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AVIVA GUIDE TO ESG SANDBOX

LIFE'S BETTER WITH A PLAN



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THERE ARE TWO ROUTES TO ACCESS THE TOOL.

The primary or standard route is through Platform Services. This allows you to model the ESG credentials of an investment solution that you build from scratch within the sandbox. More details on this route are on page 3 of this guide.

The second route is for advisory managed models. Simply start with an existing model and then explore hypothetical changes within the sandbox environment. More details on this route are on page 6 of this guide.

ACCESS VIA
PLATFORM SERVICES

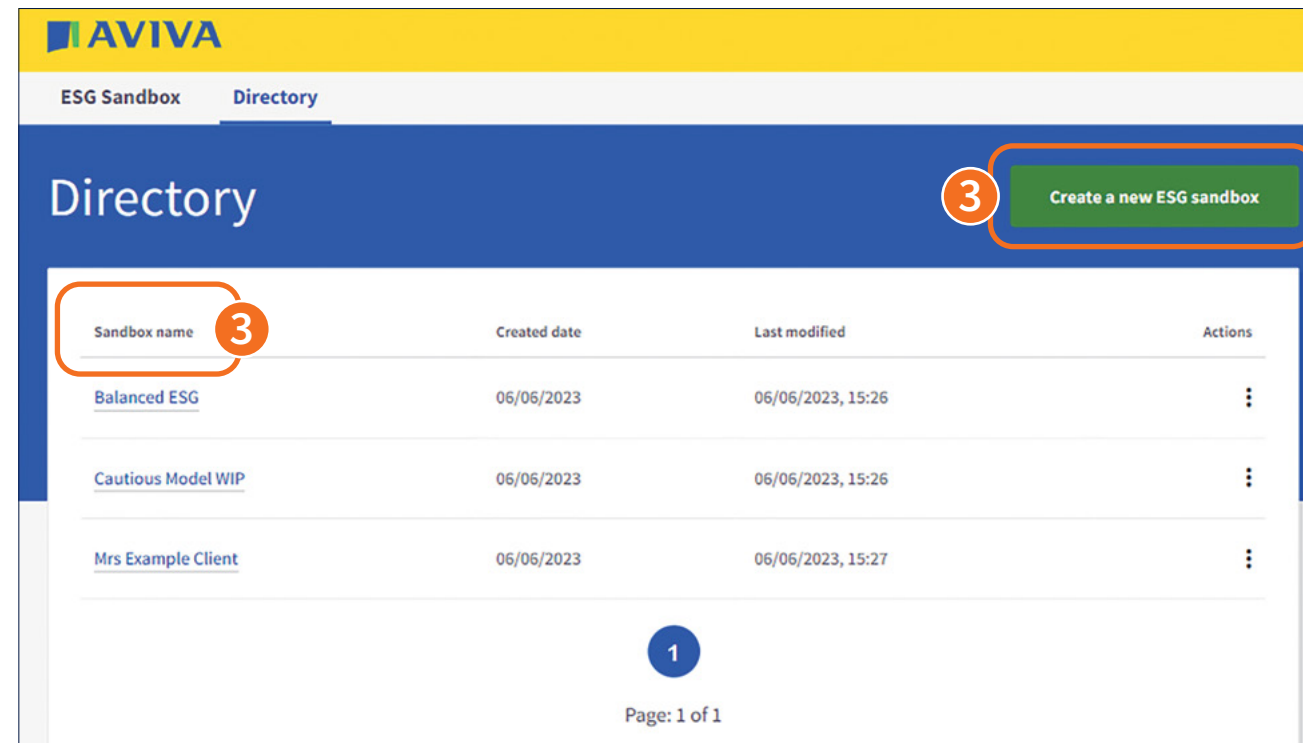
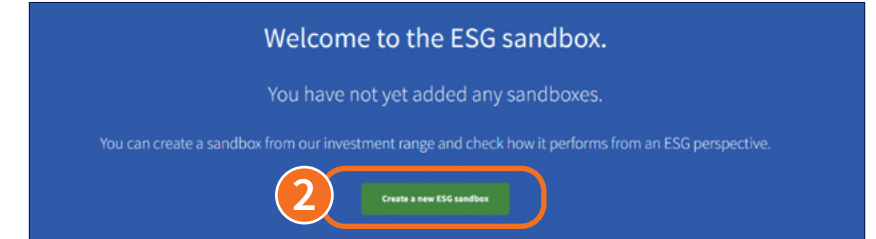
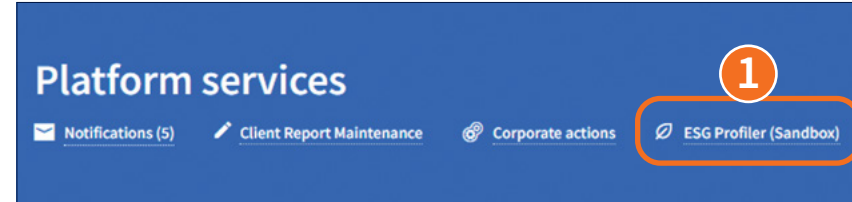
ACCESS VIA
MODEL PORTFOLIO



ESG
SANDBOX

HOW TO ACCESS THE STANDARD SANDBOX

- 1 Selecting 'ESG Profiler (Sandbox)' from the landing screen will present you one of two options:
- 2 On your first visit you will be given with the option to 'Create a new ESG sandbox'.
- 3 On subsequent visits you will be able to see your directory, which will list previously created sandboxes. From here you can open a saved copy by clicking the 'Sandbox name' or start a to new sandbox from scratch by clicking 'Create a new ESG sandbox'.



USING THE STANDARD SANDBOX

- 1 To 'create a new ESG sandbox' please give it a unique name and then click 'Add'.
- 2 A blank template will appear. From here, simply click 'Add investment' to search for any fund, model or equity that you have permission to use.
- 3 You can add any combination of assets – once you're finished, just click 'Add selected'.

The image shows three sequential screenshots of the Aviva ESG Sandbox interface, illustrating the steps to create a new sandbox and add investments.

Screenshot 1: Create a new ESG sandbox

The first screenshot shows a blue button labeled "Create a new ESG sandbox". To its right is a modal titled "Create a new sandbox". Inside the modal, there is a text input field labeled "Please enter the name of the new sandbox" with the text "Example Sandbox" entered. Below the input field are two buttons: "Cancel" and "Add". A red circle with the number "1" highlights the "Add" button.

Screenshot 2: Example Sandbox

The second screenshot shows the "Example Sandbox" page. The page has a yellow header with the "AVIVA" logo and a blue sidebar with "ESG Sandbox" and "Directory" tabs. The main content area has a blue header "Example Sandbox" and a white body. The body contains two bullet points: "If more than 50% of the assets held in a fund do not qualify for ESG analysis, this is flagged on the basis that the assets available for analysis represent fewer than the majority of assets in the fund. For example, this could occur in the case of a bond fund where the majority of assets are sovereign bonds." and "Data available for securities and corporate bonds (and exclusive of asset types deemed not relevant for ESG analysis) should have coverage of at least 65% of the fund's holdings calculated by weight. For more information please consult the [reference guide](#)." Below the bullet points is a blue box with a white icon and text: "This sandbox currently has no investments. Please use the 'Add an investment' button to begin." To the right of the main content area is a yellow button labeled "Add an investment". A red circle with the number "2" highlights this button.

Screenshot 3: Aviva Investors

The third screenshot shows the "Aviva Investors" page. The page has a white header with "Aviva Investors" and a search icon. Below the header is a section titled "90 funds matching your search criteria". This section contains a table with three columns: "Fund name", "ISIN", and "Add". The table lists three funds: "Aviva Investors Climate Transition Global Credit Iyh Acc" (ISIN: LU2324721625), "Aviva Investors Climate Transition Global Credit Ryh Acc" (ISIN: LU2324721898), and "Aviva Investors Climate Transition Global Credit Syh Acc" (ISIN: LU2324721971). To the right of the table is a yellow button labeled "Add selected (0)". A red circle with the number "3" highlights this button. Another red circle with the number "3" highlights the "Add" column header.

USING THE STANDARD SANDBOX

You will be returned to the sandbox with the data from those selected investments loaded.

- 1 Simply **align the % weighting to each asset** to start exploring against the main themes.
 - 2 Once you are happy with the weightings, click '**Update**'. This locks in the base make-up of that model and allows the modelling of changes (more details on page 9).
- ▶ Jump to slide 9 to learn more about modelling changes within the sandbox.

The screenshot shows the AVIVA ESG Sandbox interface. At the top, there's a yellow header with the AVIVA logo and 'ESG Sandbox' and 'Directory' tabs. Below this is a blue header with 'Example Sandbox'. The main content area has a 'Comparison view' tab selected. It displays a table with columns for Asset, ISIN, Existing weighting, Edit weighting (Zero if not required) %, Carbon emissions (kg CO2 / £ 1000), Water usage (litres / £ 1000), Waste to landfill (kg / £ 1000), Average female directors (%), Deforestation (# Flagged), Human rights controversies (# Flagged), Corporate governance (# Flagged), and Tobacco (# Flagged). The table lists three assets: Aviva Investors Multi-asset Fund III, Aviva Investors Multi-asset Fund V, and Anon Model 177931. The 'Edit weighting' column for the first two assets is highlighted with a red box and a '1' in a red circle. At the bottom right, the 'Update' button is highlighted with a red box and a '2' in a red circle. The bottom of the interface shows buttons for 'Exit without saving', 'Save', and 'Update', along with a 'View impact on themes' button.

Asset	ISIN	Existing weighting	Edit weighting (Zero if not required) %	Carbon emissions (kg CO2 / £ 1000)	Water usage (litres / £ 1000)	Waste to landfill (kg / £ 1000)	Average female directors (%)	Deforestation (# Flagged)	Human rights controversies (# Flagged)	Corporate governance (# Flagged)	Tobacco (# Flagged)
Aviva Investors Multi-asset Fund III	GB00BVRZG174	0.00%	0 %	GREEN	GREEN	GREEN	AMBER	GREEN	GREEN	GREEN	20
Aviva Investors Multi-asset Fund V	GB00BVRZG398	0.00%	0 %	GREEN	GREEN	GREEN	AMBER	GREEN	GREEN	GREEN	18
Anon Model 177931	-	0.00%	0 %	NOT SPECIFIED	NOT SPECIFIED	NOT SPECIFIED	NOT SPECIFIED	NOT SPECIFIED	NOT SPECIFIED	NOT SPECIFIED	Not specified

100.00% 0.00
Total must equal 100

Exit without saving Save Update View impact on themes

HOW TO ACCESS THE MODEL PORTFOLIO SANDBOX

The second route to access the ESG Profiler sandbox is via an existing model portfolio on the Aviva Platform:

- 1 Navigate through Platform Services to the **Model portfolios** section.
- 2 Once in model portfolios, simply click on the model you wish to import, then within the right-hand navigation, click the **'ESG Profiler (Sandbox)'** action.
- 3 The system will ask you to name the ESG Sandbox to be stored within the directory (the model name will be pre-populated). Add to this if you wish, click save and the ESG Sandbox will load, with all details based on the model make-up.

The screenshot shows the 'Platform services' header with navigation links: Notifications (5), Client Report Maintenance, Corporate actions, and ESG Profiler (Sandbox). Below this is a secondary navigation bar with icons for Business reporting, Transfer tracker, Bulk switch/redirect, Completed applications, Model portfolios (highlighted with a red box and a '1'), and Remuneration statement.

The main content area displays details for 'Anon Model 250839'. On the right-hand navigation panel, the 'ESG Profiler (Sandbox)' action is highlighted with a red box and a '2'.

Below the model details, there is a section for 'Assets' with a donut chart and a table. A modal dialog is open at the bottom right, asking for a new name for the model. The input field contains 'Anon Model 250839 (WIP)' and is highlighted with a red box and a '3'.

Assets	Last price	Allocation
Aviva Inv UK Equity Income 2 Acc	£2.4296	50%
Aviva Inv Cash 2 Acc	£0.701008	50%

USING THE MODEL SANDBOX

The system will store your newly named sandbox within the directory:

- 1 The ESG Sandbox will load, with all details based on the model. From here you can try out any change you wish to make to that model portfolio.
- 2 Simply amend the %, remove and/or add new assets to meet the prospective change to the model.
- 3 Once complete, click 'View impact on themes'.
- 4 This will present a comparison of current and prospective models.

Please note, this is the only way to manipulate the make-up of a model. If you add a model to a blank ESG Sandbox, you cannot manipulate the constituent holdings.

1 AVIVA ESG Sandbox Directory

Anon Model 250839 (WIP)

• If more than 50% of the assets held in a fund do not qualify for ESG analysis, this is flagged on the basis that the assets available for analysis represent fewer than the majority of assets in the fund. For example, this could occur in the case of a bond fund where the majority of assets are sovereign bonds.

• Data available for securities and corporate bonds (and exclusive of asset types deemed not relevant for ESG analysis) should have coverage of at least 65% of the fund's holdings calculated by weight.

For more information please consult the [reference guide](#).

Detailed view Comparison view

Reset columns Edit columns Download CSV View full screen

Asset	ISIN	Existing weighting	Edit weighting (Zero if not required) %	Carbon emissions (kg CO2 / £ 1000)	Water usage (litres / £ 1000)	Waste to landfill (kg / £ 1000)	Average female directors (%)	Deforestation (if flagged)	Human rights controversies (if flagged)	Corporate governance (if flagged)	Tobacco (if flagged)
Aviva Inv UK Equity Income 2 Acc	GB00BGR51K64	50.00%	50	77.57	51,792.53	4.65	37.7	0	0	2	4
Aviva Inv Cash 2 Acc	GB00B24DQM23	50.00%	50	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Total		100.00%	100.00								

Exit without saving Save a copy Update **View impact on themes**

4

Air pollution
Total share of air pollution particulates released over the past year:
0.32 kg
-33.99% relative to an index of global companies. Comparative index

Climate change
Total share of carbon emissions ownership over the past year:
77.55 kg CO2
+3.74% relative to an index of global companies. Comparative index

Corporate governance
Flagged for controversies related to a firm's approach to corporate governance.
2 companies
-96.72% relative to an index of global companies. Comparative index

Deforestation
Flagged for deforestation concerns.
0 companies
-100% relative to an index of global companies. Comparative index

Human rights
Flagged for severe or concerning controversies related to a firm's impact on human rights.
0 companies
-100% relative to an index of global companies. Comparative index

Recycling
Percentage of waste recycled.
67.64%
+22.02% relative to an index of global companies. Comparative index

Waste
Total ownership of waste
4.65 kg
-8.09% relative to an index of global companies. Comparative index

UNDERSTANDING AND EXPLORING THE CURRENT METRICS OF A SANDBOX

Once you have a populated a sandbox, regardless of the route, you will be able to view the current metrics associated with that model.

- 1 You can explore **detailed** and **comparison** views at asset level.
- 2 Each of the ESG preferences are presented at the bottom – these are the aggregated figures.
- 3 It is possible to edit the table to include the six available key exclusionary filters. Simply click ‘**Edit columns**’ to be presented with the options.
- 4 You can export the key data into an excel document by clicking ‘**Download CSV**’. This spreadsheet will include all information covering asset detail, % splits, fund codes and ESG data.

AVIVA ESG Sandbox Directory

Example Sandbox

• If more than 50% of the assets held in a fund do not qualify for ESG analysis, this is flagged on the basis that the assets available for analysis represent fewer than the majority of assets in the fund. For example, this could occur in the case of a bond fund where the majority of assets are sovereign bonds.
 • Data available for securities and corporate bonds (and exclusive of asset types deemed not relevant for ESG analysis) should have coverage of at least 65% of the fund's holdings calculated by weight.
 For more information please consult the [reference guide](#).

1 **Detailed view** Comparison view
3 [Reset columns](#) [Edit columns](#) [Download CSV](#) [View full screen](#)
4 [Add an investment](#)

Asset	ISIN	Existing weighting	Edit weighting (Zero if not required) %	Carbon emissions (kg CO2 / £ 1000)	Water usage (litres / £ 1000)	Waste to landfill (kg / £ 1000)	Average female directors (%)	Deforestation (# flagged)	Human rights controversies (# flagged)	Corporate governance (# flagged)	Tobacco (# flagged)
Aviva Investors Multi-asset Fund III	GB00BVRZG174	34.00%	34	36.57	656.27	0.77	34.11	1	0	19	20
Anon Model 177931	-	33.00%	33	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Aviva Investors Multi-asset Fund V	GB00BVRZG398	33.00%	33	47.85	552.18	0.89	33.62	1	0	12	18
Total		100.00%	100.00								

2 **Air pollution** **Climate change** **Corporate governance** **Recycling** **Waste**

1. ☒ Asset
 2. ☒ ISIN
 3. ☒ Existing weighting
 4. ☒ Edit weighting (Zero if not required)
 5. ☒ Carbon emissions (kg CO2 / £ 1000)
 6. ☒ Water usage (litres / £ 1000)
 7. ☒ Waste to landfill (kg / £ 1000)
 8. ☒ Average female directors (%)
 9. ☒ Deforestation (# flagged)
 10. ☒ Human rights controversies (# flagged)
 11. ☒ Corporate governance (# flagged)
 12. ☐ Recycling (%)
 13. ☐ Air pollution (kg / £ 1000)
 14. ☐ Adult entertainment (# flagged)
 15. ☐ Alcohol (# flagged)
 16. ☐ Controversial weapons (# flagged)
 17. ☐ Gambling (# flagged)
 18. ☒ Tobacco (# flagged)
 19. ☐ Fossil fuels (# flagged)

[Exit without saving](#) [Save a copy](#) [Update](#) [View impact on themes](#)

Air pollution: Total share of air pollution particulates released over the past year: 0.22 kg. 54.13% Lower relative to an index of global companies. Comparative index. Did you know? More than 90% of people worldwide live in areas exceeding the WHO Guideline for healthy air. More than half live in areas that do not even meet WHO's least-stringent air quality target.

Climate change: Total share of carbon emissions ownership over the past year: 42.16 kg CO2. 43.6% Lower relative to an index of global companies. Comparative index. Equivalent to 183 miles driven.

Corporate governance: Flagged for controversies related to corporate governance. 18 companies. 79.49% Lower relative to an index of global companies. Comparative index. Did you know? Corporate governance is the good organisation and is a key factor for long term financial performance.

Recycling: Percentage of waste recycled: 51.41%. 7.26% Lower relative to an index of global companies. Comparative index. Equivalent to 5 out of 10 plastic bottles used.

Waste: Total ownership of waste: 0.83 kg. 43.59% Lower relative to an index of global companies. Comparative index. Equivalent to roughly 9 household waste.

MODELLING CHANGES TO A SANDBOX

- 1 Now you have a sandbox with a baseline view, you will be able to see 'Existing weighting' and 'Edit weighting' columns. These give you the ability to explore how changes will impact the metrics.
- 2 Simply add more investments or adjust the percentages before clicking 'View impact on themes'.
- 3 New investments will be highlighted green and have a 0% allocation.

AVIVA
ESG Sandbox Directory

Example Sandbox

• If more than 50% of the assets held in a fund do not qualify for ESG analysis, this is flagged on the basis that the assets available for analysis represent fewer than the majority of assets in the fund. For example, this could occur in the case of a bond fund where the majority of assets are sovereign bonds.
 • Data available for securities and corporate bonds (and exclusive of asset types deemed not relevant for ESG analysis) should have coverage of at least 65% of the fund's holdings calculated by weight.
 For more information please consult the [reference guide](#).

[Reset columns](#) [Edit columns](#) [Download CSV](#) [View full screen](#)

Asset	ISIN	Existing weighting	Edit weighting (Zero if not required) %	Carbon emissions (kg CO2 / £ 1000)	Water usage (litres / £ 1000)	Waste to landfill (kg / £ 1000)	Average female directors (%)	Deforestation (# flagged)	Human rights controversies (# flagged)	Corporate governance (# flagged)	Tobacco (# flagged)
Aviva Investors Multi-asset Fund III	GB00BVRZG174	34.00%	34	35.57	656.27	0.77	34.11	1	0	19	20
Anon Model 177931	-	33.00%	33	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Aviva Investors Multi-asset Fund V	GB00BVRZG398	33.00%	12	47.85	552.18	0.89	33.62	1	0	12	18
Aviva Investors Multi-Strategy Target Return Fund 9 GBP Acc	GB00BPORT421	0.00%	21	0.6	1.8	0.01	45.45	0	0	1	0
Total		100.00%	100.00								

[Exit without saving](#) [Save a copy](#) [View impact on themes](#)

Air pollution

Total share of air pollution particulates released over the past year.

0.22 kg

-14.13% Lower relative to an index of global companies. Comparative index

Did you know? More than 90% of people worldwide live in areas exceeding the WHO Guideline for healthy air. More than half live in

Climate change

Total share of carbon emissions ownership over the past year.

42.16 kg CO2

-43.6% Lower relative to an index of global companies. Comparative index

Equivalent to 183 miles driven.

Corporate governance

Flagged for controversies related to a firm's approach to corporate governance.

18 companies

-75.63% Lower relative to an index of global companies. Comparative index

Did you know? Corporate governance is the cornerstone of any good organisation and is recognised as a key factor for long term financial success.

Deforestation

Flagged for deforestation concerns.

1 company

-90% Lower relative to an index of global companies. Comparative index

Did you know? Around one football field of rainforest was lost every six seconds in recent years.

Human rights

Flagged for severe or concerning controversies related to a firm's impact on human rights.

0 companies

-100% Lower relative to an index of global companies. Comparative index

Did you know? Over 1000 corporate signatories in 135 countries have signed up to the UN Global Compact, which protects human rights.

Recycling

Percentage of waste recycled.

51.41%

-7.38% Lower relative to an index of global companies. Comparative index

Equivalent to 5 out of 10 plastic bottles used.

Waste

Total ownership of waste

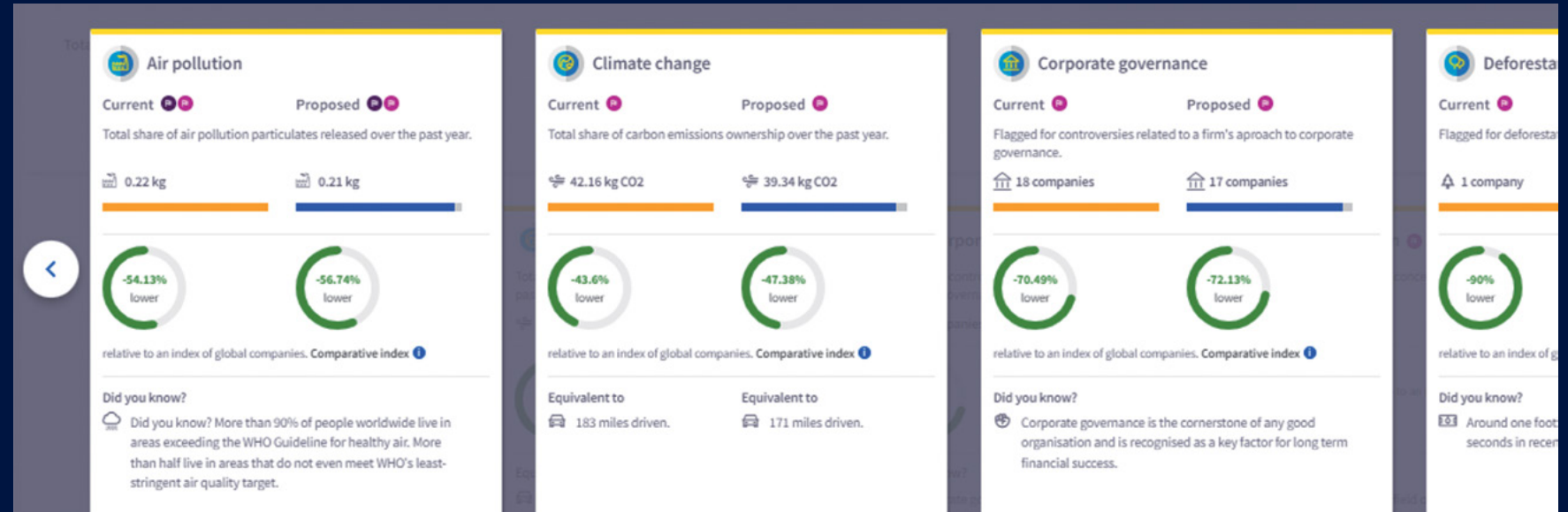
0.83 kg

-43.59% Lower relative to an index of global companies. Comparative index

Equivalent to Roughly 0 household

MODELLING CHANGES TO A SANDBOX

- ▶ ‘View impact on themes’ will demonstrate how the changes you have made have improved or been detrimental to the ESG metrics, showing the current vs proposed setup.
- ▶ At this point you can either ‘Update’, which will set the new ‘make-up as the existing weighting’ or ‘Save a copy’, which will move this new weighting to a new sandbox. Choosing this option will preserve the previous solution, instead of replacing it.



DIRECTORY MANAGEMENT

- 1 All saved sandboxes, regardless of access route, will be saved within the **Directory**.
- 2 From here you can:
 - ▶ Click the name to open that sandbox
 - ▶ Duplicate an existing and create a new sandbox with the existing sandbox as the start point.
 - ▶ Rename or delete the sandbox.

AVIVA

ESG Sandbox **Directory** 1

Create a new ESG sandbox

Directory

Sandbox name	Created date	Last modified	Actions
Balanced ESG	06/06/2023	06/06/2023, 15:26	⋮
Cautious Model WIP	06/06/2023	06/06/2023, 15:26	⋮
Mrs Example Client	06/06/2023	06/06/2023, 15:27	⋮

1

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APPENDIX: ESG TOOL REFERENCE GUIDE

REFERENCE GUIDE

FNZ Impact (The tool) provides information on your client's current portfolio for certain specific ESG themes. The information doesn't show whether the fund that your client invests in has any specific ESG aims or whether it employs a particular ESG strategy to achieve its aims. In addition, UK market has no defined criteria for the assessment of ESG factors currently and there are still some market wide gaps of reliable ESG data which mean that we are unable to provide all of the information that we would like to provide on some of the themes presently. The tool will be updated when reliable data is available. It is important that you refer to this reference guide for details of the ESG themes that the tool covers, and the methodology and assessment criteria used.

There is growing consensus that considering environmental, social and governance topics, including climate change, is supportive of fiduciary duty. The ESG & Responsible Investing area of the platform aims to further inform you in making choices with regard to your clients' investments by aligning both their financial goals and their values where appropriate. This is achieved through providing information about the environmental, social and governance aspects of investments into the platform, giving you and your client the opportunity to understand your client's preferences from the perspective of these considerations, and then applying these insights to the selection of investments where appropriate.

Limitations exist given inconsistencies in the market and gaps in data provision. Given the subjective nature of some ESG ratings, funds could be rated differently elsewhere.

This tool may be able to support you in advising your clients to assist them to make choices with regard to their investments by assessing the sustainability credentials of portfolios, however please note that the tool is not a substitute for a suitability assessment which remains the sole obligation of the advisor.

WHAT IS ESG AND WHY IS IT IMPORTANT?

Given the rise in awareness of significant global environmental and social challenges, many of us have made lifestyle changes to align with our values around managing our own impact on the future world. This is now beginning to extend to clients, wishing to align their investment objectives with their broader values.

As a result of these developments, investment managers, financial advisers and end investors are now incorporating ESG considerations into investment analysis, decision-making, and suitability.

APPENDIX: ESG TOOL REFERENCE GUIDE

WHAT ARE ESG FACTORS?

Environmental factors

These factors focus on the natural world, including elements such as carbon management, resource use (both renewable and non-renewable), and air pollution. Examples include:

- Climate change and carbon emissions/reductions
- Biodiversity
- Resource depletion, for example fossil fuel use
- Waste management
- Water usage
- Deforestation

Social factors

These are factors that affect the lives of people, including the management of human resources, employee rights, and local community rights. Examples include:

- Human rights
- Gender and diversity
- Modern slavery
- Working conditions
- Employee relations

Governance factors

These relate to how businesses are run, including their relationship to broader stakeholders, for example issues inherent to the business model or industry best practice. Examples include:

- Bribery and corruption
- Tax strategy
- Board structure
- Political contributions
- Whistle-blower schemes

HOW IS ESG DATA SOURCED?

This platform solution aims to enable alignment and transparency across key ESG metrics by striving to move towards the dissemination of disclosed impact data in the areas where this data is most prevalent and available. This aims to align with industry calls for greater transparency and consistency from bodies such as the International Financial Reporting Standards Foundation and UN Principles for Responsible Investment.

In line with other methodologies, the solution takes a ‘dashboard’ approach - aiming to source raw data for a variety of key metrics rather than aggregate scores where possible - when looking at a company or at the portfolio level. The solution sources and aggregates these data from some of the world’s most widely used ESG data providers and the

data selection process involves a continual, detailed review of market providers given the pace at which the market is evolving. Added to this, specialist sources can be used to supplement insights. The insights generated, which represent an aggregation of widely used ESG data sources available in the market today, are designed to support investors of all kinds seeking to achieve a range of objectives, including measuring, and reporting on controversial industry exposure, carbon emissions, diversity & inclusion progress, and company governance. They also aim to support advisers in selecting and implementing appropriate investment strategies and factoring sustainability research into their investment and risk management processes. To learn more about data providers used, visit the [Find out more section](#).

COVERAGE

Whilst disclosure has improved in recent years, for example as evidenced by disclosures to the Carbon Disclosure Project, gaps remain. Data are currently unavailable for some metrics, for some firms in some geographies, and some of the most significant developments in the field of ESG data include filling in these gaps in the data, adding new metrics and improving consistency – all of which will aid comparability across companies.¹

Given the above, for company level data, coverage displayed is dependent on the availability of underlying data. It is therefore achieved subject to the availability of data from selected data providers. If data is not available, no data will be displayed.

APPENDIX: ESG TOOL REFERENCE GUIDE

For fund data, the following applies:

In line with industry standards set by data providers, a threshold of 65% or more of a fund's constituent components (by weight) should be covered in order for fund level data to be provided, achieved subject to the availability of data. The calculation performed first assesses the percentage of assets which qualify for ESG analysis. Of this percentage, which is rebased to represent 100%, resource usage data (in the case of carbon, waste, water) or percentage data points (e.g., percentage of women on boards) are aggregated and a weighted average for this portion of the portfolio is calculated and displayed.

Data is always displayed where it is available. Cash positions, and other asset types deemed to be not relevant for ESG analysis are removed prior to calculating a fund's gross weight. Currently this includes the removal of sovereign bonds which will not be covered currently given the lack of standardised reporting methodologies. Where weighted averages are provided these are based on the number of companies within the portfolio for which data is available.

¹ Generation Investment Management (2019), **The future of ESG Data, The Future of ESG Data | Generation Investment Management LLP (generationim.com)**.

Flags

For data to meet coverage criteria without being flagged, coverage of 65% of the underlying instruments of a fund's gross weight must be achieved.

Flags will be shown where the data provided has not met certain criteria as follows:

- Data available for securities and corporate bonds (and exclusive of asset types deemed not relevant for ESG analysis as described in the Coverage section) should have coverage of at least 65% of the fund's holdings calculated by weight
- If more than 50% of the assets held in a fund do not qualify for ESG analysis (as described in the Coverage section), this is flagged on the basis that the assets available for analysis represent fewer than the majority of assets in the fund. For example, this could occur in the case of a bond fund where the majority of assets are sovereign bonds.

Intent of fund manager/investment

At the present time, the insights provided support a view of the current positioning of the fund or company from the perspective of the ESG Preferences selected. The intention of a fund's investment process and whether the fund is presented as ethical, sustainable, ESG, socially responsible or similar, or a company's sustainability objectives, are not provided at this time we are working on this with the aim of providing this in a future development.

Identifying exposure to controversial industries

The tool screens to identify companies with any tie to certain industries, products, and services. This indicates whether any of the in-scope portfolio's market value (please see 'coverage' section of reference guide) is exposed to companies flagged for involvement in the following industries according to MSCI restrictive screen definitions (MSCI ESG Research has developed a framework designed to define involvement in controversial activities; please find more detail [here](#)). If any involvement is present according to the framework, the fund is flagged. The relevant industries can be selected via the 'Edit columns' selector within the tool.

Fund insights are based on exposure to the underlying companies for these controversial industries. The following can be screened:

- **Tobacco:** Tobacco products through the producer, distributor, licensor, retailer, supplier, and/or ownership.
- **Gambling:** Gambling through the operation, support, licensing, and/or ownership.
- **Adult entertainment:** Adult entertainment, including producer, distributor, retailer, and/or ownership.
- **Controversial Weapons:** Cluster munitions, landmines, biological / chemical weapons, depleted uranium weapons, blinding laser weapons, incendiary weapons, and/or non-detectable fragments.
- **Alcohol:** Alcohol, including producer, distributor, retailer, licensor, supplier, and/or ownership.
- **Fossil Fuels:** Thermal coal, oil and gas in particular reserve ownership, related revenues and power generation.

APPENDIX: ESG TOOL REFERENCE GUIDE

Comparison index and traffic light system

A traffic light indicator system (red, amber, green) is used as a basis for communicating an investment's performance in relation to the sustainability metrics used, relative to the comparative index, a universe of global companies as represented by the constituents of the MSCI ACWI Index. This appears throughout the platform, aiming to enable quick and intuitive comparability. Where the comparative index is unsuitable for the selected preference, a default target point is used.

A given metric related to the investment (e.g., the carbon footprint of a fund) is shown with a red, amber, or green colour-coded indicator, communicating whether the associated sustainability metric is relatively better than average (green), worse than average (red) or about average (amber) compared with the comparative index.

It is important to emphasise that the aim of the red, amber, green indicator is not to test whether these thresholds for being classified in the high and low categories are optimal or not, but rather to provide an appropriate system for communicating the product's performance relative to the comparative index. More details on the calculations for deviation from the comparative index level are provided in the [Find out more section](#).

How often is data updated?

Holdings data is updated in real time. Look through data feeds, for example the holdings held by a client, are updated daily. ESG data feeds are updated monthly (in line with most providers' doing this monthly) though underlying ESG data gathered by providers is updated less frequently as detailed below. Research sources are refreshed twice a year. Data providers are assessed annually or as and when new innovations arrive. Both the appropriateness of the data provider and the quality of any new data sourced (e.g., new data sets for review) are assessed.

Insights may change daily for a fund if underlying holdings are changed. Note that the lag on fund managers' reporting can be upwards of a month in reporting underlying holdings.

- ▶ **Quantitative (carbon footprint information): usually change annually**
- ▶ **Qualitative (e.g., policies, memberships): usually change annually**
- ▶ **Controversies (e.g., news): could change daily**
- ▶ **Exposures (e.g., revenues or activities in potential controversial areas, e.g., tobacco, weapons): usually change annually for a specific company.**

WHAT IS ESG RISK?

ESG risk ratings are provided by some of the world's most widely used ESG specialist research and data providers. ESG risk ratings are designed to measure a company or portfolio's resilience to long-term, industry material environmental, social and governance (ESG) risks. For companies, ESG Risk scores are calculated by third party ESG data providers and these scores are displayed. For funds, a score calculated by the selected third-party provider is displayed. Further information is available here: [MSCI \(2021\), ESG Fund Ratings - MSCI](#).

APPENDIX: ESG TOOL REFERENCE GUIDE

WHAT IS ‘TEMPERATURE ALIGNMENT’?

Temperature alignment aims to model an asset’s contribution to the objectives of the Paris Agreement on climate change (2015), specifically the consensus to limit global temperature rise to below 2 degrees of warming by 2050.

The Paris Agreement, the first-ever universal, legally binding global climate change agreement, adopted at the Paris climate conference (COP21) in December 2015 and ratified by around 190 countries, set out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C.

Using this metric, investors can track a company’s actual and forecasted carbon management and reduction performance and whether further reductions in carbon emissions are being achieved to meet the Paris Agreement Goal of keeping global temperature rise well below 2°C. Data is only available for a subset of the investment universe at this time and may not be displayed for all companies.

WHAT ARE THE KEY THEMES?

Globally recognised sustainability frameworks including those issued by intergovernmental, global standard-setting bodies, and academic actors drive our analysis of core sustainability issues and the metrics which enable measurement of these issues, for example the Sustainability Accounting and Standards Board, the Taskforce for Climate Related Disclosures, and the UN Sustainable Development Goals. This includes a review of impact frameworks, academic and NGO research and data provider intelligence. The following globally recognised frameworks form the basis of the review, considered in order to understand, develop, and verify sustainability issues of note. These reflect the recommendations of intergovernmental groups, global standard-setting bodies, and academic actors.

APPENDIX:

ESG TOOL REFERENCE GUIDE - THEMES IN DETAIL



CLIMATE CHANGE

Promoting a low carbon economy

Why this matters

Climate change and global temperature rises are causing long-lasting changes to our climate system, which threatens irreversible consequences if we do not act. In order to limit warming to 1.5°C above pre-industrial levels as called for in the Paris Agreement, global efforts would need to reach net zero CO2 emissions globally around 2050. Companies have an important role to play in achieving carbon reduction, including the disclosure of both carbon emissions and strategies for carbon emission reduction. The lower the carbon footprint figure shown, the lower the environmental impact of the activities that a company is performing, or a portfolio has, from a carbon perspective.

To achieve this goal, companies can reduce carbon emissions by decarbonising their operations and supply chains through

continuously improving energy efficiency, reducing the carbon footprint of their operations, products, services, and processes, and setting ambitious emissions reductions targets in line with climate science, as well as scaling up investment in the development of innovative low-carbon products and services.

About this calculation

Ownership of emissions is calculated by dividing a company's total carbon footprint (the carbon emissions of a company from their operations and purchased energy, based on the GHG Protocol) by the total market value of the company, and multiplying this by the amount of the company you own. This is done for each company in the portfolio and added together to give a figure for the whole portfolio. It can also be calculated per £1000, enabling a comparison of one company or fund with another to understand carbon emissions produced on a like-for-like basis.



WATER SECURITY

Promoting effective and efficient use of water

The United Nations Sustainable Development Goals recognise that social development and economic prosperity depends on the sustainable management and sharing of water resources and ecosystems.

About this calculation

This shows the share of the water used by the companies in your portfolio. First, the water a company uses in cooling and processing, plus their purchased water, is added together to understand how much water is being used. Ownership is calculated by dividing this figure by the total market value of the company and multiplying this by the amount of the company owned. This is done for each company in the portfolio and added together to give a figure for the whole portfolio. It can also be calculated per £1000, enabling you to compare one company or fund with another to understand water usage on a like-for-like basis.



WOMEN IN LEADERSHIP

Promoting equality for women in the workforce

The United Nations notes that women and girls represent half of the world's population and therefore also half of its potential.

About this calculation

This metric shows the average percentage of female directors in the companies in the portfolio. This is provided for each company in the portfolio. For your total portfolio, a weighted average of all the companies in the portfolio is shown. It is important to note that both over representation and under representation of women in leadership roles can be assessed as amber or red.

APPENDIX:

ESG TOOL REFERENCE GUIDE - THEMES IN DETAIL



WASTE

Minimising negative environmental impact through effective waste management

The impact of the plastic that ends up in the oceans every year in marine ecosystems is just one factor that has encouraged greater awareness of the consequences of poor waste management.

Within current global policy frameworks, waste management features in UN Sustainable Development Goal (SDG) 11 and SDG 12, notably with commitments around preventing, reducing, recycling and reuse.

About this calculation

This shows the share of waste sent to landfill generated by the companies in the portfolio. The total quantity of waste that is generated by the company and is disposed to landfill is calculated by totalling hazardous and non-hazardous landfill and waste produced by the company. Ownership is then calculated by dividing this figure by the total market value of the company and multiplying this by the amount of the company you own. This is done for each company in your portfolio and added together to give a figure for your whole portfolio. It can also be calculated per £1000, enabling the comparison of one company or fund with another to understand waste sent to landfill on a like-for-like basis.



HUMAN RIGHTS

Why this matters

Internationally observed standards, for example the UN Global Compact, with over 7000 corporate signatories worldwide, acknowledges the responsibility of businesses to respect, human rights and meet standards in this area. This includes acting with due diligence to avoid infringing the rights of others, and addressing any negative human rights impacts related to their business. They must also abide by international standards and avoid causing or contributing to adverse human rights impacts through their activities and relationships.

About this calculation

This shows the number of companies in the portfolio where severe or concerning controversies related to a firm's impact on human rights have been flagged. This metric flag concerns related to situations such as poor occupational safety records, inadequate anti-discrimination policies, poor whistle-blower protections, or supply chain risk of forced labour. For the total portfolio, the total number of companies who have experienced these incidents is shown.



DEFORESTATION

Promoting stewardship of the world's forests

Net forest loss has decreased by more than half since the 1990s, but the loss of forests continues at pace. Managing forests sustainably, and the interrelated issues of halting and reversing land and natural habitat degradation, successfully combating desertification, and stopping biodiversity loss, are not only key to mitigating climate change. Sustainable management also contributes to long-term socio-economic growth, and the integrity of global ecosystems which support life as we know it on earth. Companies can implement strategies to incentivise sustainable land use, responsible forest management and environmental stewardship.

About this calculation

Global Canopy, an NGO backed by the UK and international governments, identifies, and assesses the performance of global companies and financial institutions that are exposed to deforestation through the Forest 500 ranking, www.forest500.org.

Biannually Global Canopy maps companies and financial institutions in forest risk commodity supply chains to select the Forest 500 sample. These companies are selected because they have been evaluated to be the most influential companies in forest-risk supply chains based on their exposure to one or more forest-risk commodities - soy, palm oil, beef, leather, pulp and paper or timber – industries with the most significant impacts on deforestation, according to analysis.

Companies are then scored, with low scores highlighting management practices and deforestation impacts of greatest concern. If companies achieve a bottom score of 0 or 1 out of 5, they are flagged. For a portfolio, the number of companies (scoring 0 or 1) making up the relevant percentage of the portfolio by weight is calculated.

APPENDIX:

ESG TOOL REFERENCE GUIDE - THEMES IN DETAIL



CORPORATE GOVERNANCE

Promoting fair business practices

Governance encompasses the rules, roles, and processes which a company and its board have in place to run its business. Factors surrounding a company's management systems and how it conducts itself have been a part of environmental, social and governance considerations for many years. Issues such as board composition, executive compensation, corporate disclosure, fraud, and insider trading are some of these considerations. Striving towards good practices in this area contribute to a fairer, more just and well-run corporate environment.

About this calculation

This shows the number of companies in the portfolio where issues related to a firm's corporate governance have been flagged. This metric flags concerns related to the following categories, poor auditing and accounting, corruption, bribery & fraud, governance structures, controversial investments, the appropriate behaviour of executives and independence of boards. For the total portfolio, the total number of companies who have experienced these incidents is shown.



AIR POLLUTION

Promoting cleaner air for all

Keeping our air clean is crucial for health and wellbeing globally. As highlighted by the UN, air pollution is the single greatest environmental risk to human health and one of the main avoidable causes of death and disease globally, with some estimated 6.5 million premature deaths (2016) across the world attributed to indoor and outdoor air pollution.

About this calculation

The air pollutant metric shows the quantity of air pollution particulates released by the companies invested in at company, fund or portfolio level for a universe of global companies who report this data. The total quantity of harmful particulates in tonnes aggregated across the following air pollutants.

- ▶ Acid Rain, Eutrophication, and Smog Precursors
- ▶ Dust and Particles
- ▶ Ozone Depleting Substances
- ▶ Volatile Organic Compounds
- ▶ Metal Emissions

This air pollution figure is generated for the company and ownership is then calculated by dividing this figure by the total market value of the company and multiplying this by the amount of the company you own in your portfolio.



RECYCLING

Promoting recycling for a sustainable future

Growing waste levels pose a serious risk to ecosystems and human health. Every year, an estimated 11.2 billion tonnes of solid waste is collected worldwide (UN) and emissions from solid waste, for example landfill, contribute to global greenhouse gas emissions. In 2018, less than 10% of plastic waste was recycled. Waste from electrical and electronic equipment containing new and complex hazardous substances is also a key challenge.

About this calculation

This shows the percentage of waste recycled by the companies in the portfolio. The total quantity of waste that is generated by the company is calculated, and the amount recycled calculated as a percentage of this total. This is done for each company in your portfolio, and this is then used to create a weighted average for a fund or your whole portfolio.

FIND OUT MORE

SUSTAINABILITY FRAMEWORKS & RESOURCES

The following globally recognised frameworks are considered in order to understand, inform, and verify sustainability issues of note reflected in the solution, and can provide useful resources for further reading.

- ▶ SASB (“SASB Materiality Map®” n.d.)
- ▶ Global Reporting Initiative (GRI, 2020)
- ▶ International Integrated Reporting Council (IIRC, 2013)
- ▶ Carbon Disclosure Project (CDP 2020, 2019)
- ▶ Task Force for Climate Related Disclosures (TCFD, n.d.)
- ▶ Carbon Disclosure Standards Board (CDSB, 2020)
- ▶ UN Sustainable Development Goals (United Nations n.d.)
- ▶ Cambridge Institute of Sustainability Leadership (CISL 2019)
- ▶ UN Global Compact (United Nations, n.d.)
- ▶ EU Taxonomy (EU, 2021)
- ▶ The Sustainable Finance Disclosure Regulation
- ▶ UN Principles for Responsible Investing

DATA PROVIDERS

The data providers currently used are as follows:

	Sustainability providers	
Measurement	Core	Additional
ESG Providers	Sustainalytics MSCI	
Specialist metrics	Trucost (environmental, carbon) *	Forest500.org, by Global Canopy (Deforestation)
Look through analysis	Morningstar *	
Stewardship	Minerva	



FIND OUT MORE

USE OF COMPARISON INDEX & RED, AMBER, GREEN INDICATOR DISPLAY




For each metric, there will be a Red Amber Green status against either:



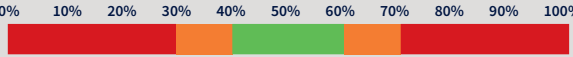
- ▶ A comparison index metric value as a target point
- ▶ A default target point

Boundaries for each of the Red, Amber, Green status will be defined based on the target point



Default levels



Analysis provided context for appropriate deviation from the comparison index level which is sufficient to meaningfully define “high” and “low” yet not so large as to be considered unrealistic. Taking a three-tier approach, 100% is split equally into three categories to create an even spread numerically between red, amber, and green categories where the comparison index represents the baseline. Hence, in the case of carbon emissions, we defined the red/green categories as: “relative to the comparison index, the CO2-emission of this investment is c.30 percent or more, higher/lower than average”. The CO2-emission associated with the amber colour is described as “about average”.

Metric	Comparison
 Carbon Emissions	Metric values that are lower than the target point will move towards the Green status.* Metric values that are higher than the target point will move towards the Red Status.* Default target point: MSCI World All Countries Index metric value. Default upper amber limit: 133.33% of target point. Default lower amber limit: 66.67% of target point.
 Water used in litres	Metric values that are lower than the target point will move towards the Green status.* Metric values that are higher than the target point will move towards the Red Status.* Default target point: MSCI World All Countries Index metric value. Default upper amber limit: 133.33% of target point. Default lower amber limit: 66.67% of target point.
 Corporate Governance (only at fund level and portfolio)	Metric values that are lower than the target point will move towards the Green status.* Metric values that are higher than the target point will move towards the Red Status.* Default target point: MSCI World All Countries Index metric value. Default upper amber limit: 133.33% of target point. Default lower amber limit: 66.67% of target point.

Metric	Comparison
 Waste to landfill in kg	Metric values that are lower than the target point will move towards the Green status.* Metric values that are higher than the target point will move towards the Red Status.* Default target point: MSCI World All Countries Index metric value. Default upper amber limit: 133.33% of target point. Default lower amber limit: 66.67% of target point.
 % of women directors	Metric values that deviate away from the target point will move towards the Amber status and then the Red status. Default target point: default target of 50%. Default green limit: 10% away from target point. Default amber limit: 20% away from target point. 

FIND OUT MORE

Metric	Comparison
 Companies negatively impacting deforestation (only at fund level and portfolio)	<p>Metric values that are lower than the target point will move towards the Green status. *</p> <p>Metric values that are higher than the target point will move towards the Red Status. *</p> <p>Default target point: MSCI World All Countries Index metric value.</p> <p>Default upper amber limit: 133.33% of target point.</p> <p>Default lower amber limit: 66.67% of target point.</p>
 Human Rights (only at fund level and portfolio)	<p>Metric values that are lower than the target point will move towards the Green status. *</p> <p>Metric values that are higher than the target point will move towards the Red Status. *</p> <p>Default target point: MSCI World All Countries Index metric value.</p> <p>Default upper amber limit: 133.33% of target point.</p> <p>Default lower amber limit: 66.67% of target point.</p>

Metric	Comparison
 Recycling in %	<p>Metric values that are lower than the target point will move towards the Green status.</p> <p>*Metric values that are higher than the target point will move towards the Red Status.</p> <p>*Default target point: MSCI World All Countries Index metric value.</p> <p>Default upper amber limit: 133.33% of target point.</p> <p>Default lower amber limit: 66.67% of target point.</p>
 Air pollution in Kg of particles recorded	<p>Metric values that are lower than the target point will move towards the Green status.</p> <p>*Metric values that are higher than the target point will move towards the Red Status.</p> <p>*Default target point: MSCI World All Countries Index metric value.</p> <p>Default upper amber limit: 133.33% of target point.</p> <p>Default lower amber limit: 66.67% of target point.</p>

IMPORTANT INFORMATION

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