TCFD report for year ending 31 March 2023

National Grid Electricity Group of Electricity Supply Pension Scheme

Produced by: The National Grid Electricity Group Trustee Limited

Date: September 2023

Contents

Introduction

Climate change is affecting the planet, causing extreme weather events, impacting crop production and threatening Earth's ecosystems. Understanding the impact of climate change and the National Grid Electricity Group of the Electricity Supply Pension Scheme (the "Group")'s vulnerability to climate-related risks will help us to mitigate the risks and take advantage of any opportunities.

The Task Force on Climate-related Financial Disclosures ("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.

Better climate reporting should lead to better-informed decision-making on climate-related risks. In addition, greater transparency around climate-related risks should lead to more accountability and provide decision-useful information to investors and beneficiaries.

This document is the first annual TCFD report for the Group. It has been prepared by the National Grid Electricity Trustee Company Limited (the "Group Trustee") for the Group year ending 31 March 2023.

The TCFD developed four recommendations on climate-related financial disclosures. These are governance, strategy, risk management and metrics and targets.

Governance

The organisation's governance around climate-related risks and opportunities.

Strategy

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

Risk management

The processes used by the organisation 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.

Executive summary

The Group's ESG Beliefs

The Group Trustee believes that the Group can benefit from businesses making a positive impact on society and/or the environment; Environmental, Social and Governance (“ESG”) risks, including climate change, are not being adequately priced by the market, and will have a material effect on returns over the Group’s lifetime.

The Group Trustee also believes that investment managers which are better at integrating ESG considerations will generate better long-term returns. Additionally, the Group Trustee also acknowledges the importance of good stewardship, which may generate better returns and lower risk.

Strategy

The Group Trustee has carried out a qualitative risk assessment on each of the Group’s liquid asset classes. From this, the Group Trustee has identified which climate-related risks and opportunities could have a material impact on the Group. Given the number of strategies used in the Group, the Group Trustee has completed a best endeavours exercise to analyse the climate-related risks of each asset class.

The Group Trustee has also undertaken a climate change scenario analysis to better understand the impact climate change could have on the Group’s assets and liabilities.

The Group’s investment portfolio exhibits reasonable resilience under most of the climate scenarios. This is due to the diversification of assets, the low risk strategy/proportion of equities, and high levels of hedging against changes in interest rates and inflation.

Risk management

The Group Trustee has established a process to identify, assess and manage the climate-related risks that are relevant to the Group. This is part of the Group’s wider risk management framework and is how the Group Trustee monitors the most significant risks to the Group, in its efforts to achieve appropriate outcomes for members.

Metrics and Targets

The Group Trustee has agreed to report on Total Greenhouse Gas (GHG) Emissions, Carbon Footprint, Binary Target measurements and Data Quality- and will report on these annually.

The data gathered for the purposes of this exercise is a ‘snapshot’ as at 31 March 2022. Subsequently, there have been some changes to the Group’s assets which mean that this data will have changed. Over time, a picture of the Group’s evolution of navigating its carbon emissions will build up, and will be shared in future reports.

The rest of this report provides further detail. Please refer to the Glossary for further information on the terms used.

Governance

Governance

The Group's ESG Beliefs

The Group Trustee believes that good stewardship can lead to better returns, lower risk and that investment managers which are better at integrating ESG considerations will generate better long-term returns.

The Group Trustee should be concerned with the ESG impact of companies that are held in the Group's portfolio and should look to engage with the companies that the Group invests in.

The Group can benefit from businesses making a positive impact on society or the environment; ESG risks, including climate change, are not being adequately priced by the market, and will have a material effect on returns over the Group's lifetime.

Role of the Group Trustee

The Group Trustee is ultimately responsible for oversight of all strategic matters related to the Group and for making Group wide decisions. This includes approval of the governance and management framework relating to ESG considerations and climate-related risks and opportunities.

Given its importance, the Group Trustee has not identified one individual to be specifically responsible for the Group's response to climate risks and opportunities. Rather, the Group Trustee has collective responsibility for setting the Group's climate change risk framework. The Group Trustee is supported by its investment adviser and external support team when undertaking governance activities by developing and reviewing its climate change risk framework.

The Group Trustee has discussed and agreed its overarching approach to managing climate change risk, as part of the Group's wider approach to Responsible Investment. Details are set out in the Statement of Investment Principles ("SIP") and the Responsible Investment ("RI") policy, which is reviewed and (re)approved every year (or sooner in the event of a significant change in investment policy) by the Group Trustee.

In assessing the Group's climate change risk exposure, the Group Trustee considers various timeframes:

- the short (**1-3 years**);
- medium (**4-10 years**); and
- long (**11-20 years**) term.

Climate-related opportunities are evaluated over the same time horizons. This recognises the Group Trustee's long-term financial objective to hold sufficient assets to cover the Group's liabilities within the next 10 years, and/or to secure bulk annuities, should that be considered appropriate. However, the Group Trustee also acknowledges that the Group could be subject to much longer-term risks if the Group Trustee agrees to run-off the Group's liabilities instead of securing bulk annuities. Where appropriate, the Group Trustee considers transition and physical risks separately.

The Group Trustee receives training on an annual basis (or more frequently as required) on climate-related issues as part of its TCFD reporting process, to ensure that it has the appropriate degree of knowledge and understanding on these issues to support good decision-making.

The Group Trustee requires its advisers to bring important and relevant climate-related issues and developments to the Group's attention in a timely manner. As such the Group Trustee expects its advisers and investment managers to have the appropriate knowledge to advise on climate-related matters.

Role of the Investment Committee

The Group Trustee has delegated implementation and day-to-day oversight of the Group's climate change risk management framework to the Investment Committee ("IC"), which is a sub-committee of the Group Trustee.

The IC seeks to ensure that any investment decisions appropriately consider climate-related risks and opportunities within the context of the Group's wider risk and return requirements and are consistent with the climate change policy as set out in the SIP and the RI policy.

The IC regularly monitors and reviews progress against the Group's climate change risk management approach. The IC keeps the Group Trustee appraised of any material climate-related developments through updates as and when required.

Implementation is detailed later in this TCFD report, but key activities delegated to the IC include:

- ensuring investment proposals explicitly consider the impact of climate risks and opportunities;
- engaging with the investment managers to understand how climate risks are considered in their investment approach;
- working with 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 Group Trustee's behalf; and
- ensuring that actuarial and covenant advice adequately incorporate climate-related risk factors where they are relevant and material.

<u>Activity for the Group's Year 1 report</u>

The Group's investment adviser supported the IC at its quarterly meetings throughout 2022/23 to work through the TCFD recommendations and ensure a comprehensive understanding of the climate-related risks and opportunities that affect the Group. As part of this the IC challenged its investment adviser on the information provided via the investment managers in respect of the climate related risk sand opportunities described on page 11 and 12 of this report.

<u>Changes expected for the Group's Year 2 report</u>

The Group Trustee has spent a considerable amount of time and resource in understanding the Group's climate-related risks and opportunities as part of the Group's first TCFD report. The Group Trustee expects the required time and resource to reduce in future years given that a formal plan is now in place.

Role of the Group Trustee's external support team

The role of the Group Trustee's external support team, Barnett Waddingham, is to ensure that the Group Trustee has the appropriate governance processes in place to appropriately identify, assess and manage climate related risks and opportunities that are relevant to the Group.

Barnett Waddingham are also responsible for implementing the Group's approach to climate change risk on behalf of the Group Trustee (working with the Group Trustee's advisers as required) and facilitating training to help ensure that the Group Trustee has sufficient knowledge and understanding to make well-informed decisions on the Group's climate change risk management approach.

In addition, Barnett Waddingham ensures that the advice that the Group Trustee and the IC receive appropriately takes climate change considerations into account, where they are relevant and material to the Group, that the advisers are bringing relevant updates and opportunities for the Group Trustee's consideration, and that the advisers have the appropriate capabilities in doing so.

Role of the Group Trustee's advisers

Investment adviser

The Group Trustee's investment adviser, Aon, provides strategic and practical support to the Group and the IC, in respect of the management of climate-related risks and opportunities, and ensuring compliance with the recommendations set out by the TCFD.

This includes provision of regular training and updates on climate-related issues and climate change scenario modelling to enable the IC and the Group Trustee to assess the Group's exposure to climate-related risks.

Group Actuary

The Group Actuary, Lynda Whitney, helps the Group Trustee assess the potential impact of climate change risk on the Group's funding assumptions.

Covenant adviser

The Group Trustee's covenant adviser, PwC, helps the Group Trustee understand the potential impact of climate change risk on the sponsor covenant of the Principal Employer (National Grid Electricity Transmission plc) and each of the Participating Employers (National Grid UK Limited, National Grid Electricity System Operator Limited, and Elexon Limited) of the Group.

The chart below illustrates the relationships between the Group Trustee, the IC and their external support and advisers.

Overview of relationships between relevant parties

*Typically also expected to comprise the Valuation Working Group during triennial actuarial valuations

Strategy

Assessing climate-related risks and opportunities

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

The Group Trustee has carried out a qualitative risk assessment on each of the Group's liquid asset classes (the illiquid asset classes were excluded from this report on the grounds of immateriality at the date the information was collated). From this, the Group Trustee has identified which climate-related risks and opportunities could have a material impact on the Group.

The Group's investment portfolio is diversified across a range of different asset classes including equities, credit, real estate and liability driven investments ("LDI"). There are also AVCs within the Group, however these are small in size compared to the Group's defined benefit liabilities and therefore deemed to be immaterial for the purposes of this Strategy Pillar.

Given the number of strategies used in the Group, the Group Trustee has completed a best endeavours 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 Group Trustee assessed the climate-related risks and opportunities over multiple time horizons. The Group Trustee has decided the most appropriate time horizons for the Group are:

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

When deciding the relevant time horizons, the Group Trustee has taken into account the liabilities of the Group and its obligations to pay benefits.

Climate-related risk assessment

Based on the analysis completed*, the Group Trustee identified that:

- The managers who engaged with the process (see table below) provided insightful commentary on and assessment of climate risks.
- The fund managers are more concerned by transition risks than physical climate risks.
- There were no mandates where significant concerns were raised needing immediate action. Overall, the Group's investments display a low to medium level of financial exposure to the risks and time periods considered, meaning that climate risks are not expected to have a material impact on the Group's funding and investment strategy over these time periods. Should concerns arise in future climate-related risk assessments, the Group Trustee will assess the impact on the investment strategy as it continues to evolve and take action accordingly.
- There were significant differences in the way managers assessed climate risk, which may represent methodological rather than real differences in risk exposure.

The Group Trustee, through its investment adviser, is engaging with BlackRock (to the extent that they remain an investment manager to the Group) and Insight in particular, to encourage them to better support the Group with its understanding of climate risks.

The Climate Risk Assessment extends to the Group's liabilities and covenants. Deterioration of the Group's funding level will place a strain on the covenant of the Group's sponsoring employer to the extent it results in higher deficit repair contributions. It may also require the Group Trustee to re-risk the Group's assets or to extend the time frame for achieving full funding. The Group Trustee therefore recognises that climate change may have an impact on the employer covenant to the Group. The Group Trustee monitors (with the support of its covenant adviser) the covenant of the Group's sponsoring employer on a regular basis, and maintains a regular dialogue with the Group's sponsoring employer.

Covenant adviser assessment

Covenant considerations

The Group is directly supported by National Grid Electricity Transmission plc. As part of its detailed covenant reviews, the Group's covenant adviser considers the possible impact of climate-related risks and opportunities on the sponsor over the short, medium and long term. This informs its view on the resilience of the employer covenant under various climate scenarios. Any material covenant risks and opportunities identified are then considered as part of half-yearly covenant monitoring and reported to the Group Trustee so they can be factored into Group strategy considerations.

Transition risks and opportunities

Given the nature of the business, the Group's sponsor will play a pivotal role in the UK's transition to net zero and as such, transition risks and opportunities are a key consideration when assessing and monitoring employer covenant.

The investment required to support the decarbonisation of energy is a great opportunity for the sponsor, supporting its position as critical national infrastructure, and could lead to material growth in the size of the business. However, there are also risk considerations around the successful delivery and financing of significant electricity transmission projects (noting 17 major projects were approved by Ofgem in December 22). Such risks could have cost, operational, reputational and regulatory implications over the short, medium and long term and will continue to be closely monitored by the Group's covenant advisor.

Physical risks

In addition to transition risks, in a 'hothouse' scenario in which global warming cannot be limited to a 1.5 degree Celsius rise, the sponsor's exposure to physical risks increases over time. Higher temperatures and more extreme weather patterns could lead to damage to physical assets and challenge the company's ability to meet electricity demands.

The impact of such risks and opportunities materialising on covenant will depend on the level of covenant reliance at that time.

Climate-related opportunities

The Group Trustee expects potential opportunities to arise in the Group's assets associated with (but not limited to) the following themes:

- Clean energy: Green power generation, clean technology innovation, sustainable biofuels.
- Environmental resources: Water, agriculture, waste management.
- Energy and material efficiency: Advanced materials, building efficiency, power grid efficiency.
- Environmental services: Environmental protection, business services.

The Group Trustee expects its investment adviser to raise any such opportunities (as relevant to the Group) to the Group Trustee's attention in a timely manner. The investment opportunities that arise through the transition to a low carbon economy are then considered by the Group Trustee on a case-by-case basis.

* The table below summarises the information requested/received from the Group's managers on their assessment of climate risks and opportunities.

Manager	Asset class	Proportion of assets[1]	Response requested	Response received
W. Scott	Equities	3.5%	Y	Y
Insight	Bonds/LDI	65.8%	Y	Y
PIMCO	Bonds	6.1%	Y	Y
LGIM	Bonds	0.0%	N	N
BlackRock	Property	3.3%	Y	Y
CBRE	Property	3.3%	Y	Y
CVC	Private Credit	0.7%	N	N
HPS	Private Credit	1.8%	N	N
KKR	Infrastructure	0.0%	N	N

1. As at end Feb 2022 when requests were first issued

Portfolio resilience and scenario analysis

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

The analysis looks at five climate change scenarios. Each scenario considers what might happen when transitioning to a low carbon economy under different conditions. The Group Trustee has chosen these scenarios because it believes that they provide a reasonable range of possible climate change outcomes. These scenarios were developed by Aon and are based on detailed assumptions. They are only illustrative and are subject to considerable uncertainty.

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

Base scenario

+2ºC – 2.5ºC

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.

1

No transition

+4ºC

No further action is taken to reduce greenhouse gas ("GHG") emissions leading to significant global warming.

2

Disorderly transition

<3ºC

Limited action is taken and insufficient consideration is given to sustainable long-term policies to manager global warming effectively.

3

Abrupt transition

1.5 - 2ºC

Action on climate change is delayed for five years at which point we experience more frequent extreme weather events and governments have to address GHG emissions.

4

Orderly Transition

1.3 - 2ºC

Immediate and coordinated action to tackle climate change is taken using carbon taxes and environmental regulation.

5

Smooth Transition

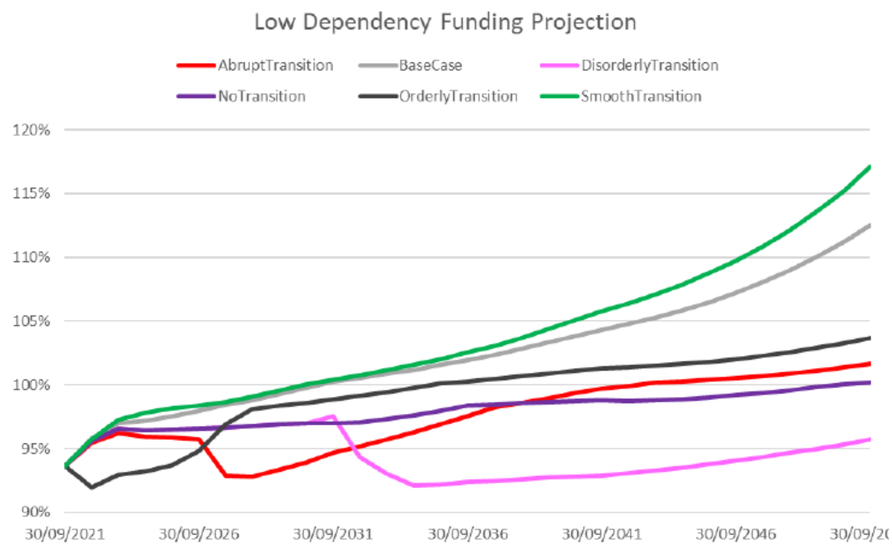
<1.5ºC

Rapid advancement of green technology and government action on climate change which achieves a smooth transition to a low carbon economy.

Impact Assessment

The IC reviewed scenario analysis which considered the potential impact of climate change on the current strategic asset allocation and liabilities (measured on the strategic liability basis) and, therefore, its funding position. The analysis is presented in the chart and table below:

Funding level projections under the climate change scenarios



Source: Aon

Asset return projections under the climate change scenarios

	Base case	No transition	Disorderly transition	Abrupt transition	Orderly transition	Smooth transition
Short-term return[1] (% p.a.)	0.7	0.5	0.5	0.4	-0.6	0.9
Medium-term return[1] (% p.a.)	0.6	0.3	0.4	0.2	1.0	0.5
Long-term return[1] (% p.a.)	0.4	0.3	0.3	0.5	0.2	0.4

Source: Aon. See Appendix 1 for further information.

Conclusions

Based on the analysis, the IC considers that the investment strategy exhibits reasonable resilience under most of the climate scenarios, whilst acknowledging there are scenarios that could lead to a material deterioration in the funding level. However, this risk is mitigated by the Group's low risk strategy/proportion of equities, the diversification of assets, and high levels of hedging against changes in interest rates and inflation, especially as the de-risking progresses according to the agreed flight plan.

Of the scenarios, the IC believes a Disorderly Transition scenario to be of most concern. After 10 years the funding level deteriorates sharply and does not recover by the end of the 30-year modelling period. This leaves the Group materially worse off relative to the base case.

The Group Trustee, supported by the IC, will consider further opportunities to mitigate these potential shocks, such as further de-risking and more climate transition focused approaches, to provide further downside protection.

Action taken following the scenario analysis

The Group Trustee has not taken any action as a result of the climate change scenario modelling specifically, given that the Group is expected to be reasonably resilient to climate change. However, ongoing de-risking has been undertaken more generally, as the Group's funding level has improved.

Risk management

Our process for identifying and assessing climate-related risks

The Group Trustee has established a process to identify, assess and manage the climate-related risks that are relevant to the Group. This is part of the Group's wider risk management framework and is how the Group Trustee monitors the most significant risks to the Group in its efforts to achieve appropriate outcomes for members.

1

Qualitative assessment

The first element is a qualitative assessment of climate-related risks and opportunities which is prepared by the Group Trustee's investment adviser and reviewed by the Group Trustee.

2

Quantitative analysis

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

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

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

Climate risk management questionnaire

The Group Trustee recognises the Group's exposure to the climate related risks stemming from transitioning to a lower-carbon economy, and as a result of physical risks from shocks caused directly by climate change. As a result, the Group Trustee has posed:

- A due diligence questionnaire asking its investment managers to identify the most significant climate-related risks and opportunities affecting the Group, and to quantify these risks as described on page 14 of this report; and
- The "top" questions as outlined in guidance from the Pensions Climate Risk Industry Group's ("PCRIG") recommended areas to its investment managers, supplemented by some of its own questions to better understand and assess the impact of these climate-related risks on the Group's investments.

Seven managers responded to the climate risk management questionnaire. The Group Trustee agreed that one of these managers was no longer relevant given that the Group has already disinvested, therefore has excluded this from the analysis. In summary:

- Six of the managers have produced (or are in the process of producing) their TCFD report, setting out their approach to managing climate related risks.
- Four of the managers conduct climate related risks scenario analysis and one of the managers is currently in the process of setting up this analysis on the asset class level.
- Two of the managers have committed to a long-term temperature alignment target for the portfolios they manage on behalf of the Group Trustee.

Overall, the managers have adequate frameworks and processes in place to ensure they take into account climate related risks and opportunities within their mandates. In addition, the majority of the managers are participating in broader industry initiatives.

In summary the Group Trustee is comfortable with the managers' ability to act in the best interests of the Group and to account for climate related risks and opportunities in the portfolios that they manage.

* The table below summarises the information requested/received from the Group's managers on their assessment of climate risk management.

Manager	Asset class	Proportion of assets[1]	Response requested	Response received
W. Scott	Equities	3.5%	Y	Y
Insight	Bonds/LDI	65.8%	Y	Y
PIMCO	Bonds	6.1%	Y	Y
LGIM[2]	Bonds	0.0%	Y	Y
BlackRock	Property	3.3%	Y	Y
CBRE	Property	3.3%	Y	Y
CVC	Private Credit	0.7%	N	N
HPS	Private Credit	1.8%	N	N
KKR	Infrastructure	0.0%	N	N

1. As at end Feb 2022.
2. LGIM issued with a climate risk management questionnaire following initial investment in March 2022.

Our process for managing climate-related risks

The Group Trustee recognises the long-term risks posed by climate change and has taken steps to integrate climate-related risks into the Group's risk management framework.

The Group Trustee has taken the following steps to integrate climate-related risks into its risk management framework and processes.

Training

The Group Trustee receives training on responsible investment to understand how ESG factors, including climate change, could impact the Group's assets and liabilities.

Advisers

The Group Trustee reviews its adviser objectives to ensure advisers have appropriate climate capability, and bring important, relevant and timely climate-related issues to the Group Trustee's attention.

Actuarial and covenant

The Group Trustee ensures that actuarial and covenant advice adequately incorporate climate-related risk factors where they are relevant and material.

The Group Trustee also seeks to understand the climate-related risks to the employer over the short, medium and long term.

Integrated risk management framework

Climate-related risks are included in the Group's wider risk management framework, which is overseen by the IC on a regular basis.

Investment strategy

The Group Trustee ensures investment proposals explicitly consider the impact of climate risks and opportunities.

Managers

The Group Trustee engages with the investment managers to understand how climate risks are considered in their investment approach, and stewardship activities are being undertaken appropriately. The IC reviews its investment managers at its quarterly meetings and conducts ESG monitoring on them on annual basis.

Group documentation

The Group Trustee includes consideration of climate-related risks in the Group's other risk processes and documents, such as the risk register and the SIP, and regularly reviews these.

Metrics and Targets

Our climate-related metrics

The Group Trustee uses quantitative measures to help it understand and monitor the Group’s exposure to climate-related risks.

The Group Trustee’s investment adviser, Aon, collected information from Group’s most material managers at the time of writing, including Walter Scott, Insight, PIMCO, LGIM, BlackRock and CBRE, consistent with the managers who provided information for the Strategy Pillar and Risk Management pillars of the draft TCFD report.

Aon collated this information to calculate climate-related metrics for the Group’s portfolio. The Group’s metrics are as follows:

Total Greenhouse Gas emissions	The total greenhouse gas (“GHG”) emissions associated with the portfolio. It is the recommended absolute measure of carbon output from the Group’s investments as referenced in the statutory guidance[1] for UK pension schemes.
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 the recommended intensity measure as referenced in the statutory guidance for UK pension schemes.
Data quality	A measure of the proportion of the portfolio for which the Group Trustee has high quality data. For this report, due to the lack of data availability on which assessments could be made, the Group Trustee has focussed on the data coverage. In future, it will also consider the % of emissions which are estimated / verified / reported.
Binary Target Measurement	The Binary Target Measurement measures the alignment of a portfolio with a given climate outcome, based on the percentage of investments in the Group’s portfolio with declared net zero, Paris2-aligned targets or sustainability asset plans for property assets which may or may not be SBTi validated. Pragmatically, it is the simplest approach to calculate and least reliant on the underlying data and methodologies. The Group Trustee will consider reporting on alternate portfolio alignment metrics in future, once the quality of the underlying portfolio emissions data has improved.

[1] Governance and reporting of climate change risk: guidance for trustees of occupational schemes (publishing.service.gov.uk)

[2] The Paris Agreement is a legally binding commitment to limit the rise in global temperatures to 1.5 degrees Celsius above pre-industrial levels.

Measuring greenhouse gas emissions

Measuring greenhouse gas emissions enables pension schemes to assess their exposure to climate change. Greenhouse gases are produced by burning fossil fuels, meat and dairy farming, and some industrial processes. When greenhouse gases are released into the atmosphere, they trap heat in the atmosphere causing global warming and contributing to climate change.

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

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.

Scope 1 and 2 emissions for the Group

The data gathered for the purposes of this exercise is a 'snapshot' as at 31 March 2022. Subsequently, there have been some changes to the Group's assets which mean that this data will have changed. Over time, a picture of the Group's evolution will build up, and will be shared in future reports.

	Total Greenhouse Gas emissions (tCO2e)	**Carbon footprint (tCO2e/£m)**	**Data Quality**	**Binary Target Measurement**
Equities	1,813	14	98%	32%
Bonds	34,433	118	37%	10%
Property	1,590*	7*	74%	62%**
Total (excluding LDI and longevity swap collateral)	37,836	60	56%	28%
LDI and longevity swap collateral	513,949	165***	95%	95%
Total	551,785	138	83%	75%

Source: Investment managers / Aon / MSCI. Investment managers provided carbon emissions data in line with the Investment Association's ("IA") Carbon Emissions Template ("CET")[3] Excludes the Group's investments in private credit and infrastructure. *As at 31 December 2021 due to carbon metrics relating to property assets being reported with one quarter's lag **Proportion of assets with a sustainability plan that has not necessarily been verified by the SBTi ***Estimated as annual UK GHG emissions/£ UK Government Debt (market value of gilts in issuance including green gilts).

[3] Full information on the CET, including all underlying methodology can be found in the relevant section of the IA's Data Delivery Framework: Data Delivery Frameworks | The Investment Association (theia.org)

Notes on the data

- Industry wide carbon calculation methodology for LDI has not yet been established meaning the LDI total emissions figures are subject to change in the future and are based on estimations.
- The LDI/longevity swap collateral figures only cover sovereign bond investments and exclude derivatives at the current time.
- Carbon footprint and data quality have been calculated as a weighted averages across equities, bonds, property and LDI / longevity swap collateral.
- The Binary Target Measurement metrics reported were sourced directly from the managers. As such no judgements and assumptions were made to calculate the portfolio alignment metric, or to address any gaps in the data.

Notes on information provided by the managers

At the time of writing Insight was unable to provide data relating to its Bonds Plus Fund, as the investments in the portfolio include non-physical exposures such as derivatives. Aon is currently engaging with Insight for further clarity around this.

In addition, PIMCO was unable to provide the Binary Target Measurement. Again Aon is engaging with the manager to obtain this in the near future.

For the CBRE and BlackRock property portfolios, it is currently not possible to have SBTi verified net zero targets for buildings. However 90% of properties in the BlackRock portfolio had a sustainability asset plan in place as at 30 June 2022, as did 34% of properties in the CBRE portfolio.

Looking to the future
Our climate-related target

Climate-related targets help the Group Trustee track its efforts to manage the Group's climate-change risk exposure.

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

Asset class	Current coverage	Future target	Target timescale
Equities	98%	**100%**	**2025**
Bonds	37%	**55%**	**2027**
Property	74%	**95%**	**2027**
LDI / longevity swap collateral	95%	**100%**	**2027**
Total*	56%	**75%**	**2027**

*__Note:__ Excludes the Group's investments in private credit and infrastructure on the grounds of immateriality at 31 March 2022.

What is the Group Trustee doing to reach the target?

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

To improve data coverage, the Group Trustee will engage with the Group's investment managers to improve the availability and reporting of emissions data for each asset class in which the Group is invested. Through ongoing pressure from asset owners collectively and new regulatory requirements for asset managers, the Group Trustee expects data quality to improve over time and will engage further with the managers if progress does not meet the Group Trustee's expectations.

Future evolution of the investment strategy

As highlighted above, the climate metrics in this report cover the Group's most material managers at the time of writing, consistent with the managers who provided information for the Strategy and Risk Management sections of the report.

Going forward, the Group Trustee anticipates that the Group's asset allocation will evolve over time, as the Group continues to de-risk the investment strategy towards meeting its Long-Term Financial Objective. In particular, the Group Trustee expects to transition the assets towards a portfolio comprising of the Group's illiquid assets (private credit and infrastructure) alongside the Liability Driven Investment strategy in place.

The Group Trustee therefore expects that its data quality targets will evolve in line with the asset allocation over time. For example, the Group Trustee may no longer need to set a target for the allocation to equities, if the equity exposure is removed by the date of the Group's next year-end as currently planned.

The Group Trustee will therefore review the Group's allocation at the time of preparing next year's TCFD report and revise its data quality targets as required.

Glossary

Governance	refers to the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders.[4] 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.[5]
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.[6]
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.[7]
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.[8]
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.[9]
Greenhouse gas emissions ("GHG") scope levels[10]	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.[11]

[4] A. Cadbury, Report of the Committee on the Financial Aspects of Corporate Governance, London, 1992.
[5] OECD, G20/OECD Principles of Corporate Governance, OECD Publishing, Paris, 2015.
[6] TCFD, Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[7] Ibid
[8] Ibid
[9] Ibid
[10] World Resources Institute and World Business Council for Sustainable Development, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), March 2004.
[11] 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).[12]
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.[13]
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.[14]

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

Appendix 1 – climate scenario modelling assumptions

The purpose of the scenario model is to consider the long term exposure of the Group to climate related risks and the pattern of asset returns over the long term.

In particular, the model considers different climate change scenarios and the approximate impact on asset/liability values over the long term.

Our model assumes a deterministic projection of assets and low dependency liabilities, using standard actuarial techniques to discount and project expected cashflows.

i. It models the full yield curve as this allows for an accurate treatment of the liabilities and realistic modelling of the future distribution of interest rates and inflation. It also allows us to truly assess the sensitivities of the assets and liabilities to changes in interest and inflation rates.
ii. The parameters in the model vary deterministically with the different scenarios.
iii. Note no allowance is made for expenses, with modelled asset/liability cashflows left unaffected by these factors.

The liability update and projections are considered appropriate for the analysis. However, they are approximate and a full actuarial valuation carried out at the same date may produce a materially different result. The liability update and projections are not formal actuarial advice and do not contain all the information you need to make a decision on the contributions payable or investment strategy.

The model intends to illustrate the climate-related risks the Group is currently exposed to, highlighting areas where risk mitigation could be achieved through changing the portfolio allocation.

i. Other relevant issues such as governance, costs and implementation (including manager selection and due diligence) must be considered when making changes to the investment strategy.

Investment risk is only captured in the deviance from the Base Case, but this is not the only risk that the Group faces; other risks include covenant risk, longevity risk, timing of member options, basis risks and operational risks.

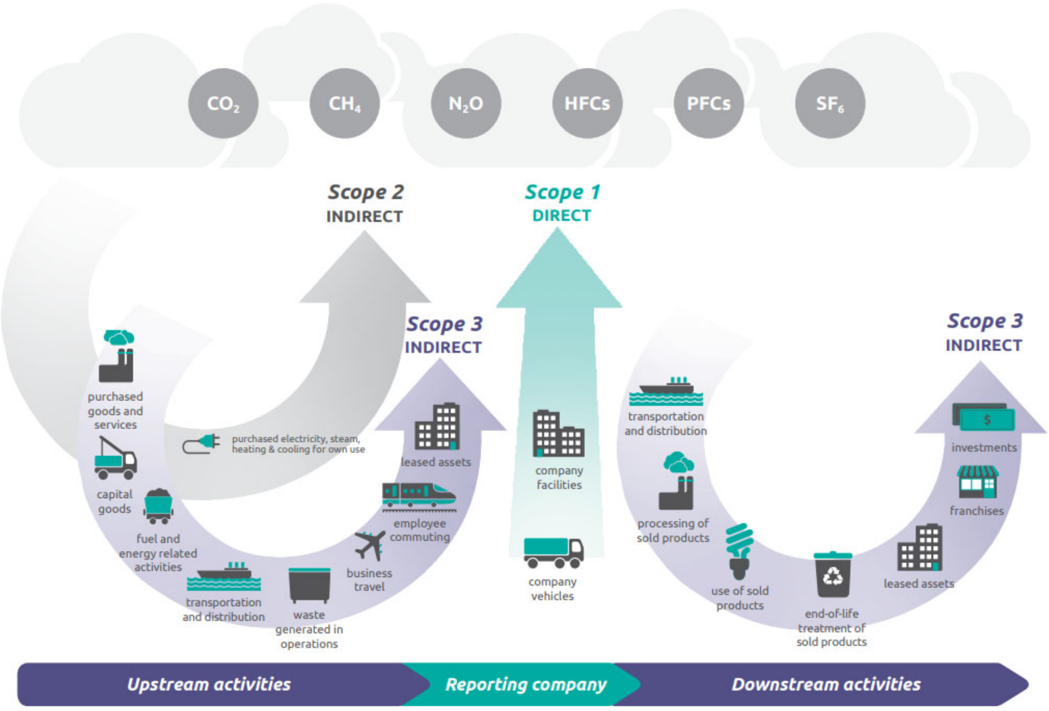
The model has been set up to capture recent market conditions and views; the model may propose different solutions for the same strategy under different market conditions.

Key Assumptions

	Temperature risk by 2100	Reach net zero by	Carbon price (2030/2050)	Introduction of environmental regulation
No transition	+4C	After 2050	$40/$50	None
Disorderly transition	<3C	After 2050	$65/$340	Late and aggressive
Abrupt transition	1.5C – 2C	2050	$135/$280	Aggressive
Orderly transition	1.3C – 2C	2050	£100/$215	Co-ordinated
Smooth transition	<1.5C	2045	$80/$165	High co-ordination

Appendix 2 – Greenhouse gas emissions in more detail

Overview of GHG Protocol scopes and emissions across the value chain



Source: Greenhouse Gas Protocol, [Corporate value chain (scope 3) Accounting and Reporting Standard](), 2011