

FSI Group Carbon and Climate Dashboard Explainer

We believe that climate change is a significant investment issue now and into the future. Understanding how an investment manager is incorporating climate change in their investment decision-making, ownership practices and advocacy is important information for clients and other stakeholders.

We provide a Climate Change Statement on our website which is consistent with the Task Force on Climate-related Financial Disclosures' (TCFD's) recommendations. In addition, each of our investment teams provides a climate change statement articulating the approach they take to managing risks and opportunities.

With these climate change statements, we also provide interactive carbon footprint and climate risk reports for each investment team. This document provides information on which carbon footprint and climate change metrics show and don't show.

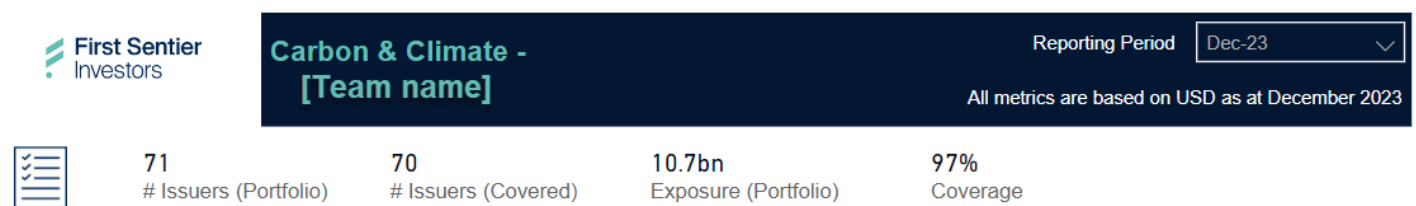
In previous years we have discussed the benefits and issues associated with carbon footprinting. Please see our [2016 RI and Stewardship Report](#) for full details. Notwithstanding these issues, we believe carbon footprinting is an important lens for considering portfolio exposure to greenhouse gas emissions when considered in context with other metrics. All carbon data is sourced from Institutional Shareholder Services Inc. (ISS) and numbers below are for illustrative purposes only.


Some issues we raised in our Climate Change Statement which are important to keep in mind:

- Data quality and availability issues, including that a significant proportion of carbon emissions data is estimated as not all companies report;
- Dividing Emissions by Revenue (for corporates) is often not the best intensity measure (see below) but has been recommended by the Task Force on Climate-related Financial Disclosures;
- Transition and stranded asset risks are not captured in carbon footprints;
- Other risks including physical risks are not captured in carbon footprints.

Header section

The header identifies the investment team(s) covered by the dashboard. In the top right corner is a drop-down box that can be used to change the reporting time period to any 3-month quarter for last 5 years. The date and currency are displayed under this box.



	Carbon & Climate - [Team name]	Reporting Period	Dec-23	
All metrics are based on USD as at December 2023				
	71 # Issuers (Portfolio)	70 # Issuers (Covered)	10.7bn Exposure (Portfolio)	97% Coverage

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Under the header are summary metrics for the number of Issuers in the portfolio, the number of issuers covered by our carbon data, the total exposure in USD represented by investments in the portfolio and the coverage expressed as a percentage. All metrics are based on USD.

Carbon and Climate metrics are reported separately for Corporate issuers (e.g. listed companies that may issue equity or debt securities) and Sovereign issuers (e.g. country governments and sub-national entities that issue debt securities). Equity portfolios only contain corporate issuers, whereas debt portfolios contain corporate and/or sovereign debt issuers depending on the portfolio.

Exposure refers to the proportion of the fund's assets under management that is relevant for the calculation of carbon and climate change metrics.

Corporate metrics

Portfolio Carbon Footprint

This metric measures the absolute greenhouse gas emissions associated with a portfolio (Scope 1 and 2) expressed in tCO₂e. Scope 1 and 2 emissions are allocated to investors based on an enterprise ownership approach (if an investor owns 10% of a company's total Enterprise Value Including Cash (EVIC), then they own 10% of the company and therefore of the company's emissions).

Portfolio Carbon Footprint



4.41M

Scope 1

1.19M

Scope 2

47.71M

Scope 3

5.60M

Scope 1+2

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Scope 1 emissions relate to direct emissions by the company (for example by burning fossil fuels). Scope 2 refers to indirect emissions from the generation of purchased electricity and heating by the company. Scope 3 refers to other indirect emissions in a company's value chain from sources they do not own or control (for example purchased goods and services, business travel, use and processing of sold products).

Uses: portfolio decomposition and attribution analysis. Not for comparison as the data is not normalised.

Relative Carbon Footprint

The carbon emissions of a portfolio per \$m invested. Scope 1 and 2 emissions are allocated to investors based on an enterprise ownership approach (if an investor owns 10% of a company's total Enterprise Value Including Cash (EVIC), then they own 10% of the company and therefore the company's emissions). This is then normalised by portfolio value.

Relative Carbon Footprint (Scope 1 & 2)



59.33

tCO₂e / \$m invested
Portfolio



115.62

tCO₂e / \$m invested
Benchmark



(48.69%)

Variance

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Variance shows the difference between the Carbon Footprint for all companies in the portfolio vs the benchmark as a percentage.

Uses: this metric normalises the measure of a portfolio's contribution to climate change based on investment size to enable comparisons to the benchmark and other portfolios.

Weighted Average Carbon Intensity

This metric measures the Weighted Average Carbon Intensity (scope 1 & 2) per \$m revenue for all companies in the portfolio. Carbon intensity is weighted by percentage exposure to each company.

Weighted Average Carbon Intensity



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Variance shows the difference between the carbon intensity (scope 1 & 2) per \$m revenue for all companies in the portfolio vs the benchmark as a percentage. Carbon intensity is weighted by percentage exposure to each company.

Uses: this metric adjusts for company size and is therefore a more accurate measurement of company efficiency than absolute emissions. It can be used for comparisons against a benchmark or another portfolio and for portfolio decomposition and analysis.

Fossil Fuel Exposure

This indicator tells an investor how much exposure a portfolio has to companies that are involved in fossil fuel related activities.

Fossil Fuel Exposure



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

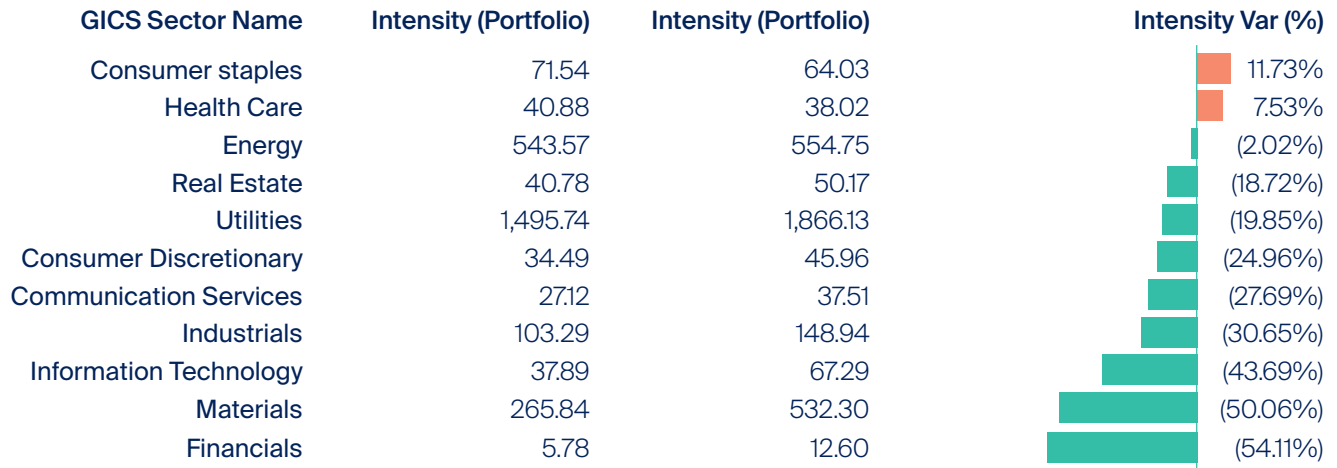
Fossil Fuel related activities are defined as:

- I. exploration, mining, extraction, distribution or refining of hard coal and lignite;
- II. exploration, extraction, distribution (including transportation, storage and trade) or refining of liquid fossil fuels; and
- III. exploring and extracting fossil gaseous fuels or from their dedicated, distribution (including transportation, storage and trade).

This metric also focuses on the supply side of energy. We can use this metric to gain a better understanding of the stranded asset risk within portfolios. Any exposure will flag the full weight of the holding.

Sector

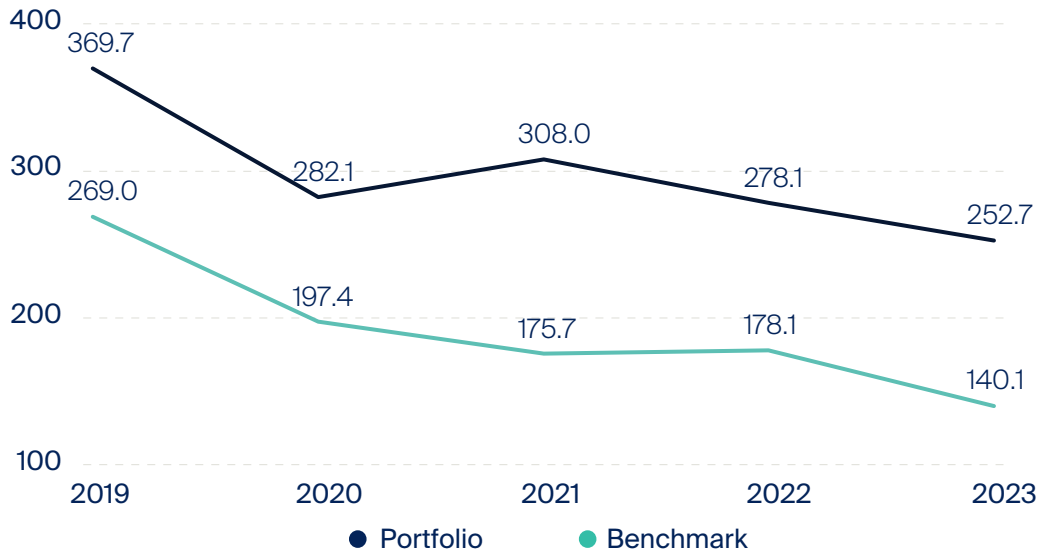
This chart shows the difference between the portfolio's weighted average carbon intensity against benchmark for each sector.



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Historical Weighted Average Carbon Intensity

This line chart compares the WACI trend for the portfolio vs the benchmark over the past 5 years.



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Top Contributors

This table shows the ten largest corporate contributors¹ to emissions in the portfolio based on the selected metric.

Issuer	Contribution to:	Contribution (%)
Santos Ltd.	25.11	25.59%
BHP Group Ltd.	23.82	24.28%
Rio Tinto Ltd.	16.01	16.32%
Woodside ENErgy Group Ltd.	9.48	9.66%
Northern Star Resources Ltd.	7.66	7.81%
James Hardie Industries Plc	4.74	4.83%
CSL Ltd.	2.11	2.15%
Woolworths Group Ltd.	1.48	1.51%
Telstra Group Ltd.	1.47	1.50%
IGO Ltd.	1.24	1.26%

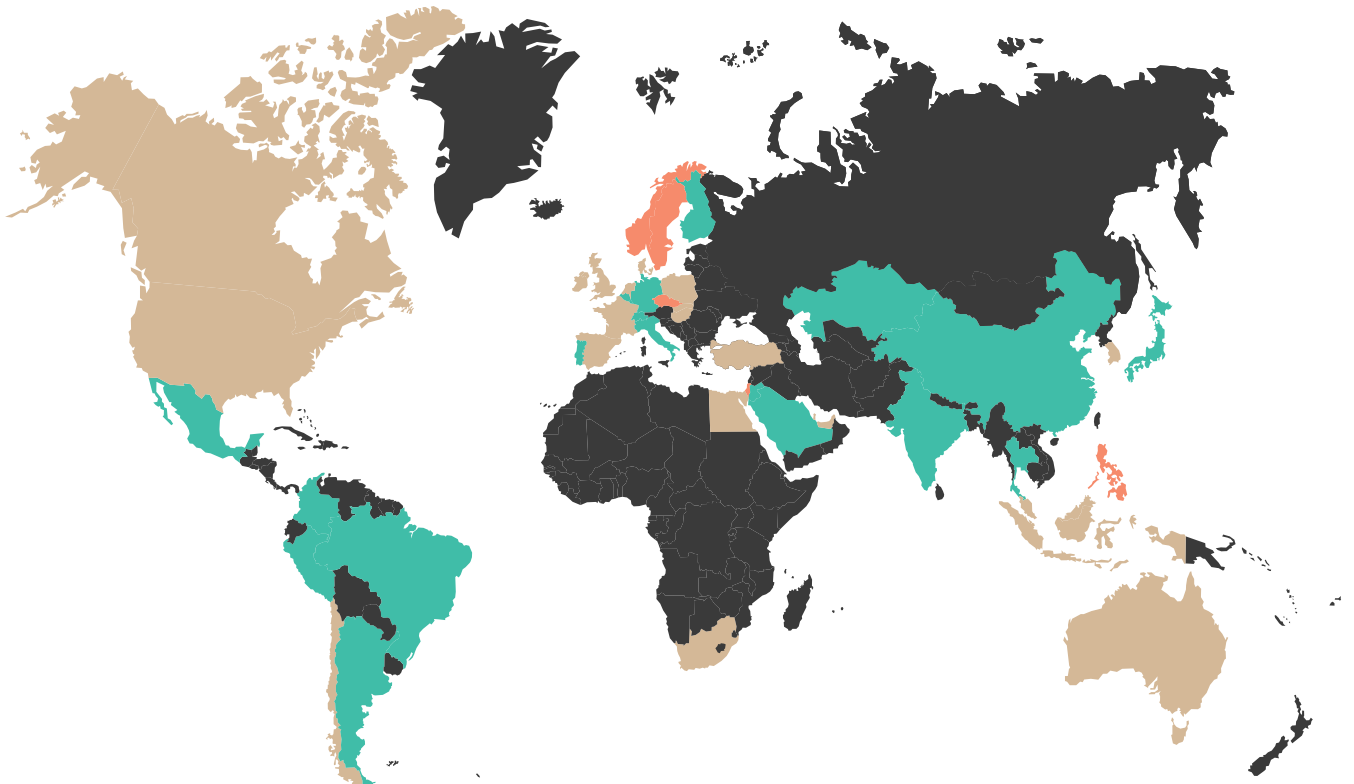
Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

¹ Reference to specific securities (if any) is included for the purpose of illustration only and should not be construed as a recommendation to buy or sell the same. All securities mentioned may or may not form part of the holdings of a portfolio or fund managed by the First Sentier Investors Group and are subject to change.

The contribution values represent the company’s portion of the total portfolio value for the selected metric, not the value of the metric for the company itself.

Country of Domicile

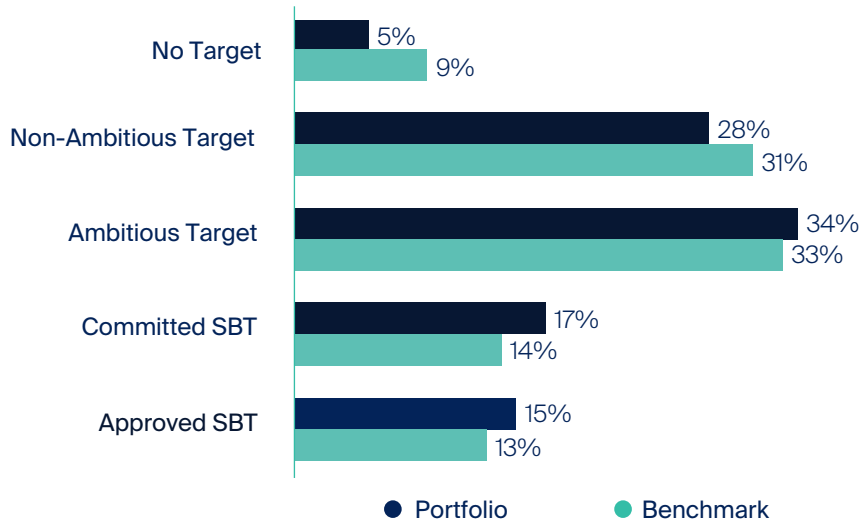
The colour represents the difference in weighted average carbon intensity for the companies held in the portfolio vs. the benchmark. Countries highlighted in green and orange are more than 50% below or above the benchmark respectively, amber represents less than 50% variance from the benchmark.



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

GHG Reduction Target

The “GHG Reduction Target” chart gives an indication of the portion of companies in the portfolio that have set GHG reduction targets and the nature of those targets. Companies are grouped into five categories distinguishing between “No Target”, “Non-Ambitious Target”, “Ambitious Target”, “Committed Science Based Target”, and “Approved Science Based Target”.



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Sovereign Section

Sovereign emissions are categorised differently to corporate emissions. We present two approaches to measuring sovereign emissions. Emissions for Sovereign debt security issuers are calculated according to the ISS Methodology for Sovereign Climate Data for both Production and Government emissions models.

Production Emissions are the emissions footprint of a country’s production according to International Sovereign accounting guidelines. The analysis allocates emissions to the portfolio based on the investor’s ownership of sovereigns, and a corresponding amount of the countries’ CO2 equivalent (CO2e) emissions.

Government Emissions are calculated in line with the ‘Partnership for Carbon Accounting Financials’ (PCAF) standard. This approach takes into account that a government bond co-finances both direct emissions from the public sector and investments made by the government. Accounting for sovereign GHG emissions is focused on the central government role of a country, which contains the central government activities themselves and the influence exerted by policies and regulations on the economy. The PCAF approach for sovereign bonds attributes emissions caused by a government based on sector-specific data. Using general government final consumption expenditure (% of purchasing-power-parity adjusted GDP (PPP-adjusted GDP)) allows to allocate parts of a country’s total emissions to its government.

Portfolio Carbon Footprint

Portfolio carbon footprint shows the amount of carbon emissions in tonnes of CO₂e from a sovereign debt issuer owned by the portfolio based on the portfolio's investment in sovereign debt securities, using both the Production and Government models.

Portfolio Carbon Footprint



1.47
tCO₂e / \$m
Production

126.20
tCO₂e / \$k
Government

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

The metric normalises the absolute production and government emissions by a sovereign's GDP (Gross Domestic Product, adjusted for purchasing-power-parity in current prices) in calculating sovereign Production and Government emissions.

Relative Carbon Footprint

Relative carbon footprint measures the carbon emissions of sovereign debt issuers in a portfolio, using both the Production and Government models.




	Production - tCO ₂ e / \$m PPP - adjusted GDP	Government - tCO ₂ e / \$m PPP - adjusted GDP
	392.02M Portfolio	32.61M Portfolio
	396.70M Benchmark	33.06M Benchmark
	(1.18%) Variance	(1.38%) Variance

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

The metric normalises the measure of a portfolio's contribution to climate change based on investment size to enable comparisons to the benchmark and other portfolios.

Weighted Average Carbon Intensity

The weighted average carbon intensity metrics normalise the absolute Production and Government emissions by a sovereign's GDP (based on purchasing-power-parity in current prices), providing sovereign production and government emissions per unit of PPP-adjusted GDP in the selected currency.

	Production - tCO2e / \$m PPP - adjusted GDP	Government - tCO2e / \$m PPP - adjusted GDP
	392.02M Portfolio	32.61M Portfolio
	396.70M Benchmark	33.06M Benchmark
	(1.18%) Variance	(1.38%) Variance

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

These metrics show how efficient a sovereign's production is relative to the emissions they produce, allowing for efficiency comparisons between sovereigns.

Note that the methodologies for calculating relative carbon footprint and weighted average carbon intensity are aligned and produce the same numbers for Sovereign emissions.

Top Contributors

This table shows the largest sovereign issuer contributors² to emissions in the portfolio based on the selected metric. The contribution values represent the issuer's portion of the total portfolio value for the selected metric, not the value of the metric for the issuer itself.

Issuer	Contribution to:	Contribution (%)
Government of the United States of America	48,467.23	40.41%
Government of Australia	26,719.49	22.28%
Government of Malaysia	22,486.19	18.75%
Government of Indonesia	5,894.47	4.91%
Government of Japan	2,900.43	2.42%
Government of the Philippines	2,558.08	2.13%
Government of Italy	2,308.22	1.92%
Government of France	1,632.80	1.36%
Government of Germany	1,157.18	0.96%
Government of Canada	1,094.74	0.91%

Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

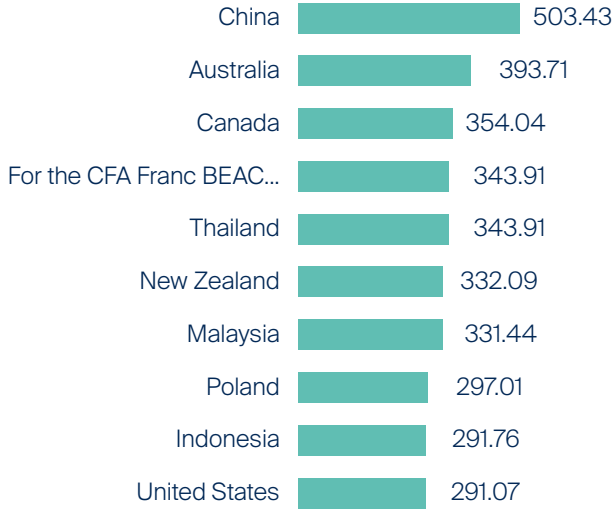
The table will display top contributors by either relative carbon footprint or weighted average carbon intensity metrics (Production and Government models) depending on the selection in the 'Contribution to' column.

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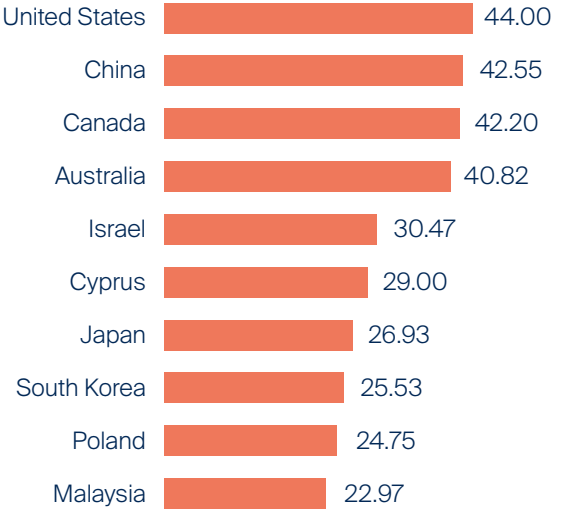
Issuing Country of Debt

In the chart, issuers held in the portfolio are ranked from largest to smallest weighted average carbon intensity using both the Production and Government models.

Production Carbon Intensity



Government Carbon Intensity



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

Historical Weighted Average Carbon Intensity

This line chart compares the WACI trend for the portfolio vs the benchmark using both the Production and Government models.

Production



Government



Source: ISS Climate data as at 31 Dec 2023, FSI Holdings data as at 31 Dec 2023

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