in determining how quickly the world transitions. This will depend heavily on political will at national and international levels, throwing the spotlight on the electoral cycle in the US and other key democracies, as well as geopolitical relationships with China, India and other major players.

Economics and markets: On the horizontal axis, the second key driver is business and consumer dynamism. A dramatic shift in capital spending will be needed to reach net zero, including the development and roll out of renewable energy and carbon removal technologies.

The matrix scenarios involve four different combinations of high or low policy activism and high or low market dynamism. The most optimistic scenario, 'Roaring 20s', has both drivers working in harmony, resulting in rapid decarbonisation. In the most pessimistic scenario, 'Meltdown', a toxic political climate compounded by dysfunctional markets frustrates progress. In between are two scenarios in which either the markets ('Boom and Bust') or policy ('Green Phoenix') stymie progress.

Figure 6: Scenario drivers and implications

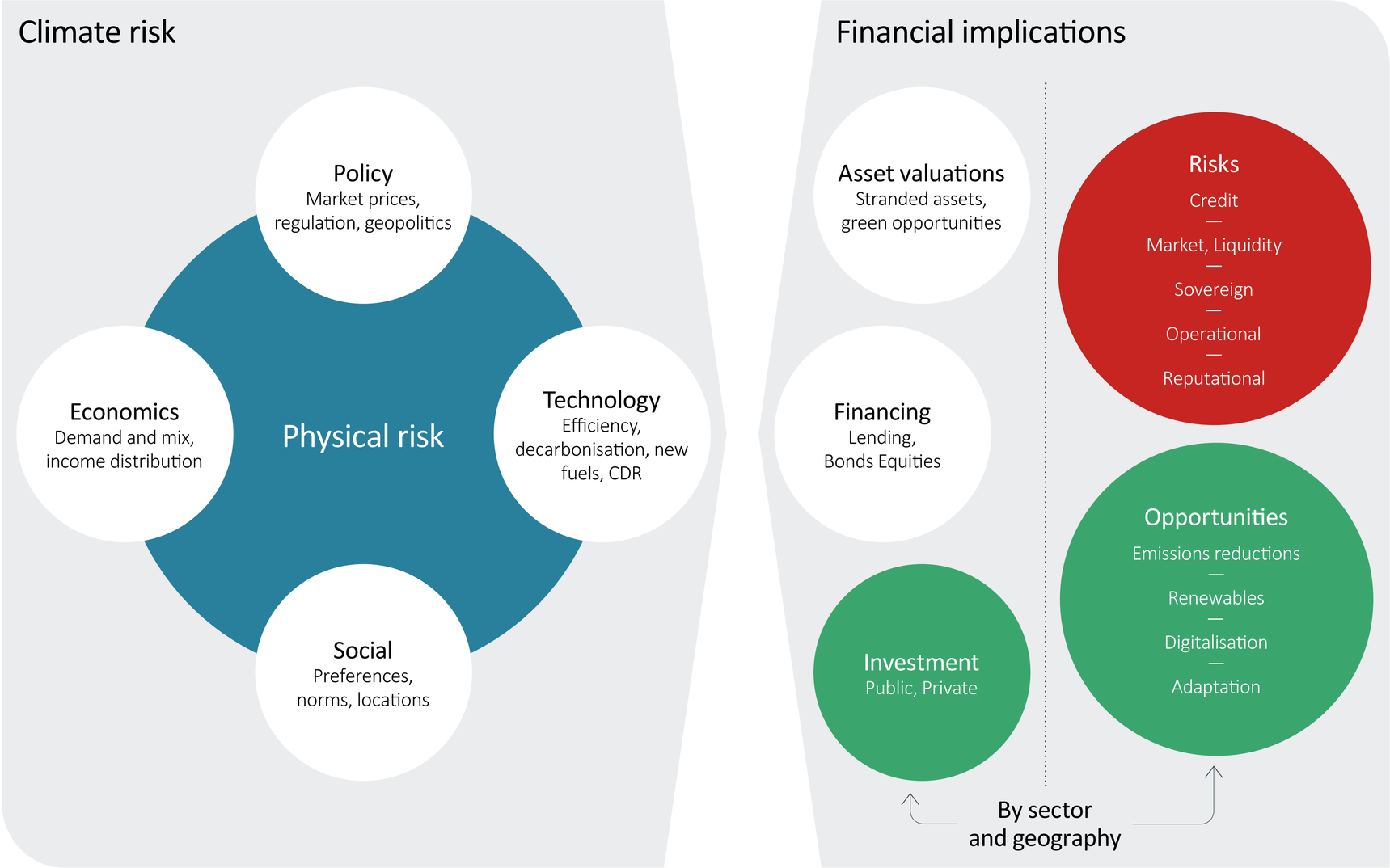


Figure 7: Real-world climate scenarios (to 2030) – 2x2 matrix

High policy intervention

Policy intervention

Low policy intervention

3. Boom and Bust (BB)
– policy steps up after fossil fuel surge bursts

Politics: Global co-operation is reinforced after the Boom and Bust bursts

Growth: Policy tightening to squeeze inflation hits growth, followed by a 'green' recovery stimulus (carbon dividend) and support for sustainable finance

Investment: Green investment is initially driven by cost advantages, then by recovery packages once the Boom and Bust bursts

Energy and asset prices: Fossil fuel price surge is followed by a renewed collapse, accelerating asset stranding (cushioned by state support)

1. Roaring 20s (R20)
– policy and markets align

Politics: Constructive global competition, US bipartisanship, COP breakthroughs, aggressive net zero implementation

Growth: Robust and sustained, 'Keynesian' world, active fiscal policy, with carbon pricing/dividends, productivity boosted by tech investment

Investment: Strong, driven by public and private sectors, fast roll out of green infrastructure and technology, accelerated innovation

Energy and asset prices: Carbon pricing drives wedge between fossil/renewables, accelerating asset stranding (cushioned by state support), markets and consumers reward green companies

4. Meltdown (M)
– policy failures compound weak growth

Politics: Nationalism and division, populism, geopolitical conflict

Growth: L shaped (also because of climate physical shocks), pandemic recurs, energy trade war

Investment: Weak. Nationalist governments support home fossil fuel industries and (in consuming nations) renewables to achieve 'energy security'

Energy and asset prices: Energy trade war keeps fossil fuel prices volatile. Asset stranding hurts financial system

2. Green Phoenix (GP)
– market-driven, while policy lags

Politics: Co-operation stymied by downturn-fuelled nationalism

Growth: V shaped, a renewed dip in the initial two years, creative destruction scenario, governments fall behind on climate commitments, leaving businesses to take the lead

Investment: Driven by business, not government, capitalising on new (cheapening) technologies and consumer pressure for 'greening' and digitalisation

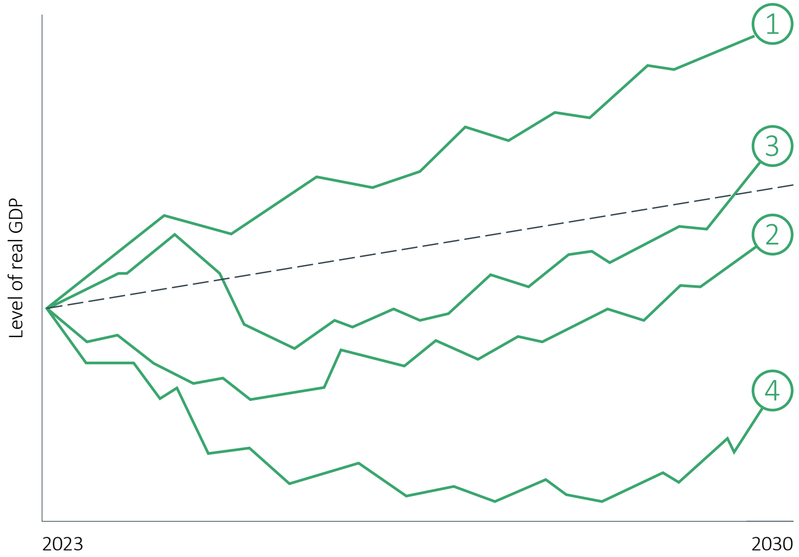
Energy and asset prices: Fossil fuel prices and asset prices slump. Activist ESG investors and consumer pressures drive 'greening', leading to further 'stranding'

Low market dynamism | **Market dynamism** | High market dynamism

Stylised paths for global GDP

Volatility is embedded in our climate scenario narratives. This is in stark contrast to the smooth pathways mapped out by the long-term reference scenarios used thus far. Even the disorderly scenarios produced by the NGFS are characterised by a single one-off shock, often after 2030. To highlight the point, rather than a trend GDP growth rate, our scenarios have distinctively different pathways for GDP through the rest of the decade, with profound consequences for politics, markets, technological progress and consumer behaviour, not to mention GHG emissions. Figure 8 shows illustrative stylised paths for global GDP in each case.

Figure 8: Stylised paths for global GDP, 2023–30



① Roaring 20s ② Green Phoenix ③ Boom and Bust ④ Meltdown

Reflections on these scenarios

Increasingly dramatic extreme weather events show that climate change is not just a potential long-term existential threat to humanity, but a clear and present danger to our welfare and wealth. Growing recognition of this needs to be reflected in a paradigm shift in the scenarios being used to take action to address it. Decision-makers have no time to lose in acting on their commitments, even in the face of growing volatility and radical uncertainty. Simply waiting for more data or better models is no longer an option; they must act on judgements based on more realistic and plausible scenario narratives.

These four scenario narratives aspire to be decision-useful, recognising that the short-term dynamics and implications of climate action will be dictated by the volatility of politics, economics, markets, technology and consumer behaviour. Global heating is not an uncertainty over the remainder of the decade, it is literally 'baked in'. What matters is how governments, businesses and society react. Many companies and investors are committed to playing their part in halving global greenhouse gas emissions by the end of the decade. It is disturbing that only in the most optimistic of our four scenarios does this look plausible. As reflected in the name of the report, we have *No Time to Lose*.

We decided to make this research available as a public good in the hope that the report will be of wider benefit and help galvanise real-world action as society understands the costs of inaction associated with the current trajectory towards ever higher temperatures.

Next steps for our scenario analysis

We intend to use the new decision-useful climate scenarios framework to:

Focus on a shorter time horizon, where we can limit the uncertainty by better understanding the interaction between climate transition considerations and other macro drivers

Develop a long-term investment outlook; from this, we will draw out investment implications for capital markets expectations, top-down portfolio construction and country/sector preferences

Run climate scenario analysis for both the DB and DC funds for our 2025 TCFD Report

We are also working with the University of Exeter to:

Develop a financial heat map, which shows the impact of climate scenarios on key variables, such as GDP and interest rates

Develop a sector heat map, to better understand how the broad sector narrative and macro implications will play out in specific sectors

6 Risk management

This section covers the processes we have established for identifying, assessing and managing climate-related risks, and how these are integrated into our overall risk management framework.

The Trustee Board's overall risk management of the scheme

The Trustee Board has ultimate responsibility for the scheme's risk management, even where this is delegated to USSIM. This means the Trustee Board is responsible for setting risk appetites and satisfying itself that appropriate systems are in place across the scheme to make sure the Risk Governance Policy is implemented.

Rather than having a separate risk management framework for climate risk, the way we assess and manage climate risk fully aligns with our existing risk management framework.

In this context, risk is defined as the possibility that the scheme's objectives will not be achieved, including, for example:

- Target funding levels are not met
- Expected investment returns do not materialise
- Climate change impacts the scheme's investments

Our risk management framework uses three lines of defence – an approach that is embedded across the organisation:

First line of defence
Business functions Business functions, such as USSIM asset class teams, are responsible for identifying, monitoring, and managing risks. This includes identifying and managing climate-related risks in our investments.
Second line of defence
Group risk, legal, and compliance functions These functions facilitate the risk programme and provide oversight and challenge to the first line.
Third line of defence
Internal audit function This function provides independent assurance on the risk management and oversight activity of the first and second lines of defence.

We use appropriate tools and techniques (the 'frameworks') to give the Trustee Board an integrated view of material risks across the whole enterprise.

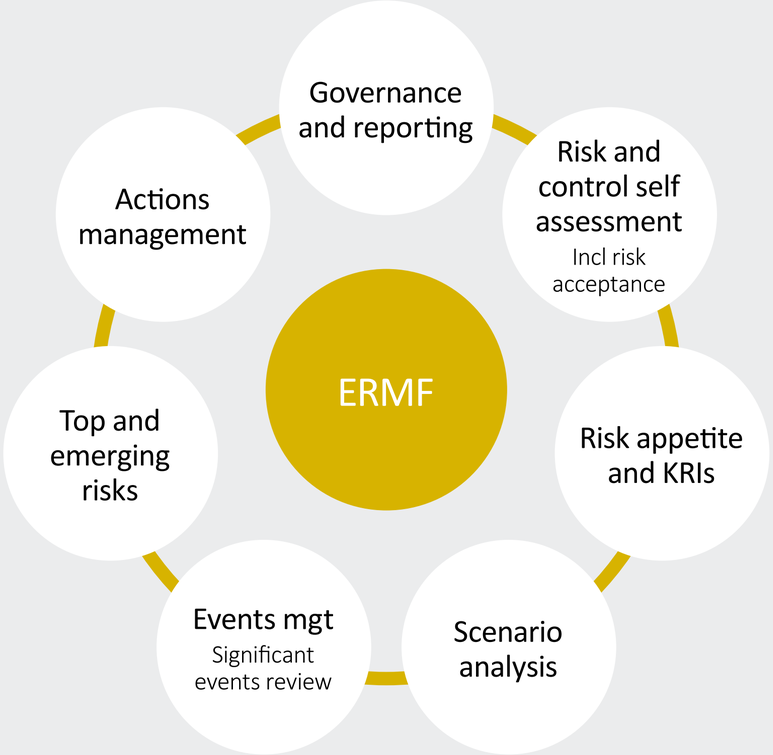
How we integrate climate risk into our risk management processes

We have integrated broader ESG risks, and specifically climate risks, into our wider risk governance, monitoring and management processes. This includes processes for identifying, assessing and managing these risks.

Our Enterprise Risk Management Framework (ERMF)

Our Enterprise Risk Management Framework (ERMF) comprises a set of processes to identify, measure, manage and report operational risks. This includes both forward- and backward-looking risk disciplines, applied both top-down and bottom-up. The figure below shows the key activities included in the ERMF.

Figure 9



We identify climate risk as a top risk: a top-down approach

We take a top-down approach to identify and prioritise the high-level (enterprise level) risks that pose significant potential for an adverse outcome, whether financial, non-financial or reputational. This allows a focused and robust approach to identifying and managing our strategic and operational risks.

ESG risks, including climate risk, were once again identified within this set of risks for USS. This has resulted in various actions (detailed throughout this report) to help manage the potential impact on our investments. The process of identifying these high-level risks is conducted annually and refreshed as necessary, or if triggered by events. Mitigating action plans are owned at the executive level and tracked and reported at the various governing bodies quarterly.

We have added climate risk to the scheme's risk inventories

Climate risk extract in the USS Report and Accounts

Risk	Description	Impact	Control/mitigation
Climate change risk	The risk of material financial impact from climate change, driven by: 1. Transition risk where asset values are impacted by economic transition in response to climate change 2. Physical risk of damage to assets from extreme climate and weather events	Loss of value of assets and/or asset stranding from: 1. Transition to a low-carbon economy 2. Actual or potential physical damage especially where we are long-term owners of those assets	• The ambition for the investment portfolio to achieve portfolio net zero by 2050 with an interim net zero 2025 and 2030 target for our non-sovereign assets • Integration of climate risk into our governance and risk management processes with oversight at Trustee Board level • Integration of climate risk into investment decision-making processes • Regular scenario analysis (conducted at least every three years) and modelling to help identify and quantify the systemic impact of climate change on the real economy and markets • USSIM Net Zero Steering Committee and Net Zero Working Groups to monitor and implement change at asset class level • Stewardship of carbon intensive assets through direct and collective engagement and system level engagement where appropriate, to ensure climate risk in all forms is being appropriately managed • Dedicated in-house Responsible Investment team with specialist expertise to support investment teams and the Trustee Board

We embed climate risk in our Risk Appetite Statements (RASs) and Key Risk Indicators (KRIs)

The Risk Appetite Framework is one of the key processes by which we manage and govern the risks associated with responsible investment. Risk appetite is the maximum level of risk we are willing to accept in pursuit of our objectives. It is codified in our Risk Appetite Statements (RASs), recommended by the Investment Committee (IC) and set by the Trustee Board. It also includes a set of Key Risk Indicators (KRIs), setting the parameters within which USSIM is to manage the scheme's investments. The RASs and KRIs cover a range of risks, from short-term liquidity risk to long-term funding risk. This brings a multi-faceted view of risk applicable over multiple time horizons. Through this process a RAS for climate risk has been set at the highest level of governance in the organisation – the Trustee Board.

These risks are monitored using the risk indicators and reported to appropriate governance bodies within USS.

Figure 10 shows the current ESG/climate RASs and KRIs.

Figure 10: RASs and KRIs

Risk	Investment RAS	Investment KRI
DB and DC investment risk	'Cautious' for ESG risk (the potential for long-term detrimental impact on financial performance arising from ESG factors, except climate change) within DC funds and the DB implemented portfolio.	Qualitative assessment by the Risk team of how USSIM is integrating ESG factors.
Climate risk (applies to DB and DC)	'Cautious' appetite for climate issues causing detriment to performance.	Qualitative assessment by the Risk team of how USSIM is delivering versus our ambition to net zero.

We are cautious in respect of climate change issues being detrimental to performance. We prefer safe options that are low risk and have either moderate financial or opportunity cost, or only have the potential for moderate reward.

We place great importance on this risk and continue to engage positively and actively to reduce the absolute emissions of our investment portfolio over time. Active measures we have taken so far are outlined throughout this report, including reporting, governance, engagement, climate integration and risk management, the climate tilt of the portfolio and divestment, where deemed appropriate and to the financial benefit of our members.

Risks for which the Trustee Board has set risk appetites are assigned to an owner at Group Executive level. The USSIM CEO is the executive owner for climate risk, with the following responsibilities:

- Ongoing identification, monitoring and management of climate risks
- Understanding the implications of the risk on USS strategy/operations and investments
- Directing the appropriate risk response (mitigate, avoid, transfer, accept) and making sure it is applied effectively
- Implementing and enforcing risk management policy
- Making sure frameworks for managing climate risk are available and applied across the organisation
- Performing a regular risk assessment of risk exposure against risk appetite

The USS Group Chief Risk Officer (CRO) oversees and challenges how relevant executives manage risk. The CRO supports business management in integrating climate risk into the Risk Management Framework and provides input to the IC's assessment of USSIM's performance in managing climate risk.

Climate risk is in our day-to-day operating risk registers: a bottom-up approach

Business areas are required to maintain risk registers that document the risks and controls associated with their processes.

These risk registers incorporate climate and other ESG risks. They also include evidence that investment desks and supporting functions are integrating financially-material climate and ESG considerations into their everyday processes and decision making, where appropriate.

The business risk registers are reviewed periodically with input from the RI team and receive oversight and challenge from the Group Risk team. The results of these assessments are reported to relevant governance forums quarterly, for example, the Risk Committees. The results also inform the Group Risk team's bottom-up assessment of these risk registers, which contributes to the qualitative assessment for the DB and DC balanced scorecard assessment on RI.

Climate risk is in our Investment Framework

We introduced an integrated Investment Framework in 2022, which changed the way the Trustee Board sets the mandate for USSIM. The framework includes the investment RASs and KRIs, including those for climate risk, as detailed above. This makes clear the parameters within which USSIM is to manage the scheme's investments.

The Investment Framework also includes an assessment of investment performance using an investment balanced scorecard for each of DB and DC.

Investment balanced scorecard: assessing USSIM's risk management, investment performance and advice

The balanced scorecard is a mechanism for the IC to assess USSIM's investment performance and risk management. Both DB and DC scorecards include a section on RI, ESG integration, managing climate risks and progress towards our net zero ambition.

The DB and DC investment balanced scorecards are produced twice a year primarily to enable the IC to carry out its annual assessment of USSIM's investment performance.

1. Investment return
2. Investment risk
3. Active management
4. Portfolio resilience
5. Responsible investment
6. Advice and support

The scorecard reflects the Trustee Board's belief that USSIM's investment performance should not be assessed one-dimensionally using a benchmark. Instead, it should be assessed using a range of quantitative risk-and-return metrics and qualitative assessments, including reference to many of the KRIs used for governing risks. All USS investment and advisory teams will in future have an RI performance objective to embed material financial factors in their investment process.

ESG, net zero, and climate risk in the balanced scorecards

The RI category of the balanced scorecard assesses the scheme's and USSIM's progress against these Key Risk Indicators:

a. Net zero ambition: An assessment of how USSIM is delivering against the scheme's net zero ambition
b. ESG integration: An assessment of how USSIM is integrating ESG factors (including reporting and stewardship)
c. Physical risk: A qualitative assessment by the Risk team of how USSIM is integrating physical risk

5. Responsible Investment – qualitative Key Risk Indicator measures for ESG and net zero

USSIM's RI performance is qualitatively assessed annually by the USS Group Risk function. This assessment feeds into the overall scorecard assessment by the IC alongside USSIM's other RI achievements over the period. That overall scorecard assessment is used as an input by the Remuneration Committee in setting the overall compensation for USSIM.

The Investment Framework, of which the balanced scorecard is a part, therefore provides an integrated governance framework for climate risk, linking the assessment of investment risk and performance back to Trustee Board strategy, objectives, and risk appetite.

Managing climate risk in the scheme's valuation

In line with The Pensions Regulator's defined benefit funding guidance, we have taken a proportionate, integrated approach in developing the Integrated Risk Management Framework (IRMF) as an approach to managing valuation risk. The IRMF is a regulatory expectation and the Regulator's guidance recognises that trustees have a strong vantage point from which to identify the risks (including climate risk) that their scheme faces, taking account of the advice they receive across the employer covenant, investment, and funding strands in an integrated way.

The IRMF is informed by expert professional advice from different specialist sources covering employer covenant, investment and actuarial considerations and potential impact on liabilities.

We then integrate this advice into a coherent framework for addressing how we manage risk in the context of the covenant. The next two sections cover the impact of climate risks on covenant and liabilities respectively.

The impact of climate risks on covenant

Consideration of climate risks is embedded into our covenant monitoring and assessment activities and is reflected in our overall covenant assessment. As part of those activities, we:

- Review information on climate-related issues published by employer representative bodies
- Discuss with employers how climate risks are captured in their risk management processes
- Understand how climate-related risks are incorporated into employers' scenario analyses

In our view, the climate-related issues that the sector may need to address include:

- Cost of transitioning campuses towards more efficient and environmentally friendly heating, lighting and transport
- Increased flood and weather risks affecting campus design and the cost or availability of insurance
- Managing the impact of climate-related risks on institutions' endowment and investment portfolios
- Opportunities for the sector from climate-related areas of research and innovation
- Environmental concerns around travel, making it more difficult to attract international students

Our sponsoring employers inevitably differ in how they incorporate climate-related issues into governance, risk management and strategic and financial planning and their consideration of these issues continues to evolve. University representative body Universities UK (UUK) provides some data for the sector in aggregate as of August 2023:

- 86% of UK member universities had committed to Scopes 1 and 2 net zero targets (from 75% in 2022)
- 65% of UK member universities had committed to Scope 3 net zero targets (up from 59% in 2022)
- 9% of UK member universities had already delivered Scope 3 reductions (up from 6% in 2022)

We continue to engage with scheme employers and stakeholders to understand their evolving assessment of climate risks. We interviewed university employers as part of our covenant assessment for the 2023 valuation, with consideration of climate-related risks and objectives forming part of that engagement. Consistent with the sector-level data from UK, the key findings were:

- Universities' focus is primarily on Scopes 1 and 2 targets, generally aiming for net zero on these by 2030 to 2040
- Efficiency improvements to deliver Scopes 1 and 2 targets have generally been incorporated into 'business as usual' planning and budgeting processes. Most capital investment decisions now include consideration of climate objectives as part of procurement processes
- The ease, speed and cost of achieving Scopes 1 and 2 targets depends on the nature of individual university estates. Where estates include heritage or listed buildings, planning and implementation is complex, significantly more expensive, likely to take longer to deliver and has not in all cases been fully costed
- Heat efficiency, insulation, and solar and wind power initiatives are however being adopted widely by universities
- Much less consideration has so far been given to achieving Scope 3 targets which are widely seen as being significantly harder to deliver than Scopes 1 and 2
- No higher education institution we have spoken to believes that climate change is a source of potential major disruption (for example, flooding) requiring significant mitigation

The impact of climate risks on liabilities

We consider the effects of climate risks in selecting our assumptions for the valuation of the scheme's liabilities and future contribution requirements. Climate change could affect our liabilities in a variety of ways, including potential changes to GDP, mortality rates and longevity. We consult with our advisers to understand these impacts on liabilities.

USSIM provides capital market expectations which make allowances for climate change. These are used to determine discount rates. The effect of climate change on mortality will be kept under review and assumptions will be modified as the effects are revealed.

Using stewardship to help manage climate-related risks

We actively engage with our investments to help manage climate-related risks. We engage to encourage our investments to reduce emissions, to obtain information that we can integrate into our investment decision making, and to encourage better management of ESG issues, including climate change. We engage with individual assets, with policymakers and regulators, and through collaborations such as Climate Action 100+.

We have included two case studies. See our **Stewardship Report** for more information – particularly Principle 7: Stewardship, Investment and ESG integration, and Principle 4: Promoting well-functioning markets.

Direct Equity – Northvolt: Sustainable Growth mandate

In 2023, USS made its first direct investment into the Sustainable Growth mandate, providing growth capital to Northvolt in the form of a convertible loan note. Northvolt has a goal to become a global leader in eco-friendly battery production, underscored by its commitment to using fossil-free energy, ensuring traceability in raw material sourcing, implementing robust material recycling practices, and minimising its environmental impact across the product life cycle.

Recognising the pivotal role of electric vehicles in decarbonisation, USS considers this investment may be the first of many in adjacent sectors that are enabling or benefiting from decarbonisation tailwinds. Before we invested, our investment team extensively reviewed the sustainability reports provided by the company, reinforcing our confidence in this new investment.

Direct Equity – Bruc: renewables and natural capital mandate

USS has continued to support the growth of Bruc Energy, the Spanish renewable platform we have invested in since 2021. As a material shareholder in Bruc, we work closely with their senior management team to achieve the ambition of making the company a leader in solar and wind renewable energy. Over the course of 2023, Bruc:

- Reached approximately 1GW of solar photovoltaic (PV) installed operating capacity, successfully adding 155MW of assets
- Generated more than 1,842GWh of renewable energy, enough to power circa 500,000 homes for a year and avoid the emission of 408,000 tonnes of CO_2
- Contributed to the creation of 269 jobs and generated more than 800 training hours, due to the significant construction activity undertaken

Managing climate risks at asset level

As well as the risk frameworks and tools we mention above, we have processes for identifying, assessing and managing climate risk at scheme portfolio, asset class and asset level. At a high level this includes climate scenario analysis (see the Strategy section) and emissions reporting (see the Metrics and targets section).

Details and examples of how we assess and manage climate risks at asset class level are set out in detail in our **Stewardship Report** in Principle 7, specifically in the section: Our approach to ESG integration by asset class.

We have included a short summary of our processes and some case studies here.

Listed equity: Global Emerging Markets

In 2023, the Global Emerging Markets Equities (GEMs) team improved ESG integration and reporting on climate progress in various ways. ESG is now further integrated into the investment research process, benefiting our company analysis.

The team has continued to develop in-house tools for ESG analysis with a focus on using data and information to improve the quality of engagement with portfolio companies. They have also continued to engage with the most carbon intensive companies in the portfolio, improving understanding of their decarbonisation strategies and monitoring their progress to date.

Collaboration with the Developed Markets Equities team has been key to understand whether companies are including Scope 3 emissions in their sustainability reports, what data is reported, how valid it is, and whether it is possible to use these data to estimate the financial impact of carbon emissions.

Listed equity: Developed Markets

The Developed Markets Equities team has launched the newly created Long-Term Real Return (LTRR) mandate, aiming for strong long-term returns with lower risk than the broader equity market. Over £4 billion is now invested in high-quality companies with strong competitive advantages.

Responsible investment considerations are integrated at every stage of the investment process. The companies we invest in have low Scope 1 and 2 emissions, supporting our goal for our portfolio to achieve net zero by 2050 or earlier.

Private Markets: Direct assets

The Private Markets Group (PMG) is dedicated to factoring climate-related issues into the ESG due diligence they undertake for all direct investments. PMG have developed a Climate Risk Framework to capture both physical and transition climate risks across new deals and existing assets. These high-level assessments inform additional due diligence, which may include the use of external environmental advisers/consultants.

Tripod Tech Corp improves the scope and speed of disclosure

Tripod Tech Corp, a major printed circuit board (PCB) manufacturer in China, ranked among our top 10 GEMs portfolio emitters in 2023. Initial engagement revealed incomplete carbon emissions data and unclear reduction targets. We highlighted our concerns, discussed global best practice, and suggested ways in which the company could apply it to their own disclosures. Since then, Tripod has made significant strides, including issuing comprehensive sustainability reports in English, disclosing emissions from all manufacturing sites, and setting specific GHG reduction targets. With commitments to Scope 3 verification and a plan for net zero by 2060, Tripod aims to align with China's goals and manage climate transition risks.

We will continue to engage with the company to encourage them to exceed baseline targets and improve the scope and speed of disclosure, which could enhance Tripod's competitiveness.

Property: DPD's greenest distribution centre

Prologis Park, one of our direct property assets situated near Canary Wharf and the City of London, saw Unit A vacated by a major supermarket in March 2022. A marketing strategy, developed by USSIM and its retained investment advisers, based on advice from (and implemented by) USSIM's appointed letting agents, targeted potential occupiers in e-commerce, data centres, and last-mile delivery sectors. DPD, a prominent parcel delivery and e-commerce operator, agreed to lease the unit, planning to create their greenest UK distribution centre with an all-electric fleet of 500 vehicles and all their HGVs powered by HVO renewable biofuel. The site also included solar charging canopies, photovoltaic panels, and cycle parking spaces. USS collaborated with DPD to enhance energy efficiency even further, installing a VRF heating/cooling system and LED lights to achieve an 'A' Energy Performance Certificate rating, aligning with our net zero ambition. DPD have committed to maintaining this rating throughout the 20-year lease term and providing energy data for us to track Scope 3 greenhouse gas emissions.

Private Markets: Property

Before investing in directly held buildings, potential physical risks from climate change, such as flood and storm damage, are assessed. Energy Performance Certificates (EPCs) for UK properties are required by law, which helps assess a building's energy efficiency and potential exposure to higher energy and/or carbon costs. A Responsible Property Investment (RPI) programme has been active for over a decade. The RPI programme primarily focuses on reducing energy consumption in major property assets to mitigate potential carbon exposure.

Fixed Income: Sovereign debt

USS uses a proprietary ESG tool, which ranks countries based on ESG factors. In portfolio construction for the Emerging Market Debt (local currencies) portfolio, the composite country index ranking is a core tool.

Improving ESG country scores signal a positive outlook, while declining scores prompt caution. Our investment strategy aims to avoid countries with increasing default risks, enhancing portfolio quality and aligning with the scheme's risk appetite. Climate and carbon exposure are built into modelling, with allocations favouring countries showing improvement and reducing exposure to those with significant increases in coal production and emissions.

Fixed Income: Credit (corporate debt)

The credit team adopts a screening-based approach using external ESG risk scores from major rating agencies, conducting monthly screenings for any red flags. ESG issues are flagged in this research where they are financially material, particularly focusing on environmental factors and climate risks, with further analysis conducted to assess creditworthiness implications.

ESG credit templates are used to compare portfolio ESG scores to benchmarks and identify excessive exposures and unintended risks, while additional fundamental ESG research is conducted for weak-scored or high-exposure companies. ESG factors are discussed during quarterly investment forums for companies with large exposures, and while credit investors have limitations in engaging with issuers on ESG, these are standard topics during company meetings.

Externally managed funds

USS applies its RI strategy across all scheme investments, whether managed internally by USSIM or by external managers. Around 70% of investments are managed in-house, while external managers are assessed and monitored for their ESG practices. External manager oversight is considered stewardship, involving engagement to enhance their efforts. Both pre-appointment and ongoing assessments are conducted, evaluating policies, processes, resources, and reporting. Dedicated teams conduct due diligence on new fund managers to ensure alignment with responsible investment principles and scheme needs.

Please see our **Stewardship Report** for more information, and specifically Principle 8: Monitoring managers and service providers.

UK Power Networks – facilitating the energy transition

£100m

invested by USS in privately placed 20-year bonds issued by UK Power Networks (UKPONE), focusing on ESG and net zero credentials.

UKPONE manages electricity distribution to 8.4m homes and businesses, playing a crucial role in the UK's net zero transition. UKPONE introduced the first independent Distribution System Operator (DSO) in the UK to meet rising demand for low-carbon electricity. They have set high carbon reduction targets, aiming for net zero by 2028 and collaborating with suppliers on Scope 3 emissions reduction. USS monitors UKPONE's performance against net zero commitments and assesses the DSO's role in enhancing network resilience and facilitating the energy transition.

7

Metrics and targets

This section covers the metrics we use to assess and manage climate-related risks and opportunities, and the targets we use to measure our progress towards our net zero ambition.

Our ambition is for our portfolio to achieve net zero by 2050 if not before. Our interim net zero target is to reduce the Scope 1 and 2 emissions intensity of the non-sovereign assets in our portfolio by 25% by 2025, and by 50% by 2030 (relative to a 2019 baseline).

While our internal investment teams are expected to decarbonise their portfolios at the rate set for the scheme, each team has specific targets and delivery approaches for each asset class. This ensures that each investment team contributes to our shared ambition.

Our four metrics

Category	Our chosen metric	Explanation and scopes covered
Absolute emissions	Portfolio emissions (tCO_2e)	Absolute amount of carbon dioxide and equivalents emitted (Scopes 1 and 2) by the investments: Million tCO_2e. We currently focus on Scopes 1 and 2 and report Scope 3 emissions separately where available. We expect to see this metric reduce substantially over the long term as the scheme and the global economy decarbonise.
Emissions intensity[3]	tCO_2e per £ million invested	The amount of carbon dioxide and equivalents emitted per million pounds of scheme investments. We currently focus on Scopes 1 and 2 and report Scope 3 emissions separately where available. We expect to see this metric reduce substantially over the long term as the scheme and the global economy decarbonise.
Portfolio alignment	Percentage of portfolio emissions from assets aligned with a pathway of well below 2˚C	This assesses the proportion of our assets that are on a decarbonisation trajectory expected to align with 2˚C or below. This is based on the warming path as assessed by S&P Trucost modelling. This forward-looking metric shows how assets are transitioning: we expect to see alignment increase in future.
Data quality	Estimated reliability of sourced data for proportions of our investments	We group different sources of Scope 1 emissions data by an estimate of their accuracy. We then report the proportion of our investments for which emissions data were sourced using that method. This metric tracks how well investments are disclosing their carbon exposure and climate transition plans, giving us greater confidence to use these data in our investment decision making. We expect to see the percentage increase in future.

3. The TCFD guidance defines carbon footprint as the total carbon emissions for a portfolio normalised by the market value of the portfolio, expressed in tonnes of CO_2e per million dollars invested. In this report, we use emissions intensity to express the amount of carbon dioxide and equivalents emitted per million pounds of scheme investments.

Metrics as at December 2023

Our total assets under management (AUM) are £77 billion, as at December 2023, where £74.2 billion is DB and £2.8 billion in DC. Within DB, £47.3 billion are non-sovereign assets and £26.9 billion are sovereign debt.

DB metrics excluding sovereign debt

Category	Description	Dec 2022	Dec 2023
AUM	NAV of non-sovereign assets for which absolute emissions are measured	£46.4bn	**£47.3bn**
Absolute emissions	Absolute amount of carbon dioxide and equivalents emitted (Scopes 1 and 2) by the investments: Million tCO_2e	3.3 $MtCO_2e$	**2.6 $MtCO_2e$**
Emissions intensity	The amount of carbon dioxide and equivalents emitted per million pounds of scheme investments: tCO_2e per £ million invested	70.7 tCO_2e per £m	**54.6 tCO_2e per £m**
Portfolio alignment	Proportion of portfolio emissions from assets aligned with a pathway of well below 2˚C	27%	**45%**
Data quality	Proportion of assets for which Scope 1 emissions data was reported or derived from reported information	52%	**64%**
Scope 3 emissions	Scope 3 emissions:	7.2 $MtCO_2e$	**8.5 $MtCO_2e$**

About these metrics:

- 2022 data are taken from last year's report, calculated for 31 December 2022 on 15 February 2023
- 2023 data were calculated for 31 December 2023 on 15 January 2024
- 2022 and 2023 portfolio alignment data are reported for the £14.9 billion and £17.8 billion of assets for which S&P Trucost Paris Alignment data were available respectively
- Data quality is reported based on the source of Scope 1 emissions data using industry guidance
- All reported numbers relating to portfolio alignment and data quality are reported to the nearest whole number. Other reported numbers are rounded to one decimal place.
- 2022 and 2023 Scope 3 emissions data are reported for the £22.9 billion and £27.3 billion of assets for which data were available respectively
- The emissions intensity of the DB scheme's non-sovereign investments reduced by more than 22% from 2022 to 2023, from just over 70 tonnes CO_2e per £ million invested, (tCO_2e per £ million) to 55 tCO_2e per £ million invested
  - The absolute financed emissions of the scheme's DB non-sovereign assets reduced by around 0.7 M tCO_2e from 3.3 $MtCO_2e$ to 2.6 $MtCO_2e$
- During 2023, we transitioned circa £4 billion in equity assets from passively managed, highly diversified portfolios into an internally managed active portfolio focusing on very high-quality businesses expected to have attractive risk-return characteristics for the scheme over the long term
  - These businesses typically have very low emissions and the portfolio intensity is measured at circa 10 tCO_2e per £ million compared with the passive portfolios that were typically 50 to 100 tCO_2e per £ million, which is a key contributor to the reduction in the scheme's emissions intensity
  - The more concentrated positions in this portfolio are also the key contributor to the increase in assets invested in companies that are estimated to be on an emissions trajectory aligned with a well below 2˚C warming scenario
- We had a significant increase in reporting of emissions data by our third-party managers across both public and private markets this year which contributed to the increase in high-quality data used in calculations, from 52% last year to 64% this year
- Our absolute emissions (as defined in our interim net zero target) are now 39% lower than in 2019, 14% ahead of our 2025 target with 11% remaining to reach our 2030 target
- While these numbers represent material progress towards decarbonising our portfolio, we are conscious this is not reflective of the global progress towards net zero, nor is it proportionate to any reduction in our exposure to the systemic risks posed by climate change.
- In our 2023 TCFD Report we restated emissions data because of improvements in data quality alongside the processes we use to collect data. We may need to restate reported data again in future as data quality, coverage and climate modelling improve.

Progress against our targets

Emissions intensity of non-sovereign assets compared to 2019

2019 emissions intensity	2023 emissions intensity	Reduction from 2019 to 2023	Annualised reduction
89.5 tCO_2e per £m	54.6 tCO_2e per £m	39%	11.6%

Sovereign debt

Category	Description	Dec 2022	Dec 2023
AUM	NAV of sovereign assets	£22.7bn	**£26.9bn**
Absolute emissions	Absolute amount of carbon dioxide and equivalents emitted (Scopes 1 and 2) by the investments: Million tCO_2e (territorial + imported)	15.6 $MtCO_2e$	**14.7 $MtCO_2e$**
Emissions intensity	The amount of carbon dioxide and equivalents emitted per million pounds of scheme investments: tCO_2e per £ million invested (territorial + imported)	685.3 tCO_2e per £m	**548.2 tCO_2e per £m**

Territorial emissions are defined as those generated discretely within a country's territory as defined by its geographic boundary and cover all anthropogenic industrial and non-industrial processes as well as land use, land use change and forestry emissions. Imported emissions are those generated outside of a country's geographic boundary but are embedded in goods and services that are imported by the country.

We continue to report emissions data for sovereign and non-sovereign assets separately. While we continue to track and report sovereign data, we have not set interim targets due to our lack of influence over country emissions. This, along with our concerns over the methodology used for calculating this data, makes the effective comparison of corporate and country emissions impossible.

DC metrics excluding sovereign debt

Under TCFD Regulations, we need to report funds that have over £100m in assets. That applies to the funds in the below table.

		Dec 2022			Dec 2023		
Metric	Fund	Total NAV (£m)	Non-Sovereign NAV (£m)	Amount (tCO_2e)	Total NAV (£m)	Non-Sovereign NAV (£m)	Amount (tCO_2e)
Total emissions (tCO_2e)	Growth	1,159	964	66,086	1,685	1,461	83,749
	Moderate Growth	246	188	12,599	346	275	16,279
	Cautious Growth	128	85	5,764	182	129	7,361
	Ethical Growth	–	–	–	109	101	2,996
	All Equity World	–	–	–	115	115	6,813
	Cash	–	–	–	127	–	–
Emissions intensity (tCO_2e per £m invested)	Growth	1,159	964	68.5	1,685	1,461	57.3
	Moderate Growth	246	188	67.1	346	275	59.1
	Cautious Growth	128	85	68.0	182	129	56.9
	Ethical Growth	–	–	–	109	101	29.6
	All Equity World	–	–	–	115	115	59.4
	Cash	–	–	–	127	–	–

About these metrics:

- In 2022, the intensity of passively implemented external funds was estimated based on a measurement of their benchmarks
- In 2023, we received reported emissions from all externally managed, non-sovereign portfolios in our reported DC options, therefore no internal calculations were necessary. All data are taken from external managers.

Our methodology, rationale and data sourcing for each metric

After a detailed review of carbon data providers, we chose S&P Trucost as the most appropriate source of these data. They met our needs in providing both carbon and broader climate data for a wide range of asset classes and geographies. We combine this with disclosures from company reports and direct communication with our third-party asset managers and unlisted or direct assets, where such data are available.

Data quality metric

Data quality for DB assets

Climate and carbon data quality and availability vary across companies, asset classes and markets. We have made best efforts to collect accurate and up-to-date emissions data for each underlying company or country. For investments in externally managed funds, and for which underlying holdings information is either unavailable or unsuitable, we have two options for collecting data:

- We take disclosures from the manager, or
- We estimate the intensity of the portfolio using average intensities for the industries and regions in which the portfolio is invested, based on available data

We have reported our emissions intensity and absolute emissions based on 100% of our DB assets by using estimated proxy data in place of reported data where it is not available. As noted in our data quality metric, however, we saw a substantial increase in reported data in 2023, with emissions data for 64% of our assets coming from fully or partially reported sources.

Figure 11 shows a more detailed breakdown of the data sources by category. Industry guidance has been used when determining these.

Figure 11: Proportion of non-sovereign DB AUM by Scope 1 emissions source quality

Scope 1 emissions source quality	% of assets
1. Verified Reported Emissions	18.4%
2. Unverified Reported Emissions	27.2%
3. Estimates derived from partially reported emissions	18.0%
4. Estimates based on modelling of consumption and production	3.2%
5. Estimates based on emissions per unit of value typical to that region and/or sector	21.2%
6. Estimates based on emissions per unit of value typical to that portfolio	12.0%

Verified: This information is classified as 'verified' if we receive it through S&P Trucost, meaning it has been through explicit quality assurance checks.

Unverified: We classify this information as 'unverified' if we have taken the number from a company publication or disclosure but cannot be certain of its reliability, or if it was reported to us by one of our third-party managers.

For our sovereign debt investments, our service provider was able to provide data covering 99.9% of the assets, although we do not have a data quality rating for this portion of our assets.

Data quality for DC assets

DC funds are all externally managed and this year we received reported emissions data from managers of all DC funds invested in non-sovereign assets. This is classified as unverified reported emission data and therefore implies 100% data quality within our reported DC segments.

Alignment metric

S&P Trucost methodology is used when determining portfolio alignment. More information on their methodology can be found **here**: S&P Trucost calculates a company's alignment to a given warming path based on its individual profile and the best data available for future emissions. These data include company targets, industry averages and more. For companies in carbon-intensive industries such as steel or cement production, S&P Trucost uses the Sectoral Decarbonisation Approach as recommended by the Science Based Targets Initiative. This more accurately reflects their anticipated impact on the path to a low-carbon economy.

We recognise that alignment metrics are highly sensitive to the methodology used to model them and include estimated inputs that themselves can be debated. But in the short to medium term, we believe that this metric can be a useful indicator of how successful our stewardship and engagement activities are in encouraging companies to plan for a low-carbon future. It is also more sensitive to a company's specific decarbonisation trajectory, making allowances for the likely cost of decarbonisation and the need for new technologies to make that future a reality. We recognise that transition data and the methodologies to calculate them continue to develop and will be subject to change over time.

Absolute emissions and intensity metrics

Data sourcing by asset class
S&P Trucost has many years' experience in both collecting published corporate climate data and estimating these data if they are not available. More information is available on their **website**.

For corporate assets we consider both our equity and debt investments when calculating emissions, enabling us to identify the highest emitters across the asset classes and markets we invest in. Many of the highest emitters are energy companies in our GEMs portfolio.

Below is a case study on how we engage with companies on their emissions. For more information, go to our **Stewardship Report**.

Data sourcing by asset class: Property
Our property investments are mostly direct investments in offices, retail and industrial buildings across the UK. Data on emissions data for our real estate investments are provided by **EVORA**, a leading sustainability consultancy focused on the property sector.

Unilever updates its Climate Transition Action Plan (CTAP)

Unilever has historically been a corporate climate leader and is now updating its Climate Transition Action Plan (CTAP) to align with a 1.5° target, seeking feedback from stakeholders including USSIM. While grappling with challenges in Scope 3 emissions data, Unilever's shift to an absolute framework and prioritisation of plastic as an issue alongside climate and nature, demonstrate a commitment to sustainability and willingness to take concerted policy action to drive global change.

Real estate presents practical challenges in assessing emissions. The most significant reporting challenge is working out who is responsible for emissions between the landlord and tenant, or between an owner and a mortgage provider (or debt provider). This is a particular problem for the Full Repairing and Insuring leases commonly used in the sector. In these leases, tenants have explicit and sole responsibility for energy usage and management, with building owners tending to have limited, if any, Scope 1 and 2 emissions. While this may be an accurate reflection of responsibilities, it may lack credibility with stakeholders who do not accept that the numbers reported for the landlord's or owner's emissions are a fair characterisation of their emissions. It may also not reflect accurately the carbon and climate-related risk associated with owning a building. However, reporting on total building emissions does not account for tenants' responsibilities for their emissions (that is, it introduces an element of double counting).

Data sourcing by asset class:
Private assets in externally managed funds
For externally managed assets across both private and public markets we take reported emissions data from the managers where it is available. While we acknowledge there may be slightly differing methodologies across different managers, we believe this represents the best available and most consistent way to source the data. Where data are not reported by the manager, but the underlying holdings are incorporated into our systems, we calculate a figure using either company-level data or proxy emissions data using S&P Trucost and public market indices.

In private markets specifically, we support broader market actions to encourage private market carbon disclosure. For example, we support the **CalPERS/Carlyle Data Convergence Project**, to streamline the private markets approach to collecting and reporting ESG data. In 2023, we saw a significant increase in reporting from our private market investments.

Data sourcing by asset class: Sovereign debt
We take country emissions and economic data from S&P Trucost to calculate the emissions of our sovereign debt investments. In line with previous years' reporting and industry guidance, we use territorial plus imported emissions, including those arising from land use, land use change and forestry, and have attributed those emissions using gross national debt.

We acknowledge updated PCAF guidance on the methodology for attributing sovereign emissions and from next year we will report our sovereign footprint using the full consumption-based emissions approach and attribute them using PPP-adjusted GDP. We will also recalculate emissions for last year to allow for a meaningful year-over-year comparison.

Data limitations and validation

Data limitations

The availability and quality of data vary across, and within, asset classes. If the availability and quality of data improves in future years, we may need to revisit and restate previously reported data.

To support access to carbon data, we have supported **CDP** since its creation in 2002. CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

Data validation processes

We have defined a new formal data validation process for TCFD metrics which will improve efficiency, quality, confidence and auditability in our reported metrics.

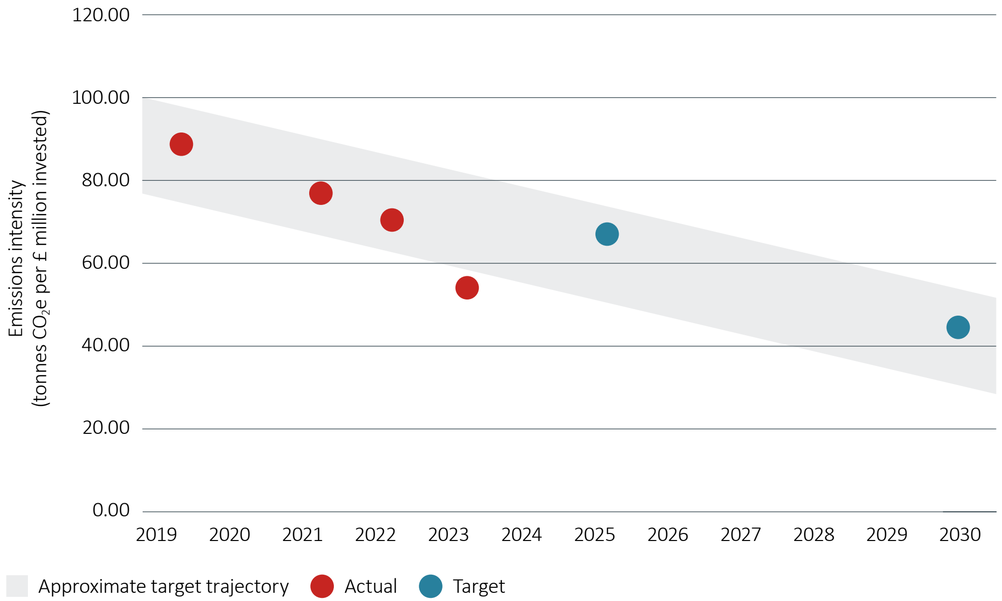
Climate reporting data are now formally integrated into our investment data infrastructure, enabling more efficient analysis and reporting. To mitigate some of the challenges posed by the limitations on quality, transparency and volume of data being processed, our TCFD data has been through appropriate levels of internal review and validation to assess completeness and accuracy to the extent possible.

Our net zero ambition and targets

Our target implies that from our baseline year of 2019, we need to reduce our non-sovereign assets' emissions intensity by between 4.7% and 6.1% each year on average. We expect to see greater reductions in later years as we:

- Improve the integration of climate data into our investment decision making
- Realise the impact of our engagement with our long-term investments on achieving emissions reduction
- Incorporate climate change risks into our asset allocation

Figure 12: Emissions intensity versus targets



Samsung Electronics sets net zero targets

As a long-term shareholder in Samsung Electronics, we have actively engaged with Samsung on various sustainability matters, including carbon emissions.

In response to our engagement, Samsung committed to achieving net zero by 2050, with divisional targets set for different business sectors. Moving forward, we will closely monitor Samsung's progress in achieving net zero, highlighting our investment commitment to integrating material environmental considerations into our investment strategy, driving positive change towards a more sustainable future.

8 Next steps towards net zero

We plan to take the following four steps to continue our progress in reaching our net zero ambition.

1. Put our new decision-useful climate scenarios into practice	We will use the scenarios we developed with the University of Exeter to run climate scenario analysis for both the DB and DC parts of the scheme for our 2025 TCFD Report. This will help us better integrate real-world climate risk and opportunities into our investment decision making.
2. Enhance our long-term investment outlook to inform asset allocation	We will continue to work with the University of Exeter to consider the impact of the physical and transition risks associated with climate change and use this to develop a long-term investment outlook. Alongside other factors, we will use this to inform decisions in relation to strategic asset allocation.
3. Continue our active ownership approach to climate issues	We will continue to consider climate-related risks and opportunities. This includes the consideration of climate mitigation and adaptation, climate transition and climate solutions.
4. Further embed net zero into how we invest	We will provide additional training and support to our investors to ensure climate considerations are fully embedded into investment processes and decision making.

9 Glossary

Absolute emissions	Absolute amount of carbon dioxide and equivalents emitted (Scopes 1 and 2) by the investments: Million tCO_2e
AUM	Assets Under Management. An amount of money managed or invested.
Carbon dioxide equivalent (CO_2e)	Metric used to compare the emissions from various greenhouse gases based on their global-warming potential.
Emissions intensity	The amount of carbon dioxide and equivalents emitted per million pounds of scheme investments.
ESG	Environment, Social and Governance.
Financed emissions	An estimate of the emissions generated by the scheme's investments.
Greenhouse gases (GHGs)	The six gases listed in the Kyoto Protocol: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride. These contribute to the greenhouse effect and climate change.
Net zero target	Our target is to reach net zero emissions in our portfolio by 2050, if not before. Our interim net zero target is to reduce the emissions of the non-sovereign assets in our portfolio by 25% by 2025, and by 50% by 2030 (relative to a 2019 baseline).
Paris Agreement	A legally binding international treaty on climate change, signed in Paris in December 2015. Its overarching goal is to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "to limit the temperature increase to 1.5°C above pre-industrial levels."
Paris-aligned	In investment terms, investments that are consistent with the objectives of the Paris Agreement (see above).
Physical risks	Physical risks are those that relate to the physical impacts associated with a changing climate, such as temperature effects on productivity, and increase in frequency and severity of extreme weather events.
Science Based Target Initiative (SBTI)	A corporate climate action organisation that enables companies and financial institutions worldwide to play their part in combating the climate crisis.
Scope 1 emissions	Emissions from sources that an entity owns or controls directly – for example, from burning fuel in a fleet of vehicles.
Scope 2 emissions	Emissions that an entity causes indirectly when the energy it purchases and uses is produced. The generation of electricity, for example, would fall into this category.
Scope 3 emissions	Indirect emissions that occur in the value chain of an organisation, both upstream and downstream. Scope 3 emissions can include categories such as business travel, waste disposal and use of sold products.
Sovereign assets/non-sovereign assets	In our TCFD Report we classify the assets as follows: sovereign and non-sovereign. Non-sovereign assets include equity and debt issued by corporations, real estate investments, plus all other securities not directly issued by a national government. It does not include any synthetic derivative exposures.
Stewardship	The responsible allocation, management, and oversight of capital to create long-term value for clients and beneficiaries leading to sustainable benefits for the economy, the environment and society.
Transition risk	The risk associated with the pace and extent at which an organisation manages and adapts to reduce GHGs and transition to a renewable, net zero economy. Transition risk impacts are driven by the combination of policy drivers and technological innovation.

10 Appendix: Statutory reporting requirements

This section maps this TCFD Report to the DWP's statutory guidance: **Governance and reporting of climate change risk: guidance for trustees of occupational schemes**.

Governance

DWP reporting requirement	Section of report	Page number
33. Trustees must describe in their TCFD report:		
How they maintain oversight of climate-related risks and opportunities which are relevant to the scheme	Climate-related risks and opportunities: who is responsible, and how do they exercise oversight	8
The roles of those undertaking scheme governance activities, in identifying, assessing and managing climate-related risks and opportunities relevant to those activities	Climate-related risks and opportunities: who is responsible, and how do they exercise oversight	8
The processes the trustees have established to satisfy themselves that those undertaking scheme governance activities take adequate steps to identify, assess and manage those risks and opportunities	As above	
The role of those advising or assisting the trustees with scheme governance activities	As above	
The processes the trustees have established to satisfy themselves that the person advising or assisting takes adequate steps to identify and assess any climate-related risks and opportunities which are relevant to the matters on which they are advising or assisting	How the Trustee Board maintains oversight of climate-related risks and opportunities	8

Governance continued

DWP reporting requirement	Section of report	Page number
34. To help contextualise these disclosures, trustees should concisely describe:		
How the board and any relevant sub-committees are informed about, assess and manage climate-related risks and opportunities and the frequency at which these discussions take place	Climate-related risks and opportunities: who is responsible, and how do they exercise oversight	8
	How the Trustee Board and Investment Committee are informed about climate-related risks and opportunities	11
Whether they questioned and, where appropriate, challenged the information provided to them by others undertaking governance activities – or advising and assisting with governance	As above	
The rationale for the time and resources they spent on the governance of climate-related risks and opportunities	How the Trustee Board and Investment Committee are informed about climate-related risks and opportunities	11
35. Trustees should also concisely describe, in relation to those who undertake governance activities, or advise or assist with governance of the scheme:		
The kind of information provided to them by those persons about their consideration of climate-related risks and opportunities faced by the scheme	How the Trustee Board and Investment Committee are informed about climate-related risks and opportunities	11
The frequency with which this information is provided	As above	
36. Trustees should describe the training opportunities they provided for their employees in relation to climate change risks and opportunities. Where trustees identified skills gaps, they may also describe whether they encourage external advisers to provide training opportunities.	Climate-related training opportunities	11
37. Trustees may wish to provide an organogram or structural diagram in their TCFD report, showing which groups/individual roles have responsibilities for governance of climate-related risks and opportunities.	Climate-related risks and opportunities: who is responsible, and how do they exercise oversight	8

Strategy

DWP reporting requirement	Section of report	Page number
92. Trustees must describe in their TCFD report:		
The time periods which the trustees have determined should comprise the short term, medium term and long term	A brief recap of 2021/22 climate scenario analysis: The scenarios and time horizons we used in this analysis	12
The climate-related risks and opportunities relevant to the scheme over the time periods that the trustees have identified and the impact of these on the scheme's investment strategy and, where the scheme has a funding strategy, the funding strategy	Risks and opportunities, and the resilience of our investments and funding strategies in these scenarios	13
The most recent scenarios the trustees have used in their scenario analysis	The scenarios and time horizons we used in this analysis	12
The potential impacts on the scheme's assets and liabilities which the trustees have identified in those scenarios and, if the trustees have not been able to obtain data to identify the potential impacts for all of the assets of the scheme, why this is the case	Risks and opportunities, and the resilience of our investments and funding strategies in these scenarios	13
The resilience of the scheme's investment strategy and, where the scheme has a funding strategy, the funding strategy, in the most recent scenarios the trustees have analysed	As above	
Where trustees have concluded that it is not necessary to undertake new scenario analysis outside the mandatory cycle, the reasons for this determination	A brief recap of 2021/22 climate scenario analysis	12
93. Trustees should also describe in their TCFD report:		
Their reasons for choosing the scenarios they have used	A brief recap of 2021/22 climate scenario analysis	12
The key assumptions for the scenarios used and the key limitations of the modelling (for example, material simplifications or known under/over estimations)	Limitations of this scenario analysis	14
Any issues with the data or its analysis which have limited the comprehensiveness of their assessment	As above	
94. Trustees may include information in their TCFD report on any other aspects of the assessment of their investment strategy and, if they have one, funding strategy and scenario analysis that they consider would be helpful to disclose	Creating decision-useful scenarios with the University of Exeter	14
	Next steps for our scenario analysis	17

Risk management

DWP reporting requirement	Section of report	Page number
113. Trustees must describe in their TCFD report the processes they have established for identifying, assessing and managing climate-related risks in relation to the scheme, and how the processes are integrated within the trustees' overall risk management of the scheme	The Trustee Board's overall risk management of the scheme How we integrate climate risk into our risk management processes	18 19
114. The report should also include concise information on the following:		
The risk tools the trustees used and the outputs/outcomes of using those particular tools	Our Enterprise Risk Management Framework (ERMF) Climate risk is in our Investment Framework Managing climate risk in the scheme's valuation Managing climate risks at asset level	19 21 22 24
How the trustees have identified, assessed and managed both transition and physical risks for the scheme	As above	
How the trustees' assessment of climate-related risks has impacted the scheme's prioritisation and management of risks which pose the most significant potential for loss and are most likely to occur	As above	
115. Trustees should include information on how, if at all, they have used stewardship to help manage climate-related risks to the scheme	Using stewardship to help manage climate-related risks	23
116. Disclosing information about how climate-related opportunities are identified, assessed and managed is encouraged as this will add further insights for members and others into the scheme's overall approach to climate-related risk	Managing climate risk in the scheme's valuation Managing climate risks at asset level	22 24

Metrics

DWP reporting requirement	Section of report	Page number
175. Trustees must describe in their TCFD report the metrics which they have calculated – absolute emissions metric, emissions intensity metric, portfolio alignment metric and an additional climate change metric. If they have been unable to obtain data to calculate the metrics for all of the assets of their scheme, they must explain why this is the case	Our four metrics	26
176. When disclosing their portfolio alignment metric trustees should describe the key components of the methodology (for example, key judgements, assumptions, data inputs and where relevant how the chosen methodology accounts for data gaps) used to calculate their chosen metric	Our methodology, rationale, and data sourcing for each metric: Data quality metric	29
177. If the trustees have chosen to use a metric which is not recommended in this Guidance, they should explain why	n/a	
178. For all metrics, trustees should concisely explain their methodologies and those of any asset managers or third-party service providers used, and their rationale for taking the approach that has been adopted	Our methodology, rationale, and data sourcing for each metric	29
179. When reporting total GHG emissions and Carbon Footprint, trustees should report the proportion of assets for which data was available. Trustees should concisely explain where data was estimated and should indicate any assumptions that have been made that could impact significantly on the results. Where they have data of uncertain quality, trustees should again concisely explain this	Metrics as at December 2023 Our methodology, rationale, and data sourcing for each metric	27 29
180. Where trustees report metrics on only a proportion of the portfolio, they should explain the proportion on which they are reporting	Metrics as at December 2023	27
181. When reporting total GHG emissions and Carbon Footprint, trustees should set out the Scope 1 and Scope 2 emissions of assets separately from the Scope 3 emissions of assets for each DB section and each popular DC arrangement. Trustees may additionally report the Scope 1 and Scope 2 emissions of assets separately. Emissions should be reported in amount of CO_2 equivalent (CO_2e).	Metrics as at December 2023 Scope 3	27 27

Metrics continued

DWP reporting requirement	Section of report	Page number
182. If trustees believe that it is not meaningful, in relation to any metric, to aggregate data across certain asset classes, they should not do so, but should instead report at the most aggregated level which remains meaningful (for example at asset class level). If this approach is necessary, they should also report the proportions of the scheme assets associated with each reported metric (in the above example, the proportion of the portfolio represented by each asset class).	Metrics as at December 2023	27
183. Trustees may choose to disclose some or all of their chosen metrics against a relevant benchmark to identify the relative performance of the portfolio.	n/a	
193. Trustees must describe in their TCFD report the target they have set, and the performance of the scheme against the target.	Our net zero ambition and targets	31
194. Trustees should report concisely on the steps they are taking to achieve the target or targets.	Our net zero ambition and targets Next steps towards net zero	31 32
195. Trustees should provide a concise description of the methodology used to measure performance against the target or targets, including any estimations relied upon in measuring progress.	Progress against our targets	28
196. Where trustees have replaced a target, they should briefly explain why. Similarly, where a target has been missed, trustees should offer a brief explanation. Such explanations could help savers and others understand the trustees' conclusions on the events or circumstances that made the target unachievable or not in members' interests.	n/a	

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