

FOR PROFESSIONAL CLIENTS ONLY

WORCESTERSHIRE PENSION FUND

2023 Climate Risk Management Report

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PREPARED BY LGPS CENTRAL LIMITED





About this Report

This report represents the fourth edition of the Worcestershire Pension Fund’s (“The Fund” or “WPF”) analysis of its approach towards climate-related risks and opportunities. Previously titled the “Climate Risk Report,” the name has been altered in this edition to avoid any confusion with the Department of Levelling Up, Housing, and Communities’ (DLUHC) climate-related disclosure requirement also named the “Climate Risk Report.” This iteration follows the same structure as the previous editions released by WPF since 2020.

Section 1 of the report assesses the Fund’s climate risk management framework and disclosure practices. It aims to evaluate the Fund’s alignment with Department of Levelling Up, Housing, and Communities (DLUHC)

recommendations on climate-related risk management. Additionally, it examines the Fund’s maturity in handling these risks within its investment portfolio.

This analysis references WPF’s 2022 Climate-Related Disclosure report and public policy documents including recent [Annual Reports](#),¹ the Fund’s [2022 Valuation Report](#),² and its [2023 Investment Strategy Statement](#).³

Emphasising compliance, the Fund’s Climate-Related Disclosure report meets Task Force on Climate-Related Financial Disclosures (TCFD) guidelines, satisfying DLUHC’s annual Climate Risk Report requirement.

Section 2 of the report explores the Fund’s climate metrics more extensively, notably highlighted within its Climate-Related Disclosure report. This section is specifically devoted to conducting a thorough analysis of the Fund’s carbon footprint indicators. Serving as a comprehensive information hub, it illuminates the Fund’s various initiatives geared towards improving its carbon footprinting activities.



¹ [Annual reports | Worcestershire Pension Fund](#)

² [Report \(Vertical\) \(lgpsboard.org\)](#)

³ [PC 2023 03 22 Investment SS and Climate Strat - App 1 - Draft Statement.pdf \(moderngov.co.uk\)](#)



Executive Summary

Climate Analysis

Summary of Recommendations and Considerations:

Governance

- Continue to review, improve, and enhance climate-related disclosures with an awareness of potential future regulations.
- Consider disclosure of climate discussions at working groups within, or outside of, its pool.
- Consider enhancing disclosure relating to the content and purpose of climate related training undertaken by the Committee.

Strategy

- The Fund should continue to commission Climate Scenario Analyses as recommended by DLUHC, with an awareness that the content of these analyses will develop in line with industry best practice.
- Consider providing more details relating to how specific risks and opportunities may materialise, and how the Fund is responding to these potential impacts.

Risk Management

- Consider preparing further disclosure of details relating to the identification and assessment of specific risks associated with climate change.
- Consider incorporating existing climate risk management processes for investments into a similar risk management framework for the Fund's funding strategy.
- Consider further disclosures relating to the frequency and scope of climate-related discussions at the Pensions Committees.

Metrics & Targets

- Consider adopting a Net Zero Climate Strategy, as well as short-, medium-, and long-term interim targets.
- Additional metrics to meet DLUHC requirements should be included in the next iteration of the Fund's TCFD report.
- Consider adopting forward-looking targets based on pathway alignment in addition to emissions-based targets.
- Consider detailing the metrics and targets which correspond to the Fund's engagement activities.
- Consider monitoring and disclosing progress in data availability across the Fund's investments, setting targets where appropriate.



Executive Summary *(continued)*

Climate Metrics for Total Equity Portfolio

Normalised
Financed
Emissions:

72.7
tCO₂e/£m
invested

↓ 11% vs 2022

↓ 22% vs
reference index

Weighted Average
Carbon Intensity
(WACI):

98.7
tCO₂e/\$M
Revenue

↓ 32% vs 2020

↓ 14% vs 2022

↓ 40% vs
reference index

Ongoing
engagement efforts
with companies
responsible for

71% of
financed
emissions

20%

of financed
emissions from
companies which
are 'Aligned' or
'Aligning' to Paris

↑ 14% vs
FTSE All World



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Front Cover: Malvern Hills, Worcestershire
Images (Clockwise): Cotswolds Countryside
Worcester Cathedral, Worcestershire
Worcester, Worcestershire



Section 1

Climate Analysis



Introduction

The Fund has taken proactive steps in its climate-related reporting, voluntarily publishing annual reports aligned with the TCFD since October 2020. This demonstrates a strong commitment to addressing climate risks, even ahead of the anticipated mandate from the DLUHC. The mandate is expected to require Local Government Pension Scheme administering authorities to identify, assess, and manage climate-related risks, aligning with TCFD recommendations.

The section's primary emphasis is on pinpointing pathways for advancing the Fund's action and disclosure regarding climate-related risks and opportunities. Our approach involves a thorough analysis of potential regulatory requirements and industry best practices to benchmark the Fund's existing approach. This process yields various observations and recommendations, providing actionable insights for the Fund's consideration and potential implementation.

This report adheres to the structure of the TCFD, with each section analysed according to the framework outlined above. Throughout this analysis, we identify best practices that often go beyond the scope of the Department of Levelling Up, Housing, and Communities (DLUHC) requirements. It's essential to note that some other pension schemes and financial institutions are already ahead in implementing climate-related practices due to varying regulatory frameworks. While we recognise that the Fund may be considered ahead of the curve compared to other LGPS schemes, the primary purpose of this report is to drive further progress and improvement.



Malvern Hills, Worcestershire



Introduction *(continued)*

In our evaluation, we have undertaken several key steps to assess the Fund's preparedness for potential regulatory requirements:

Step 1

We scrutinised the [consultation document](#) released by DLUHC on 1 September 2022,⁴ using it as a valuable reference for our analysis. While awaiting the final decision from DLUHC, we leveraged the information within the consultation to inform our assessment.

Step 2

Using the TCFD Maturity Map⁵ as a foundational framework, we assessed the Fund's current climate reporting. This evaluation aims to pinpoint opportunities for enhancing the Fund's reporting, progressing towards best practice. The TCFD maturity map is a framework for gauging an organisation's maturity in understanding, managing, and addressing climate change matters. Although not industry-specific, this map helps assess how well an organisation has implemented the four pillars of TCFD recommendations—Governance, Strategy, Risk Management, Metrics, and Targets—along with identifying improvement opportunities over time. The matrix categorises maturity into three levels: Limited, Moderate, and Full.

Step 3

To gain broader insights, we reviewed TCFD reports published by diverse organizations within the Financial Services industry. This review encompasses both asset owners and asset managers, allowing us to gauge industry best practices and actions taken to achieve 'full disclosure' status within the TCFD Maturity Map. We use these actions as benchmarks to measure the Fund's progress.

Step 4

We conducted an in-depth analysis of the Fund's public disclosures, scrutinising its approach to identifying, assessing, and managing climate-related risks and opportunities. This analysis was based on the Fund's publicly accessible information, including but not limited to its Investment and Funding Strategy Statements, the 2022 Annual Report, and its most recent climate-related disclosure.

Step 5

Based on this assessment, we offer recommendations and considerations to guide the Fund in advancing its climate-related management and reporting. This ensures it remains well-prepared to meet potential regulatory requirements and aligns with industry best practices.

⁴ <https://www.gov.uk/government/consultations/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks>

⁵ TCFD Maturity Map, The Prince's Accounting for Sustainability Project. Found here: <https://www.tcfidhub.org/resource/tcfid-maturity-map/>



Governance

Proposed DLUHC Requirements

Administering Authorities (“AA”) will be expected to establish and maintain, on an ongoing basis, oversight of climate related risks and opportunities. They must also maintain a process or processes by which they can satisfy themselves that officers and advisors are assessing and managing climate-related risks and opportunities.

Disclosure Maturity Map

LIMITED DISCLOSURE

- The board’s oversight of climate-related risks and opportunities.
- Management’s role in assessing and managing climate-related risks and opportunities.
- A published policy or commitment statement on climate change.

MODERATE DISCLOSURE

- A statement on how the board is actively considering climate-related risks and opportunities on a regular basis.
- Measures to increase board knowledge on climate-related risks and opportunities such as compulsory training or use of an expert advisory board.
- A named individual or committee responsible for climate change at board level.
- Clear consideration of physical, transition and liability risks.
- Commitment to reducing or avoiding impact on, and of, climate change, with short-, medium- and long-term targets.

FULL DISCLOSURE

- Capacity and competence of the board to respond to climate-related risks and opportunities effectively.
- Climate-related risks and opportunities are integrated into standard board agendas.
- Full and clear consideration of physical, transition and liability risks over short-, medium- and long-term time horizons.
- Financial incentives for executives on progress towards achieving short-, medium- and long-term climate targets.

GOVERNANCE DISCLOSURE



Governance *(continued)*

Industry Best Practices

Signposting

Several asset managers such as abrdn, Royal London and Schroders included website links to specific sections of their annual report in the TCFD. The annual report contains the profiles of these asset managers' board of directors, including their competency in environmental, social and governance (ESG) issues such as climate. This signposting practice enhances accessibility and facilitates the reader's navigation of relevant information.

Governance Structures

Most financial institutions either have a specific board-level sustainability committee or discuss climate-related risks at the board's audit and risk committee. Liontrust also named a specific Non-Executive Director responsible for all ESG matters. Whilst not compulsory, establishing a dedicated board committee for climate-related matters provides expertise, accountability, strategic alignment, transparency, risk mitigation, opportunity identification, regulatory compliance, stakeholder engagement, and a long-term perspective. This proactive approach ensures organizations effectively address climate challenges and opportunities while fulfilling their responsibilities to stakeholders and society.

Transparency

To demonstrate how climate-related risks are integrated into board agendas on a regular basis, Scottish Widows summarised topics discussed, and key decisions made on climate matters throughout the year. Including examples and case studies in a report enhances reader engagement by providing real-world, practical illustrations that make complex concepts more accessible and relatable. It adds credibility, inspires, and fosters problem-solving, making the content more informative and actionable.

Remuneration

Financial institutions which are listed on the stock exchange are required to disclose its Key Management Personnel's (KMP) remuneration. There are various examples of the climate-related metrics that these institutions use to measure KMP's performance for remuneration purposes. Most include climate-related metrics in their long-term incentive plans, but Royal London include ESG metrics in both short- and long-term incentive plans.



Governance *(continued)*

WPF Current Disclosures and Practices

Governance Structures and Transparency

The Fund's governance structures are detailed in the Governance Compliance Statement, which states that overall responsibility for the Fund's management rests with the Pensions Committee, established by the appointing council. Accordingly, the Investment Strategy Statement (ISS) is prepared by Worcestershire County Council but delegated to the Pensions Committee, and includes the Fund's Responsible Investment Beliefs. The Fund also publishes a Climate Change Risk Strategy, which sets out the Fund's support for the ambitions of the Paris Agreement on Climate Change. The Strategy is premised on five evidence-based beliefs about climate risk. The Committee is responsible for reviewing and approving this strategy, which is reviewed at least every two years.

Current Practice

The Committee meets quarterly, with the members of the Committee receiving quarterly voting and engagement updates in every meeting. Following the meeting, these reports are published on the Fund's website. The Committee, the Pension Investment Sub-Committee, and the Pension Board all receive focussed training and workshops on a variety of RI topics, including climate change.

Individual Responsibilities

The Chief Financial Officer and the Head of Pension Investments, Treasury Management & Banking have primary responsibility for the management of climate-related investment risks. As many of the Fund's assets are managed externally, the implementation of climate risk management is often delegated to portfolio managers, which is then overseen by the Pension Investment Sub-Committee.

Based on our analysis, the Fund is currently aligned with moderate levels of disclosure, as per the maturity map above.

Considerations and Recommendations

The Fund's existing governance structures related to the management of climate risk mean it is well positioned ahead of any potential regulatory changes which may arise in the near future. However, there are some considerations and recommendations which may help the Fund continue aligning with industry best practice.

Although a climate-specific sub-committee might not be appropriate for an AA, we acknowledge the Fund's active participation in multiple working groups within and outside its pool. At times, these groups engage in discussions related to climate matters, allowing the Fund to broaden its understanding of these issues. Enhanced disclosure of these discussions would help demonstrate the Fund's collaborative approach to managing climate risk.

Further evidence of the Fund's efforts to manage climate risk could also be provided through additional disclosures relating to the scope and frequency of climate training received by the Committee. This could be included as a summary update within the Fund's report on activities.

Related to the above point, the Fund could consider providing additional details regarding the climate-related experience of the specific members of the Fund's Committee. This could include attendance of each member of the Committee at the climate training sessions, but could also be expanded to include climate-relevant experience from alternative sources.

Continue to review, improve, and enhance climate-related disclosures with an awareness of potential future regulations. WPF's readiness to meet the DLUHC's potential recommendations has increased as a result of this report, and similar exercises in the future will help ensure the Fund is able to respond early to any further climate-related regulations.



Strategy

Proposed DLUHC Requirements

AAs will be expected to identify climate-related risks and opportunities on an ongoing basis and assess their impact on their funding and investment strategies.

AAs will be required to carry out two sets of scenario analysis. This must involve an assessment of their investment and funding strategies. One scenario must be Paris-aligned (meaning it assumes a 1.5 to 2 degree temperature rise above pre-industrial levels) and one scenario will be at the choice of the AA. Scenario analysis must be conducted at least once in each valuation period.

Disclosure Maturity Map

LIMITED DISCLOSURE

- Operational greenhouse gas ("GHG") emission reductions.

MODERATE DISCLOSURE

- Climate-related risks and opportunities the organisation has identified over the short-, medium- and long-term.
- The impact of climate related risks and opportunities on the organisation's businesses, strategy and financial planning.
- Involvement in domestic and international efforts to mitigate climate change.

FULL DISCLOSURE

- The potential impact of different climate scenarios, including a 4°C, a 2°C and a 1.5°C scenario, on the organisation's businesses, strategy and financial planning.
- The organisation's internal carbon pricing strategy.
- Vocal advocacy for action on climate change and collaboration with peers and other stakeholders to achieve change.

STRATEGY DISCLOSURE



Strategy *(continued)*

Industry Best Practices

Climate Scenario Analysis

USS's climate scenario analysis discussed the impact of climate change to both its investment and funding strategies. The rationale behind the chosen scenarios and time horizons were clearly described. Further, USS also illustrated how climate change impacts their defined contribution members' investments returns. While we understand that scenario analysis remains an evolving tool, it still provides a valuable insight into how climate change could impact investment returns under different scenarios, highlighting the importance of conducting and disclosing the findings of climate scenario analysis. As this tool is still evolving it is important to demonstrate an understanding and provide a justification of the parameters surrounding the analysis, including the scenarios chosen and time horizons, which should be clearly defined.

Industry Collaboration

Partnerships, initiatives and collaborations were discussed in plenty of detail in Scottish Widows' TCFD report. They also produced a case study of a collaborative engagement on the topic of deforestation. Collaborative engagement allows funds to pool their influence as to drive change in the industry, it is considered industry best practice to not only collaborate in these initiatives, but to also demonstrate the impact derived from these collaborative engagements through case studies.



Worcestershire in the snow



Strategy *(continued)*

WPF Current Disclosures and Practices

Identification of Risk

In line with good industry practice, the Fund has identified the short-, medium-, and long-term risks associated with climate change, and these risks are associated to specific asset classes.

The Fund's Climate Strategy

The Fund's 2023 Climate Change Risk Strategy will be reviewed at least every two years by the Committee. This strategy is premised on five foundational-evidence based beliefs, including a belief that the risks and opportunities of climate change should be considered as part of asset allocation decisions, manager selection decisions, and individual investment decisions. The strategy also outlines the Fund's aim to reduce the carbon footprint (scope 1 & 2) of the Fund's listed equity portfolio by 2023, and set an internal decarbonisation target up to 2025 and review thereafter.

Climate Scenario Analysis

The Fund also commissioned a Climate Scenario Analyses in 2020 and 2022, which provided models of the impact on returns over the short-, medium-, and long-term under a range of different climate change scenarios. In line with DLUHC recommendations for full disclosure, the three scenarios included a "rapid transition", "orderly transition", and "failed transition" scenario. Advantages and disadvantages of these analyses were included in both reports alongside the Scenario Analysis. In the Fund's 2022 Valuation Report, a further climate scenario analysis analysed the impact of climate change on the Fund's funding. The analysis considered three different scenarios: a Rapid Transition; an Orderly Transition; and a Failed Transition.

Based on our analysis, the Fund is currently aligned with moderate, with elements of full levels of disclosure, as per the materiality map above.

Considerations and Recommendations

The Fund should be commended for its use of scenario analyses, both looking at the impacts of climate on its investments but also on its funding. From a more long-term perspective, the Fund should consider updating its climate policies to reflect impacts on its funding as well as investments. This is in line with a direct recommendation provided by DLUHC.

The Fund should continue to commission climate scenario analyses as recommended by DLUHC, with an awareness that the content of these analyses will develop in line with industry best practice. Integrating scenario analysis for both investment and funding whenever feasible provides a holistic perspective which aids decision making.

The Fund may also benefit from elaborating on how specific risks and opportunities related to climate change may materialise, as well

as expanding on the corresponding material impacts. An explicit focus on how these risks and opportunities can best be mitigated or exploited would also help move the Fund towards industry best practice. Regular horizon scanning may be an effective way to identify emerging climate risks. This analysis could be linked to the Fund's risk register and further incorporated into its Climate Stewardship Plan.

Finally, full disclosure according to DLUHC includes a summary of the Fund's advocacy for action and collaboration on climate change. Although the Fund does mention an aim to collaborate with like-minded organisations on climate matters, this could be reinforced with concrete examples of climate advocacy. Such disclosures are often found in stewardship reports, which, although third party sources are frequently referenced by the Fund, could be made more explicit as part of its wider climate disclosures.



Risk Management

Proposed DLUHC Requirements

AAs will be expected to establish and maintain a process to identify and manage climate-related risks and opportunities related to their assets. They will have to integrate this process into their overall risk management process.

Disclosure Maturity Map

LIMITED DISCLOSURE

- Acknowledgement of the need to assess and respond to climate-related risks.

MODERATE DISCLOSURE

- The organisation's processes for identifying and assessing climate-related risks.
- The organisation's processes for managing climate-related risks.

FULL DISCLOSURE

- How processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.

RISK MANAGEMENT DISCLOSURE



Risk Management *(continued)*

Industry Best Practices

Risk Management Policy and Transparency

Schroders' risk management section clearly outlines how climate risk fits in its three lines of defence, the risk owners at each line, and how its oversight structure works – from business unit to its board audit and risk committee. Schroders also details its actions to identify, assess and manage climate-related risks. Inclusion of these details provides accountability and transparency with regard to risk management and demonstrates the funds' ability to identify and mitigate climate risks through appropriate practices.

Asset-specific Risk Management

Abrdn included a table that maps its existing climate tools against asset classes to give a view of the applicability of tools for various investments strategies. This also assists in demonstrating the Fund's industry best practices to identify and mitigate climate risks.

WPF Current Disclosures and Practices

Risk Management Policy and Transparency

The Fund's approach to risk management is detailed in the Climate Change Strategy, where each of the key Strategy Actions relates to furthering the identification and management of climate risk. In the 'Measurement & Observation' section, the Fund commits to regular economic assessments of the fund's asset allocation against plausible climate scenarios and a carbon risk metric assessment of the Fund's listed equities. The Strategy also states that the Fund will assess the approach taken by its managers to climate risk during selection and due diligence, and regularly monitor progress on climate risk management post appointment.

The Fund's annual Climate Risk Report presents both top-down and bottom-up risk analyses which aim to assess the Fund's exposure to, and management of, climate risk. Where possible, climate risks are assessed in units of investment return in order to compare with other investment risk factors.

Climate risk is deemed sufficiently significant to be included in the fund's Risk Register, and is discussed alongside 'mainstream' investment risks by the Pensions Committee.

Stock-specific Risk Management

As well as several policies for the 'Selection, Due Diligence and Monitoring' of new funds (which are informed by the IIGCC recommendations), the Fund has also developed a Climate Stewardship Plan, whereby clear engagement goals are set with companies, fund managers, policymakers, and other areas of influence. The Fund's robust approach to stewardship was recognised in September 2021 when the Fund became a signatory to the 2020 UK Stewardship Code. The Fund has retained its signatory status since then.

Based on our analysis, the Fund is currently aligned with moderate, with elements of full levels of disclosure, as per the materiality map above.

Considerations and Recommendations

Consider preparing further disclosure of details relating to the identification and assessment of specific risks associated with climate change (i.e., the time horizon of specific risks and how these may materialise in a portfolio) could support the Fund's approach to the management of climate risk.

The Fund may also wish to consider incorporating its existing climate risk management processes for its investments into a similar risk management framework for its funding strategy.

Finally, further disclosures relating to the frequency and scope of climate-related discussions at the Pensions Committees may help to demonstrate the Fund's ongoing work on managing climate risk.



Metrics and Targets

Proposed DLUHC Requirements

AAs will be expected to report on metrics as defined in supporting guidance. The proposed metrics are set out below.

- Metric 1 will be an absolute emissions metric. Under this metric, AAs must, as far as able, report Scope 1, 2 and 3 greenhouse gas (GHG) emissions.
- Metric 2 will be an emissions intensity metric. We propose that all AAs should report the Carbon Footprint of their assets as far as they are able to. Selecting an alternative emissions intensity metric such as Weighted Average Carbon Intensity (WACI) will be permitted, but AAs will be asked to explain their reasoning for doing so in their Climate Risk Report.
- Metric 3 will be the Data Quality metric. Under the Data Quality metric, AAs will report the proportion the value of its assets for which its total reported emissions were Verified, Reported, Estimated or Unavailable.
- Metric 4 will be the Paris Alignment Metric. Under the Paris Alignment Metric, AAs will report the percentage of the value of their assets for which there is a public net zero commitment by 2050 or sooner.

Metrics must be measured and disclosed annually.

AAs will be expected to set a target in relation to one metric, chosen by the AA. The target will not be binding. Progress against the target must be assessed once a year, and the target revised if appropriate. The chosen metric may be one of the four mandatory metrics listed above, or any other climate related metric recommended by the TCFD.



Metrics and Targets *(continued)*

Disclosure Maturity Map

	LIMITED DISCLOSURE	MODERATE DISCLOSURE	FULL DISCLOSURE
METRICS AND TARGETS DISCLOSURE	<ul style="list-style-type: none"> • Scope 1 and Scope 2 GHG emissions. 	<ul style="list-style-type: none"> • Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions, and the related risks. • Measurement methodologies for these are clearly defined and in line with recognised guidance. • The organisation’s quantified targets to reduce GHG emissions in relative or absolute terms (Scopes 1, 2 and/or 3) and performance against these. 	<ul style="list-style-type: none"> • The metrics used to assess climate-related risks and opportunities in line with strategy and risk management process. • The targets used to manage climate-related risks and opportunities, including use of science-based targets, and performance against these targets. • Assurance of reported GHG emissions under International Standard on Assurance Engagements (ISAE) 3410, Assurance Engagements on GHG Statements.



Metrics and Targets *(continued)*

Industry Best Practices

Discussion of Metrics, Methodology and Limitations

USS discussed its data sourcing and methodology in great detail, and included an explanation of data limitations. In its report, USS also reviewed the organisations climate performance against its net zero target pathway. Disclosing information regarding the methodologies, data limitations, and how metrics should be interpreted demonstrates an understanding of the data challenges and provides credibility to the findings derived from the data. This information also means the data can be more easily interpreted by the reader.

Transparency around Restated Data

Schroders explained its annual emissions recalculation process and highlighted data that is restated. As data coverage and reliability continues to evolve it is important to ensure the most accurate data is reported. However, this can lead to data being restated. As this can

lead to a lack of consistency as reported data is retrospectively amended, it is important for the Fund to disclose how data has been restated and the purpose of the restatement, minimising inconsistency from one report to the another.

Data Assurance

Abrdn included an independent assurance statement that provides limited assurance of its selected sustainability performance indicators. This statement is included in the company’s sustainability disclosures, providing reported metrics with additional credibility and reliability.



Lavender plants blossoming in Worcestershire



Metrics and Targets *(continued)*

WPF Current Disclosures and Practices

Discussion of Metrics, Methodology and Limitations

The Fund's annual Climate Risk Report and its TCFD report both present a wide range of climate metrics to measure the fund's overall performance in managing climate risk. The report is transparent about some of the challenges faced when reporting on climate data, but clear justification is provided for the metrics chosen, and the metric choice has been updated for the Fund's 2023 metrics, in line with DLUHC recommendations.

Targets

The Fund does not currently have a formal decarbonisation target in place, although it does have an aim to reduce the carbon footprint (scope 1 & 2) of the Fund's listed equity portfolio by the end of 2023. It also has an aim to set an internal decarbonisation reduction target up to 2025. Finally, the fund

aims to continue investing in low carbon and sustainable instruments by the end of 2023.

Detailed metrics which present a more complete picture of the fund's exposure to climate risk are presented in Section 2 (Climate Metrics) of this report.

Based on our analysis, the Fund is currently aligned with moderate levels of disclosure, as per the materiality map above.

Considerations and Recommendations

The Fund states in its TCFD report that "the ability for diversified investors (such as pension funds) to set meaningful targets is inhibited by the paucity of credible methodologies and data currently available". While carbon methodologies and data availability are still developing, the Fund should consider a Net Zero Climate Strategy, as well as short-, medium-, and long-term interim targets. In order to ensure that these are achievable, the Fund may wish

to consider setting net zero aligned asset class specific targets. This recommendation has been carried forward from the Fund's 2022 Climate Report. Such targets would help the Fund align with the DLUHC recommendations.

Future iterations of the TCFD report will include the four metrics required by the DLUHC. These should be reported in addition to the metrics which have been reported over previous years, adding further context and nuance to the Fund's climate analysis.

The Fund may also wish to consider detailing the metrics and targets which correspond to their engagement activities. Such information is often published in the stewardship reports of industry leaders and assists in quantifying alternate areas of progress within the management of climate risk.

The Fund may also wish to consider the adoption of forward-looking targets, based on pathway alignment in addition to emissions-based targets.

The Fund may wish to monitor and disclose progress in data availability across its investments. In line with DLUHC recommendations, auditable emissions data represents the highest quality of data and lends credibility and reliability to the Fund's progress towards decarbonisation. Targets could be set to measure progress towards this enhancement.



Other Requirements / Recommendations

Proposed DLUHC Requirements

	DLUHC Requirement	LGPS Central Proposals
Disclosure	AAs will be expected to publish an annual Climate Risk Report. This may be a standalone report, or a section in the AA's annual report. The deadline for publishing the Climate Risk Report will be 1 December, as for the AA's Annual Report, with the first Climate Risk Report due in December 2024.	The Fund has been complying with this recommendation since the publication of its first climate report in 2020. We propose that scheme members are informed that the Climate Risk Report is available in an appropriate way.
Scheme Climate Report	DLUHC proposes that the Scheme Advisory Board (SAB) should prepare an annual Scheme Climate Report including a link to each individual AA's Climate Risk Report (or a note that none has been published) and aggregate figures for the four mandatory metrics.	This exists in the consultation, and could have implications for the Fund's carbon risk analyses going forwards. While this is more relevant for the SAB than the Fund in particular, we feel it is important for the Fund to remain aware of any developments in this area as it may have implications for the Fund's future carbon reporting.
Proper Advice	DLUHC proposes to require that each AA take proper advice when making decisions relating to climate-related risks and opportunities and when receiving metrics and scenario analysis.	Although this section requires no concrete action at this time, we recommend that the Fund remains aware of potential future developments. The Fund may wish to conduct a review of its provision of advice to ensure that its metrics and scenario analyses remain 'proper', as per the DLUHC requirements.



Conclusion

The Fund's Overall Readiness / Maturity

Based on its current processes and disclosures, we consider that the Fund is well positioned to meet DLUHC's potential requirements on climate change governance and disclosures. The items in the table would push the Fund towards full compliance.

On average the Fund is disclosing at Moderate level, although it should be noted that, based on our analysis, no single peer is able to achieve leader status across all elements. The Fund does have the potential to move towards leader status in several elements, and is most advanced in relation to the 'Strategy' and 'Risk Management' pillars of the TCFD.

Please note, some considerations and recommendations have been carried forward from the previous climate risk report. Finally, it should be restated that some of the observations discussed in the section above may not require action from WPF as best practice of investment managers is not always appropriate for local government pension funds. These observations were included to flag best practice and to ensure the Fund remains cognisant of emerging best practices.

Summary of Considerations and Recommendations

Section	Considerations and Recommendations
Governance	<ul style="list-style-type: none"> – Continue to review, improve, and enhance climate-related disclosures with an awareness of potential future regulations. – Consider disclosure of climate discussions at working groups within, or outside of, its pool. – Consider enhanced disclosure relating to the content and purpose of climate related training undertaken by the Committee.
Strategy	<ul style="list-style-type: none"> – The Fund should continue to commission Climate Scenario Analyses as recommended by DLUHC, with an awareness that the content of these analyses will develop in line with industry best practice. – Consider providing more details relating to how specific risks and opportunities may materialise, and how the Fund is responding to these potential impacts.
Risk Management	<ul style="list-style-type: none"> – Consider preparing further disclosure of details relating to the identification and assessment of specific risks associated with climate change. – Consider incorporating existing climate risk management processes for investments into a similar risk management framework for the Fund's funding strategy. – Consider further disclosures relating to the frequency and scope of climate-related discussions at the Pensions Committees.
Metrics and Targets	<ul style="list-style-type: none"> – Consider adopting a Net Zero Climate Strategy, as well as short-, medium-, and long-term interim targets. – Additional metrics to meet DLUHC requirements should be included in the next iteration of the Fund's TCFD report. – Consider adopting forward-looking targets based on pathway alignment in addition to emissions-based targets. – Consider detailing the metrics and targets which correspond to the Fund's engagement activities. – Consider monitoring and disclosing progress in data availability across the Fund's investments, setting targets where appropriate.



Section 2

Climate Metrics

YE 31 March 2023

Wate of Evesham, Worcestershire



Climate Metrics

Scope of Analysis

The following Climate Metrics offer a detailed, bottom-up analysis with the following objectives:



Observing climate transition risks and opportunities within the portfolio.



Identifying opportunities for engagement with companies.



Facilitating the monitoring of climate risk management by managers.

This analysis encompasses public market investments reported by the Fund as of 31 March 2023. It includes holdings in listed equity and fixed income funds. The exclusion of unlisted asset classes is due to limited data availability. The assets under management (AUM) within the report's scope totalled approximately £2.6 billion as of that date, with the specific funds outlined in the chart below.

LGPS Central has been calculating carbon footprint metrics for Worcestershire Pension Fund since 2020. The analysis scope has expanded over time as the Fund effected asset allocation decisions during this period. This report summarises the evolution of the Fund's carbon footprint up to 30 March 2023.



River Avon, Pershore, Worcestershire



Climate Metrics *(continued)*

FIGURE 1: BREAKDOWN OF FUNDS INCLUDED IN THE ANALYSIS





Climate Metrics *(continued)*

The analysis is based on a dataset provided by MSCI ESG Research LLC (MSCI).⁶ We utilised data that was downloaded from MSCI on 1st September 2023. The table on pages 46-51 provides an overview of the types of carbon metrics utilised.

Carbon footprint metrics were selected to comply with the results of [Department for Levelling Up, Housing & Communities' consultation](#),⁷ which were published in September 2022. That document sets out an expectation that AAs report on four proposed metrics:



Absolute emissions metric –
financed emissions



Emissions intensity metric –
normalised financed emissions
and weighted average carbon
intensity (WACI)



Data quality metric



Paris alignment metric

⁶ Certain information @ 2023 MSCI ESG Research LLC. Reproduced by permission. Attention is drawn to Section 8.0 Important Information.

⁷ <https://www.gov.uk/government/consultations/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks>



Poppies at dawn near Bewdley, Worcestershire



Climate Metrics *(continued)*

On top of the headline DLUHC-proposed metrics, we also calculate multiple other metrics as listed in the definition table. We believe carbon footprint metrics apply only one lens, whereas additional metrics – including fossil fuel exposure, clean tech exposure, and carbon risk management – provide a deeper and broader assessment of climate risk and opportunity. Further detail of these metrics can be found on pages 46-51.

The analysis looks at the headline metrics first, before delving into asset class assessment.

The Headline Metrics

Carbon Footprint Metrics

Metrics	Financed Emissions	Normalised Financed Emissions	Weighted Average Carbon Intensity (WACI)
Absolute / Intensity	Absolute	Intensity	Intensity
Definition	Financed emissions calculates the absolute tonnes of CO2 equivalent for which an investor is responsible.	This metric measures the Financed Emissions for every £1 million invested.	WACI measures a portfolio's exposure to carbon-intensive companies.
Question answered	What is my portfolio's total carbon footprint?	What is my portfolio's normalised carbon footprint per million GBP invested?	What is my portfolio's exposure to carbon-intensive companies?
Unit	tCO2e	tCO2e / £m invested	tCO2e / \$m revenue
Comparability	No; does not take size into account	Yes; adjusts for portfolio size	Yes
Data needs	Medium <ul style="list-style-type: none"> Notional amount invested Carbon emissions of issuer EVIC or Total Equity + Total Debt (Sovereign: PPP-Adjusted GDP) 	Medium <ul style="list-style-type: none"> Notional amount invested Total portfolio AUM Carbon emissions of issuer EVIC or Total Equity + Total Debt (Sovereign: PPP-Adjusted GDP) 	Low <ul style="list-style-type: none"> Portfolio weights Carbon emissions of issuer Sales of issuer (Sovereign: Nominal GDP)

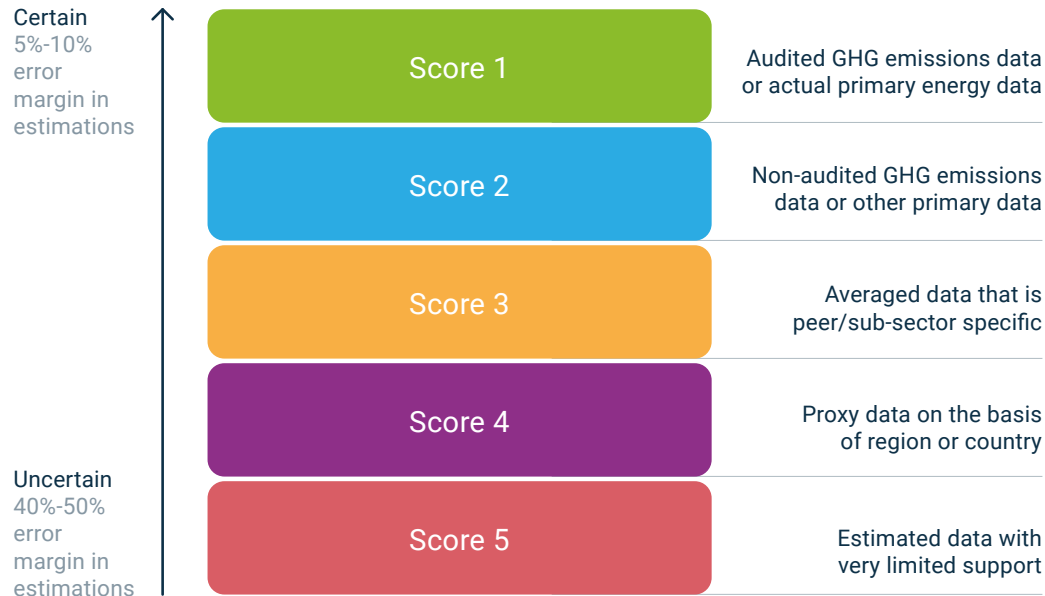


Climate Metrics *(continued)*

Data Quality Metric

Score between 1 and 5; with 1 being the most preferred which relates to actual audited data. Score 5 is the least preferred, which relates to estimated data with limited support.

This system enables reporting on financed emissions even if data is not available, whilst providing transparency over the accuracy of the information provided. The source of the score is MSCI.



Source: The Global Carbon Accounting Standard for the Financial Industry: Draft version for public consultation (August 2020), Partnership for Carbon Accounting Financials (2020).



St Mary's Church and the Staffordshire-Worcestershire Canal, Kidderminster



Climate Metrics *(continued)*

Paris Alignment Metric

A company will be considered at least Aligning to Paris Agreement by LGPS Central if:

The Company score above **Median** in **Low Carbon Transition score**

+ and it meets **one** of the following criteria: +

The Company has a **science-based target** **or** The Company has an **implied temperature rise** rating of 2.0°C or lower

Low Carbon Transition Score

Score from 0 (worst) to 10 (best) measuring companies' exposure to and management of risks and opportunities related to the low carbon transition. Source of rating: MSCI.

Score of more than 5 (median) required to be considered at least Aligning.

and

Science-Based Target

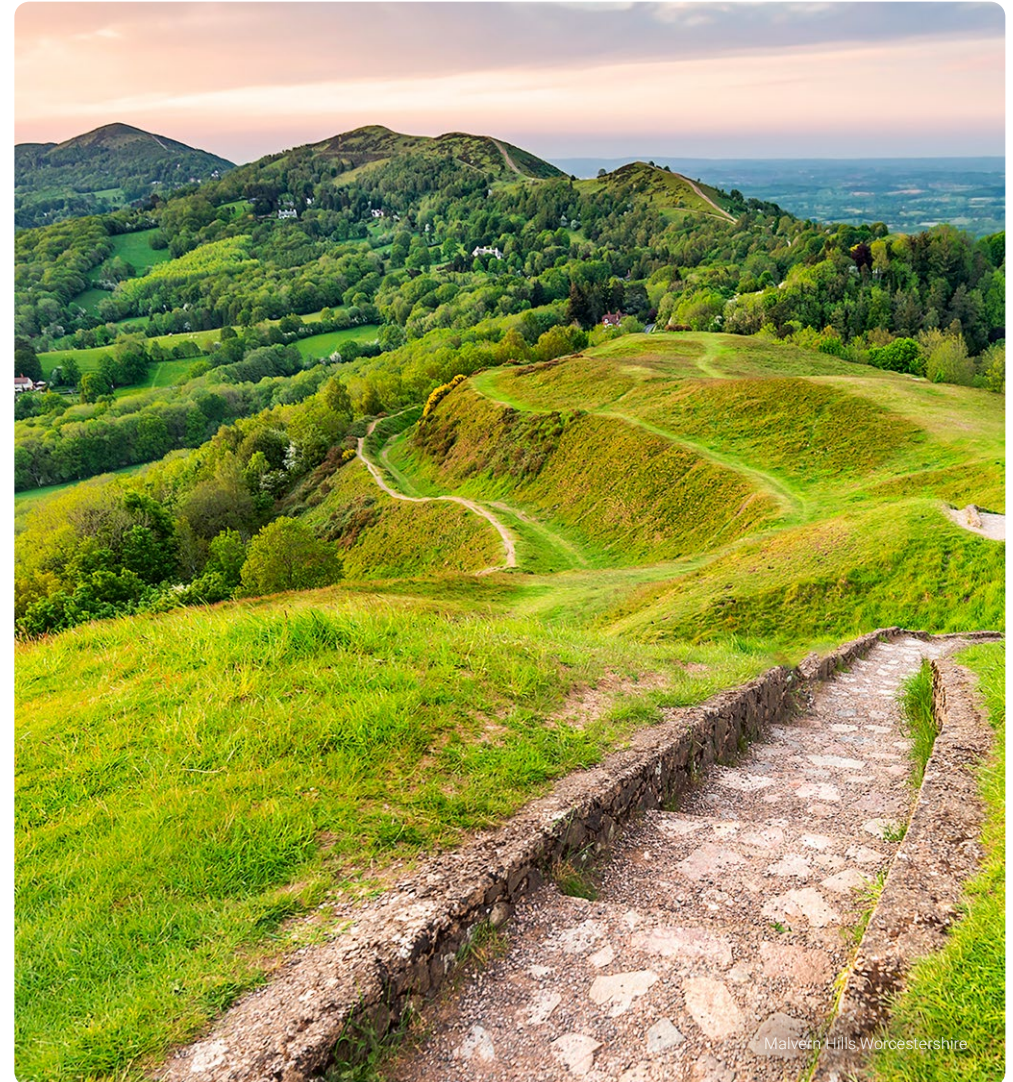
Issuer commits to a medium- and long-term net zero target that are considered science-based; i.e. in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement.

or

Implied Temperature Rise

Implied temperature rise (in the year 2100 or later) if the whole economy had the same over-/undershoot level of greenhouse gas emissions to the issuer.

Below 2°C is required to be considered at least Aligning.





Climate Metrics *(continued)*

MSCI Low Carbon Transition Risk Assessment⁸

MSCI ESG Research's Low Carbon Transition Risk⁹ assessment is designed to identify potential leaders and laggards by holistically measuring companies' exposure to and management of risks and opportunities related to the low carbon transition.

The final output of this assessment is two company-level factors as described below:

☰ 1) Low Carbon Transition Category:

This factor groups companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition (Exhibit 1).

🌱 2) Low Carbon Transition Score:

This score is based on a multi-dimensional risks and opportunities assessment and considers both predominant and secondary risks a company faces. It is industry agnostic and represents an absolute assessment of a company's position vis-à-vis the transition.

Calculation methodology

The LCT Categories and Scores are determined by a combination of each company's current risk exposure and its efforts to manage the risks and opportunities presented by the low carbon transition. The 3-step process followed by MSCI ESG Research is explained below.

Step 1

The first step towards measuring the Low Carbon Transition Risk Exposure for a company is the computation of its Carbon Intensity profile – which is informed by its Product Carbon Intensity, Operational Carbon Intensity and Total Carbon Intensity.



Step 2

MSCI assess a company's management of risks and opportunities presented by the low carbon transition. This assessment is based on policies and commitments to mitigate transition risk, governance structures, risk management programs and initiatives, targets and performance, and involvement in any controversies.



Step 3

Low Carbon Transition Risk Exposure Category and Score that was calculated in Step 1 are adjusted for the strength of management efforts calculated in Step 2. Following this adjustment, Low Carbon Transition Risk Exposure Score of companies with top or second quartile risk management improves and some top and second quartile companies may move up one category.

⁸ Source: MSCI Climate Change Indexes Methodology, pp17-18

⁹ For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>



Climate Metrics *(continued)*

Scope 3 Emissions

Scope 3 emissions refers to the emissions released indirectly through business activities. More specifically, scope 3 represents the emissions released through the value chain of the company, both upstream and downstream, emissions which are not otherwise captured in scope 1 and 2. This would include the emissions produced by a company’s supplier when producing a product brought by the company, or the emissions released by a customer through a product supplied by the company.

Due to the nature of this measurement, for many industries and assets the associated scope 3 emissions of the company will often be significantly greater than those of the scope 1 and 2. When aggregated at portfolio level, scope 3 emissions will also be subject to double

counting, a term which refers to aggregating an observation multiple times, despite being a single observation. Double counting will often occur due to overlapping value chains, a simple example of this can be explained through the use of a vehicle with an internal combustion engine. In such an instance such, scope 3 emissions will be associated with both the provider of fuel for the vehicle, as well as the vehicle manufacturer as well. Double counting will also occur across scope 1 and 2, to 3, as one companies scope 1 and 2 emissions, will often be another company’s scope 3.

Despite the flaws within this metric, a company’s scope 3 emissions are important to account for, as without this metric many companies’ emissions would be significantly understated.



River Severn at Worcester, Worcestershire



Climate Metrics *(continued)*

Headline Metrics	WPF March 2023
Absolute emissions metric: – Financed emissions	Equities: <ul style="list-style-type: none"> – Scope 1 and 2: 167,214 tCO₂e – Scope 3: 1,754,764 tCO₂e
Emissions intensity metric: – Normalised financed emissions – Weighted Average Carbon Intensity (WACI)	Equities: <ul style="list-style-type: none"> Normalised Financed Emissions – Scope 1 and 2: 72.7 tCO₂e/£M Invested – Scope 3: 767.0 tCO₂e/£M Invested WACI <ul style="list-style-type: none"> – Scope 1 and 2: 98.7 tCO₂e/\$M Revenue
Data Quality metric: – Data availability – MSCI data quality metric	Equities: <ul style="list-style-type: none"> – Data availability: 96.3% of AUM with data coverage for financed emissions calculation – Data quality: 2.1 (Weighted Average of available data quality)
Paris Alignment metric: Combination of <ul style="list-style-type: none"> – MSCI Low Carbon Transition Score – Science-Based Target – MSCI Implied Temperature Rating 	Equities: <ul style="list-style-type: none"> – LCT Score: 37.1% of financed emissions has above median score – SBT: 35.7% of financed emissions are covered by a science-based target – ITR: 26.1% of financed emissions has an implied temperature of 2°C or below



Climate Metrics *(continued)*

Our Approach to Climate Data

Climate data is an evolving field, and methodologies are continuously updated by governments, data providers, and companies. The data accessible through our data provider (MSCI) undergoes frequent revisions as estimated data gets replaced by reported data, estimations are refined for greater precision, and data coverage expands.

We recalculate our emissions annually and may revise previously reported greenhouse gas (GHG) data to incorporate the most current information. When possible, we align our holding period with the period in which emissions from the underlying issuer occurred. Consequently, there may be variations between data reported in previous documents and the figures presented in this report due to these restatements. Our metrics employ methodologies aligned with those used by the Partnership for Carbon Accounting Financials (PCAF) and MSCI.

A summary of restated values are as follows:

	Previously Reported			Restated Data		
	2020	2021	2022	2020	2021	2022
Equities Portfolios						
Weighted Average Carbon Intensity	137.4	113.0	118.7	144.0	97.7	114.4
Weight in Fossil Fuel Reserves	6.6%	6.51%	7.4%	5.3%	3.9%	6.8%
Weight in Thermal Coal Reserves	2.2%	2.15%	1.9%	2.8%	1.7%	3.0%
Weight in Coal Power*	1.2%	0.41%	0.7%	0.1%	0.0%	0.0%
Weight in Clean Technology	34.6%	35.9%	34.4%	37.1%	40.5%	38.2%
Reference Indices						
Weighted Average Carbon Intensity	180.2	157.1	169.8	186.8	165.8	165.8
Weight in Fossil Fuel Reserves	7.7%	7.3%	8.9%	6.0%	5.9%	8.0%
Weight in Thermal Coal Reserves	3.0%	2.9%	2.7%	2.4%	2.3%	3.4%
Weight in Coal Power	1.5%	0.8%	1.3%	0.2%	0.1%	0.1%
Weight in Clean Technology	34.7%	36.9%	36.2%	36.3%	38.1%	38.8%

* New methodology screens companies with >30% of share from coal power generation.



Equities

The table below shows the Fund's aggregated climate risk metrics for each portfolio in the equity asset class. Please see the Glossary on pages 46-51 for definitions of each of these metrics.

FIGURE 3: EQUITIES CLIMATE DASHBOARD

Equity Asset Class	Multiple Fund Classification	Multiple Fund Manager	£2,433,117,663 NAV	Blended Reference Index	Q1 2023 Period										
Carbon Footprint Metrics															
			Portfolio	Reference	Previous Year	Data Availability									
			Portfolio	Reference	Previous Year	Portfolio	Reference								
Total Financed Emissions	Scope 1+2	167,214	222,645	164,359	96.3%	98.3%									
tCO2e	Scope 3	1,754,764	1,857,785	1,546,893	96.1%	98.1%									
Normalised Financed Emissions	Scope 1+2	72.7	93.2	81.5											
tCO2e/£M Invested	Scope 3	767.0	777.7	770.3											
Weighted Average Carbon Intensity	Exclude Sovereign	98.7	164.1	114.4	96.3%	98.4%									
tCO2e/\$M Revenue	Include Sovereign	98.7	164.1	114.4	96.3%	98.4%									
Top 10 Emissions Contributors						Recommendations / Observations									
Issuer	PF Weight	Ref Weight	% Financed Emission	% WACI	Scope 1+2	Scope 3	Engagement	Focus	Data	LCT	ITR	SBT			
Taiwan Semiconductor Manufacturing Co., Ltd.	1.8%	1.3%	0.9%	19	3.7%	4	11.3M	35.0M	Yes	Yes	2	5.8	2.9	No	<ul style="list-style-type: none"> Financed emissions have increased slightly since the previous year. However, as the fund's AUM also increased by a greater proportion over the same period, normalised financed emissions have decreased by 11%. The fund's financed emissions are 25% lower than that of the benchmark, driven by underweight exposure to Materials, Energy, and Utilities.
SHELL PLC	1.7%	2.0%	15.2%	1	6.5%	1	137.7M	1,174.0M	Yes	Yes	2	2.9	2.5	No	
BP P.L.C.	1.0%	1.1%	3.6%	5	1.5%	11	35.5M	640.7M	Yes	Yes	2	2.8	2.4	No	
RIO TINTO PLC	0.7%	0.7%	3.1%	7	4.1%	3	30.3M	583.9M	Yes	Yes	2	5.5	5.9	No	
ANGLO AMERICAN PLC	0.4%	0.4%	1.4%	13	1.7%	10	13.3M	335.2M	Yes	No	2	5.8	5.5	No	
CRH PUBLIC LIMITED COMPANY	0.3%	0.4%	4.8%	3	3.4%	6	33.8M	22.4M	Yes	Yes	2	4.9	1.8	Yes	
CEMEX, S.A.B. de C.V.	0.1%	0.0%	5.0%	2	3.4%	5	39.3M	14.8M	Yes	Yes	2	4.0	1.9	Yes	
SOUTH32 LIMITED	0.1%	0.0%	3.0%	8	2.8%	8	21.0M	67.4M	Yes	No	2	4.0	5.2	No	
SEMBCORP INDUSTRIES LTD	0.1%	0.0%	4.4%	4	4.3%	2	25.5M	8.9M	No	No	2	3.4	3.2	No	
Huaxin Cement Co., Ltd.	0.0%	0.0%	2.6%	10	2.8%	7	36.0M	3.5M	No	No	2	1.4	8.3	No	
Worst YoY Contributors													Stewardship Focus		
BLUESCOPE STEEL LIMITED													No		
SEMBCORP INDUSTRIES LTD													No		
SOUTH32 LIMITED													No		
High Impact Sectors / Climate Solutions Exposures (Portfolio vs Benchmark)						Portfolio Alignment & Engagement									
Fossil Fuel Exposure	Fossil Fuel Revenue	Thermal Coal Exposure	Coal Power Exposure	Cleantech Exposure	Cleantech Revenue	Engagement	Data Quality	LCT	ITR	SBT	Alignment				
5.7% 8.3%	2.0% 3.9%	2.1% 2.9%	0.0% 0.1%	38.1% 38.2%	4.9% 5.2%	71.2%	2.1	37.1%	26.1%	35.7%	19.7%				



Equities *(continued)*

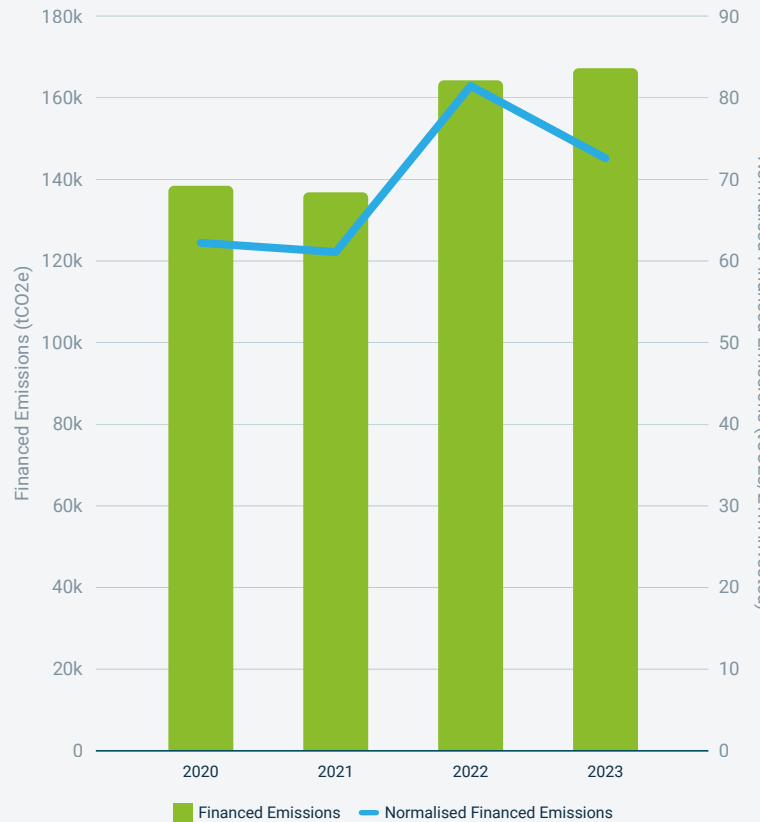
We have examined nine funds with a combined NAV of approximately £2.4 billion as of March 31, 2023.

Notably, the composition of the funds within the analysis has changed significantly since our initial assessment in 2020. For example, over this time the Fund has shifted assets into LGPSC's Global Sustainable Equity funds, which has resulted in significant improvements in the Fund's carbon metrics.

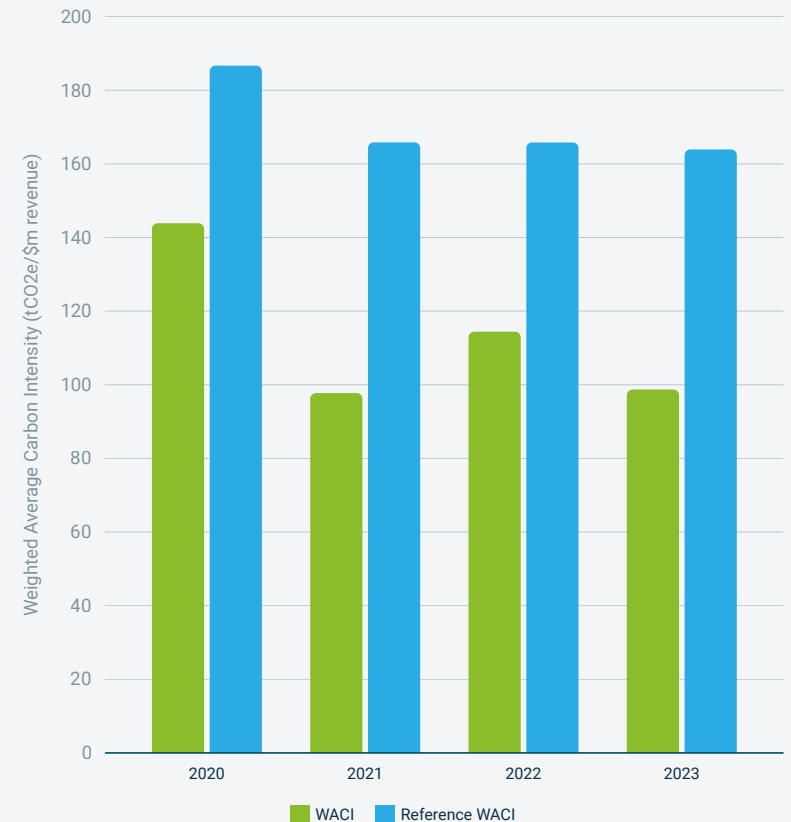
Each fund's carbon footprint is evaluated in comparison to the primary market index in which it predominantly invests. In this case, as all funds considered in this analysis have a global investment universe, we have selected the FTSE All-World Index as the reference benchmark for this evaluation.

Carbon Footprint Metrics

Total Equities: Historical Financed Emissions



Total Equities: Historical WACI





Equities *(continued)*

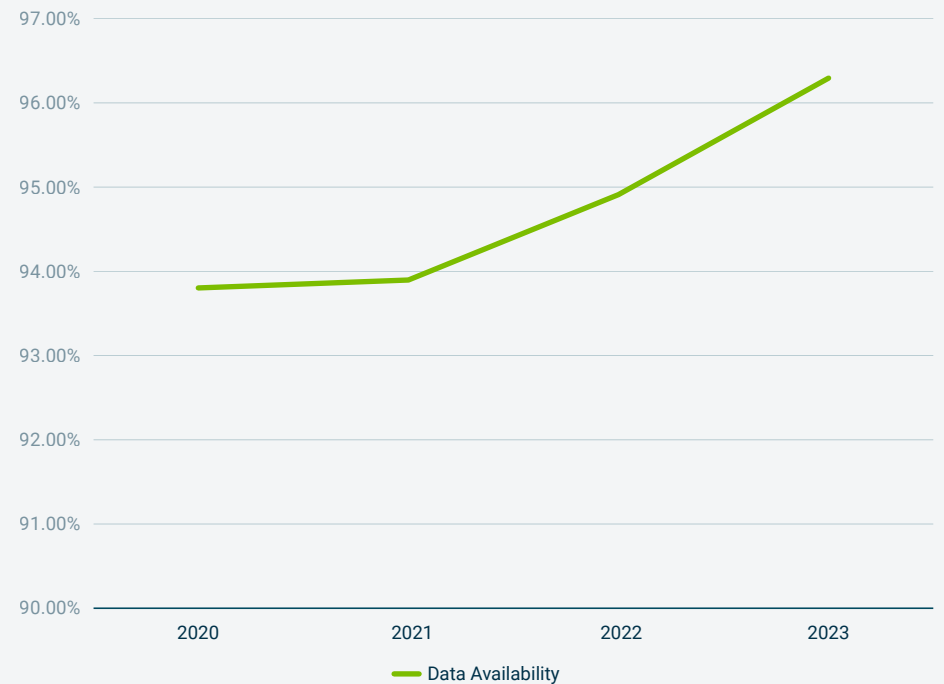
Financed emissions have seen a small increase (1.7%) since the previous year. However, as the Fund's NAV increased by 10.9% over the same period, financed emissions normalised per £m invested have decreased by 10.8%. The majority of the YoY increase in financed emissions can be attributed to the Nomura Asia-Pacific Equity fund, with a 73% increase in financed emissions alongside a 5.5% increase in NAV. The increase in the financed emissions of the Nomura fund was mitigated by a decrease of a similar extent in the LGIM Global Equity fund.

In relative terms, carbon metrics for equities have consistently outperformed their reference indices, with 2023 financed emissions and WACI outperforming the benchmark by 25% and 40% respectively. All actively managed portfolios exhibit lower carbon metrics compared to their respective market indices. This indicates that the stock selection and asset allocation decisions of delegated managers are informed by climate risk considerations.

In contrast to the Fund's financed emissions, the Fund's WACI has decreased by 31.5% since 2020. This shows that the carbon intensities of the companies in which the fund is investing (ie. the amount of carbon produced in proportion to the firm's revenue) has decreased significantly. The WACI also decreased by 13.7% since 2022, driven in part by a reduction in exposure to the Energy sector.

Data

Equities: Data Availability Over Time

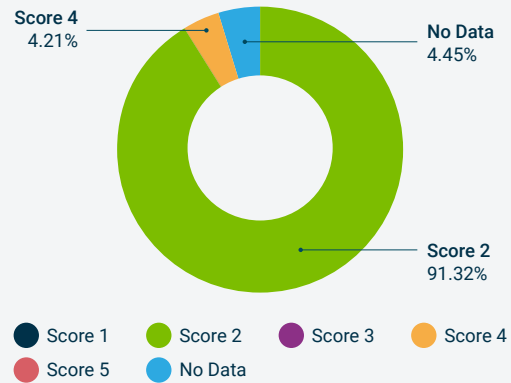


This chart shows how data availability has changed over time, since we first began collecting data in 2020. Data availability for the Total Equity portfolio has remained high throughout the period, with steady improvements as the availability trends upwards. As of Q1 2023, data availability is lowest for the Nomura portfolio (91.6%) and highest for the LGIM NA Equity fund (99.2%). These differences are reflective of the idiosyncrasies of data availability in different geographic markets.



Equities *(continued)*

Equities: Breakdown of Data Quality Score (March 2023)



We have consistently had access to a substantial amount of equity data since we began calculating carbon footprint metrics. Our current primary focus is to enhance the quality of the data used in these calculations. At present, the majority (91.3%) of the data analysed, as measured as a percentage of the total value of equity funds, is sourced from company-reported data with a rating of 2. To attain a higher rating, company-reported data should undergo independent verification. In practice, a significant portion of the data we employ has already undergone independent verification. However, we currently lack a method to confirm the audited status of this data. Our ongoing efforts are directed toward improving the data validation process to accurately reflect the true quality of the data we utilise. This workstream is conducted in collaboration with our data provider.



Worcestershire Countryside

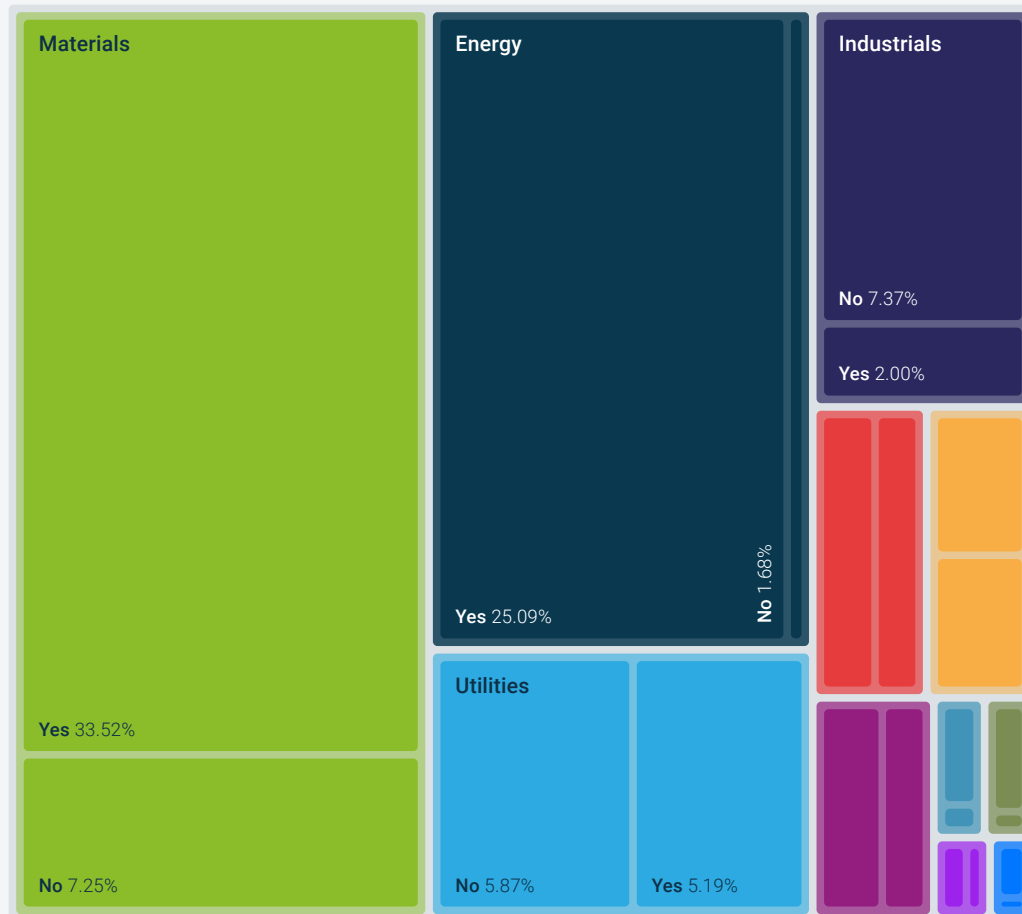


Equities *(continued)*

Sources of Emissions

The graph below illustrates the distribution of emissions within the portfolio by sector and indicates whether these emissions are addressed through engagement activities.

Financed Emission (Scope 1+2) by GICS Sector and Climate Engagement



Between 2020 and 2023, the Fund's share of emissions associated with investments in Utilities decreased significantly, counterbalanced by increases in the share of emissions associated with Materials and Energy. This is to be largely expected: companies in the Utilities sector have been able to shift towards low carbon alternatives with relative ease as the price of green electricity decreases. Materials, on the other hand, is more reliant on carbon-intensive operations and there are few low-carbon alternatives.

It is encouraging to see that engagement efforts within the Materials sector have increased over the same period. In 2020, 69% of emissions arising from that sector came from companies which were being engaged by LGPSC or its external stewardship provider. In 2023, that figure has increased to approximately 83%. Furthermore, only 6% of financed emissions from the Energy sector are arising from companies which are not being engaged. This suggests that engagement efforts are focussing on sectors which may represent the greatest exposure to climate risk for the Fund.

At the company level, six of the Top 10 emitters from across the portfolio are included in the climate stewardship focus list, and eight of the Top 10 emitters are currently being engaged by LGPSC or its external stewardship provider. As with previous years, we recommend that those companies in the Plan continue to be monitored, with any significant changes to the Top 10 emitters reflected with updates to the plan.

Relative to reference indices, the Fund's equities portfolios have lower exposure to fossil fuels, thermal coal, and coal power generation. This can be attributed in part to Fund's underweight position in the Energy sector.



Equities *(continued)*

Highest Emitting Issuers

The leading contributor to financed emissions in WPF's equity portfolios is **Shell**, accounting for 15.2% of all such emissions. Shell has committed to a climate target of reducing scope 1 and 2 emissions by 50% by 2030, compared to a 2016 baseline, and achieving net zero emissions by 2050. In relation to this target, Shell has already reduced its scope 1 and 2 emissions by 20.4% since the baseline year, and they have also reported successful attainment of their short-term targets for 2021 and 2022. These factors place Shell above the industry average in terms of its climate ambitions and its progress towards the achievement of those ambitions. Nonetheless, Shell continues to be a key focus of our stewardship efforts.

CRH, a supplier of construction materials has been one of the top contributors (year-on-year) to the portfolio's financed emissions as exposure to the company increased. However, the company has established 2030 target which

has been validated by the SBTi. The target refers to a 30% reduction in absolute emissions by 2030 from a base year of 2021. The company has so far reduced scope 1 and 2 emissions by 6.1% (from 2021 to 2022). Prior to this the company's scope 1 and 2 emissions doubled over a 10-year period (2012 to 2022), driven by M&A activities.

Taiwan Semiconductor Manufacturing Co (TSMC) also features in the Top 10 emitters list, contributing 0.9% of the portfolio's financed emissions and 3.78% of the portfolio's WACI. The semiconductor industry is naturally carbon intensive, yet semiconductors themselves will play a crucial role in the transition to a low carbon economy. The company has set a goal to reach net zero by 2050, although this is not yet a science-based target. Elements such as this will be key to future engagements with the company.



Harvington Hall, Worcestershire



Fixed Income

The table below shows the Fund's aggregated climate risk metrics for each portfolio in the fixed income asset class. Please see the Glossary on pages 46-51 for definitions of each of these metrics.

FIGURE 4: FIXED INCOME CLIMATE DASHBOARD

Fixed Income Asset Class	Fixed Income Global Fund Classification	Multiple Fund Manager	£181,399,939 NAV	50% Sterling Non-Gilt & 50... Reference Index	Q1 2023 Period											
Carbon Footprint Metrics																
		Portfolio	Reference	Previous Year	Data Availability											
					Portfolio Reference											
Total Financed Emissions tCO ₂ e	Scope 1+2	9,299	9,421	13,550	71.8% 77.4%											
	Scope 3	45,310	74,892	58,085	71.6% 76.9%											
Normalised Financed Emissions tCO ₂ e/£M Invested	Scope 1+2	71.3	51.9	91.4												
	Scope 3	349.0	412.9	391.8												
Weighted Average Carbon Intensity tCO ₂ e/\$M Revenue	Exclude Sovereign	174.6	159.0	200.5	83.0% 96.1%											
	Include Sovereign	175.5	159.0	198.8	87.3% 96.1%											
Top 10 Emissions Contributors																
Issuer	PF Weight	Ref Weight	% Financed Emission	% WACI	Scope 1+2	Scope 3	Engagement	Focus	Data	LCT	ITR	SBT	Recommendations / Observations			
THE SOUTHERN COMPANY	0.9%	0.1%	12.2%	2 17.7%	1 82.6M	34.8M	Yes	No	2 3.1	3.7	No	<ul style="list-style-type: none"> Data availability for the fixed income portfolio remains relatively low. Although availability has improved over time, the climate metrics included in this report should be considered with this limitation in mind. Total financed emissions have reduced significantly since 2022, and are now outperforming the benchmark. While normalised financed emissions and WACI have also seen significant YoY reductions, they remain above the benchmark. 				
INTERCONTINENTAL HOTELS GROUP PLC	0.5%	0.1%	2.1%	13 2.1%	7 2.5M	3.5M	No	No	2 5.3	4.9	Yes					
ENEL Finance International N.V.	0.4%	0.6%	2.8%	9 1.2%	14 55.9M	69.2M	No	No	2 6.1	1.4	Yes					
CLECO CORPORATE HOLDINGS LLC	0.4%	0.0%	18.6%	1 11.2%	2 9.2M	3.7M	No	No	4		No					
WEC ENERGY GROUP, INC.	0.4%	0.0%	4.1%	5 5.5%	3 21.8M	29.0M	Yes	No	2 2.7	3.5	No					
DUKE ENERGY CORPORATION	0.3%	0.1%	3.5%	8 5.3%	4 78.0M	26.5M	Yes	No	2 4.0	2.6	No					
Dominion Energy, Inc.	0.2%	0.1%	1.5%	17 2.7%	6 35.0M	25.4M	Yes	No	2 3.7	2.9	No					
RWE Aktiengesellschaft	0.2%	0.0%	8.3%	3 3.0%	5 89.6M	23.0M	Yes	No	2 4.5	6.6	Yes					
Holcim Sterling Finance (Netherlands) B.V.	0.1%	0.1%	5.3%	4 1.9%	10 83.0M	30.9M	No	No	2 4.2	2.3	Yes					
THE AES CORPORATION	0.1%	0.0%	2.0%	14 2.0%	9 41.0M	8.6M	Yes	No	2 4.2	3.6	No					
High Impact Sectors / Climate Solutions Exposures (Portfolio vs Benchmark)													Worst YoY Contributors			Stewardship Focus
Fossil Fuel Exposure	Fossil Fuel Revenue	Thermal Coal Exposure	Coal Power Exposure	Cleantech Exposure	Cleantech Revenue	Engagement	Data Quality	LCT	ITR	SBT	Alignment	DUKE ENERGY CORPORATION No ELECTRICITE DE FRANCE SA No RWE Aktiengesellschaft No				
4.4% 6.3%	1.2% 2.1%	1.5% 1.4%	0.0% 0.2%	22.3% 28.9%	3.7% 4.6%	51.6%	2.2	26.1%	38.9%	39.7%	24.4%					
Portfolio Alignment & Engagement																



Fixed Income *(continued)*

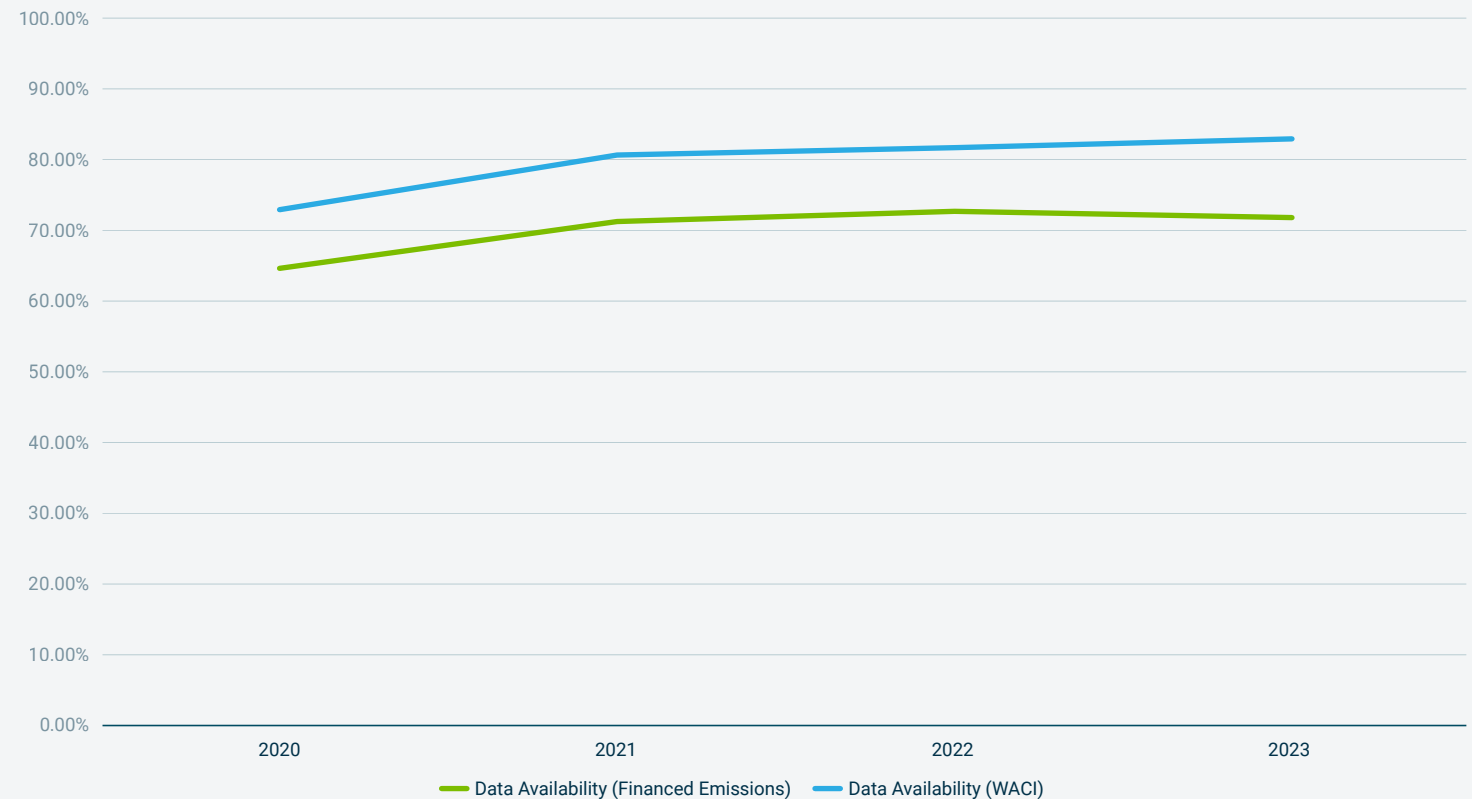
This is the first time that we are calculating the carbon footprint of WPF's fixed income investments, which encompasses a single fund (LGPSC Corporate Bond Fund).

It should be noted here that data coverage is typically much lower in fixed income portfolios than listed equity portfolios, due to the maturity of carbon reporting within that asset class. LGPSC typically sets a threshold of 60% data availability to include a portfolio within the climate analysis. Although the Corporate Bond Fund does exceed this threshold, the carbon metrics reported in this section of the report should nonetheless be considered with this limitation in mind. As climate analyses mature across the industry, data availability will increase.

The reference indices we used to measure the fund's relative performance was 50% Sterling Non-Gilt Index + 50% ICE BofA Global Corporate Index. It should be noted that the accuracy of any comparison with a reference index is likely to be affected by discrepancies in data availability between the fund and the index. Lower data availability often results in higher normalised financed emissions and WACI figures.

Data

Fixed Income: Data Availability Over Time





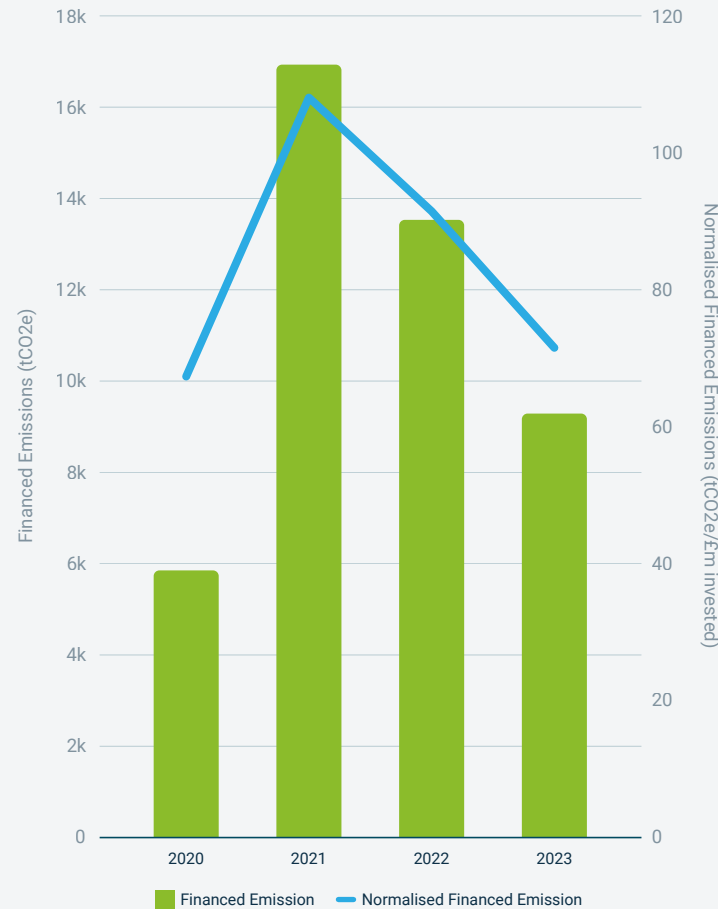
Fixed Income *(continued)*

The financed emissions associated with the fixed income portfolio have increased by 59% since 2020, while financed emissions normalised per £m invested have increased by 5%. The difference between those two figures is reflective of the increase in the Fund's NAV over the same period. It should also be noted that many portfolios follow a similar pattern due to the impact of the covid pandemic in 2020, and the subsequent rebound.

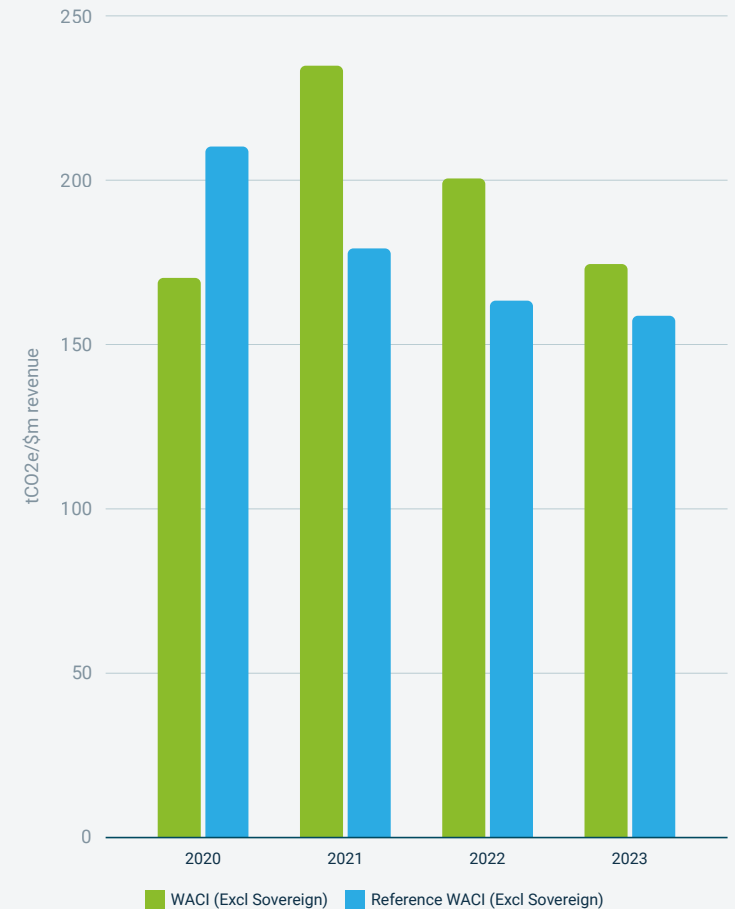
The fund's exposure to carbon intensive companies followed a similar pattern over the same time period, as evidenced by the WACI graph above. As with financed emissions, the fund saw a spike in 2021 and has been steadily decreasing since then. The Fund has been closing the gap between the portfolio WACI and the reference index over the last three years, suggesting that managers are increasingly incorporating climate risk considerations into their stock selection choices.

Carbon Footprint Metrics

Fixed Income: Financed Emissions Over Time



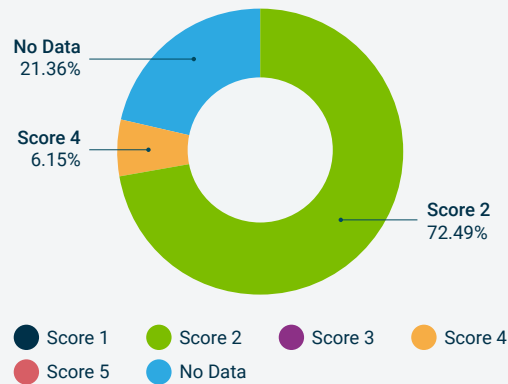
Fixed Income: WACI Over Time





Fixed Income *(continued)*

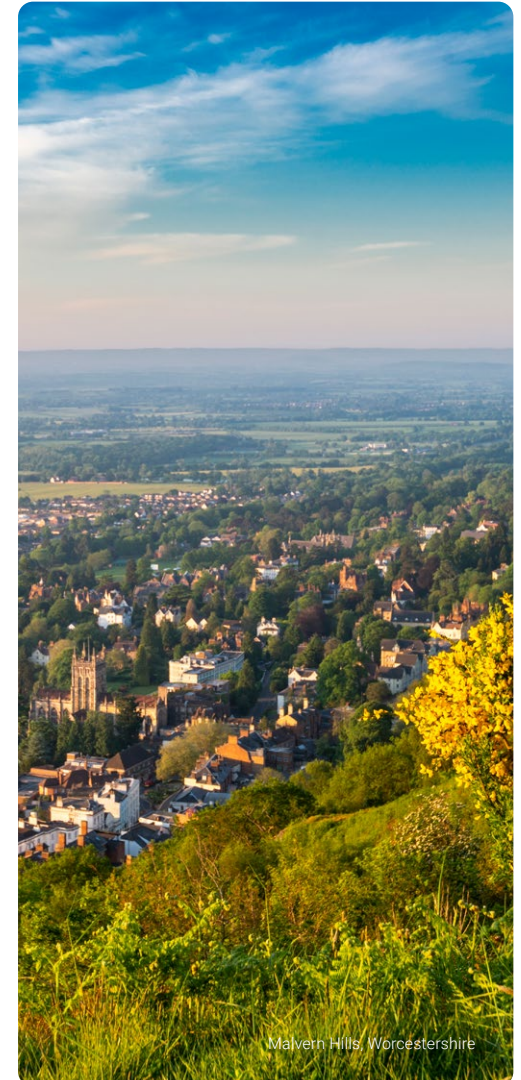
Fixed Income: Breakdown of Data Quality Score (March 2023)



Data availability for fixed income is relatively low compared to those of its equities counterpart. However, it is worth noting that significant improvements have been made since we started carbon footprinting in 2020. It is also encouraging that a significant majority of the data within the portfolio (72%) is company-specific reported data, receiving a score of "2" for data quality.

Going forward, our immediate focus on fixed income is:

- i) Adding sovereign emissions data into the calculation. This will significantly improve data coverage for emerging market debt funds. (NB: We are currently developing a methodology to calculate emissions from sovereign issuers in our model).
- ii) Increasing coverage of EVIC data, especially for non-listed issuers. This will improve our financed emissions data coverage.
- iii) Mapping securities to their parent issuer.



Malvern Hills, Worcestershire

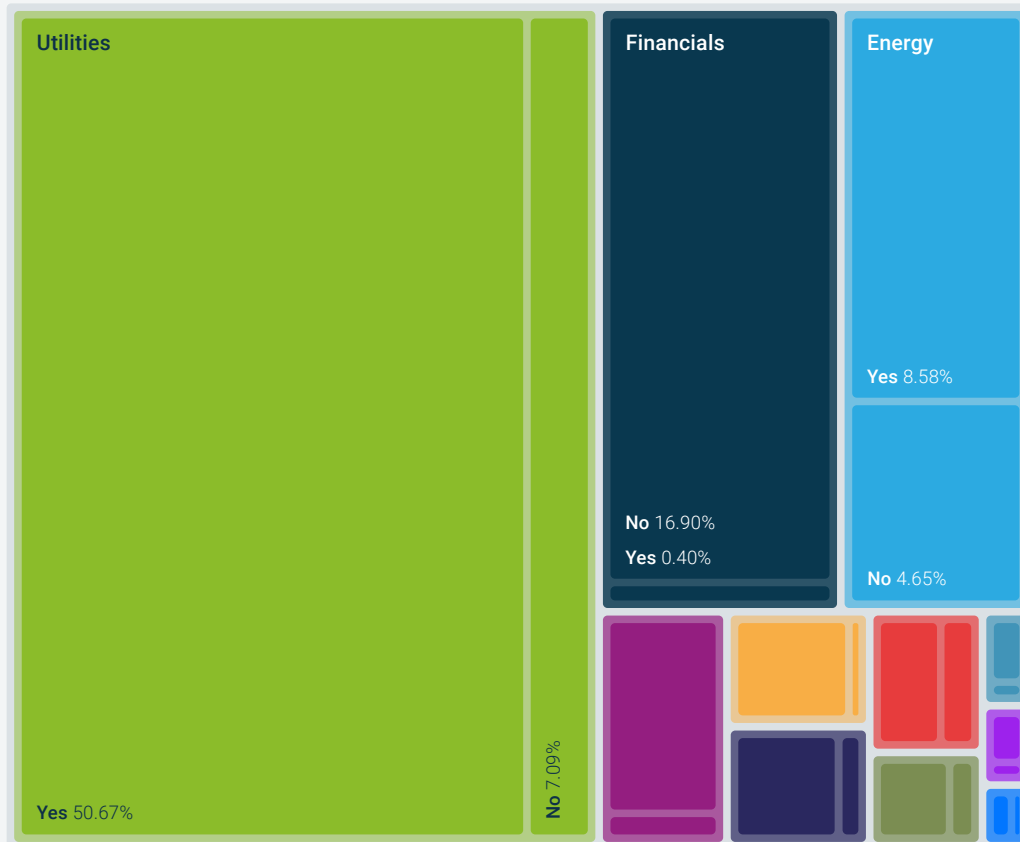


Fixed Income *(continued)*

Sources of Emissions

The graphic below illustrates the distribution of emissions within the portfolio by sector and indicates whether these emissions are addressed through engagement activities.

Financed Emission (Scope 1+2) by GICS Sector and Climate Engagement



The proportion of financed emissions arising from each sector has changed significantly since 2020. Most notably, the proportion of financed emissions arising from Utilities is currently 57%, up from approximately 26% in 2020. Simultaneously, the financed emissions arising from the Energy sector have decreased from 38% to 13%.

Overall engagement coverage has also increased significantly over the same period. As of 31 March 2023, 51.6% of financed emissions are under one or more engagement program. In the fixed income portfolio, the major sector with the least engagement is Energy, which could be an area to improve going forwards. It should be noted here that engagement in the fixed income asset class does face some challenges. Firstly, there is often a lack of desire for companies to engage with their debtholders. This problem is often exacerbated as high portfolio turnover means engagers cannot commit to a long-term engagement plan with single issuers. Nevertheless, the expectation placed upon delegated managers is to perform ESG integration and stewardship. It is imperative that this metric improve over time as we believe that engagement can lead to improvements in carbon performance.

Relative to reference indices, the Fund's equities portfolios have lower exposure to fossil fuels, thermal coal, and coal power generation. This can be attributed in part to Fund's underweight position in the Energy and Materials sectors.



Fixed Income *(continued)*

Highest Emitting Issuers

Cleco Corporate Holdings, a public utility holding company, is the fixed income portfolio's top emitter and is responsible for 18.6% of financed emissions and 11.2% of WACI. Unfortunately, the issuer is not covered by MSCI for LCT and ITR scores. The issuer's private company status (it is owned by private equity firms) makes it difficult to analyse and engage with. LGPSC is communicating with the underlying manager on how they plan to engage with the company.

Another of the fixed income portfolio's top contributors to financed emissions is **Enel**, which contributes 2.8% of financed emissions. Enel is generally seen as a leader in low carbon transition amongst its Utilities peers, demonstrated by the companies ITR of 1.4, LCT of 6.1 and SBT. We therefore consider Enel to be at least aligning to the Paris Agreement. It has an ambitious plan to be net zero by 2040 by switching its generation capacity to renewables (85% by 2030, 100% by 2040).

RWE is responsible for approximately 8.3% of the portfolio's financed emissions and 3.0% of the portfolio's WACI. The German energy company is a major emitter but also a major investor in the transition, with targets to add 25GW of renewable energy capacity by 2030 and reach carbon neutrality by 2040. That said, the company's Scope 1 & 2 emissions did increase from 2022 to 2023, meaning the manager's engagement with the company should be closely monitored.



Dunstall Castle, Croome Park, Pershore, Worcestershire



Definition of Carbon Metrics

TABLE 1: DEFINITION OF CARBON METRICS USED¹⁰

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Scope 1 Emissions	tCO2e (Tons of CO2 equivalent)	These are the Greenhouse Gas (GHG) emissions that a company is directly responsible for through its generation of energy.	The emissions generate through the company's direct operations, such as fuel combustion, company vehicles, etc.	These metrics must be considered together to gain a full understanding of a company's carbon profile. They do not consider a company's size and they do not capture the impact of the company's business model on the climate.
Scope 2 Emissions	tCO2e	GHG emissions that a company produces indirectly through its operations via the consumption of purchased energy.	The emissions generated through the energy purchased by the company during its operations, such as energy consumption used to heat buildings.	Scope 3 emissions can also be counted multiple times by companies at different stages of the same supply chain.
Scope 3 Emissions	tCO2e	All indirect GHG emissions resulting from the company's wider business practice.	Capturing emissions up and down the company's supply chain, including the emissions produced by customers' consumption of its products.	
Financed Emissions	tCO2e	This figure represents the amount of emissions attributed to the investor based on the proportion of the company that the investor owns.	Measures the absolute tons of (scope 1 and 2) CO2 emissions for which an investor is responsible.	Limited usefulness for benchmarking and comparison to other portfolios due to the link to portfolio size (benchmarks are assumed to have equal AUM to the respective portfolio to overcome this challenge). Attribution factor (EVIC) ¹¹

¹⁰ Further information can be found at this link: [Carbon Footprinting 101 - A Practical Guide to Understanding and Applying Carbon Metrics - MSCl](#)

¹¹ EVIC is the Enterprise Value Including Cash. In other words, this refers to the company's total value.



Definition of Carbon Metrics *(continued)*

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Normalised Financed Emissions	tCO2e/£m Invested	Financed Emissions are normalised by the portfolio's AUM as to provide a measure of carbon intensity.	This measure converts the absolute measure of Financed Emissions into a relative measure of carbon intensity, creating greater ease when benchmarking and comparing to other portfolios.	This measure will complement Financed Emissions, as alone it cannot provide an absolute measure of portfolio emissions.
Weighted Average Carbon Intensity (WACI)	tCO2e/\$m revenue	Is calculated by working out the carbon intensity (Scope 1+2 Emissions / \$M revenue) for each portfolio company and calculating the weighted average by portfolio weight.	A proxy for carbon price risk. Were a global carbon price to be introduced in the form of a carbon tax, this would (ceteris paribus) be more financially detrimental to carbon intensive companies than to carbon efficient companies.	This metric includes scope 1 and 2 emissions but not scope 3 emissions. This means that for some companies the assessment of their carbon footprint could be considered an 'understatement'. As this metric is a product of revenue, the figure may fluctuate independently of the company's carbon emissions.
Exposure to Fossil Fuel Reserves	%	The weight of a portfolio invested in companies that (i) own fossil fuel reserves (ii) thermal coal reserves (iii) utilities deriving more than 30% of their energy mix from coal power.	A higher exposure to fossil fuel reserves is an indicator of higher exposure to companies challenged by the transition to a lower carbon economy and is a measure of the impact of the portfolio.	It does not consider the amount of revenue a company generates from fossil fuel activities. Consequently, diversified businesses (e.g. those that are involved in a range of economic activities) would be included when calculating this metric regardless of the proportion of their revenue derived from fossil fuels. As a result it is not a precise measure of transition risk.



Definition of Carbon Metrics *(continued)*

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Exposure to Fossil Fuel Reserves by Revenue	%	<p>This figure identifies each portfolio company's maximum percentage of revenue (either reported or estimated) derived from conventional oil and gas, unconventional oil and gas, as well as thermal coal.</p> <p>Each company's maximum possible revenue values are summed and weighted by the portfolio weights to produce a weighted exposure figure.</p>	<p>This has been included to overcome the limitations of the metric of Exposure to Fossil Fuel Reserves, which includes all companies which have any exposure regardless of how small.</p>	<p>This measurement uses maximised estimates where reported values are not available. Therefore, there is a potential to overestimate exposure.</p>
Exposure to Clean Technology	%	<p>The weight of a portfolio invested in companies whose products and services include clean technology (Alternative Energy, Energy Efficiency, Green Buildings, Pollution Prevention, and Sustainable Water). The final figure comes from the percentage of each company's revenue derived from clean technology.</p>	<p>Provides an assessment of climate-related opportunities so that an organisation can review its preparedness for anticipated shifts in demand.</p>	<p>While MSCI has been used for this report due to its wide range of listed companies and data points, there is no universal standard or definitive list of green revenues. This is due to the inherent difficulty in compiling a complete and exhaustive list of technologies relevant for a lower-carbon economy.</p> <p>This is also a binary measure, whereby all exposures to clean technology are categorised equally. Therefore, companies with very limited exposure to clean technology may have a significant influence on the final figure. This limitation is met by the revenue metric below.</p>



Definition of Carbon Metrics *(continued)*

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Exposure to Clean Technology by Revenue	%	This identifies the maximum percentage of revenue, either reported or estimated, derived from companies involved in clean technology (see above). Company values are summed and weighted by the portfolio weights to produce a weighted exposure figure.	Allows for a comparison of company's exposure to clean technology, adjusted according to a proportion of that company's revenue generated from those activities.	This measurement uses maximised estimates where reported values are not available. Therefore, there is potential to overestimate exposure.
Engagement	%	Is calculated by the proportion of financed emissions which are accounted for under an engagement program either directly, in partnership and/or through stewardship provider.	This allows us to understand how much of the portfolio's financed emissions are accounted for under engagement programs.	This figure does not demonstrate the degree of progress made with the portfolio company as a result of the engagement. This will also include engagement on issues outside of environmental topics.
Data Quality	Numerical (1-5)	This metric is presented as a score between 1 and 5, with 1 representing the highest quality of reported emissions. A score of 1 would represent independently verified emissions data, whereas a higher score may represent estimated emissions based on sector averages.	Understanding data quality provides an insight into the accuracy of other climate metrics.	Simple quantification of the quality of data, does not provide in-depth understanding of data availability/reliability.



Definition of Carbon Metrics *(continued)*

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Low Carbon Transition	Numerical (1-10)	Low Carbon Transition scores are assigned from 1 to 10, whereby a score of 10 indicates exceptional management of climate risks and opportunities, while a score of 1 indicates poor management. For this metric the proportion of financed emissions associated with a portfolio with a manager score above 5 is aggregated.	This views how well a company manages risk and opportunities related to the low carbon transition. The overall figure for this metric is apportioned by financed emissions, highlighting the proportion of emissions within the portfolio which arise from companies with effective carbon management policies.	While this considers the ability of a company's management to incorporate low carbon transition risks and opportunities, it is not an overall indicator of the company's low carbon transition performance.
Implied Temperature Rise (ITR)	%	ITR is typically expressed in degrees centigrade, and is based on the implied global temperature rise if the entire economy adopted the same decarbonisation policy as the company in question. The reported figure is expressed in a percentage, and relates to the share of financed emissions within the portfolio with an ITR of 2C or less.	Implied temperature rise is an intuitive, forward-looking metric, expressed in degrees Celsius, designed to show the temperature alignment of companies, portfolios and funds with global temperature goals.	Implied temperature rise is heavily reliant on the model's parameters and assumptions.
Science-Based Targets	%	This is calculated as the proportion of financed emissions which are accounted for by a portfolio company with science-based climate target.	Provides an insight into the proportion of companies which have implemented science-based targets. Apportioning by financed emissions places a greater weight on companies where emissions are more substantial.	This metric only measures the proportion of companies with official science-based targets which have been verified by an independent body. A company with robust and ambitious targets which have not been verified may be omitted.



Definition of Carbon Metrics *(continued)*

Carbon Risk Metric	Unit	Definition	Use Case	Limitations
Paris Alignment	%	This metric is constructed in-house. A company is considered to be aligned if they have a Low Carbon Transition score greater than 5, as well as either an ITR of 2 degrees Celsius or lower, or a science-based target.	This figure is designed to provide an insight into the overall Paris alignment of the portfolio. Apportioning by financed emissions places a greater weight on companies where emissions are more substantial.	The limitations of the figure will be carried over from the limitations of the underlying metrics. There is currently no consensus opinion on what it means for a company to be aligned.

