# Task Force on Climate-related Financial Disclosures Report

**December 2022**

## Royal London UK Growth Trust

ROYAL LONDON
ASSET MANAGEMENT

# Royal London UK Growth Trust

This report is broken down into 6 sections:

**Fund overview**

**All climate metrics**

**Climate metrics**

**Scenario analysis**

**Appendix - Definitions, acronyms and methodological definitions**

**Appendix - Methodological and data assumptions, limitations, and disclaimers**

## Introduction

Royal London Asset Management has been an official supporter of the Financial Stability Boards (FSB) Taskforce on Climate-related Financial Disclosures (TCFD) since June 2020, aiming to increase and improve our own disclosure and that of the companies we invest in. This report has been prepared in accordance with the recommendations of the TCFD, which aims to help the investment community build a more in-depth and consistent picture of the impact of climate change.

This fund is benchmarked against FTSE All-Share Index

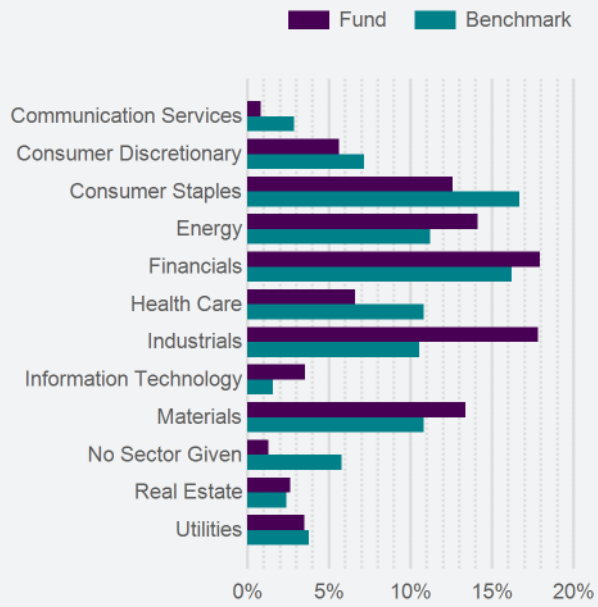
## Governance, Strategy and Risk Management

For more information on the fund's approach to governance, strategy and risk management, please refer to our RLAM 2022 TCFD Report available **here.**

## Fund overview

Sector* and asset breakdowns

### Sector breakdown by holding value 2022




**We apply the MSCI Global Industry Classification Standard to determine our company sectors*

### Fund asset breakdown by holding value 2022

# Royal London UK Growth Trust compared to FTSE All-Share Index

The following metrics have been prepared in accordance with the recommendations of the TCFD. Detailed breakdowns of the metrics can be found on subsequent pages, along with metric descriptions.

| Metric type | Fund Value | Fund Coverage | Benchmark Value | Benchmark Coverage |
|---|---|---|---|---|
| Scope 1 GHG Emissions | 85,536.99 | 98.42% | N/A | N/A |
| Scope 2 GHG Emissions | 19,483.39 | 98.42% | N/A | N/A |
| Scope 3 GHG Emissions (Estimated) | 1,191,131.04 | 98.42% | N/A | N/A |
| Scope 3 GHG Emissions (Reported) | 1,626,708.85 | 73.26% | N/A | N/A |
| Total GHG Emissions (scope 1 and 2 only) | 105,020.38 | 98.42% | N/A | N/A |
| Total GHG Emissions (scope 1, 2 and 3) | 1,296,151.42 | 98.42% | N/A | N/A |
| Carbon Footprint (scope 1 and 2 only) | 82.40 | 98.42% | 83.46 | 93.67% |
| Carbon Footprint (scope 1, 2 and 3) | 1,017.00 | 98.42% | 895.99 | 93.63% |
| Weighted Average Carbon Intensity (scope 1 and 2) | 115.96 | 98.42% | 119.79 | 94.37% |
| Weighted Average Carbon Intensity (scope 1, 2 and 3) | 1,451.35 | 98.42% | 1,286.18 | 94.32% |
| 1.5°C Disorderly | -22.16 | 98.42% | N/A | N/A |
| 2°C Disorderly | -25.91 | 98.42% | N/A | N/A |
| 2°C Orderly | -2.59 | 98.42% | N/A | N/A |
| 3°C Transitional | -1.56 | 98.42% | N/A | N/A |
| Average physical risk | -9.13 | 96.80% | N/A | N/A |
| Aggressive physical risk | -14.19 | 96.80% | N/A | N/A |

# Scope 1 GHG Emissions

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The scope 1 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

GHG emissions = ∑ (attribution fraction x company emissions)

Listed companies attribution fraction = current value of investment / enterprise value including cash

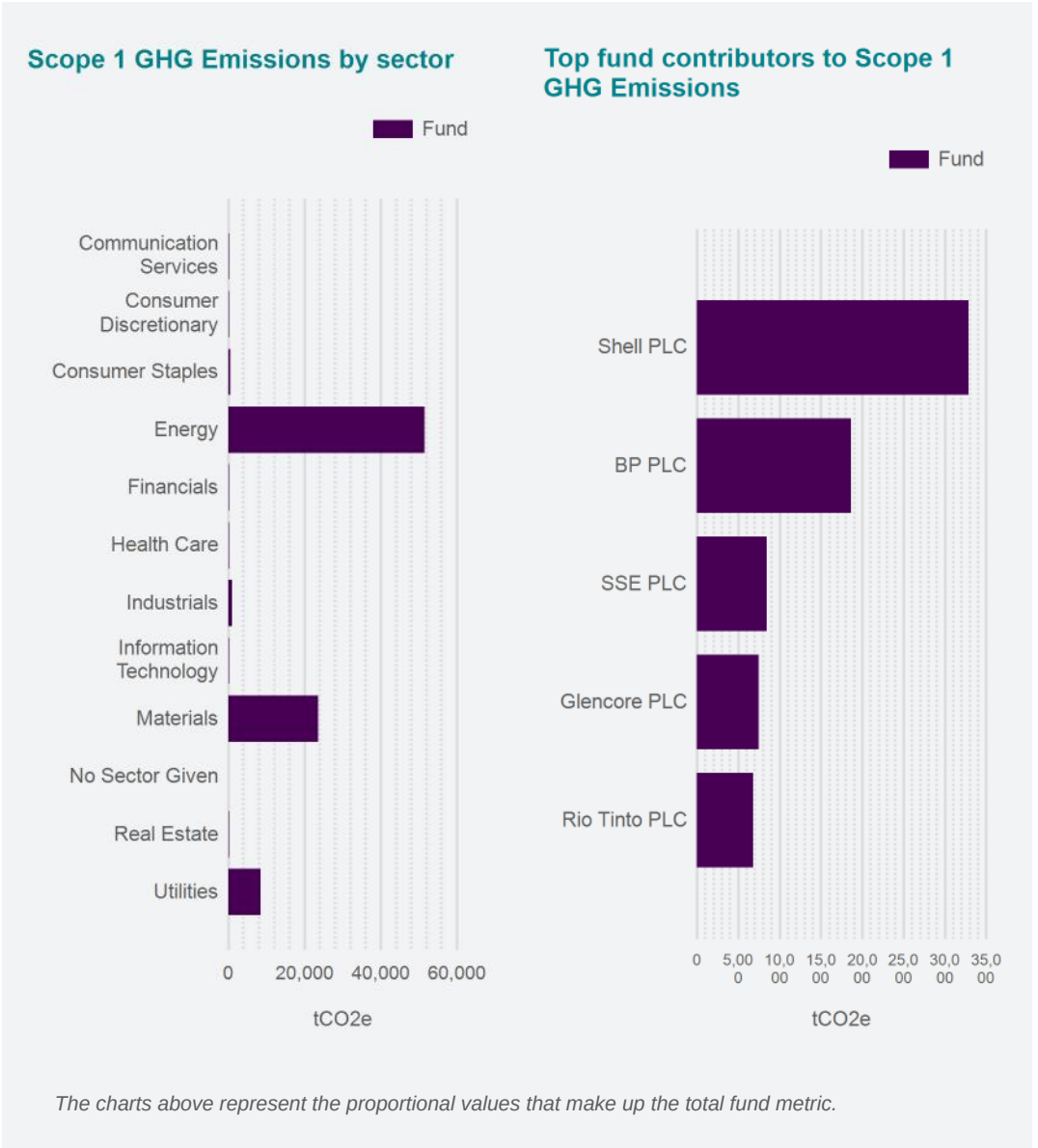
Private companies attribution fraction = current value of investment / (equity + debt)

## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 85,536.99 |
| Coverage | 98.42% |

## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 5.54 | 0.01% |
| Reported | 85,531.45 | 99.99% |
| Source: MSCI | 85,536.99 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Scope 2 GHG Emissions

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The scope 2 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

GHG emissions = ∑ (attribution fraction x company emissions)

Listed companies attribution fraction = current value of investment / enterprise value including cash

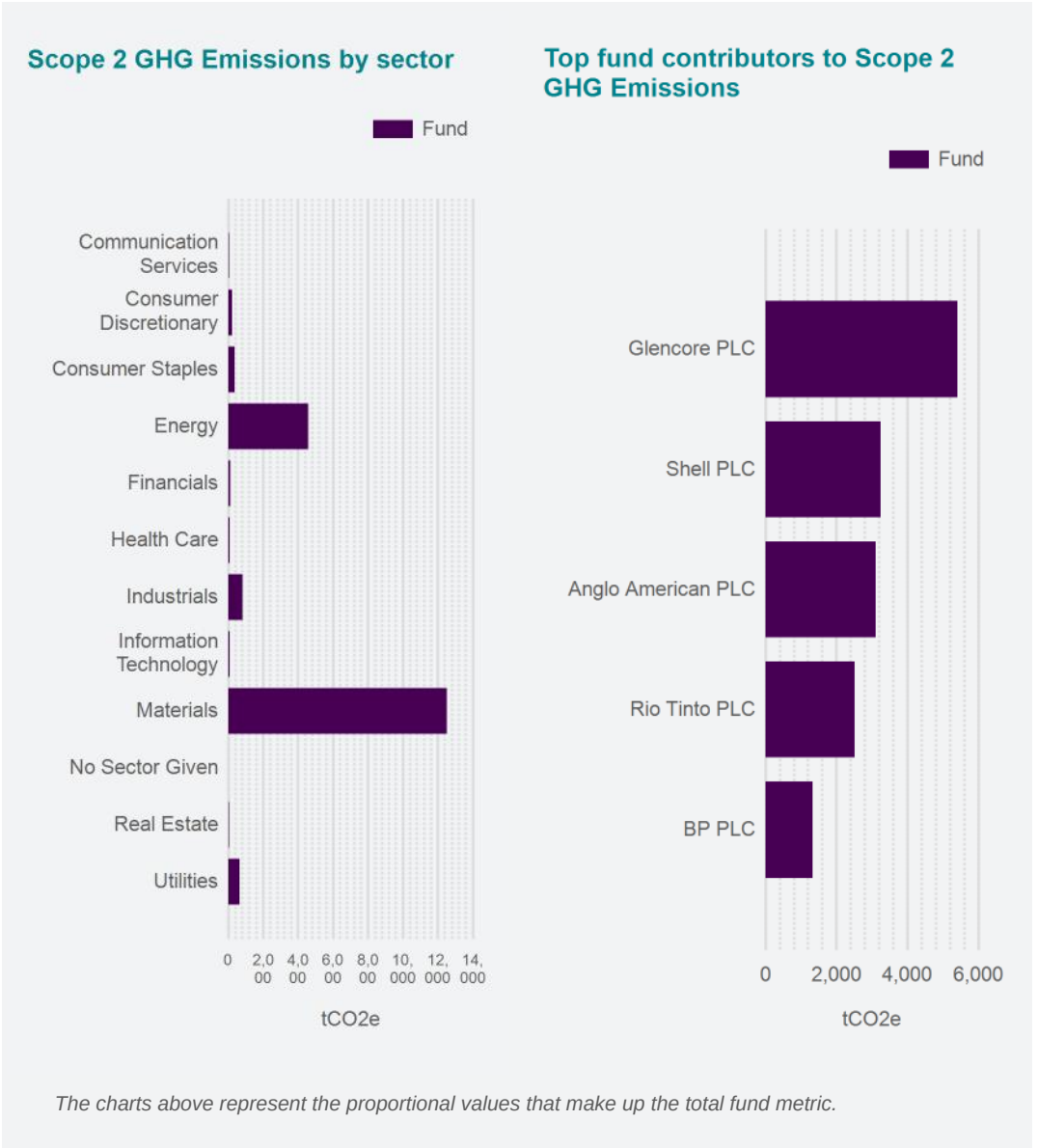
Private companies attribution fraction = current value of investment / (equity + debt)

## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 19,483.39 |
| Coverage | 98.42% |

## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 125.87 | 0.65% |
| Reported | 19,357.52 | 99.35% |
| Source: MSCI | 19,483.39 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Scope 3 GHG Emissions (Estimated)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The scope 3 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

GHG emissions = ∑ (attribution fraction x company emissions)

Listed companies attribution fraction = current value of investment / enterprise value including cash

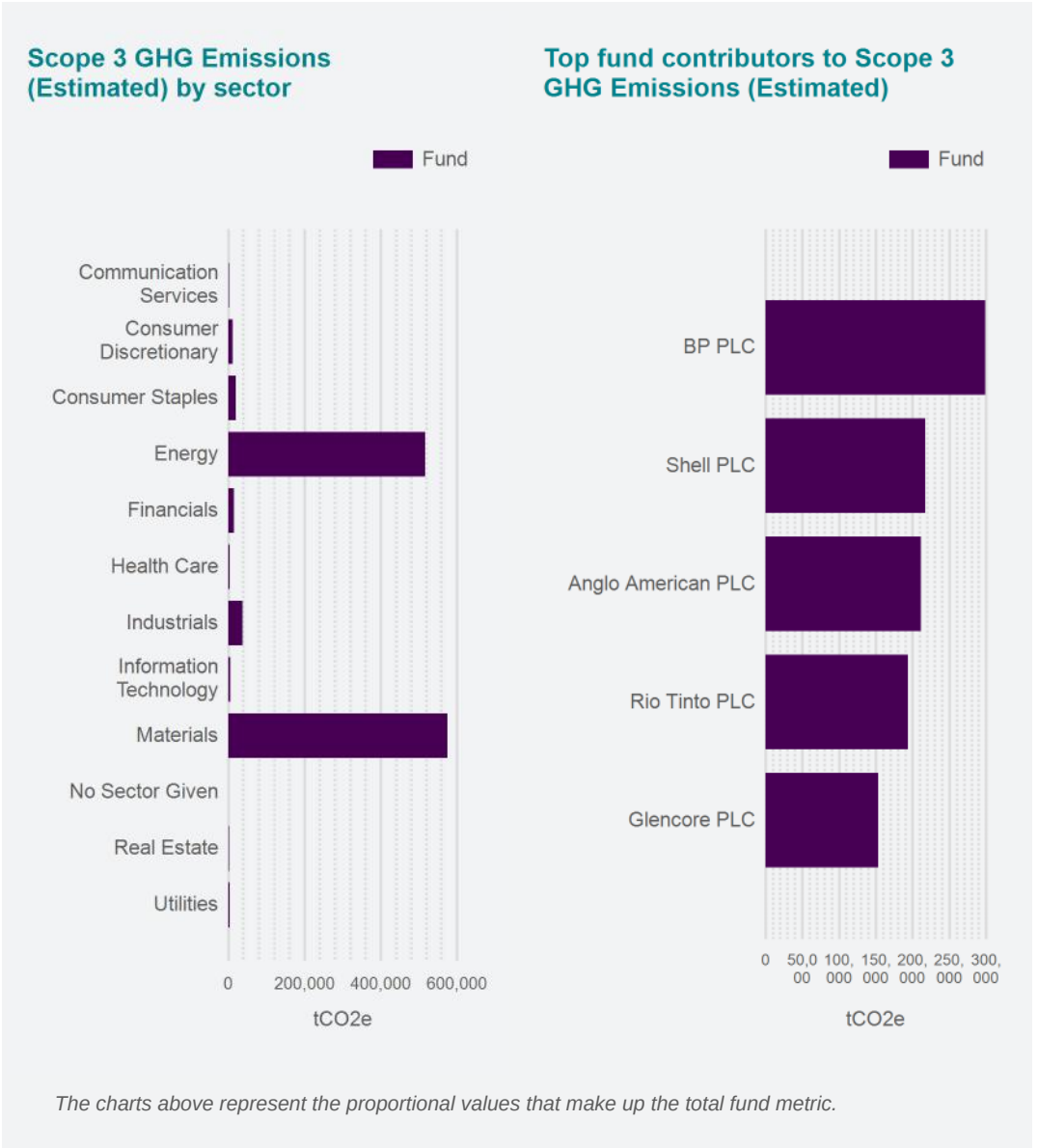
Private companies attribution fraction = current value of investment / (equity + debt)

## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 1,191,131.04 |
| Coverage | 98.42% |

## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 1,191,131.04 | 100.00% |
| Reported | 0.00 | 0.00% |
| Source: MSCI | 1,191,131.04 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Scope 3 GHG Emissions (Reported)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The scope 3 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

GHG emissions = ∑ (attribution fraction x company emissions)

Listed companies attribution fraction = current value of investment / enterprise value including cash

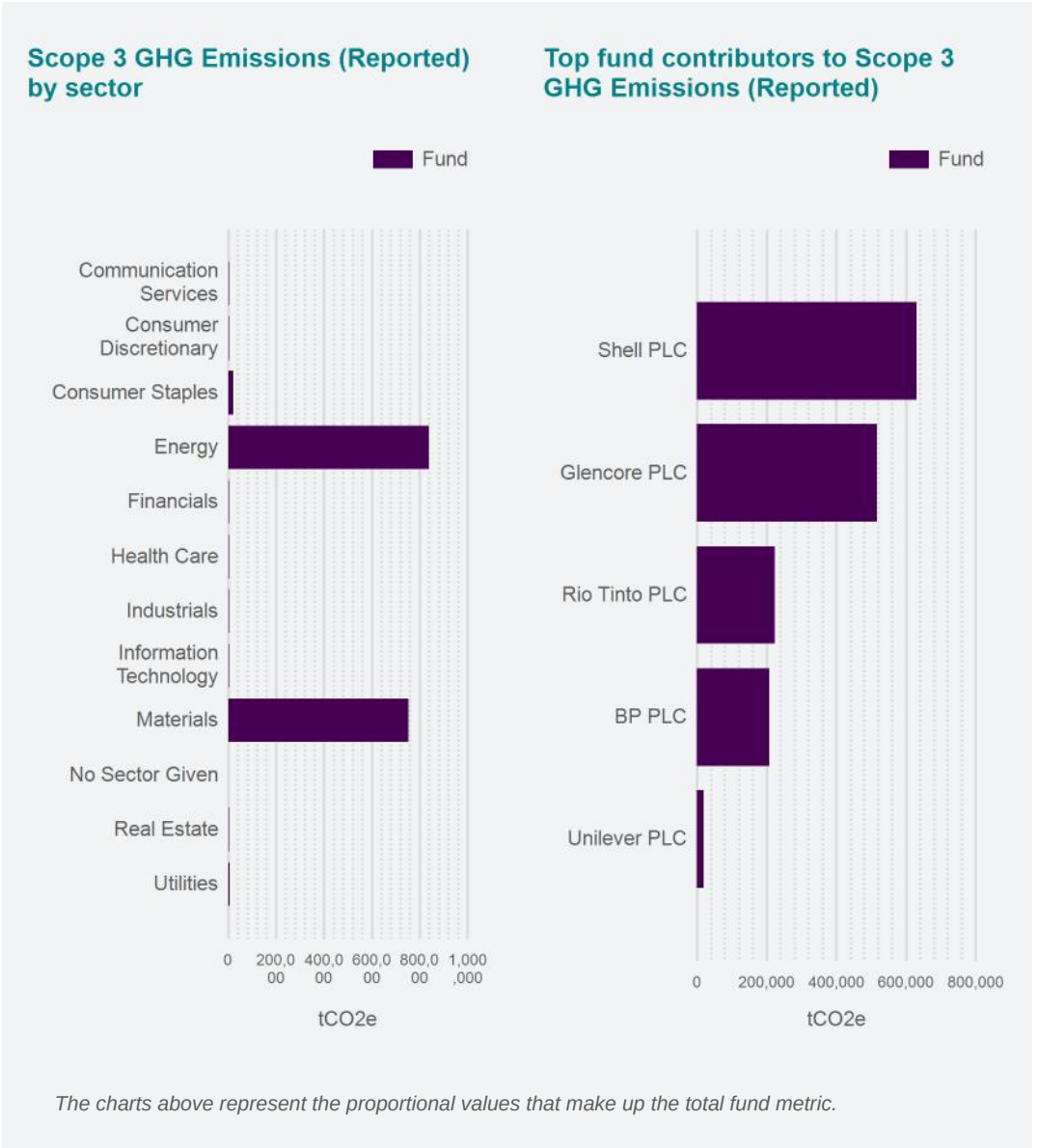
Private companies attribution fraction = current value of investment / (equity + debt)

## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 1,626,708.85 |
| Coverage | 73.26% |

## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 0.00 | 0.00% |
| Reported | 1,626,708.85 | 100.00% |
| Source: MSCI | 1,626,708.85 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Total GHG Emissions (scope 1 and 2 only)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The scope 1 and 2 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

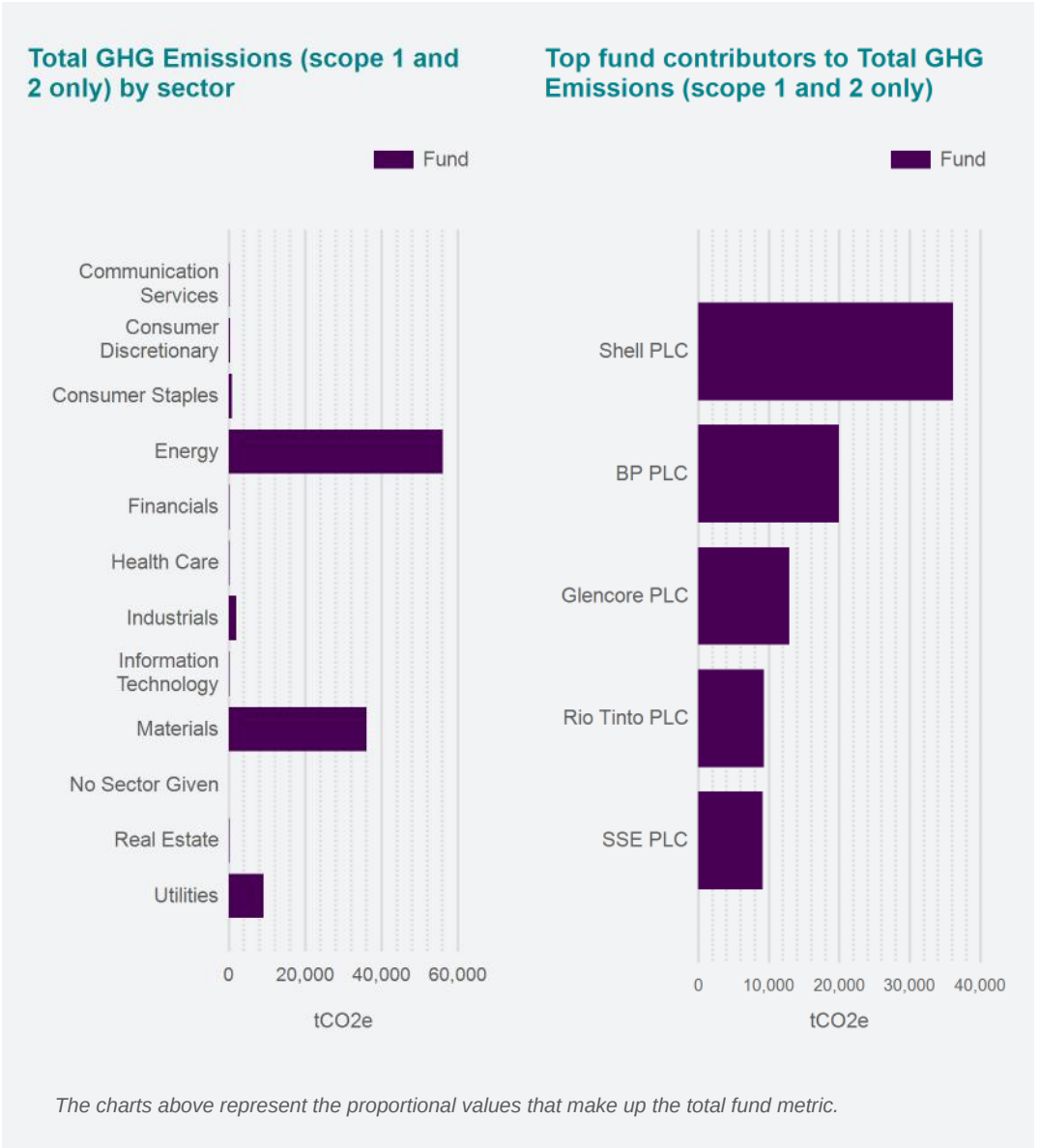
GHG emissions = ∑ (attribution fraction x company emissions)

## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 105,020.38 |
| Coverage | 98.42% |

## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 131.42 | 0.13% |
| Reported | 104,888.96 | 99.87% |
| Source: MSCI | 105,020.38 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Total GHG Emissions (scope 1, 2 and 3)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The absolute emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.

We provide GHG emissions for scope 1 and 2 emissions. For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.

In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.

GHG emissions = ∑ (attribution fraction x company emissions)

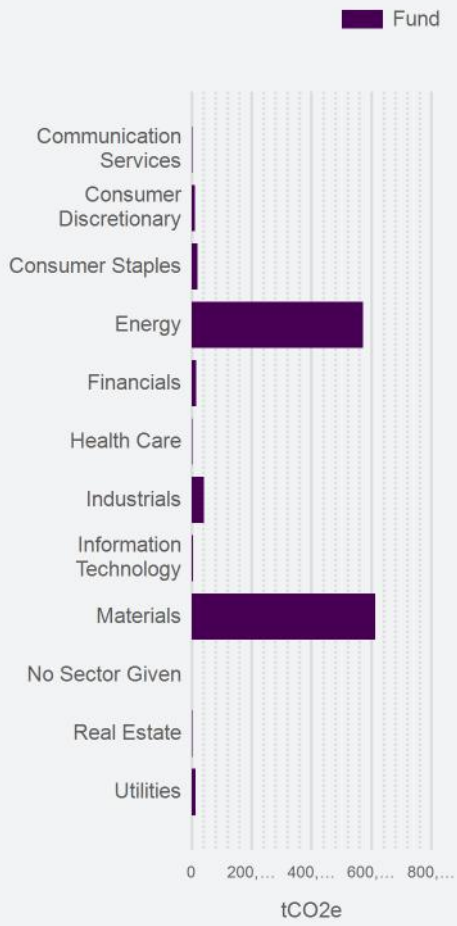
## 2022

| Metric: | Fund |
|---|---|
| Tonnes of CO2 equivalent (tCO2e) | 1,296,151.42 |
| Coverage | 98.42% |

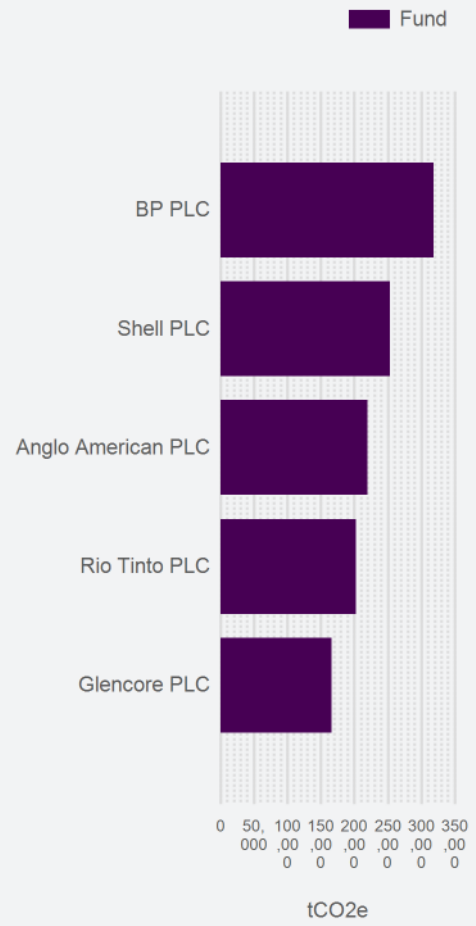
## Carbon data quality and sources

| Data types: | Fund | Weight |
|---|---|---|
| Estimated | 1,191,262.45 | 91.91% |
| Reported | 104,888.96 | 8.09% |
| Source: MSCI | 1,296,151.42 | 100.00% |

### Total GHG Emissions (scope 1, 2 and 3) by sector




### Top fund contributors to Total GHG Emissions (scope 1, 2 and 3)




*The charts above represent the proportional values that make up the total fund metric.*

# Carbon Footprint (scope 1 and 2 only)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The emissions intensity of an investment fund, expressed in tCO2e / $M invested. Total GHG emissions (scope 1 and 2) is divided by the fund value. The resulting indicators measures absolute emissions generated for each dollar invested in the fund.

Carbon Footprint = ∑ (GHG emissions / current fund value)

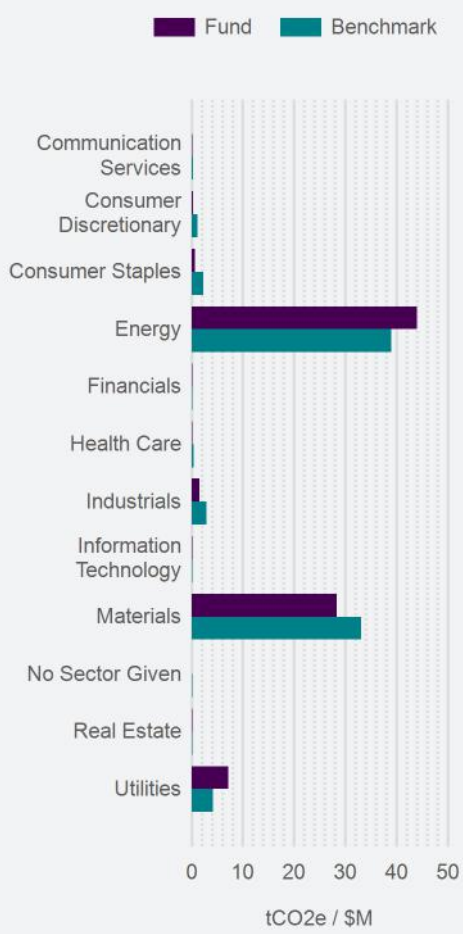
## 2022

| Metric: | Fund | Benchmark | Difference |
|---|---|---|---|
| Tonnes of CO2 equivalent per million dollars invested (tCO2e / $M) | 82.40 | 83.46 | -1.27% |
| Coverage | 98.42% | 93.67% | 5.07% |

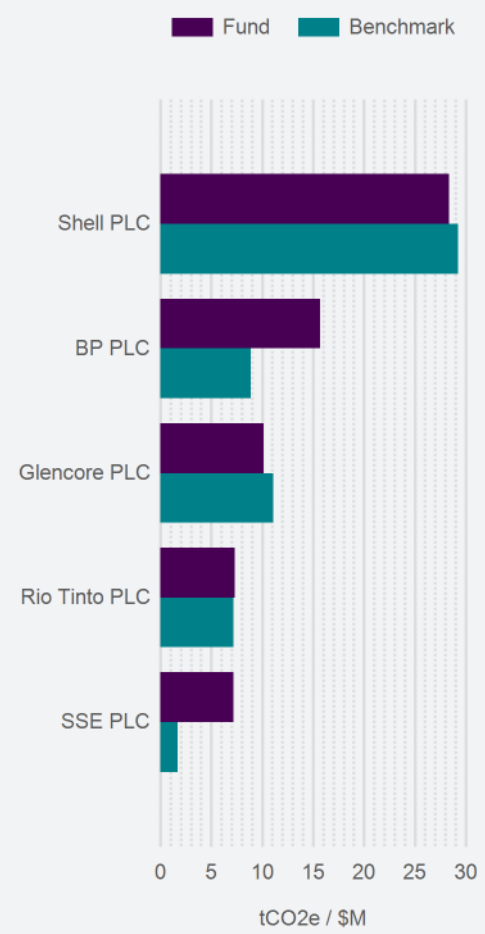
## Carbon data quality and sources

| Data types: | Fund | Weight | Benchmark | Weight |
|---|---|---|---|---|
| Estimated | 0.10 | 0.13% | 1.24 | 1.48% |
| Reported | 82.30 | 99.87% | 82.22 | 98.52% |
| Source: MSCI | 82.40 | 100.00% | 83.46 | 100.00% |

### Carbon Footprint (scope 1 and 2 only) by sector




### Top fund contributors to Carbon Footprint (scope 1 and 2 only)




*The charts above represent the proportional values that make up the total fund metric.*

# Carbon Footprint (scope 1, 2 and 3)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The emissions intensity of an investment fund, expressed in tCO2e / $M invested. Total GHG emissions (scope 1, 2 and 3) is divided by the fund value. The resulting indicators measures absolute emissions generated for each dollar invested in the fund.

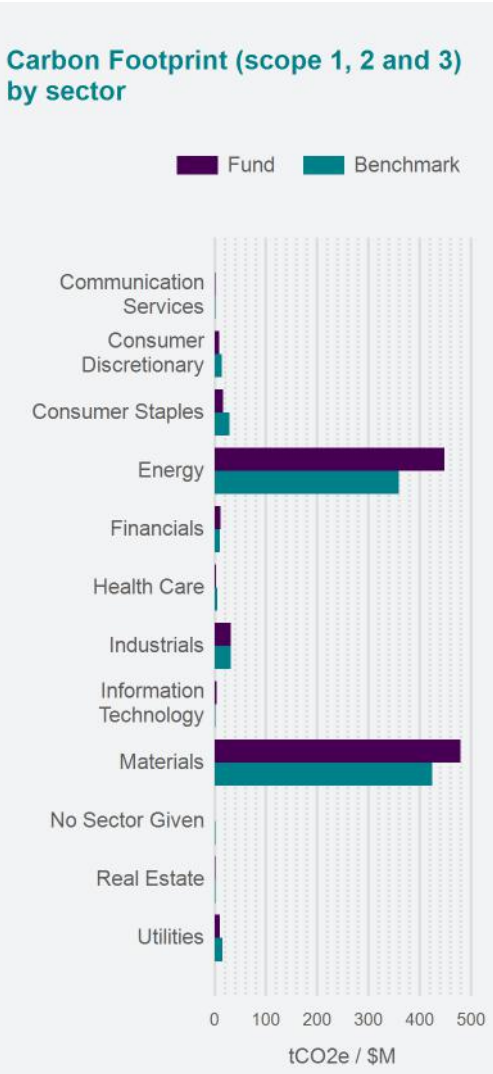
Carbon Footprint = ∑ (GHG emissions / current fund value)

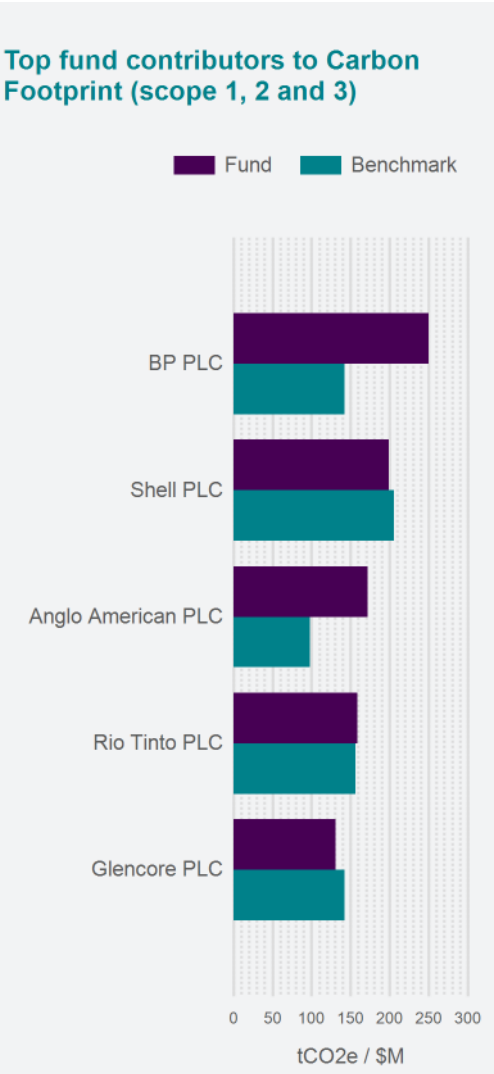
## 2022

| Metric: | Fund | Benchmark | Difference |
|---|---|---|---|
| Tonnes of CO2 equivalent per million dollars invested (tCO2e / $M) | 1,017.00 | 895.99 | 13.51% |
| Coverage | 98.42% | 93.63% | 5.11% |

## Carbon data quality and sources

| Data types: | Fund | Weight | Benchmark | Weight |
|---|---|---|---|---|
| Estimated | 934.70 | 91.91% | 813.79 | 90.83% |
| Reported | 82.30 | 8.09% | 82.19 | 9.17% |
| Source: MSCI | 1,017.00 | 100.00% | 895.99 | 100.00% |




*The charts above represent the proportional values that make up the total fund metric.*

# Weighted Average Carbon Intensity (scope 1 and 2)

*Royal London UK Growth Trust compared to FTSE All-Share Index*

## Description

The fund's exposure to revenue emission-intensive companies, expressed in tCO2e / $M revenue. Scope 1 and scope 2 GHG emissions are divided by company's revenues, then multiplied based on fund weights (the current value of the investment relative to the current fund value).

The WACI is calculated as a weighted average sum of the holdings with carbon intensity coverage.

WACI = ∑ [(current value of investment / current fund value) x (company emissions / company $M revenue)]

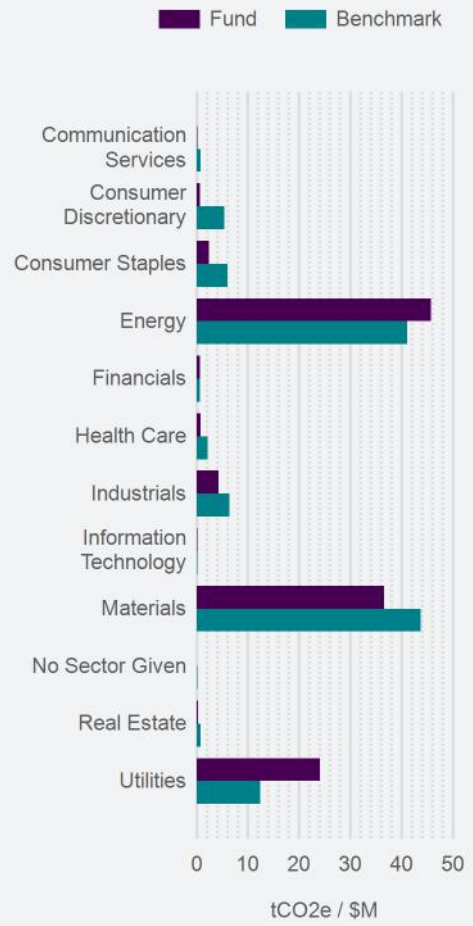
## 2022

| Metric: | Fund | Benchmark | Difference |
|---|---|---|---|
| Tonnes of CO2 equivalent per million dollars revenue (tCO2e / $M) | 115.96 | 119.79 | -3.20% |
| Coverage | 98.42% | 94.37% | 4.29% |

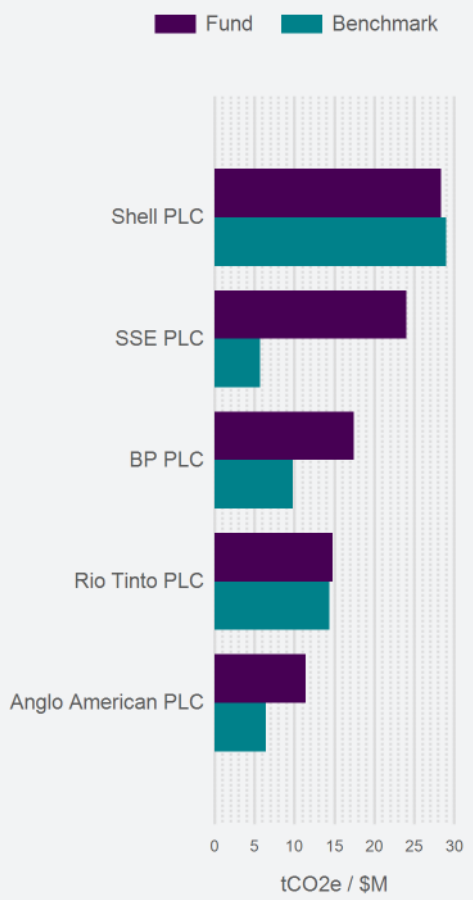
## Carbon data quality and sources

| Data types: | Fund | Weight | Benchmark | Weight |
|---|---|---|---|---|
| Estimated | 0.66 | 0.57% | 1.62 | 1.35% |
| Reported | 115.31 | 99.43% | 118.18 | 98.65% |
| Source: MSCI | 115.96 | 100.00% | 119.79 | 100.00% |

### Weighted Average Carbon Intensity (scope 1 and 2) by sector




### Top fund contributors to Weighted Average Carbon Intensity (scope 1 and 2)




*The charts above represent the proportional values that make up the total fund metric.*

# Weighted Average Carbon Intensity (scope 1, 2 and 3)

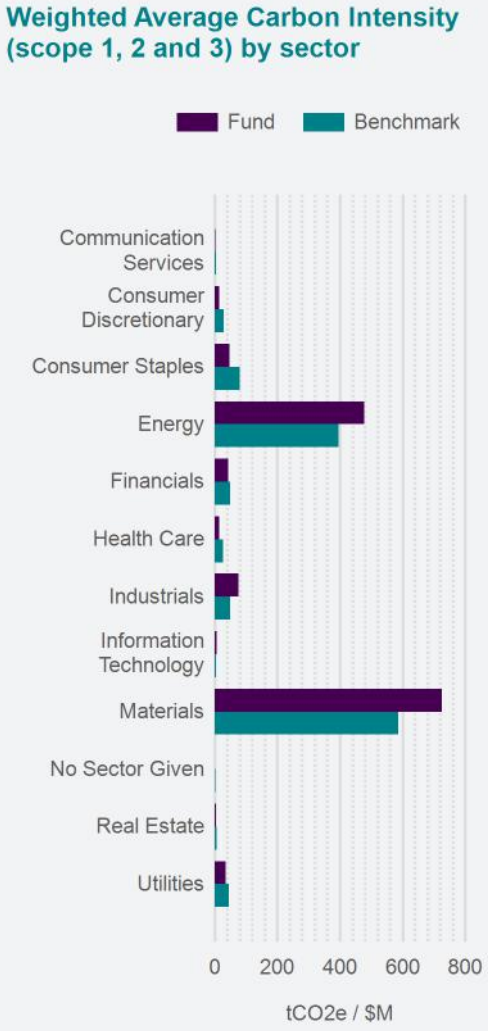
*Royal London UK Growth Trust compared to FTSE All-Share Index*

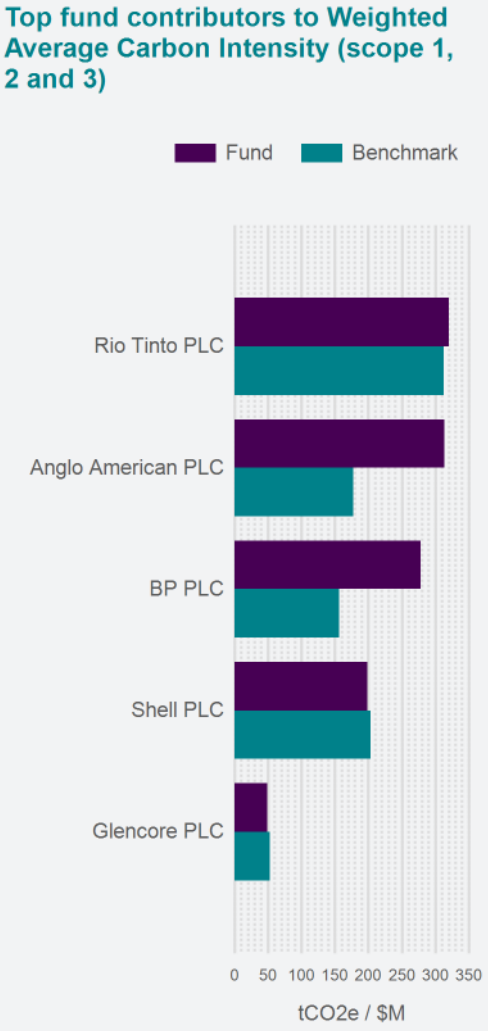
## Description

The fund's exposure to revenue emission-intensive companies, expressed in tCO2e / $M revenue. Scope 1, scope 2 and scope 3 GHG emissions are divided by company's revenues, then multiplied based on fund weights (the current value of the investment relative to the current fund value).

The WACI is calculated as a weighted average sum of the holdings with carbon intensity coverage.

WACI = ∑ [(current value of investment / current fund value) x (company emissions / company $M revenue)]




*The charts above represent the proportional values that make up the total fund metric.*

## 2022

| Metric: | Fund | Benchmark | Difference |
|---|---|---|---|
| Tonnes of CO2 equivalent per million dollars revenue (tCO2e / $M) | 1,451.35 | 1,286.18 | 12.84% |
| Coverage | 98.42% | 94.32% | 4.34% |

## Carbon data quality and sources

| Data types: | Fund | Weight | Benchmark | Weight |
|---|---|---|---|---|
| Estimated | 1,336.04 | 92.06% | 1,168.01 | 90.81% |
| Reported | 115.31 | 7.94% | 118.18 | 9.19% |
| Source: MSCI | 1,451.35 | 100.00% | 1,286.18 | 100.00% |

# Climate Change Scenario Analysis – Climate Value-at-Risk (C-VaR)

*Royal London UK Growth Trust*

Climate Change Scenario Analysis aims to quantify whether - and how much - climate change may impact future fund performance. We are required to disclose climate scenario analysis under TCFD and to achieve this we have used a model known as Climate Value-at-Risk (C-VaR), which provides a prediction of the impact global temperature rises and economic developments may have on investment returns. We do not currently use C-VaR when making investment decisions and instead favour other monitoring metrics that help assess 'Paris alignment'.

C-VaR takes into account the physical impact of global rising temperatures like rising sea levels and increased extreme weather patterns, alongside the impact of mitigating actions like government policies and technology developments. Each of these factors is considered under different global temperature rise assumptions to try to predict the impact this may have on global markets and, in turn, fund performance. Given the uncertainty around how effectively and quickly emissions can be reduced across the economy, we have modelled multiple climate scenarios at temperature rises of 1.5°C, 2°C and 3°C.

The four transition scenarios we disclose under transition risks have been developed by the Central Banks network NGFS (for more details on the methodology and specific models used please refer to the Appendix; Definitions, acronyms and methodological definitions).

Within transition risk, disorderly and orderly scenarios refer to the possible route policy makers will take: orderly assumes global policy is aligned and implemented quickly; and disorderly assumes policy is reactive and action is late but fast. The C-VaR value illustrates the possible % movement in fund value under that scenario. Typically, a disorderly 1.5°C scenario will have the greatest impact on fund performance as the amount of changed needed to limit global warming to this temperature is the greatest under this scenario. The **bold** scenario in the table shows the climate scenario under which the fund faces higher transition risk.

This C-VaR methodology also shows physical climate risk through two scenarios which look at the impacts these risks could have in the next 15 years in a "business-as-usual" trajectory. These scenarios show the potential chronic risks of extreme cold, extreme heat, extreme precipitation, heavy snowfall, and extreme wind. They also model the potential acute (moderate) risks of coastal flooding, fluvial flooding, tropical cyclones, river low flow and wildfires.

Please note, we do not currently use C-VaR when making investment decisions as we do not believe it accurately reflects our view of company value and potential future returns. The C-VaR model involves numerous socio-economic, policy and technological assumptions on how both the world and each company we invest in may change, which we believe cannot yet be confidently relied on in investment decision making. We favour monitoring metrics that help assess 'Paris alignment' over the C-VaR models. Our Paris alignment assessment (see **RLAM's entity level report** for details on our Net Zero Investment Framework alignment categories) has fewer assumptions and can be used to reasonably assess a company's emission reduction plan and impact on climate change. We are disclosing this information to provide transparency and disclosure to our clients and to meet our regulatory obligations.

**The scenarios and their key characteristics are provided in the table below.**

| Category | Scenario | | Scenario Summary | C-VaR | Coverage |
|---|---|---|---|---|---|
| Transition Risks | Disorderly | Divergent Net Zero (~1.5°C)" | Net Zero is reached by 2050 but failure to coordinate policy pushes high costs to consumers. Fast action spares us from the worst physical climate impact. | -22.16% | 98.42% |
| | | **Delayed Transition (~ 2°C)** | **Annual global emissions do not decrease until 2030 and are reduced later with reactive policy action. High transition risk and physical risk.** | -25.91% | |
| | Orderly | Below 2°C | Net Zero is achieved after 2070. Climate policies are introduced immediately globally and become gradually more stringent. Low transition risk and high physical risk. | -2.59% | |
| | | National Determined Contributions (NDCs) (~ 3°C) | Assumes all policies pledged by states to the United Nations are implemented. Emissions decline and transition is not disruptive but continued warming brings severe physical risks. | -1.56% | |
| Physical Risks | Moderate (average) | | The average potential impact on companies' market value, assuming trends in acute and chronical physical risk from a "business as usual" scenario. | -9.13% | 96.80% |
| | Aggressive | | The worst case (95th percentile) or most severe potential impact on companies' market value, assuming trends in acute and chronical physical risk from a "business as usual" scenario. | -14.19% | |

# Definitions, acronyms and methodological definitions

## Climate physical risk

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organisations, such as direct damage to assets and indirect impacts from supply chain disruption. Organisations' financial performance may also be affected by changes in water availability, sourcing and quality; food security; and extreme temperature changes affecting organisations' premises, operations, supply chain, transport needs and employee safety. (Source: TCFD)

## Climate transition risk

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organisations.

## Climate stress-testing

A stress test is a projection of the financial condition of a firm or economy under a specific set of severely adverse conditions. This may be the result of several risk factors over multiple periods of time. Stress testing is a risk management tool used to increase a firm's awareness of its business model vulnerabilities to climate risks. Firms might consider sources of transition and physical risks that will be particularly difficult for them to withstand. (Source: CFRF)

## TCFD

The Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD) was set up to develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers and other stakeholders. In our 2020 report we used the recommendations published by the TCFD in 2017. For this year's report we have followed the TCFD recommendations published in 2021 and some additional guidelines provided by UK regulators including the FCA.

## Overarching methodological definitions:

| Metric | Asset class applicability | Brief explanation |
|---|---|---|
| **Greenhouse gases emissions (GHG)** | Equities, Corporate Bonds, Sovereign, Property | The seven gases included in the United Nations Framework Convention on Climate Change (UNFCC) as drivers of climate change: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). |
| **CO2e – Carbon dioxide equivalent** | Equities, Corporate Bonds, Sovereign, Property | An aggregation of the above seven greenhouse gases into their equivalent as CO2 based on their radiative forcing (a measure for the strength of climate change drivers) over a given time horizon. RLAM relies on company's reports and its data provider to aggregate all greenhouse gases into a CO2 equivalent unit. The conversion factors of GHG to CO2e are provided by the IPCC Assessment Reports, based on 100-year Global Warming Potentials. |
| **Emissions scopes** | Equities, Corporate Bonds | The GHG Protocol Corporate Accounting and Reporting Standard classified organisation's GHG emissions into three scopes.<br>• Scope 1: direct emissions from owned or controlled sources.<br>• Scope 2: indirect emissions from generation of purchased energy.<br>• Scope 3: all indirect emissions (not included in scope 2) that occur upstream and downstream the organisation value chain. There are 15 sub-categories of scope 3 emissions. Important sub-categories include category 11, use of sold products which encompasses most energy sector emissions and category 15, financed emissions which is explained below. |
| **Data sources and quality** | Equities, Corporate Bonds | **Financial data:** Fund data and benchmark data is from RLAM financial data systems with values as of end of year 2022.<br>Revenues and EVIC data are from MSCI, latest available information with threshold of tolerance of 2019 for oldest acceptable EVIC value.<br><br>**Emissions data:** We disclose % of data from RLAM or from MSCI. We also disclose % of data reported by issuers and % of estimated data where either ourselves or MSCI have used approximations.<br>Our equity emissions data comes wholly from MSCI. For fixed income securities, RLAM has developed its own emissions research process. The report uses RLAM data for the fixed income securities as a first port of call and MSCI where no RLAM data is available. RLAM's data for emissions includes a combination of company disclosures through annual reporting, sustainability supplements and filings to the carbon disclosure project and primary research by our RI team. Where we lend to ring-fenced subsidiaries, we have tried to source carbon data and revenues specific to those subsidiaries.<br>All our scope 3 data is from MSCI. We provide separate portfolio aggregate metrics for scope 3 emissions reported by companies and for scope 3 emissions estimated by our data provider.<br><br>**Additional metrics:** Implied Temperature Rise and Climate Value-at-Risk (C-VaR), fossil fuel exposure and green revenues are provided by MSCI. |
| **Benchmark** | Fund's benchmark | The benchmark applied is the performance benchmark associated with the portfolio. |
| **Aggregation and coverage** | Equities, Corporate Bonds, Sovereign Bonds | In order to calculate a fund's coverage for the metric, holdings with negative weights are removed and the fund is re-balanced to 100%. The removal of negative weights does not apply to futures and FX forwards where the holding weight is managed as part of the fund accounting process. |

# Definitions, acronyms and methodological definitions

| Name | Unit of Metric | Metric Description |
|---|---|---|
| **Scope 1 GHG Emissions** | Tonnes of CO2 equivalent (tCO2e) | The scope 1 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions)<br><br>Listed companies attribution fraction = current value of investment / enterprise value including cash<br><br>Private companies attribution fraction = current value of investment / (equity + debt) |
| **Scope 2 GHG Emissions** | Tonnes of CO2 equivalent (tCO2e) | The scope 2 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions)<br><br>Listed companies attribution fraction = current value of investment / enterprise value including cash<br><br>Private companies attribution fraction = current value of investment / (equity + debt) |
| **Scope 3 GHG Emissions (Estimated)** | Tonnes of CO2 equivalent (tCO2e) | The scope 3 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions)<br><br>Listed companies attribution fraction = current value of investment / enterprise value including cash<br><br>Private companies attribution fraction = current value of investment / (equity + debt) |
| **Scope 3 GHG Emissions (Reported)** | Tonnes of CO2 equivalent (tCO2e) | The scope 3 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions)<br><br>Listed companies attribution fraction = current value of investment / enterprise value including cash<br><br>Private companies attribution fraction = current value of investment / (equity + debt) |

# Definitions, acronyms and methodological definitions

| Name | Unit of Metric | Metric Description |
|---|---|---|
| **Total GHG Emissions (scope 1 and 2 only)** | Tonnes of CO2 equivalent (tCO2e) | The scope 1 and 2 emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions) |
| **Total GHG Emissions (scope 1, 2 and 3)** | Tonnes of CO2 equivalent (tCO2e) | The absolute emissions associated with the investments in the fund, expressed in tCO2e (metric tonnes of CO2 equivalent). Emissions are attributed to a fund based on the portion of the company's value the fund holds, using enterprise value including cash for publicly listed corporates.<br><br>We provide GHG emissions for scope 1 and 2 emissions. For scope 3 emissions we distinguish between company reported data and estimated data from our data providers.<br><br>In this disclosure we have excluded emissions associated with private issuers of corporate bonds. This is because market values (EVIC) tend to be systematically higher than account values (equity + debt) and this therefore can make private issuers emissions look artificially higher.<br><br>GHG emissions = ∑ (attribution fraction x company emissions) |
| **Carbon Footprint (scope 1 and 2 only)** | Tonnes of CO2 equivalent per million dollars invested (tCO2e / $M) | The emissions intensity of an investment fund, expressed in tCO2e / $M invested. Total GHG emissions (scope 1 and 2) is divided by the fund value. The resulting indicators measures absolute emissions generated for each dollar invested in the fund.<br><br>Carbon Footprint = ∑ (GHG emissions / current fund value) |
| **Carbon Footprint (scope 1, 2 and 3)** | Tonnes of CO2 equivalent per million dollars invested (tCO2e / $M) | The emissions intensity of an investment fund, expressed in tCO2e / $M invested. Total GHG emissions (scope 1, 2 and 3) is divided by the fund value. The resulting indicators measures absolute emissions generated for each dollar invested in the fund.<br><br>Carbon Footprint = ∑ (GHG emissions / current fund value) |
| **Weighted Average Carbon Intensity (scope 1 and 2)** | Tonnes of CO2 equivalent per million dollars revenue (tCO2e / $M) | The fund's exposure to revenue emission-intensive companies, expressed in tCO2e / $M revenue. Scope 1 and scope 2 GHG emissions are divided by company's revenues, then multiplied based on fund weights (the current value of the investment relative to the current fund value).<br><br>The WACI is calculated as a weighted average sum of the holdings with carbon intensity coverage.<br><br>WACI = ∑ [(current value of investment / current fund value) x (company emissions / company $M revenue)] |

# Definitions, acronyms and methodological definitions

| Name | Unit of Metric | Metric Description |
|---|---|---|
| **Weighted Average Carbon Intensity (scope 1, 2 and 3)** | Tonnes of CO2 equivalent per million dollars revenue (tCO2e / $M) | The fund's exposure to revenue emission-intensive companies, expressed in tCO2e / $M revenue. Scope 1, scope 2 and scope 3 GHG emissions are divided by company's revenues, then multiplied based on fund weights (the current value of the investment relative to the current fund value).<br><br>The WACI is calculated as a weighted average sum of the holdings with carbon intensity coverage.<br><br>WACI = ∑ [(current value of investment / current fund value) x (company emissions / company $M revenue)] |
| **Climate Value-at-Risk (C-VaR)** | % | The Climate value-at-risk (C-VaR) model aims to provide an assessment on how climate change may affect the investment return in funds based on conditions associated with global temperature trajectories (e.g. 1.5°C, 2°C, 3°C). By evaluating policy impact, technology opportunities and climate physical risk, under different scenarios associated with those temperature trajectories, the metric provides insights into the potential stress on market valuation, translating climate-related costs into possible valuation impacts.<br><br>The underlying climate model we selected is the regionalised model of investment and development (REMIND). It is a global multi-regional model that couples an economic growth model with a detailed energy system model and a simple climate model. It is hosted at the Potsdam Institut fur Klimafolgenforschung (PIK), Germany.<br><br>We use four scenarios developed by the Central Banks network NGFS:<br>• **Current Policies -** 'hot house' 3°C scenario (A scenario of a 3°C hot-house temperature rise, which represents the best estimate of the effect of current policies)<br>• **Below 2°C -** an 'orderly transition' scenario (An orderly way to prevent a temperature rise of less than 2°C)<br>• **Delayed Transition -** a 2°C 'disorderly transition' scenario (A disorderly transition to prevent a temperature rise of more than 2°C – for example due to late policy intervention)<br>• **Divergent net zero** - a 1.5°C degrees 'disorderly transition' scenario (A disorderly transition to prevent a temperature rise of more than 1.5°C – on the understanding that the time for orderly policy making to achieve 1.5°C has already passed)<br><br>Orderly or disorderly depends among other variables on global cooperation and adequate policies being in place. The variables behind each scenario can be reviewed here https://data.ene.iiasa.ac.at/ngfs and https://carbon-delta.com/climate-value-at-risk.<br><br>We also report against physical climate risk scenarios looking at the impacts of physical climate risk in the next 15 years of a world that is in a business-as-usual trajectory. The scenarios address chronic risks of extreme cold, extreme heat, extreme precipitation, heavy snowfall and extreme wind. They also address acute risks of coastal flooding, fluvial flooding, tropical cyclones, river low flow and wildfires. These scenarios are associated two probability cases:<br>1. **An average physical risk scenario**<br>The average potential impact in companies' market value, assuming trends in acute and chronic physical risk events follow scenario.<br>2. **An aggressive physical risk scenario**<br>The worst case (*95th* percentile) or most severe impact on companies' market value, assuming trends in acute and chronic physical risk events follow scenario. |

# Methodological and data assumptions, limitations, and disclaimers

Our disclosed metrics are subject to potential limitations due to the emerging nature of climate data applications and methodologies in finance. Low levels of data coverage may give inaccurate fund statistics. All data is supplied for information purposes only and should not be relied upon for investment decisions. We endeavour to improve climate data in finance through our engagement with companies and data providers. We believe that technological innovations will make data more easily accessible and auditable in the future. We are also working with regulators, such as through the Climate Financial Risk Forum (CFRF) in the UK, to support disclosure standardisation.

Although Royal London Asset Management Ltd's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the ESG parties), obtain information from sources considered reliable, none of the ESG parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose.

**We have found three areas where limitations are most evident:**

**1. Issuers' carbon emissions data is incomplete and can be inconsistent across sectors, asset classes and regions.**

Most greenhouse gas disclosures are voluntary, relative to financial data, and are subject to less rigorous auditing. Issuers disclose emissions with different levels of transparency, coverage and methodologies, making disclosures less comparable. For example, they may aggregate all greenhouse gases into CO2 equivalent values or reveal their operations' carbon intensity and not the absolute emissions. Furthermore, there are instances in which emissions are inherently hard to monitor and measure, such as methane emissions that leak from oil and gas infrastructure. Specific countries, such as the US and China, are further behind in disclosure along with relatively low emitting sectors such as financials.

When issuers don't report scope 1 and 2 emissions, data providers' estimation methodologies that allow for further coverage make emission data less reliable. Methodologies to estimate emissions can be based on a company's production data, historical companies' emissions reports or by using the subindustry segment intensity average. We have enhanced scope 1 and 2 emissions with in-house research for fixed income sterling credit instruments based on detailed knowledge of the issuers, capital structure considerations and underlying assets.

Given the lack of issuer data and inconsistencies in reporting we selected to disclose our holdings' scope 3 emissions as estimated by data providers following the GHG Protocol methodology. The scope 3 estimation methodologies cannot follow the GHG Protocol entirely as it would require complete understanding of each company's entire value chain and market. Nonetheless, the methodologies are based on bottom-up company-specific data when available but can also use top-down sector intensities. The scope 3 emission estimates are particularly weak for financials.

The comparability and timeliness of companies' disclosures is limited by data providers' research cycles and the rapidly moving landscape of corporate and policy climate pledges. Timing of disclosure varies across jurisdictions and companies, with announcements on climate strategy or emissions targets not necessarily following the financial disclosure schedules. This is compounded by data provider schedules (the workflow by which they prioritise companies' research). The result is that carbon data is often 12-18 months out of date.

**2. Issuers' financial data can be inconsistent.**

The financial data standardised by ESG data providers used in this report may differ to data used in our internal financial analysis. For example, conversion rates and differences in tax system reporting make data less comparable. To assess companies' performance, we use the financial data from various data providers, including the ESG data vendors used in this assessment. This includes revenue, market capitalisation and enterprise value used in this analysis. We cross refer these data sets to ensure the financial data quality of our investable universe, but some uncertainties persist.

**3. Metrics that stress-test the value of financial instruments due to climate change transition and physical risk are still evolving. Climate Value at Risk (C-VaR), our selected metric, relies on necessary climate model, socioeconomic assumptions and cost and valuation calculations that reduce confidence in the metric.**

The metric consists of three models, policy C-VaR, physical C-VaR and technology C-VaR. For each climate impact is calculated at asset-level and translated into impact on cost or return for the next 15 years.

i Policy C-VaR calculations make necessary assumptions on how much a company may need to reduce its greenhouse gas emissions due to climate policy and how much this may cost.

- Assumptions include countries adequately disclosing their plans to the United Nations Framework Convention on Climate Change (UNFCCC) and implementing them. Carbon prices used to estimate costs are taken from IPCC referenced integrated assessment models (IAM) and scenarios. IPCC and NGFS IAM scenarios assumptions are openly auditable and can be considered the latest science which informs policy. However, these models have assumptions around GDP growth, technology uptake, and marginal abatement costs which mean inherently each scenario for which a carbon price is taken will show only one possible alternative future.

ii Physical C-VaR makes assumptions on the climate impact on a company's assets from climate change and how costly this could be in terms of increased business interruptions and/or asset damage.

- It uses climate impact models that include chronic hazards such as gradual temperature, precipitation, and snowfall changes as well as acute hazards such as coastal flooding and cyclones. The impact of emissions on warming has lower uncertainties than the planet's warming effects on weather and climate and its implications in specific locations. Beyond the difficulty of accurately estimating the increase in vulnerability of assets due to climate change, estimating how much this may cost the business has additional assumptions, for example how costs are aggregated from asset to business balance sheets, assumptions of companies' lack of adaptive capacity and insurance costs.

iii Technology C-VaR has embedded various assumptions on green technology ownership and uptake to estimate how much a company may benefit from transitioning to a low carbon economy.

- For this analysis, millions of low carbon patents granted by various patent authorities are assessed. Using current green revenues and patent analysis to understand companies' low carbon innovation, a model simulates which companies may benefit when policies from IPCC and NGFS IAM models that reach different warming goals are implemented globally. Assumptions are made on: technology uptake, the returns these technologies will yield and crucially that patent ownership and citations are a good starting point to understand transition opportunity.

# Methodological and data assumptions, limitations, and disclaimers

The metrics we disclose are following requirements captured in the United Kingdom Financial Conduct Authority and the Department for Work and Pensions climate disclosures regulations. Our climate scenario analysis uses the Network for Greening the Financial System (NGFS) climate scenarios. The NGFS is a network of 121 Central Banks including the Bank of England.

We follow the Taskforce for climate-related Financial Disclosure (TCFD) and Climate Financial Risk Forum (CFRF) industry recommendations.

**MSCI disclaimer**

Certain information contained herein (the "Information") is sourced from/copyright of MSCI Inc., MSCI ESG Research LLC, or their affiliates ("MSCI"), or information providers (together the "MSCI Parties") and may have been used to calculate scores, signals, or other indicators. The Information is for internal use only and may not be reproduced or disseminated in whole or part without prior written permission. The Information may not be used for, nor does it constitute, an offer to buy or sell, or a promotion or recommendation of, any security, financial instrument or product, trading strategy, or index, nor should it be taken as an indication or guarantee of any future performance. Some funds may be based on or linked to MSCI indexes, and MSCI may be compensated based on the fund's assets under management or other measures. MSCI has established an information barrier between index research and certain Information. None of the Information in and of itself can be used to determine which securities to buy or sell or when to buy or sell them. The Information is provided "as is" and the user assumes the entire risk of any use it may make or permit to be made of the Information. No MSCI Party warrants or guarantees the originality, accuracy and/or completeness of the Information and each expressly disclaims all express or implied warranties. No MSCI Party shall have any liability for any errors or omissions in connection with any Information herein, or any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

**Important information**

Issued in June 2023 by Royal London Asset Management Limited, Firm Reference Number: 141665, registered in England and Wales number 2244297; Royal London Unit Trust Managers Limited, Firm Registration Number: 144037, registered in England and Wales number 2372439; RLUM Limited, Firm Registration Number: 144032, registered in England and Wales number 2369965. All of these companies are authorised and regulated by the Financial Conduct Authority. Royal London Asset Management Funds Plc, an umbrella company with segregated liability between sub-funds, authorised and regulated by the Central Bank of Ireland, registered in Ireland number 364259. Registered office: 70 Sir John Rogerson's Quay, Dublin 2, Ireland.

All of these companies are subsidiaries of The Royal London Mutual Insurance Society Limited, registered in England and Wales number 99064. Registered office: 80 Fenchurch Street, London, EC3M 4BY. The Royal London Mutual Insurance Society Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. The Royal London Mutual Insurance Society Limited is on the Financial Services Register, registration number 117672. Telephone calls may be recorded. For more information please see our Privacy Notice at www.rlam.com

## Contact us

For more information about our range of products and services, please contact us.

**Royal London Asset Management**

80 Fenchurch Street
London
EC3M 4BY

020 7606 6500

www.rlam.com