



Warwickshire Pension Fund

Climate Risk Report
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Executive Summary

This paper sets out some key metrics for the Fund’s carbon exposure as at 31 March 2021.

This paper only focuses on the Fund’s listed or public assets, and does not cover the private assets that the Fund invests in. We expect that the private asset funds reporting will improve over time.

There are several companies whose contribution to the Fund’s carbon footprint significantly outweighs their allocation. We recommend that the Fund engages with its investment managers in relation to these companies, with the objective of managing and mitigating climate risk via proactive and effective engagement.

We note that in this report all data has been provided by the managers, and we have carried out high level sense checks rather than a detailed review of the data. We would be happy to provide a more detailed report should the Committee wish to take this approach.

Key Takeaways

Subject	Comments	Action
Climate Risk	<ul style="list-style-type: none"> The Fund’s managers are broadly exposed to lower levels of Climate Risk than their market benchmarks, this is based on numerous climate risk metrics. 	<ul style="list-style-type: none"> The Fund should engage with their managers to understand to what steps they take to ensure climate risk is integrated in the investment process and any recent manager engagements they have had.
Power Assets Holdings Ltd	<ul style="list-style-type: none"> This asset represents c.0.2% of the LGIM Asia Pacific fund and less than 0.1% of the LGIM RAFI fund. However it contributes c.45% and c.2% of the carbon intensity of the LGIM Asia Pacific fund 	<ul style="list-style-type: none"> The Fund should engage with LGIM to understand any recent engagement activity with the business on low carbon management strategies that they plan to put in place.
Data	<ul style="list-style-type: none"> This report only covers c.50% of the Fund’s total assets. This lack of coverage is expected to improve over time. We expect scope 3 emissions to be included in next year’s reporting and more consistency in metrics used across managers. 	<ul style="list-style-type: none"> The Fund may wish to engage with LGIM to encourage them to provide benchmark data to ensure a consistent approach and comparability The Fund may wish to consider engaging with the managers not included in this paper to provide support for more carbon reporting.

Funds reviewed

We have received data from the following managers:

- BCPP – UK Listed Equity Alpha fund and Global Equity Alpha fund
- LGIM – regional equity funds, RAFI Equity fund and Investment Grade Corporate Bond All Stocks Index fund

It is important to note that these managers have provided their reporting data in different formats, which makes a clear comparison between funds difficult to carry out. We expect that next year’s reporting will be improved and there will be more consistency across manager reporting.

We have compared the two BCPP equity funds that the Fund invests in against their respective benchmarks using selected carbon metrics.

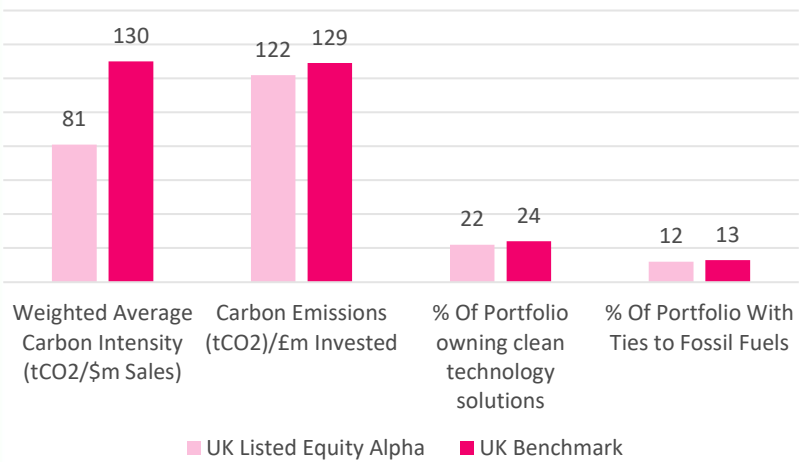
The funds outperform their respective benchmarks in three of the four metrics. However, both funds have a lower proportion of the assets in clean technology solutions. This is because BCPP categorisation is more stringent than MSCI ACWI index.

In terms of the Fund's private market investments, BCPP have stated that their portfolios are relatively immature and therefore BCPP expect carbon data coverage to develop over time.

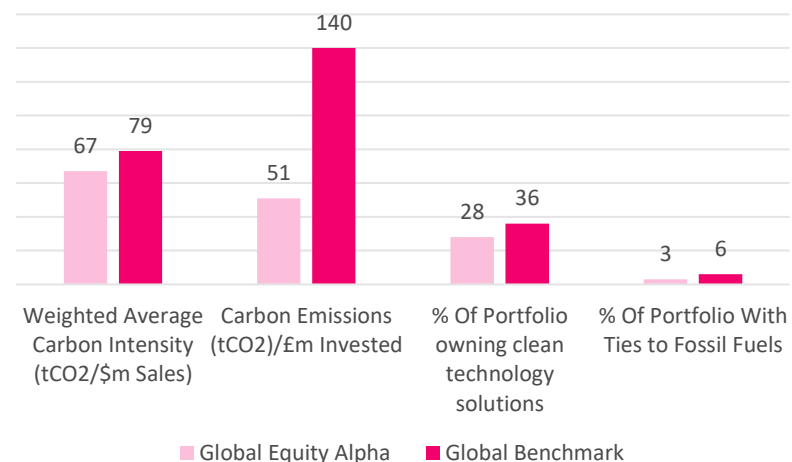
BCPP funds

	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Carbon Emissions (tCO2)/£m Invested	Portfolio owning clean technology solutions	Ties to Fossil Fuels
UK Listed Equity Alpha	81	122	22%	12%
Benchmark	130	129	24%	13%
Relative	-49	-7	-2%	-1%
Global Equity Alpha	67	51	28%	3%
Benchmark	79	140	36%	6%
Relative	-12	-89	-8%	-3%

UK Listed Equity Alpha



Global Equity Alpha



Key Takeaways/ Actions

- The two funds perform well from a climate perspective.
- It would be good to understand the manager's integration of carbon risk into the investment strategy.

Source: BCPP. Fund benchmark for UK Listed Equity Alpha is FTSE ALL Share Index and for Global Equity Alpha is MSCI ACWI

Climate Risk Analysis

LGIM have shared details on the underlying fund exposures as at 31 March 2021. The Fund holds 9 funds with LGIM, which span regional/global equity, corporate bonds and gilts funds.

LGIM have been unable to provide data for each fund's benchmark. Therefore, we have provided similar benchmarks where possible for comparison. However, for some of these benchmarks the methodology may vary and this can mean that they are not necessarily the best (or even a good) comparison.

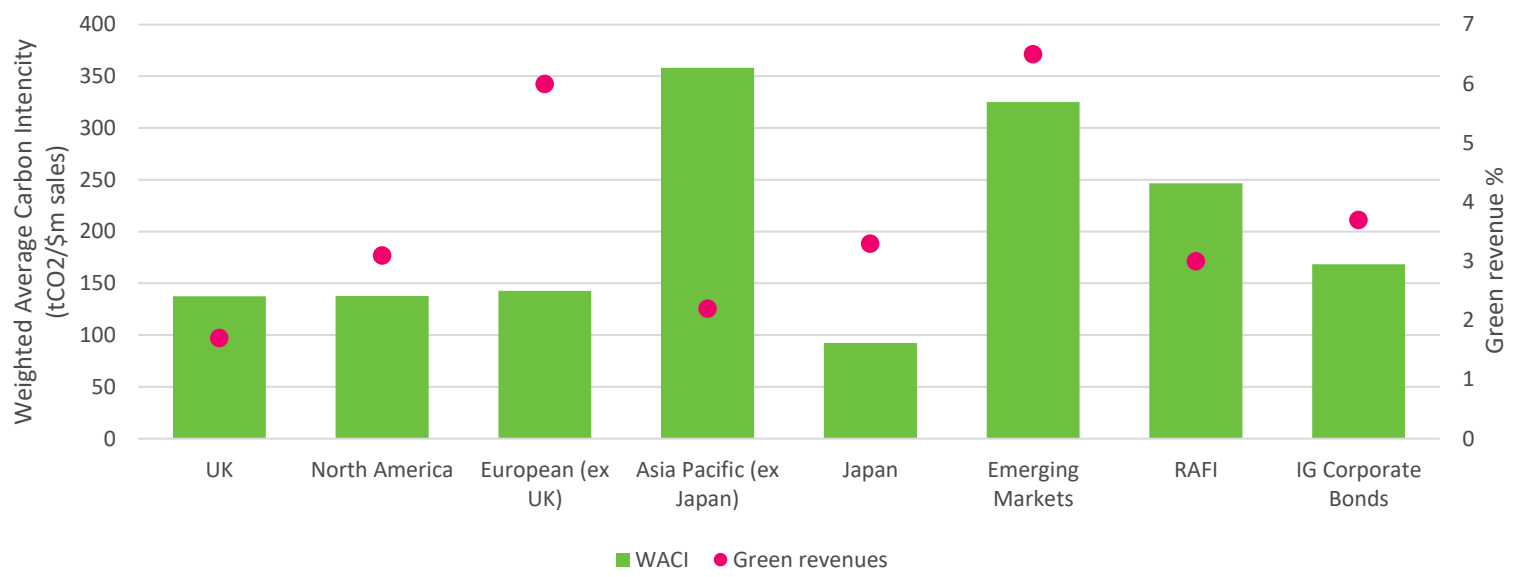
Please note that LGIM have not provided data on the All Stocks Index Linked Gilts fund, due to no guidance from PCAF or TCFD on how sovereigns and derivatives should be treated for carbon reporting.

Key Takeaways/ Actions

- We suggest that the Fund engages with LGIM with regard to some or all of these companies.

LGIM exposures

- As expected, the Asia Pacific (ex Japan) and Emerging Markets funds have the greatest WACI exposure. These regions tend to have more exposure to companies with a higher carbon footprint.
- The Emerging Markets and European (ex UK) funds have the highest proportion of assets with green revenue.
- We note that the LGIM RAFI fund, which invests based on a non-price weighted index strategy, has a higher WACI than most of the regional funds. This is due to the fund being heavily weighted towards value stocks, which tend to be in the oil/gas and utilities sectors.



Source: LGIM data, as at 31 March 2021. LGIM use ISS for carbon data and Refinitiv for enterprise value and HSBC for green revenue data.

Climate Risk Analysis

Both the UK Equity fund and the North America fund have a lower carbon impact and higher green revenues than comparable benchmarks.

Based on the top 5 emitters, we note that the UK fund has a number of stocks with contribute significantly more to emissions than their capital weight.

Please note that the benchmark shown on this page is for illustration only and some of the differences between the fund and the benchmark shown may be due to differences in the underlying assets rather than a drift away from the benchmark.

UK Equity Fund

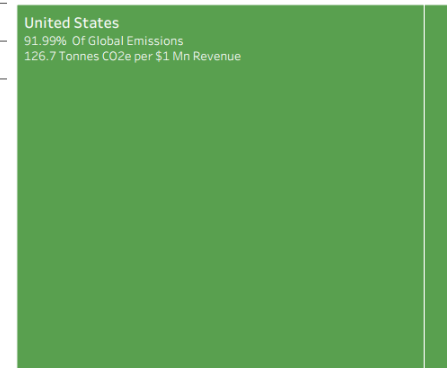
	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	137.5	84.8	1.7%	5.7%
FTSE All-Share	138.9	n/a	1.6%	4.3%
Relative	-1.4	n/a	+0.1%	+1.4%



Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Rio Tinto PLC	17.7	12.9%	2.8%
CRH PLC	16.6	12.1%	1.2%
Anglo American PLC	9.8	7.2%	1.6%
BHP Group PLC	7.6	5.5%	1.9%
SSE PLC	7.4	5.4%	0.7%

North American Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	137.8	41.6	3.1%	2.5%
FTSE North America	140.5	n/a	5.1%	12.5%
Relative	-2.7	n/a	+2.0%	-10.0%



Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
NextEra Energy Inc	10.5	7.6%	0.4%
Southern Co/The	7.4	5.4%	0.2%
Duke Energy Corp	6.6	4.8%	0.2%
American Electric Power Co Inc	5.7	4.1%	0.1%
Linde PLC	5.3	3.9%	0.4%

Source: LGIM data and graphs, as at 31 March 2021. LGIM use ISS for carbon data and Refinitiv for enterprise value and HSBC for green revenue data.
Fund benchmark for LGIM UK Equity Fund is FTSE All Share and LGIM North American Equity Fund is FTSE World North America.

Climate Risk Analysis

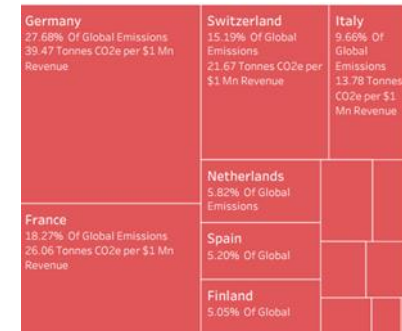
The European Equity fund has a lower carbon impact than a comparable benchmark. However, the Asia Pacific fund does not compare as favourably.

We note that the Asia Pacific fund's largest contributor to emissions actually contributes just under half of the fund's WACI.

European (ex UK) Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	142.6	97.9	6.0%	3.3%
FTSE Europe (ex UK)	143.9	n/a	4.9%	10.4%
Relative	-1.3	n/a	+1.1%	-7.1%

Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
RWE AG	20.3	14.2%	0.3%
LafargeHolcim Ltd	15.8	11.1%	0.3%
Air Liquide SA	10.7	7.5%	0.9%
Enel SpA	8.0	5.6%	1.0%
ArcelorMittal SA	6.6	4.6%	0.3%



Asia Pac (ex Japan) Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	358.3	99.7	2.2%	2.6%
FTSE Asia Pacific ex Japan	206.3	n/a	4.6%	13.3%
Relative	+152.0	n/a	-2.4%	-10.7%

Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Power Assets Holdings Ltd	156.3	43.6%	0.2%
CLP Holdings Ltd	22.3	6.2%	0.5%
CK Infrastructure Holdings Ltd	13.6	3.8%	0.1%
Woodside Petroleum Ltd	13.3	3.7%	0.5%
BHP Group Ltd	11.4	3.2%	3.1%



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Source: LGIM data and graphs, as at 31 March 2021. LGIM use ISS for carbon data and Refinitiv for enterprise value and HSBC for green revenue data.

Fund benchmark for LGIM European (ex UK) Equity Fund is FTSE Developed Europe ex UK and LGIM Asia Pac (ex Japan) Equity Fund is FTSE Developed Asia Pacific ex Japan.

Climate Risk Analysis

Both the European Equity fund and the Asia Pacific fund show a mixed performance against the carbon metrics, with a higher WACI but lower ties to fossil fuels.

Japan Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	92.4	77.0	3.3%	1.1%
FTSE Japan	85.3	n/a	5.0%	7.9%
Relative	+7.1	n/a	-1.7%	-6.8%

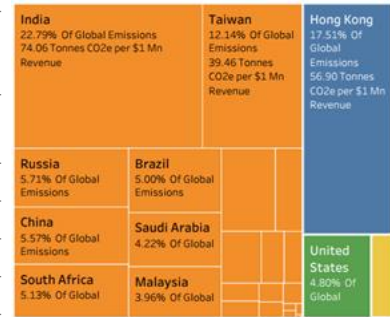
Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Shin-Etsu Chemical Co Ltd	6.7	7.2%	1.5%
Chubu Electric Power Co Inc	5.8	6.2%	0.2%
Nippon Steel Corp	5.4	5.8%	0.3%
Electric Power Development Co Ltd	4.1	4.5%	0.1%
JFE Holdings Inc	2.5	2.8%	0.1%



Emerging Markets Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m revenue)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	325.0	177.9	6.5%	6.2%
FTSE Emerging Markets	317.4	n/a	4.2%	11.1%
Relative	+7.6	n/a	+2.3%	-4.9%

Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Taiwan Semiconductor Manufacturing Company	17.6	5.4%	6.9%
NTPC Ltd	13.4	4.1%	0.1%
UltraTech Cement Ltd	12.9	4.0%	0.2%
Anhui Conch Cement Co Ltd	9.5	2.9%	0.1%
Gazprom PJSC	7.3	2.2%	0.4%



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Source: LGIM data and graphs, as at 31 March 2021. LGIM use ISS for carbon data and Refinitiv for enterprise value and HSBC for green revenue data.
 Fund benchmark for LGIM Japan Equity Fund is FTSE Japan and LGIM Emerging Markets Equity Fund is FTSE Emerging.

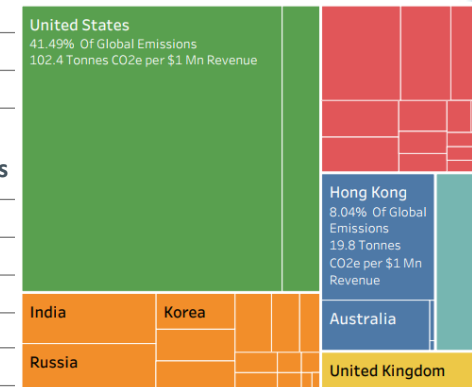
Climate Risk Analysis

Both the RAFI Equity fund and the Corporate bond fund show a mixed performance against the carbon metrics, with a higher WACI and lower ties to green revenues but lower proportion of ties to fossil fuels.

RAFI All World 3000 Equity Fund

	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	246.7	147.5	3.0%	8.5%
FTSE RAFI AW	237.4	n/a	3.4%	16.5%
Relative	+9.3	n/a	-0.4%	-8.0%

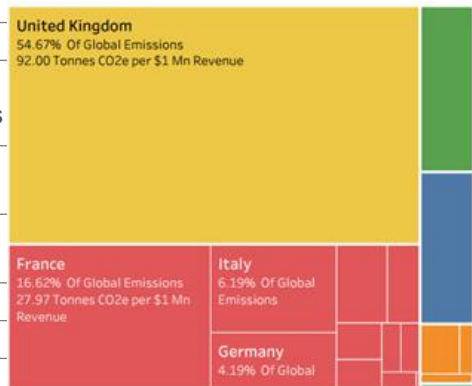
Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Duke Energy Corp	6.0	2.4%	0.2%
Southern Co	5.6	2.3%	0.1%
Power Assets Holdings Ltd	5.1	2.1%	0.0%
Exxon Mobil Corp	4.8	1.9%	1.0%
RWE AG	4.5	1.8%	0.1%



Investment Grade Corporate Bond All Stocks Index

	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Tonnes CO2e per \$m Carbon Footprint (EVIC)	Green Revenues	Ties to Fossil Fuels
Fund	168.3	77.7	3.7%	3.2%
Markit iBoxx Non-Gilts	115.8	n/a	5.1%	11.4%
Relative	+52.5	n/a	-1.4%	-8.2%

Top 5 Carbon Emitters	Weighted Average Carbon Intensity (tCO2/\$m Sales)	Contribution to WACI	% of total Fund assets
Western Power Distribution			
West Midlands PLC	11.2	6.7%	0.2%
Western Power Distribution East Midlands PLC	7.4	4.4%	0.1%
Engie SA	7.4	4.4%	0.5%
Central Networks East plc	5.6	3.3%	0.1%
Enel Finance International NV	5.1	3.0%	0.3%



Please note that the benchmark shown on this page is for illustration only and some of the differences between the fund and the benchmark shown may be due to differences in the underlying assets rather than a drift away from the benchmark.

Source: LGIM data and graphs, as at 31 March 2021. LGIM use ISS for carbon data and Refinitiv for enterprise value and HSBC for green revenue data. Fund benchmark for LGIM RAFI All World 3000 Equity Fund is L&G FTSE RAFI Global Reduced Carbon Pathway 3.5, however the benchmark shown is L&G FTSE RAFI AW 3000 QSR, and for LGIM Investment Grade Corporate Bond All Stocks Index is Markit iBoxx GBP Non-Gilts Total Return



Disclaimer

Scope and third party disclaimer

- This presentation is addressed to the Warwickshire Pension Fund. This presentation is for the sole purpose of helping the Trustees understand the Climate Risk metrics of the Warwickshire Pension Fund.
- This presentation is not intended for use for any other purpose.
- Hymans Robertson LLP does not accept any liability to any party other than the Committee, unless we have expressly accepted such liability in writing.

Risk Warnings

- Please note the value of investments, and income from them, may fall as well as rise. This includes equities, government or corporate bonds, and property, whether held directly or in a pooled or collective investment vehicle. Further, investments in developing or emerging markets may be more volatile and less marketable than in mature markets. Exchange rates may also affect the value of an overseas investment. As a result, an investor may not get back the amount originally invested. Past performance is not necessarily a guide to future performance.
- The paper may only be released or otherwise disclosed in a complete form, which fully discloses our advice and the basis on which it is given.

Understanding Climate Risk Metrics

Metric	Description/ Methodology
Weighted Average Carbon Intensity	A measure of a portfolio's exposure to carbon-intense companies. This is expressed in terms of tons of CO2 equivalent emitted per million dollars of revenue, weighted by the size of the allocation to each company. Is measured using scope 1 + scope 2 emissions. Scope 1 emissions are those from sources owned or controlled by the company, typically direct combustion of fuel as in a furnace or vehicle. Scope 2 emissions are those caused by the generation of electricity purchased by the company.
Total Carbon Emissions	This represents the portfolios estimated Scope 1 + Scope 2 greenhouse gas emissions. This is expressed in terms of thousand tons of CO2 equivalent emitted by the companies invested in by the portfolio, weighted by the size of the allocation to each company.
Tonnes CO2e per \$m Carbon Footprint (EVIC)	This shows the portfolio's carbon footprint. This is calculated by adding up the total carbon emissions and dividing by the portfolio's total EVIC (enterprise value including cash).
Green Revenues %	The weighted average % of revenue for portfolio companies derived from any of the six environmental impact themes including alternative energy, energy efficiency, green building, pollution prevention, sustainable water, or sustainable agriculture.
Low Carbon Transition Score	A company level score that measures a company's level of alignment to the Low Carbon Transition. Companies with higher Low Carbon Transition score are more aligned with the Low Carbon Transition compared to the companies with lower scores. (Score: 0-10)
Portfolio owning clean technology solutions	Companies involved in clean technology solutions earn more than 0% of their revenues in the following categories: Alternative Energy, Energy Efficiency, Green Building, Pollution Prevention, and Sustainable Water.
Portfolio With Ties to Fossil Fuels	The percentage of the portfolio invested in companies with an industry tie to fossil fuels (thermal coal, oil and gas), in particular reserve ownership, related revenues and power generation. It does not flag companies providing evidence of owning metallurgical coal reserves.

There are many different climate risk metrics used by managers.

The 4 rows highlighted in green show the metrics that we believe are TCFD compliant at the time of writing this paper. This may be subject to any changes in regulation or guidance.