

AI US Equity Index Fund



LEI	FUND SIZE	AS AT
549300K0FLV1CLF8D839	GBP 2,031m	30/12/2022

TCFD Fund Disclosures

We are required by the UK Financial Conduct Authority (FCA) to provide this document, which gives you information about the collective climate impact and risks of the assets held by the fund. The content is aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and complies with the specific sustainability disclosure rules of the FCA.

Fund Objectives & Policy

The aim of the Fund is to seek to provide capital growth and income for investors by tracking closely the performance of the FTSE® USA Index. In pursuing this objective the Fund will directly invest into constituents of the Benchmark Index. The Fund may also invest in permitted transferable securities, permitted money-market instruments, permitted deposits, units in collective investment schemes (including schemes operated by other Aviva Group entities and group entities of the Investment Manager) and exchange traded funds (including funds operated by group entities of the Investment Manager). Derivatives and forward transactions may be used for the purposes of efficient portfolio management.

We may use derivatives for investment purposes, and in order to reduce risk or to manage the fund efficiently. Derivatives are linked to the rise and fall of other assets. In other words, they "derive" their price from another asset. They can generate returns when share prices and/or indices fall.

In addition, the Sub-Fund has limited exclusions based on Aviva Investors' UK Responsible Investment policy. Further information on the Aviva Investors UK Responsible Investment policy and how we engage with companies is available on our website and in the Prospectus.

The benchmark provider does not endorse the product, nor confirm the accuracy of the information in this report.

Climate Risk Strategy

As the Fund's objective is to track an index, the Fund does not have a climate specific strategy. However, the Fund has specific exclusions based on Aviva Investors' UK Responsible Investment policy including, unconventional fossil fuels and thermal coal and these form a key part of Aviva investors broader climate mitigation strategy. For the investments selected within the portfolio, Aviva Investors retains the voting rights, and use these with the aim of positively influencing each companies climate risk strategy, whilst helping to create competitive returns.

Please see page 116 of [Aviva's Climate-related Financial Disclosure](#).

Climate Risk Management

As the Fund's objective is to track an index, the Fund does not aim to manage climate risk, however controls are in place to ensure the Fund's exclusion policy is applied accurately.

Climate Risk Governance

Aviva Investors UK Fund Services Limited has an independent governance structure which allows the Board, management committee and senior management to integrate climate related risks and opportunities into its strategy, decision making and business processes.

For further information on how we integrate ESG please refer to the Aviva Investors UK Fund Services Limited's Responsible Investment policy which is available on our website and in the prospectus.

Please see page 116 of [Aviva's Climate-related Financial Disclosure](#).

Fund Greenhouse Gas Emissions

The table below show the key measures used to evaluate the Greenhouse Gas emissions impact of the fund as at 30 December 2022.

Climate Metrics	Unit of measurement	Coverage	2022 Amount
Total scope 1 and 2 greenhouse gas emissions	tCO ₂ e - shown in thousands	100%	73.51
Total carbon emissions	tCO ₂ e - shown in thousands	100%	73.51
Total carbon footprint	tCO ₂ e / \$million invested	100%	30
Weighted average carbon intensity	tCO ₂ e / \$million Revenue	100%	101

Data sources – please see information on data sources shown later in this document. **Note** - Zero balances may be a result of rounding.

Carbon Emissions Metrics Explained: We use the following metrics to measure the collective carbon impact of the fund's holdings, calculated according to TCFD standards, which in turn are based on the internationally accepted [GHG Protocol](#):

Metric	TCFD Definition, based on GHG Protocol
Scope 1 Greenhouse Gas Emissions (Metric Tonnes)	Direct GHG emissions that occur from sources that are owned or controlled by the company.
Scope 2 Greenhouse Gas Emissions (Metric Tonnes)	GHG emissions from the generation of purchased electricity consumed by the company.
Scope 3 Greenhouse Gas Emissions (Metric Tonnes)	GHG emissions that are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Will be disclosed from June 2024 onwards.
Total Greenhouse Gas Emissions (Metric Tonnes)	Total of Scopes 1 and 2 until June 2024, and total of Scope 1, 2, and 3 from June 2024 onwards.
Total Carbon Footprint (Metric Tonnes per \$1M AUM Contribution)	Total carbon emissions for a portfolio normalized by the market value of the portfolio, expressed in tonnes CO ₂ e/\$M invested.
Weighted Average Carbon Intensity (Metric Tonnes per \$1M Revenue)	Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio), expressed in tonnes CO ₂ e/\$M revenue.

Exposure to high carbon emissions risk sectors

Sector analysis is 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 2022 report available at <https://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 business disruption. Some sectors, such as real estate and agriculture, are particularly exposed to such risks.

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 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.

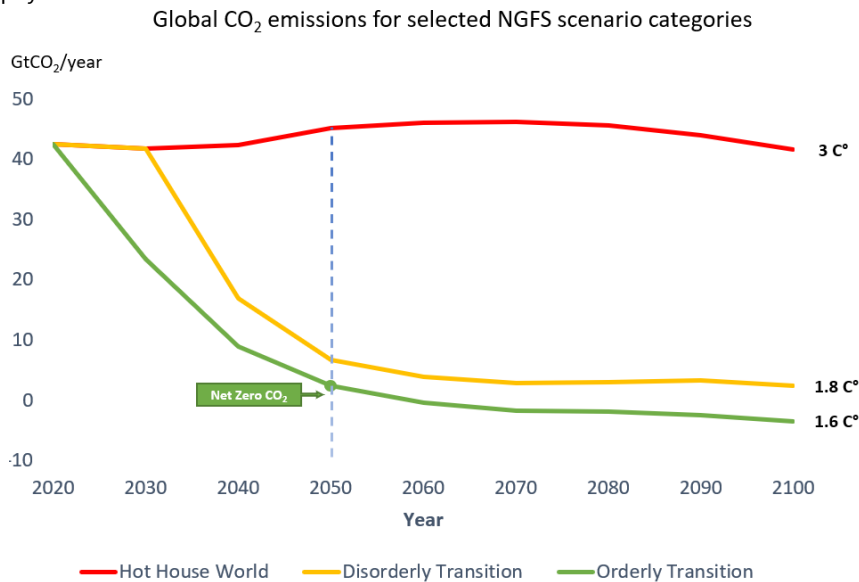
The sector transition risk analysis in the sections below focuses on GHG emissions reduction and carbon intensive industry sectors. This is to provide commentary on the sector emissions and carbon intensity metrics above.

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)¹. This 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.

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.



Data Source: IIASA NGFS Climate Scenarios, REMIND Model

¹ The new 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.

We use the Global Industry Classification Standards (“GICS”) in the sector commentary which follows. 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.

Top 3 Carbon Emitting GICS sectors

For Equities and Corporate Bonds, we can break emissions down by sector. We use the Global industry Classification Standard (GICS) system, and measure all greenhouse gas (GHG) emissions, not just carbon.

Metrics have been prepared for £2,024m of the Equity and Corporate Bonds.

The 3 largest (scope 1 & 2) carbon emitting Global Industry Sectors of the fund in Equities and Corporate Bonds are:

GICS Sector	WACI tCO2e / \$m Revenue*	Contribution to Portfolio WACI%	Assets holding £m	Assets exposure %**
Utilities	1,168	25	43	2
Energy	455	23	105	5
Materials	709	18	53	3

Data sources – please see information on data sources shown later in this document. **Note** - Zero balances may be a result of rounding.

*Carbon Intensity data is available for scope 1 & 2 emissions only.

**Sector information is unavailable for 0% of the fund’s Equity & Corporate Bonds Assets.

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 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

Water supply is becoming increasingly strained in some regions. This will require investment in adaptation to build resilience and investment in infrastructure and technologies such as rainwater harvesting and desalination of sea water. In Orderly and Disorderly transition, water utilities may need 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.

Energy

Oil and natural gas products are energy-intensive and emit high levels of carbon. 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.

[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.

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 process¹ 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 costly 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.

[1] Lower clinker-to-cement ratio, lower thermal energy intensity and a higher share of bioenergy and renewable waste.

Product Scenario Alignment

Indicating the likely implied temperature rise associated with a fund's investments is inherently complex, it is a rapidly evolving metric which has to include a host of assumptions by its very nature, guidance on how best to calculate this forward looking indicator is improving all the time, but currently we do not feel it appropriate to publish this data as it risks being potentially misleading and in any event would be heavily caveated and only indicative of a range of potential temperature rises and subsequent associated scenario's given the uncertainty of forecasts for the global economy to decarbonise. We intend to publish the implied temperature rise (ITR) of our investment products in subsequent years once we have designed a suitably robust methodology to represent the most likely possible future decarbonisation pathway of a representative basket of assets for a fund based on its sector, asset class and/or investee company specific projected decarbonisation pathways and other relevant carbon intensity data such as the likes of progress against the Science Based Target Initiative.

In the meantime the most decision useful information to enable comparison between funds based on their implied temperature rise is to use independent research that compares funds using the same methodology, this is freely available from climate data providers such as MSCI as per their ESG fund ratings and climate search tool <https://www.msci.com/our-solutions/esg-investing/esg-fund-ratings-climate-search-tool>. Comparing funds ITR scores from different firms which may be using proprietary models and differing assumptions could produce misleading results in that near identical funds could show very different numbers based on the method and bullishness of the model used and assumptive inputs.

Climate Value-at-Risk

Climate Value at Risk (Climate VaR) has emerged as a measure to estimate the potential financial losses that a company or portfolio of assets could incur as a result of climate change, we are currently evaluating the robustness of this measure and intend to publish it for future iterations of our fund level TCFD reports once we are comfortable the data has sufficient coverage and quality and once we have fully understood the potential limitations and weaknesses of the metric so we can present it in a suitable way. This includes ensuring the appropriate time horizon of the indicator and the appropriate scenarios are reflected in the output in a way that ensures it is not potentially misleading.

Other Metrics

There are countless options rapidly developing that are designed to convey climate risks and opportunities, we will keep this metrics under review and where they are deemed to be decision useful we will endeavour to incorporate them into our future reporting suite in conjunction with formal adoption of additional data by TCFD and other disclosure standards boards and regulations.

Climate Metrics

Our key climate figures show the carbon emissions for each investment fund. Metrics are disclosed for Equities and Corporate Bonds and Sovereigns. There are three types of emissions we consider: Scope 1 (direct), Scope 2 (indirect) and Scope 3 (from a company's value chain). This year, we're publishing numbers for Scope 1 and Scope 2. In the future, we'll add Scope 3, but the current data isn't sufficiently established.

Climate metrics include estimates of emissions and climate change, for more details, our reporting approach¹ and cautionary statements are provided in the Aviva plc Climate-related Financial Disclosure 2022 report available at <https://www.aviva.com/sustainability/reporting/>.

¹ The principal reporting policies adopted in the preparation of these climate metrics are set out in the following sections of [Aviva plc Climate-related Financial Disclosure 2022 report](#); Climate reporting policies (pages 59 - 60), reporting criteria (note 14 – page 64 - 65), our approach and methodology for climate metrics (note 5: page 66 - 68, note 6: page 68 – 69), key estimates and assumptions (note 5: page 66 - 68, note 6: page 68 – 69), and cautionary statements (page 122 - 123). Judgement has been applied in this annualisation to incorporate expectations for expected usage (and therefore emissions) in the last 3 months of the year taking into account historical emission data.

Useful Link

[Aviva's Climate-related Financial Disclosure](#)

Data sources

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. The Information may only be used for your internal use, may not be reproduced, or re-disseminated in any form and may not be used as a basis for, or a component of, any financial instruments or products or indices. Further, none of the Information can in and of itself be used to determine which securities to buy or sell or when to buy or sell them. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data 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.

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