
Climate Risk Report

June 13, 2024

Portfolio Name: MI THORNBIDGE GLOBAL OPPORTUNITIES FUND
Analysis Date: December 29 2023
Currency: GBP

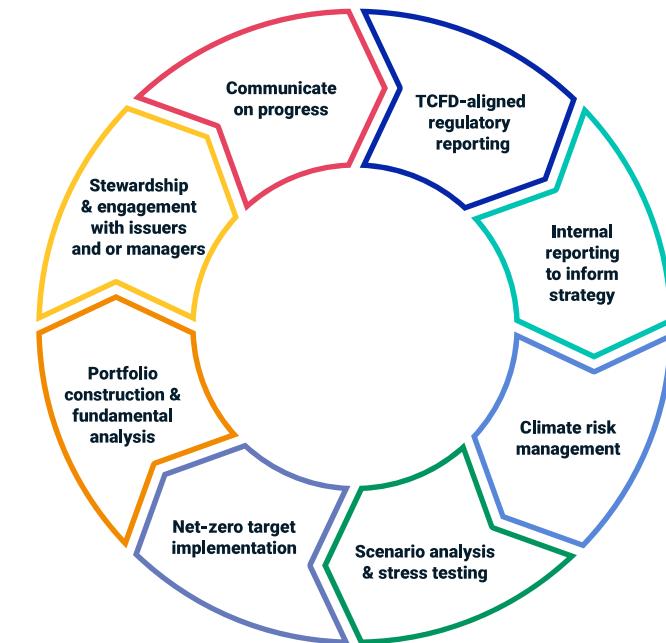
This report is designed to provide institutional investors with transparency into their portfolios' climate-related risks and opportunities according to the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD). With climate-related risks posing a potential threat to the long term resilience of investment portfolios and with climate reporting frameworks and regulations gaining momentum, there is a growing focus on climate risk management practices and disclosures.

This report aims to help investors understand their exposure to these risks and opportunities, one of the key aspects of the TCFD recommendations and an essential step in a Net Zero journey.

This report combines both current exposure climate data and forward looking metrics. Depending on your product subscription you will see relevant data in the report. Please note that a '0' will be displayed in two cases; either 1. the metric in question is not part of your current subscription, or 2. there is no data flowing for that datapoint (no involvement for instance) - we are working on making this more transparent in the next iteration of the report. If you are unsure about your subscription please contact your ESG Consultant.

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Transition Risks & Opportunities

Carbon Footprint

		Portfolio	Benchmark	Active
Allocation Base	EVIC			
Financed Carbon Emissions tons CO2e / GBP M invested Investor Allocation: EVIC	Scope 1+2	62.3	67.3	-7.5%
	Scope 3 – upstream	125.7	122.0	3.1%
	Scope 3 – downstream	196.9	308.6	-36.2%
Total Financed Carbon Emissions tons CO2e Investor Allocation: EVIC	Scope 1+2	10,435.2	11,275.2	-7.5%
	Scope 3 – upstream	21,061.4	20,433.5	3.1%
	Scope 3 – downstream	32,978.3	51,695.1	-36.2%
Financed Carbon Intensity tons CO2e / GBP M sales Investor Allocation: EVIC	Scope 1+2	185.0	186.6	-0.9%
	Scope 3 – upstream	373.3	338.2	10.4%
	Scope 3 – downstream	584.5	855.7	-31.7%

Weighted Average Carbon Intensity

Corporate constituents tons CO2e / GBP M sales	Scope 1+2	92.6	156.6	-40.9%
	Scope 3 – upstream	325.9	317.2	2.8%
	Scope 3 – downstream	299.0	585.8	-49.0%

Sovereign constituents

tons CO2e / GBP M GDP nominal	GHG intensity	N/A	N/A	N/A
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Fossil Fuel Exposure

	Portfolio	Benchmark	Active
Potential emissions from fossil fuel reserves (tCO2e / GBP M invested)	1,054.5	1,686.6	-37.5%
Fossil Fuel Based Revenue Exposure	2.5%	3.6%	-1.1%
Thermal coal exposure (Any tie)	2.0%	4.1%	-2.1%
Oil & Gas exposure (Any tie)	6.6%	11.5%	-4.9%
Exposure to Power Generation			
Thermal Coal (apportioned fuel mix, % of generation)	6.9%	25.3%	-18.4%
Green and Fossil Fuel Based Revenue Coverage	88.9%	99.9%	-11.0%

MSCI Low Carbon Transition Risk Assessment

	Portfolio	Benchmark	Active
Exposure to companies classified as:			
Low Carbon Solutions	4.7%	9.5%	-4.8%
Low Carbon Transition Risk	11.1%	23.3%	-12.3%
Low Carbon Transition Risk Coverage	87.4%	99.9%	-12.4%

Transition Opportunities

	Portfolio	Benchmark	Active
Green Revenue Exposure	2.3%	6.0%	-3.8%
Exposure to Power Generation			
Renewables (apportioned fuel mix, % of generation)	12.2%	13.1%	-0.8%

Companies' Transition Plans

	Portfolio	Benchmark	Active
Companies with GHG emission reduction targets	82.5%	86.5%	-3.9%
Companies with targets across all scopes	54.2%	58.5%	-4.4%
Companies with SBTi approved targets	44.7%	41.2%	3.6%
Companies with top quartile carbon management score	59.2%	64.3%	-5.2%

Scenario Analysis

 MSCI Climate Scenario Analysis

	Portfolio	Benchmark	Active
Aggregate Climate VaR (Value at Risk)	-14.2%	-14.9%	0.7%
Policy Climate VaR	-13.4%	-13.8%	0.4%
Technology Opportunities Climate VaR	1.6%	2.0%	-0.4%
Physical Risk Climate VaR	-2.4%	-3.1%	0.7%

Physical Climate Risk

	Portfolio	Benchmark	Active
Tropical Cyclones	0.0%	-0.1%	0.0%
Coastal Flooding	-1.6%	-2.2%	0.6%
Extreme Heat	-0.7%	-0.8%	0.1%
Extreme Cold	0.1%	0.1%	0.0%
Precipitation	-0.1%	-0.2%	0.0%
Extreme Snowfall	0.0%	0.0%	0.0%
Extreme Wind	0.0%	-0.1%	0.0%
Fluvial Flooding	-0.1%	-0.1%	-0.1%
River Low Flow	0.0%	-1.1%	1.1%
Wildfire	0.0%	0.0%	0.0
Aggregated Physical Climate VaR	-2.4%	-3.1%	0.7%

Portfolio Temperature Alignment

 MSCI Implied Temperature Rise

	Portfolio	Benchmark	Active
Implied Temperature Rise	1.9°C	2.5°C	-24.0%
Implied Temperature Rise Coverage	87.4%	99.8%	-12.3%



Footprint Metrics on Investor Allocation

Allocation Base	EVIC	Portfolio	Coverage	Benchmark	Coverage	Active
● Financed Carbon Emissions tons CO2e / GBP M invested Investor Allocation: EVIC	Scope 1+2	62.3	87.4%	67.3	99.8%	-7.5%
	Scope 3 – upstream	125.7	87.4%	122.0	99.8%	3.1%
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● Corporate constituents tons CO2e / GBP M sales	Scope 1+2	92.6	87.4%	156.6	99.9%	-40.9%
	Scope 3 – upstream	325.9	87.4%	317.2	99.9%	2.8%
	Scope 3 – downstream	299.0	87.4%	585.8	99.8%	-49.0%
● Sovereign constituents tons CO2e / GBP M GDP Nominal	GHG intensity	N/A	N/A	N/A	N/A	N/A



Footprint Metrics on Investor Allocation Definitions

EVIC: Enterprise Value Including Cash Enterprise Value Including Cash (EVIC) is an alternate measure to Enterprise Value (EV) to estimate the value of a company by adding back cash and cash equivalents to EV.

$$\text{EVIC} = \text{Market capitalization at fiscal year-end date} + \text{preferred stock} + \text{minority interest} + \text{total debt} + \text{cash and cash equivalents}$$

The underlying data used for EVIC calculation is sourced from a company's accounting year-end annual filings. EVIC is updated and reflected once a year as the data is sourced annually.

● Financed Carbon Emissions
tons CO2e / GBP M invested

Allocated emissions to all financiers (EVIC) normalized by \$m invested. Measures the carbon emissions, for which an investor is responsible, per GBP million invested, by their equity ownership. Emissions are apportioned based on equity ownership (% market capitalization).

$$\frac{\sum_i^i \left(\frac{\text{current value of investment}_i}{\text{issuer's EVIC}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)}{\text{current portfolio value (\$M)}}$$

● Total Financed Carbon Emissions
tons CO2e

Allocated emissions to all financiers (EVIC). Measures the total carbon emissions for which an investor is responsible by their equity ownership. Emissions are apportioned based on equity ownership (% market capitalization).

$$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{issuer's EVIC}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)$$

● Financed Carbon Intensity
tons CO2e / GBP M sales

Allocated emissions per allocated sales. Measures the carbon efficiency of a portfolio, defined as the ratio of carbon emissions for which an investor is responsible to the sales for which an investor has a claim by their equity ownership. Emissions and sales are apportioned based on equity ownership (% market capitalization).

$$\frac{\sum_i^i \left(\frac{\text{current value of investment}_i}{\text{issuer's EVIC}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)}{\sum_i^i \left(\frac{\text{current value of investment}_i}{\text{issuer's EVIC}_i} \times \text{issuer's \$M revenue}_i \right)}$$

Weighted Average Carbon Intensity Definitions

● Corporate constituents
tons CO2e / GBP M sales

Measures a portfolio's exposure to carbon-intensive companies, defined as the portfolio weighted average of companies' Carbon Intensity (emissions/sales).

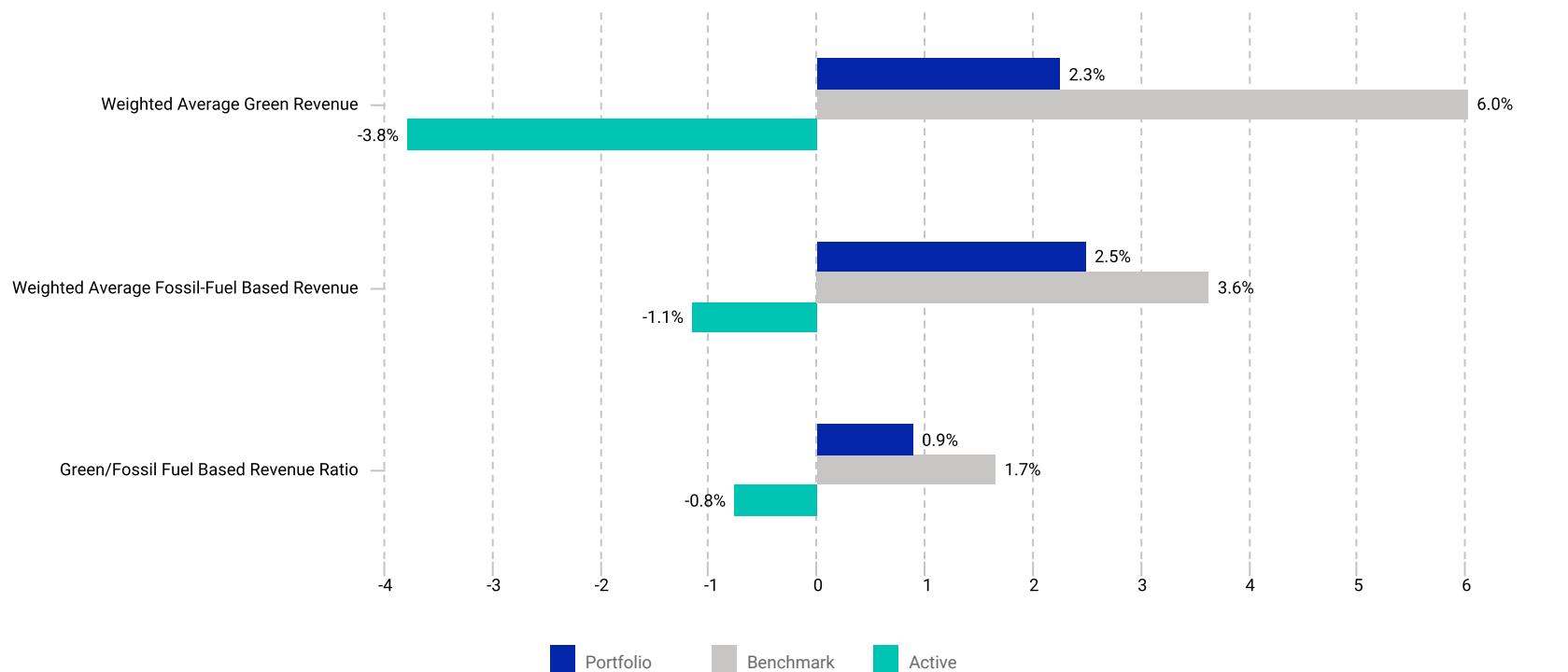
$$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i} \right)$$

● Sovereign constituents
tons CO2e / GBP M GDP nominal

Measures a portfolio's exposure to carbon-intensive economies, defined as the portfolio weighted average of sovereigns' GHG Intensity (emissions/GDP).

$$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{sovereign issuer's GHG emissions}_i}{\text{sovereign issuer's \$M GDP}_i} \right)$$

Fossil Fuel Based and Green Revenue Summary



Understanding Fossil Fuel Based Revenue

Fossil fuel-based revenue is the weighted average of revenue exposure to thermal coal extraction, unconventional and conventional O&G extraction, O&G refining as well as revenue from the thermal coal power generation.

Understanding Green Revenue

Green revenue is the weighted average of revenue exposure to alternative energy, energy efficiency, green building, pollution prevention, sustainable water and sustainable agriculture.

🌡 MSCI Implied Temperature Rise

Implied Temperature Rise (ITR) provides a portfolio level number in degrees of Celsius demonstrating how aligned the companies in the portfolio are to global temperature goals.

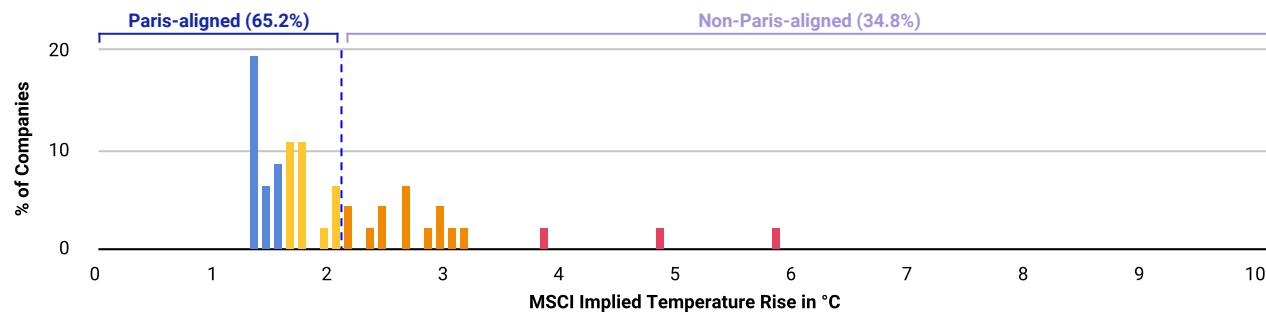


The Implied Temperature Rise (ITR) metric provides an indication of how well public companies align with global temperature goals. Expressed in degrees Celsius, it is an intuitive, forward-looking metric that shows how a company aligns with the ambitions of the Paris Agreement -- which is to keep a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C.

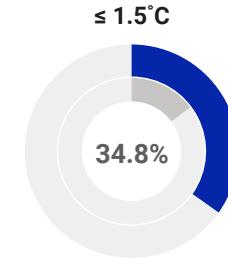
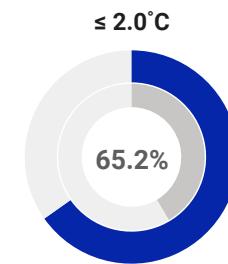
The portfolio-level Implied Temperature Rise uses an aggregated budget approach: it compares the sum of "owned" projected GHG emissions against the sum of "owned" carbon budgets for the underlying fund holdings. The portfolio's total estimated carbon budget over- /undershoot is then converted to a degree of temperature rise (°C) using science based TCRE (Transient Climate Response to Cumulative Emissions). The allocation base used to define ownership is Enterprise Value including Cash (EVIC) in order to enable the analysis of equity and corporate bond portfolios.

🌡 Portfolio MSCI Implied Temperature Rise Distribution

The issuers in the portfolio are distributed according to their Implied Temperature Rise showing the number who are aligned with the Paris Agreement and the more ambitious 1.5°C temperature goal.



Implied Temperature Rise Categories	% of companies in category	
1.5°C Aligned	<= 1.5°C	34.8%
2°C Aligned	> 1.5°C - 2 °C	30.4%
Misaligned	>2.0 - 3.2°C	28.3%
Strongly Misaligned	>3.2°C	6.5%



65.2% of companies within the portfolio (vs. 41.5% for the benchmark) align with the goal of limiting temperature increase to below 2°C.

Portfolio Benchmark

34.8% of companies within the portfolio (vs. 14.9% for the benchmark) align with the goal of limiting temperature increase to below 1.5°C.

Climate Value at Risk

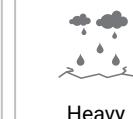
Selected Scenario : 1.5°C NGFS Disorderly

	1.5°C NGFS Disorderly			1.5° REMIND NGFS Orderly			1.5° REMIND NGFS Disorderly			2° REMIND NGFS Orderly			3° REMIND NGFS NDC		
	Portfolio	Benchmark	Active	Portfolio	Benchmark	Active	Portfolio	Benchmark	Active	Portfolio	Benchmark	Active	Portfolio	Benchmark	Active
Policy Climate Var (Scope 1,2,3)	-13.4%	-13.8%	0.4%	-9.7%	-9.9%	0.2%	-13.4%	-13.8%	0.4%	-2.1%	-3.2%	1.1%	-1.2%	-2.1%	0.9%
Technology Opportunities Climate VaR	1.6%	2.0%	-0.4%	0.9%	1.1%	-0.3%	1.6%	2.0%	-0.4%	0.2%	0.4%	-0.1%	0.2%	0.2%	-0.1%
Physical Climate VaR Aggressive	-2.4%	-3.1%	0.7%	-2.4%	-3.1%	0.7%	-2.4%	-3.1%	0.7%	-3.5%	-4.1%	0.6%	-5.2%	-5.9%	0.7%
Aggregated Climate VaR	-14.2%	-14.9%	0.7%	-11.2%	-11.8%	0.6%	-14.2%	-14.9%	0.7%	-5.3%	-7.0%	1.6%	-6.3%	-7.8%	1.5%

Physical Climate Value at Risk Detail

Selected Scenario : Aggressive

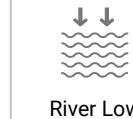
Chronic Risks (0.5° global grid)

				
Extreme Heat -0.7%	Extreme Cold 0.1%	Wind Gusts 0.0%	Heavy Snowfall 0.0%	Heavy Precipitation -0.1%

Climate VaR Portfolio Coverage Summary

	Portfolio	Benchmark	Active
Policy Climate VaR (Scope 1,2,3)	87.4%	99.8%	-12.4%
Technology Opportunities Climate VaR	77.5%	92.1%	-14.6%
Physical Climate VaR	85.6%	99.0%	-12.4%

Acute Risk (high res)

				
Tropical Cyclones 0.0%	Coastal Flooding -1.6%	Fluvial Flooding -0.1%	River Low Flow 0.0%	Wildfires 0.0%

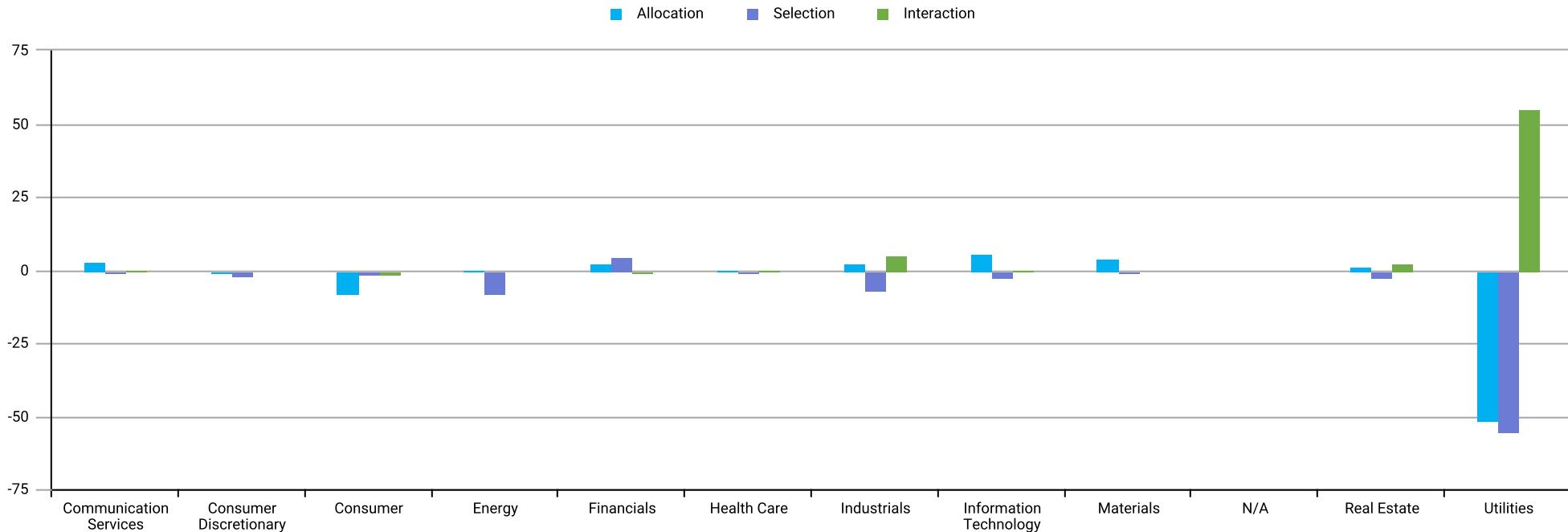
Aggregate Physical Climate VaR

-2.4%

Benchmark Aggregate Physical Climate VaR

-3.1%

Weighted Average Carbon Intensity (S1+S2 tCO2 / GBP M sales) - Attribution Analysis

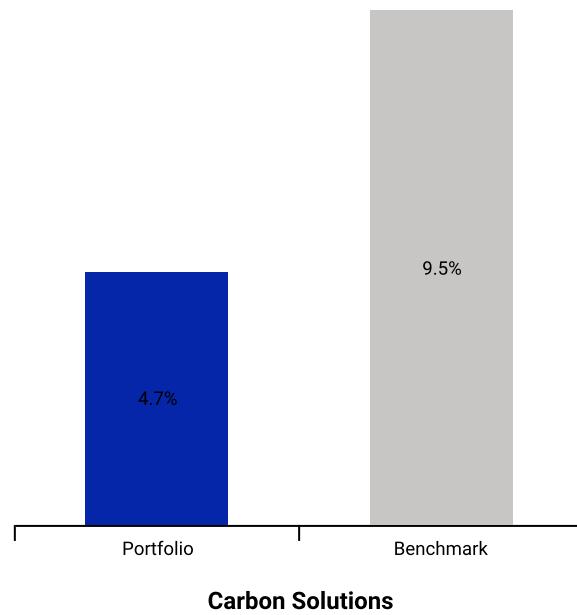


Understanding carbon attribution analysis

In attribution analysis of carbon footprints, negative values represent areas that contribute to a smaller footprint relative to the benchmark, while positive values contribute to a larger relative footprint.

- **Sector Allocation** measures the impact of a manager's decisions to over- or underweight portfolio sectors relative to a benchmark. Negative values come from underweighting sectors with higher carbon footprints than the benchmark or overweighting sectors with carbon footprints lower than the benchmark.
- **Stock Selection** measures the impact of a manager's security selection within a sector relative to a benchmark. Negative values in a sector come from selecting companies with lower footprints relative to those in the benchmark. The weight of the sector in the benchmark determines the size of the effect.
- **Interaction** measures the combined impact of a manager's allocation and stock selection within a sector. For example, overweighting a sector with a lower carbon footprint relative to the benchmark results in negative interaction, while underweighting a sector with a lower relative carbon footprint leads to a positive interaction effect.

Exposure to Low Carbon Solutions



Carbon Solutions

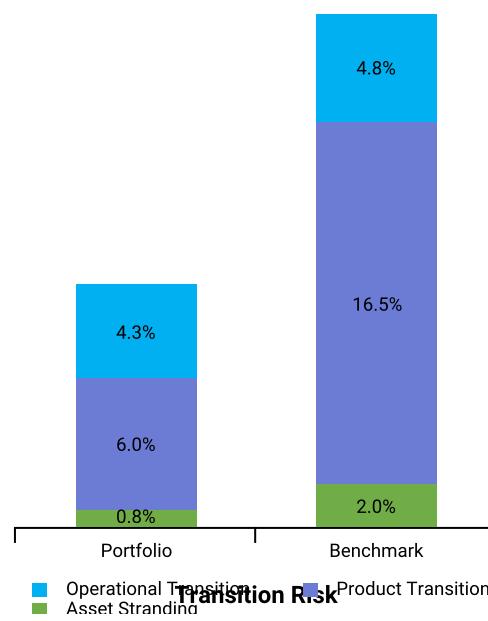
Identifies the portfolio's market value exposed to companies that have potential to benefit through the growth and demand for low carbon products and services. These typically include companies that offer renewable electricity, electric vehicles, solar cell manufacturers

Understanding MSCI Low Carbon Transition Risk Assessment

The Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C published in October 2018 re-iterated that achieving the Paris agreement target of 1.50°C warming level would require rapid, far-reaching and unprecedented transitions in all aspects of society. The "Low Carbon Transition" refers to the necessary transition of the global economy from carbon intensive operations and energy sources to zero or low carbon operations and energy sources.

MSCI Low Carbon Transition Categories classify companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition to a low carbon economy (See categories to the right).

Exposure to Low Carbon Transition Risk



Transition Risk

Identifies the portfolio's market value exposed to companies with increased operations and/or capital costs (operational transition), facing reduced demand for carbon-intensive products (product transition), and companies with potential stranding of physical/ natural assets due to regulatory, market or technology forces.

Low Carbon Transition Categories



Solutions

Companies that have potential to benefit through the growth of low-carbon products and services. Examples include renewable electricity, electric vehicles, solar cell manufacturers etc.



Operation Transition

Companies with increased operation and/or capital cost due to carbon taxes and/or investment in carbon emission mitigation measures leading to lower profitability of the companies. Examples include fossil fuel based power generation, cement, steel etc.



Product Transition

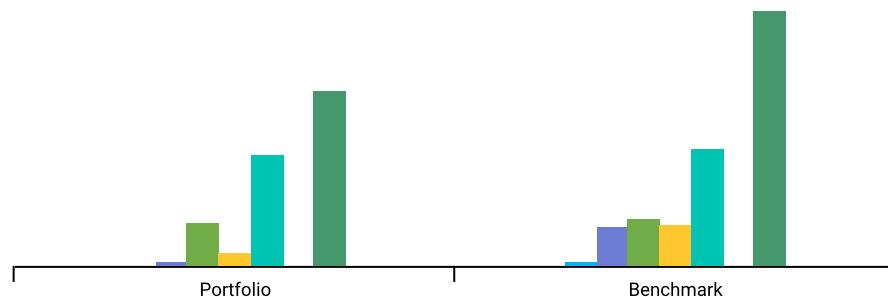
Companies that face reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products. Examples include Oil & gas exploration & production; Petrol/diesel based automobile manufacturers, thermal power plant turbine manufacturers etc.



Asset Stranding

Potential to experience "stranding" of physical/natural assets due to regulatory, market or technological forces arising from low-carbon transition. Examples include coal mining & coal based power generation; Oil sands exploration/production

Weighted Average Fossil Fuel-based Revenue Exposure



Thermal Coal Extraction	0.0%	0.1%
Unconventional O&G	0.1%	0.6%
Conventional O&G	0.6%	0.7%
Generation Fossil Fuel	0.2%	0.6%
O&G Refining	1.6%	1.7%
Exposure from Funds	0.0%	0.0%
Total	2.5%	3.6%

Portfolio Top 5 Companies with Highest Proportion of Fossil Fuel Revenues

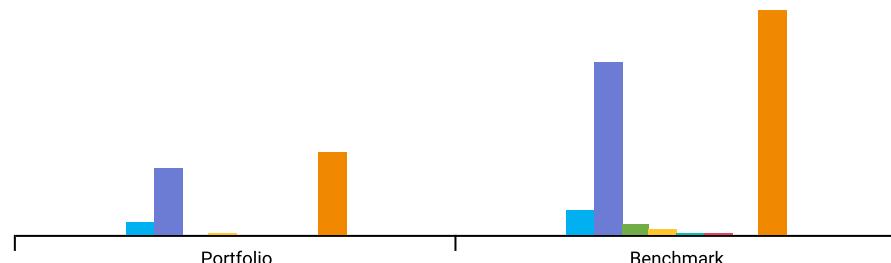
	Weight Fossil Fuel Theme	Fossil Fuel Revenue
VERMILION ENERGY INC	0.3% Unconventional O&G,Conventional O&G,	100.0%
CHEVRON CORP	0.8% Unconventional O&G,Conventional O&G,O&G Refining,	99.9%
PETROLEO BRASIL SP PREF A	0.0% Conventional O&G,O&G Refining,Generation Fossil Fuels	90.8%
SHELL PLC-NEW	2.6% Unconventional O&G,Conventional O&G,O&G Refining,	40.0%
JAPAN PETROLEUM EXPLORAT	0.9% Unconventional O&G,Conventional O&G,Generation Fossil Fuels	33.8%

Understanding Fossil Fuel-based Revenue Exposure

The reduced demand for carbon-intensive products and services could lead to financial stress and asset stranding in carbon-intensive industries. It is estimated that a low-carbon transition could put assets worth USD 25 trillion at risk of stranding in the fossil fuel industry alone (source: "2020 vision: why you should see peak fossil fuels coming" Carbon Tracker, Sept. 2018).

Historically, investors have focused much attention on the carbon-intensive industries that could be directly affected by a potential low-carbon transition: fossil-fuel-based power generation, coal mining and oil and gas production and refining.

Weighted Average Green Revenue Exposure



Alternative Energy	0.4%	0.7%
Energy Efficiency	1.8%	4.6%
Green Building	0.0%	0.3%
Pollution Prevention	0.1%	0.2%
Sustainable Water	0.0%	0.1%
Sustainable Agriculture	0.0%	0.1%
Exposure from Funds	0.0%	0.0%
Total	2.3%	6.0%

Portfolio Top 5 Companies with Highest Proportion of Green Revenues

	Weight	Green Revenue Theme	Green Revenue
MICROSOFT CORP	4.7%	Energy Efficiency,	21.7%
QUANTA SERVICES INC	2.8%	Alternative Energy,Energy Efficiency,	13.0%
SHELL PLC-NEW	2.6%	Alternative Energy,Energy Efficiency,Pollution Prevention,	10.9%
MERCEDES-BENZ GROUP AG	1.5%	Energy Efficiency,	10.7%
AMAZON.COM INC	2.2%	Energy Efficiency,	6.9%

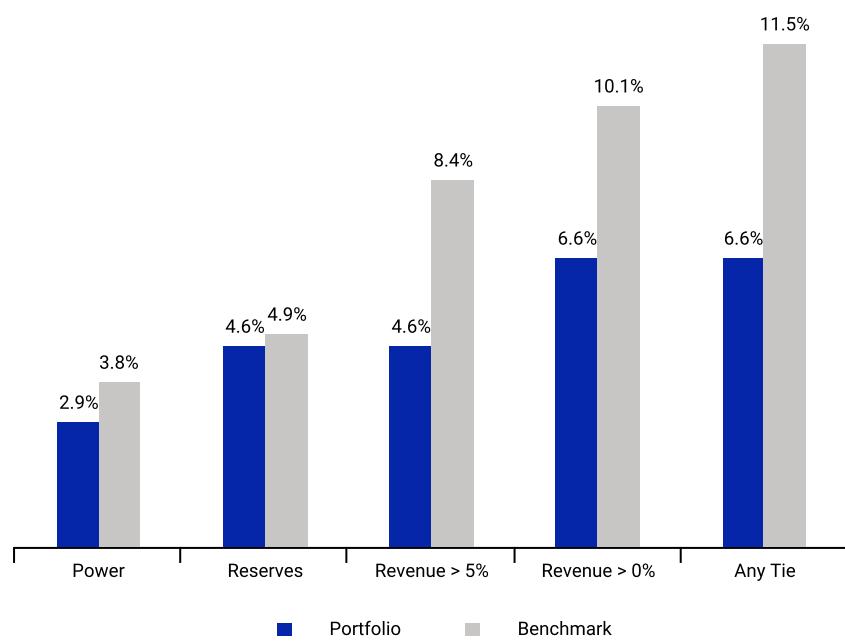
Understanding Green Revenue Exposure

Companies and industries whose products and operations are well positioned for the transition (e.g. renewable-energy producers and electric-vehicle manufacturers) could see increased demand for their products and services in the low-carbon transition.

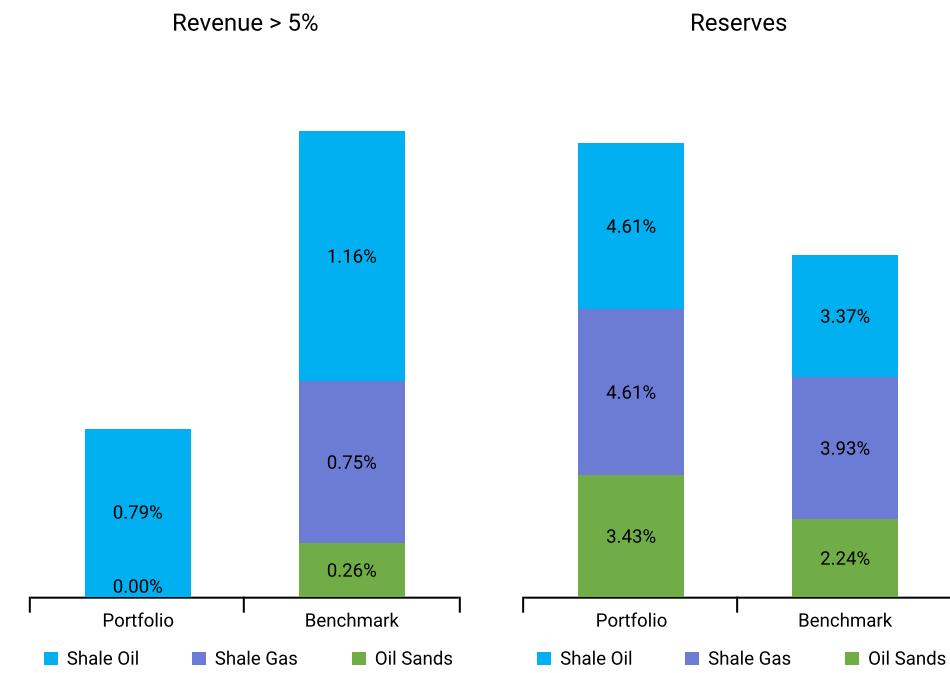
For instance in 2016, solar-photovoltaic additions rose faster than for those of any other fuel - and even surpassed the net growth in coal-fired power plants (source: "Renewables 2017" International Energy Agency, Oct 2017).

A similar trend has been observed in the automobile industry as well, where the demand for electric cars has grown by more than 40% per year since 2010 (source: Global EV Outlook 2017, International Energy Agency).

Oil & Gas Exposure



Unconventional Oil & Gas Exposure



Oil & Gas Outlook

Demand for oil and gas in a low carbon world is forecast to decline under low carbon scenarios (IEA SDS), leading to potentially stranded assets.

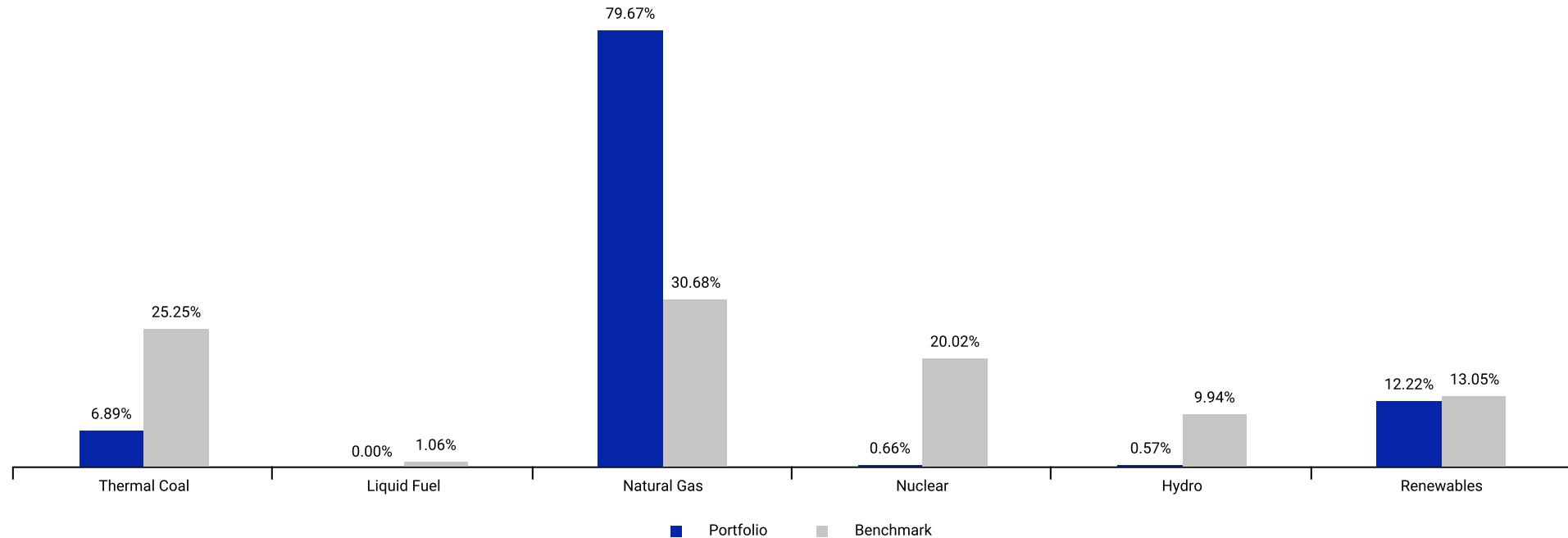
Oil and Gas Revenue & Reserves Exposure

There are several ways to determine a portfolio's exposure to oil and gas. Any tie is the broadest indicator encompassing activities related to oil and gas reserves ownership, revenue derived from oil and gas production, and ownership of or by oil and gas companies.

Unconventional Oil and Gas

We classify oil sands, shale gas and shale oil as unconventional. Oil sands and shale oil are arguably more exposed to stranded assets risk as they have a higher carbon content than other types of oil and gas. In addition to higher carbon intensity, the extraction of unconventional sources of oil and gas can be costly because of various geological, technical and environmental challenges.

Exposure to Power Generation - Apportioned Fuel Mix

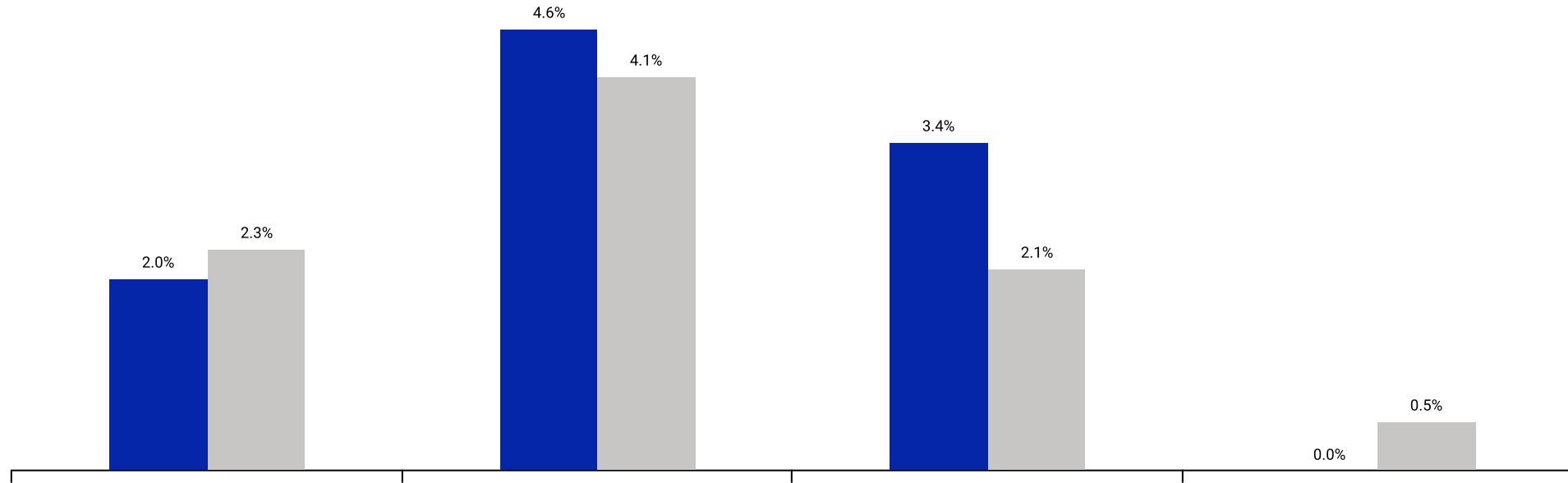


Understanding Power Generation - Apportioned Fuel Mix

The Paris Agreement calls for coordinated efforts ensuring global temperature rise as a result of GHG emissions is limited to 1.5°C or below. Analytical results vary, but most Paris-aligned scenarios require industrial carbon emissions peaking in the 2020s and reducing rapidly thereafter, leading to a net-zero industrial emissions in the second half of this century.

Exposure to Holdings Deriving Revenues From Fossil Fuel

■ Portfolio ■ Benchmark

**Thermal Coal**

Shows the portfolios market value exposed to companies that derive revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties, and contract mining services.

Conventional O&G

Shows the portfolios market value exposed to companies that derive revenue from conventional oil and gas. It includes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore. It excludes revenues from unconventional oil & gas.

Unconventional O&G

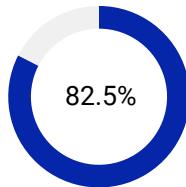
Shows the portfolios market value exposed to companies that derive revenue from unconventional oil and gas. It includes revenues from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It excludes all types of conventional oil and gas production.

Generation Fossil Fuel

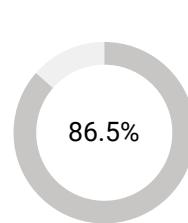
Shows the portfolios market value exposed to companies that derive revenue from power generation based on fossil fuel (thermal coal, liquid fuel and natural gas).

Exposure to Companies with Proactive Carbon Risk Mitigation Initiatives

Companies with GHG Emissions Reduction Targets

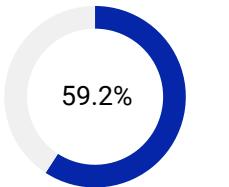


Portfolio

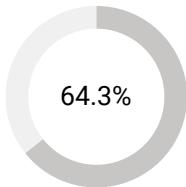


Benchmark

Companies with Top Quartile Carbon Management Score



Portfolio



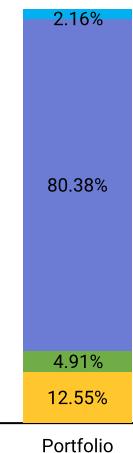
Benchmark

Understanding Carbon Risk Management Initiatives

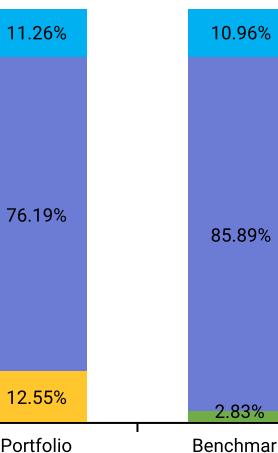
Companies have a variety of strategies to reduce emissions, including setting targets for reductions, using cleaner energy sources and managing energy consumption

While these efforts vary considerably across companies, we categorize them as No Efforts, Some Efforts, and Aggressive Efforts to make them more comparable

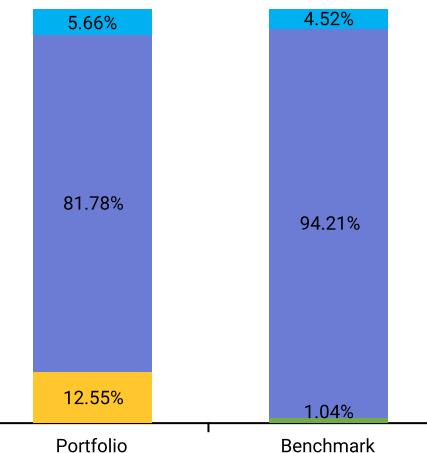
Total GHG Emissions Reduction Targets



Use of Cleaner Energy Sources



Energy Consumption Management and Operational Efficiency



■ No Information ■ No Effort ■ Some Effort ■ Aggressive Effort

MSCI Implied Temperature Rise Company Analysis

Aggregated Implied Temperature Rise

Portfolio: 1.9°C Benchmark: 2.5°C

Implied Temperature Rise: Companies with Highest Temperature Alignment

Company Name	Weight	Implied Temperature Rise
CHEVRON CORPORATION	0.8%	5.8°C
Vermilion Energy Inc.	0.3%	4.8°C
Petroleo Brasileiro S.A. (Petrobras)	0.0%	3.8°C
Prosus N.V.	1.2%	3.1°C
QUANTA SERVICES, INC.	2.8%	3.0°C
Mitsubishi UFJ Financial Group, Inc.	1.6%	2.9°C
Samsung Electronics Co., Ltd.	1.6%	2.9°C
JPMORGAN CHASE & CO.	1.8%	2.8°C
BROADCOM INC.	9.2%	2.6°C
AMAZON.COM, INC.	2.2%	2.6°C

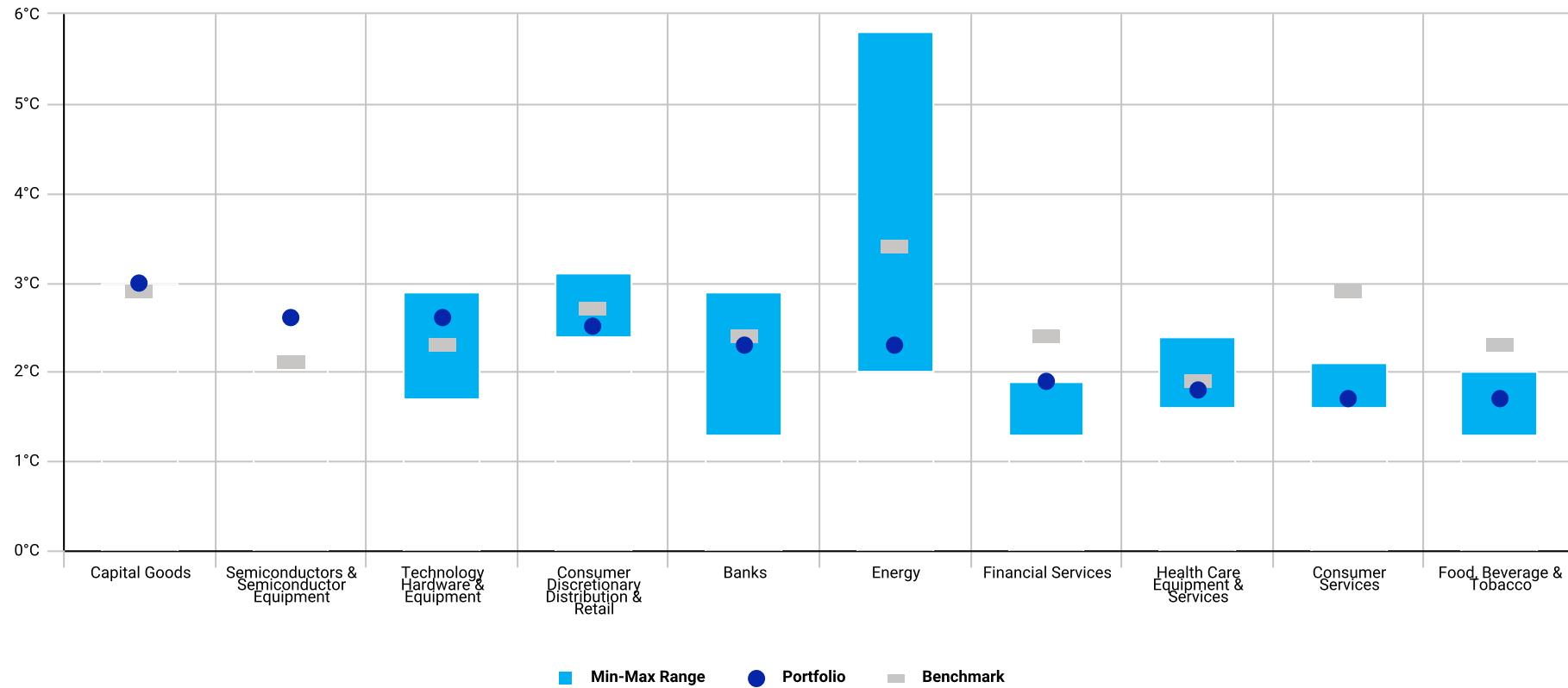
Implied Temperature Rise: Companies with Lowest Temperature Alignment

Company Name	Weight	Implied Temperature Rise
MASTERCARD INCORPORATED.	3.5%	1.3°C
NOVO NORDISK A/S	2.5%	1.3°C
BRITISH AMERICAN TOBACCO P.L.C.	2.1%	1.3°C
ANGLOGOLD ASHANTI PLC	1.9%	1.3°C
AIB GROUP PUBLIC LIMITED COMPANY	1.7%	1.3°C
SANOFI SA	1.5%	1.3°C
JOHNSON & JOHNSON	1.4%	1.3°C
META PLATFORMS, INC.	1.3%	1.3°C
DIAGEO PLC	0.9%	1.3°C
MICROSOFT CORPORATION	4.7%	1.4°C

Implied Temperature Rise

The Implied Temperature Rise (ITR) metric provides an indication of how well public companies align with global temperature goals. Expressed in degrees Celsius, it is an intuitive, forward-looking metric that shows how a company aligns with the ambitions of the Paris Agreement - which is to keep a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. The portfolio-level Implied Temperature Rise compares the sum of "owned" projected GHG emissions against the sum of "owned" carbon budgets for the underlying fund holdings. The portfolio's total estimated carbon budget over- / undershoot is then converted to a degree of temperature rise (°C) using the TCER. The allocation base used to define ownership is Enterprise Value including Cash (EVIC) in order to enable the analysis of equity and corporate bond portfolios.

Aggregated Implied Temperature Rise by Industry Group



Aggregated Implied Temperature Rise Spread by Industry Group

The chart above displays the Industry Groups in this portfolio that are associated with the highest aggregated Implied Temperature Rise (ITR). The light blue bars are a measure of the maximum and minimum aggregated ITR per group. Each gray bar represents either the average level of aggregated ITR per group or the benchmark portfolio's aggregated ITR per group (if specified). Each dark blue dot represents the ITR of this portfolio, taking into account holding weights. Use this graphic to identify a group's current deviation from global climate goals and find Industry Groups where climate goal alignment is most feasible. Company and portfolio level Implied Temperature Rises are floored and capped at 1.3°C and 10°C.

Portfolio Weights of Largest Contributor Countries by Time-to-maturity

Country/Duration	Total
Total	0.00%

Total includes all other country buckets not listed in the above list.

Portfolio Level Sovereign Climate VaR Results

	Portfolio	Benchmark	Active
1p5C NGFS Orderly	0.00%	0.00%	0.00%
1p5C NGFS Disorderly	0.00%	0.00%	0.00%
2C NGFS Orderly	0.00%	0.00%	0.00%
2C NGFS Disorderly	0.00%	0.00%	0.00%
3C NGFS Current Policies	0.00%	0.00%	0.00%
3C NGFS	0.00%	0.00%	0.00%
<i>Coverage</i>	0.00%	0.00%	0.00%

Coverage is 0.00% for the portfolio, 0.00% for the benchmark.

Coverage here denotes total portfolio coverage across all asset classes, not only the sovereign portion of the portfolio. The coverage metrics presented in this report are computed in the context of the entire long-only side of the portfolio - no weight adjustments are performed for the respective scopes of corporate or sovereign exposures.

Understanding Sovereign Climate VaR

Sovereign Bond Climate VaR is designed to provide a forward-looking and return-based valuation assessment to measure climate related risks in a sovereign bond investment portfolio. The fully quantitative model offers insights into how climate change could affect sovereign bond valuations through the use of a stress testing framework.

It estimates the change in the sovereign yield curve when market expectations move from a climate-agnostic baseline expectation to any other climate scenario. Yield curve changes are then used to stress test the value of local-currency sovereign bonds.

The model produces two types of outputs: the potential impact of climate change and economic decarbonization on implied yield curves and sovereign bond valuations.

**Country and time-to-maturity contribution to portfolio level Sovereign Climate VaR (1.5°C NGFS
Disorderly)**

Country/Duration	Total
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Total	N/A
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Understanding Sovereign Climate VaR contributions

In the contribution analysis, values represent the countries' contributions to the total Sovereign Climate VaR by time-to-maturity buckets for the 1.5°C NGFS Disorderly scenario. The Total row is the sum of the 10 major contributor countries plus all others' contributions.

MSCI Climate Change metrics evaluates approximately 10,000+ companies covering the MSCI ACWI IMI. The data availability in the report analysis is the result of two subsequent mappings:

Step 1. Security mapping with MSCI security master when the portfolio is initially uploaded to ESG Manager (out of scope/matched).

Step 2. Security mapping when the portfolio template is run in the analysis tab – the matched securities from step 1 are checked against the data available as of the date of the analysis. While we are aiming to align coverage for all climate datasets, the coverage results may vary depending on the dataset and are detailed in the table below.

Total securities	Securities covered for S1&2 footprint, fossil fuel exposure, power gen, LCT, green revenues, target data			Securities covered for Scope 3 estimates			Securities covered for ITR			Securities covered for Climate VaR (note climate var results are security specific)			
	Number of securities covered	Percent of total securities	Percent of market cap	Number of securities covered	Percent of total securities	Percent of market cap	Number of securities covered	Percent of total securities	Percent of market cap	Number of securities covered	Percent of total securities	Percent of market cap	
Portfolio	72	47	65.3%	87.4%	47	65.3%	87.4%	47	65.3%	87.4%	47	65.3%	87.4%
Benchmark	2,918	2,916	99.9%	99.9%	2,913	99.8%	99.9%	2,904	99.5%	99.9%	2,904	99.5%	99.8%

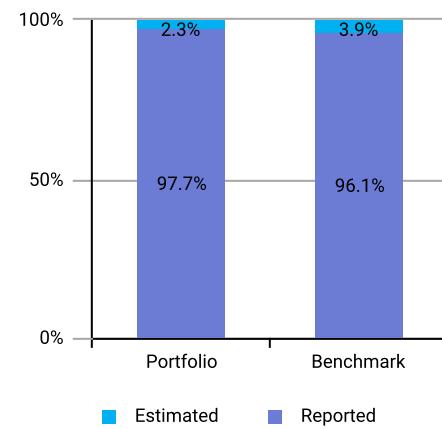
Availability & quality of carbon emission data

For Scope 1 & 2, when reported data is not available, Scope 1 & 2 carbon emissions are estimated using MSCI's Scope 1 & 2 estimation model which we have mapped to the data quality score defined by PCAF.

Note: All Scope 3 emissions used in this report are estimated by MSCI's S3 estimation model, due to un-usability (inconsistency, volatility) of the reported Scope 3

	Scope 1 & 2		Reported		Estimated		No data		Quality	
	Audited emission data	Non-audited emission data,	Production model/Physical activity based	Emission factor per unit of revenue	Emission factor per unit of EVIC	PCAF Weighted Score				
						PCAF SCORE 1	PCAF SCORE 2	PCAF SCORE 3	PCAF SCORE 4	PCAF SCORE 5
Portfolio	No of Securities	0	46	0	1	0	25	2.05		
	% of Securities	0.0%	63.9%	0.0%	1.4%	0.0%	0.0%	2.05		
	% of Market Value	0.0%	85.4%	0.0%	2.0%	0.0%	12.6%	2.05		
Benchmark	No of Securities	0	2,400	2	514	0	2	2.08		
	% of Securities	0.0%	82.2%	0.1%	17.6%	0.0%	0.0%	2.08		
	% of Market Value	0.0%	96.0%	0.0%	3.8%	0.0%	0.1%	2.08		

Contribution to Scope 1+2 Carbon emissions by source of carbon data

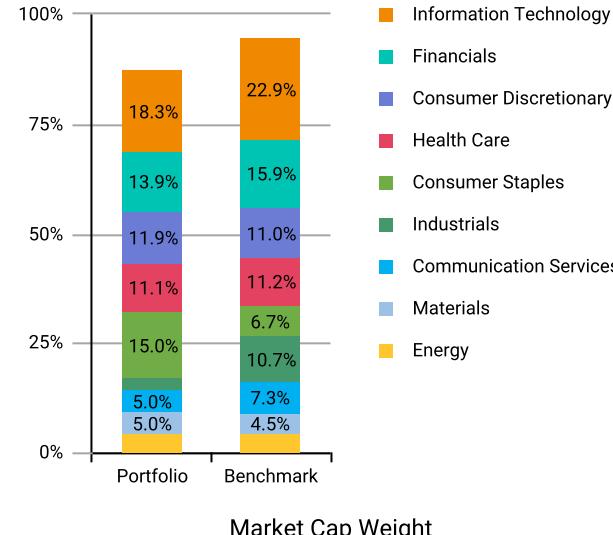


Financed Carbon Emission (S1+S2) by Sector

	Portfolio	Benchmark	Active
Materials	619.1	490.9	26.1%
Energy	302.5	317.8	-4.8%
Industrials	44.5	50.7	-12.3%
Financials	17.5	6.5	167.9%
Consumer Discretionary	16.9	16.8	0.6%
Consumer Staples	14.0	31.5	-55.7%
Information Technology	6.4	9.4	-32.0%
Health Care	4.2	5.0	-16.8%
Communication Services	1.4	6.3	-77.7%
Total	62.3	67.3	-7.5%

The sector table shows the comparison of the portfolio sector emissions (Scope 1 + Scope 2) to those of the benchmark. The key denotes the magnitude of the emissions in each sector with green denoting lower emissions, and red denoting higher emissions in that sector.

Sector Weight to Financed Carbon Emissions (S1+S2)



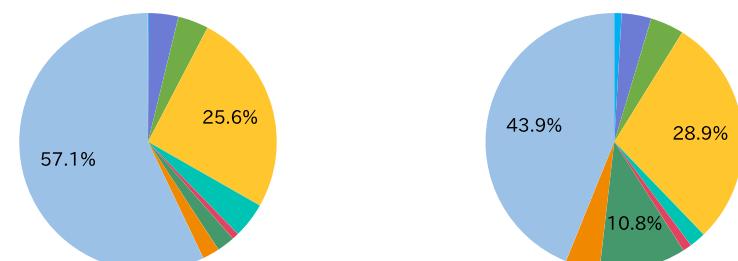
Market Cap Weight

The column chart shows the composition by sector of the portfolio and benchmarks by market capitalization to financed carbon emissions. This highlights that dominant sectors, in terms of emissions, tend to be Energy, Utilities, and Materials.

Sectoral Contribution to Financed Carbon Emissions (S1+S2)

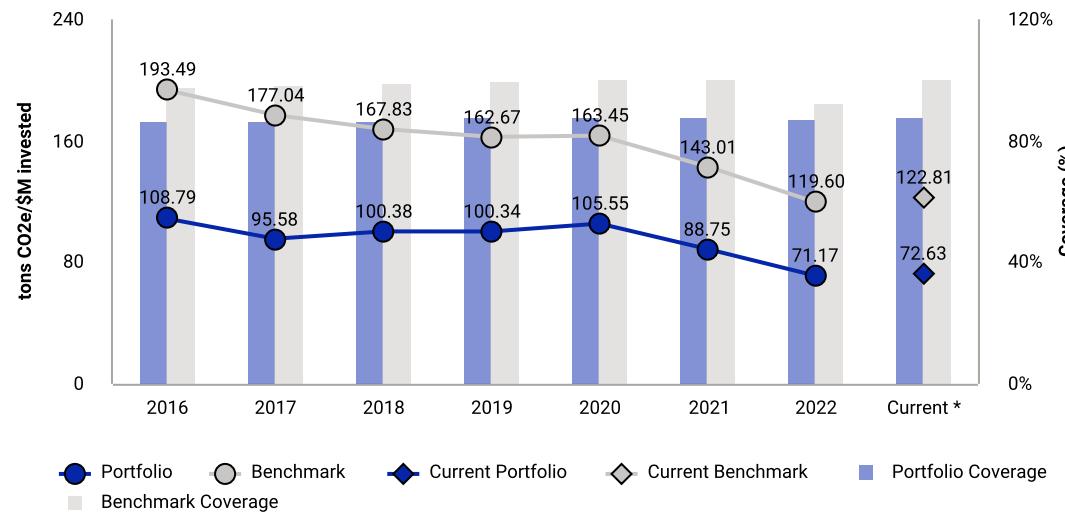
	Portfolio	Benchmark
Communication Services	0.1%	0.7%
Consumer Discretionary	3.7%	2.8%
Consumer Staples	3.8%	3.1%
Energy	25.6%	21.5%
Financials	4.4%	1.5%
Health Care	0.8%	0.8%
Industrials	2.3%	8.1%
Information Technology	2.1%	3.2%
Materials	57.1%	32.6%

The pie chart shows the composition by each sector's contribution to financed carbon emissions. This highlights that dominant sectors, in terms of emissions, tend to be Energy, Utilities, and Materials.



Contribution to Financed Carbon Emissions

WACI Trend of Current Holdings



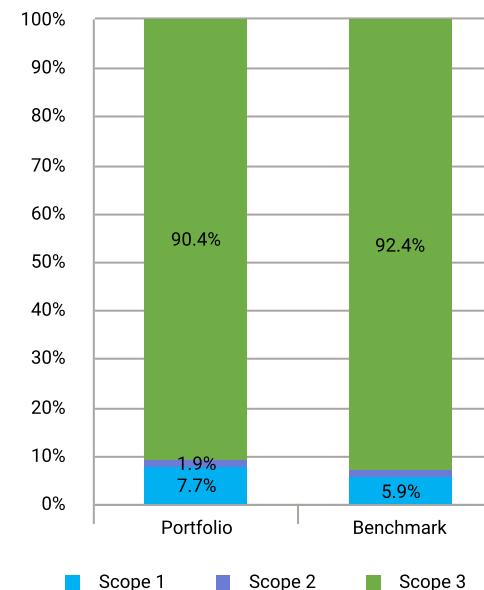
Change across 5 years = -27.6%

Change since baseline NZ year of 2019 = -27.6%

The timeline compares the historical and most recent financed carbon emissions of the portfolio to the benchmark based on the current constituents and weights.

* Reflects most recently available data for each company on the date of running the report

Type of Emissions as Percent of Contribution



The chart above illustrates the emissions profile of the portfolio compared with the benchmark, denoting the share between Scopes 1, 2 and 3 emissions. *Scope 3 is a combination of estimated and reported

Notice & Disclaimer

From MSCI ESG Research LLC

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