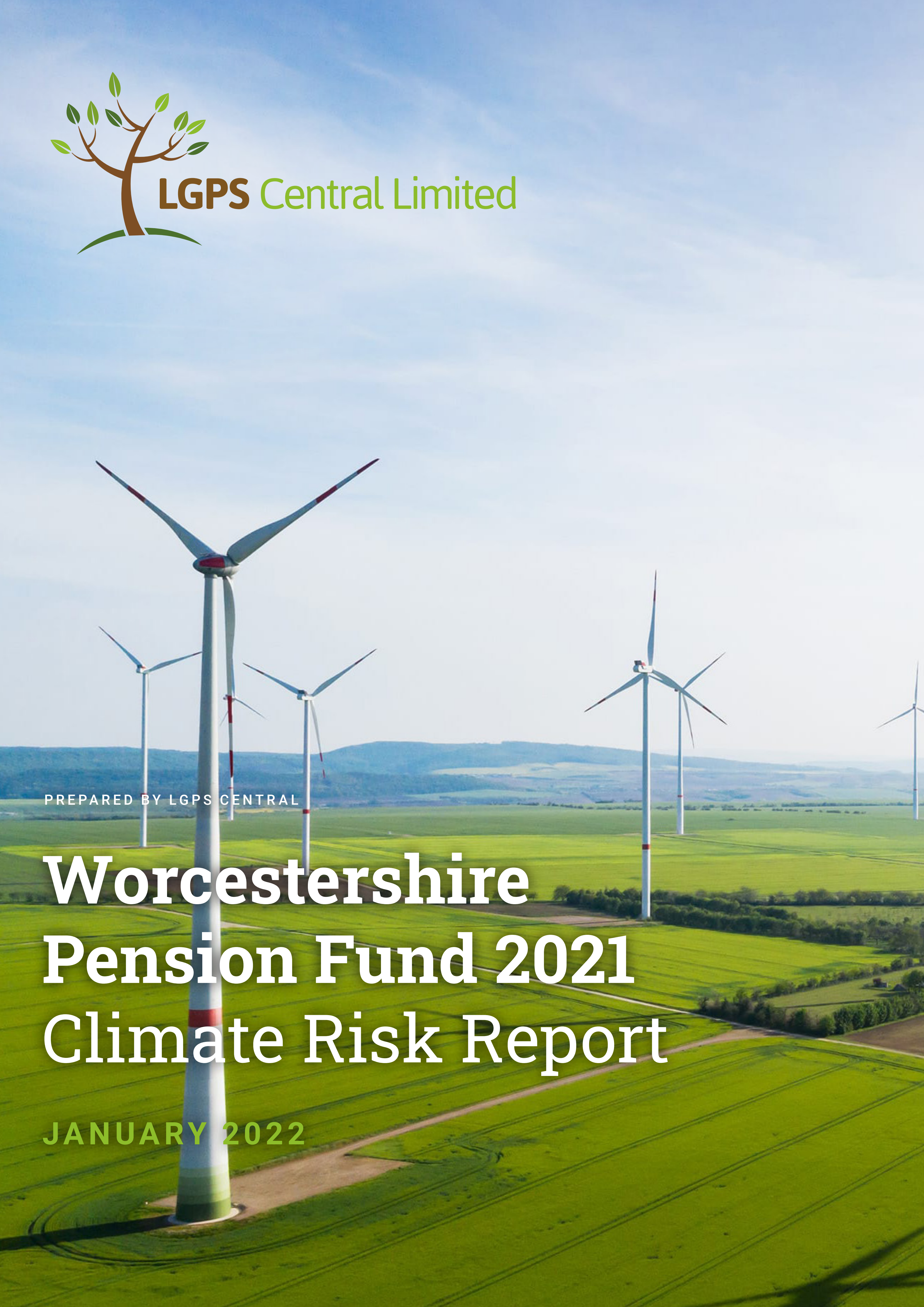


PREPARED BY LGPS CENTRAL

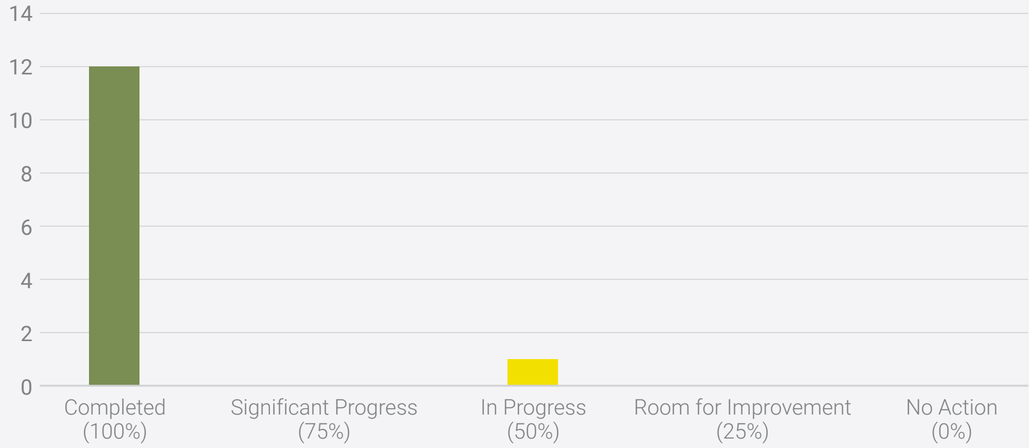
Worcestershire Pension Fund 2021 Climate Risk Report

JANUARY 2022

Contents

1.0 Executive Summary

Governance Recommendations and Considerations Implemented by WPF



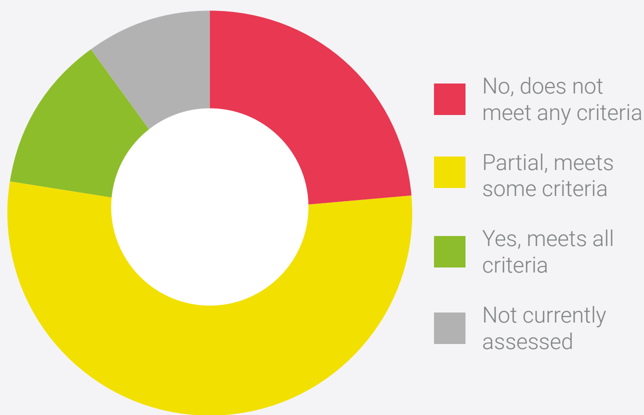
Disclosed the Fund's first standalone TCFD Report

92% of governance recommendations and considerations completed

Reported against the 2020 Stewardship Code

~£200m invested into low carbon factor fund

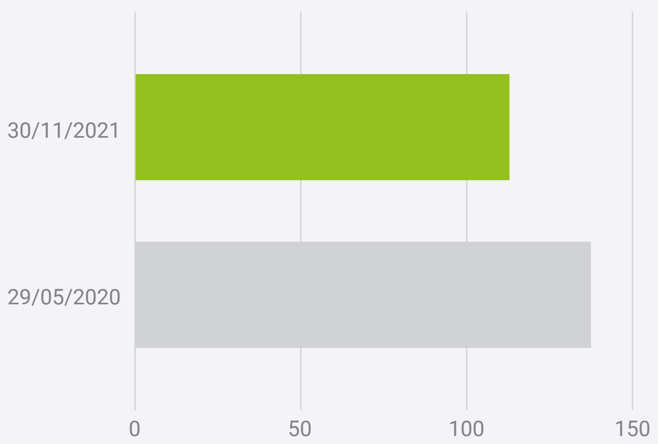
CA100+ Benchmark Alignment of CSP Companies



Total Equities carbon footprint 28.05% below Blended Benchmark

Published a Climate Strategy

Total Equities Carbon Footprint (tCO_2e/$m revenue)[1]



17.77% carbon reduction in Total Equities portfolio between 29.05.2020 and 30.11.2021

Regular training on RI and climate change matters

6.51% of the Total Equities portfolio invested in Fossil Fuel reserves

All active equity strategies more carbon efficient than the benchmark

[1] Certain Information @ 2021 MSCI ESG Research LLC. Reproduced by permission

This report is Worcestershire Pension Fund's (WPF) second Climate Risk Report. In September 2020, WPF received its first Climate Risk Report. Through a combination of bottom-up and top-down analysis, the report was designed to allow WPF a view of the climate risk held throughout its entire asset portfolio, accompanied by proposed actions the Fund could take to manage and reduce that risk. In the past 16 months WPF have been actively implementing the report's recommendations. The purpose of this second Climate Risk Report is threefold. We aim to: analyse progress against the baseline of data and recommendations established in the first report; to reassess the financially material risks and opportunities in the Fund to provide a refreshed view of the Fund's exposure to climate-related risk, and; to identify a series of further measures by which WPF can continue to manage material risks.

The report is structured to align with the four pillars of the Taskforce on Climate-Related Financial Disclosures (TCFD) and facilitates the Fund's annual public disclosure against this framework. We provide below a summary of the key findings from each section[2].

GOVERNANCE

The Fund has made progress in enhancing its responsible investment and climate change practice in the last 16 months. This includes publishing its first TCFD-disclosure report, reporting against the 2020 Stewardship Code and producing a Climate Change Risk Strategy. Out of the 13 recommendations and considerations issued in the first Climate Risk Report, 12 have been completed.

STRATEGY

Section 4.2 provides a literature review of climate risk management within alternative asset classes. Outside of listed equities, the lack of transparency and established reporting standards limits investors' ability to leverage climate data for analysis. To bridge this gap, we suggest several alternative actions that WPF could consider utilising to further manage climate risk within non-listed investments.

RISK MANAGEMENT

We have reviewed ongoing engagements with the companies in the Fund's Climate Stewardship Plan. All of the companies are making clear progress which is evidenced by achievement of several measures of success. Despite this, most of these companies have not attained all of the indicators within the CA100+ benchmark assessment, and they are not aligned with a 1.5°C scenario.

METRICS & TARGETS

The Carbon Risk Metrics we have analysed suggest that climate risk is better managed by the Fund than in the benchmarks. Between 29th May 2020 and 30th November 2021, the carbon footprint of the Total Equities portfolio has decreased by 17.77%. At the latter date, the Total Equity carbon footprint was 28.05% more carbon efficient than the benchmark. Exposure of the Total Equities to fossil fuel reserves also decreased between 2020 and 2021.

Climate change is, for asset owners, a risk that cannot be fully diversified. Almost all asset classes, sectors and regions are likely to be affected by the physical, policy, or market-related consequences of climate change over the long term. Climate risk is not reserved for oil & gas companies, nor for listed equities, and we suggest that investors seeking to manage climate risk should cast their net wider than is commonly assumed in public discourse (where divesting from energy suppliers is taken as a synonym for climate risk management).

It is our aim that this Climate Risk Report will assist the Fund in continuing its journey to integrate climate risk into its investment decisions.

[2] Source of all carbon risk metrics data: MSCI ESG. Attention is drawn to Section 8.0 "Important Information"

2.0 Recommendations and Considerations

2.1 Governance

CATEGORY	PORTFOLIO	RECOMMENDED ACTION	REPORT REFERENCE
Governance	Total Fund	• **R:** Continue to implement the recommendations and considerations from the 2020 Climate Risk Report	§4.1

2.2 Strategy

CATEGORY	PORTFOLIO	RECOMMENDED ACTION	REPORT REFERENCE
Strategy	Alternative Asset Classes[3]	• **R:** Explore the potential options to monitor and manage climate risk in alternative asset classes	§4.2

2.3 Risk Management

CATEGORY	PORTFOLIO	RECOMMENDED ACTION	REPORT REFERENCE
Company Stewardship	Total Equities	• **R:** Continue to engage the companies highlighted in the Climate Stewardship Plan through selected stewardship partners • **R:** Report progress in the next Climate Risk Report	§4.3.2

2.4 Metrics & Targets

CATEGORY	PORTFOLIO	RECOMMENDED ACTION	REPORT REFERENCE
Metrics	Total Fund	• **R:** Repeat Carbon Risk Metrics analysis annually • **R:** Report annually on progress on climate risk using the TCFD Framework • **R:** Continue to include key carbon intensive and fossil fuel stocks in the Climate Stewardship Plan • **R:** Continue to monitor manager's stewardship activities with key carbon intensive and fossil fuel holdings	§4.4.1

[3] By 'Alternative Asset Classes' we refer to those outside listed equities where data is more limited. This includes, Fixed Income, Private Equity & Debt, Infrastructure and Property.

3.0 Introduction

3.1 Scope of the Report

In September 2020 Worcestershire Pension Fund ("WPF" or "the Fund") received its first Climate Risk Report. Through a combination of top-down and bottom-up analyses the report aimed to identify the nature and magnitude of the Fund's climate-related risks, and suggest actions that could be taken to manage the risk. In the past 16 months WPF has been implementing many of these recommendations.

The purpose of this report is threefold. We aim to:

- analyse progress against the baseline of data and recommendations established in the first report;
- to reassess the financially material risks and opportunities in the Fund to provide a refreshed view of the Fund's exposure to climate-related risk, and;
- to identify a series of further measures by which WPF can continue to manage material risks.

Our mode of analysis is consistent with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). The TCFD set out four disclosure pillars and each section in chapter four of this report corresponds to one of those pillars (Table 3.1.1). Our analyses aim to facilitate the Fund's annual disclosure against the TCFD framework.

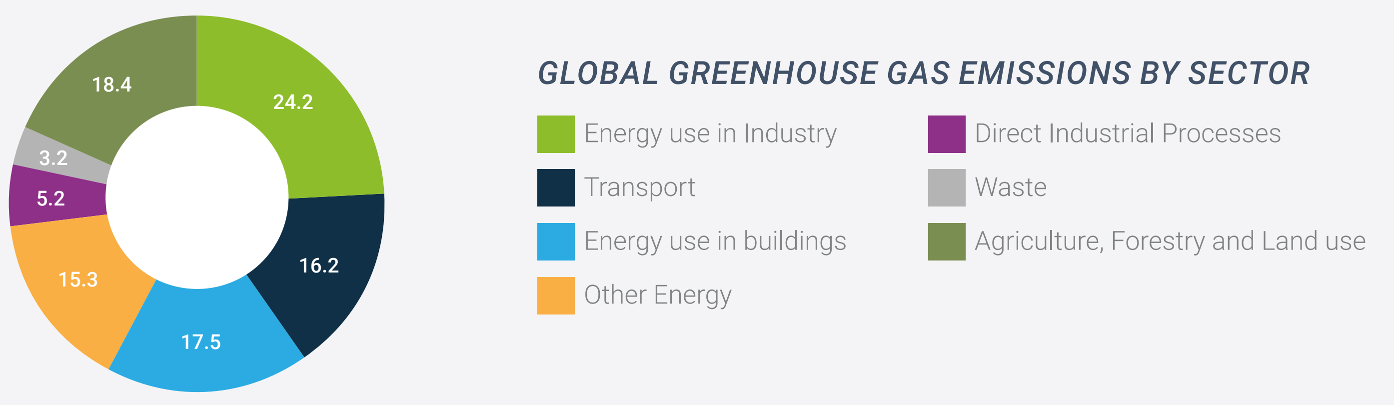
TABLE 3.1.1: THE FOUR PILLARS OF TCFD RECOMMENDED DISCLOSURE

PILLAR	ABOUT	REPORT REFERENCE
Governance	Organisations should describe how climate-related risks and opportunities are assessed and managed by an organisation's management team and overseen by its board.	§4.1
Strategy	Organisations should disclose the actual and potential impacts of climate-related risks and opportunities on their businesses, strategy, and financial planning.	§4.2
Risk Management	Organisations should disclose how they identify, assess and manage climate risk.	§4.3
Metrics & Targets	Organisations should disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities.	§4.4

3.2 Climate Change as a Fiduciary Issue

Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels. Most of this warming has occurred in the past 35 years, with the five warmest years on record taking place since 2010. Between the years 2006-2015, the observed global mean surface temperature was 0.87°C higher than the average over the 1950-1990 period. The overwhelming scientific consensus is that the observed climatic changes are primarily the result of human activities including electricity and heat production, agriculture and land use change, industry, and transport (Figure 3.2.1).

Figure 3.2.1: Total anthropogenic Green House Gas ("GHG") emissions ($GtCO_2eq/yr$) by economic sectors.



Source: Climate Watch, the World Resources Institute (2020).

Despite the need for urgent action, the majority of climate scientists anticipate that with the current response to climate change, the world will be between 2°C and 4°C warmer by 2100, with significant regional variations. This is substantially higher than the Paris Climate Change Agreement, which reflects a collective goal to hold the increase in the climate's mean global surface temperature to well below 2°C above preindustrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

The magnitude and speed of a Paris-aligned climate transition leads to climate-related risks and opportunities about which investors ought, as far as is possible, be aware. The Task Force on Climate-Related Financial Disclosure divides climate risks into two major categories. The first is the transition risk that could crystallise as society attempts to move into a low-carbon economy, and the second is the physical damages that are likely to occur as the natural world changes (Tables 3.2.1 and 3.2.2).

TABLE 3.2.1: EXAMPLES OF TRANSITION RISKS

RISK	DESCRIPTION
POLICY	• Increased pricing of GHG emissions • Enhanced emissions-reporting obligations • Mandates on and regulation of existing products and services • Exposure to litigation
TECHNOLOGY	• Substitution of existing products and services with lower emissions options • Unsuccessful investment in new technologies • Costs to transition to lower emissions technology
MARKET	• Changing consumer behaviour • Uncertainty in market signals • Increased cost of raw materials
REPUTATION	• Shifts in consumer preferences • Stigmatisation of sector • Increased stakeholder concern or negative stakeholder feedback

Source: Taskforce on Climate Related Financial Disclosures (2017)

TABLE 3.2.2: EXAMPLES OF PHYSICAL RISKS

RISK	DESCRIPTION
ACUTE	• Increased severity of extreme weather events, including more severe storms, wildfires and droughts
CHRONIC	• Changes in precipitation patterns and extreme variability in weather patterns • Rising mean temperatures • Rising sea levels

Source: Taskforce on Climate Related Financial Disclosures (2017)

Climate change is for asset owners a risk that cannot be fully diversified. Almost all asset classes, sectors and regions are likely to be affected by the physical, policy or market-related consequences of climate change over the long term. Climate risk is not reserved to the oil & gas and power generation sectors, but also to downstream sectors. Investors focussing exclusively on primary energy suppliers could fail to identify material climate risks in other sectors. Speaking generally, a Paris-aligned transition to a low carbon economy would lead to lower economic damages and is for long-term investors preferable to alternative climate scenarios.

For investors, climate change is a fiduciary issue. Local authority pension funds typically have multidecadal time horizons, with both their investment beliefs and liability profiles thoroughly long-term. Significant uncertainty remains, and no single tool can provide an accurate and complete observation on a pension fund's climate risk. For responsible investors looking to proactively manage climate risk, a combination of metrics and methodologies represents the best possible information set currently available.

4.0 Analysis

4.1 Governance

4.1.1 SCOPE

In the Fund's 2020 Climate Risk Report we reviewed the Fund's published documentation and governance arrangements from the perspective of climate strategy setting. We identified areas in which the Fund's governance and policies could further embed and normalise the management of climate risk. The purpose of this section is to refresh this review. We provide a progress update against the recommendations and considerations issued in the first report and suggest further policy extensions the Fund could consider. We recognise that the Fund's existing climate governance is already to a high standard, and our perspectives offered below are suggestive only.

4.1.2 KEY FINDINGS

The Fund has made considerable progress in terms of its responsible investment and climate change practice in the last 16 months. In March 2021, the Fund published its first TCFD report, which is an effective disclosure medium for keeping stakeholders abreast of the Fund's latest actions and viewpoints on climate risk management. During that same month the Fund developed its first Climate Change Strategy which we find to be a clear, ambitious document that supports the Fund's investment objectives. Since the previous Climate Risk Report, the Fund's Investment Strategy Statement, Risk Register and Funding Strategy Statement have been updated to include more explicit references to climate risk. In 2021, the Fund attained signatory status to the 2020 Stewardship Code.

We issued 13 recommendations and considerations in the last Climate Risk Report, all with medium term horizons (i.e. they were not designed to be implemented immediately). We also note that it was at the Fund's full discretion to decide which recommendations were most appropriate to execute. Given the already high volume of RI activity within the Fund, we acknowledge that a degree of prioritisation will have been required and the following progress update should be interpreted with this in mind. 92% of the recommendations have been completed while 8% are in progress. Figure 4.1.2.1 provides a high-level summary of the progress made, while the tables below provide a more comprehensive overview of the actions taken by WPF.

Figure 4.1.2.1: Progress against the governance recommendations and considerations from the 2020 Climate Risk Report.

RECOMMENDATIONS PROGRESS

ITEM	RECOMMENDATION	PROGRESS UPDATE	STATUS
1	Develop a Climate Strategy	The Fund published its first Climate Change Risk Strategy in March 2021. The strategy recognises the importance of climate change and draws together the Fund's climate related policies, objectives and statements into one consolidated document. The document considers: more detailed investment beliefs related to climate change; integration of climate risks into asset allocation and asset selection; a climate stewardship plan; and strategic actions.	100%
2	Schedule time at Pension Fund Committee meetings at least annually for discussion of progress on climate strategy	The Pension Committee include a specific ESG section in the meeting every quarter, which include climate change when appropriate.	100%
3	Schedule one training session on general RI matters and one climate-specific training per year	In the past 12 months the Fund has received training on both RI and climate change. This includes a comprehensive ESG workshop in March 2021, which is due to conducted again in February 2022. In addition, committee members attended the LGPSC RI Summit which included several sessions focusing on climate change, engagement and net zero.	100%
4	Integrate communications on climate risk into communications strategy	The Fund has acknowledged this recommendation and will be looking to update as part of their Communication strategy review being reported to Committee in March 2022.	50%
5	Report against the 2020 Stewardship Code	The Fund attained signatory status to the 2020 Stewardship Code, making it one of the first local authority pension funds in the UK to do so.	100%

PROGRESS		
0%	No Action	
25%	Room for Improvement	
50%	In Progress	
75%	Significant Progress	
100%	Completed	

CONSIDERATION PROGRESS

ITEM	CONSIDERATION	PROGRESS UPDATE	STATUS
6	In the ISS make clear the roles of key governance committees	The Fund has updated its ISS to include a specific section on climate change. In addition, the Fund has incorporated sections and references to its Climate Strategy, TCFD Report and SDG work.	100%
7	Update the Governance Policy Statement to explain how climate risks are governed	The Fund updated its Governance Policy Statement in March 2021 to include RI oversight in its terms of reference.	100%
8	Integrate climate risk advice in advisor's reports	The Fund's Investment Advisor includes explicit reference to climate risk in investment advice if required.	100%
9	Review as part of the FSS the extent to which climate risks could affect other risks noted in the FSS	The Fund's Climate Change Strategy makes explicit reference to the potential that climate change may affect the funding level of the Fund through impacts on employer covenant, asset pricing, longer-term inflation and interest rates and life expectancy.	100%
10	Consider including climate risk in the Risk Register	Climate risk was added to the Fund's Risk Register in November 2021.	100%
11	In the 2020/21 Annual Report include a summary of this Climate Risk Report in a manner consistent with the TCFD Recommendations	The Fund has expanded the Responsible Investment section of its 2020/21 Annual Report to include a specific section on climate change and reference to their TCFD Report.	100%

PROGRESS

0%	No Action	75%	Significant Progress
25%	Room for Improvement	100%	Completed
50%	In Progress		

ITEM	CONSIDERATION	PROGRESS UPDATE	STATUS
12	In the 2020/21 Annual Report include more detailed information on the engagement and voting carried out	The Fund has reviewed its FSS and published an updated policy in September 2021.	100%
13	Continue to include Quarterly Stewardship updates in Pension Committee meetings	The Fund has continued to publish the Quarterly Stewardship updates in Pension Committee meetings.	100%

PROGRESS				
0%	No Action		75%	Significant Progress
25%	Room for Improvement		100%	Completed
50%	In Progress			

4.1.3 RECOMMENDATIONS AND CONSIDERATIONS

The following recommendations were successfully achieved in 2020 but due to their ongoing nature we recommend they continue as regular practice in future years.

- Continue to schedule time at Pension Fund Committee meetings for the discussion of climate-related risks and climate strategy
- Continue to schedule training on RI and climate risk for members of the Pension Fund Committee

We recommend that the following recommendations/ considerations are carried over from the 2020 Climate Risk Report.

- Integrate communications on climate risk into communications strategy

4.2 Strategy

4.2.1 ALTERNATIVE ASSET CLASS REVIEW

At the present time, the novelty of climate change means there is a paucity of data on which a portfolio assessment can be based. This is most pertinent for unlisted asset classes where datasets are not sufficiently complete to facilitate the carbon risk metrics analyses used to observe climate risk within public equity portfolios. This section aims to address this gap and provide a set of alternative techniques that an Asset Owner could utilise to enhance climate risk analysis within unlisted portfolios. The commentary is not designed to be a complete and exhaustive list, rather it seeks to provide a repository of potential steps, some of which the Fund could consider enacting to further manage the risk of climate change.

ASSET CLASS	FIXED INCOME	PRIVATE EQUITY	INFRASTRUCTURE	PROPERTY
TRANSITION RISK	Reduced credit rating and in extremis default risk of issuers that finance high carbon assets and activities.	Contingent on the policy response to climate change, private equity companies in high emitting sectors face asset impairment, large operating costs and stranded asset risk.	Policy and technology advancements could reduce the value of some infrastructure assets that are less suitable in a low carbon world, or in some cases it could render assets redundant.	Core property that is poorly rated on energy efficiency standards is likely to underperform highly rated assets. Older property assets likely to need capital injection to improve energy efficiency.
PHYSICAL RISK	Eroded value of corporate debt that finances companies and assets which suffer repeated and persistent damage from climate-related weather events.	Lower valuation of assets, reduced profitability, increased risks to supply chains and potentially increased insurance and regulatory costs.	Higher insurance costs and lower valuation of assets located in climate vulnerable locations. Lower valuation of some assets due to higher investment and adaptation maintenance costs.	Higher insurance costs and decline in value of property assets that are at high risk from climate-related weather events.
CHALLENGES	• Availability of consistent and reliable climate change data. • Lack of climate focused investment products.	• Limited amount of publicly disclosed information	• Lack of data, analytical tools and services. • No established standard for conducting physical climate risk analysis	• Data extraction • Proliferation of green buildings certification schemes
EMERGING REGULATION	1. EU Green Bond Standard 2. Green Bond Principles	• No regulation specifically aimed at private equity	1. UK Net Zero by 2050	• UK Minimum Energy Efficient Energy Standards • EU Taxonomy • Renovation Wave • Energy Performance of Buildings Directive
INITIATIVES	1. Climate Bond Initiative	1. Initiative Climat International (iCI) 2. One Planet Private Equity Funds Initiative (OPPEF)	1. SteelZero 2. LED	1. RE100 2. EP100
WHAT CAN BE DONE?	1. Engagement 2. Beyond Ratings 3. Data Providers	1. Annual Questionnaire 2. ESG KPIs 3. Climate Change Reporting 4. ESG Data Provider	1. Annual Questionnaire 2. ESG KPIs 3. Physical Climate Risk Assessment 4. GRESB 5. ClimateWise Transition Risk Framework	1. Regular ESG Risk Assessment 2. Engagement 3. GRESB 4. Carbon Risk Real Estate Monitor (CRREM) 5. MSCI Real Estate Value at Risk

4.3 Risk Management

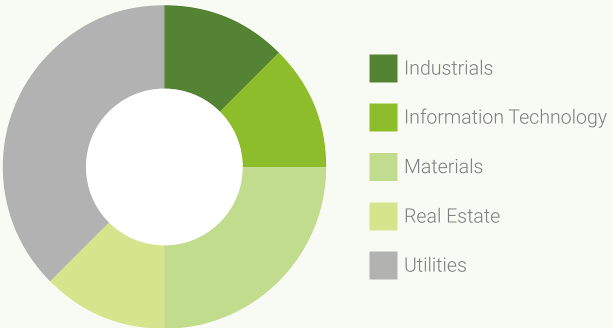
4.3.1 CLIMATE STEWARDSHIP PLAN SCOPE

Based on the findings of its 2020 Climate Risk Report the Fund has developed a Climate Stewardship Plan ("CSP"). The CSP identifies the areas in which stewardship techniques can be leveraged to further understand and manage climate-related risks within the Fund. It is split into two main sections.

PART 1: COMPANY ENGAGEMENT

The Fund's 2020 Climate Risk Report identified eight companies considered to be of most relevance to WPF's climate risk. Figure 4.3.1.1 details the sectors these eight companies are found in. Reflecting the externally managed nature of WPF, the Fund's portfolio managers and suppliers are engaging with these companies on behalf of the Fund. The CSP outlines the rationale, objectives and strategy of the engagement activity. A progress update based on the identified measures of success will be provided annually as part of the Fund's Climate Risk Report.

Figure 4.3.1.1 Sectors included in the Fund's CSP



PART 2: MANAGER MONITORING

The Fund aims to monitor its major appointed investment managers to ensure that climate-related risk is integrated into the investment process. Table 4.3.1.1 provides a high-level summary of the key manager monitoring issues the Fund seeks to address.

TABLE 4.3.1.1 MANAGER MONITORING ISSUES

ASSET CLASS	TOPIC
EQUITIES	• The influence of climate factors on sector positioning • Stewardship activities with companies identified in the 2020 Climate Risk Report
FIXED INCOME	• Approach to assessing climate risk in the absence of reported GHG emissions data • Engagement with the most intensive carbon issuers • Extent of investment in green bonds
REAL ASSETS	• Physical risk resilience • GRESB participation

4.3.2 COMPANY ENGAGEMENT UPDATE

We have reviewed ongoing engagements with the eight investee companies identified in the Fund's CSP. Table 4.3.2.1 details the manager responsible for conducting the engagement. For each company, we provide below the context of the engagement, including the rationale, objectives and strategy, alongside issuing the first annual progress update as at 10th January 2022. The Climate Action 100+ Benchmark is used as a key tool to monitor progress throughout the Fund's CSP. We therefore provide below a high-level summary of this initiative, before assessing each of the eight companies in turn.

CLIMATE ACTION 100+ (CA100+)

CA100+ is an investor-led initiative set up to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change. The engagement initiative currently encompasses 167 companies that are estimated to collectively emit more than 80% of industrial GHG emissions globally. Investor participants, including LGPSC Central, have committed to engage these high emitters to:

- Implement a **strong governance** framework which clearly articulates the board's accountability and oversight of climate change risk;
- Take action to **reduce GHG emissions** across the value chain, consistent with the Paris Agreement's goal of limiting global average temperature increase to below two degrees Celsius above pre-industrial levels, aiming for 1.5 degrees. Notably, this implies the need to move towards net-zero emissions by 2050 or sooner; and
- Provide enhanced **corporate disclosure** in line with the final recommendations of the Task Force on Climate related Financial Disclosures (TCFD) and sector-specific Global Investor Coalition on Climate Change (GIC) Investor Expectations on Climate Change guidelines (when applicable), to enable investors to assess the robustness of companies' business plans against a range of climate scenarios, including well below two degrees and improve investment decision-making.

In September 2020, CA100+ introduced a Benchmark Framework which identifies ten key indicators of success for business alignment with a net-zero emissions future and goals of the Paris Agreement. Assessments for each CA100+ company against the ten indicators were published on 22 March 2021 and offers comparative assessments of individual focus company performance against the three high-level commitment goals. The ten indicators included in the CA100+ are:

1. Net-zero GHG emissions by 2050 (or sooner) ambition
2. Long-term (2036-2050) GHG reduction target(s)
3. Medium-term (2026-2035) GHG reduction target(s)
4. Short-term (up to 2025) GHG reduction target(s)
5. Decarbonisation strategy
6. Capital allocation alignment
7. Climate policy engagement
8. Climate governance
9. Just Transition
10. TCFD Disclosure

TRANSITION PATHWAY INITIATIVE

The Transition Pathway Initiative (TPI) framework evaluates companies based on their climate risk management quality and their carbon performance. The former includes an assessment of policies, strategy, risk management and targets. There are six management quality levels a company can be assigned to:

- Level 0 – Unaware of (or not Acknowledging) Climate Change as a Business Issue
- Level 1 – Acknowledging Climate Change as a Business Issue
- Level 2 – Building Capacity
- Level 3 – Integrated into Operational Decision-making
- Level 4 – Strategic Assessment
- Level 4* – Satisfies all management quality criteria

TABLE 4.3.2.1 COMPANIES INCLUDED IN THE CLIMATE STEWARDSHIP PLAN

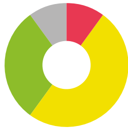
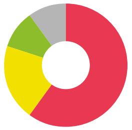
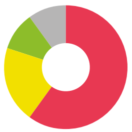
COMPANY	SECTOR
BHP	Materials
DUKE ENERGY	Utilities
Keppel DC REIT	Real Estate
NEXTera ENERGY	Utilities
RioTinto	Materials
Southern Company	Utilities
tsmc	Info Tech
Wizz wizzair.com	Industrials

Between 29th May 2020 and 30th November 2021, several asset allocation changes were made by WPF. This includes exiting the LGIM FTSE RAFI Developed Equity portfolio and the MSCI World Minimum Volatility Total Return Fund, and transitioning the assets into the LGPS Central Climate Multi Factor Fund and the LGIM Global Fund. As a result, four of the companies listed in the Fund's Climate Stewardship Plan are no longer material enough in terms of climate risk to warrant inclusion in the Plan. In addition, Nomura Asset Management have exited its position in Keppel DC REIT and BMO its position in Wizz Air. In light of this, we recommend removing Duke Energy, Keppel DC REIT, NextEra, The Southern Company and Wizz Air, and replacing them with the companies identified in the updated Carbon Risk Metrics analysis in section 4.4. Table 4.3.2.2 provides a list of the companies we recommend adding to the Fund's Climate Stewardship Plan moving forward.

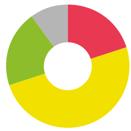
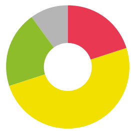
TABLE 4.3.2.2 RECOMMENDED ADDITIONS TO THE CLIMATE STEWARDSHIP PLAN

COMPANY	SECTOR
bp	Energy
CEMEX	Materials
CRH	Materials
GLENCORE	Materials
	Energy

As a result, the proposed forward Climate Stewardship Plan includes the following: BHP, BP, Cemex, CRH, Glencore, Rio Tinto, Royal Dutch Shell, and Taiwan Semiconductor Manufacturing.

COMPANY	TPI MQ	TPI PARIS ALIGNMENT	CA100+[4]	COMPANY CONTEXT	ENGAGEMENT OBJECTIVES	ENGAGEMENT STRATEGY	MEASURES OF SUCCESS
BHP	4*	Not Aligned		• World's largest diversified resource company • Top five global producer of iron ore, metallurgical copper in concentrate • In 2020 set a net-zero by 2050 target	1. For BHP to suspend memberships from any association that is not aligned with their own climate change goals. 2. For BHP to establish clear short-, medium- and long-term GHG reduction targets that cover all material scope 1, 2 and 3 GHG emissions and are aligned with a 1.5°C warming trajectory	Direct engagement by LGIM and LGPS Central via the CA100+	1. Set medium-term emission reduction targets that are science based and aligned with its net zero strategy. 2. Strengthened the link between climate performance and executive remuneration
DUKE ENERGY	3	Below 2 degrees		• Engages in the distribution of natural gas and energy related services • Recently upgraded its short and long-term emissions targets • Set a net-zero emissions aspiration for 2050	1. Achievement of high-level CA100+ objectives	Direct engagement by LGIM	1. Company have put forward a proposal to accelerate the retirement of their coal fleet and replace their energy mix.
KEPPEL DC REIT	-	-	-	• Real estate investment trust investing in data centres across Asia Pacific and Europe • The company is a signatory of the Climate Neutral Data Centre Pact • The company does not have a net zero commitment	1. Reduction in Scope 1 and 2 emissions 2. Incorporation of climate change performance into company remuneration	Direct engagement by Nomura	1. Improved renewable energy use in Europe and Singapore 1. Developed and implemented asset enhancement works to improve energy efficiency
NEXTERA ENERGY	2	Paris Pledges		• American electricity company • World's largest producer of wind and solar energy, with plans to boost renewable capacity by 30GW by 2024. • Poor corporate lobbying practices	1. Methane Emissions reduction 2. Capital allocation alignment with the Paris Agreement 3. Attainment of Indicator 7 "Climate Policy Engagement in CA100+ benchmark 4. Net Zero Emissions by 2050 ambition	Direct engagement by LGPS Central alongside collaborative engagement by CA100+ focus group.	1. Made progress on its corporate lobbying transparency by agreeing to conduct an annual review of its trade association memberships and committing to an annual disclosure update. 2. Set a target for reducing its GHG emissions up to 2025. This covers at least 95% of scope 1 and 2 emissions and the most relevant scope 3 emissions.

[4] The following key is utilised for the pie charts above. Red represents "no criteria met". Yellow represents "partial, some criteria met". Green represents "all criteria met". Where grey is shown it is because an indicator is not currently assessed.

COMPANY	TPI MQ	TPI PARIS ALIGNMENT	CA100+[4]	COMPANY CONTEXT	ENGAGEMENT OBJECTIVES	ENGAGEMENT STRATEGY	MEASURES OF SUCCESS
RIO TINTO	4	Below 2 degrees		• Anglo-Australian multinational diversified mining company • No exposure to coal • Net zero by 2050 target covering scope 1 and 2 emissions	1. Achievement of the high-level objectives of the CA100+ Initiative.	1. Direct engagement by Nomura 2. Collaborative engagement by CA100+	1. Set 2030 emission reduction targets, consistent with the IPCC pathways to 1.5°C. 2. Intend to increase renewable energy proportion to 70% 3. In March 2021 the company for the first time backed shareholder resolutions focusing on climate change.
THE SOUTHERN COMPANY	3	Below 2 degrees		• One of the largest electricity producers in the US • In 2018 the firm set a low-to-no carbon reduction pledge which was widely regarded as ambiguous. • Firm appears to lobby against climate change regulations and policies.	1. Achievement of the high-level objectives of the CA100+ Initiative	• Direct engagement by LGIM	2. In April 2020, the firm announced a commitment to reach net-zero emissions by 2050. The commitment includes medium and long-term emission reduction targets, and scope 3 emissions where applicable. 3. Company have reduced their thermal coal capacity from 30% in 2017 to 17% in 2021. 4. Improvement in Company's TPI score from a 2 to a 3
TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY	-	-	-	• Engages in the manufacture and sale of integrated circuits and wafer semiconductor devices. • The main climate risks facing the company stem from its direct operations through increased compliance costs if carbon regulations tighten in the future.	1. Creation of a robust climate change strategy aligned with Net Zero 2. Improved water management efficiency	• Direct engagement by EOS at Federated Hermes	1. Company announced a Net Zero Target in September 2021. 2. Released a public statement committing to improved water efficiency.
WIZZ AIR	2	Paris Pledges	-	• Low cost airline operating throughout Europe • As of March 2021, the company had published no information on its scope 1 and 2 emissions	1. Improved carbon risk management quality (measured by TPI Score) 2. Publication of GHG emissions data	• Direct engagement by EOS at Federated Hermes and BMO	1. Committed to an emissions intensity target for 2030 2. Committed to disclose against the TCFD Recommendations 3. Established a sustainability committee 4. Plans to disclose a 2050 decarbonisation strategy

[4] The following key is utilised for the pie charts above. Red represents "no criteria met". Yellow represents "partial, some criteria met". Green represents "all criteria met". Where grey is shown it is because an indicator is not currently assessed.

4.4 Metrics and Targets

4.4.1 SCOPE AND DEFINITIONS OF TERMS

The following Carbon Risk Metrics section is a bottom-up analysis conducted at the company and portfolio level. The purposes of this analysis are:

- To observe climate transition risks and opportunities in the portfolio
- To identify company engagement opportunities
- To support manager monitoring of climate risk management

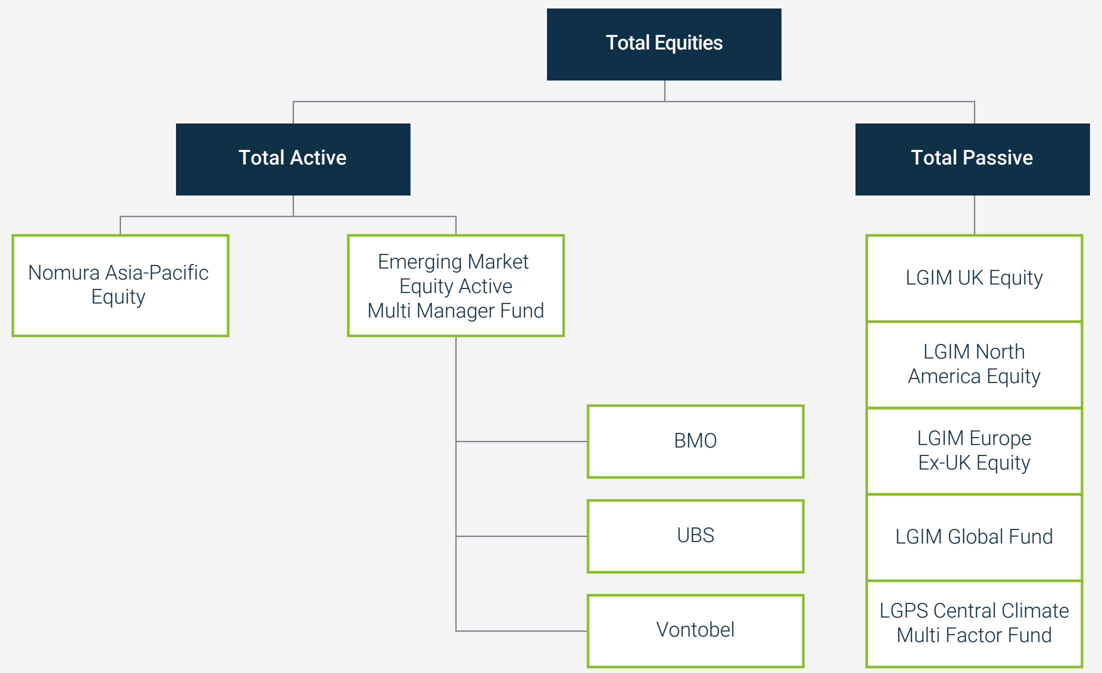
The scope of the analysis comprises the equities portfolios as at 30th November 2021. The results are compared to a baseline of data collected in the first Climate Risk Report, which used holdings data from 29th May 2020. The analysis seeks to identify and assess how the portfolio carbon risk metrics have changed within this timeframe.

The analysis is limited to the equities portfolios as unlisted asset classes do not have sufficiently complete and comparable data to facilitate carbon risk metrics analysis at this time.

TABLE 4.4.1.1: SCOPE OF CARBON RISK METRICS ANALYSIS AS AT 30TH NOVEMBER 2021.

	EQUITIES
NUMBER OF STRATEGIES ANALYSED	9
INDIVIDUAL COMPANIES INCLUDED	2,055

Figure 4.4.1.1: Portfolios Included in the Carbon Risk Metrics Analysis



The analysis is based on a dataset provided by MSCI ESG Research LLC (MSCI)[5]. Table 4.4.1.2 provides an overview of the types of carbon risk metric utilised. We are aware that the raw numbers are not a complete guide to climate risk and have published elsewhere our views on the limitations of carbon footprinting[6]. We believe, however, that this kind of bottom-up quantitative analysis can assist an asset owner in identifying the parts of the portfolio to prioritise, and in framing relevant questions to put to investee companies and external fund managers.

[5] Certain information @ 2021 MSCI ESG Research LLC. Reproduced by permission. Attention is drawn to Section 8.0 Important Information.
[6] https://www.responsible-investor.com/articles/carbon-footprint-piece In collaboration with other asset owners.

TABLE 4.4.1.2: CARBON RISK METRICS USED

CARBON RISK METRIC	DEFINITION	USE CASE	LIMITATIONS
PORTFOLIO CARBON FOOTPRINT (WEIGHTED AVERAGE CARBON INTENSITY)	Is calculated by working out the carbon intensity (Scope 1+2 Emissions / $M sales) 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'.
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 stranded asset risk.	It does not consider the amount of revenue a company generates from fossil fuel activities. Consequently, diversified businesses (e.g. those that own a range of underlying companies, one of which owns reserves) would be included when calculating this metric. In reality, these companies may not bear as much stranded asset risk as companies who do generate a high proportion of revenue from fossil fuels.
EXPOSURE TO CLEAN TECHNOLOGY	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).	Provides an assessment of climate-related opportunity so that an organisation can review its preparedness for anticipated shifts in demand.	There is no universal standard, definitive list of green revenues; the EU has been developing such a taxonomy for several years. Even the EU's taxonomy is not likely to be a complete and exhaustive list of technologies relevant for a lower-carbon economy.
CARBON RISK MANAGEMENT VIA THE TPI	The TPI framework evaluates companies based on their climate risk management quality and their carbon performance. The former includes an assessment of policies, strategy, risk management and targets.	Contextualises the companies contributing to a portfolio's carbon footprint or fossil fuel exposure. Can be used to track how companies are managing climate risk and whether their strategies are aligned with the goals of the Paris Agreement.	Does not assess every company, only the world's largest high-emitting companies. The data are also not updated very frequently, which can make some assessments outdated.

4.4.2 TOTAL EQUITIES

TABLE 4.4.2.1 OVERVIEW OF WPF TOTAL EQUITY CARBON RISK METRICS[7]

	2020			2021			% DIFFERENCE BETWEEN 2020 AND 2021	
	PF	BM	% DIFF	PF	BM	% DIFF	PF	BM
Portfolio Carbon Footprint (tCO_2e/ $m)	137.41	180.22	-23.75%	113.00	157.05	-28.05%	-17.77%	-12.85%
Weight in fossil fuel reserves (%)	6.58%	7.71%	-1.13%	6.51%	7.26%	-0.75%	-0.07%	-0.45%
Weight in thermal coal reserves (%)	2.17%	2.95%	-0.78%	2.15%	2.85%	-0.70%	-0.02%	-0.10%
Weight in coal power (%)	1.20%	1.53%	-0.32%	0.41%	0.83%	-0.42%	-0.79%	-0.70%
Weight in clean tech (%)	34.55%	34.67%	-0.13%	35.92%	36.84%	-0.92%	1.38%	2.17%

We provide comments on the Carbon Risk Metrics results at the Total Equities level. The Total Equity portfolio comprises all the listed equity portfolios we were able to cover in the analysis and are included in Figure 4.4.1.1.

The carbon footprint of the Total Equities portfolio has decreased by 17.77% between 29th May 2020 and 30th November 2021. This is largely driven by WPF's asset allocation actions, most notably the decision to transition assets out of both the MSCI World Min Vol TR fund and the FTSE RAFI DEV fund into the LGPS Central Climate Multi Factor fund and the LGIM Global Fund. With carbon footprints of only 58.3 tCO_2e/$m revenue and 37.4 3 tCO_2e/$m revenue respectively, the LGPS Central Climate Multi Factor fund and the LGIM Global Fund are significantly more carbon efficient than the MSCI World Min Vol TR fund and the FTSE RAFI DEV fund. As a result, this transition drives down the carbon footprint at the Total Equity level. We find this to be evidence of good carbon risk management on behalf of LPF. The Total Equities portfolio continues to be more carbon efficient than its blended benchmark, achieving outperformance of 28.05% as of 30th November 2021.

The exposure of the Total Equity portfolio to fossil fuel producers remained largely unchanged between 31st December 2019 and 31st March 2021. This trend is similarly observed in the exposure to thermal coal reserves and coal power, where only marginal changes occurred between the aforementioned dates. The Total Equity weight in clean technology has increased by 1.38% between 29th May 2020 and 30th November 2021.

As of 30th November 2021, 200 companies (out of 2055) in the Total Equity portfolio are ranked by the TPI. 79.5% of these companies are classed as having a management quality of Level 3, 4 or 4* (159 companies). This suggests the Fund's appointed portfolio managers are, on average, investing in above average to 'best in class' companies in terms of climate risk management. The number of companies aligned with the Paris Agreement, however, is significantly lower than the proportion with good management quality (Figure 4.4.2.4). We suggest that the targeting of Paris-alignment through company engagement (to be executed via the Fund's portfolio managers and service providers) would further improve the management of carbon risk within the Fund.

Echoing the trend observed in 2020, the portfolio carbon footprint of many strategies remains concentrated in only a handful of companies. Most of these names are included in the Fund's Climate Stewardship Plan, and we recommend that the Fund continues to use this as a tool for monitoring company engagement and manager stewardship activities.

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TABLE 4.4.2.2 OVERVIEW OF WPF ACTIVE AND PASSIVE EQUITY CARBON RISK METRICS[8]

	PORTFOLIO CARBON FOOTPRINT (TCO_2E/$M REVENUE)			WEIGHT IN FOSSIL FUEL RESERVES (%)			WEIGHT IN THERMAL COAL RESERVES (%)			WEIGHT IN CLEAN TECHNOLOGY		
	2020	2021	% DIFF	2020	2021	% DIFF	2020	2021	% DIFF	2020	2021	% DIFF
Total Equities	137.41	113.00	-17.77%	6.58%	6.51%	-0.07%	2.17%	2.15%	-0.02%	34.55%	35.92%	1.38%
Total Active Equities	93.24	143.98	54.41%	5.58%	6.27%	0.70%	1.79%	1.28%	-0.51%	41.67%	41.76%	0.09%
Total Passive Equities	160.35	99.36	-38.04%	7.11%	6.62%	-0.48%	2.37%	2.54%	0.17%	30.81%	33.27%	2.46%

Figure 4.4.2.1 Total Equities Carbon Footprint[9]

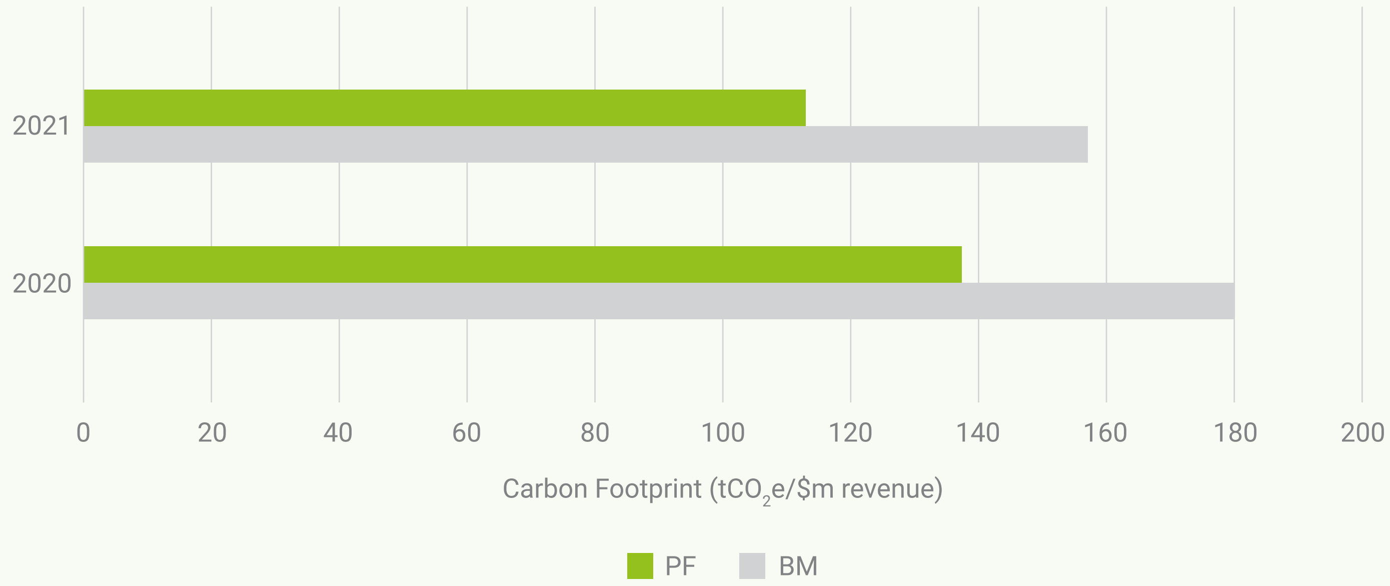
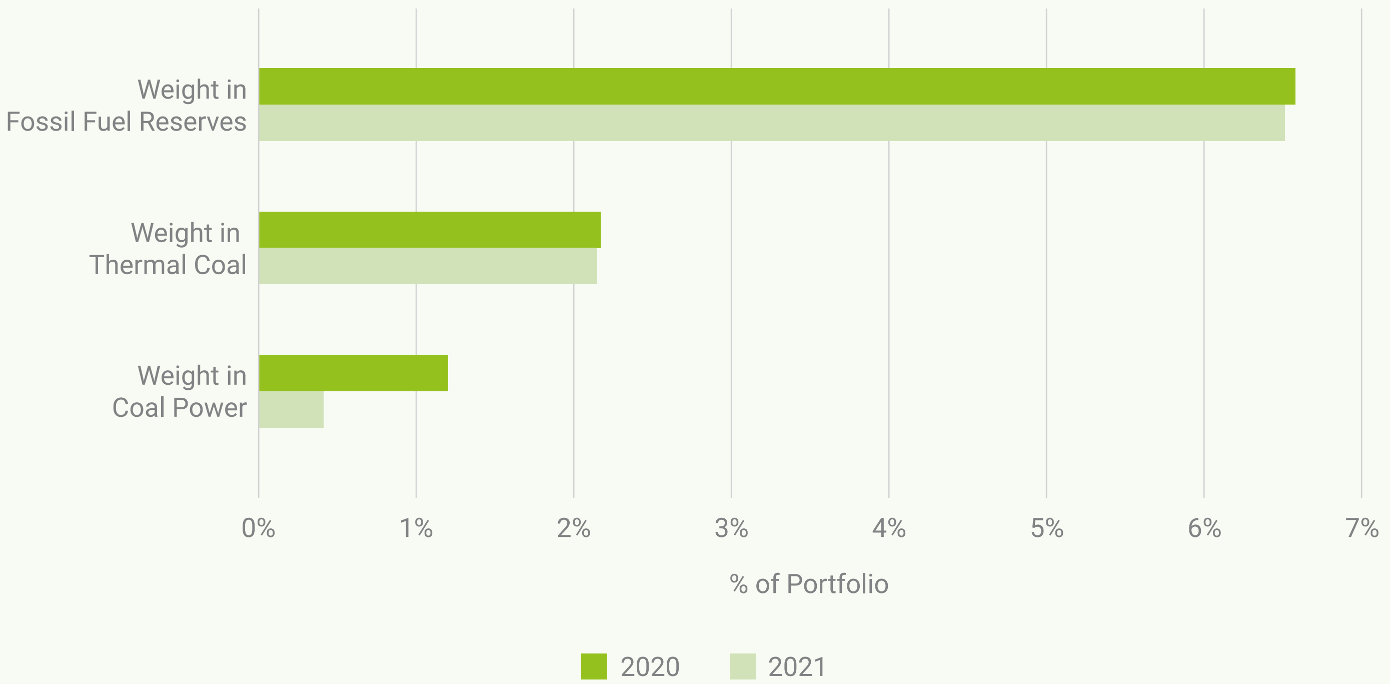


Figure 4.4.2.2 Total Equities Weight in Fossil Fuel Reserves[10]



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[9] Certain Information @ 2021 MSCI ESG Research LLC. Reproduced by permission
[10] Certain Information @ 2021 MSCI ESG Research LLC. Reproduced by permission

Figure 4.4.2.3 Total Equities Weight in Clean Technology[11]

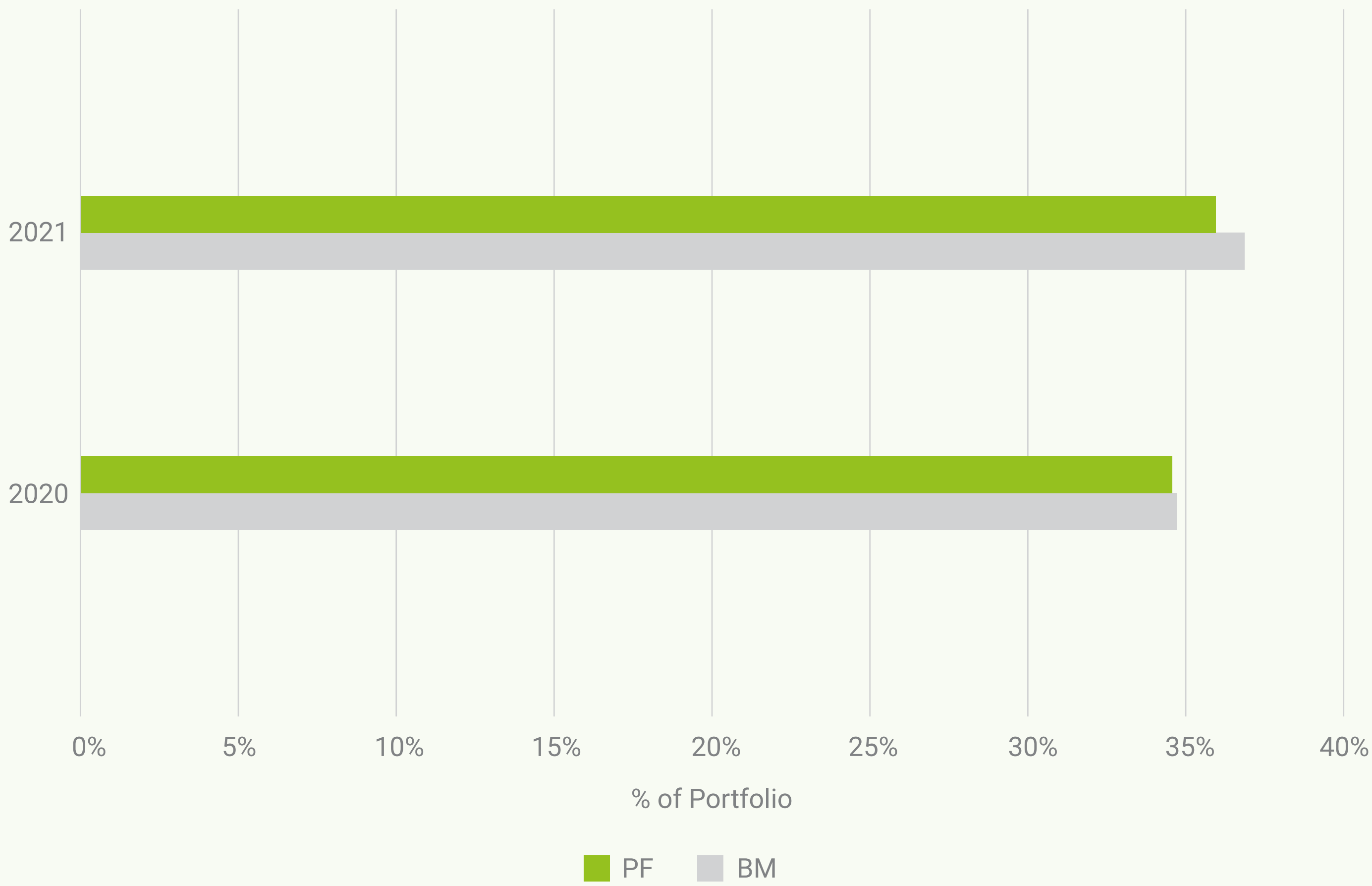
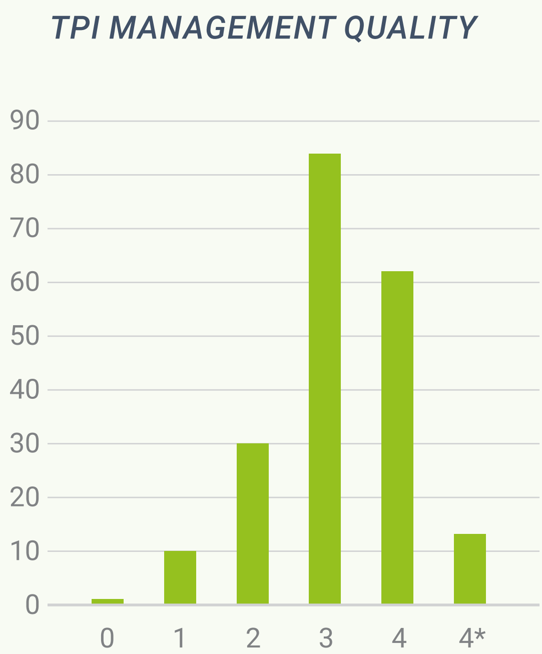
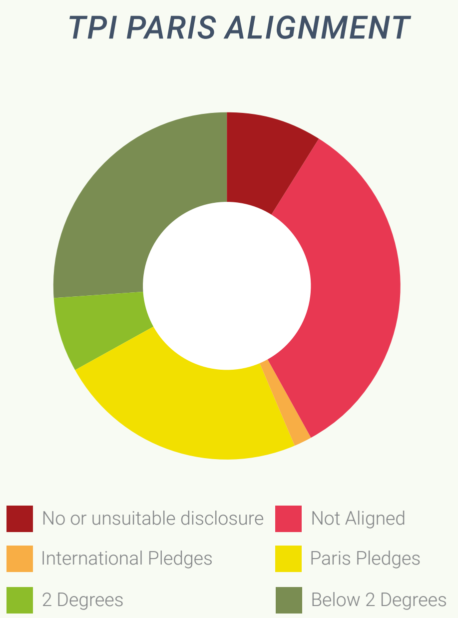


Figure 4.4.2.4 Total Equities TPI Assessment





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5.0 Conclusion

In this, WPF's second Climate Risk Report, we continue to argue that climate-related risks can be financially material and that the management of climate risk is a fiduciary issue. Through physical events, policy or market changes, climate risks are likely to affect almost all asset classes, sectors and regions. While there remains a great deal of uncertainty, it is not likely that climate risks can be mitigated through diversification alone.

In the Fund's first Climate Risk Report we used a combination of top-down and bottom up analyses to explore the nature and magnitude of the Fund's climate-related risks. The report established a baseline for WPF's climate risk management and supported the Fund in shaping its strategic approach to climate risk. In this second report we focus on providing the Fund with a progress update.

We find that WPF has made significant enhancements to its published documentation and governance arrangements in the past year. The Fund has implemented 12 of the 13 recommendations issued in the first Climate Risk Report including, publishing its first TCFD-disclosure report, developing a Climate Change Risk Strategy and reporting against the 2020 Stewardship Code. In our view, the Fund's approach to RI, including climate risk management, is above industry average standards and significantly in excess of the regulatory minimum. We suggest that the Fund maintains this current level of practice and implements any recommendations that are still outstanding from the first report.

Due to our prior recommendation that Climate Scenario Analysis be conducted only on a biennial basis it is not provided as part of this Climate Risk Report. In lieu, we conduct a literature review on the techniques that the Fund could consider enacting to further manage climate risks within alternative asset classes. We suggest that the Fund explores some of these options to determine if they are viable and value-accretive additions to the Fund's current risk management process.

The Risk Management section outlines the scope of the Fund's Climate Stewardship Plan and provides the first progress update against the eight investee companies recommended for engagement. We find that over the past year engagement progress with these companies has been steady, with several companies having strengthened their climate change commitments as a result. For example, Rio Tinto, for the first time, backed a shareholder resolution on climate change at its AGM.

The updated Carbon Risk Metrics implies that the existing management of carbon risk in the Fund continues to exceed that of the benchmarks. Between 29th May 2020 and 30th November 2021, the carbon footprint of the Total Equity portfolio decreased by 17.77%. At the latter date, the Total Equity carbon footprint was 28.05% more carbon efficient than the blended benchmark. Exposure of the Total Equity portfolio to fossil fuel reserves remained largely unchanged between May 2020 and November 2021.

We encourage the Fund to repeat its Carbon Risk Metrics analysis annually and consider repeating its Climate Scenario Analysis in 2022 or 2023.

6.0 Glossary

Carbon Risk Management: How well a company is managing ESG risks and opportunities. A higher score is indicative of better management.

Clean Technology/ Weight in Clean Technology: the weight of a portfolio invested in companies whose products and services include clean technology. Products and services eligible for inclusion include Alternative Energy, Energy Efficiency, Green Building, Pollution Prevention, Sustainable Water.

Coal Power Generation/ Portfolio exposure to coal power generation: the weight of a portfolio invested in electricity utilities where more than 30% of the fuel mix derives from coal power.

Coal Reserves/ Portfolio exposure to thermal coal reserves: the weight of a portfolio invested in companies that own thermal coal reserves.

Divestment/exclusion/negative screening: the exclusion, usually on moral grounds, of particular types of investments, possibly affecting in a negative way the riskreturn profile of a portfolio.

Engagement: dialogue with a company concerning particular aspects of its strategy, governance, policies, practices, and so on. Engagement includes escalation activity where concerns are not addressed within a reasonable time frame.

ESG factors: determinants of an investment's likely risk or return that relate to issues associated with the environment, society or corporate governance.

Ethical investment: an approach to investment where the moral persuasions of an organisation take primacy over investment considerations.

Fossil Fuel Reserves/ Portfolio exposure to fossil fuel reserves: the weight of a portfolio invested in companies that own fossil fuel reserves.

Interaction effect: The combined impact of sector allocation decisions and stock selection decisions.

Non-financial factors: determinants of an investment's likely risk or return that cannot be, or cannot straightforwardly be, given a monetary value for insertion into an organisation's financial statements.

Physical risk/ climate physical risk: the financial risks and opportunities associated with the anticipated increase in frequency and severity of extreme weather events and other phenomena, including storms, flooding, sea level rise and changing seasonal extremities.

Portfolio Carbon Footprint/ Carbon Footprint: A proxy for a portfolio's exposure to potential climate-related risks (especially the cost of carbon), often compared to a performance benchmark. It is calculated by working out the carbon intensity (Scope 1+2 Emissions / $M sales) for each portfolio company and calculating the weighted average by portfolio weight.

Responsible Investment factor/RI factor: an aspect of an investment which relates to environmental, social or corporate governance issues.

Responsible Investment/RI: the integration of financially material environmental, social and corporate governance ("ESG") factors into investment processes both before and after the investment decision.

Scope 1 Greenhouse Gas Emissions: Direct emissions from owner or sources controlled by the owner, including: on-campus combustion of fossil fuels; and mobile combustion of fossil fuels by institution-controlled vehicles.

Scope 2 Greenhouse Gas Emissions: Indirect emissions from the generation of purchased energy.

Scope 3 Greenhouse Gas Emissions: Indirect emissions that are not controlled by the institution but occur as a result of that institutions activities. Examples include commuting, waste disposal and embodied emissions from extraction.

Sector Allocation Effect: The impact of over or underweighting portfolio sectors relative to a benchmark. Negative value comes from underweighting sectors with carbon footprints higher than the benchmark or overweighting sectors with carbon footprints lower than the benchmark.

Social investing/social impact investing: investments that seek to achieve a positive social impact in addition to a financial return.

Stewardship: the promotion of the longterm success of companies in such a way that the ultimate providers of capital also prosper, using techniques including engagement and voting.

Stock Selection Effect: The impact of specific security selection within a sector relative to the benchmark. A negative value indicates the fund manager is choosing more carbon-efficient assets than the benchmark.

TCFD: Taskforce on Climate-related Financial Disclosures. A body established by Mark Carney in his remit as Chair of the Financial Stability Board whose recommendations have come to be seen as the best practice framework for climate-related disclosures by companies, asset managers, asset owners, banks and insurance companies.

Transition risk/ climate transition risk: the financial risks and opportunities associated with the anticipated transition to a lower carbon economy. This can include technological progress, shifts in subsidies and taxes, and changes to consumer preferences or market sentiment.

Voting: the act of casting the votes bestowed upon an investor, usually in virtue of the investor's ownership of ordinary shares in publicly listed companies.

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