

Explanation of the information contained within an ESG Quarterly Report, which contains Taskforce on Climate Related Financial Disclosures (TCFD) product report disclosures

Section 1 – Emissions and climate data

The ESG Quarterly Report, which is used as LGIM's TCFD Product Report, contains data for carbon emissions and other greenhouse gases (GHGs), that when emitted into the atmosphere are responsible for the greenhouse effect (global warming) on the planet. Carbon dioxide equivalent (CO₂e) is a standard way to compare the emissions of different greenhouse gases. The choice of this metric and the below measurement and scenarios follows best practice recommendations from the TCFD.

Please refer to the 'How we measure and calculate' section for more details on the metrics below. We aim to use language that is easy to understand. Where we have had to use terms that you may not be familiar with, we have provided definitions. The terms will be highlighted in **brown**, and an explanation of their meaning can be found in the 'Terms explained' section.

To provide context for the below metrics, 1 tonne of CO₂e approximately represents:



Economy return flight from London to New York
Source: Planetair travel calculator



138 meat-based meals
Source: Carbon Equity



To capture 1 tonne of CO₂ approximately 50 trees must grow for one year
Source: Climate Neutral Group

Total Carbon Emissions

This represents the total greenhouse gas (in tonnes of CO₂e) emitted by the companies within a fund over a year. It includes Scope 1 and Scope 2 emissions.

Scope 1 Emissions

These are greenhouse gas emissions owned and controlled directly by the companies that the fund invests in. For example, through company vehicles, company office space and equipment, and the energy used in production of goods or services.

Scope 2 Emissions

These are emissions that the companies, which the fund invests in, make indirectly via consumption of purchased heat, steam or electricity, all of which are produced on its behalf and owned by another.

Scope 3 Emissions

These are all other indirect emissions that occur in a company's value chain i.e., the emissions that are generated before (upstream of) or after (downstream of) a company's operations. Data quality for Scope 3 emissions is affected by poor disclosure and a lack of consistency in measurement.

Weighted Average Carbon Intensity (WACI)

This is a standard measurement to understand emissions after adjusting for the size of a company. This metric portrays the amount of carbon produced relative to the varying sizes of companies held within the fund.

Carbon Footprint

This demonstrates the total amount of CO₂ and other equivalent greenhouse gas emissions that are emitted as part of the funds daily activities relative to its market capitalisation (size).

Implied temperature alignment

This is the suggested global climate temperature outcome the fund is compatible with, by the year 2100. **For example, the Paris Climate Agreement** aims to limit global warming to well-below 2°C, ideally 1.5°C. The approach reflects the link between companies' carbon emissions and global warming outcomes.

Climate Value at Risk (VAR)

Climate value at risk (VAR) is a forward-looking estimate of the financial losses that companies within the fund may experience under different climate scenarios (referenced on page 5), over a specified time and at a given probability, as a result of climate change. A negative Climate VaR percentage would indicate greater potential losses in the value of companies within the fund due to climate related issues.

Carbon Reserves

Carbon reserves describes the quantities of greenhouse gas emissions that could be generated if the fossil fuel reserves owned by companies within the fund were realised and burned. The carbon reserves intensity of the overall fund considers the relative sizes of the different companies within the fund.

Green revenues

Green revenues are the proportion of revenue derived from low-carbon products and services associated with the fund, from the companies within the fund that have disclosed this as a separate data point.

Assets that are measured for climate reporting:

Your money can be invested in one or more funds containing one or more asset classes. Example asset classes include things like equities (company shares), bonds (loans to governments and companies), property and cash. Assets can only be measured for climate reporting where sufficient climate data is available to do so. According to data availability the asset classes that can be measured are:

- Equities and corporate bonds for the 'total carbon emissions,' 'scope 1 emissions' and 'scope 2 emissions'.
- Equities, corporate bonds and government (sovereign) bonds for 'weighted average carbon intensity,' 'carbon footprint' and 'implied temperature alignment.'

However, some equities or bonds may not be included where **meaningful data** cannot be provided or where they are not included in the asset mix of the fund. Whilst some metrics measure the same assets, the data availability may vary per metric. The **asset coverage** figures provided in the metrics, show the percentage of assets that provided meaningful data and are eligible for this type of climate reporting.

How we measure and calculate:

Total Carbon Emissions

Total including Scope 1 and 2 emissions. We measure this for companies that we hold within a fund's asset mix, through bonds and/or equities. It is based on the share of emissions we will hold in a particular company through the amount of investment held. This is done by calculating the company's overall emissions total against the percentage share we have in that company as part of a fund's holdings. The amount of carbon dioxide equivalent (**CO₂e**) calculated per company is then combined into an overall total for the percentage of eligible assets.

Scope 1 emissions

By using the same calculation method for total carbon emissions, we measure this for the proportion of companies that we hold within a fund's asset mix, through bonds and/or equities, for their scope 1 emissions.

Scope 2 emissions

By using the same calculation method for total carbon emissions, we measure this for the proportion of companies that we hold within a fund's asset mix, through bonds and/or equities, for their scope 2 emissions.

Weighted Average Carbon Intensity (WACI)

We measure a tonne of carbon dioxide equivalent (**CO₂e**) emissions per £1million revenue (income generated from a company as sourced in year-end financial statements). The overall total is a **weighted average** of all companies and sovereigns (various types of bonds, which are long- and short-term loans to local and national governments) included within a fund. WACI gives an emissions intensity metric based on the amount of carbon produced for each £1m of revenue generated by the companies invested in.

Carbon Footprint

To calculate the carbon footprint associated with this fund, we take the 'total carbon emissions' figure and calculate a **weighted average** against the overall market value of all companies and sovereigns (various types of bonds, which are long- and short-term loans to local and national governments) within a fund. This is a way to measure emissions relative to market size. Carbon Footprint also acts as an emissions intensity metric, which is the volume of emissions (metric tonne of carbon dioxide, **CO₂e**) per £1million of enterprise value. By looking at an intensity value you can adjust for the size of a fund to compare the funded emissions for different fund sizes.

Implied Temperature Alignment

Based on a combination of historical and forward-looking data, activities and targets, a score is calculated for each of the underlying equities, corporate bonds and sovereign/government bonds held within a fund, then combined to give the implied temperature alignment of the overall fund.

Climate Value at Risk (VAR)

The Climate VaR metric is derived from a forward-looking methodology based on climate scenario modelling. Assumptions are made as to the impact each climate scenario would have on economic factors (i.e., interest rates and unemployment). The different economic factors are then applied to the financial statements of companies within the fund to generate the potential financial losses the fund may experience as a result of climate change. It is subject to known and unknown risks, uncertainties and other important factors, including limitations inherent in the methodology and data used.

Carbon Reserves

Carbon Reserves Intensity represents the carbon in the fossil fuel reserves owned by a company, divided by its market capitalisation (total value of a company's shares) to adjust for the company size. It enables the assessment of the impact of climate change on portfolios (i.e., how exposed would a portfolio be to climate regulation, such as higher carbon taxes), and to understand a portfolio's contribution to climate change. In contrast to carbon emissions, we assume that if the underlying carbon reserves intensity data is missing, it is zero. As many companies have no significant carbon reserves, and therefore do not report on them.

Green Revenues

Green revenues are the proportion, in percent, of revenue from low-carbon opportunities associated with the fund, from the companies within the fund that have disclosed this as a separate data point. It excludes carbon trading, gas and nuclear.

Terms explained:

Asset coverage

The percentage of the fund's asset classes that were measured. The asset classes that can be measured are equities (company shares) and government and corporate bonds. Some funds may include one or more of these asset types.

CO2e

CO2 stands for carbon dioxide. The 'e' stands for equivalent. CO2e is a metric that allows comparison of emissions from various greenhouse gases to the equivalent measure of carbon dioxide.

Engagement

Purposeful, targeted communication with an entity (e.g., company, industry body, regulator) on particular matters of concern with the goal of encouraging change at an individual issuer and/or the goal of addressing a market-wide or system risk such as climate.

Fossil fuels

Fossil fuels include petroleum (oil), coal, and natural gas. These materials are called fossil fuels because, like fossils, they are the remains of organisms that lived long ago.

Meaningful data

Meaningful data refers to data that is accurate, reliable and valid. For example, in regard to climate metrics a data point would be seen as meaningful if it provided an accurate reflection of the climate data of the fund.

Paris Climate Agreement

To address global warming, the international climate change treaty, the Paris Climate Agreement, aims to limit and hold the world's average temperature rise to well-below 2°C (ideally 1.5°C) by the year 2100. Currently, the Earth is already about 1.1°C warmer than it was in the late 1800s (pre-industrial).

Weighted average

A weighted average accounts for the relative importance and size of the different assets that are included. We will hold varying levels of assets within a fund, for example we may hold more shares in one company over another. We use a weighted average to allow for the different importance of the carbon data for assets according to size held, based on the market value at the reporting date. This weighted average paints a clearer picture than an equally split average would.

Climate Stewardship Metrics

Stewardship refers to actions that LGIM can / will take with the aim of delivering positive change on behalf of our clients on a broad range of ESG issues. This can be in the form of exercising voting rights or **engaging** with companies, policymakers and other stakeholders on issues that range from climate change to board independence and diversity. Our Investment Stewardship team exercises voting rights globally across LGIM's active and index funds, holding companies to account on the issues that matter most to our clients.

Section 2 - Climate scenario and risk analysis

To address global warming, the international climate change treaty, the Paris Climate Agreement, aims to limit and hold the world's average temperature rise to well-below 2°C (ideally 1.5°C) by the year 2100. Currently, the Earth is already about 1.1°C warmer than it was in the late 1800s (pre-industrial). To help achieve this, the aim is to achieve net zero carbon emissions globally by 2050. Net zero means cutting carbon dioxide (CO2) to as close to zero as possible, with remaining emissions re-absorbed or removed from the atmosphere, by oceans, forests or carbon capture technology for instance. At the same time, it also requires deep reductions in other greenhouse gases, particularly methane.

This means that we need to move to an economy built on sustainable actions that result in less negative impact, known as transitioning to a low-carbon economy. This will bring associated transition risks and opportunities. In addition to ongoing risks from the changes in extreme weather events, a successful adjustment will involve significant changes to climate-related policy, regulations and law; use of technology; and business and government strategies.

Depending on how well businesses and governments transition, this will have a ripple effect on areas like reputation and trust, business and market performance, supply and demand of materials and goods.

Against this backdrop, scenario analysis, based on climate scenario modelling, helps us to explore a range of possible climate futures and understand potential climate-related risks.

We consider three temperature scenarios. The scenarios have a forecast time horizon to 2050, with narratives defined by their probable temperature outcome in 2100 (compared to pre-industrial temperatures in the 1800s). These are possible pathways, rather than predictions or probabilities. They are an exercise in what could happen, not in predicting what will happen.

Opportunities

While we have identified potential risks, companies and governments that can effectively plan and participate in the move to a more sustainable economy over the next 10 years - creating a decade of delivery – can also create opportunities. A number of opportunities exist to gain market share and public trust, reduce costs and emissions, while benefiting the planet. In particular, we should expect to see some opportunities for companies with capabilities in electric vehicles, green fuels, technology, renewables and critical minerals.

ORDERLY TRANSITION SCENARIO

Immediate, ambitious policy and investment action to address climate change succeeds in limiting global warming to well-below 2°C.

DISORDERLY TRANSITION SCENARIO

Policy and investment action to limit global warming to well-below 2°C is delayed by 10 years, resulting in much more disruptive change from 2030.

HOTHOUSE WORLD SCENARIO

Global failure to act on climate change means greenhouse gas emissions continue to grow at historical rates.

Terms explained:

Carbon pricing

A carbon price is the price that a company would have to pay for each tonne of CO₂e emitted.

Low-carbon technologies

These are technologies that produce low levels of CO₂ emissions, or no net emissions. Examples include wind turbines, solar power, ground source heat pumps.

Stranded assets

This means an asset (such as a coal-fired power plant) that once had value or produced income but no longer does. This is usually due to some kind of external change, including changes in technology, markets, regulations and societal behaviours.

Key risks

The value of an investment and any income taken from it is not guaranteed and can go down as well as up, you may not get back the amount you originally invested.

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