TCFD report for year ending 5 April 2023

Plumbing & Mechanical Services (UK) Industry Pension Scheme (the “Scheme”)

Produced by: The Trustee Directors (“the Directors”) of the Plumbing & Mechanical Services (UK) Industry Pension Scheme (“the Scheme”)

Date: 2 March 2023

Introduction

The Taskforce on Climate-related Financial Disclosure (“TCFD”) is an initiative that developed some best practice guidance for climate-risk reporting. New UK regulations require trustees to meet climate governance requirements and publish an annual TCFD-aligned report on their pension scheme’s climate-related risks.

This document is the first annual TCFD report for the Plumbing & Mechanical Services (UK) Industry Pension Scheme.

The TCFD disclosures report has been prepared by the Directors for the scheme year ending 5 April 2023.

Contents

Executive summary

This statement sets out the approach of the Directors with regards to identifying and managing climate-related risks and opportunities in the context of the Directors broader regulatory and fiduciary responsibilities to their members.

The Directors support the recommendations set out by the TCFD on the basis that they will allow the Directors to more closely assess, monitor and mitigate climate-related risks on behalf of Scheme members. This is the Directors' first disclosure under the framework and this statement is therefore expected to evolve over time.

This statement has been prepared in accordance with the regulations set out under "The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021" (the "Regulations") and provides a status update on how the Scheme is currently aligning with each of the four elements set out in the regulations (and in line with the recommendations of the TCFD). The four elements covered in the statement are detailed below:

- **Governance:** The Scheme's governance around climate-related risks and opportunities.
- **Strategy:** The actual and potential impacts of climate-related risks and opportunities on the Scheme's strategy and financial planning.
- **Risk Management:** The processes used to identify, assess and manage climate-related risks.
- **Metrics and Targets:** The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

The following pages summarise the Directors' current position with regards to the TCFD recommendations and those set out in the Regulations. The Directors have been supported by the Scheme's investment adviser, Aon Investments Limited ("Aon") with the production of this TCFD disclosures report and the data contained within it.

Strategy

After undertaking both qualitative and quantitative analysis, the Directors have identified:

- From the qualitative analysis, it became apparent that climate related risks and opportunities impact all the different asset classes in which the Scheme invests. Over time, there was a general expectation that the impact of both physical and transition risks increases. Alongside this, climate change provided numerous investment opportunities for the different asset classes.
- The Scheme has a reasonable degree of resilience relative to climate related risks, which was a key outcome from the quantitative climate scenario analysis based on the three different strategies considered. This was demonstrated under all three climate scenarios. The resilience of the strategy considered was primarily driven by the high level of diversification in the assets, low proportion of equities and the high levels of hedging against changes in interest rates and inflation.

Risk Management

The Directors have integrated climate related risks into the various Scheme documents and processes. For example, the Directors have a clear policy on stewardship, including the impact of climate change, as outlined in their Statement of Investment Principles. In addition to this, the Directors receive data on voting and engagement from managers (as outlined in the Engagement Policy Implementation Statement, which is produced annually).

The Directors have outlined a Risk Management Plan, on page 22 and 23, which assists with the ongoing management of climate related risks and opportunities.

Metrics and Targets

The Directors gathered the carbon metrics data from a range of different sources, including their investment managers, investment advisers and other data vendors. As required, the Directors have, as far as they are able, collated the data for the total greenhouse gas emissions and carbon footprint.

The Directors are keen to understand the carbon emissions in the Scheme's portfolio, but note that at the current time, data is limited for certain asset classes. The Directors expect over time that this data will become more meaningful as more data is collected for each reporting year, enabling comparisons to be made. Alongside this however, the Directors are aware that it is likely that their reporting of greenhouse gas emissions and carbon footprint may "increase". The Directors do not view this as a real increase and note that the increase is an expected output as the availability and coverage of data expands as the Directors engage with the Scheme's managers that were initially unable to supply full emissions data.

Whilst all of the Scheme's investment managers and underlying asset portfolios were contacted for carbon metrics information, not all of the investment managers were able to provide the data requested and data coverage was of varying degrees.

It became apparent that there is much room for improvement in the carbon metrics data supplied by companies to asset managers and provided to the Directors, to enable the Directors to obtain a clear overview of the Scheme's total greenhouse gas emissions and carbon footprint. With that in mind, the Directors have opted to report on data quality for the third metric and focused the target on improving the data quality over the next 3 years. Once carbon data is of a reasonable quality, the Directors may consider setting further targets.

Governance

Governance

Role of the Trustee Directors

The Trustee Directors ("the Directors") are ultimately collectively responsible for overseeing all strategic matters related to the Scheme. This includes the governance and management frameworks relating to environmental, social and governance ("ESG") considerations and climate-related risks and opportunities.

The Directors have discussed and agreed climate-related beliefs and the Scheme's approach to managing climate change risk and the opportunities these may present. These are set out in the Scheme's Statement of Investment Principles ("SIP"), which is reviewed at least every three years (or sooner in the event of a significant change in investment policy) by the Directors.

In summary, the Directors believe that:

- the risks associated with climate change may have a materially detrimental impact on the Scheme's investment returns within the timeframe that the Directors are concerned about and, as such, the Directors integrate assessments of climate change risk into their investment decisions.

- climate-related factors may create investment opportunities. Where possible, and appropriately aligned with the Directors' strategic objectives and fiduciary duty, they will seek to capture such opportunities through the Scheme's investment portfolio.

The Directors assess climate related risks and opportunities over multiple time horizons. The Directors have decided the most appropriate time horizons for the Scheme are:

- short term: 1-3 years
- medium term: 4-10 years
- long term: 11-20 years

Climate-related risks and opportunities are integrated into the Directors' risk management framework, so the Directors can maintain oversight of the climate-related risks and opportunities that are relevant to the Scheme.

The Directors receive regular training on climate-related issues, when appropriate, to develop the appropriate degree of knowledge and understanding on these issues to support good decision-making. The Directors expect their advisers to bring important and relevant climate-related issues and developments to their attention in a timely manner, informing them of its relevance to the Scheme and incorporating climate related issues into advice.

The Directors have delegated oversight and day-to-day implementation of the Scheme's climate change risk management framework to a new Investment, Funding & Covenant ("IFC") Committee, which is a sub-committee of the Trustee Board. This was previously the responsibility of the Audit, Risk and Governance ("ARG") sub-committee.

The Directors regularly monitor and review progress against the Scheme's climate change risk management approach.

Role of the IFC Committee

The expectation is that the IFC will monitor and review progress against the Scheme's climate change risk management approach on an annual basis once the initial framework has been agreed with the Directors. The IFC will keep the Trustee Board appraised of any material climate-related developments through regular (typically annual) updates.

Implementation is detailed later in this report, but key activities undertaken by the IFC, with the support of the Directors' advisers, are:

- ensuring investment proposals consider the impact of climate risks and opportunities.
- engaging with the Scheme's investment managers to understand how climate risks are considered in their investment approach.
- working with the investment managers to disclose relevant climate-related metrics as set out in the TCFD recommendations.
- ensuring that stewardship activities are being undertaken appropriately on the Scheme's behalf.
- monitoring and reviewing progress against the Scheme's risk management framework.

Role of the Other Advisors or Stakeholders Deemed Relevant

The Directors expect their advisers and investment managers to bring important climate-related issues and developments to their attention in a timely manner. The Directors believe their advisers and investment managers have the appropriate knowledge on climate-related matters.

- **Investment adviser:** the Directors' investment adviser, Aon, provides investment-related strategic advice and support to the Trustee Directors in respect of the Scheme's climate-related risks and opportunities. This includes regular training and updates on climate-related issues, climate change scenario modelling and ESG ratings for investment managers.

- **Scheme Actuary:** the Scheme Actuary, Willis Towers Watson, will help the Directors assess the potential impact of climate-related risks on the Scheme's funding where relevant.

- **Covenant adviser:** the Directors' covenant adviser, Interpath Advisory, will help the Trustee to understand the potential impact of climate-related risk on the industry and employer covenant for the Scheme.

Strategy

Assessing climate-related risks and opportunities

Assessing the climate-related risks and opportunities the Scheme is exposed to is key to understanding the impact climate change could have on the Scheme in the future.

The Directors have carried out a qualitative risk assessment on each asset class the Scheme is invested in. From this the Trustee has identified which climate-related risks and opportunities could have a material impact on the Scheme.

The Scheme's investment portfolio is diversified across a range of different asset classes including equities, credit, real estate and liability driven investments ("LDI"). Given the number of asset classes used in the Scheme, the Directors have completed a proportionate exercise to analyse the climate-related risks of each asset class.

Risk categories

In the analysis, the climate-related risks have been categorised into physical and transitional risks.

Transitional risks are associated with the transition towards a low-carbon economy. For example, shifts in policy, technology or supply and demand in certain sectors.

Physical risks are associated with the physical impacts of climate change on companies' operations. For example, extreme temperatures, floods, storms or wildfires.

Ratings

The analysis uses a RAG rating system where:

Red denotes a high level of financial exposure to a risk.

Amber denotes a medium level of financial exposure to a risk.

Green denotes a low level of financial exposure to a risk.

Time horizons

The Directors assessed the climate-related risks and opportunities over multiple time horizons. The Directors have decided the most appropriate time horizons for the Scheme are:

- short term: 1-3 years.
- medium term: 4-10 years
- long term: 11-20 years

When deciding the relevant time horizons, the Directors have taken into account the liabilities of the Scheme and their obligations to pay benefits.

Climate-related risk assessment

The notion that there are "climate risks" in financial portfolios is now a well-established one. So, what are climate risks? In short, the idea is that climate change impacts the financial performance of companies and therefore also the risk-return profile of the securities they issue. Climate risks are typically categorised along two dimensions described above.

Transition risks

Transition risks relate to the need to transition to a low-carbon economy, including development of, and investment in, new technologies and services that support this transition as well as government policy to aid

in the transition. Specific market-based activities comprise the mitigation of carbon emissions, and/or adaptation to be resilient against climate change:

- **Mitigation:** technologies and services that increase energy efficiency, relate to increased renewable energy uptake and decreased demand for fossil fuels, and/or capture or sequester carbon dioxide.
- **Adaptation:** infrastructure resiliency efforts, business model shifts (e.g. changing geographic location of production and/or sales, introduction of new products and services and aligning business models with new environmental conditions).

Potential financial impacts from this transition include:

- **Revenue loss (demand contraction):** reduced demand for fossil fuels, related services, and energy consuming products.
- **Stranded assets:** devaluation/impairment or “asset stranding” of fossil fuel reserves.
- **Revenue growth:** growth in renewable energy, emergence of new industries, including carbon capture and sequestration, smart grid technologies, energy-efficient products, infrastructure adaptations, and green chemistry solutions.
- **Long-term cost reductions:** operational cost reduction from investments in updated infrastructure and technologies that facilitate the transition to a low-carbon, resilient economy.

Furthermore, the transition comes with policy and legal risks, including:

- **Carbon pricing mechanisms** (e.g. carbon taxes), already implemented in over 25 countries.
- **Litigation risk:** driven by the failure of companies to mitigate impacts of climate change, failure to adapt to climate change, and the insufficiency of disclosure around material financial risks.

Physical risks

A changing climate can lead to changes in the frequency and severity of extreme or incremental hazards. The TCFD recommendations refer to these hazards as acute and chronic, respectively. Acute hazards represent severe and extreme events and are location specific (e.g. droughts, heatwaves, storms, wildfire, etc). Chronic climate change represents the background incremental changes in, for example: temperature, precipitation and sea-level rise over several decades.

Acute and chronic climate-related hazards

Acute	Chronic
▪ Extreme heat	▪ Water stress
▪ Extreme rainfall	▪ Sea level rises
▪ Floods	▪ Land degradation
▪ Droughts	▪ Variability in temperature
▪ Storms (e.g., hurricanes)	▪ Variability in precipitation

Climate-related risk assessment (on asset class level)

LGIM - Passive Equities

	Physical risks		Transition risks			
Time horizon	Acute	Chronic	Policy and Legal	Technology	Market	Reputation
Short (1-3 years)						
Medium (4-10 years)						
Long (11-20 years)						

Source: Manager.

Physical risks
The Manager does not expect material climate-related financial impact at a global equity index level in the short term. However, medium term acute physical risk exposure is likely to increase, with chronic risks still not posing a material risk. When approaching the long-term horizon, risks associated with extreme weather events are likely to cause business interruptions and have a negative effect on economic performance, having an overall growing impact at the portfolio level. The Manager believes that uncertainty around future climate pathways could make some geographies 'uninsurable' resulting in write-offs of productive assets.

Transition risks
The Manager considers the transition risks to be minimal in the short-term but more significant as they approach the long-term across all types of risks. The Manager believes that those that are ill-prepared for adopting low-carbon technologies will face severe risks. The growing demand and supply of key raw materials for low-carbon technologies resulting in a large drop in fossil fuel use is likely to have large financial repercussions at a global equity index level, alongside the rising price of carbon which also poses significant risks going forward. Reputational risks in the long-term are likely, arising from loss of social licenses and social unrest if climate policy is not addressed sufficiently.

DTZ - UK Property

	Physical risks		Transition risks			
Time horizon	Acute	Chronic	Policy and Legal	Technology	Market	Reputation
Short (1-3 years)	n/a			n/a	n/a	n/a
Medium (4-10 years)	n/a		n/a	n/a		
Long (11-20 years)				n/a	n/a	n/a

Source: Manager.
Note: N/A denotes that the risks do not apply to the asset class over the specified time horizons (or at all).

Physical risks
Physical risks arising from climate change could lead to property damage and material financial impacts, particularly in geographically vulnerable areas. The principal physical climatic risk experienced in the UK is fluvial flooding (categorised as an 'acute' risk). However the Manager does not see material acute risk in the short or medium term for the portfolio. Over the long-term, the investment manager sees rising temperature and rising sea levels potentially affecting portfolio assets - categorising it as a high risk.

Transition risks
In the short-term, the Manager sees emerging climate-related regulatory compliance and enhanced emissions reporting obligations as a medium-term risk. Medium-term transition risks include increased cost of utilities across the portfolio, changing investor behaviour and shifts in customer preferences to more sustainable products and increased stakeholder concern. Evolving regional and national planning requirements have been identified as long-term transition risks for the portfolio.

CBRE - Inflation Protection Securities Fund

	Physical risks		Transition risks			
Time horizon	Acute	Chronic	Policy and Legal	Technology	Market	Reputation
Short (1-3 years)						
Medium (4-10 years)						
Long (11-20 years)						

Source: Manager.

Physical risks
The Fund has a low average exposure to acute and chronic physical climate hazards across all time horizons as indicated by the green rating in the table above. The Manager utilises the Moody's Physical Risk Tool methodology. Based on this analysis, it was concluded that the portfolio has a medium average exposure to floods, low exposure to hurricanes and typhoons (i.e. extreme winds), and generally no exposure to sea level rise (although two assets are rated as being at high risk). Individual assets might have different exposures to individual hazards.

Transition risks
The Manager believes there are reputational risks for real estate managers in medium and long terms due to managers failing to set and meet relevant climate-related targets and reducing emissions. The Manager is managing reputation based transitional risks through underlying asset-level processes from energy performance certificates (EPC) performance management to Carbon Risk Real Estate Monitor ("CRREM") analysis and green building certifications programs. To effectively manage policy and legal risks, the Manager has its Sustainability and Legal and Compliance teams, as well as external advisors and technical consultants, monitoring for policies and regulations that apply to its business.

Insight - Asset Backed Securities Fund

	Physical risks		Transition risks			
Time horizon	Acute	Chronic	Policy and Legal	Technology	Market	Reputation
Short (1-3 years)		n/a				n/a
Medium (4-10 years)						
Long (11-20 years)	n/a	n/a	n/a	n/a	n/a	n/a

Source: Manager.
Note: N/A denotes that the risks do not apply to the asset class over the specified time horizons (or at all).

Physical risks
The Manager identified no material climate associated risks in the short-term due to underlying pools having cash buffers and sufficient collateral in place in the event of a fall in asset valuations or a missed payment as a result an extreme weather event. The Manager identified stranded assets as a result from rising sea levels as a medium risk in the medium term.

Transition risks
The Manager is aware of the increase in the availability of climate-related data and the need to utilise artificial intelligence and machine learning to clean and interpret data effectively. This presents a short to medium term risk.

PIMCO - Multi Asset Credit Fund

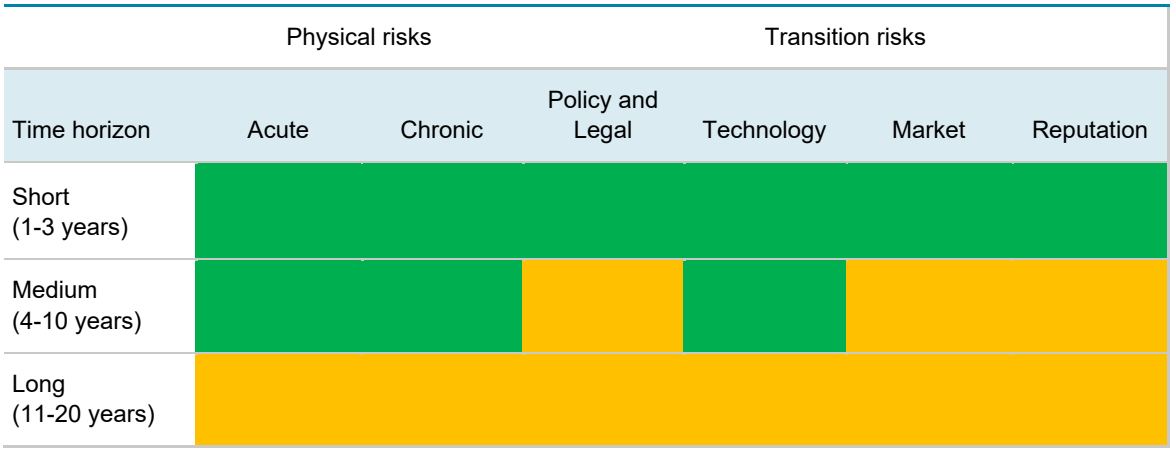
	Physical risks		Transition risks			
Time horizon	Acute	Chronic	Policy and Legal	Technology	Market	Reputation
Short (1-3 years)						
Medium (4-10 years)						
Long (11-20 years)						

Source: Manager.
Note: RAG table above only includes corporate exposure in the Pluming & Mechanical Services (UK) Portfolio.

Physical risks
The Manager does not see material financial impacts in the short-term as the risks associated with acute and chronic weather risks such as floods, wildfires and hurricanes have had a limited impact on corporate issuers' financials. The manager identifies acute and chronic risk becoming a more material impact as we approach the medium-term horizon where these impacts will become increasingly frequent and severe. Over the long-term the investment manager sees risks from extreme weather events as becoming exacerbated affecting corporate issuers financials and therefore labelling it as a high-risk.

Transition risks
The manager believes policy risks arise mostly from deeper CO2 cuts as a result of policy changes, but that such policy actions are likely to be delayed beyond the medium term. Substitution technologies such as hydrogen-based technology are likely to take time before becoming cost competitive and therefore will be a medium to longer-term disruption to industries at scale. However, the Manager is aware of the increase in reputational risks even in the short-term with the physical risks of climate change and its associated adverse effects intensifying, classifying this as a high-risk.

Liability Driven Investment Portfolio



Source: Manager.

Physical risks
The Manager does not see material financial impacts in the short-term and medium-term. These risks are relatively geographically concentrated and not expected to have material financial impact on UK sovereign bonds, although there is some risk over the longer-term.

Transition risks
Policy changes such as carbon pricing will cause demand patterns to shift over the medium and long terms and may be accompanied by changing market sentiment independent of policy change. It is likely that many fossil fuel exporting countries see relatively larger losses in GDP, depending on the ambition of global policy and resulting demand patterns. As a result, they may see their credit ratings fall and yields increase, with some impact on investors' global sovereign bond portfolios.

Infrastructure

In early 2022, the Directors decided to replace the Macquarie Infrastructure fund, which is at the end of its fund life and returning cash to investors, with a new infrastructure manager, KKR.

KKR is currently working on fund specific reporting and is in the process of reviewing and analysing ESG metrics for its portfolio companies. The manager is looking to develop this within the next two years.

Physical risks
On the firm level, the Manager identified that physical risks had potentially higher impacts on specific sectors such as energy, transportation, manufacturing, and real estate. Acute risks associated with increased severity of extreme weather events such as floods and storms are more likely to have an impact on communications technology and healthcare and information. The manager found that physical risks did not have a significant impact on the retail, financial and consumer technology sectors but does highlight these sectors will experience secondary impacts from the other more affected sectors.

Transition risks
On the firm level, the Manager identified that risks associated with transitioning to a low-carbon economy affected sectors such as energy, transportation, manufacturing, and real estate to a greater extent. The manager highlights that these companies have a more pressing need to mitigate these risks as well as gaining greater insights in the extent of these impacts and potential mitigation and adaption options to ensure these risks are minimal.

Climate-related opportunities

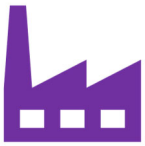
The Directors have identified some climate-related opportunities:

Cleaner energy

Green power generation,
clean technology innovation,
sustainable biofuels

Environmental resources

Water,
agriculture,
waste management



Energy and materials efficiency

Advanced materials,
building efficiency,
power grid efficiency

Environmental services

Environmental protection,
business services

The Directors also rely on their investment managers to take into account climate related risks and opportunities applicable for their mandates. Based on the qualitative assessment, the Directors' managers identified the following opportunities.

LGIM - Passive Equities

Industrial, utility and basic materials sectors are among the most exposed to transition risks but may also see the greatest opportunity going forward. As electric vehicles, renewables and other alternative fuels become cheaper relative to conventional alternatives, companies stand to benefit significantly from this growth. While not all participants in these growing markets are likely to be captured in today's global equity indices, many existing corporates are likely to profit significantly. Within-sector variation in climate-related valuation impact is expected to be large, especially in the most exposed sectors. Those companies that are formulating effective transition plans today and committing the required capital are among the most likely to benefit.

Volume growth and investment returns are not intrinsically correlated. Thematic focus on constraints will be required to protect returns. Investors should focus on three areas to evaluate opportunities and produce targeted investment strategies: geological scarcity, technological innovation, and regulatory change.

DTZ - UK Property

The Manager has identified opportunities in relation to the transition to a low carbon economy with respect to the short and medium-term horizon.

- Short-term opportunities
  There is an opportunity to develop 'green assets' as well as 'net-zero' investment offerings creating a decarbonisation pathway.

- Medium term opportunities
  The Manager also identifies energy efficiency such as adopting renewable and other lower-emission sources as a climate-related investment opportunity. Other potential opportunities arise from development of climate-friendly products such as 'green assets' and 'net-zero' products.

CBRE - Inflation Protection Securities Fund

The Manager is seeing increasing demand from tenants and the wider market for low carbon and climate resilient buildings. As such, the Manager is developing mitigation plans to address any climate-related risks present in its portfolios. In practice, this means that the Manager will look at investing in low-carbon options, and work with underlying managers to also make these necessary investments. This could include options such as, but not limited to, rooftop photovoltaics, highly energy efficient HVAC systems, sustainable transport options and accessible and healthy buildings.

The Manager is constantly reviewing best practice solutions and technologies in the market and seeks to continuously improve its climate-related analyses and approaches in line with the latest science.

Multi Asset Credit Fund

Whilst not the principal driver or main objective of the Scheme's portfolio, climate risks are a consideration in all investments at the manager level. At the point of writing the Scheme's portfolio held 0.9% in green bonds and no unlabelled green bonds.

The manager uses a top-down macroeconomic investment approach with bottom-up research to arrive at climate-related opportunities. The Manager also utilises its extensive team comprised of 75+ credit research analysts to assess investments based on several ESG factors.

LGIM - Liability Driven Investment Portfolio

Within-sector variation in climate-related valuation impact is expected to be large, especially in the most exposed sectors. Those governments that are formulating effective transition plans today and committing the required capital to ensure economic prosperity alongside decarbonisation going forward are among the most likely to benefit.

Beyond the low-carbon technologies already in use today, there are also many potential innovative solutions that could present opportunities. These include carbon capture and storage, direct air capture, low- or zero-carbon hydrogen and ammonia production and nature-based solutions.

It should also be said that just as sovereign bond investors are shielded from some of the downside risk from a low-carbon transition compared to equity investors, they will be unable to profit from much of the upside risk of climate-related opportunities.

KKR - Infrastructure

The Manager recognises that from an investor's perspective, companies that are more likely to be affected by physical or transition climate issues have a more pressing need to, and may be more motivated to, anticipate, mitigate and/or avoid risks, as well as gain greater insights into the extent and complexity of impacts, associated costs, and mitigation and adaptation options. With such companies, there is often an opportunity to create value by engaging and working with them to address climate issues. As part of the Manager's climate action strategy, it is helping its portfolio companies seize these opportunities by developing and sharing resources on key topics such as measuring GHG emissions, assessing climate risk, and setting climate targets.

There were no specific climate related opportunities identified by the Asset Backed Securities Fund Manager.

Portfolio resilience and scenario analysis

The Directors have undertaken climate change scenario analysis to better understand the impact climate change could have on the Scheme's assets and liabilities.

The analysis looks at three climate change scenarios. Each scenario considers what might happen when transitioning to a low carbon economy under different conditions. The Directors have chosen these scenarios because they believe that they provide a reasonable range of possible climate change outcomes. These scenarios were developed by the Scheme's investment consultant, Aon, and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty.

The Directors established a "base case" scenario against which the three climate change scenarios are compared.

	1	2	3
Base scenario	**No transition**	**Disorderly transition**	**Orderly transition**
+1.5ºC – 2.4ºC	**+4ºC**	**<3ºC**	**1.3ºC - 2ºC**
Emission reductions start now and continue in a measured way in line with the objectives of the Paris Agreement and the UK government's legally binding commitment to reduce emissions in the UK to net zero by 2050.	No further action is taken to reduce greenhouse gas ("GHG") emissions leading to significant global warming	Limited action is taken and insufficient consideration is given to sustainable long-term policies to manage global warming effectively	Considers the impact of immediate and coordinated action to tackle climate change using carbon taxes and environmental regulation.

Impact Assessment

When undertaking the assessment of the climate scenarios, the Directors referred to the Scheme's current strategic asset allocation, as outlined below.

Asset Class	Strategic weighting (%)
Equities	4
Property	3
Illiquid assets	3
Credit	20
Liability Driven Investment	65
Inflation protecting illiquid assets	5
Total	**100**

Source: Statement of Investment Principles

The Scheme's investment portfolio exhibits some resilience under the climate scenarios. This is due to the diversification of assets, the low proportion of equities and the high levels of hedging against changes in interest rates and inflation.

The worst-case scenario for the Scheme is the no transition scenario. Although initially the funding level improves, after 11 years the funding level starts deteriorating and does not recover by the end of the 30 year modelling period. Although the Scheme's liabilities would be significantly smaller at that time, the Scheme could be materially worse off in terms of surplus relative to the base case, which may place a strain on the Sponsor covenant.

Another key risk is volatility of the funding level. The Scheme experiences funding volatility in all scenarios modelled (with the no transition scenario outlined in the previous paragraph).

- Under the disorderly transition, the Scheme initially experiences an increase in funding level, before experiencing a fall in the funding level after around 10 years of around 5% before recovering. However, under this scenario, the projected funding level lags the base case during the time periods assessed.
- Under the orderly transition, the Scheme experiences a fall in the funding level of around 3% before recovering. Again, under this scenario, the projected funding level lags the base case during the time periods assessed.

Business, strategy, and financial planning

The Directors recognise the importance of climate change and the risk it poses to the Scheme. The Directors will endeavour to take climate-related risks into account where feasible when determining the Scheme's investment strategy.

Another key risk identified from the analysis is the volatility of the funding level, with the no transition scenario expected to have the most material impact on the funding level. Deterioration of the funding level will place a strain on the Sponsor covenant and participating employers, if they must make up a bigger shortfall through any future deficit reduction contributions. It may also require the Scheme to re-risk in order to stay on track to achieve the funding target or extend the timeframe for achieving this.

The Directors therefore recognise that climate change may have an impact on the employer covenant. The Directors monitor the covenant on a regular basis, with the support of their covenant adviser, and maintain a regular dialogue with the participating employers.

The Trustee is next due to undertake a triennial actuarial valuation as at 5 April 2023. As part of this the Scheme Actuary will help the Directors assess the potential impact of climate change risk on the Scheme's funding assumptions. The results of the assessment are expected to be included within the TCFD Report in 2024.

Risk management

Our process for identifying and assessing climate-related risks

The Directors have established a process to identify, assess and manage the climate-related risks that are relevant to the Scheme. This is part of the Scheme's wider risk management framework and is how the Directors monitor the most significant risks to the Scheme in their efforts to achieve appropriate outcomes for members.

Qualitative assessment

The first element is a qualitative assessment of climate-related risks and opportunities which is prepared by the investment adviser, and reviewed by the Directors

Quantitative analysis

The second element is quantitative in nature and is delivered by means of climate change scenario analysis, which is provided by the Scheme's investment adviser and reviewed by the Directors

Together these elements give the Directors a clear picture of the climate-related risks that the Scheme is exposed to. Where appropriate, the Directors distinguish between transition and physical risks. And all risks and opportunities are assessed with reference to the time horizons that the Trustee has identified as relevant to the Scheme.

When prioritising the management of risks, the Trustee assesses the materiality of climate-related risks relative to the impact and likelihood of other risks to the Scheme. This helps the Trustee focus on the risks that pose the most significant impact.

Our process for managing climate related risks

The Directors recognise the long-term risks posed by climate change and have taken steps to integrate climate-related risks into the Scheme's risk management framework.

The Directors have developed the following risk management plan, to help with the ongoing management of climate related risks and opportunities. The Directors have delegated a number of tasks, but still retain the final approval responsibility.

Activity	Actions	Owner	Input	Frequency of review	First year schedule
Governance (incorporating content and commitments set out in the Governance statement)					
Framework	Approve climate risk management framework	Directors	Directors	One off	ARG agreed on 8 September 2022. Directors ratified at June 2023 Board meeting.
Training	Receive training on climate-related issues	Directors	Advisors	Annual	**Schedule** within **existing** training plan
Advisers	Review advisor objectives to ensure advisors have appropriate climate capability, and bring important, relevant and timely climate-related issues to the Trustee's attention	Directors	Advisors	Annual	**Incorporate** climate objectives into **existing** annual IC objectives review
Investment strategy	Ensure investment proposals consider the impact of climate risks and opportunities.	IFC	Investment advisor	Ongoing	**Instruct** Aon to factor climate-related considerations into **future** investment proposals and advice
Actuarial and covenant	Ensure that actuarial and covenant advice adequately incorporate climate-related risk factors where they are relevant and material.	Directors	Scheme Actuary, Covenant advisor	Triennial	**Ensure** considered in 2023 funding valuation process, and **future** valuations.
Managers	Engage with the investment managers to understand how climate risks are considered in their investment approach, and stewardship activities are being undertaken appropriately	Directors	Fund managers, Investment advisor	Annual	**Considered** as part of Climate Risk Assessment **undertaken by ARG in** September 2022.

Strategy					
Climate Scenarios	Undertake quantitative scenario analysis to understand the impact of climate related risks	IFC	Investment advisor	First year, Triennial thereafter (with annual review)	ARG reviewed in September 2022 for first year reporting. To be reviewed annually by IFC to ensure suitability.
Risks and opportunities	Identify the climate-related risks and opportunities for investment & funding strategy and assess their likelihood and impact.	IFC	Advisors	Annual	**Considered** as part of Climate Risk Assessment **undertaken by ARG in** September 2022.
Risk management					
Risk prioritisation	Consider the prioritisation of those climate-related risks, and the management of the most significant in terms of potential loss and likelihood.	IFC	Advisors	Annual	Considered as part of Climate Risk Assessment undertaken by ARG in September 2022.
Scheme documentation	Include consideration of climate-related risks in the Scheme's other risk processes and documents, such as the risk register and the SIP, and regularly review these.	IFC	Advisors	One-off, ongoing thereafter	IFC to **incorporate** into **existing** SIP at next review. ARG **incorporated** climate-related risks into risk register in November 2022.
Covenant	Seek to understand the climate-related risks to the employer over the short, medium and long term.	Directors	Covenant advisor	Annual	**Ensure** considered in 2023 funding valuation process, and **future** valuations.
Metrics and targets					
Metrics	Obtain data for metrics	IFC	Investment advisor, fund managers	Annual	Obtain via a combination of Aon and investment managers in 24 January 2023 ARG meeting. Schedule to take place annually.
Targets	Review continued appropriateness of metrics	IFC	Investment advisor	Annual	Review in summer IFC meeting, alongside production of final TCFD disclosure.

The Directors have taken the following steps to integrate climate-related risks into their risk management framework and processes.

Training

The Directors complete regular training, as required, on responsible investment to understand how ESG factors, including climate change, could impact the Scheme assets and liabilities.

Monitoring

As part of ongoing monitoring of the Scheme investment managers, the Directors use ESG ratings provided by the Scheme's investment adviser, Aon, to monitor the level of ESG integration within managers.

Annual ESG assessment

On an annual basis, the Directors request that investment managers provide their responsible investment policy; details of how ESG is integrated within their decision-making process; and details of outstanding ESG issues within portfolios.

Integrated into risk framework

Climate-related risks are included in the Scheme's wider risk management framework, which is regularly reviewed by the IFC Committee and annually ratified by the Board.

ESG focussed investments

The Directors' investment adviser keeps them informed on investment opportunities that could contribute to the Directors' ESG aims.

As part of the assessment of the managers' policies and processes to assess climate related risks, the Directors have posed the "top" questions (as outlined in guidance from the Pensions Climate Risk Industry Group[1]) to their investment managers. The questions were designed to assist the Directors with their assessment of each manager's capabilities and approach to climate management and focused on areas such as TCFD reporting, managers ability to conduct climate scenario analysis, engagement and escalation policies, managers ability to provide carbon related data and align their strategies to a particular temperature level.

The table below summarises the responses from the investment managers. Some managers were excluded on the basis of materiality.

The Directors viewed this as a suitable starting position to understand what their investment managers are doing more broadly in relation to climate risk. Over time, the Directors expect to see improvements from their investment managers.

[1] Aligning your pension scheme with the TCFD recommendations: Part II - Trustee governance, strategy and risk management: how to integrate and disclose climate-related risks (publishing.service.gov.uk)

Manager	TCFD report	Climate-related risks analysis	Industry initiatives	Carbon reporting	Temperature alignment
CBRE	In progress	In progress	✓	✓	✓
Insight	In progress	✓	✓	✓	✓
DTZ	✓	✓	✓	✓	✓
KKR	✓	-	✓	✓	In progress
LGIM	✓	✓	✓	✓	✓
PIMCO	-	✓	✓	✓	-

Source: Managers.

Metrics and Targets

Our climate-related metrics

The Directors use some quantitative measures to help them understand and monitor the Scheme's exposure to climate-related risks.

The Directors' investment adviser, Aon, collected information from the Scheme's managers on their greenhouse gas ("GHG") emissions. Aon collated this information to calculate climate-related metrics for the Scheme's portfolio. These are the metrics that the Directors have chosen to report on:

Total Greenhouse Gas emissions	The total greenhouse gas ("GHG") emissions associated with the portfolio. It is an absolute measure of carbon output from the Scheme's investments and is measured in tonnes of carbon dioxide equivalent (tCO2e).
Carbon footprint	Carbon footprint is an intensity measure of emissions that takes the total GHG emissions and weights it to take account of the size of the investment made. It is measured in tonnes of carbon dioxide equivalent per million pounds invested (tCO2e/£m).
Data quality	A measure of the proportion of the portfolio that the Directors have high quality data for (i.e., data which is based on verified, reported, or reasonably estimated emissions, versus that which is unavailable). This has been selected on the basis that it provides a consistent and comparable measure of the level of confidence in the data.
Portfolio alignment	A measure of how well the portfolio is aligned with the goal of limiting the increase in the global average temperature to 1.5˚C above pre-industrial levels. The Directors have reported on the implied temperature rise (ITR) associate with their invested assets.

Source: Aon. Managers.

Total Greenhouse Gas emissions (scope 1 and 2)	**Carbon footprint (scope 1 and 2)**	**Data quality**	**Portfolio Alignment**
125,090 tCO_2e	69.3 tCO_2e/£m	81.1%	2.66°C as % of reported assets[1]

Source: Managers.
[1]ITR has been aggregated for illustrative purposes based on the % of reported equity and diversified income credit assets only, as the methodology used to calculate the individual mandate's ITR was comparable. Other assets were excluded due to unavailability of data.

Data

Because not all the Scheme's managers were able to provide all the requested data, the reported emissions metrics do not include all the Scheme's GHG emissions. This means that the metrics show the Scheme's GHG emissions to be lower than they really are. The Directors also note that there is not yet an industry-wide standard on calculating some of these metrics and that different managers may use different methods and assumptions when providing data to the Directors.

These issues are commonplace across the industry at the current time and highlight the importance of TCFD-aligned reporting to improve transparency on carbon-related data. The Directors expect that in the future better information will be available from managers as the industry aligns to expectations and best practice standards. The Directors and Aon are engaging with managers to ensure that this improvement will be reflected in the coming years' reporting.

The table below summarises the observations on data gathered from the Scheme's managers:

Current position

Aon requested emissions data from the Scheme's managers, which represent all of the Scheme's assets.

Data availability

Data was received from managers covering 81**%** of the Trustee's portfolio. Data was not available for around 19**%** of the Scheme's assets.

Aon, on behalf of the Directors, is engaging with the Scheme's managers that were unable to supply full emissions data for this analysis in order to improve transparency and reporting of this data.

Measuring greenhouse gas emissions

Measuring GHG emissions is a key way for pension schemes to assess their exposure to climate change. GHG are produced by burning fossil fuels, meat and dairy farming, and some industrial processes. When GHG gases are released into the atmosphere, they trap heat in the atmosphere causing global warming and contributing to climate change.

GHG are categorised into three types or 'scopes' by the GHG Protocol, the world's most used greenhouse gas accounting standard.

Scope 1

All direct emissions from the activities of an organisation which are under their control; these typically include emissions from their own buildings, facilities and vehicles

Scope 2

These are the indirect emissions from the generation of electricity purchased and used by an organisation

Scope 3

All other indirect emissions linked to the wider supply chain and activities of the organisation from outside its own operations – from the goods it purchases to the disposal of the products it sells

Scope 3 emissions are often the largest proportion of an organisation's emissions, but they are also the hardest to measure. The complexity and global nature of an organisation's value chain make it hard to collect accurate data.

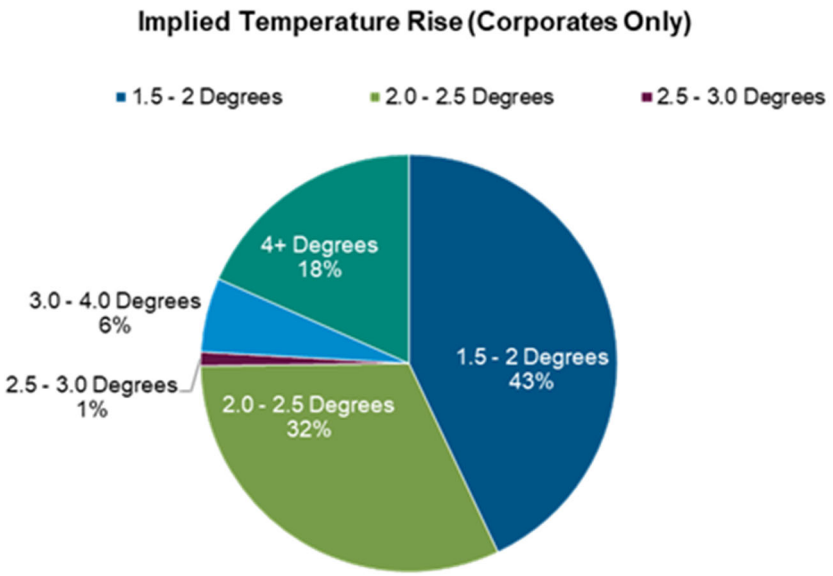
The table below shows a more detailed breakdown of the scope 1 and 2 emissions from each asset class in the Scheme's portfolio (where available).

Asset class	Asset allocation as at 30 June 2022 (%)	Carbon Footprint (tCO2e/£m invested)	Total GHG Emissions calculated (Tonnes CO2e)	Data Quality Coverage %	Implied Temperature Rise (°C)
LGIM Equities	**4%**	**104.7**	**7,453**	**78.1%**	**n/a**
MSCI World Minimum Volatility	2%	78.2	2,685	84.2%	2.83
FTSE RAFI 1000	2%	129.5	4,769	77.1%	2.89
DTZ Property	**6%**	**10.0**	**1,410**	**100.0%**	**1.5**
Cash[1]	**3%**	**-**	**-**	**-**	**-**
Infrastructure[2]	**0%**	**-**	**-**	**-**	**-**
Credit	**19%**	**57.4**	**19,962**	**30.0%**	**n/a**
Insight - Asset backed securities[3]	8%	-	-	-	-
PIMCO Diversified Income	11%	102.6	19,962	53.7%	2.52*
CBRE Inflation Protecting Illiquids	**4%**	**9.0**	**1,085**	**76.2%**	**-**
LGIM LDI	38%	87.4	60,583	**99.5%**	1.9
Total Main Portfolio	**74%**	**24.2**	**90,492**	**74.7%**	**n/a**
Pensioner Buy in	26%	75.0	34,598	100.0%[4]	-
Total	**100%**	**69.3**	**125,090**	**81.1%**	**n/a**

Source: Investment managers. Investment managers provided carbon emissions data in line with the Carbon Emissions Template (CET). Where managers provided information in USD terms, Aon converted it to GBP terms as at 30 June 2022 FX rate. Figures may not sum due to rounding

[1]Cash was excluded from the analysis on the basis of materiality.
[2]Macquarie was unable to report carbon data as the fund is in a 'wind-down phase' with only 1 asset remaining.
[3]Insight was not able to provide carbon information due to the complete lack of data availability from the data provider.
[4]The buy in provider provided its total book carbon data, of which Plumbing Pension has a portion. The coverage has been assumed to be 100%.
Please note, one equity mandate has been excluded from analysis in the table above on the basis of materiality and the mandate being in the selling off stage.
Where data has not been filled, managers did not provide data.
*PIMCO was not able to provide an aggregated figure of Implied Temperature Rise Metric. However, the manager has provided the temperature rise attribution for the portfolio's corporate bond holdings provided in Figure 1 below. At the point of writing, 71.8% of the Plumbing portfolio holdings comprised of corporates and data coverage within corporates is 54%. 2.52°C is an aggregated weighted average ITR calculated by Aon, based on this information pie chart below.

Figure 1: PIMCO Diversified Income – Implied Temperature Rise



Source: PIMCO. Data provided as at 30 September 2022.

Looking to the future
Director's climate-related target

Climate-related targets help the Directors track their efforts to manage the Scheme's climate-change risk exposure.

The Directors have set a target for improving the data quality metric. Without meaningful data from the investment managers, it is very hard for the Directors to measure their climate-risk exposure. So, it is important to set a target to improve the quality of GHG emissions data from the managers.

Based on the observation of data quality summarised in the previous section, credit portfolio has the lowest data coverage. Hence, the Directors have agreed to the following data quality target for the Scheme's assets below.

In 3 years' time, achieve above 75% coverage of carbon emission data for the credit portfolio.

In 3 years' time, ensure that the overall emission data across all asset classes split across scopes 1, 2 and 3 is above 90%.

The Directors will achieve this by:

- Engagement with managers who were unable to provide data.
- Ensure managers are providing consistent data.

The Scheme's performance against the target will be measured and reported on every year. Over time, this will show the Scheme's progress against the target.

Appendices

Appendix A - Climate Risk Assessment – transition risks

Transition risks relate to the need to transition to a low-carbon economy, including development of, and investment in, new technologies and services that support this transition as well as government policy to aid in the transition. Examples of climate-related risks and potential financial impacts include:

	Climate-related risks	Potential financial impacts
Policy and legal	▪ Increased pricing of GHG emissions ▪ Enhanced emissions-reporting obligations ▪ Mandates on and regulation of existing products and services ▪ Exposure to litigation	▪ Increased operating costs (e.g. higher compliance costs, increase insurance premiums) ▪ Write-offs, asset impairment and early retirement of existing assets due to policy changes ▪ Increased costs and/or reduced demand for products and services resulting from fines and judgments
Technology	▪ Substitution of existing products and services with lower emissions options ▪ Unsuccessful investment in new technologies ▪ Costs to transition to lower emissions technology	▪ Write-offs and early retirement of existing assets ▪ Reduced demand for products and services ▪ Research and development (R&D) expenditures in new and alternative technologies ▪ Capital investments in technology development ▪ Costs to adopt/deploy new practices and processes
Market	▪ Changing customer behaviour ▪ Uncertainty in market signals ▪ Increase cost of raw materials	▪ Reduced demand for goods and services due to shift in consumer preferences ▪ Increased production costs due to changing input prices (e.g. energy, water) and output requirements (e.g. waste treatment) ▪ Abrupt and unexpected shifts in energy costs ▪ Change in revenue mix and sources, resulting in decreased revenues ▪ Re-pricing of assets (e.g. fossil fuel reserves, land valuations, securities valuations)
Reputation	▪ Shifts in consumer preferences ▪ Stigmatisation of sector ▪ Increased stakeholder concern or negative stakeholder feedback	▪ Reduced revenue from decreased demand for goods / services ▪ Reduced revenue from decreased production capacity (e.g. delayed planning approvals, supply chain interruptions) ▪ Reduced revenue from negative impacts on workforce management and planning (e.g. employee attraction and retention) ▪ Reduction in capital availability

Appendix – B - Glossary

Governance	refers to the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders.[2] Governance involves a set of relationships between an organisation's management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organisation are set, progress against performance is monitored, and results are evaluated.[3]
Strategy	refers to an organisation's desired future state. An organisation's strategy establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy formulation generally involves establishing the purpose and scope of the organisation's activities and the nature of its businesses, taking into account the risks and opportunities it faces and the environment in which it operates.[4]
Risk management	refers to a set of processes that are carried out by an organisation's board and management to support the achievement of the organisation's objectives by addressing its risks and managing the combined potential impact of those risks.[5]
Climate-related risk	refers to the potential negative impacts of climate change on an organisation. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, and fires). They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise). Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations.[6]
Climate-related opportunity	refers to the potential positive impacts related to climate change on an organisation. Efforts to mitigate and adapt to climate change can produce opportunities for organisations, such as through resource efficiency and cost savings, the adoption and utilization of low-emission energy sources, the development of new products and services, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organisation operates.[7]
Greenhouse gas emissions ("GHG") scope levels[8]	Greenhouse gases are categorised into three types or 'scopes' by the Greenhouse Gas Protocol, the world's most used greenhouse gas accounting standard. Scope 1 refers to all direct GHG emissions. Scope 2 refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam. Scope 3 refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions could include: the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses), outsourced activities, and waste disposal.[9]

[2] A. Cadbury, Report of the Committee on the Financial Aspects of Corporate Governance, London, 1992.
[3] OECD, G20/OECD Principles of Corporate Governance, OECD Publishing, Paris, 2015.
[4] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[5] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[6] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[7] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[8] World Resources Institute and World Business Council for Sustainable Development, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), March 2004.
[9] PCC, Climate Change 2014 Mitigation of Climate Change, Cambridge University Press, 2014.

Value chain	refers to the upstream and downstream life cycle of a product, process, or service, including material sourcing, production, consumption, and disposal/recycling. Upstream activities include operations that relate to the initial stages of producing a good or service (e.g., material sourcing, material processing, supplier activities). Downstream activities include operations that relate to processing the materials into a finished product and delivering it to the end user (e.g., transportation, distribution, and consumption).[10]
Climate scenario analysis	is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organisation to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time.[11]
Net zero	means achieving a balance between the greenhouse gases emitted into the atmosphere, and those removed from it. This balance – or net zero – will happen when the amount of greenhouse gases add to the atmosphere is no more than the amount removed.[12]

[10] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[11] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[12] Energy Saving Trust, What is net zero and how can we get there? - Energy Saving Trust, October 2021