

Your Guide to Climaterelated Disclosure Reports

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This guide aims to help you better understand the metrics included in our Climate-related Disclosure Reports:

Climate metrics in this guide:





Introduction

The purpose of this guide is to help you better understand the information in our Climate-related disclosure reports.

What are the Climate-related disclosure reports?

The Climate-related disclosure reports, referred to as Product-level TCFD reports, are produced in accordance with regulations from the FCA and compliant with recommendations of the TCFD.

The Climate-related disclosure reports refer to an individual investment fund, a with-profit fund, or several funds making up an investment portfolio e.g., a default arrangement.

The metrics contained in the Climaterelated disclosure reports relate to the previous calendar year e.g. 1st January to 31st December 2023.

A simple guide to climate metrics

Our report uses globally accepted GHG emission metrics to show the potential impact of your investment portfolio on climate change. This data covers three investment categories: Equities and Corporate Bonds, Direct Real Estate (property) and Sovereigns (excluding Sub-sovereigns and Supranationals).

The reports provide greenhouse gas (GHG) emissions numbers in tonnes of carbon dioxide equivalents (tCO_2e), certain data in percentages and asset holdings in £ sterling.

What is TCFD?

Following the Paris Agreement, adopted in 2015, global commitments have been made to combat climate change. The <u>Task Force on Climate-related Financial Disclosures</u> (TCFD) was set up to produce a common global framework for companies to report on how climate change affects their businesses. It published a set of recommendations on the way firms should report their climate-related risks and opportunities as we move to a Net Zero emissions economy.



Explaining our data



The Kyoto Protocol identified seven Greenhouse Gases which trap heat in the atmosphere and contribute to global warming.

Greenhouse gases have different warming effects. We use the metric CO_2e as a simple number that represents all greenhouse gases.

 $tCO_2e = tonne$ (metric) of carbon dioxide equivalents

The figures presented are for the purposes of visual representation only. They are based on approximations and have been prepared based on:

- The Intergovernmental Panel on Climate Change (IPCC) Assessment Report 6 (AR6) published in March 2023.
- Indicators of Global Climate Change 2023: annual update of key indicators of the state of the climate system and human influence, Piers M. Forster et al.
- A global population of 8 billion.

Paris Agreement in 2015,

As part of the

195 countries agreed to pursue efforts to limit the temperature increase to 1.5 degrees above preindustrial levels

200 GtCO₂

Global carbon budget remaining before 1.5 degrees temperature increase is reached

25 tCO₂

Equivalent carbon budget per person



Total Greenhouse gas (GHG) emissions (1/2)

What are Scope 1, 2 and 3 GHG Emissions?

They're different categories of greenhouse gas (GHG) emissions that a company may be responsible for.



Scope 1: direct emissions from sources that are owned or controlled by the company, for example its own factories, vehicles, or the energy it produces.



Scope 2: indirect emissions from the energy a company has bought, like electricity, steam, heating and cooling systems.



Scope 3: all other indirect emissions that occur in a company's business activities. This might be from the goods and services it buys, investments it makes, employee travel, waste disposal, or customers using a company's products.

In simple terms, Scope 1 are the emissions that the company produces directly, Scope 2 comes from the energy the company purchases and Scope 3 is related to the company's activities, but not directly produced by the company.

How do we calculate total emissions?

Our reports show the level of Financed Emissions.

This represents the amount of a company, property or country's absolute GHG emissions attributed to the investment portfolio based on the portfolio's holding in that company, property or country.

Scope 3 GHG Emissions:

Explaining our data

Scope 3 GHG emissions are principally a company level metric. For companies, understanding the source of their Scope 3 GHG emissions can help them to advance their decarbonisation and sustainability journey. Scope 3 GHG emissions will be outside their own operations and likely be significantly larger than their direct and purchased energy GHG emissions (Scope 1 & 2).

We report Scope 3 emissions separately from scope 1&2. To learn more about scope 3 emissions see section 6 of this guide.

- Why is this important:

- Total greenhouse gas emissions is useful to track how emissions change over time
- It is less useful for making comparisons because the size of the company or investment fund will have a direct influence on the metric
- This metric is used to calculate many other climate metrics



What do carbon emissions represent in the real world?



The figures presented are for the purposes of visual representation only. They are based on approximations and have been prepared with the following assumptions: The average care mits around 175g of CO_2 per kilometre driven: UK GOV env0302 2023 figures | The average annual emissions of using a smartphone are around 80 kg CO_2 e per year | The average carbon emissions from a round-trip flight from London to New York is around 1.2 - 1.6 tonnes of CO_2 e per passenger | A mature tree can absorb around 22 kg of CO_2 per year





Economic Carbon Intensity (ECI) (1/2)

What is ECI ($tCO_2e/\pounds m$)?

We also report ECI, sometimes referred to as 'Carbon Footprint'. This measures the financed emissions per million GBP Sterling invested. In simple terms, it measures the 'carbon efficiency' of an investment.

For investments, we sum the GHG emissions for each asset held by the investment portfolio and then divide the sum of those emissions by the sum of the market value of the investment portfolio.

A lower number indicates the investment is producing more value with lower emissions – in other words, a smaller carbon footprint. This is useful when comparing investments of different sizes.

How do we calculate ECI?





Why is this important:

- Provides insight into the carbon efficiency of a company, property, country, or investment fund.
- It enables comparison between investments regardless of size



Introduction

Carbon Intensity by Asset Class Scope 1 & 2

Explaining our data



Economic Carbon Intensity (ECI) (2/2)

The economic carbon intensity is determined by dividing the total CO_2 linked to your investment, by the value invested. This allows for comparison, and the ability to identify investments with lower carbon intensity for the same value invested.







Carbon intensity by asset class

What is Carbon intensity by asset class?

This metric is calculated by grouping the assets in the portfolio by asset class and dividing the sum of the carbon emissions for the asset class relative to their weight in the portfolio. Each asset class uses a different calculation method to calculate carbon intensity based on the type of investment; companies (equities and corporate bonds), property (direct real estate) or countries (sovereign bonds):

Weighted Average Carbon Intensity (WACI) by Revenue

For Equities and Corporate Bonds, this is worked out by taking the carbon intensity of each company and weighting the company holding within its asset class. The metric can also be referred to as Weighted Average Carbon Intensity (WACI) by revenue.

We measure the intensity in tonnes of CO_2e per million dollars of revenue.



Real Estate Carbon Intensity

For Direct Real Assets, the portfolio carbon intensity represents the total financed emissions by reference to the total related floor space. This covers whole building emissions including energy consumption related landlord and tenant emissions.

We measure the carbon intensity in kilogrammes of CO_2e per square meter of floor space.



Sovereign Carbon Intensity

Explaining our data

For Sovereigns, the carbon intensity is calculated by dividing a country's total production based GHG emissions (tCO₂e) by its Purchasing Power Parity (PPP) adjusted Gross Domestic product (GDP) in millions of Pounds.





GICS[®] Sector Analysis (1/10)

Our Approach to Climate Risk Management

Climate risk considerations are included in our investment approach with sector analysis a key part of our strategy. We'll continue to build on our approach by identifying, assessing, and reducing climate risks as we move forward.

For more information on our approach to managing these risks please see the Aviva plc Climate-related Financial Disclosure 2023 report available at **www.aviva.com/sustainability/reporting**.

Climate risks

There are two main types of climate-related risks: physical risk and transition risk.

Physical risk has two components:

- Acute risks, stemming from more frequent and severe weather events like heatwaves, droughts, wildfires, and flooding; and
- Chronic risk driven by longer term shifts in climate patterns like sea level rise, and higher average temperature.

Physical risks can have a severe impact on properties (including assets owned or used by companies, such as production facilities), infrastructure and land. So, they can have a negative impact on all sectors either directly or indirectly, for example, through operational and supply chain disruptions. Some sectors, such as real estate and agriculture, are particularly exposed to such risks.



Explaining our data

Why is this important:

There are different levels of climate risk for each economic sector. Policies, technological development, and changing societal preferences affect how quickly sectors transition to a low-carbon economy and how companies within them are valued.

Carbon Intensive Industries heavily dependent on fossil fuels face greater hurdles shifting to a Net Zero economy, unlike those less reliant on them, which may have a more straightforward transition path.





GICS[®] Sector Analysis (2/10)

Climate risk Cont...

Transition risks are generally estimated based on costs of shifting to a low-carbon economy. They arise primarily from policy change and level of technological adoption, but also from market developments such as changes in consumer preferences. These risks can impact all companies, but particularly in sectors like Energy, Utilities and Industrials that are sensitive to carbon price policies and emissions regulations.

A company's profitability will be affected by its sensitivity to the physical and transition effects of climate change. These risks aren't mutually exclusive, which means a company can be exposed to both. This is because failure to adapt to climate change that is already happening carries a cost even if climate policies and technologies are deployed extremely fast to reduce future emissions.

The sector transition risk analysis in the sections below focuses on greenhouse gas (GHG) emissions reduction and carbon intensive industry sectors.

Scenario analysis

To understand how physical and transition risks could affect different sectors in the future, we use climate change analysis scenarios prepared by the Network for Greening the Financial System (NGFS). NGFS* scenarios are periodically reviewed and updated based on the latest economic and climate data, policy commitments and technological developments. NGFS (Phase III) covers six scenarios in three categories: "Orderly", "Disorderly", and "Hot House World". Each outlines a different possible climate pathway and its likely outcome by 2100.

- Orderly transition scenarios assume climate policies are introduced earlier and gradually become stricter. In this scenario, worldwide GHG emissions will reach net zero by 2050, and there is a higher likelihood that global warming is likely to be less than 2°C higher than pre-industrial levels. There are two key transition objectives: to significantly reduce the GHG emissions from the global energy sector (known as decarbonisation) by shifting from burning fossil fuels to using renewable energy, and to electrify energy usage in high carbon-emitting sectors.
- **Disorderly transition** scenarios assume climate policies are delayed until after 2030. Because the shift from fossil fuels to renewables remains slow and climate policies are implemented later, with emissions continuing to rise in the meantime, the transition would need to happen from a higher emissions level over a shorter period of time to limit global warming below 2°C. A sharper transition would be less coordinated, more complex and more costly. Physical risks would also be higher than in an Orderly transition.
- Hot house world scenarios assume that current policies stay the same. Paris Agreement commitments aren't met, and emissions and temperatures continue to rise. This causes severe physical risks, as well as social and economic disruptions. In these scenarios, the temperature will rise to over 3°C by 2100.

11 12/2/2024

*The 2022 NGFS scenarios draw on the Integrated Assessment Models (IAMs) used by the Intergovernmental Panel on Climate Change, Sixth Assessment Report (IPCC AR6). The NGFS scenarios are widely used by central banks and the financial sector to analyse climate risks and opportunities.





GICS[®] Sector Analysis (3/10)

The chart below illustrates the three NGFS scenarios. If immediate actions are taken to reduce global levels of GHG emissions to net zero by 2050, this would lead to a 1.6°C global temperature increase by 2100 under the Orderly scenario. If no further policies are implemented, resulting in the Hot House World scenario, global mean temperature would rise to 3°C or more by the end of the century, very significantly increasing the impact of physical risks.





GICS[®] Sector Analysis (4/10)

Sectoral Analysis

We use the Global Industry Classification Standards ("GICS") in the sector commentary. GICS is widely used by finance firms, and covers 11 economic sectors: Communication Services, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Real Estate and Utilities.

There are different levels of climate risk for each economic sector. Policies, technological development, and changing societal preferences affect how quickly sectors transition to a low-carbon economy and how companies within them are valued.

Communication Services



This sector includes media, broadcasting and telecommunication amongst others. They have more limited exposure to climate-related risks for all scenarios as they generally have a lighter environmental footprint when compared with the other sectors listed here.

Supporting infrastructure will be more exposed to extreme weather, particularly in the hot house world scenario. For example, overhead access networks, backhaul, and core networks via poles and pylons are at risk of damage by severe winds. How quickly a company can respond to these outages or build operational resilience determines the climate impact for this sector.





GICS[®] Sector Analysis (5/10)

Consumer Discretionary



This sector encompasses automobiles and components, distribution and retail, consumer durable and apparel, and consumer services. These industries are at high risk in Orderly and Disorderly transition scenarios. Stricter emission requirements and fuel economy standards are the main sources of risk, compounded by changing consumer preferences. Significant capital investment and research and development expenditure is required to meet the new and upcoming regulations and consumer demand for performance, safety, recyclability and reliability.

For the automotive industry, sales of petrol and diesel vehicles are declining due to changing consumer preferences and policies to phase them out. Low and zero emission vehicles represent an opportunity, but regulations and infrastructure for recycling old vehicles, especially batteries, or support for more extensive and low carbon public transit systems, could lead to additional challenges for the industry.

Consumer Staples

This sector includes companies that provide products and services that people use every day, including food and drinks manufacturers and distributors, producers of household goods and personal products, and food and drug retailers.

The companies in this sector rely heavily on agriculture, which is highly exposed to risks in all three scenarios. This is because agriculture depends on natural resources like land and water. It's also vulnerable to extreme weather, changes to GHG emissions regulations and increased focus on reducing food waste (a significant source of global GHG emissions). Sustainable agriculture and diversification can help reduce transition risks, but the cost of adapting and meeting new environmental regulations can reduce profits in the near term. Shifting consumer preferences – for example, around plant based or locally sourced food, or sustainable food packaging – can also impact the business models and profitability of companies in this sector.

The consumer staples sector would be badly affected under the hot house world scenario because agriculture is highly dependent on land. Severe droughts and other extreme weather would be more common, leading to lower crop yields for essentials like grains and rice.



GICS[®] Sector Analysis (6/10)

Energy

Oil and natural gas products are energy-intensive and emit high levels of Greenhouse Gases (GHG). Companies in this sector are particularly vulnerable to the energy transition needed for the Orderly and Disorderly scenarios.¹



As more stringent environmental policies are adopted, regulations are likely to increase operational and investment costs. They will also limit if and where companies can explore for new resources – according to the International Energy Agency (IEA) there should be no further new exploration past 2021 if we are to limit global warming to not more than 1.5°C by the end of the century. These are high risks that can impact the valuation of reserves. The intensity of emissions from production² is also a key driver of net impacts for oil and gas producers. Stricter requirements for air, water, carbon emissions, and energy efficiency, combined with more alternative energy choices, will reduce demand for refined products as consumers switch to electrified alternatives for cars and heating.

Rising sea levels and increased frequency of extreme weather events could cause frequent disruption to oil rigs and refineries. Damage to facilities has the potential to increase capital expenditure because of higher maintenance costs. In more extreme circumstances, production facilities could be closed, halting production. Significant investment is needed to reduce the negative impact of physical risks, particularly in a Hot house world scenario.

Financials

For most financial firms, the main climate-related risks feed through from the companies they do business with³ or the assets they finance⁴.



Companies that lend, insure, underwrite, manage assets or trade in industries like aviation, shipping, automotive, energy and power could be at high risk. For those that own long-term, less flexible infrastructure, energy projects, or real estate, the positive or negative consequences depend on the assets' climate credentials. Financial firms investing in renewable energy, green hydrogen, battery EVs, and carbon capture and storage, or those investing in companies with ambitious carbon reduction commitments are less exposed to transition risks.

(Re)insurance companies face moderate risks because extreme weather events and global warming will add complexity to underwriting and risk management. These companies could face higher losses or claims if their business associates don't mitigate and adapt to climate change.



GICS[®] Sector Analysis (7/10)



Health Care

This sector consists of medical service providers, medical equipment and drug manufacturers, medical insurance providers, and companies that help provide healthcare to patients. It has a low exposure to climate-related risks in all three scenarios.

Industrials

The sector includes manufacturing and transport. The aviation and shipping industries are particularly exposed to a high level of climate related risks as they still rely heavily on fossil fuels, while zero-emission and low-carbon vehicle operations – a long-term opportunity – require considerable infrastructure and technology investment.



Gradual removal of fossil fuel subsidies and changing consumer preferences could lead to lower demand and reduced revenue for certain modes of transport, particularly those that will likely take longer to decarbonise. Equally, it could present opportunities for other modes of transport, such as rail⁵. It also presents opportunities for companies developing sustainable fuels and/or vessels using low carbon fuels, such as ammonia for shipping.

In a Hot house world scenario, the sector is exposed to physical risk. For example, this could be in the form of disrupted operations through frequent re-routings and temporary route closures, as well as damage to infrastructure from extreme weather events. This will have an impact on costs, earnings, and profitability for these companies.





GICS[®] Sector Analysis (8/10)

Information Technology

The sector comprises companies that offer software and information technology services. This covers manufacturers and distributors of technology hardware and communications and electronic equipment. Direct exposures to climate-related risks are generally low for this sector, but certain companies or industries may be indirectly exposed through their supply chains.

The software services sector has low environmental impact. Increasing requirements for power management (e.g. smart grids) and energy efficiency, particularly in buildings and manufacturing, can drive demand for more sophisticated software.

Data centres require cooling in operations, making them very high emitter. So emissions regulations can drive risk for companies. Data centres have a moderate climate risk under the hot house world scenario, if they are located in regions with higher exposure to extreme weather.

Materials

This sector includes companies that manufacture chemicals, construction materials, forest products, glass, paper and related packaging products, and metals, minerals and mining companies, including producers of steel.



Companies are exposed to a very high level of climate risk under the Orderly and Disorderly transition scenarios. For example, while changes in the cement production process⁶ could help reduce carbon emissions, a real break-through requires large-scale deployments of Carbon Capture and Storage (CCS), and that requires additional capital investment costs. The costs for furnace retrofitting with CCS or switching to renewable energy (e.g. green hydrogen) will be substantial for steel producers.

The transition to electric vehicles and much greater use of energy storage will benefit certain mined products such as lithium, copper, cobalt and nickel. This would require increased investment in developing production, as well as addressing new environmental regulations and social challenges.





GICS[®] Sector Analysis (9/10)

Real Estate

Scope 1&2



The sector is highly exposed to GHG emissions regulation as more countries establish emission and energy-efficiency guidelines. Letting potential is increasingly influenced by the environmental footprint.⁷ Landlords would have to invest in assets to make them more resilient and efficient to maintain their value.

More extreme weather events and higher temperatures means increased construction and repair costs, particularly in the hot house world scenario. Adapting properties to address vulnerabilities may be costly or result in the assets losing value.

Utilities

The sector includes power and water utilities. Both types of utilities are vulnerable to physical risks in all scenarios and the cost of complex investment programmes to adapt to these risks could impact profitability and asset value.

Electricity and gas utilities



Electricity and gas utilities are exposed to climate transition risks on electricity prices, fuel, environmental costs, and growing investment needs. On the other hand, they're likely to benefit from growing demand for electrified heating, transportation and industry as the broader economy decarbonises.

In general, coal-fired power plants are most vulnerable, followed by gas-fired plants. Renewables and other low-carbon energy sources are likely to benefit from electrification. As global temperatures rise, increasing water stress can have a long-term impact on hydropower and water-cooled thermal and nuclear plants. Some might benefit from lower electricity prices during unusually wet periods as another impact of higher global temperatures is increased precipitation.

Water utilities



to become energy independent and invest in technologies to reduce emissions in wastewater treatment. Overall, however, water utility companies can be viewed as an opportunity rather than a risk given the increasing need to safeguard water resources in a warming world.



GICS[®] Sector Analysis notes (10/10)

- 1. In Orderly and Disorderly transition scenarios, fossil fuels represent only slightly over 20% of global energy demand compared to around 83% in 2020, resulting in significant losses for energy companies with fossil fuels heavy energy mix.
- 2. Downstream emissions required to produce a barrel of product.
- 3. Firms they lend to, invest in and/or insure such as corporates and households.
- 4. Category 15, Investment includes Scope 3 emissions associated with the reporting company's investments in the reporting year, not already included in scope 1 or scope 2. It applies to investors and companies that provide financial services, or non profit driven investors (e.g. multilateral development banks). Investments are categorized as a downstream scope 3 category because providing capital or financing is a service provided by the reporting company.
- 5. Rail transport emits six to 41 grams of carbon dioxide equivalent (CO2e) per passenger kilometre travelled, compared with 150 grams for an economy long-haul flight and 255 grams for a domestic flight. A shift from other modes of transportation to rail would therefore help decarbonize the transportation sector as a whole.
- 6. Lower clinker-to-cement ratio, energy efficiency improvements (e.g. Waste Heat Recovery) and a higher share of bioenergy and renewable waste.
- 7. Energy efficiency, water usage, waste management and indoor environment quality.





Scope 3 GHG Emissions (1/2)

What are Scope 3 Emissions

This year we are publishing Scope 3 GHG Emissions data for the first time. Scope 3 GHG emissions are principally a company level metric, however from an investor perspective, understanding an individual company's Scope 3 GHG emissions can assist when comparing two companies operating in the same sector. It allows investors to evaluate which company is making better progress on decarbonising their business through managing their Scope 3 GHG emissions.



Why is this important:

Understanding Scope 3 GHG emissions provides a more complete picture of investment emissions across sectors.

In some sectors, e.g. cement production, most company emissions are direct emissions (Scope 1 & 2).

In other sectors, e.g. oil & gas production, most emissions are indirect as they supply companies downstream, e.g. utilities or transport. Comparing just direct emissions (Scope 1 & 2) without considering the full value chain emissions (Scope 1-3) can lead to misleading conclusions about the contribution of different sectors to global emissions and to climate change.

By understanding Scope 3 GHG emissions a company can:

- identify their GHG emission hotspots across their value chain in order to prioritise carbon reduction strategies,
- identify which suppliers are leaders and which are lagging behind in terms of their sustainability performance.
- undertake informed decision making across procurement, product development and logistics, to identifying which interventions can deliver further GHG emission reductions.
- target product innovation to create more sustainable and energy-efficient products.

Typically, Scope 3 GHG emissions **make up 65–95%** of most companies' overall GHG emissions, according to CDP. They are indirect emissions—a consequence of a company's activities outside its direct operational control. This in turn makes it a difficult metric to accurately quantify. Given this is a new measure, companies can struggle to acquire Scope 3 GHG emissions data from their suppliers, particularly smaller ones and overseas suppliers.

Even where companies provide emissions information, it may be incomplete, and often does not cover all categories of Scope 3 emissions. Currently, many companies use industry averages, proxies and other sources to calculate **an estimate** of their Scope 3 emissions. This in turn, makes it challenging for financial institutions and investors to form a good understanding and obtain robust data of the Scope 3 emissions for the companies and assets they invest in.





Scope 3 GHG Emissions (2/2)

How we display Scope 3 information in our reports

In our report we provide two views of the Scope 3 data:

Scope 1, 2 & 3 GHG emissions by sector breakdown

We believe that this visualization of scope 1, 2, & 3 emissions data is more helpful than a portfolio total. By sector, it shows the ratio of Scope 1&2 GHG emission versus Scope 3 GHG emissions, and highlights where the challenge in is reducing all GHG emissions lies. It groups companies operating in related fields together and so illustrates the industries which have more to do in reducing GHG emissions. It allows you to understand at a sector level the hot spots within your portfolio in terms of Scope 3 GHG emissions of investments.

A total portfolio value for Scope 3 GHG emissions

Scope 3 emissions is intended as a company metric rather than an aggregated portfolio metric. Summing up the Scope 3 data for many companies can lead to double counting where two companies form part of each others' value chain. For example, if Company A supplies its products to Company B, Company A emissions will be supply chain emissions for Company B, while

Company B emissions will be customer chain emissions for Company A, so emissions are double counted.

We are cautious about this value due to the double counting and the estimated nature of the data that Scope 3 emissions of investments. All the Scope 3 data in your report is **estimated by MSCI**, our market data provider, and there are limitations and judgements that MSCI make with respect to Scope 3 GHG emissions.



Explaining our data

Example report visual:

Total GHG Emissions Scope 1 & 2

ECI Scope 1 & 2

Carbon Intensity by Asset Class Scope 1 & 2

s Scope 3 GHG Emissions

Explaining our data



Factors that can drive change in the GHG emissions? (1/3)

In addition to the real-world reduction in Greenhouse Gas (GHG) emissions by countries and companies, there are additional factors that can influence the GHG emissions metrics that are published for your investment portfolio.

We are starting to provide a history of climate data for your investment portfolio, which gives a limited view of the direction of travel of your investments in terms of decarbonisation. The reports only have up to two years of data, so any directional change should be considered with caution. As more data becomes available with each subsequent reporting year, any trends should become more evident.

Alongside the climate metrics, there two pieces of qualifying information on the data we have used:

- PCAF Data Quality Score
- Data Coverage

These are helpful because they provide context to the underlying data used to calculate the climate metrics in your climate report.

The higher the PCAF score (1-5) the greater degree of estimation is involved in producing the metrics based on the available underlying data. As estimates are replaced with reported data, the PCAF score will lower. Increasingly companies are being obliged to adopt universal reporting standards, principally those set by the Task Force on Climate Related Financial Disclosure (TCFD), this means that over time the proportion of reported data available will increase and should lead to more confidence in the numbers.

Where the PCAF score is high, we expect a higher level of year-on-year variation in the data which means that more caution needs to be applied when looking at the data and data trends. We provide two measures of coverage, (i) the share (%) of your portfolio we have been able to calculate climate metrics for and (ii) the proportion of assets (%) for which we have been able to acquire carbon emissions data to calculate climate metrics. These numbers are intended to provide information about how much of your portfolio has been included into the carbon metrics presented.

There are some asset classes we are not able to calculate climate metrics; this includes cash, derivatives and indirectly held property. If your investment portfolio holds these types of assets, then it will have a lower % coverage than an investment portfolio which holds only equities.

A high data coverage score for an asset class indicates that we have been able to obtain more carbon information about the companies and countries that issue investments your portfolio invests into. In general, the data coverage for companies has improved year on year as our data vendor has expanded its available universe of companies covered. The improvement in data coverage can provide more confidence.

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Factors that can drive change in the GHG emissions? (2/3)



There are two key metrics contained in your report:

- Total Greenhouse Gas (GHG) Emissions which are the absolute GHG emissions attributed to your investments
- Carbon Intensity This is made up from two different metrics, the GHG emissions per £m of investee company revenue or per £m of invested amount

The Total GHG Emissions aims to quantify the quantity of GHG emissions the assets in your investment portfolio emit. This is an absolute figure, attributed to the investment based on the proportion of the investment relative to the enterprise value of the company, including cash, and can be influenced by the size of your investment portfolio.

When considering trend, Total GHG emissions values can also be influenced by changes in either inflows or outflows of money into your investment portfolio. If an investment portfolio was valued at £2m last year, and received additional investment of £1m this year, increasing the amount invested by 50% to £3m, then we may expect there will also be a rise in the Total GHG emissions reported. The reverse may be true, if money has been taken out of the investment portfolio. Considering these types of factors when looking at trend data is important.

It is likely that a fund with £1bn of assets will have higher Total GHG emissions value than a fund with £1m of assets. However, a smaller portfolio may have higher emissions if the investments it holds are high-emitting companies, whereas a larger portfolio may have lower emissions if the investments it holds are low-carbon (such as renewable energy companies).





Factors that can drive change in the GHG emissions? (3/3)





The Economic Carbon Intensity and Carbon Intensity by Asset Class metrics are helpful in removing the size factor. These metrics aim to illustrate the carbon efficiency of a company or your investment portfolio.

They do this by normalising the Total GHG emissions number by single common factor for example a per pound invested or per pound of revenue generated by the investee companies. This allows comparisons between separate investment portfolios, but also between years in the same portfolio, regardless of changes in the size of the portfolio. The introduction of a factor to normalise the Total GHG Emissions value has its own impact. The selected factor will also be subject to non-climate-related fluctuations. For example where GHG Emissions are divided by portfolio value, the value of the portfolio can both increase or decrease due to performance, net flows or outflows of investment.

Explaining our data



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ECI Scope 1 & 2

Carbon Intensity by Asset Class Scope 1 & 2

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Factors Driving GHG Emissions

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Explaining our data (1/3)

Data providers

We have used climate and other data from MSCI ESG Research LLC or its affiliates or information providers. Although Aviva's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the 'ESG Parties'), obtain information (the 'Information') from sources they consider 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.

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Explaining our data (2/3)

About the numbers

Assets Under Management Coverage

GHG emissions data is not always available, and methodologies don't yet exist for all asset classes (e.g. cash). That's why our financed emissions calculations cover the percentage of assets held by your investment portfolio.

If you have investments in categories without GHG emissions data, or an agreed methodology for calculating financed emissions, this will be reflected in your Assets Under Management (AUM) coverage.

We expect coverage to increase year-on-year as new methodologies are agreed and the supporting data becomes more comprehensive.

Asset Class Coverage

The credibility of our calculations is dependent on the availability and quality of the supporting data.

There is good availability of data for listed companies (Equities and Corporate debt) and this is reflected in the high data coverage scores. Higher data coverage means there are more reference points to check quality.

The good news is, we expect coverage values and data quality to increase year-on-year.

Understanding Zeroes and Dashes

Sometimes a zero in the pound sterling column is worth more. This is because we show pounds as millions to 2 decimal places, so £100,000 would show as 0.10; £10,000 as 0.01 and £1,000 as 0.00.

A dash '-' in the table columns means we had no information to report on. This may be because our data providers weren't able to provide the information, the investment portfolio has no investment in an asset class, or it holds assets in less than 3 Global Industry Classification Standard (GICS) Sectors.



Introduction

ECI Scope 1 & 2



Explaining our data (3/3)



What is PCAF?

The Partnership for Carbon Accounting Financials (PCAF)¹ is an industry-led initiative. The globalisation of PCAF enables financial institutions worldwide to consistently measure and disclose the greenhouse gas (GHG) emissions of their financial activities.

Carbon footprinting metrics for financed emissions (Aviva's Scope 3, category 15 emissions) in this report follow the PCAF Standard Part A: Financed Emissions. PCAF suggests use of book value rather than market value for corporate bonds. We have continued to use market value rather than book value, because our assessment is that the use of market value does not have a material impact on the reported Absolute Emissions.

The Financed Emissions Standard Part A provides detailed methodological guidance for seven asset classes including listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgages, motor vehicle loans and sovereign debt.

To improve transparency in respect of the data quality of its climate metrics, Aviva discloses data quality scores for the climate metrics and these scores reflect the level of estimations involved in emissions based on the guidance from PCAF Standard Part A. The asset class level data quality score is a weighted average which is based on the proportional amount of our holdings. A scale of 1 (highest quality score) to 5 (lowest quality score) is used, with 1-2 corresponding to verified or unverified reported emissions, respectively, and 3-4-5 using estimated emissions depending on the type of estimation. It should also be noted that estimation approaches (i.e. emission factors) differ per asset class.



Glossary 1/4

Asset Allocation

The process of dividing an investment portfolio among different asset classes (such as stocks, bonds and cash) based on an investor's goals, risk tolerance and timescale. Asset allocation is a key strategy for managing risk and optimising investment returns.

Corporate Bonds

A bond is a debt obligation, like an IOU. Investors who buy corporate bonds are lending money to the company issuing the bond.

In return, the company makes a legal commitment to pay interest on the principal and, in most cases, to return the principal when the bond comes due, or matures.

Default Arrangement

A default arrangement is the default investment option for members of a workplace pension scheme who do not make an active investment choice.

In the UK, default investment options must meet certain requirements set by the government, such as a cap on charges and a focus on long-term investment strategies.

Direct Real Estate

In the context of our climate reports, Direct Real Estate refers to property which is directly held by Aviva Life and Pensions UK Limited. Properties are physical assets. They're different from financial assets like equities or corporate bonds, which are pieces of paper that represent ownership in a company or a loan to a company.

Explaining our data

Enterprise Value Including Cash (EVIC)

Enterprise Value Including Cash (EVIC) is the total value of a company, including its cash and cash equivalents. It's a measure of a company's total value, including its ability to generate cash. To calculate it, add the market capitalisation of a company, the market capitalisation of preferred shares and the book values of total debt and minorities' interests, without deducting cash or cash equivalents.

Equities

Equities is another name for shares issued by companies. Buying a share is like buying a tiny piece of a company.

If the value of the company goes up, so does your share. If it goes down, so does your share.





Glossary 2/4

Global Industry Classification Standard (GICS®)

A system for categorising companies into sectors and subsectors based on their primary business activities.

The GICS is used by financial analysts and investors to compare companies within the same industry sector.

Global Industry Classification Standard (GICS[®]), GICS[®] and GICS[®] Direct are service or trademarks of MSCI and S&P Global Market Intelligence.

Gross Domestic Product (GDP)

Gross domestic product is the total value of all goods and services produced in a country during a specified period of time, usually one year. It's used to estimate the size of an economy and its growth rate.

For example, if a country produces 100 cars and each car is sold for \$10,000, then the GDP of that country would be \$1,000,000.

Kyoto Protocol

The Kyoto Protocol was an international treaty, signed in 1997, that aimed to reduce carbon dioxide (CO_2) emissions and other greenhouse gases (GHG's).

The Kyoto Protocol applied to the seven greenhouse gases listed in Annex A: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3).

Network for Greening the Financial System (NGFS)

A group of central banks and financial supervisors from around the world that work together to promote sustainable finance and combat climate change.

The NGFS aims to identify and manage the financial risks associated with climate charge and to mobilise finance for the transition to a low-carbon economy.

Explaining our data

Purchasing Power Parity (PPP)

Purchasing power parity (PPP) is a way to compare the value of goods and services between countries. It's based on the idea that the same goods should cost the same in different countries.

PPP is calculated by comparing the prices of a basket of local and international goods and services in different countries.

The prices are then converted into a common currency to make the comparison.

For example, if a basket of goods costs \$100 in the US and the same basket of goods costs €80 in Europe then the exchange rate between the US dollar and the euro should be \$1.25 per euro.





Glossary 3/4

Qualifying Scheme

A pension scheme that meets certain criteria set by the UK government to qualify for tax benefits.

To be considered a qualifying pension scheme, the scheme must meet requirements related to contribution limits, vesting rules and other factors.

Sovereign

In the context of our climate reports, Sovereign refers to Government Bonds. These are like Corporate Bonds, except the debt securities are issued by a government to borrow money from investors. When an investor buys a government bond, they're essentially lending money to the government in exchange for regular interest payments and the eventual repayment of the principal amount.

Explaining our data

Revenue

Revenue is the money generated from normal business operations.

It's the top line (or gross income) figure from which costs are subtracted to determine net income.

Sub-sovereign

Whilst Sovereigns relate to debt securities issued by a government (see above). Subsovereigns relate to debt securities issued by a government, but below federal or national level i.e. state, regional and local government.

Sector

A sector is an area of the economy in which businesses share the same or related business activity, product, or service. Some examples of sectors are:

- Energy. This includes companies who are primarily involved in the exploration and production of oil, gas and coal.
- Utilities. This includes companies who provide electricity, gas and water. It also includes companies who produce or distribute renewable energy from wind turbines or solar installations.





Glossary 4/4

Supranational

Organisations, or institutions, that operate across multiple countries and are typically created by multiple sovereign states to promote economic, financial, or other shared interests. Examples of supranational organisations include; the United Nations (UN), the World Trade Organization (WTO) and the European Union (EU).

The Financial Conduct Authority

The Financial Conduct Authority (FCA) is the conduct regulator for 59,000 financial services firms and financial markets in the UK. It's also the prudential regulator for over 18,000 of those firms.

Its role includes protecting consumers, keeping the industry stable and promoting healthy competition between financial service providers.

The Paris Agreement

The Paris Agreement is a legally binding treaty adopted by 196 countries at the United Nations Framework Convention on Climate Change (UNFCCC) conference. It took place in Paris in 2015 and is also known as COP 21.

The main goal of the Agreement is to cut greenhouse gas emissions, in order to limit global temperature increases to below 2°C above pre-industrial levels and preferably to stay below 1.5 °C by 2100.

