


# URGENTEM!

URGENTEM  ELEMENT6™

User Manual

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# Overview

Urgentem's Element6™ Platform toolkit allows financial practitioners to manage both forward-looking and potential climate risk within investment portfolios as well as providing guidance to understand best-practice fiduciary and regulatory requirements that will impact portfolio performance. Metrics have been built to cover regulatory reporting metrics along with portfolio risk management and optimisation functions. The toolkit has been constructed in consultation with lead IPCC authors, academics in finance and climate science, along with data-driven NGOs. Ensuring science-aligned metrics and analytics offers users a useful perspective when integrating climate risk data into risk management and reporting.

The analytics platform hosts emissions data encompassing Scope 1, 2 & 3 emissions, stranded asset and fossil fuel reserves data, corporate emissions targets and temperature pathway scenarios. This gives our clients an unparalleled climate risk vantage point.

## Data Encryption and Security

Urgentem knows that data is the foundation for all metrics and insights. We treat encryption and security as the core elements of our platform to ensure that our client data is protected to the highest standards.

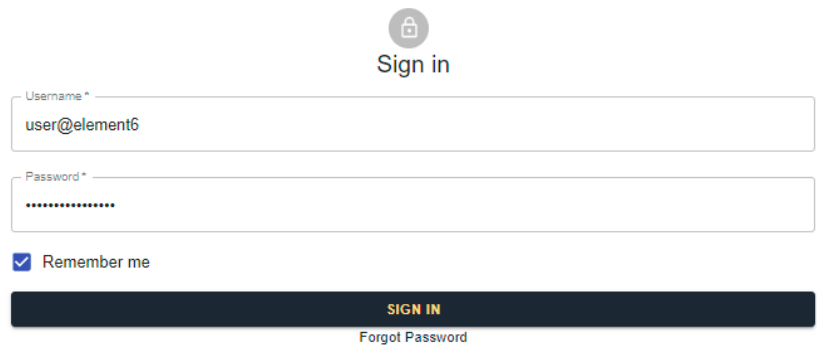
Multi-tenant architecture: We have implemented a multi-tenant architecture for our databases. Each client's data is hosted in its own tenant. Data stored in the databases are encrypted. Only the authorized admin personnel have access to the Production environment data. The test and development environment data is separately hosted from the Production environment data.

Client API access: Depending on the contractual obligations, we provide encrypted tokens that identify each client. These tokens are random URL-safe text strings generated using 32 bytes of Base64 encoding (As of 2015, it is believed that 32 bytes/256 bits of randomness is sufficient for the typical use-case to secure against brute-force attacks).

Dashboard access: We support multiple users for each client with each user having her/his own login credentials. Our dashboard uses cookies and they are set to expire (TTL/Time-To-Live) in less than 24 hours.

# Logging into the Analytics

Gain access to Element6™ by using your permissioned e-mail address and associated password. Logging in will lead you directly to the homepage. To log out of the analytics, click the user profile icon at the top-right corner of the platform and select 'Log out' from the dropdown.



The sign-in form is located in the top-right corner of the platform. It features a 'Sign in' button with a lock icon. Below the button are two input fields: 'Username \*' with the text 'user@element6' and 'Password \*' with a masked password '\*\*\*\*\*'. A 'Remember me' checkbox is checked. At the bottom of the form is a dark blue 'SIGN IN' button. Below the button is a link for 'Forgot Password'.

## User Profile Settings

The User Profile Settings can be accessed by clicking on the user profile icon at the top right of the dashboard. Within the dropdown menu, click on the 'Setting' icon. This will take you to the 'Settings' page.

### Change User Password

Here you can change the user password by clicking on 'Change Password'. We advise users to set a strong 12-character (or more) alpha-numeric password using: upper and lower-case letters, numbers, and special characters.

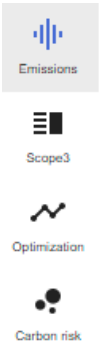
# Module 1: Home Page

The dashboard is composed of the Navigation Panes, Top Bar, and the Left Sidebar. A brief description of each of these components is described below. Clicking on the 'Urgentem | Element6' button at the top left of the dashboard will take the user back to the Homepage with the portfolio summary.



## Left Sidebar

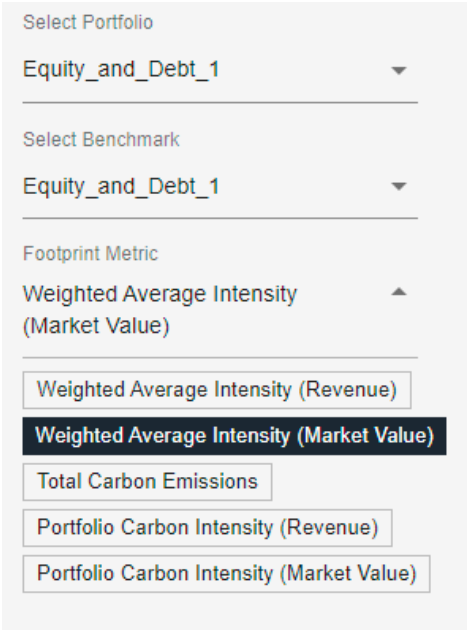
The sidebar on the left is used to navigate the analytics. Clicking on the element will take you to the module page.



## Module Controls

Each module has a set of controls that can be used to interact and control the analytics. The control panel is located on the left-hand side of the dashboard. To load a Portfolio or Benchmark, select from the "Select Portfolio" and "Select Benchmark" dropdown menus. Upon selection, the portfolio and benchmark will load into the platform. The other dropdowns and options available in the control panel will vary depending on the module selected.

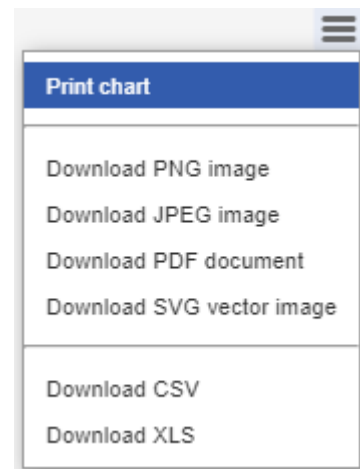
In this example, the 'Weighted Average Intensity (Market Value)' has been selected from the 'Footprint Metric' dropdown menu. The selected option will be highlighted in black.



## Other Features

### Download Options:

Most charts and underlying data can be downloaded. Click on the icon at the top right of the chart or table. This will present a dropdown with different export options, including: PNG, JPEG, PDF or excel output.



### Navigation Tabs:

Tabs are located directly above each Module Title and below the Top Bar. These tabs are used to navigate through each of the modules and are found throughout the analytics.

PORTFOLIO EMISSIONS    SECTOR EMISSIONS

## Other Global Features

### Uploading a Portfolio

1) On the Home Page, click on the 'Upload Portfolio' button. This will open a pop-up window:

Upload Portfolio

Please download our sample portfolio for an exemplary structure of your portfolio.  
[Portfolio Template](#)  
[Fund of Funds Template](#)

Currency :

USD (\$)

Portfolio Value :

1000000000

Portfolio Name :

Description

Description

Benchmark

☐ Yes ☐ No

Rebalance Portfolio Weights

☐

Fund Of Funds

☐

Upload

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Click on 'Sample Portfolio' to download the portfolio template. This sheet will contain the following information:

ISIN	Security Name	Weight	Security Type
US0378331005	APPLE INC	0.334	Equity
XS1678970291	BARCLAYS PLC	0.333	Corporate Bond
MX0MGO00000	MBONO 8 12/07/23	0.333	Sovereign Bond

Fill in this excel spreadsheet with the same formatting. Filling-in the portfolio information in this format - as completely as possible - will facilitate efficient matching with our fundamentals and emissions database. The 'Security Type' column is optional. Save the portfolio upload file as a .xlsx or .csv file.

2) Assign this portfolio a name within the pop-up window. Next, set the Portfolio Value (in USD) and add a portfolio description (optional). The 'Benchmark' checkbox can be used to set the portfolio as a benchmark. Benchmark portfolios have restricted functionality within Element6. The download, fund of funds, and portfolio-specific data modules (e.g. company profile, target setting, etc.) are all disabled for benchmark portfolios.

3) [Optional] Tick the 'Rebalance Portfolio Weights' checkbox. This option will rebalance the raw portfolio weights so that the sum equals 1 (100%). A warning message will be displayed if the checkbox is not selected and the portfolio weights do not add up to 1.

3) Then, click on the 'Upload' button and select the portfolio upload file saved on your device. A pop-up window will appear indicating that the portfolio has been successfully uploaded. If there are any issues with the portfolio, an error message detailing the issue will be displayed.

4) On completion, the file is directly uploaded into a secure database and the analytics engine processes the portfolio data to match with Urgentem's emissions database.

The security ISINs are matched first, followed by Tickers. It is best to ensure that the ISINs provided are as up-to-date as possible. Our matching process relies on the ISINs provided by Bloomberg. In addition, make sure that the sum of the portfolio weights totals 1.

Uploading a new portfolio (under a new name) will initialise a new portfolio in the platform. If a portfolio is uploaded with the same Name as an existing portfolio, an error message will be displayed detailing that another portfolio name should be used. All historically uploaded portfolios are accessible and recoverable.

5) Once the portfolio is ready for analysis, the portfolio will be available in the Portfolio dropdown list within the Top Bar.

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## Uploading a Fund of Funds Portfolio

To upload a fund-of-funds portfolio, there is a slightly different upload procedure.

1) On the Home Page, click on the 'Upload Portfolio' button. This will open a pop-up window:

Upload Portfolio

×

Please download our sample portfolio for an exemplary structure of your portfolio.  
[Portfolio Template](#)  
[Fund of Funds Template](#)

Currency :

USD (\$) ▾

Portfolio Value :

1000000000

Portfolio Name :

Description

Description

Benchmark

☐ Yes ☐ No

Rebalance Portfolio Weights

☐

Fund Of Funds ☒

Upload

2) Click on the 'Fund of Funds' checkbox and download the sample Fund of Funds portfolio excel template. This template will look like the following:

FundName	FundWeight	ISIN	ISINWeight
A	0.5	CA03938C1041	0.1
A	0.5	FR0000471930	0.8
A	0.5	DE0003304101	0.1
B	0.5	ES0166300212	0.1
B	0.5	BMG3654D1074	0.8
B	0.5	XS2193662728	0.1

3) Each portfolio within the fund-of-fund portfolio should be entered on one sheet. Complete the excel template and save the excel sheet in .xlsx format. The requirements for the upload file are that the total fund weight =1, and the total weight of the securities are also required to add up to 1. If these requirements are not fulfilled, and the "rebalance portfolio weight" checkbox is not selected an error message will be displayed.

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- 4) Then, click on the 'Upload' button and select the fund-of-funds portfolio upload file saved on your device. A pop-up window will appear indicating that the portfolio has been successfully uploaded. If there are any issues with the portfolio, an error message detailing the issue will be displayed.
- 5) On completion, the file is directly uploaded into a secure database and the analytics engine processes the portfolio data to match with Urgentem's emissions database.
- 6) Once the portfolio is ready for analysis, the portfolio will be available in the Portfolio dropdown list within the Top Bar.

## Deleting Portfolios

Portfolios can be removed from the Element6™ dashboard within the admin page in settings. This feature is only available for the admin user of the account.

## Portfolio Dates, Emissions Data and Financials Data

### Financial Data

Element6™ uses fiscal year company financial data and annually reported emissions data. Portfolios are matched to the financials and fundamentals data for the latest (or selected) year.

### Emissions Data

Emissions data will be matched based on the selected year. Note that the Urgentem emissions dataset is composed of reported emissions data from the previous reported period. For instance, the Urgentem 2020 dataset consists of 2019 reported emissions data.

### Emissions Footprinting at Selected Dates

Urgentem uses the emissions intensity of revenue (tCO<sub>2</sub>e/\$m Revenue) for company and portfolio level footprinting. The assumption is that greenhouse gas emissions are very highly correlated with revenue i.e. when revenues increase, generally, greenhouse gas emissions increase to the same degree. Within the Urgentem emissions dataset, these values are calculated using revenue figures which match the reporting period for emissions. The Urgentem methodology for footprinting uses changes in revenue to model for changes in emissions over the short term. This means that for portfolios that are analysed in Q4 2019 using 2018 emissions data, the 2018 intensity figures are then multiplied by the 2019 revenue to estimate the 2019 absolute emissions.

## Potential Issues on Upload

**Corporate Actions:** All active securities are included in the analysis. Where a provided ISIN is unable to be analysed due to corporate action, this security is excluded from the analysis.

**Private Companies:** Private companies will only be included in the portfolio analysis where financial and fundamentals data is available. If you have private companies which you would like to include, please speak to your account manager to arrange for the mapping to be done. You will need to provide sector and revenue data.

**Bonds issued through private subsidiaries:** Some bonds are issued through a private arm of the parent company or special purpose vehicle (SPV). As mentioned previously, matching difficulties arise with private companies and financial information may be unavailable.

## Uploaded Portfolio Status

On the homepage, there is a section titled 'Uploaded Portfolios' which details the status of all uploaded portfolios. This table displays:

- **Portfolio Name:** The Names of the uploaded portfolios to date.
- **Emissions Data Coverage (%):** The percentage of the portfolio which has been successfully matched to the Emissions database.
- **Emissions Weight Coverage (%):** The total portfolio weight covered in the analytics.
- **Version:** This indicates the version of the portfolio. Portfolios can be modified and saved within the Element6 platform.
- **Processing Date:** The Timestamp of the portfolio processing.
- **Missing ISINs [icon]:** This will generate an excel with a list of ISINs not covered in the analysis

Portfolio Name	Emission Coverage (%)	Version	▲ Processing Date
Impact_Report_Portfolio_20200114	100	0	22-06-2021 09:46:51 <span>MISSING ISINs</span>

## Setting the Portfolio Exchange Rate

Within the Top Bar, you will find the "Currency Settings" pane on the far right. The default settings are in 1: 1 USD. The exchange rate has an influence on any metric that includes currency within the analytics. The exchange rate is by default set to USD per 1 foreign. To change the exchange rate, click on the user icon at the top right of the dashboard and then click on 'Settings' from the dropdown. You will then be presented with the following 'Currency Settings' box:

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Currency Settings

Update

Select Year :

2020

Select Quarter :

Q1

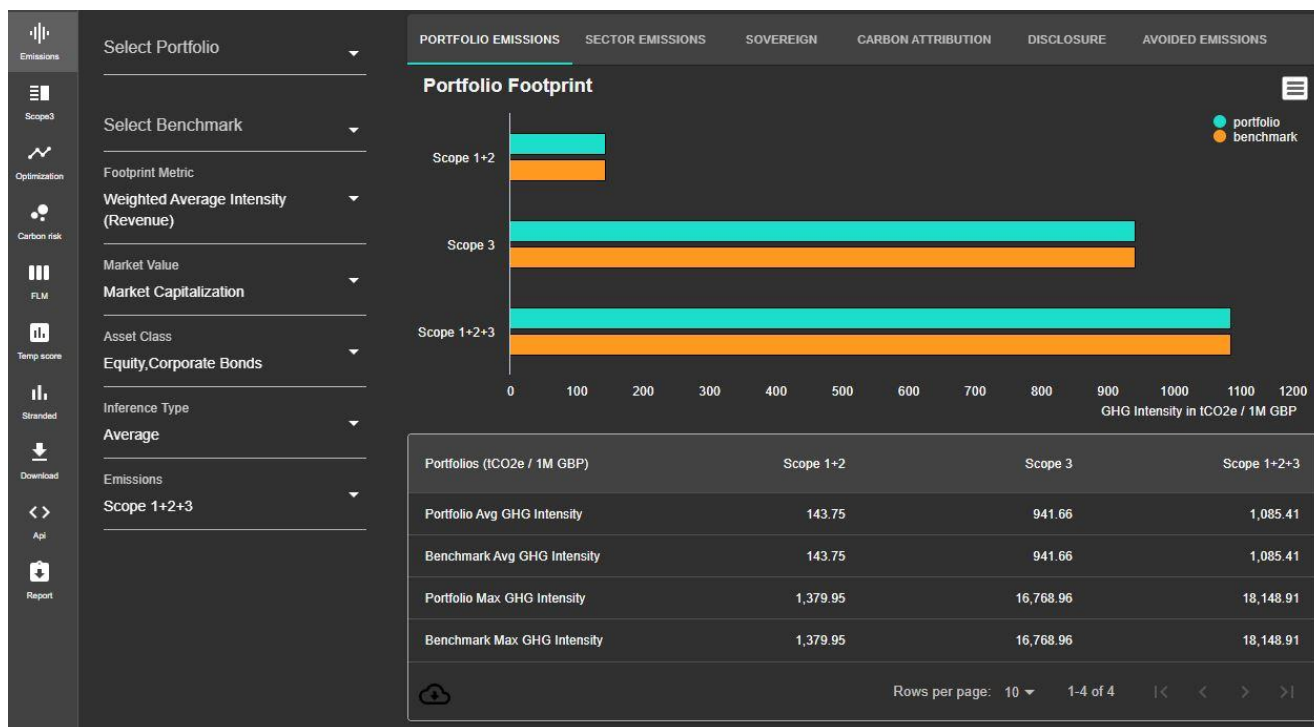
Select Currency :

USD (\$)

Changing the exchange rate from USD to EUR, for instance, will convert the carbon intensity by the latest approx. USD/EUR exchange rate: 1.2 USD per 1 EURO. The user can select the Year, Quarter and Currency from the dropdown menus. For historical exchange rates, simply select the appropriate Year and Quarter. Click 'Update' to change the exchange rate used in the analytics.

## Change Dashboard Theme

The Element6 platform is available in light and dark themes. The default theme of Element6 is the light theme. To change the theme, click on the User icon at the top right of the screen and click on 'Change Theme'. Below is an example of the Element6 dashboard in 'Dark Mode':



## Carbon Footprinting

Urgentem has a range of methodologies to estimate the greenhouse gas emissions intensity of all constituent securities in a portfolio. The emissions intensity for listed equities, corporate bonds and sovereign bonds can all be estimated. The choice of the methodology applied depends on the asset classes and on the timescale applied in the analysis.

Carbon emissions analytics begin at the company level and the security level emissions are therefore always linked to the issuing company. The following section details how to calculate the carbon intensity of a single security before it is aggregated to the portfolio, fund, or sector level.

The portfolio footprinting module allows you to calculate the portfolio carbon intensity, footprint and financed emissions using various denominators in order to meet various recommendations in line with the TCFD (Task Force for Climate-related Financial Disclosures), PRI (Principles for Responsible Investment) and EU Taxonomy. The module includes tools for footprinting equities, corporate bonds and sovereigns, along with insightful sectoral analysis. Footprinting metrics can be used over historical periods to allow for trend analysis and as key performance indicators to assess progress against targets.

## Absolute Emissions and Carbon Intensity

Absolute Emissions are measured in tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e). Absolute Emissions are calculated using the GHG Protocol methodology; this standardisation allows for aggregation and comparability of climate transition risk across organizations and jurisdictions. There are 3 Emissions Scopes within the GHG protocol to account for. These are defined in the table below:

### Emission Scopes

<u>Company Valuation:</u>	<u>Definition</u>
<i>Scope 1 Emissions</i>	Direct emissions from a company's operational activities.
<i>Scope 2 Emissions</i>	Indirect emissions from the purchase of electricity.
<i>Scope 3 Emissions</i>	All other emissions over which the company has influence but not control, such as the distribution of goods, transportation of purchased goods, transportation of waste, disposal of waste, employee commuting, business travel or investments.

tCO <sub>2</sub> e	Carbon dioxide equivalent is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential. tCO <sub>2</sub> e = Tonnes of CO <sub>2</sub> e
--------------------	--

Absolute emissions are normalised by a scaling factor to calculate carbon intensity. This normalisation allows for comparability across securities. The three most widely adopted carbon intensity denominations are by Revenue, Market Capitalisation and Enterprise Value.

## Exchange Rate Conversion

Carbon intensities are converted by multiplying the original intensity by the foreign exchange rate for the year and quarter-end. For example, a security with a Scope 1+2 intensity of where revenue is in USD can be converted to GBP by multiplying this intensity by the amount of USD per GBP.

## Average and Maximum Intensity

Urgentem utilises two methodologies for inferring missing values in our emissions dataset. Missing values are from non-disclosure and from non-analysed companies. These missing values are filled in using either an average estimate of its likely intensity or the maximum.

Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICS Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk. For a more detailed technical explanation, please refer to the Data Methodology reference document.

## Other Calculation Requirements

### Asset Classes:

When calculating the carbon intensity of a portfolio, it is essential to determine which asset classes are to be analysed. The following asset classes are footprinted as such:

<u>Asset Class:</u>	<u>Carbon Footprint Methodology</u>
Equity	Carbon intensity of issuing company
Corporate Bonds	Carbon intensity of issuing company

Loans	Carbon intensity of issuing company
Equity + Corporate Bonds + Loans	Sum of above methods
All asset classes	All asset classes within the portfolio analysed

The portfolio can be subset to include or exclude securities from the total calculation. For instance, if a portfolio contains 70% equity and 30% bonds, yet the analysis only requires the analysis of equity, the equity holding weights need to be rescaled by the size of the bond allocation. This rescaling ensures that the total weights of the portfolio analysed always totals 100%. Weights are only normalised when required for calculations e.g. Weighted Average.

### Company Valuation:

There are a range of company valuation metrics to consider when calculating a portfolio's footprint:

<u>Company Valuation:</u>	<u>Definition</u>
<i>Market Value (Capitalisation)</i>	This represents the total dollar market value of a company's outstanding shares of stock.
<i>Market Value (Capitalisation) + Total Debt</i>	This represents the total dollar market value of a company's outstanding shares of stock in addition to the sum of all short and long-term debt.
<i>Enterprise Value:</i>	<p>Enterprise Value represents the market value of a company's outstanding shares of stock, plus short-term and long-term debt, plus Preferred Equity minus Cash (and cash equivalents).</p> <p>The EU Technical Expert Group on Sustainable Finance (TEG) Report on Benchmarks (September 2019) details: <i>"using Enterprise value as a denominator for the carbon intensity allows for the applicability of the methodology to both equity and/or fixed-income investments and does not bias for or against any particular sector"</i>.</p>
<i>Enterprise Value including Cash</i>	Enterprise Value represents the market value of a company's outstanding shares of stock, plus short-term and long-term debt, plus Preferred Equity plus Cash (and cash equivalents).
<i>Total Debt only:</i>	The sum of all company's short and long-term debt.

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# Module 2: Portfolio Footprint

## Module Settings:

In the Left Sidebar you will find the module settings. These controls allow you to set the parameters of the carbon footprint calculation and set the scope of analysis.

Sector Classification

SASB

Footprint Metric

Weighted Average Intensity (Market Value)

Market Value

Market Capitalization

Asset Class

Equity, Corporate Bonds

Inference Type

Average

Emissions

Scope 1+2+3

Sector Classification	Select either SASB SICs or Standard Sector classifications. This will influence the sector-level analytics in the sectoral weights, footprints and contributions. It will also define the sector classification used in the Carbon Attribution analysis.
Footprint Metric	Select how the footprint should be calculated. These can be based on weighted-average intensities, financed emissions (total emissions), or portfolio intensity.
Market Value	Select the denominator for the calculation. This dropdown allows the user to change the $Company Value_i$ used within the footprinting calculation.
Asset Class	Define which asset classes to include in the footprint.
Inference Type	Select either Average or Maximum. Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICs Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.

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Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the intensities used within the Sectoral Intensity and Sectoral Contribution Charts.
-----------	--

## Portfolio Carbon Intensity

The chart on the top page is the Portfolio Carbon Intensity chart. This displays the carbon intensity (or footprint) of the portfolio and the benchmark in terms of Scope 1+2, Scope 3 and Scope 1+2+3. The chart plots the intensity the total portfolio carbon footprint for Scope 1+2, Scope 3 and Scope 1+2+3, when utilising the *Absolute Emissions<sub>*i*</sub>* for each security *i* within the portfolio. The figures underlying the chart can be found in the table below. Use the settings available in the left Sidebar to update the chart and table. Note that changing the Emissions option will not change the chart and table as all emissions scopes are already displayed. The following Module Settings within the analytics allow the user to change the formula inputs.

In the below example, the Weighted Average Intensity (Revenue) has been selected. Upon selection, the portfolio and benchmark portfolio Scope 1+2, Scope 3 and Scope 1+2+3 intensity chart will update accordingly.

Footprint Metric

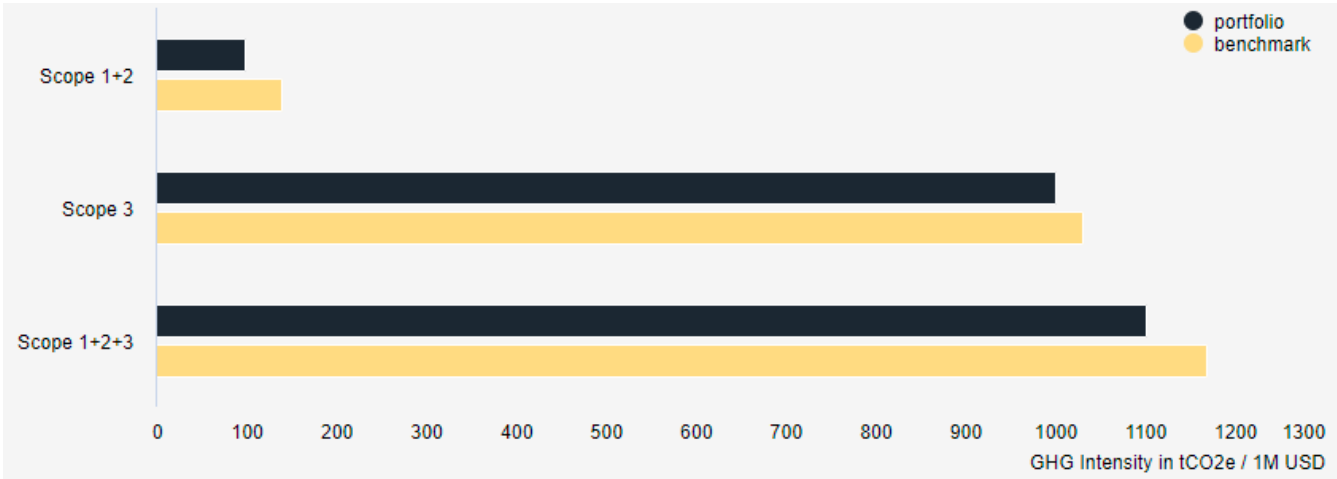
Weighted Average Intensity (Revenue)

Weighted Average Intensity (Market Value)

Total Carbon Emissions

Portfolio Carbon Intensity (Revenue)

Portfolio Carbon Intensity (Market Value)



Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
------------------	---

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Market Value	This dropdown allows the user to change the <i>Company Value<sub>i</sub></i> used within the footprinting calculation.
Asset Class	Define which asset class(es) are to be included in the footprinting calculation.
Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICS Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.

To download the chart image or underlying data, click the 'Download' icon at the top right of the chart.

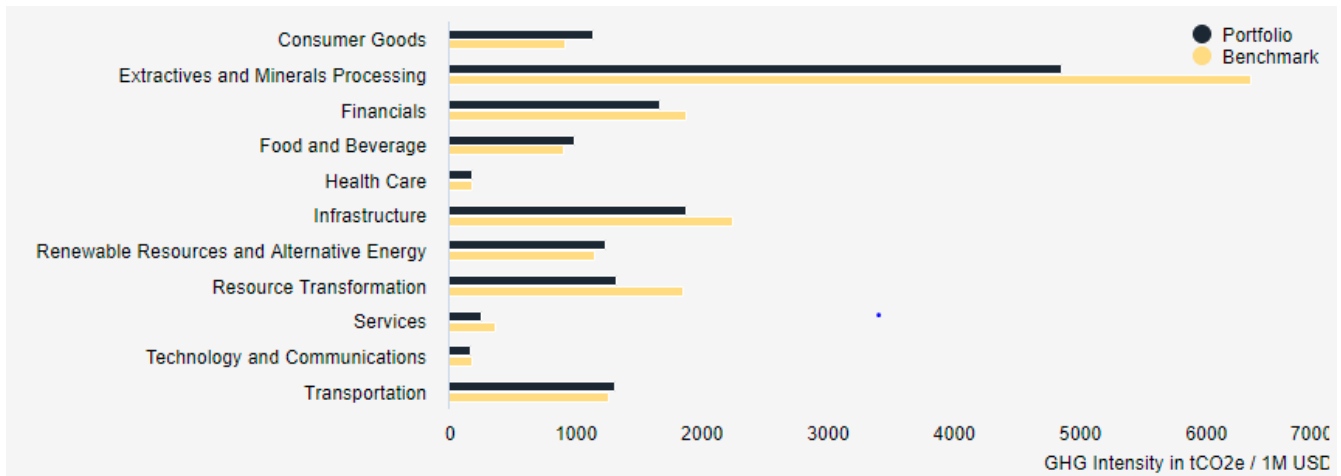
## Portfolio Sector Weights

This chart displays the total weight in each sector for the portfolio and benchmark. The following Module Settings influence the chart:

Sector Classification	Select either SASB SICS or Standard Sector classifications. This will influence the sector-level analytics in the sectoral weights, footprints and contributions.
Asset Class	Define which asset class(es) are to be included in the sector weights

## Sectoral Intensity and Contribution

The Sectoral Intensity chart displays the total carbon intensity of each sector within the portfolio and benchmark if each sector and was given an equal weighting. Like the 'Portfolio Carbon Intensity Chart', different footprint metrics can be calculated here.



The Sectoral Contribution chart displays the total carbon intensity of each sector within the portfolio and benchmark when factoring in the actual portfolio weightings. The following are inputs into the Sectoral Intensities and Sectoral Contribution charts.

The following Module Settings influence these charts:

Sector Classification	Select either SASB SICS or Standard Sector classifications.
Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Market Value	This dropdown allows the user to change the $Company Value_i$ used within the footprinting calculation.
Asset Class	Define which asset class(es) are to be included in the footprinting calculation.
Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICS Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.
Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the intensities used within the Sectoral Intensity and Sectoral Contribution Charts.

# Sovereign Emissions

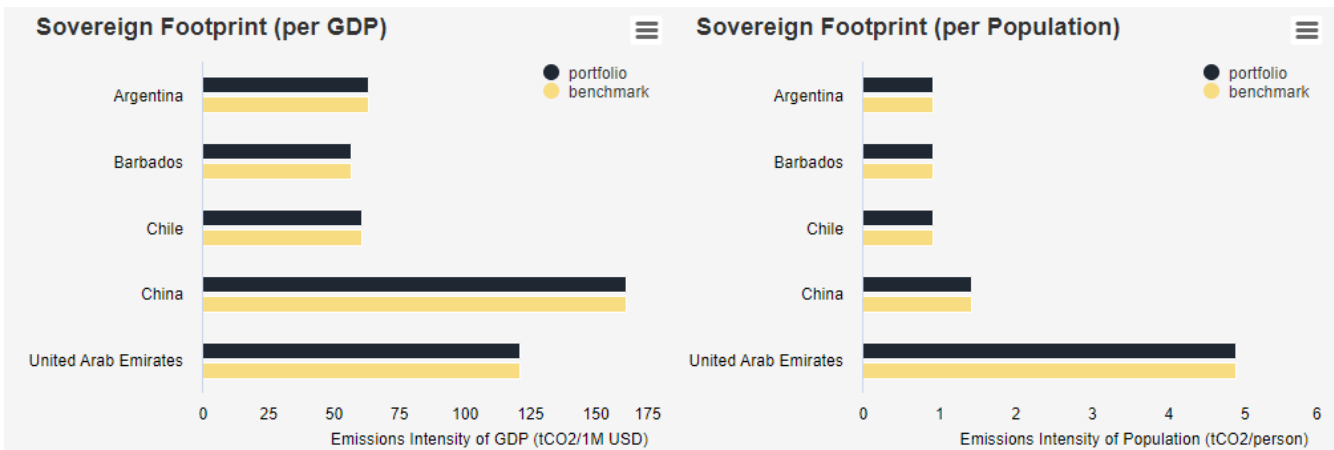
It is important also to consider the climate risk attributed to sovereign bonds. We currently use two methods to calculate the carbon intensity of sovereigns:

## Sovereign Footprint per GDP

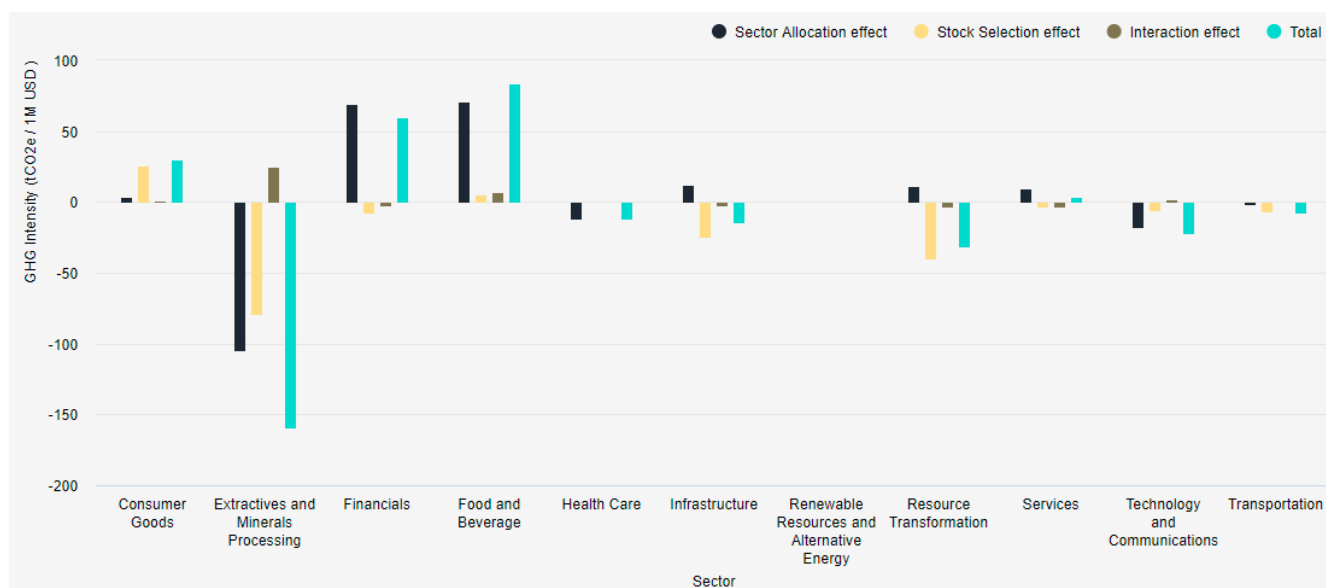
This sovereign bond footprint metric represents the relationship between the average amount of GHG emissions (tCO<sub>2</sub>e) generated per 1 million USD of country-level economic output (GDP).

## Sovereign Footprint per Population

This sovereign bond footprint metric represents the relationship between the average amount of GHG emissions (tCO<sub>2</sub>e) generated per the national population.



# Carbon Attribution



The carbon attribution analysis is a tool to identify the specific areas of the portfolio and benchmark carbon intensity performance. Use the dropdowns at the top of the module to update the Carbon Attribution Chart. This analysis is conventionally used to identify whether outperformance in returns between the portfolio and the benchmark derives from the selection of better stocks within a given sector or attributed to better sector holdings. For each sector, the chart is broken down into 4 components: Security selection effect, Sector allocation effect, Interaction effect and Total effect. The carbon attribution utilises this same framework, yet uses the carbon intensity of holdings within the portfolio instead of observed returns. Note that the figures detailed in this chart are the reverse to the performance attribution analysis. The reduction in carbon intensity (a positive outcome) is reflected by negative figures - and vice versa.

The Security Selection effect measures the impact of individual security selection on the carbon intensity against the benchmark within a respective sector. In essence, this measures the portfolio manager's carbon performance with regards to individual security picking. The Sector Allocation effect illustrates the impact of sector weighting on the carbon intensity against the benchmark. In essence, this measures the portfolio manager's carbon performance with regards to Sector Selection. The interaction effect measures the combined impact of the selection and allocation decisions within a sector. For instance, if there is superior stock selection and the sector is over-weighted, then the interaction effect is positive. If there is superior stock selection, but the sector is underweighted, the interaction effect is negative.

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The following items in the below table are required to create the carbon attribution chart:

Sector Classification	Select either SASB SICS or Standard Sector classifications.
Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Market Value	This dropdown allows the user to change the $Company\ Value_i$ used within the footprinting calculation.
Asset Class	Define which asset class(es) are to be included in the footprinting calculation.
Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICS Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.
Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the intensities used within the Sectoral Intensity and Sectoral Contribution Charts.

This example shows a case in which the portfolio manager's sector allocation is positive, illustrating the carbon impact of their sector weighting, however, the stock allocation is negative indicating that the stocks selected perform better than that of the benchmarks, with the total effect being a negative carbon impact.

### Methodology

$Sector\ Allocation\ Effect_i = Difference\ in\ Sector\ Weights\ (Portfolio\ \&\ Benchmark)\ times\ Sector\ Intensity\ of\ Benchmark$

$Stock\ Selection\ Effect_i = Sector\ Weights\ (Benchmark)\ times\ Difference\ in\ Sector\ Intensity\ (Portfolio\ \&\ Benchmark)$

$Interaction\ Effect_i = Sector\ Weights\ \Delta \times Sector\ Intensity\ \Delta$

$Total_i = Sector\ Allocation\ Effect_i + Stock\ Selection\ Effect_i + Interaction\ Effect_i$

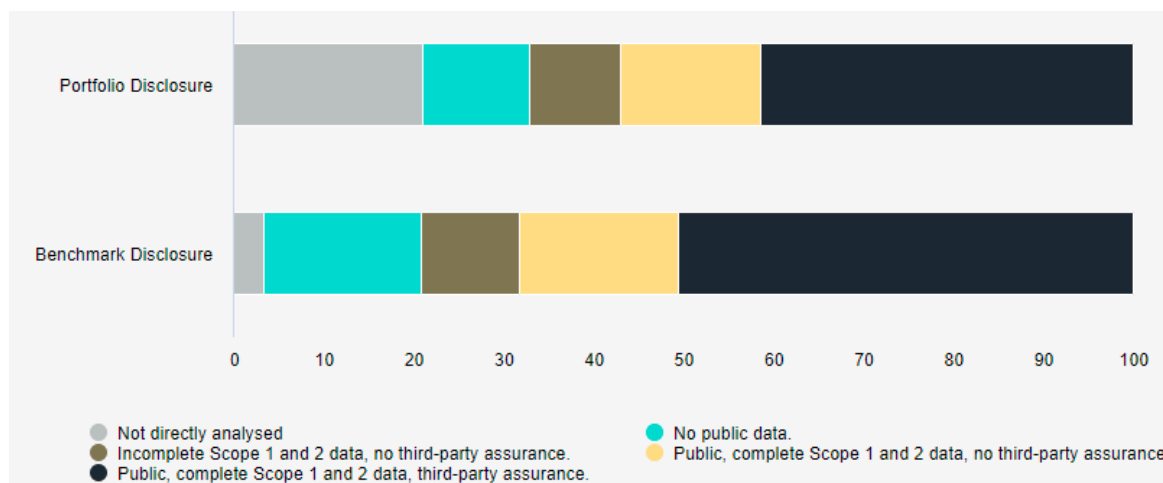
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## Disclosure

This module details the level of disclosure across the Scope 1+2 and Scope 3 categories within the Portfolio and the chosen Benchmark. The charts detail the disclosure categories in terms of portfolio weight.

### Scope 1+2 Disclosure

This chart shows the percentage of the portfolio that is invested in companies that Urgentem has directly analysed and accepted as disclosing complete greenhouse gas emissions data for Scopes 1 and 2, and the corresponding percentage invested in companies whose intensities had to be modelled.



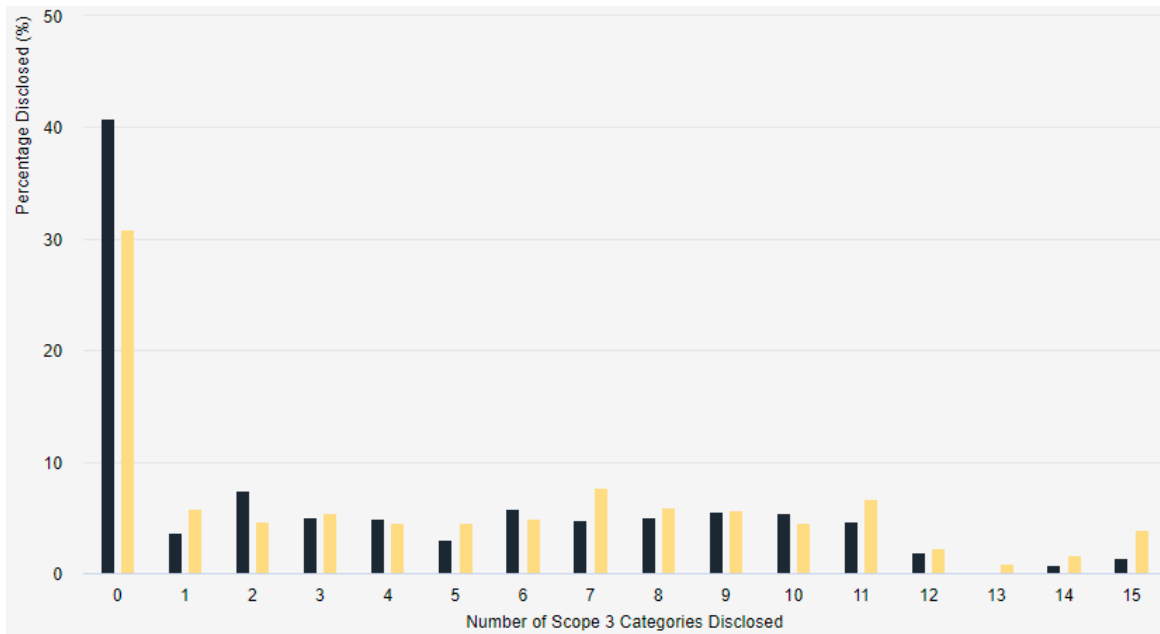
This chart is constructed by calculating the percentage of allocations in each of the Urgentem Disclosure categories. The disclosure categories and their respective numbers are as follows:

Public, complete Scope 1 and 2 data, third-party assurance	1
Public, complete Scope 1 and 2 data, no third-party assurance	2
Incomplete Scope 1 and 2 data, no third-party assurance	3
No public data	4
Not directly analysed	5 (or blank)



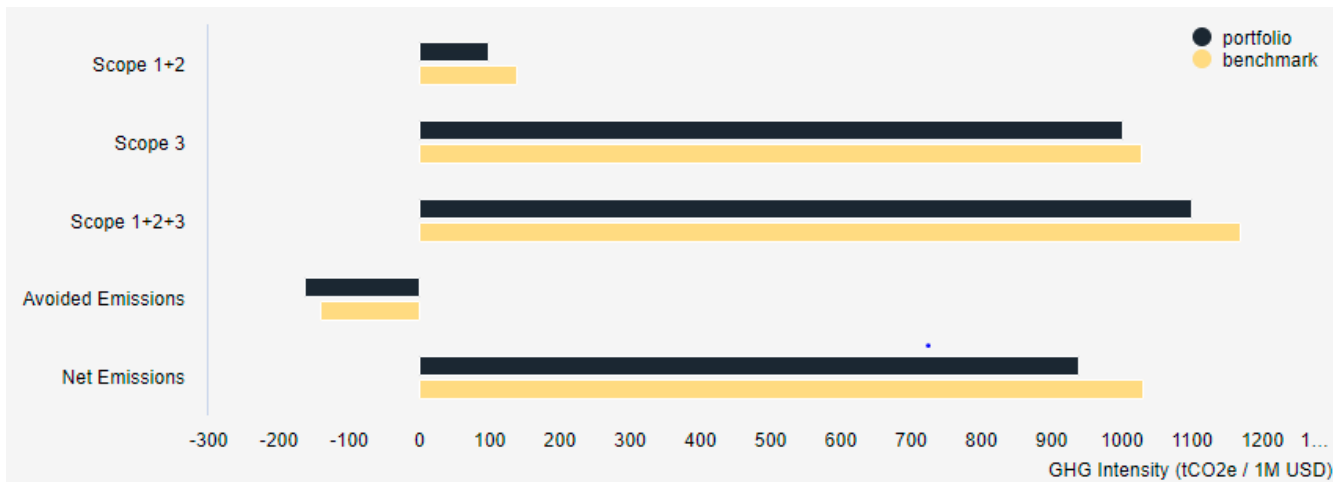
## Scope 3 Categories Disclosure

Highlights the number of Scope 3 categories disclosed out of a possible 15 for both the portfolio and benchmark. The chart plots the proportion of each of these categories to the total for the portfolio and benchmark.



## Avoided Emissions

This module calculates the avoided emissions for your portfolio. It utilises a set of unique sectoral methodologies developed by Urgentem to calculate the carbon savings produced by companies compared to their industry peers in solutions-oriented sectors. This methodology can be requested from Urgentem.



## Module 3: Scope 3 Materiality

Select 'Scope 3 Materiality' from the Left Sidebar to access the module.

### Portfolio Scope 3 Heatmap

This table displays the hotspots of carbon intensity within each of the portfolio's sectors for each of the 15 Scope 3 categories (supply chain emissions). This tool is useful as the TCFD recommends that investors report on Scope 3 emissions where material. Typically, 'Use of Sold Products' is the most material emissions category, however, other key categories include 'Scope 3 Category 15: Investments' for the Financials sector and 'Scope 1+2' for Utilities.

Financials	0.23	1.08	0.03	0.02	0	0.06	0.08	0.02	0.04	0.22	0.01	0	0.02	0.17	88.77
Extractives and Minerals Processing	15.98	0.43	0.77	0.59	0.04	0.02	0.03	0.01	11.7	25.15	100	0.82	0.16	0.08	5.3
Transportation	2.59	0.61	0.35	0.45	0.04	0.01	0.05	0	0.08	0.02	11.45	0.13	0.02	0.03	0.1
Infrastructure	26.48	1.01	4.58	0.25	0.12	0.02	0.02	0.01	0.83	0.38	19.54	0.08	1.53	0.01	0.88
Services	0.42	0.07	0.08	0.14	0.01	0.03	0.04	0.02	0.07	0	0.33	0.01	0.23	2.61	0.11
Resource Transformation	5.19	0.46	0.52	0.5	0.05	0.07	0.09	0.03	0.33	0.81	40.71	1	0.03	0.31	0.54
Health Care	0.83	0.33	0.1	0.28	0.03	0.14	0.09	0.05	0.26	0.08	1.95	0.05	0.01	0	0.01
Consumer Goods	0.93	0.38	0.12	0.69	0.03	0.04	0.06	0.03	0.53	0.06	19.38	0.9	0.02	0.85	0.09
Technology and Communications	1.87	0.72	0.28	0.17	0.02	0.26	0.18	0.05	0.19	0.16	8.15	0.07	0.09	0.01	0.11
Food and Beverage	1.25	0.64	0.47	0.45	0.21	0.04	0.08	0.12	0.86	1.33	1.33	0.4	0.05	1.13	0.65
Renewable Resources and Alternative Energy	0.11	0.04	0.02	0.04	0	0	0	0	0.03	0.06	0.21	0	0	0	0.01
	Cat 12	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 6	Cat 7	Cat 8	Cat 9	Cat 10	Cat 11	Cat 13	Cat 14	Cat 15

#### Module Settings:

Sector Classification	Select either SASB SICs or Standard Sector classifications. This will re-render the table with the selected classifications.
Materiality Type	There are two options from the Materiality Type. The default, 'Sector', displays the most material emissions categories for each sector. The highest intensity (maximum) for the sector is assigned the 100 figure.

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	<p>A materiality score of 100 = The most material (highest emissions intensity) A materiality score of &lt; 100 = the relative proportion of emissions intensity against the most material emissions category.</p> <p>The remaining figures displayed for the categories are the percentage relative to this sector maximum. The 'Portfolio' option details the most carbon-intensive category using all sectors.</p>
Emissions Type	<p>Select either Scope 3 Only or Scope 1+2+3. The default - 'Scope 3 Only' - limits the analysis to the 15 Scope 3 Categories. Selecting 'Scope 1+2+3' introduces Scope 1+2 into the analysis. Now the heatmap includes the full spectrum of emissions categories. Scope 1+2 inclusion is an important consideration as the Utilities sector will typically have a greater Scope 1 &amp; 2 emissions profile compared to Scope 3.</p>
Asset Class	<p>Define which asset class(es) are to be included in the footprinting calculation.</p>
Inference Type	<p>Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICs Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.</p>

#### Underlying Methodology:

1. Gather the intensity figures for the Scope 1+2 and Scope 3 categories within each sector within the portfolio.
2. Calculate the intensity contribution for each intensity category for each sector within the portfolio. This is done by summing the product of each intensity category \* Weights [for each of the sectors within the portfolio].

$$Intensity\ Contribution\ (Category)_S = \sum (Intensity(Category)_{S,i} \times Portfolio\ Weight_{S,i})$$

Where,

$S, i$  = each individual security within a sector in the portfolio

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$S$  = Total for the Sector

$Intensity(Category)_{S,i}$  = The intensity for given security within Scope 1+2 or Scope 3 Category

$Portfolio Weight_i$  = Weight in the portfolio

### 3. Scale intensity figures by dividing by maximum for the Sector or the within the Portfolio:

If the maximum for the 'Portfolio' is used, all of the intensity contributions - across all sectors - are divided by the maximum intensity contribution. This will scale the contributions from 100 (highest intensity contribution) to 0 (no intensity contribution).

$$Scaled\ Intensity\ Contribution\ (Category)_S = \left( \frac{Intensity\ Contribution\ (Category)_S}{Maximum\ Intensity\ Contribution\ (Category)_P} \right)$$

Where,

$S$  = Total for the Sector

$Intensity\ Contribution\ (Category)_S$  = The total intensity contribution for a sector within a Scope 1+2 or Scope 3 Category

$Maximum\ Intensity\ Contribution\ (Category)_P$  = Maximum Intensity Contribution (Category) in the portfolio

$Portfolio\ Weight_i$  = Weight in the portfolio

If the maximum for the 'Sector' is used, the intensity contributions for each sector is divided by the maximum intensity contribution for the sector. This will scale the contributions from 100 (highest intensity contribution) to 0 (no intensity contribution) for each sector.

$$Scaled\ Intensity\ Contribution\ (Category)_S = \left( \frac{Intensity\ Contribution\ (Category)_S}{Maximum\ Intensity\ Contribution\ (Category)_S} \right)$$

Where,

$S$  = Total for the Sector

$Intensity\ Contribution\ (Category)_S$  = The total intensity contribution for a sector within a Scope 1+2 or Scope 3 Category

$Maximum\ Intensity\ Contribution\ (Category)_S$  = Maximum Intensity Contribution (Category) in the sector

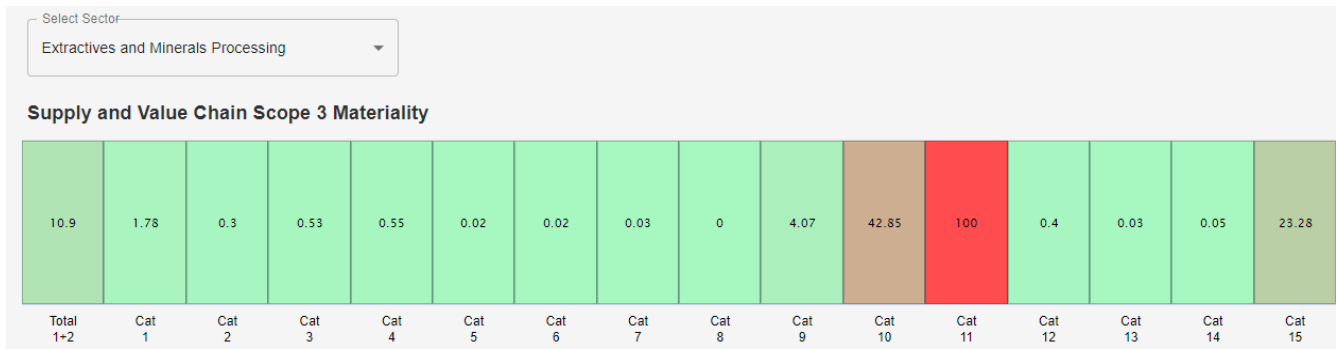
$Portfolio\ Weight_i$  = Weight in the portfolio

## Company-level Materiality Analysis

This module allows users to explore the materiality and comparative performance of company emissions within their sector across the entire carbon reporting spectrum. Clicking a sector will expand the Company Scope 3 Heatmap. This will display the material categories for the sector as represented in the previous Portfolio Scope 3 Heatmap.

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The table below displays the carbon intensity reported by the companies across the Scope 3 categories. Used together, the tool is designed to identify companies within the Urgentem Directly Analysed Universe that are not reporting or underreporting material categories for the sector. This allows users to quickly identify firms that are downplaying material climate risks within the supply and value chain. This is an especially useful tool as the TCFD recommends that investors report on Scope 3 emissions where significant and material. In the below example, the most material emissions category for the Extractives and Minerals Processing sector is Scope 3 - Category 11: Use of Sold Products.

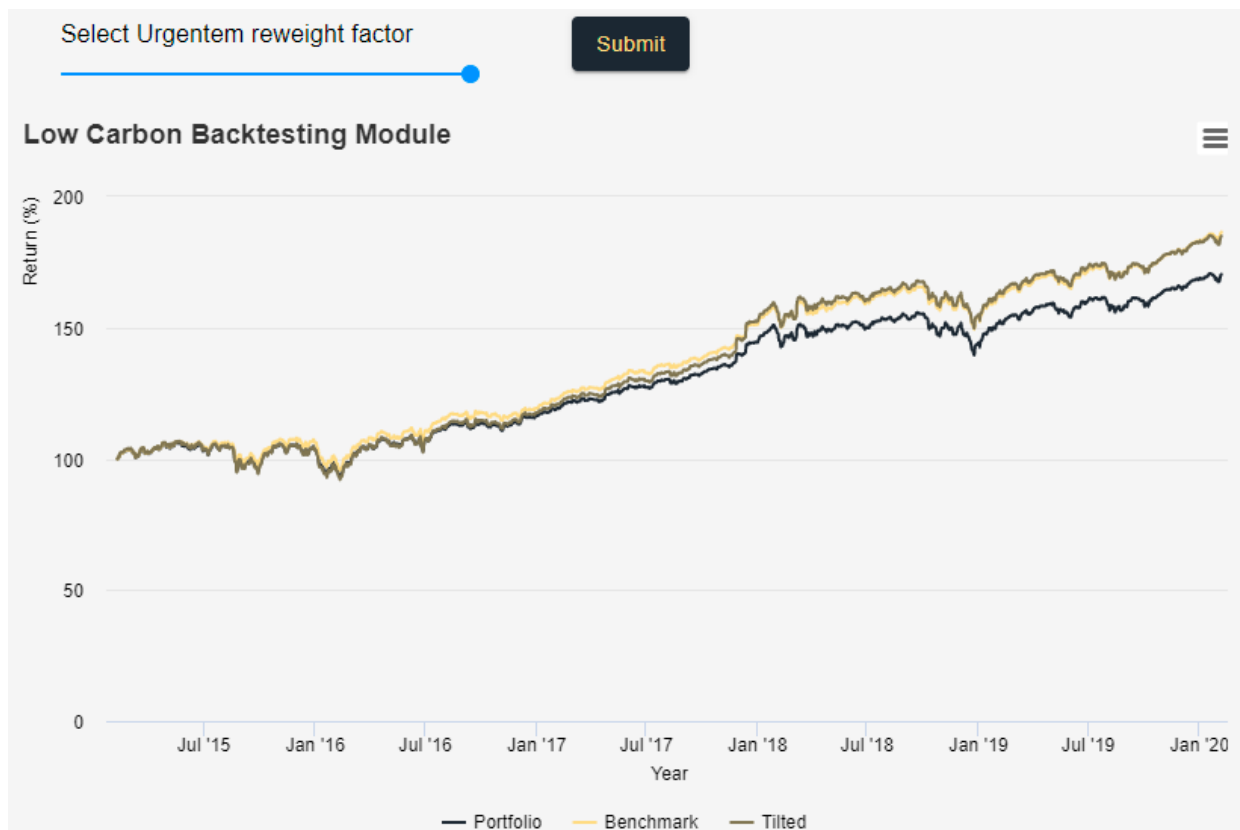


## Module 4: Portfolio Optimisation

The Portfolio Optimisation module is used to observe the impact of carbon intensity reduction on portfolio returns, i.e. climate risk-adjusted returns. This is achieved by using a low carbon tilt function which ranks and re-weights the portfolio based on carbon intensity performance.

### Low Carbon Backtesting Chart

The below chart displays the returns of the portfolio, the benchmark and the tilted (reweighted) portfolio. Select the low carbon strategy from the left Sidebar. The slider at the top of the graph can be used to control the strength of the investment strategy. Press the 'Submit' button to apply the strategy on the portfolio.



### Low Carbon Backtesting Tools

Urgentem Reweight Factor	This is a linear function that ranks the securities within the portfolio in terms of carbon intensities values. The product of the original portfolio weights and this function, therefore, tilts the
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	portfolio weights away from high carbon to lower carbon. The greater the Reweight factor slider moves from 0 to 1, the greater the reweighting effect.
Strategy	<p><u>Emissions Reduction:</u></p> <p>This is the reweighting function which ranks securities based on carbon intensity and Disclosure Category (Scope 1+2) at a certain time point. Where companies have equal carbon intensity figures, those with lower (better) Disclosure Category scores are placed higher in the ranking. This reweighting function can be applied on an annual and quarterly basis to rebalance a portfolio periodically.</p> <p><u>Carbon Momentum:</u></p> <p>This is the reweighting function which ranks securities based on the carbon intensity momentum and Disclosure Category (Scope 1+2) between time points (currently annual). The securities are ranked; lowest being the best (positive momentum) and highest (negative momentum) being worst. Where companies have equal carbon intensity figures, those with lower (better) Disclosure Category scores are placed higher in the ranking.</p>
Emissions Level	The selected emissions scope - either Average Scope 1+2 Total, Average Scope 3 or Average Scope 1+2+3 Total - is the intensity used within the reweighting function.

## Portfolio Summary Statistics

The table below the backtesting performance chart is the Summary Statistics of Portfolio, Benchmark and the Tilted portfolio performance.

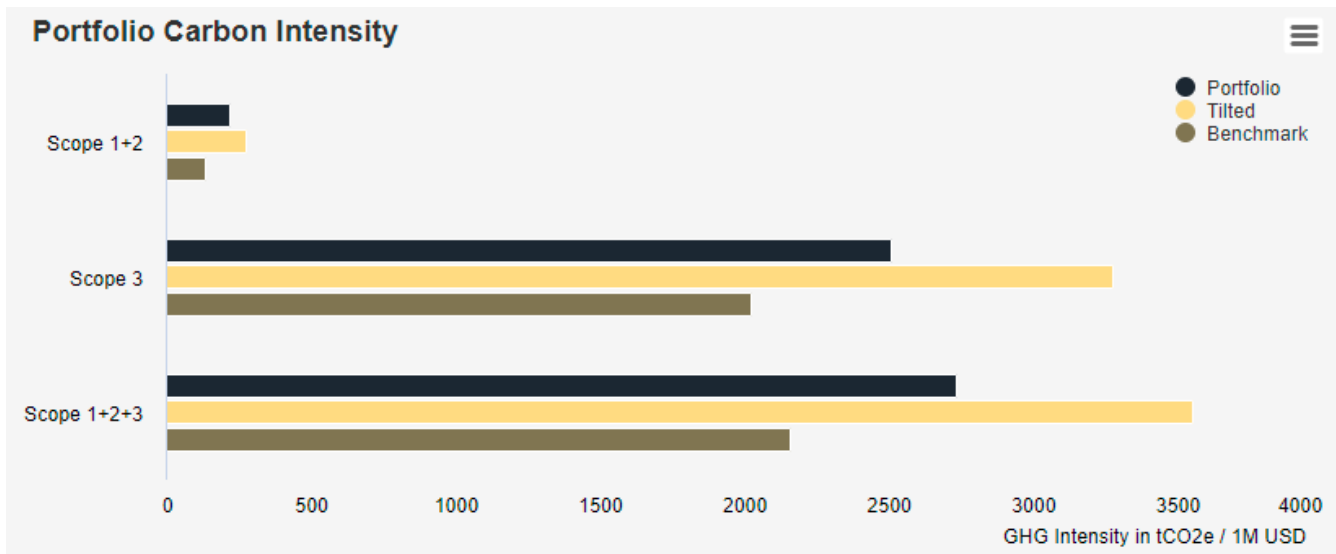
Returns	The portfolio returns observed backtested over the duration of the investment time period (i.e. Returns (1Y) = returns backtested 1 year).
Annualised Returns	Annualised Returns are period returns re-scaled to a period of 1 year.
Standard Deviation (Risk)	The standard deviation of price returns for the time period.

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Sharpe Ratio	The average return earned in excess of the risk-free rate per unit of volatility (risk) for the time period.
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## Optimized Emissions

The Optimized Emissions module displays the portfolio intensity (or total emissions) of the portfolio, benchmark and the carbon-tilted portfolio from the previous Portfolio Optimization module in terms of Scope 1+2, Scope 3 and Scope 1+2+3. Use the settings available in the left Sidebar to update the chart.



Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Define Market Value	This dropdown allows the user to change the $Market\ Value_i$ used within the footprinting calculation.
Define Asset Class	Define which asset class(es) are to be included in the footprinting calculation.
Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICs Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised

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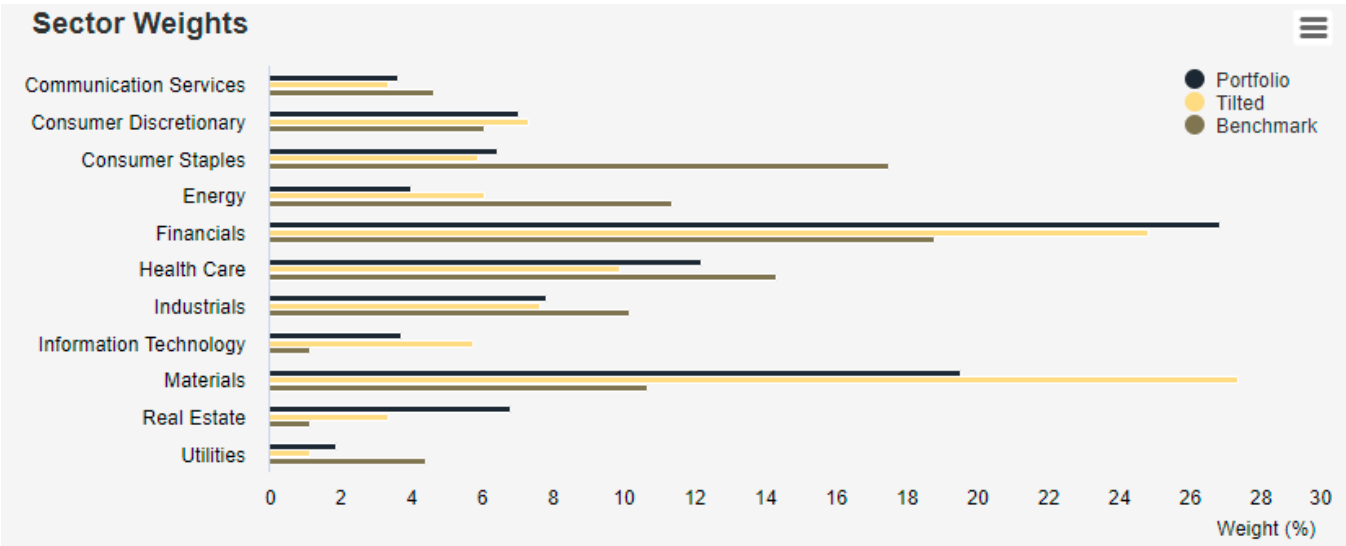
	intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.
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To download the chart and table in excel format, click the 'Download' hyperlink at the top left of the chart.

### Sector Weights (Backtest)

This chart displays the portfolio sector weights of the portfolio, benchmark and tilted portfolio. The following Module Settings influence the chart:

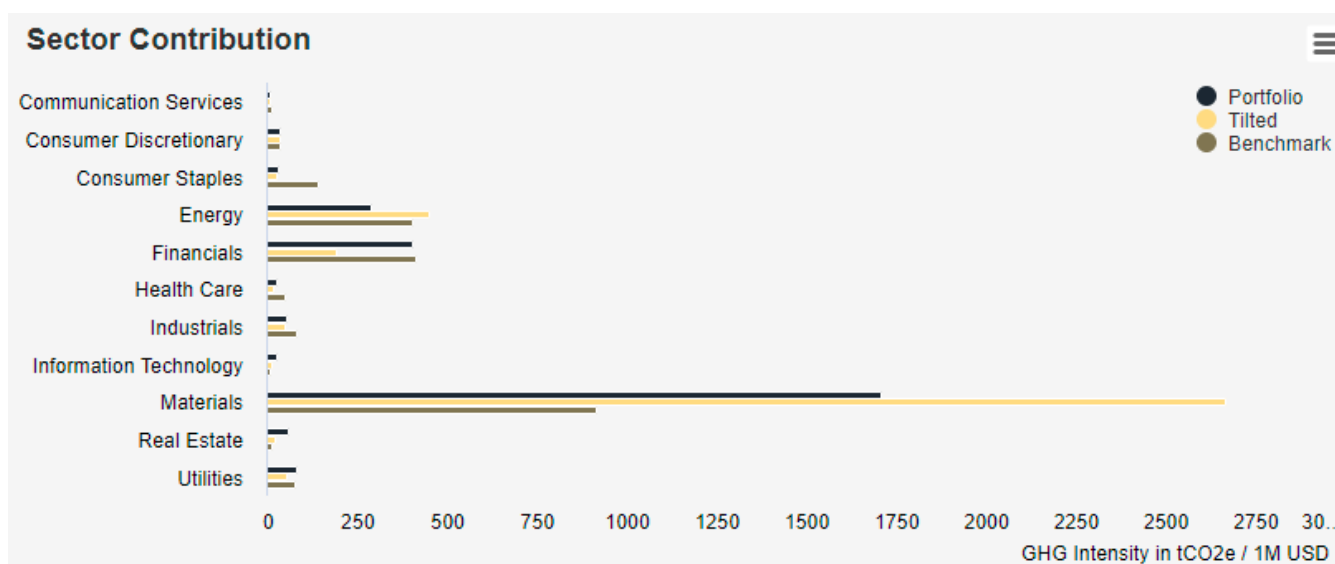
Sector Classification	Select either SASB SICs or Standard Sector classifications. This will influence the sector-level analytics in the sectoral weights, footprints and contributions.
Define Asset Class	Define which asset class(es) are to be included in the sector weights



### Sectoral Contribution (Backtest)

The Sectoral Contribution chart displays the total carbon intensity of each sector within the portfolio, benchmark and tilted-portfolio when factoring in the actual portfolio weightings.

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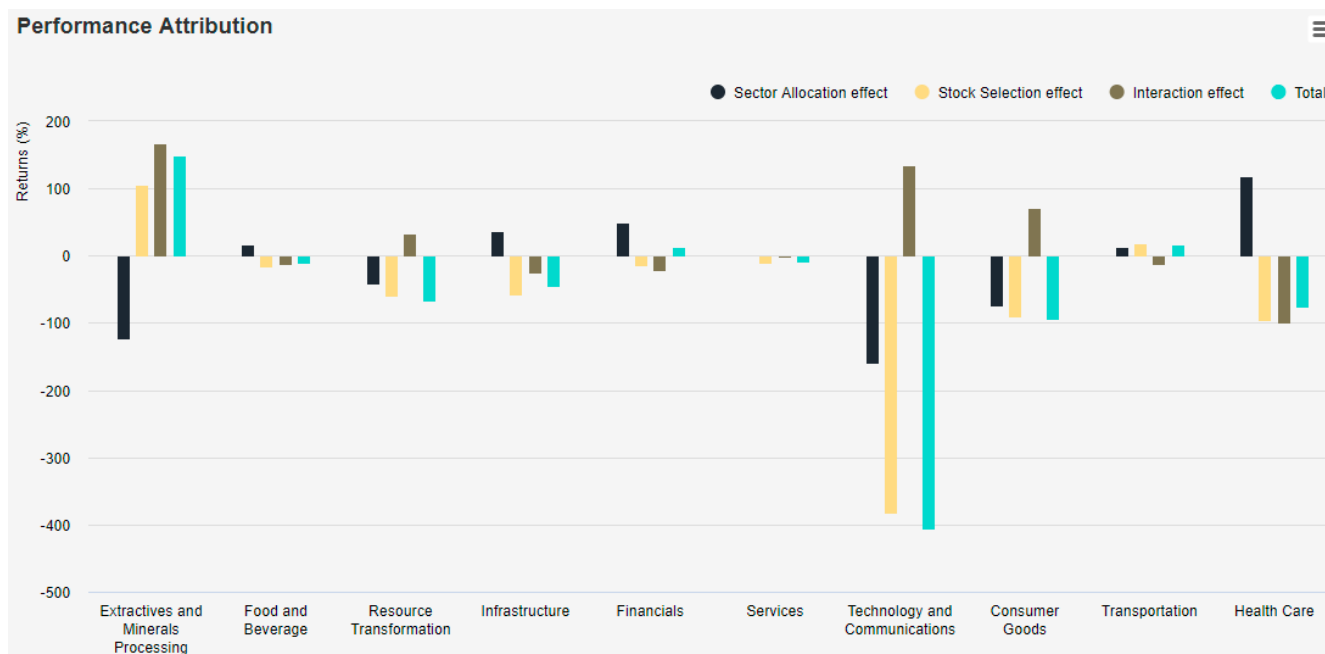
The following Module Settings influence these charts:

Sector Classification	Select either SASB SICs or Standard Sector classifications.
Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Market Value	This dropdown allows the user to change the <i>Company Value<sub>i</sub></i> used within the footprinting calculation.
Asset Class	Define which asset class(es) are to be included in the footprinting calculation.
Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICs Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.
Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the intensities used within the Sectoral Intensity and Sectoral Contribution Charts.

## Performance Attribution

The performance attribution analysis is a tool to identify the specific areas of portfolio and benchmark returns profile performance. The user can select the return time period to be considered in the analysis (1, 3, 5 year returns) and the sector classification to be displayed. The stock selection effect illustrates the impact of individual stock selection on the returns against the benchmark within a respective sector. In essence, this measures the portfolio manager's performance with regards to individual stock picking. The sector allocation effect illustrates the impact of sector weighting on the returns against the benchmark. This measures the portfolio manager's performance with regards to sector selection.

The interaction effect measures the combined impact of the selection and allocation decisions within a sector. For instance, if there is superior stock selection and the sector is over-weighted, then the interaction effect is positive. If there is superior stock selection, but the sector is underweighted, the interaction effect is negative. The total is computed by summing each of these 3 effects. For more information, please see the portfolio footprinting performance attribution section.

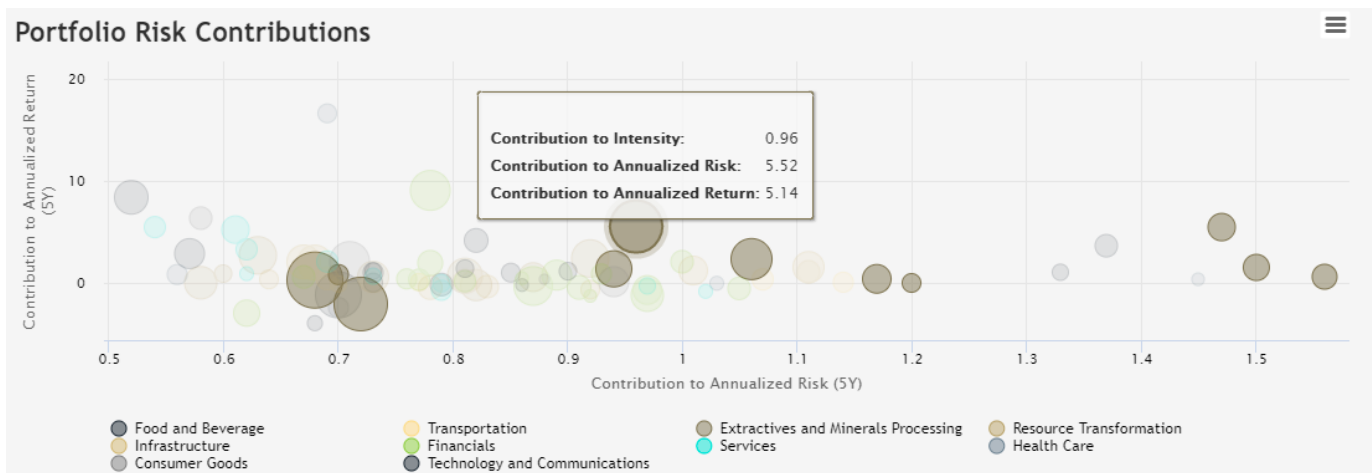


# Module 5: Portfolio Carbon Risk

These tools and metrics are designed to provide insights into the relationship between climate risk, financial measures and valuation metrics.

## Portfolio Risk Contributions Scatterplot

This scatterplot is used to assess the relationship between the contribution of risk, return and emissions profiles of individual underlying securities within the portfolio and within individual sectors. This tool is designed to identify outliers to stimulate further investigation. The contribution to portfolio annualised risk (1Y, 3Y or 5Y) is plotted on the x-axis and the y-axis plots the contribution to portfolio annualized returns (1Y, 3Y or 5Y). The size of the bubbles denotes the Contribution to Intensity of the securities within the portfolio. The larger the bubble, the greater the contribution to the portfolio total intensity (and vice versa). The bubbles are coloured by their respective classifications (Sector/SASB). On hover, the contribution to risk, return and portfolio carbon intensity can be observed.



### Module Settings:

Within the Left Sidebar you will find the module settings. These controls allow you to set the parameters of the carbon footprint calculation and set the scope of analysis.

Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Define Market Value	This option allows the user to change the $Market\ Value_i$ used within the footprinting calculation.

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Inference Type	Average or Maximum intensities (emissions) can be used in the footprinting calculation. The Average intensity is the mean intensity calculated from the emissions reported within each of the SASB SICS Industries. The maximum intensity is the top end of the distribution of these reported intensities. Average intensities are the most utilised intensity used within the analytics as it gives a fair estimation of carbon risk. Maximum intensities are used as a proxy for the worst-case scenario carbon risk.
Year	This option allows the user to define which time horizon should be considered for the annualised risk and return used in the plot.
Intensity Contribution Scope	Select either Scope 1+2 or Scope 1+2+3. This sets the intensities used within the scatterplot and the portfolio risk contributions table.

## Portfolio Risk Contributions Table

The contributions table complements the chart, allowing users to quickly find securities that are poor contributors to risk-adjusted returns and emissions profiles. The table is interactive allowing search and ordering of columns. Users can subset the table by Sector Classification, Asset Type, Security Name and Portfolio Weight. This table displays the security contributions to portfolio annualised risk, return and carbon intensity.

## Module 6: Forward-Looking Analysis

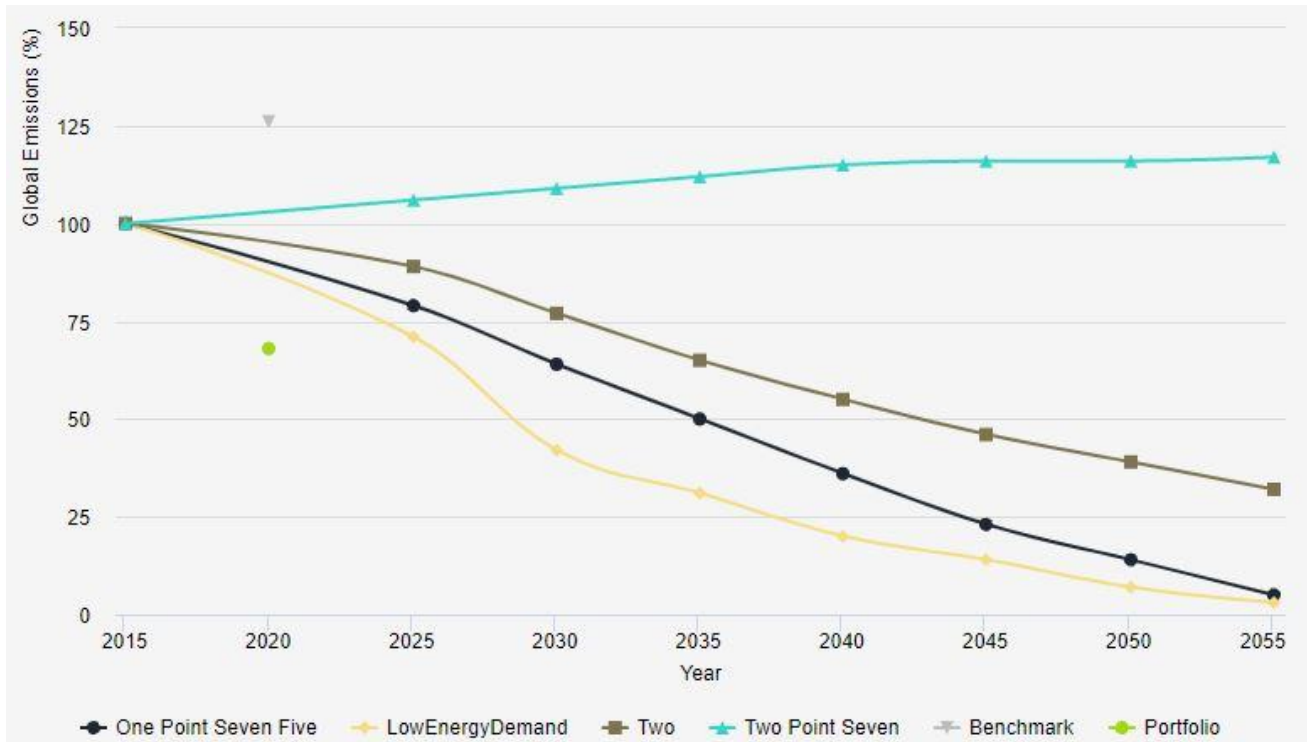
### Portfolio Alignment

The portfolio alignment chart illustrates the level of total emissions that the global economy would have if it had the same composition as the equity and debt part of the portfolio or benchmark (green and grey respectively) and compares this to the global emissions numbers expected under the scenarios that lead to increases of 2.7, 2, and 1.75 degrees Celsius in the global average temperature (curves) as estimated by the International Energy Agency (IEA). The dark blue curve represents the 1.75 degree (Well Below 2DS) IPCC scenario. The portfolio and benchmark points are plotted based on the analysis year.

The estimate for global Scope 1+2+3 emissions intensity is calculated using the Urgentem global index. This figure is used as the initial starting point (2015). The determined percentage reductions needed over time to be aligned to each of the scenarios is based on the overall global trajectories

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in each scenario. The portfolio and benchmark intensities are compared to the global figure and this is plotted as a percentage on the graph. As the intensity is reliant on the underlying revenues (or market value), the reductions needed to be in line are based on absolute emissions reductions for every year past 2015. For each year following 2015 the global intensity estimate is adjusted based on the change in the weighted average revenue and market value of the global index to reflect the fact that the analysis is based on absolute emissions reductions.



#### Select Footprint Metric:

The user can select between Weighted Average Intensity (Revenue) or Weighted Average Intensity (Market Value). This reflects the methodology for intensity alignment. Market Value is set to Market Capitalization + Total Debt as default.

#### Set Scenario Dropdown Menu:

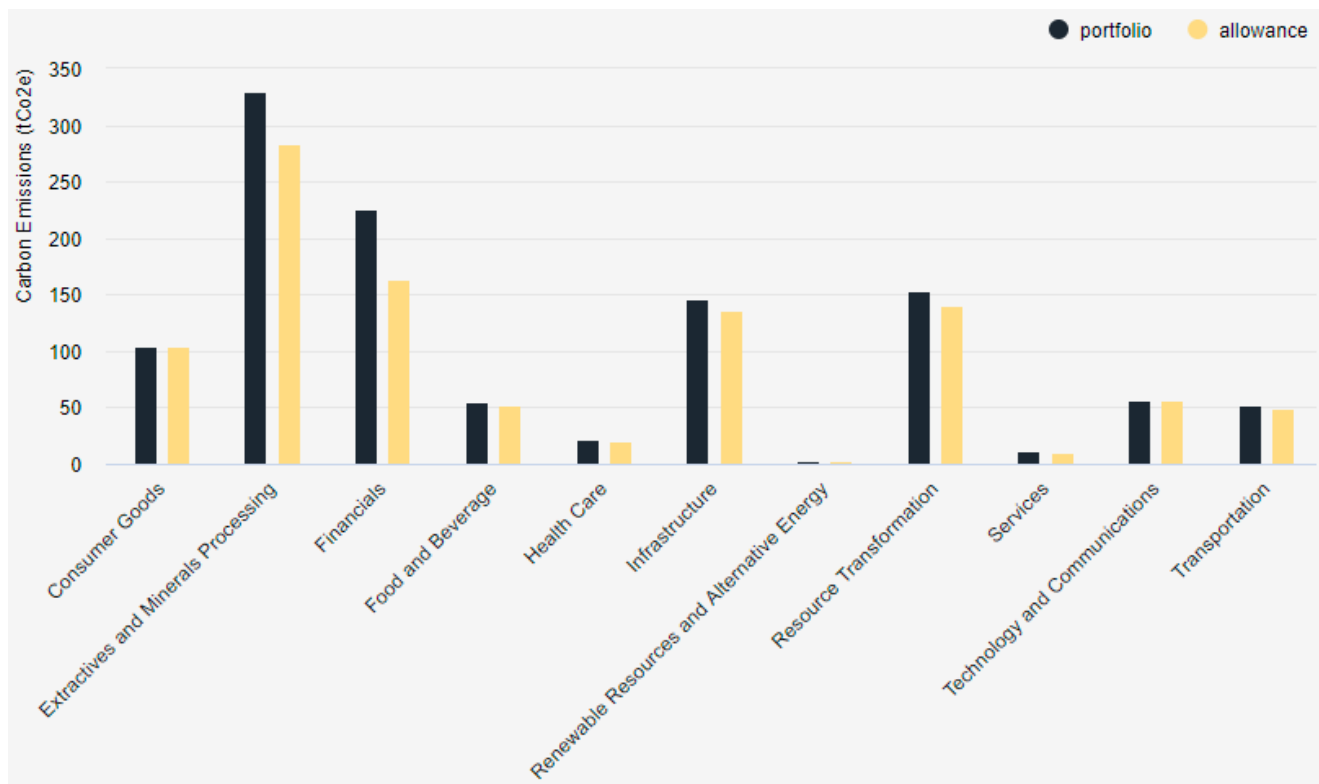
From the dropdown menu, there are options to select the following 1.5 degree IPCC Scenarios:

- SSP1 – Shared Socioeconomic Pathways: Sustainability
- SSP2 – Shared Socioeconomic Pathways: Middle of the Road
- LED – Low Energy Demand

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## Target Setting

The Target Setting module is complementary to the Scenario Analysis module as it distils the insight down to the sector level. The user has the ability to select between the IPCC 1.5 degree, IEA and NGFS scenarios. The target 'Alignment Year' can also be set using the dropdown. Sector allowances based on the scenario selected can be calculated using the market share (revenue) and relative alignment approaches. The Market Share approach highlights the absolute emissions of each of the sectors within the portfolio (black) and details the Absolute Emissions allowance (Yellow) remaining to meet the chosen scenario pathway and year. Relative Alignment analysis can utilise the following metrics: 'Weighted Average Intensity (Revenue)', 'Weighted Average Intensity (Market Value)' and 'Total Carbon Emissions'. Whereas, Market Share approach is limited to 'Total Carbon Emissions'. The Annual Reduction field in the table below details the percentage reduction required each year to meet the allowance.



### Set Scenario Dropdown Menu:

From the dropdown menu, there are the following scenario options:

### IPCC Scenarios (1.5 degree):

- SSP1 – Shared Socioeconomic Pathways: Sustainability
- SSP2 – Shared Socioeconomic Pathways: Middle of the Road
- LED – Low Energy Demand

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#### International Energy Agency (IEA) Scenarios:

- Beyond 2 Degrees,
- 2 Degrees,
- Reference Technology

#### NGFS Scenarios:

- Immediate 2+CDR representative orderly
- 1.5+CDR alternate orderly
- Delayed 2 alternate disorderly
- Immediate 1.5 + limited CDR disorderly alternate
- Current policies hot house
- NDC hot house
- 2+CDR alternate orderly
- Delayed 2 + limited CDR disorderly representative

**Years:** 2020, 2030, 2040, 2050

The associated table displays the annualised absolute emissions reduction required in percentage terms to meet the target.

#### Considerations for setting targets:

- Whether the target is absolute or intensity-based
- Time frames over which the target applies
- Base year from which progress is measured

## Company Profile

The Company Profile forward-looking module provides insight into a company's proactiveness for the transition to a low-carbon economy. This module also details the level of disclosure, carbon intensity momentum and the contribution of the company to the total intensity/carbon emissions of the portfolio. This chart plots the Carbon Budget for the selected company by BICS Level Industry. The Industry budget pathways are scaled to the company level by establishing the company's percentage of Revenue for the Industry. The company's Scope 1+2+3 figures for the past 3 years are plotted on the Carbon Budget pathways to determine whether the firm is demonstrating positive or negative momentum. The 'Footprint Metric' dropdown can be used to change the metric to absolute emissions or company-level intensity terms.

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Select Footprint Metric	Relative Alignment analysis has the following metric options: 'Weighted Average Intensity (Revenue)', 'Weighted Average Intensity (Market Value)' and 'Total Carbon Emissions'. Market Share approach limited to 'Total Carbon Emissions'.
Define Market Value	This dropdown allows the user to change the $Market\ Value_i$ used within the footprinting calculation.
Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the scope of emissions used in the analysis.

**Select Sector:** Select the Sector to analyse. This will update the Select Company dropdown list.

**Select Company:** Select the Company to analyse from the dropdown.

**Choose Alignment Approach:** Choose how the emissions budgets should be calculated – market share of revenue or relative alignment approach.

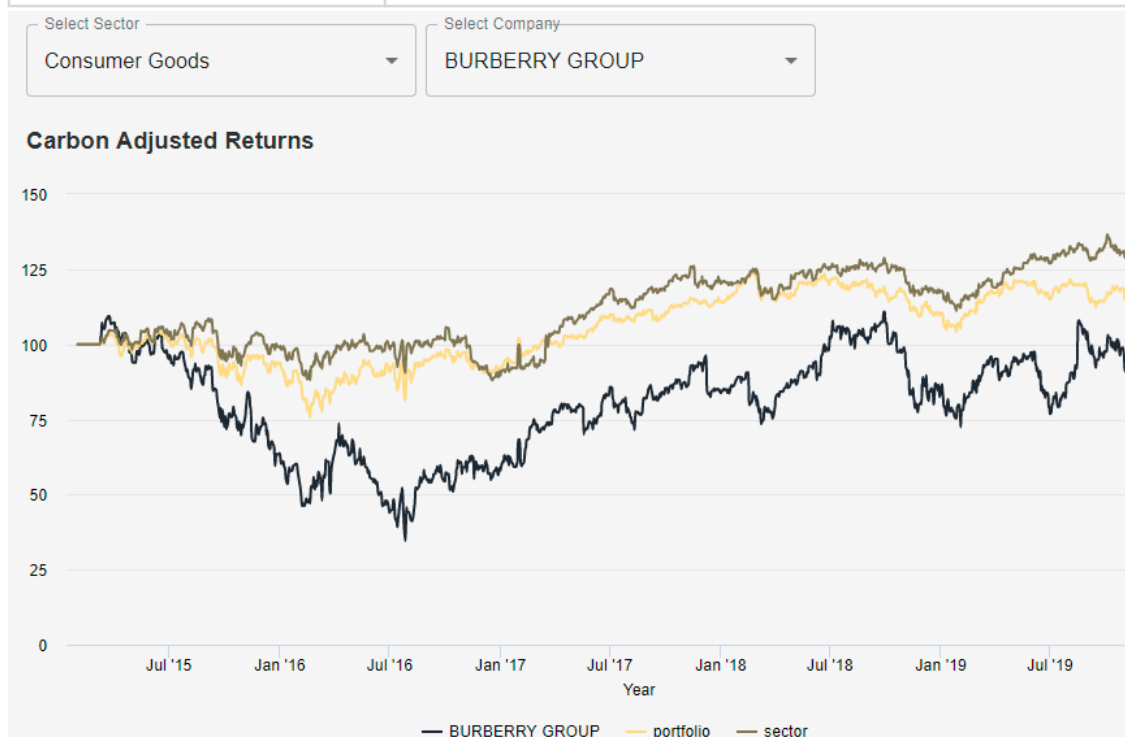
**Set 1.5 degree IPCC Scenarios:**

- SSP1 – Shared Socioeconomic Pathways: Sustainability
- SSP2 – Shared Socioeconomic Pathways: Middle of the Road
- LED – Low Energy Demand

## Carbon-Adjusted Returns

This chart explores the impact of a \$100 per tonne carbon price on portfolio returns. As carbon pricing is becoming a prevalent tool to incentivise decarbonisation, users can investigate how such scenarios can affect their returns to be better prepared for such an outcome. The impacts are calculated by comparing the company to market returns and flexing carbon price. The returns are then adjusted based on the portfolio and market emissions, either using Scope 1+2 or Scope 1+2+3 emissions. The adjustments are calculated by looking at the cost attributed to the emissions based on a carbon price which is directly carried through to the portfolio manager.

Select Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Define Market Value	This dropdown allows the user to change the $Market Value_i$ used within the footprinting calculation.
Emissions	Select either Scope 1+2 or Scope 1+2+3. This sets the scope of emissions used in the analysis.



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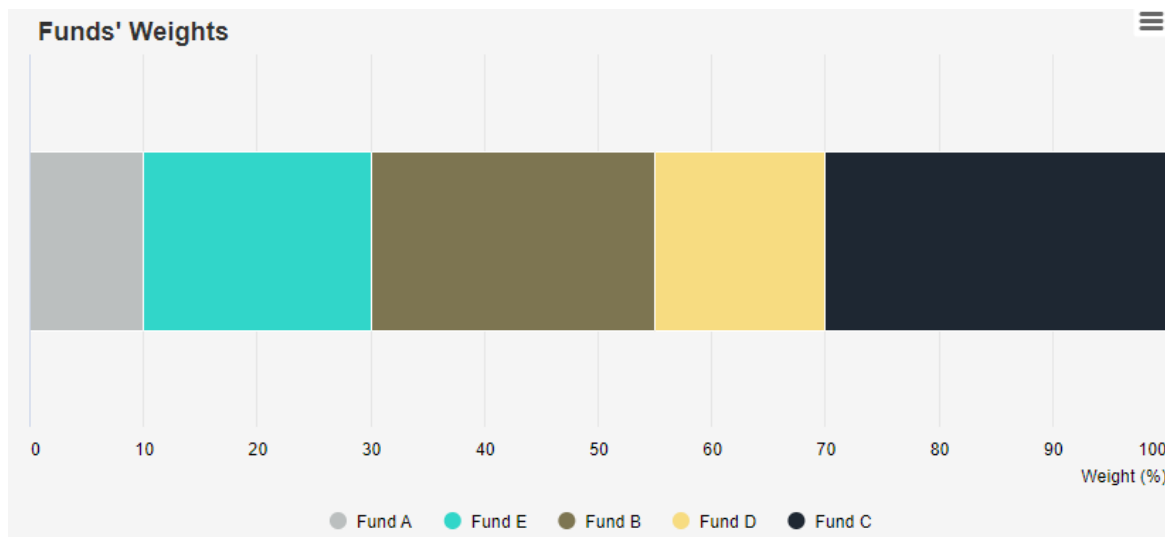
## Module 7: Fund of Funds

This module gives the user the ability to review the footprint, scenario alignment, and target setting functionalities for all funds/constituents of a fund of funds.

### Fund of Funds: Composition

The weights of all of the funds are visualised in the bar chart. The table below shows the:

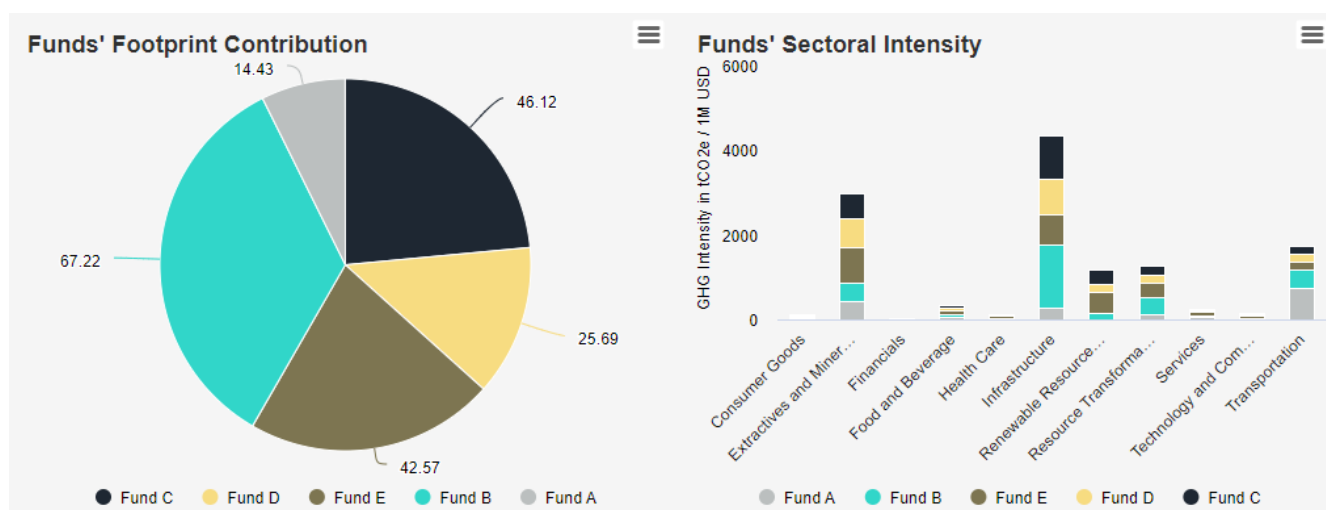
- 'Weight (%)' – This is the weight of each fund within the fund of funds
- 'Coverage (%)' The percentage of the fund which has been successfully matched to the Emissions database, in terms of the count of matched securities.
- Weight Coverage (%): The total fund weight covered in the analytics.



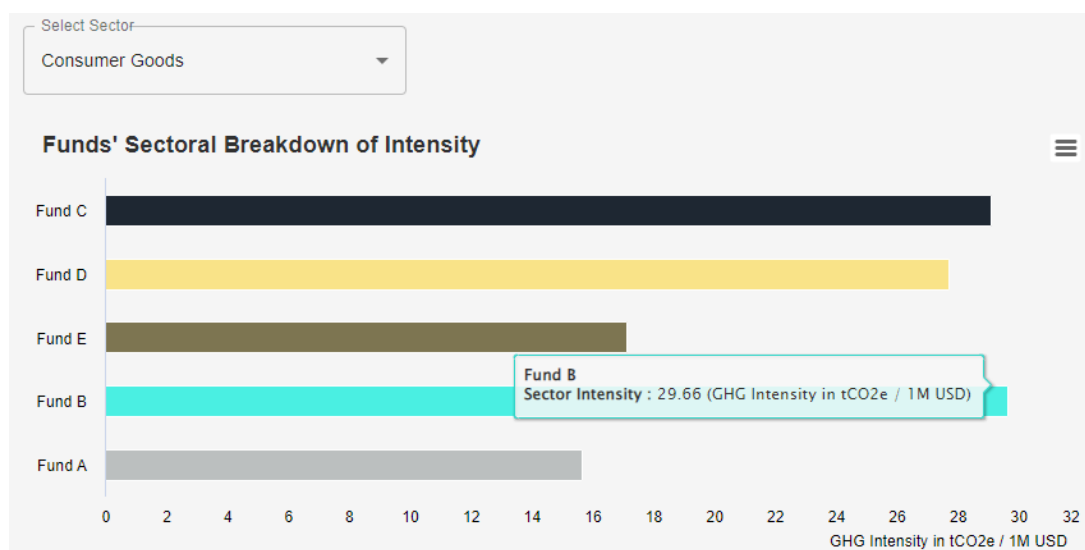
### Fund of Funds: Footprint

The stacked bar chart shows the composition of the total fund of funds footprint, by displaying the contribution of the funds for the selected scope. Where necessary, the funds' footprints are weighted by the funds' weights. The sector intensities of the funds are calculated as single portfolios.

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The chart below displays the funds' sectoral breakdown of intensity. The dropdown can be used to change the sector.

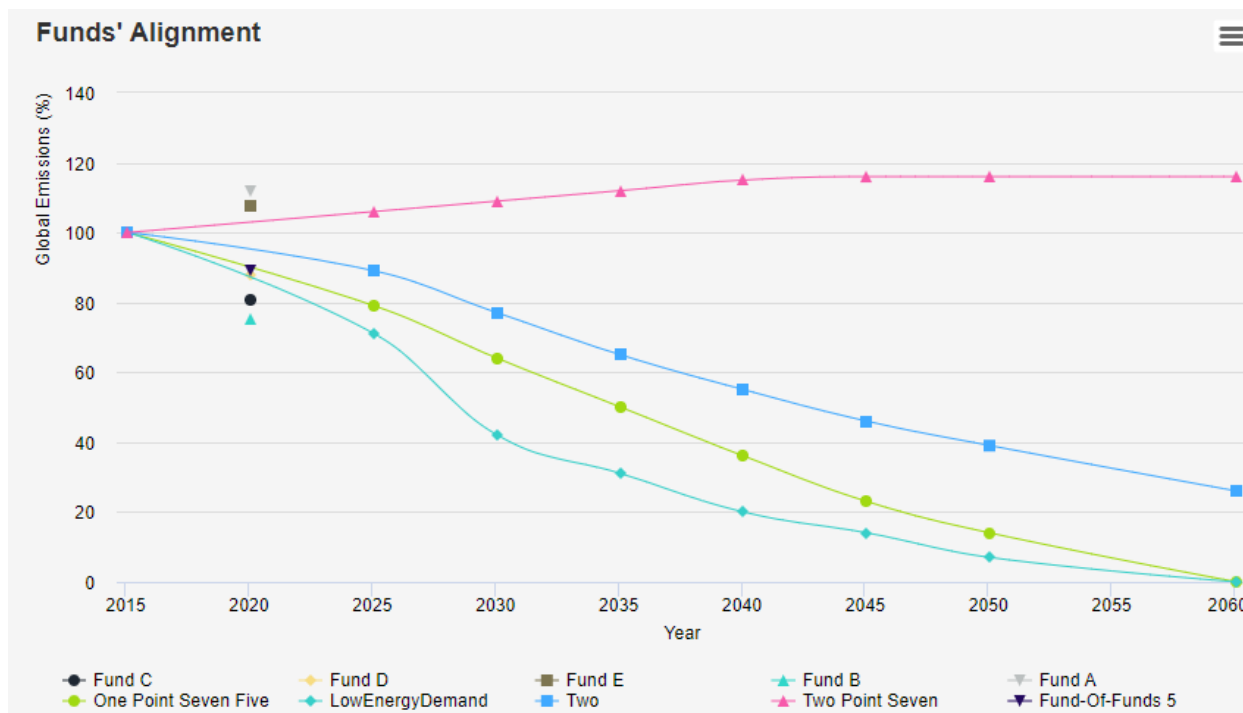


## Fund of Funds: Alignment

The portfolio alignment chart illustrates the level of total emissions that the global economy would have if it had the same composition as the equity and debt part of the portfolio or benchmark (green and grey respectively) and compares this to the global emissions numbers expected under the scenarios that lead to increases of 2.7, 2, and 1.75 degrees Celsius in the global average temperature (curves) as estimated by the International Energy Agency (IEA). The dark blue curve represents the 1.75 degree (Well Below 2DS) IPCC scenario. The funds portfolios are plotted based on the analysis year.

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The estimate for global Scope 1+2+3 emissions intensity is calculated using the Urgentem global index. This figure is used as the initial starting point (2015). The determined percentage reductions needed over time to be aligned to each of the scenarios is based on the overall global trajectories in each scenario. The funds intensities are compared to the global figure and this is plotted as a percentage on the graph. As the intensity is reliant on the underlying revenues (or market value), the reductions needed to be in line are based on absolute emissions reductions for every year past 2015. For each year following 2015 the global intensity estimate is adjusted based on the change in the weighted average revenue and market value of the global index to reflect the fact that the analysis is based on absolute emissions reductions.

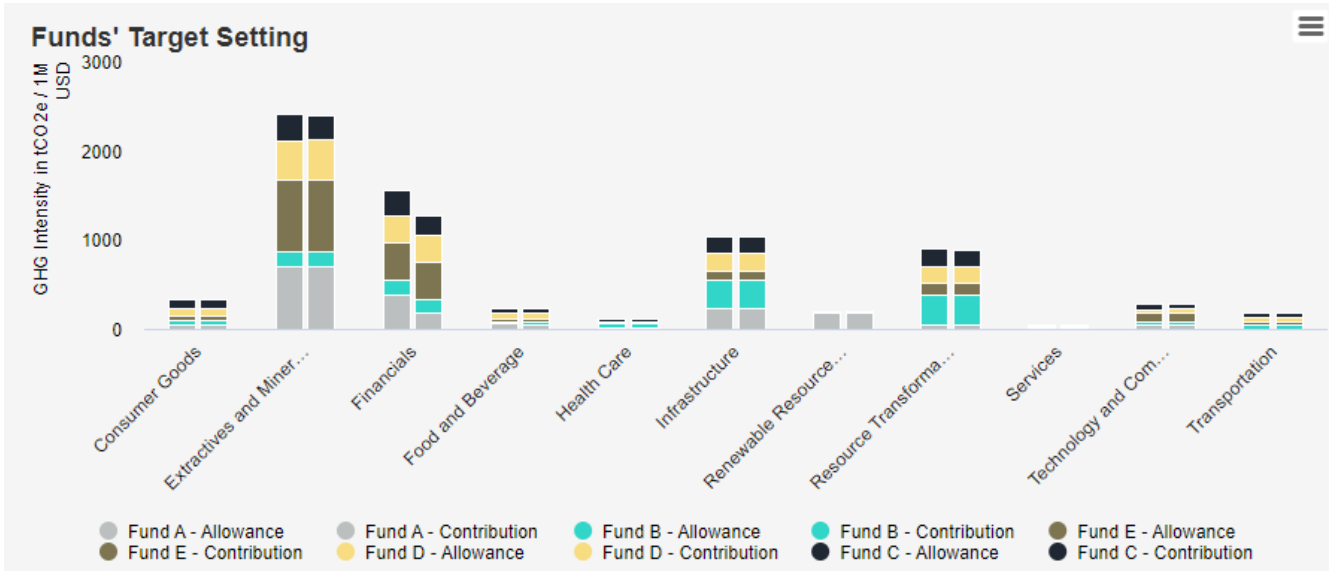


## Fund of Funds: Target Setting

The Target Setting module is complementary to the Scenario Analysis module as it distills the insight down to the sector level. The user has the ability to select between the IPCC 1.5 degree, IEA and NGFS scenarios. The target 'Alignment Year' can also be set using the dropdown. Sector allowances based on the scenario selected can be calculated using the market share (revenue) and relative alignment approaches. The Market Share approach highlights the absolute emissions of each of the sectors within each of the funds and details the Absolute Emissions allowance for the sector remaining to meet the chosen scenario pathway and year. Relative Alignment analysis can utilize the following metrics: 'Weighted Average Intensity (Revenue)', 'Weighted Average Intensity (Market Value)' and 'Total Carbon Emissions'. Whereas, Market Share approach is limited to 'Total Carbon

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Emissions’. The Annual Reduction field in the table below details the percentage reduction required each year to meet the allowance.



### Change to Sectoral View

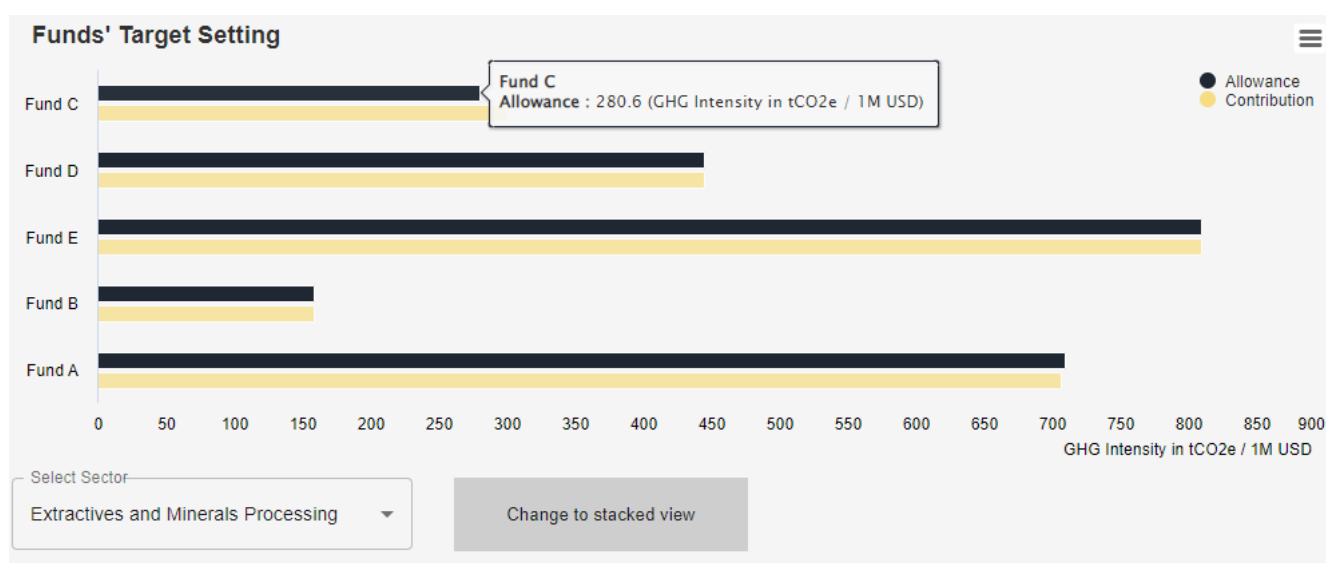
The target setting analysis can be distilled to the sectoral level by selecting the 'Change to sectoral view' button. This will transform the target setting chart from a stacked chart of the fund of funds portfolio to a sector bar chart with the funds displayed separately.

Select Sector

Extractives and Minerals Processing ▼

Change to sectoral view

The target setting chart will display the sectoral-level targets based on the sector chosen. In the following example, the Extractives and Minerals Processing sector has been selected:



Click on the 'Change to stacked view' to return to the stacked fund of funds chart.

The associated table displays the annualised absolute emissions reduction required in percentage terms to meet the target for the selected sector for each of the fund of fund portfolios.

## Module 8: Temperature Metric

This method is an open-source framework to enable the translation of corporate GHG emission reduction targets into temperature scores at a target, company, and portfolio level. The method can be used to generate temperature scores for individual targets to translate target ambition to a common intuitive metric. The method provides a protocol to enable the aggregation of target level scores to generate a temperature rating for a company based on the ambition of its targets. Finally, the method defines a series of weighting options that can enable financial institutions and others to produce portfolio-level temperature ratings.

The methodology for the temperature metric was developed in collaboration with the Science Based Targets initiative (SBTi). It provides a public, transparent, and science-based protocol to assess the ambition of corporates and portfolios based on the ambition of targets. It enables users to assess the ambition of any public GHG emission reduction target and can help users compare the relative ambition of one company versus another. The method may also be used to temperature score investment portfolios and allow financial institutions to calculate the current temperature score of the portfolio, which is a key starting point for aligning the portfolio with long-term temperature goals such as 1.5C. Clients also use this tool to engage with constituent companies to set science-based targets, using our "What If Analysis. This is often done as part of a

Financial Institutions own Scope 3 Science Based target, measured through constituent companies' Science-based target scores.

#### Module Settings and Effects:

Aggregation	<p>This dropdown lists all the possible aggregation method options:</p> <ul style="list-style-type: none"> <li>• Weighted Average Temperature Score</li> <li>• Total Emissions Weighted Temperature Score</li> <li>• Market Owned Emissions Weighted Temperature Score</li> <li>• Enterprise Owned Emissions Weighted Temperature Score</li> <li>• EV + Cash Emissions Weighted Temperature Score</li> <li>• Revenue Owned Emissions Weighted Temperature Score</li> </ul> <p><u>Portfolio Score</u>: The aggregation method affects the first chart and the short, mid and long-term scores in the table.</p> <p><u>Company Analysis</u>: The aggregation method only affects the Contribution (°C) field in the table.</p> <p><u>Attribution</u>: The aggregation method affects the attribution chart.</p> <p><u>Sectoral Score</u>: The aggregation method affects the sectoral chart.</p> <p><u>Contribution Analysis</u>: The aggregation method affects only the Contributions pie chart.</p> <p><u>Heatmap</u>: The aggregation method has a direct effect on the Temperature Score per Sector and Region heatmap.</p>
What-if Scenario	<p>This dropdown lists the possible what-if scenarios options:</p> <ul style="list-style-type: none"> <li>• None</li> <li>• All Companies without targets set a 2-degree target</li> <li>• All companies with targets set a 1.75-degree target</li> <li>• Top 10 contributors set a 2-degrees target</li> <li>• Top 10 contributors set 1.75-degrees target</li> </ul> <p>Note that this dropdown is only applicable for the Portfolio Score module. The What-if Scenario affects the Portfolio/Benchmark Temperature Score and Number of Companies charts and the short, mid and long-term scores in the table.</p>
Emissions Type	<p>Select the scope of emissions for the analysis:</p> <ul style="list-style-type: none"> <li>• Scope 1+2</li> <li>• Scope 1+2+3</li> <li>• Scope 3</li> </ul>

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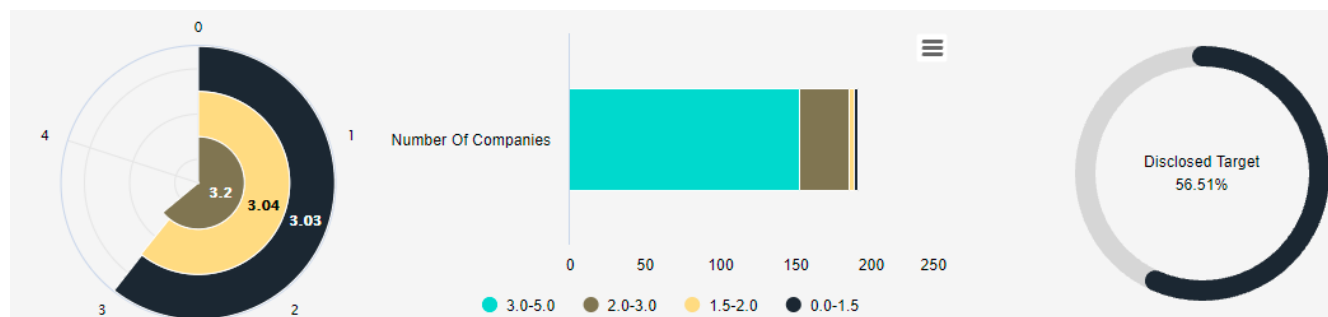


	<p><u>Portfolio Score</u>: Changing the Emissions Type will update the Portfolio/Benchmark Temperature Score and Number of Companies charts.</p> <p><u>Company Analysis</u>: Changing the Emissions Type affects both the chart and the associate table.</p> <p><u>Attribution</u>: Changing the Emissions Type affects the attribution chart.</p> <p><u>Sectoral Score</u>: Changing the Emissions Type affects the sectoral score chart.</p> <p><u>Contribution Analysis</u>: Changing the Emissions Type impacts both the Investments and Contributions pie charts.</p> <p><u>Heatmap</u>: The Emissions Type has a direct effect on the Temperature Score per Sector and Region heatmap.</p>
Score Type	<p>Define the Score type for the analysis:</p> <ul style="list-style-type: none"> <li>• Short-term: up to 4 years</li> <li>• Medium-term: 5 to 15 years</li> <li>• Long-term: longer than 15 years</li> </ul> <p><u>Portfolio Score</u>: Changing the Score Type will update the Portfolio/Benchmark Temperature Score and Number of Companies charts.</p> <p><u>Company Analysis</u>: Changing the Score Type affects both the chart and the associate table.</p> <p><u>Attribution</u>: Changing the Score Type affects the attribution chart.</p> <p><u>Sectoral Score</u>: Changing the Score Type affects the sectoral score chart.</p> <p><u>Contribution Analysis</u>: Changing the Score Type impacts both the Investments and Contributions pie charts.</p> <p><u>Heatmap</u>: The Score Type has a direct effect on the Temperature Score per Sector and Region heatmap.</p>
Default Score	<p>Set the Default Temperature score for the analysis. Ranges from: 0.5 to 5.0.</p> <p><u>Portfolio Score</u>: Changing the Default Score will update the Portfolio/Benchmark Temperature Score chart and the table.</p> <p><u>Company Analysis</u>: The 'Default Score' is not applicable for the Company Analysis module.</p> <p><u>Attribution</u>: Changing the Default Score affects the attribution chart.</p> <p><u>Sectoral Score</u>: Changing the Default Score affects the sectoral score chart.</p>

Contribution Analysis: Changing the Default Score impacts both the Investments and Contributions pie charts.

Heatmap: The Default Score has a direct effect on the Temperature Score per Sector and Region heatmap.

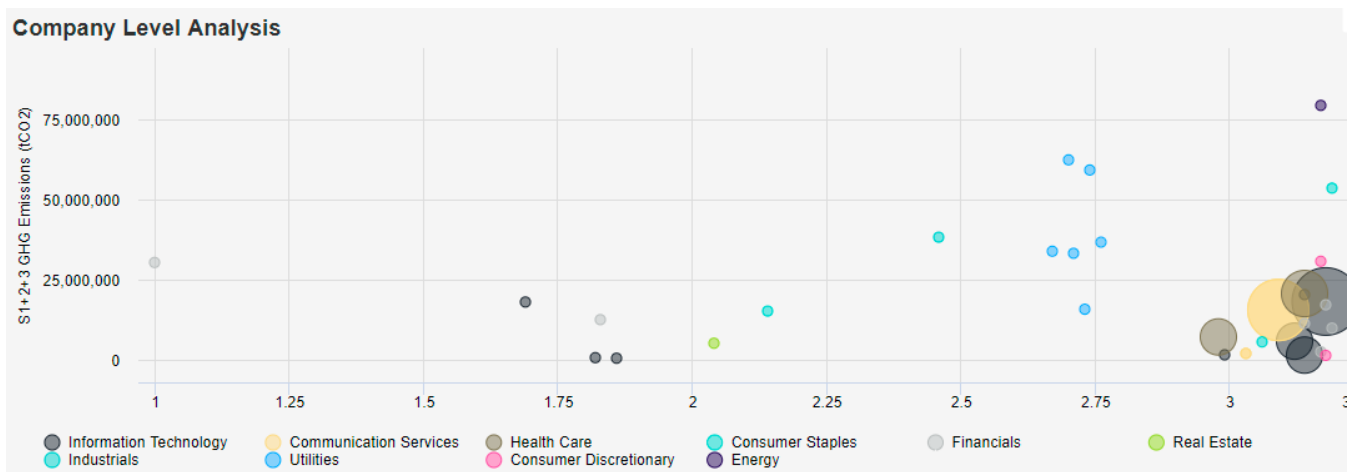
## Temperature Metric: Portfolio Temperature Score



For the selected timeframes and scopes, the portfolio scores display the percentage calculated using target and default scores. For all portfolio scores, you can analyze the contributions of each company. For analyzing SBT Portfolio Coverage, the tool also displays the percentage of SBTi approved companies on the portfolio based on the chosen weighting approach.

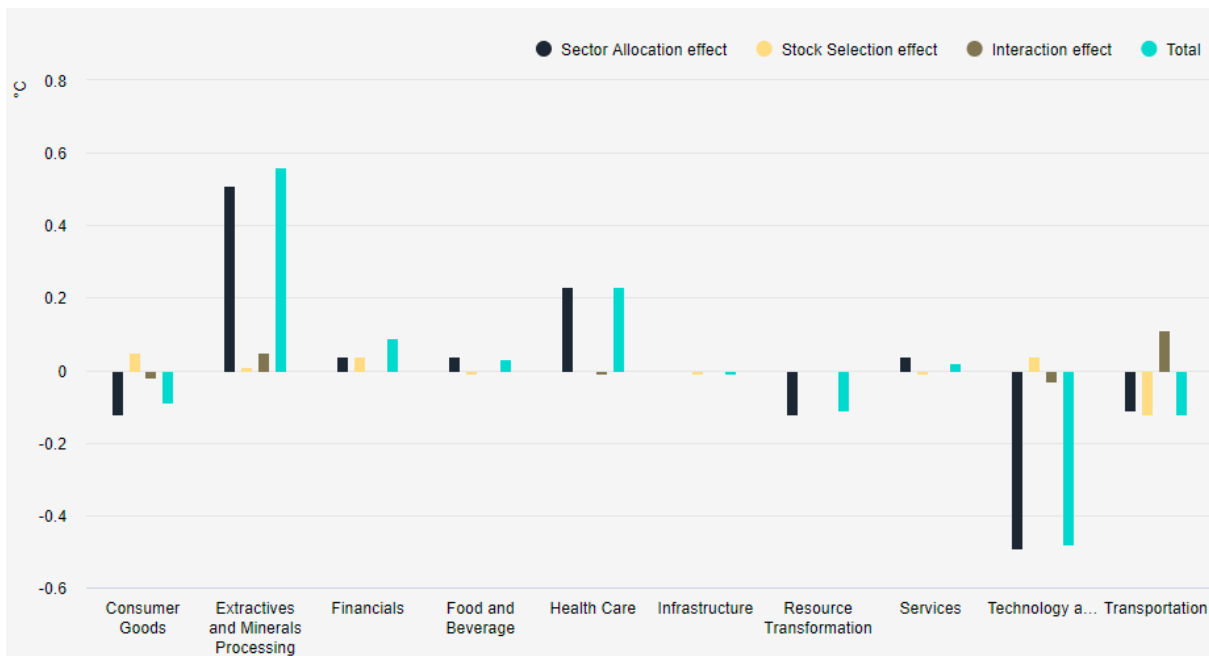
## Temperature Metric: Company Level Analysis

The interactive table allows the user to search, filter and order securities by temperature score and contribution. The user can select the portfolio from the dropdown list and alter the intensity metric displayed on the table. Search for companies, or filter by sector and analyse your holdings contribution to the portfolio score, the company level temperature score, the calculated ownership percentage (proportion of company owned in the portfolio), and the weight within the portfolio (Portfolio Percentage).



## Temperature Metric: Attribution

This is conventionally used to identify whether outperformance in returns between the portfolio and the benchmark derives from the selection of better stocks within a given sector or attributed to better sector holdings. The Security Selection effect measures the impact of individual security selection on the Temperature Score against the benchmark within a respective sector. The Sector Allocation effect illustrates the impact of sector weighting on the Temperature Score against the benchmark. The Interaction effect measures the combined impact of the selection and allocation decisions within a sector. For instance, if there is superior stock selection and the sector is overweighted, then the interaction effect is positive. If there is superior stock selection, but the sector is underweighted, the interaction effect is negative.



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## Temperature Metric: Contribution Analysis

This analysis illustrates the sector allocations within the portfolio (Investments) and the percent contribution that each sector gives to the portfolio Temperature Score. Use the Bar Chart at the bottom to analyse the sector level temperature score.

## Temperature Metric: Heatmap

Use the Temperature Score Heatmap to identify sectors and regions within your portfolio which have the greatest temperature score. This tool can be used to monitor the impact of reallocation of capital within your portfolio, as well as for targeting areas within your portfolio for engagement.

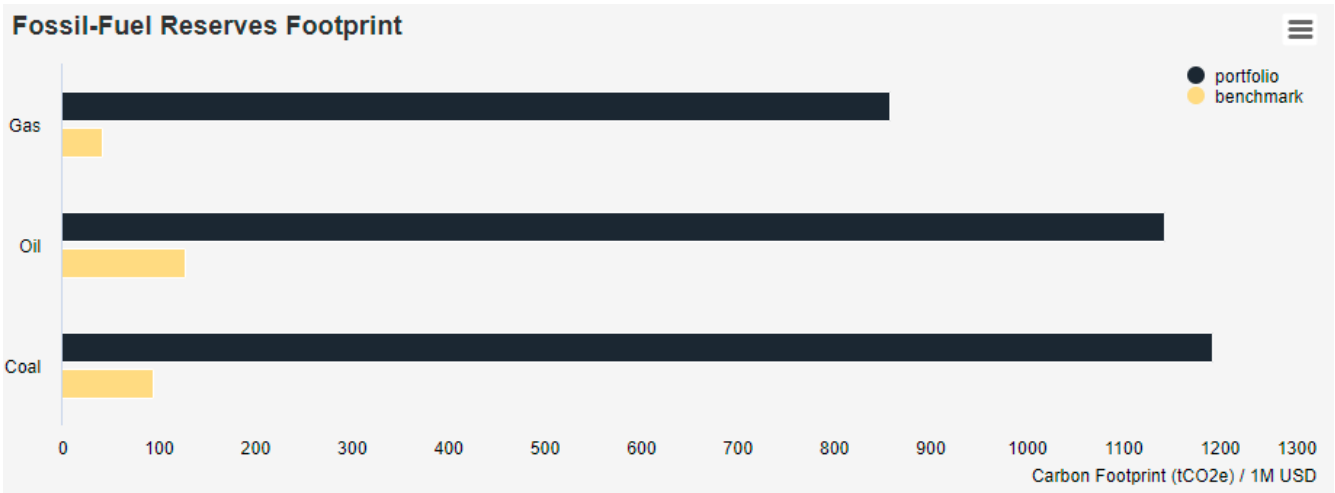
Temperature Score per Sector and Region									
North America	3.06	3.2	3.2		3.15	3.16	2.62	1.85	3.2
Europe		1.69		3.14					
Asia-Pacific					1				
	Consumer Goods	Financials	Food and Beverage	Health Care	Infrastructure	Resource Transformation	Services	Technology and Communications	Transportation

# Module 9: Stranded Asset Analysis

## Fossil fuel reserves footprint analysis

The reserves footprint analysis measures the portfolio and benchmark exposure to Coal, Oil and Gas reserves. The Coal, Oil and Gas emissions underlying the footprint calculation are based on a list of 200 companies with the largest reserves. The breakdown of the footprint by country shows the contribution of the country (based on the country of domicile) to the total footprint. The metric is based on potential CO2 emissions calculated in accordance with the IPCC Revised 1996 Guidelines for National Greenhouse Gas Inventories as a methodological framework. Reserves data are supplied by Fossil Free Indexes.

Footprint Metric	This dropdown allows the user to switch between the different Carbon Footprinting Formulas.
Market Value	This dropdown allows the user to change the $CompanyValue_i$ used within the footprinting calculation.
Asset Class	Define which asset class(es) are to be included in the footprinting calculation.



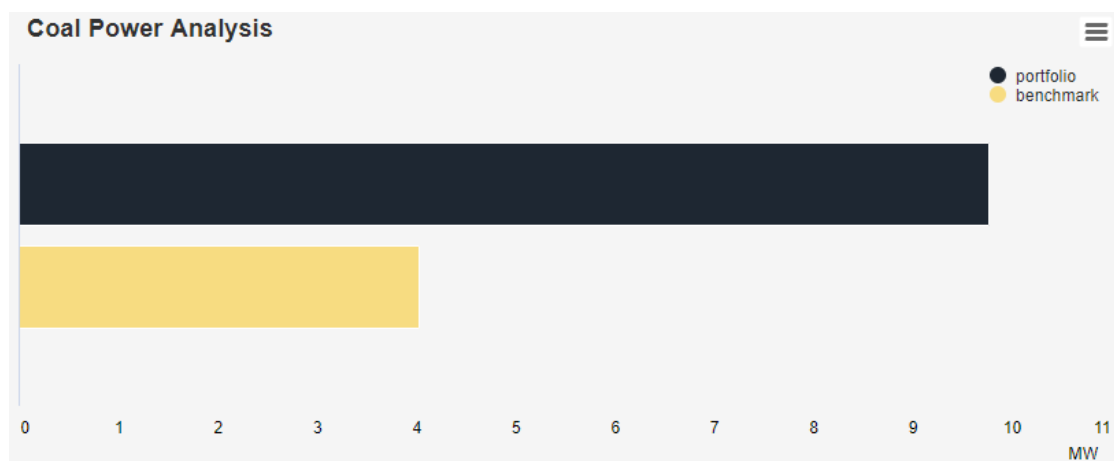
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## Coal Power Analysis

This module analyses exposure to potential stranded assets in the portfolio and benchmark. The analysis is based on the Carbon Tracker Initiative coal-fired power plant stranded assets analysis research. This module is important as it spotlights the companies linked to coal-fired power plant operations within the portfolio and benchmark. The key metrics include:

- 'Capacity (MW)': This represents the current net capacity of the coal-fired power plants operated by the company.
- 'Ownership (% Market Cap)': The weight of company ownership is determined by dividing investment value by the Market Capitalisation of the company.
- 'Capacity Owned (MW)': The coal power plant capacity attributed to the portfolio is calculated by multiplying the 'Capacity (MW)' by the 'Ownership (% Market Cap)'

The chart within this module displays the total 'Capacity Owned (MW)' by the portfolio and benchmark.



## Module 10: Natural Language Processing (NLP)

This module was created to monitor news publications and press releases in relation to specific climate-related topics and, in doing so, give indications about the activities and perceptions of companies over the short term. The main metrics used in this module are generated from natural language via sentiment score analysis. News publications are currently updated daily at 8 am UTC and are monitored across over 3,000 media outlets. Of the topics currently monitored, 10 were created by Urgentem and a further 6 were chosen based on SASB's Materiality Map.

<u>Source</u>	<u>Topics</u>
Urgentem	Biodiversity, Fossil Fuels Governance, Legal Physical Risk, Waste and Water Regulatory Risk, Reputational Risk Social, Transition Risk
SASB Materiality Map - Environment Category	GHG Emissions, Air Quality, Energy Management, Waste and Wastewater Management Waste and Hazardous Materials Management Ecological Impacts

The module is split into 4 screens: Sector Overview, Portfolio Overview, Article Analysis, and Background. The instructions for each screen are listed individually below.

### Sector Overview Screen

This is a dashboard that highlights which SASB SICS sectors are receiving the most positive and negative attention in news media across the whole Urgentem universe of companies, as captured by sentiment scores. The bubble chart shows this through a company's position on the x-axis, with the number of companies in each sector displayed by the size of the corresponding bubble. The x-axis scale has been chosen to range from -1 (highly negative) to +1 (highly positive). Hovering over a bubble in the bubble chart shows the sector name, count, and assigned scores. Each score is calculated over the date range specified, which is the past 7 days from the present time by default.

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The time series chart uses the same scores to display an aggregated sentiment score across all sectors over the date range.

By default, all news topics monitored by Urgentem are included in the analysis, with the score assigned to a particular company determined by the sum of scores over all topics and articles relating to that company. This screen can be customised to change which sectors, news topics and date range is displayed.

## Portfolio Overview Screen

This is a dashboard that operates in the same way as the Sector Overview, except that the breakdown is given by company rather than sector for each company within the selected portfolio. A benchmark can also be selected to compare the portfolio performance against. There is also the option to either aggregate the scores for each company using the sum of the scores, or the scores can be reweighted to reflect the level of exposure in the portfolio.

## Article Analysis Screen

The article analysis screen displays the news articles which generated the sentiment scores in the portfolio overview screen. Each article's headline is shown in a scrollable list along with the company name, security, and topics to which the article was linked. Clicking on the article headline redirects the user to the publication source of the article for further analysis. The user can choose to either show all headlines relevant to the companies in the portfolio (the default), or optionally only show headlines where the company is mentioned in the headline.

## Background Screen

This screen is intended to provide background information on companies within the portfolio selected for portfolio and article analyses. As well as companies' sector classifications and portfolio weights, companies' disclosure categories are shown, allowing for a deeper understanding of the perception of companies' activities in comparison to their reported activities.

## Settings

### Sector Overview Screen

#### Left menu

- Sector Classification: sectors to be analysed. All sectors are included by default.

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- Sentiment Topic: topics to be analysed. All topics are included by default.
- Date Range: date range to be analysed. A 7-day rolling window is applied by default.

## Portfolio Overview Screen

### Left menu

- Weighting: whether or not to recalculate scores based on portfolio weight. The reweighting procedure tilts the scores relative to the mean weight, whereby weights above the mean receive increased scores in proportion to the distance from the mean and those below it receive reduced scores in the same fashion.
- Sector Classification: as above, but only including those in the portfolio.
- Sentiment Topic: as above.
- Date Range: as above.

### Top menu

- Portfolio: the portfolio to be analysed.
- Benchmark: the benchmark against which the portfolio is to be compared.

## Article Analysis Screen

### Left menu

- Sector Classification: as above.
- Disclosure Category: the disclosure categories to include companies for.
- Constituents: the constituent companies within the portfolio to be included in the analysis.
- Sentiment Topic: as above.
- Relevance: whether to include articles in which companies are not mentioned in the headline of the article.
- Date Range: as above.

### Top menu

- Portfolio: as above.

## Background Screen

### Left menu

- Sector Classification: sectors to be analysed. All sectors are included by default.
- Disclosure Category: as above.
- Constituents: as above.

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## Sentiment Aggregation Methodology

A single company's sentiment score within a portfolio (or sector, see below) when indexed by  $i$  is given by:

$$\bar{S}_i = \frac{1}{JK} \sum_{j,k}^{J,K} w_i x_{i,j,k} \left( \left| \frac{\sum_{i,j,k}^{I,J,K} x_{i,j,k}}{\sum_{i,j,k}^{I,J,K} w_i x_{i,j,k}} \right| \right),$$

where  $J$  is the number of articles in the selected time period,  $K$  is the number of topics being monitored (see module description) and  $x_{i,j,k}$  is the topic-specific sentiment score for the article indexed by  $i$ ,  $j$ , and  $k$ . Here  $w_i$  is the portfolio weight for the company  $i$  and so if an unweighted score is required (as would be the case for a sector score – in this instance  $i$  is no longer the company index but instead the sector index) then  $w_i = 1$ . We normalise against the number of articles  $JK$  for each company so that we can compare larger companies and smaller companies on an equal footing.

A portfolio's total score is given by

$$S = \frac{1}{I} \sum_i^I \bar{S}_i$$

where  $I$  is the number of companies in the portfolio. This can be applied to any collection of companies, and so this applies equally to sector scores.

## Module 11: Data Download

Download the raw emissions data for your portfolio. Users can interrogate raw corporate reporting figures and cleaned emissions, with full transparency of estimation and the proprietary Urgentem cleaning methodology. This module is disabled for benchmark portfolios.

## Report a Problem

If you experience any technical issues occurred when using the Element6™ platform or API Services, please contact: [technical-support@urgentem.net](mailto:technical-support@urgentem.net)