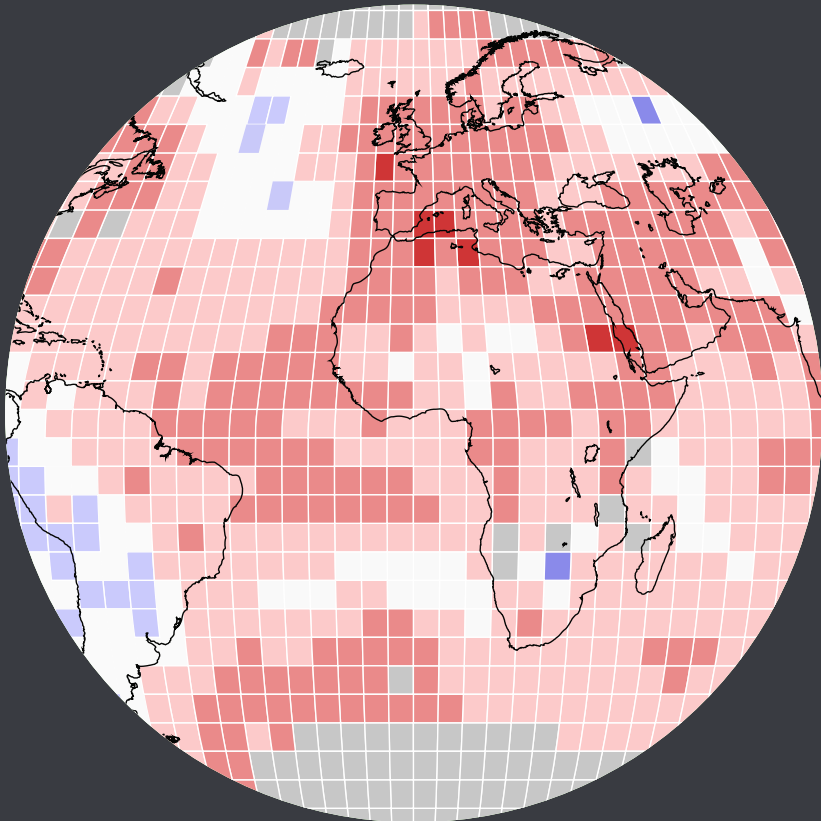




# Task Force on Climate-related Financial Disclosures 2022



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# About Ruffer

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Ruffer looks after investments for private clients, financial planners, institutions, pension plans and charities, in the UK and internationally.

Preserving our clients' capital has been the core purpose of Ruffer since the business was founded in 1994.

We define this purpose through our two investment objectives, which have remained unchanged for over 27 years

- Not to lose money in any 12-month period
- To generate returns meaningfully ahead of the return on cash

The business is committed to delivering investment performance that puts clients first. The spirit of service informs everything we do.

For more on what we do and how we do it, please visit [ruffer.co.uk](https://ruffer.co.uk)

# Foreword

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## **IN 2021, RUFFER PUBLISHED OUR CLIMATE CHANGE FRAMEWORK AND INAUGURAL RESPONSE TO THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE (TCFD) RECOMMENDATIONS.**

In early 2022, we became a signatory to the Net Zero Asset Managers (NZAM) initiative. Signing up means, among other things, an evolution of our Climate Change Framework. NZAM requires signatories to articulate a strategy and targets for achieving Net Zero on or before 2050. For that reason, we have neither updated nor included climate-related targets in this report, as these will be addressed as a component of the Net Zero framework. We aim to update the framework in early 2023.

The TCFD provides a structure which helps us consider (and report on) the nature, scale and management of climate-related risks and opportunities that may affect client portfolios. These risks and opportunities – if poorly managed or misidentified, or if they turn out to be more extreme than anticipated – could result in harm to our clients' assets.

This TCFD report is designed with twin objectives. First, to help our pension fund clients meet their statutory reporting obligations. Second, to communicate more broadly to clients and investors how we are considering climate change risk and opportunity in the stewardship of their investments.

### **CHRIS BACON**

*Chief Executive Officer*



# Ruffer's alignment with the TCFD recommendations

In May 2019, Ruffer publicly endorsed the TCFD and its call for increased climate-related financial disclosure to support well-functioning information flows within capital markets and the financial and societal ecosystem.

In September 2021, Ruffer published its Climate Change Framework combined with a response to the TCFD.

In March 2022, Ruffer signed the NZAM initiative, which commits us to publishing a pathway to Net Zero before April 2023.

In April 2022, Ruffer published its second response to the United Kingdom [Stewardship Code](#), which introduced our thinking on the transition to Net Zero in a section called 'Breaking the abatement paradox: our thoughts on Net Zero' (page 63 and following).

We work with like-minded organisations and investors to bring awareness of the need for comparable and reliable disclosure. Our activities include aligning our disclosure practices with the TCFD recommendations as well as encouraging investee companies to follow them.

We are investor signatories to or members of the following organisations which support and enable standard setting on environmental issues, including climate-related disclosure, social and corporate governance: CDP, the Sustainability Accounting Standards Board (SASB), the Institutional Investors Group on Climate Change (IIGCC) and the Principles for Responsible Investment (PRI).



# 1. Governance

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## **BOARD OVERSIGHT OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE, INCLUDING CLIMATE, RISK AT RUFFER**

### **DESCRIBE THE BOARD'S OVERSIGHT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES**

The Board, through its Risk Committee, considers investment risks quarterly as part of a broad suite of business and fund risk reporting. The Board or the Risk Committee may seek clarification or suggest further action as they see fit.

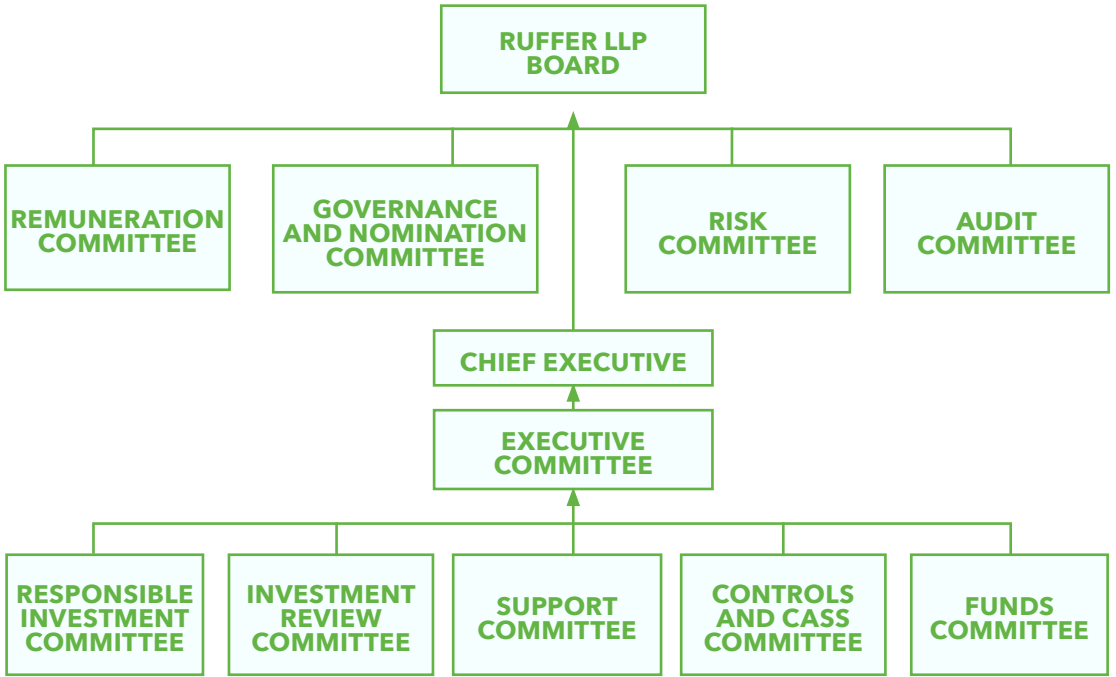
Ruffer's chairman and founder, Jonathan Ruffer, and the Chief Investment Officer (CIO), Henry Maxey, share overall oversight for the firm's investment strategy and execution, including investment risk management approach and scenario analysis. The firm acknowledges that climate risk contributes to investment risk. Every quarter, climate scenarios are tested and presented to our CIO which form an input into his and the macro team's view on the direction of markets and economies and into any consequent changes to the firm's asset allocation.

The Board has delegated responsibility for stewardship activities, including climate-related risk and opportunity, to Ruffer's Chief Executive Officer (CEO), Chris Bacon, who is supported by the Executive Committee.

This report is approved by the Board following review and recommendation to the Board by the Risk Committee.

### **DESCRIBE MANAGEMENT'S ROLE IN ASSESSING AND MANAGING CLIMATE-RELATED RISKS AND OPPORTUNITIES**

The CEO and the Executive Committee have overall responsibility for ensuring management assesses and manages climate-related risks and opportunities. The CIO is responsible for day-to-day oversight of the effective integration of climate risk into the research process.



Org Chart: Ruffer LLP Board & Executive

Climate-related risks and opportunities are considered at two levels: Ruffer LLP (the partnership and management entity); and Ruffer’s investments on behalf of its clients and investors, where risks and opportunities are integrated into investment decisions, consistent with Ruffer’s investment philosophy and objectives. The two are interdependent: the success of client outcomes relies on Ruffer LLP continuing to deliver upon its investment objectives.

Ruffer’s internal Responsible Investment Committee (RIC) oversees the firm’s responsible investment policies and processes. Engagement, voting, policy and integration are all components of managing climate-related risks and opportunities. The RIC is a formal sub-committee of the Executive Committee, with delegated authority to oversee and make recommendations on these areas.

The RIC comprises representatives from Legal and Compliance, Investment Directors, Research Directors and members of the responsible investment team. It is chaired by the Deputy CEO or the General Counsel. The committee oversees public responses to initiatives such as the TCFD and the United Kingdom Stewardship

Code report. The RIC periodically reports management information and the status of stewardship-related projects to the Executive Committee.

The formal channel for climate risk management is the internal quarterly scenario meeting, chaired by our CIO. A formal paper is tabled presenting both quantitative metrics sourced from MSCI ESG Research and qualitative commentary, including scenario analysis prepared by Ruffer. The meeting's purpose is to identify the key sources of climate risk by company name – split into physical and transition risks using the Climate Value at Risk (CVaR) metric – for a representative client portfolio. CVaR adjusts for transition opportunities in terms of an estimate of financial value created from green energy and renewable patents. We selected the LF Ruffer Total Return Fund (RTRF), given it is both a flagship fund and an expression of Ruffer's investment approach, as representative of all Ruffer funds.<sup>1</sup> This paper is then summarised for the Executive Committee meeting.

## What is CVaR?

Climate Value at Risk is designed to provide a forward-looking and return-based valuation assessment to measure climate-related risks and opportunities in an investment portfolio. This fully quantitative model offers insights into how climate change could affect company valuations.

The model blends fundamental economic and company data with macro transition and physical exposures to estimate the value at risk. The model makes various assumptions about carbon budgets, how carbon costs and revenues will flow through the financial statements, the timing and likely value of climate solution patents and temperature (emission) pathways.

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<sup>1</sup> LF Ruffer Total Return Fund is a UK UCITS fund that is only registered for distribution in the UK. However, as it follows the same investment strategy as Ruffer's other core funds and segregated portfolios, it is representative of the Ruffer portfolio.



## OUR FRAMEWORK



Source: p. 19 2021 Stewardship Code

### AT MANAGEMENT LEVEL, OUR ESG INTEGRATION FRAMEWORK GUIDES OUR APPROACH TO CONSIDERING CLIMATE RISK AND OPPORTUNITY.

#### 1. MACRO

- a. Climate-related risks, at portfolio level, are considered in a formal quarterly scenario meeting.
- b. Climate-related scenarios are drawn from third-parties and modelling is estimated using MSCI ESG Research software.

#### 2. MICRO

- a. Identification of climate-related opportunities (such as those which support the Net Zero transition) is shared between the research director and the analyst (security level analysis), supported by the responsible investment team.

- b. Climate-related risks (securities exposed to transition, physical or market risks) are the responsibility of the analyst across bonds and equities. Quantifying the climate exposure of Ruffer's protection strategies is a challenge, given the fundamentals of this asset class and data availability.
- c. Security ideas are pitched at the Equity Strategy Meeting, attended by senior members of Ruffer, for an investment decision. Climate issues, where relevant or material, are discussed in this forum.

### 3. STEWARDSHIP

- a. Proxy voting: Ruffer takes active voting decisions on climate-related resolutions.
- b. Independent engagement: we engage directly with companies on climate-related disclosure, risks and opportunities, transitioning of businesses and target setting.
- c. Collaborative engagement: Ruffer is a founding investor signatory of Climate Action 100+ and engages (in lead or supporting roles) with companies in order to achieve the initiative's goals for climate-related governance, reduction of greenhouse gas emissions and disclosure.
- d. Collaborative policy advocacy: we advocate for policy action through the industry bodies we support, such as the IIGCC.

### 4. STAKEHOLDERS

- a. Internally, selection and oversight of climate-related data and data providers and their metrics and analyses are overseen by the Responsible Investment Committee, using resources from our front office, research and technology teams.
- b. External stakeholders include regulatory bodies, the TCFD, trade associations, clients and NGOs.

## 2. Strategy

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### **ACTUAL AND POTENTIAL CLIMATE-RELATED RISKS AND OPPORTUNITIES INFLUENCING RUFFER'S INVESTMENT STRATEGIES AND PORTFOLIOS**

Ruffer actively manages an unconstrained multi-asset portfolio with the objective of delivering consistent positive returns. We are prepared to invest in emission-intensive companies and sectors where carbon emissions are difficult to abate. We do so where we see an attractive balance of investment reward versus risk or where the position provides an offset to another risk the portfolio is exposed to. In these cases, we may actively steward these investments through additional research (including ESG factors), voting and engagement. Ruffer is currently developing its approach to and targets for Net Zero, which is the next formal step in implementing a strategy for managing climate-related risk and opportunity.

Consequently, as an asset manager, Ruffer has determined that its exposure to climate-related risks and opportunities comes primarily through the investment of client funds. Climate risk is estimated in terms of both physical and transition risk. Climate-related opportunity is captured within the estimate of transition risk and identified as part of fundamental equity research. Ruffer is presently able to estimate climate risk - using the industry standard CVaR – for the equity component of the total portfolio.

### **DESCRIBE THE CLIMATE-RELATED RISKS AND OPPORTUNITIES IDENTIFIED OVER THE SHORT, MEDIUM AND LONG TERM**

Ruffer invests in listed equities, sovereign bonds, exposure to gold bullion and protection strategy (which include credit indices, derivatives, currencies and interest rates). As an absolute return manager, we have the flexibility to roam across these asset classes, changing allocation weights and portfolio constituents based upon macro or fundamental (micro) views.

Whilst we acknowledge anthropogenic climate change is happening now – witnessed in physical effects such as excessive regional heat, wildfires and floods – these events do not necessarily translate directly into investment risk. That is, the market may misprice the potential (or actual) economic impact of climate change. If we build a view that climate risk is not managed appropriately or we observe crowded trades into securities that are considered green, renewable, clean or sustainability-aligned, we can undertake stewardship activities or shift asset allocation consistent with achieving our investment objectives.

The main categories of climate change risk are well documented. These risks are expected to impact asset classes differently, so it may be possible to diversify some, but not all, climate risk. Likewise, opportunities to manage these risks while generating returns from the transition to low or Net Zero anthropogenic carbon emissions will arise across asset classes.

Ruffer subscribes to MSCI ESG Research Enhanced Climate Change Metrics (MSCI). This tool provides insight into transition and physical risk exposure at security and portfolio level. MSCI incorporates technology opportunities into its model, acknowledging companies may have earnings at risk from climate-related exposure but may also generate profit from low or no carbon solutions. This analysis does not extend to sovereign bonds or other securities. Opportunities are identified or clarified through bottom-up research guided by our thinking on the transition to Net Zero. It is sometimes tempting to be dogmatic about alignment or misalignment, but opportunities may reside within incumbent companies seeking to shift to more carbon-efficient business models.

# “History does not tell you of future things happening.”

Warren Buffett

The portfolio response to these climate risks and opportunities, and the strategies used by Ruffer to actively manage the portfolio taking them into consideration, may depend on factors such as the pathway of carbon emissions, the policy responses of governments and the actions of central banks. However, should humanity reach a climate tipping point and the unknown consequences of climate breakdown ensue, the portfolio response is difficult to predict. In any case, our role is to best position client funds to be resilient to these possible pathways.

## FEEDBACK LOOPS BETWEEN DECARBONISATION PATHWAYS, PHYSICAL EFFECTS, FINANCIAL MATERIALITY AND TRANSITION RESPONSE

The nature of transition and physical risks, and their financial materiality (measured in revenue loss or change in value) in this context, depends upon the trajectory of greenhouse gas emissions, existing concentrations of atmospheric greenhouse gases and the Earth’s ability to cycle the carbon (ie [planetary boundary](#)), amongst other factors. If the effects of climate change are faster or more extreme than forecast, we would expect a greater policy (transition) response, resulting in a subsequent steeper decline in emissions and potentially increased costs for companies and society. Conversely, technological advancement and disruption (transition opportunity) of emission intensive industries may result in lower emissions, reducing the physical risks and avoiding some of the anticipated externalised costs.

As an asset manager seeking to play a role in the Net Zero transition, whilst protecting and enhancing our client funds, we must be cognisant of climate science (for example, the chart on

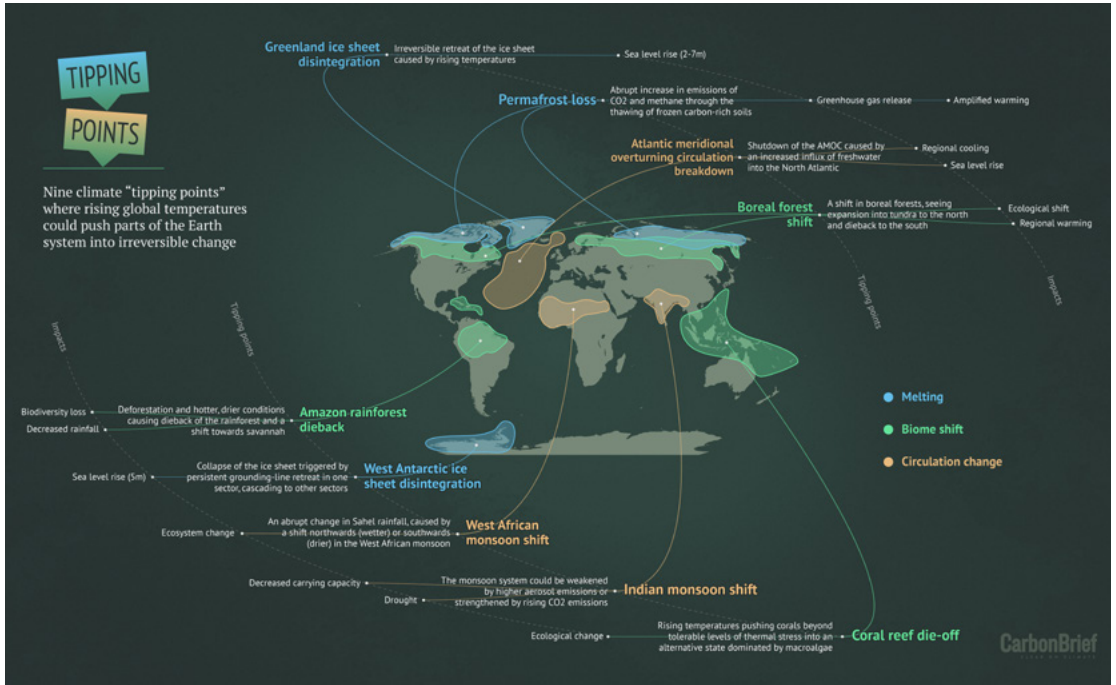
### Planetary Boundary

Planetary boundaries is a concept developed by the [Stockholm Resilience Centre](#). It suggests there is a set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come, if human activities remain within these limits. The boundaries are not independent of each other. Climate change is one of these boundaries. The carbon cycle refers to the ability of the Earth to sequester or store carbon, preventing it from entering and remaining in the atmosphere, where it contributes to global warming.

page 15 presents the potential climate tipping points scientists have cited as the global canaries in the coal mine), climate risk and opportunity, the links to financial value and any changes in either transition or physical risks. All these elements are dynamic.

Decarbonisation targets are generally constructed with a mid-term goal for 2030 and a long-term target of Net Zero by 2050. Net Zero targets do not necessarily imply a 1.5°C warming or alignment with the Paris goals. If we look towards warming projections for 2100 (prepared by the Climate Action Tracker), given the globe has already warmed by around 1.1°C since pre-industrial times, policies and action imply a midpoint of 2.7°C at the end of this century. Without a deep (43%, assuming peak emissions by 2025) and immediate (before 2030) reduction in greenhouse gas emissions, it is highly unlikely that warming will be limited to 1.5°C by mid-century, so we will see **commensurate changes** in biodiversity, water availability and social stability.

We expect this outcome because **global carbon dioxide emissions** from fossil fuels grew by around 3% a year between 2001 and 2010 compared with around 1% a year between 2011 and 2019, before the pandemic induced slump in economic activity. Today, we **collectively emit around 50 billion tonnes** of CO<sub>2</sub>-equivalent each year. With emissions likely to surpass 2019 levels by 2023, we may not have passed peak greenhouse gas emissions, a critical turning point to keep the Paris goals possible. Now, climate models can be wrong, politicians and political parties change, and the pathway of carbon emissions is uncertain. We believe a base case scenario must be anchored to the likely future outcome of current observations on science, policy, adaptation and mitigation – but it should not be held static over time.



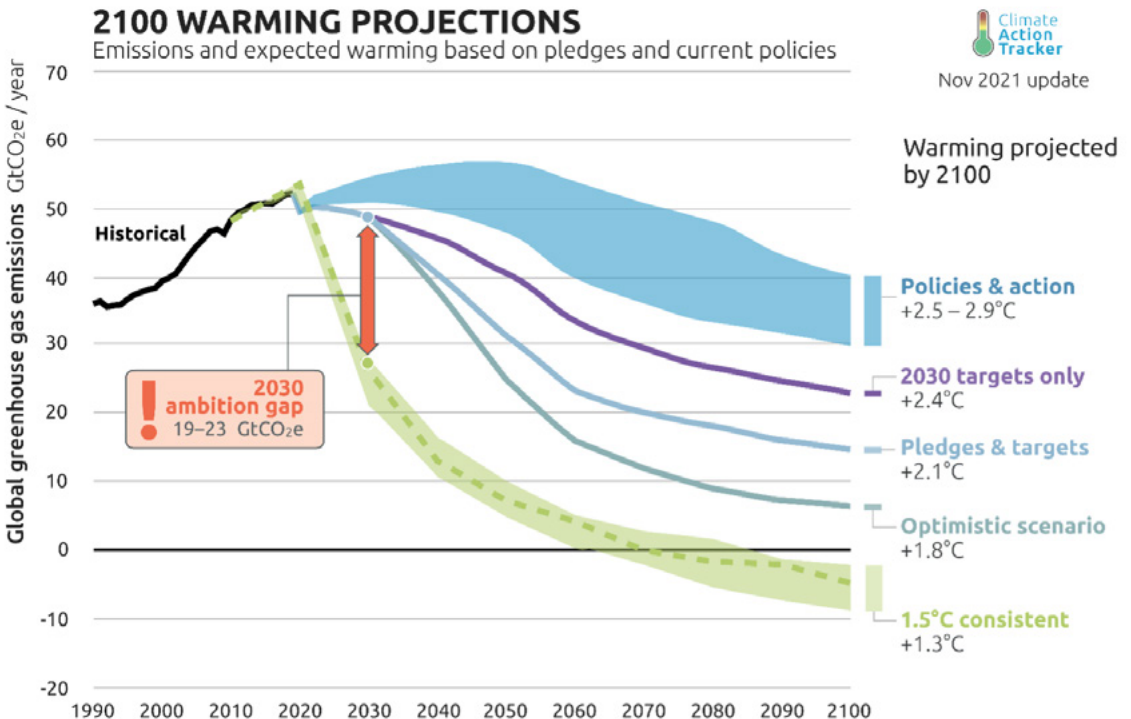
Source: [www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change/](http://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change/)

## CLIMATE TIPPING POINTS – TOO RISKY TO BET AGAINST

A 2019 paper published in *Nature* argues that many politicians and economists have seen climate tipping points as of “...low probability and little understood. Yet evidence is mounting that these events could be more likely than was thought, have high impacts and are interconnected across different biophysical systems, potentially committing the world to long-term irreversible changes.” The paper then discusses the evidence and why the nine events are critical indicators of the health of our planet. The findings of this earlier work have now been supported by a 2022 paper published in *Science* which states that “even global warming of 1°C, a threshold that we already have passed, puts us at risk by triggering some tipping points. This finding provides a compelling reason to limit additional warming as much as possible.”

## DESPITE THE GLASGOW CLIMATE PACT, 2030 CLIMATE TARGET UPDATES HAVE STALLED

At the close of COP26, the Climate Action Tracker (CAT) assessed the **effect of climate policies and action on emissions**, the impact of pledges, targets and nationally determined contributions (NDCs) and countries’ efforts compared with their fair share and modelled domestic pathways. The CAT is an independent scientific analysis that tracks government climate action and measures it against the globally established Paris Agreement aim of “holding warming well below 2°C and pursuing efforts to limit warming to 1.5°C.” Their approach is based upon a carbon budget, a theoretical maximum of anthropogenic carbon that can be released into the atmosphere if we are still to achieve the Paris goals. If humanity exceeds the budget, one should expect a warming that is above 2°C.





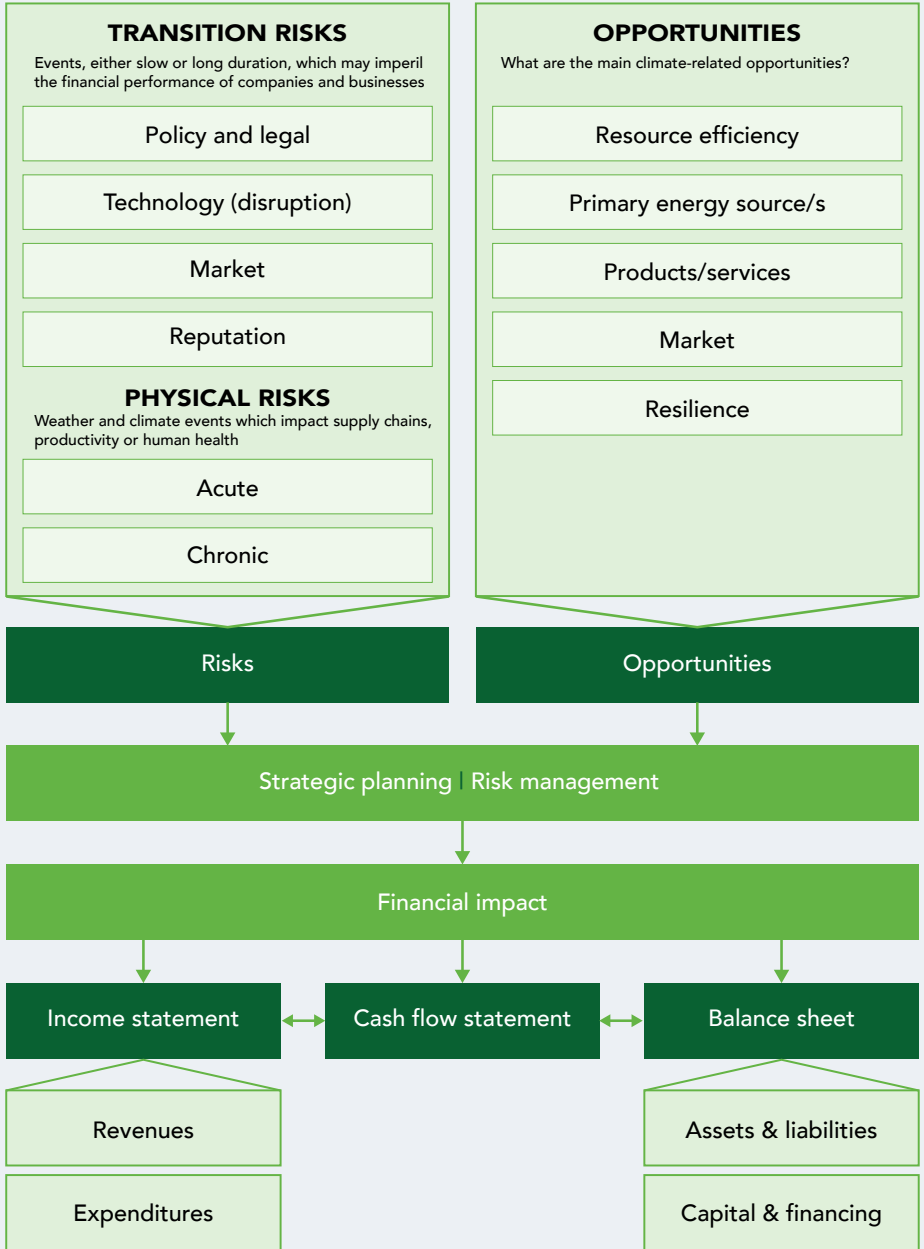
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The short-, medium- and long-term risks and opportunities Ruffer has identified can be grouped into physical and transition risks and the adaptation and mitigation responses to climate change. Mitigation involves reducing the flow of heat-trapping greenhouse gases into the atmosphere by investing in themes such as renewable energy generation and storage, shifting to vertical farming or energy efficiency through insulation and heat pumps. Adaptation (adapting to life in a changing climate) involves adjusting to the actual or expected future climate and weather conditions. Physical risk and transition opportunity are visible now and are expected to become more investable (in both scope and scale) over the medium and long term.

## SPECIFIC CLIMATE-RELATED ISSUES THAT COULD HAVE A MATERIAL FINANCIAL IMPACT

Term	Short	Medium	Long
Years	<2 years	2 to 10 years	> 10 years
Financial materiality	Low	Growing	Widespread, significant
<b>Physical issues</b>			
1. Acute	Climate science suggests acute physical events such as droughts, wildfires and floods will become more intense, frequent and severe over the short, medium and long term. This may have an increasing impact on GDP (losses). However, given the complexity of climate systems, predicting these events is misleading, at best.		
2. Chronic (higher temperatures, sea level rise)	~+1.2°C	~+1.5°C	~+0.18°C of warming/ ~+3.4cm of sea level rise per decade
Opportunity	As a broad macro risk, issuance of green or sustainable sovereign bonds, commodity indices and derivatives may allow Ruffer to either invest in government or private sector led initiatives which seek to mitigate or adapt to the physical risks by providing finance for climate-related opportunities.		
<b>Transition issues</b>			
1. Policy & legal (carbon pricing, efficiency standards, shareholder resolutions)	Legal action limited to certain sectors and companies. Emerging policy response (driven by energy security rather than climate risk)	Expect increased legal action coupled with more aggressive policy response (insulation, green buildings, subsidies for renewables).	Possibly regional carbon pricing/trading mechanisms
Opportunity	Ruffer considers this part of stewardship: monitoring, proxy voting and engagement, seeking to identify securities which are best positioned, or most resilient to, current and emerging regulation and standards. Alternatively and subject to valuation, we may seek to encourage issuers to adopt different strategy or reporting with respect to these.		
2. Technology & disruption (cleaner alternatives, stranded assets risks)	Investment in early & late stage technology covering most sectors	Expansion of low carbon economy; stranded asset risk becoming financially material	Transition well underway: hydrogen economy, EV, nuclear etc.
Opportunity	Ruffer is evolving its investment research process, partially in response to signing the NZAM, to systematically identify companies (in particular) that may have some persistent competitive advantage in research & development or human capital management. From a thematic perspective, although we are cognisant of top down climate-related themes, we select securities bottom-up. Hence, identifying possible beneficiaries of the low-carbon transition may increase in importance in our process.		
3. Market (gross domestic product, inflation, interest rates, balance of payments, fiscal and monetary policy)	Early-mover advantage	Greater dispersion in economies, sectors and companies as the effects of and response to climate change differentiates	Winners and losers will begin to emerge based upon strategic financial, labour and capital allocation decisions made over the past decade.
Opportunity	As new research and evidence is published, we may adjust asset allocation or security selection to protect the portfolio from risk or lean towards transition opportunities.		
4. Reputation (greenwashing, product claims)	Limited cases of financially material reputation risk; competitive pressure rising	Pressure on corporates to embed 'sustainability' increasing	Companies which fail to adapt business strategy to the external environment likely to suffer.
Opportunity	Reputation-type risks and opportunities are captured in Ruffer's fundamental security analysis. Where we think claims are too good to be true, we will seek to verify them through further research so that we can quantitatively adjust a financial model or investment thesis.		

### WHAT ARE THE MAIN CLIMATE-RELATED RISKS AND OPPORTUNITIES?



## RISKS

Ruffer engaged MSCI to provide enhanced climate change metrics as the primary data source. This module is used to assist in identifying climate-related financial risk and implements several scenarios to analyse how Ruffer's portfolios may behave given different timeframes, temperature pathways and policy scenarios. These metrics and scenario analyses only cover equities. For sovereign bonds, MSCI provides carbon footprint estimates but doesn't allow for scenario analysis. Securities used as part of our protection strategies are excluded from the analysis, for reasons of both data availability and lack of methodology.

### RUFFER SUPPLEMENTS THE MSCI ANALYSIS WITH IN-HOUSE RESEARCH AND ANALYSIS

**EQUITIES:** whilst MSCI might identify the top contributors to climate risk (measured as CVaR), Ruffer Investment and Research Directors and Analysts determine, on a fundamental basis, whether company management is adequately managing these risks and what improvements or enhancements could be made (using such resources as the CA100+ benchmark to guide further stewardship activities).

**SOVEREIGN BONDS:** Ruffer has developed a proprietary ESG risk model. It helps us to rank countries on a number of ESG factors, such as energy sources and use, political risk and stability (good governance implies better management of climate risk).

**PROTECTION STRATEGIES:** although climate risk is not explicitly factored into security selection or portfolio construction for Ruffer's protection strategies (which forms an essential component of the overall Ruffer portfolio), these strategies are constructed to provide insurance to client funds against expected or unexpected shocks. If climate change plays out in such a way that it affects growth, interest rates, inflation, currencies or credit, implicitly the portfolio should be well diversified if not somewhat protected from these risk factors.

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## OPPORTUNITIES

Having signed the NZAM, our thinking on identifying climate-related opportunities is evolving. Our focus here is on equities, where we think Ruffer has the largest investment opportunity set and the greatest chance to contribute to change. Whilst it is critical to invest aligned with Net Zero emissions by 2050 or sooner, it is challenging to identify opportunities for managing climate risk over the short, medium and long term consistent with our fiduciary duty and investment objectives. The speed at which the transition to Net Zero occurs (that is, the emissions pathway) will influence the severity and timing of physical and transition risks. In turn, this will influence the nature of the investment opportunities that may arise. In other words, we argue there is a circularity between the pace of decarbonisation and when opportunities for investment will emerge and what type they will be. We don't dispute that there are many opportunities today, some not accessible to Ruffer because of their size, valuation or geography.

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## SOVEREIGN BONDS AND PROTECTION STRATEGIES

For sovereign bonds and protection strategies, we remain alert to the issuance of green or sustainable bonds and climate-related derivative instruments. Thus far, we have not invested in these areas.

With sovereign bonds, we recognise that climate-related costs are often met by government assistance, and gross domestic product may be negatively impacted by the physical impacts of climate change. We predict that climate-related events may over time impair some sovereign entities' ability to pay (coupon and principal), as indebtedness rises. We do not rely on third-party credit rating agencies to structure our bond portfolio or guide our view on the creditworthiness of the securities we buy and hold.

## DESCRIBE THE IMPACT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES ON THE ORGANISATION'S BUSINESSES, STRATEGY AND FINANCIAL PLANNING

Ruffer is a limited liability partnership (LLP), as we believe this organisational structure best aligns our interests with those of our clients. Because our senior staff share in the long-term profitability of Ruffer, they are interested in nurturing client relationships through ongoing communication and by delivering upon our investment objectives.

We offer clients and investors an absolute return strategy which seeks to achieve our twin investment objectives of protecting capital and providing returns above cash on deposit. Ruffer provides an array of investment products under a 'one approach, different expressions' model.

**BUSINESS:** we have invested in systems, human capital and third-party provision of data, metrics and information to assist in identifying and managing risk and opportunity for our client funds, which we view as the material risk to Ruffer. Ruffer LLP undertakes corporate social responsibility (CSR) activities.

**STRATEGY:** our investment philosophy and investment objectives have remained unchanged since inception. As climate risk becomes more pressing, we seek ways to execute a coherent strategy which integrates climate risk and opportunity consistent with our investment philosophy.

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**FINANCIAL PLANNING:** the financial performance of Ruffer is inherently related to the performance of the client funds we are privileged to manage. Effectively managing risk and opportunities across our range of funds is critical. Expanding our range of funds or evolving our investment process to attract and retain clients is part of ongoing business management.

**DESCRIBE THE RESILIENCE OF THE ORGANISATION'S STRATEGY, TAKING INTO CONSIDERATION DIFFERENT CLIMATE-RELATED SCENARIOS, INCLUDING A 2°C OR LOWER SCENARIO**

We define resilience in this context as Ruffer's ability to effectively manage climate-related risk and opportunity so that delivering on our investment objectives is not impaired. Ruffer's investment strategy is designed to be resilient to investment risks, including climate related risks. Through the implementation of our strategy using a multi-asset class approach and being prepared to shift weights across and between these asset classes, we believe our strategy is resilient to various climate scenarios.

One measure which allows us to model climate scenarios (including both a 1.5°C and a 2°C scenario) is CVaR. This is designed to provide a forward-looking and return-based valuation assessment to measure climate-related risks and opportunities in an investment portfolio for selected temperature, policy and physical climate risk scenarios. We interpret CVaR as a guide, rather than a dictum, and we look to its decomposition to inform our thinking on the source and management of - and necessary actions related to - risk.

Ruffer uses the MSCI tool to standardise how climate risks may affect our portfolio over the short, medium and long term. The enhanced climate change metrics tool offers 15 transition (including policy and technology) scenarios and two physical risk scenarios. Of the scenarios available, Ruffer selected four [Asia-Pacific Integrated Model](#) (AIM) computable general equilibrium model (CGE) transition scenarios and the two physical risk scenarios to parameterise the potential positive or negative impacts on the Ruffer portfolio. For this report, it has only been applied to the equity part of the portfolio as the sovereign bond model is still in the development phase and the model doesn't extend to protective securities. Given the availability of data, estimates of climate risk at portfolio level may be distorted. We are benchmark unconstrained with macro views being applied to the portfolio in terms of absolute asset allocation and sector or industry tilts, which in turn influences the CVaR estimate.

Over the 12 months ending 31 March 2022, Ruffer has both reduced its allocation to equities and rotated the equity portfolio. This action resulted from a macro view of the markets which, in our view, would best protect client monies from a potential equity market correction. This rotation has led to a lower exposure to transition risk and a higher exposure to physical risk, as a proportion of total estimated equity climate risk. Total estimated climate risk has declined over this period. Some of this decline is explained by changes MSCI made to its climate model, while the rest is due to a higher estimated technology opportunity for core energy company holdings. In future, as the weight of equities rises (falls) and the constituents change, equity contribution to portfolio level climate risk may also rise (fall).

The temperature pathways provided by MSCI include: 3°C, 2°C and 1.5°C. All have varying carbon budgets based on the UN Framework Convention on [Climate Change National Emission Inventory Report](#) and the [UN Environment Programme Emissions Gap Report](#). The temperature pathways demonstrate the difference in carbon budgets between the 3°C pathway and the Paris Agreement (keeping global warming below 2°C) and Net Zero carbon reduction targets.

It also includes specific scenarios such as the so-called late action, which corresponds to a delayed policy action or [inevitable policy response](#) (in the PRI's vernacular) or disorderly transition. This meets the stipulations of the Bank of England's [2021 Biennial Exploratory Scenario](#), which investors are required to use. The scenarios have been selected because they are associated with regulatory specified pathways, have undergone a high level of academic scrutiny and are politically neutral and not commercial. The scenarios provide a high level of science-based impartial insight into the future.

## MSCI ESG Research Methodology

MSCI employs a hybrid top-down and bottom-up methodology to calculate climate change risks and opportunities such as future policies targeting emission reductions, the potential of low-carbon technologies and extreme weather hazards. The costs for individual companies (or gains for opportunities) are modelled and the CVaR represents the impact on value from these modelled costs (or gains) based on a discounted cash flow valuation methodology.

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# 3. Risk

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**RISK MANAGEMENT SITS AT THE HEART OF RUFFER'S INVESTMENT PHILOSOPHY. IT IS INTEGRAL TO DELIVERING OUR INVESTMENT OBJECTIVES OF CAPITAL PRESERVATION AND GROWTH IN WEALTH.**

Risk management is more than a compliance function, it is central to the way we invest. It focuses on seeking to understand, both quantitatively and qualitatively, the risk exposures associated with our current portfolio and how those risks are likely to manifest over the investment horizon. In order to identify vulnerabilities, the portfolio is scenario tested through different historical (and potential) events during which markets suffered significant losses or other regime changes (such as oil price spikes and inflationary periods).

We are students of economic history, with a database extending back to the beginning of the twentieth century. This allows us to identify historical market shocks to apply to the current portfolio and economic conditions. This approach guides our understanding to the array of risks to which the portfolio is exposed, helping us to position the portfolio to best withstand vulnerabilities.

We use the same approach to test the portfolio against a number of prospective market scenarios, principally potential threats. The analysis is completed by an examination of the circumstances in which these historical events occurred and of the economic and monetary environment. We conduct a similar exercise combining a quantitative back-testing and a qualitative assessment for all the periods where our analysis shows the portfolio would suffer substantial losses.

We also test the portfolio against changes in correlations between and within the asset classes we use to build a portfolio of offsetting assets. The different scenarios can be either actual historical events or stress tests designed by our macro team.

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## **DESCRIBE THE ORGANISATION'S PROCESSES FOR IDENTIFYING AND ASSESSING CLIMATE-RELATED RISKS**

At Ruffer, we are refining and improving our investment process and how we approach and appropriately manage climate change risks and identify opportunities across our strategy. This includes how ESG risks and opportunities are integrated into our investment and research processes, our client reporting on climate risk and opportunities and how our Risk team provides outputs from our climate-related scenario analysis.

Ruffer uses climate change scenario analysis to identify macro-economic climate-related risks and opportunities that could impact the assets our clients are invested in. The scenarios provide a directional indication of areas in the portfolios requiring more assessment or re-balancing. These scenarios should not be interpreted as forecasts.

We integrate the following into our investment risk process

1. Scenario analyses (1.5°C and 2°C orderly, 2°C disruptive, 3°C orderly) to identify climate-related risks under different temperature and policy pathways
2. Portfolio carbon footprint data to identify those assets with a potentially greater greenhouse gas emission contribution relative to their weight in the portfolio – in a concentrated, benchmark unconstrained and actively managed portfolio, this is often only a small number of companies
3. Company (or security) level carbon data, which may inform security selection, position size and stewardship activities

By managing these risks, we strive to protect our clients' assets from wealth erosion due to unexpected climate risks while seeking to generate real wealth through identifying climate-related opportunities.

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## **DESCRIBE THE ORGANISATION'S PROCESSES FOR MANAGING CLIMATE-RELATED RISKS**

The formal channel for presenting climate risk information is the quarterly scenario meeting, where climate-related risk analysis is prepared using MSCI metrics and data and is presented alongside other quantitative investment risk metrics, in written form. In this paper, high-level risk estimates are decomposed into the sources of risk (by sector and security), key metrics over time (CVaR, primarily) and scenario analysis. The risk information is interrogated and discussed in this meeting, where decisions on asset allocation are made. If, in their analysis of climate risk, they consider the portfolio is unintentionally or overly exposed to transition or physical risk, the senior members of our research and front office teams may agree to change our positioning at either macro (asset class) or micro (security) levels.

### SUMMARY OF FY2022 CLIMATE RISK ANALYSES

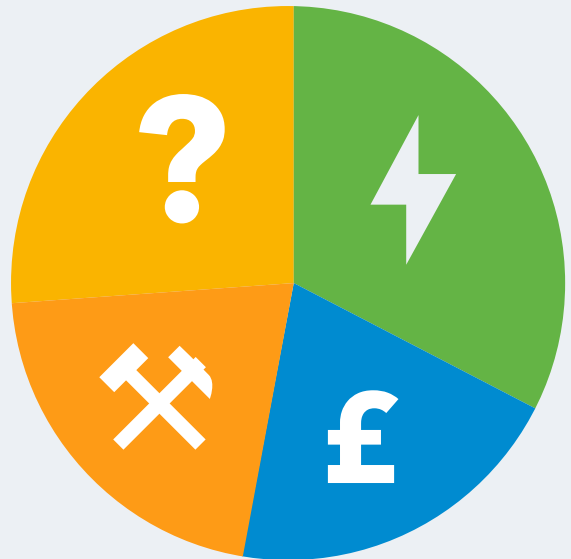
During 2021 and into 2022, a dedicated Ruffer working group was established to analyse, understand and apply the MSCI climate risk approach. We accept that no model is perfect, and we must seek to understand the assumptions, limitations and processing before any management decisions are made. In the case of equity CVaR (and other estimates), we consider this number a guide only: it must be supplemented by additional quantitative and qualitative analysis. That is, if a risk exposure is identified top down, we seek to determine whether we are likely to be adequately compensated for holding the risk, once we have undertaken bottom-up due diligence work or a broader stewardship approach.

During fiscal year 2022, the TCFD risk analysis report identified that the key contributors to equity CVaR were the sector exposure to energy, mining and financial industries. The headline figures include an estimate of both physical and transition risk. As an active manager with a fundamental investment process, we do not hold companies based on index weight. Position size is based on conviction and contribution to total risk. So we narrow the investment opportunity set through research and invest in the companies which best fit our investment objectives. Ruffer supplements this with an active stewardship and engagement programme, as appropriate.

These positions reflect our conviction that exposure to such economically sensitive sectors is crucial to meeting our capital preservation objectives. Our bottom-up research also demonstrates that companies within these hard to abate sectors will play a key role in providing the resources, processes and capital for the energy transition. The companies we hold within these sectors are those we believe to be best in class in terms of their approach to managing climate risks and capturing climate opportunities. Through our focus on stewardship, we believe we can support and encourage these companies through a successful energy transition, helping to drive positive change whilst protecting our clients' capital.

### KEY CONTRIBUTORS TO EQUITY CVAR AS AT 31/3/2022

-  ENERGY
-  MINING
-  FINANCIAL
-  OTHER



Source: Ruffer LLP

For its sovereign bond and protection strategies assets, Ruffer is currently unable to run climate risk analysis similar to the analysis we run for the equity portfolio, due to data and modelling limitations (which we are seeking to solve). Only limited carbon footprint data is available for sovereign bonds, and this is by definition backward-looking and not a measure of climate risk (or opportunity). For sovereign bonds, Ruffer has developed a proprietary ESG model, incorporating several climate-related metrics, to rank sovereign entities. This model seeks to inform our sovereign bond asset allocation decisions through providing a systematic approach to ESG factors.

## CLIMATE-RELATED ENGAGEMENT EXAMPLES



### BP

Ruffer invested a sizeable amount of capital in BP largely due to the depressed oil, and therefore stock, price resulting from the pandemic-led economic disruption. With a new CEO and executive team, BP announced a renewed focus on capital discipline, a Net Zero ambition and a strategy to increase its investment in renewable energy and carbon solutions. We analysed all these as part of our investment case. In early 2022, BP wrote to shareholders asking if the board could use its discretion in awarding executive pay for the year. We objected to the proposal on the basis that executive management should benefit financially only once their revised corporate strategy yields returns to shareholders.



### BARCLAYS

We met with Barclays twice during the 2021 calendar year to discuss climate strategy and board structure. The bank was a target of both stakeholder and shareholder pressure to outline a strategy to reduce its financing of fossil fuel based projects and adopt Net Zero targets. Ruffer sought to engage with the board and management to understand its plans to respond to this pressure through developing its strategy related to fossil fuel financing and alignment with Net Zero emissions.



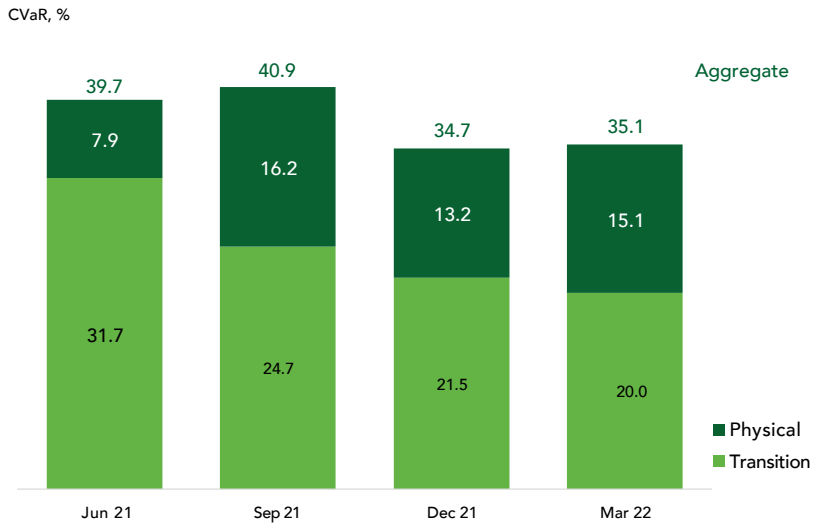
### ARCELORMITTAL

We had a call with ArcelorMittal during the final consultation period for the Climate Action 100+ Net Zero Benchmark, which will be finalised at the end of 2022. We discussed remuneration, lobbying and the potential for shorter-term targets for reducing greenhouse gas emissions.

**DESCRIBE HOW PROCESSES FOR IDENTIFYING, ASSESSING AND MANAGING CLIMATE-RELATED RISKS ARE INTEGRATED INTO THE ORGANISATION’S OVERALL RISK MANAGEMENT**

- I. IDENTIFY:** the TCFD framework provides guidance on the broad categories of climate risk. We use MSCI ESG Research to estimate physical and transition risk elements of climate risk. We supplement this with fundamental analysis, which includes a review of company disclosures related to climate.
- II. ASSESS:** The chart below shows how physical risk, transition risk and total risk, based on MSCI analysis, have changed on a quarterly basis for the equity portion of the portfolio. Over the year, the absolute weight of equities in the portfolio declined. The aggregate equity CVaR declined due to a reduction in the transition risk that was predominantly driven by an increase in the climate-related technology opportunities for the stocks held, reflecting our view that the opportunity for some of the energy stocks held was, and continues to be, underestimated.

**PHYSICAL CVAR AND TRANSITION CVAR CONTRIBUTION TO TOTAL ESTIMATED CVAR**



Source: MSCI, Ruffer, climate scenario analysis and climate data (Q1 2022)

- III. MANAGE:** Ruffer is an active manager and is not constrained by benchmarks. In terms of managing climate risk, we seek to understand the climate data, and the climate risks we are exposed to via our security holdings, on a mostly fundamental basis. In essence, we are seeking to satisfy ourselves that clients will be adequately compensated for holding these risks. For equities, we assess whether company boards and executive management have the skills, experience and knowledge to execute on strategies we believe will generate wealth, despite the anticipated or unanticipated risks to which they are exposed.

## Engaging with MSCI ESG Research on the provision of climate related data and metrics

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In our [2021 Stewardship Report](#) we highlighted our ongoing engagement with our third party climate risk data provider, MSCI ESG Research. This engagement originated from the integration of the climate risk data into our investment analysis and risk processes, which was one of the commitments made in our inaugural Task Force on Climate-related Financial Disclosures Report.

One of the key advantages of Ruffer's approach to integrating ESG factors into our investment process is that, whilst we use the top-down data from third party ESG providers to help inform our decisions, this is always paired with the bottom-up analysis by our dedicated team of research and responsible investment analysts. Given our single investment approach with one concentrated portfolio of a small number of securities, our analysts have a deep understanding of each security and the associated ESG risks and opportunities.

As detailed in our [Stewardship Report](#) we concluded we are comfortable with the climate modelling that informs much of the climate risk data. However, at a more micro level, we had difficulty reconciling how the provider's macro analysis interacts with the more granular, company specific detail. Our Research Analysts have a detailed knowledge of the companies they cover, and in some instances the provider's outputs are not aligned with our understanding of the businesses in question. This was especially evident with the way the provider calculates technology opportunities and attributes physical risks. To clarify the provider's methodology in these areas, we corresponded via email and later held two workshops to address the outstanding questions on physical risk and technology opportunities, primarily through specific case studies on companies our analysts know well.

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## PHYSICAL RISK

Our first meeting focused on the physical risk component of the methodology. This pairs a climate model with a proprietary asset location database to project the potential impact of a changing climate on companies, measured in terms of both asset damage and business interruption.

A key challenge of this analysis is that companies do not disclose all the necessary information for asset location risk mapping. The model aims to fill these gaps using industry databases, online searches and, in some cases, manual research or sector-based estimations. We used our [Currys case study](#) to further understand this gap fill approach. We had noticed unrealistically high physical risk outputs for the electrical retailer's business, arising from the assumption that around 14% of business revenues are generated by a small warehouse in Ireland at risk of flooding due to climate change. As we dug into the data, it became clear that the model was only able to locate eight business facilities, which contradicted our analysts' understanding that more than 850 physical locations were operated by the business. As a result, the model was splitting revenue roughly evenly across only eight locations, therefore overstating the potential impact of that one location's flooding risk.

We pressed the data provider on two key themes related to this issue. The first was the governance on data quality checks. The data provider confirmed that, due to the size of the universe of securities, data quality checks focus on significant top-level outliers. We acknowledged the challenge of individual security checks but suggested that a flagging system to highlight where data had been estimated and not checked would be helpful. The second theme was the data provider's engagement with the underlying companies. We highlighted that a well-established feedback mechanism could help to improve data quality over time. It would also enable us, as an asset manager, to make our engagement activities with companies more effective by allowing us to complete the loop of identifying a risk, engaging with the company to understand the risk and manage it where needed, and then empowering the company to work with the ESG data provider to properly reflect their improvement and/or the existing reality. We believe this would help to unlock value. The data provider acknowledged this and pointed to the example of their existing issuer feedback mechanism for overall ESG ratings as a model for how they can make this work in future.



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## TECHNOLOGY OPPORTUNITIES

The second meeting focused on the technology opportunities methodology, which relies on assumptions we are not entirely comfortable with. An algorithm is used to establish a company's existing 'green' revenues (according to the EU taxonomy), then an additional algorithm is used to provide a quality adjusted 'score' for the company's green patents. These two inputs are used to calculate the company's expected market share of its industry sector's forecast green revenues.

Our concerns with this, as discussed in the meeting, are twofold. Firstly, there is limited analyst oversight of the green revenue and patent classification models, due to the sheer quantity of companies the dataset covers. This lack of sufficient analyst oversight could lead to data quality issues. Secondly, the output of the calculation, the size of the potential green revenue opportunity, is set to be equivalent to the cost of a sector's emissions (eg through carbon taxes). This does not account for the potential for cross sector applications of a technological solution and so is, in our view, an imperfect measure.

We raised the example of Shell. We had flagged in advance of the call that Shell's technology opportunity had jumped from +10.3% to +42.1% in a quarter. However, the data provider explained that the quality assurance flags only kick in for 25% shifts in specific headline metrics. On review, the notes accompanying the model update suggested the only significant changes over the period were to the physical risk component. As a result, it was assumed that the change in technology opportunities was down to a change in the company's reported data. We stressed it would be extremely useful to have additional granularity on the company data that had changed and caused the reassessment. Understanding how data changes impact the assessment of the technology opportunities has implications for our engagement with companies on how they report their climate data so that their transition investments are properly reflected.

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## CLIMATE RISK OUTPUT

The granularity of the output and our ability to get a sense of the underlying drivers of the model is a key concern that has permeated our engagements with the data provider. We have continually stressed this point and it was acknowledged that this feedback is consistent across investors. This is tied in with concerns over the data provider's governance processes around the final output report. In terms of data quality checks, the data provider made clear that there are no direct data quality checks on the report outputs, but rather checks are carried out at a high level on the input data.

As things stand, the climate risk data output takes the form of a static document for both individual companies and the portfolio. This document provides high level outputs, but no detail on inputs to assist our analysis in the instances where the output does not agree with our view or where we think there may be data quality issues. This significantly inhibits the report's utility for climate risk analysis. The data provider is working on transparency tools to address this, and we will be arranging a workshop to focus on the first of these tools in the third quarter of 2022.

Our aims with this ongoing engagement are twofold. Firstly, to ensure we fully understand the methodology behind the climate risk data. In doing so, we can confirm that those areas where we disagree with the data represent potential sources of opportunity to benefit from our analysts' deeper company insight. Secondly, to work with the data provider to help refine the way their modelling interacts with company specific data, to improve the accuracy of the output report so that it reflects the underlying climate risk.

In the meantime, the potential limitations of this nascent field of scenario analysis highlights the importance of combining Ruffer's own analysis and qualitative assessment alongside such metrics to better integrate climate risk into our investment risk process.

# 4. Metrics and targets

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## **CLIMATE-RELATED METRICS ARE RELATIVELY WELL KNOWN BUT SOME REMAIN CHALLENGING TO CALCULATE, GIVEN DATA UNAVAILABILITY OR MODEL LIMITATIONS**

Metrics can be in absolute terms, such as Scope 1, Scope 2 and Scope 3 greenhouse gas emissions (GHG) in tonnes, or in efficiency terms, where tonnes of GHG are reported in terms of revenue or market value. Forward-looking metrics – such as implied temperature rise, portfolio warming potential or, in Ruffer’s case, CVaR – have limitations and assumptions.

Climate-related targets, we argue, require more thought. Setting an absolute reduction target by a certain date for a portfolio may result in unintended consequences or lead to decarbonisation in the portfolio rather than the real world. We posit that naively lowering direct portfolio emissions is probably not the best approach to protect the portfolio from climate-related risks – or, importantly, to capture opportunities. In our thinking, which we are developing over the course of 2022, we use tools like the [Science-Based Targets](#) initiative to identify companies which are on a path to Net Zero, supplemented by our internal analysis of companies’ capability (creation of intellectual property, industry and sector leadership, barriers to transition) and financial performance.

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## **DISCLOSE THE METRICS USED BY THE ORGANISATION TO ASSESS CLIMATE-RELATED RISKS AND OPPORTUNITIES IN LINE WITH ITS STRATEGY AND RISK MANAGEMENT PROCESS**

The climate-related metrics Ruffer currently measures and monitors are aligned with the recommendations of the TCFD. We monitor

1. The impact of several climate scenarios (1.5°C, 2°C, 3°C temperature pathways, average and delayed policy scenarios, average and advanced physical climate risks)
2. The carbon footprint and carbon exposure metrics of our listed equity portfolio, using a set of different TCFD aligned metrics to analyse our portfolio carbon footprint, including weighted average carbon intensity, total carbon emissions, carbon intensity
3. Ruffer's operational carbon footprint
4. Implied temperature rise (ITR), also described as portfolio warming or cooling potential
5. Low carbon patent potential within our equity portfolio, which is embedded in MSCI CVaR methodology
6. For sovereign bonds, monitor, assess and aggregate a variety of country-level factors that can impact an issuer's credit quality
  - environmental risks: climatological disasters, population living in areas where elevation is below five metres (percentage of total population), non-participation in selected international environmental agreements,
  - energy: renewable energy production, renewable energy consumption (percentage of total final energy consumption)
  - environmental status: consumption of fertiliser, percentage of waste recycled, carbon dioxide emissions (metric tonnes per capita)
  - carbon footprint at country level in absolute and relative terms (per unit of GDP, for example)

Evaluation of the equity portion of one of our core funds, the LF Ruffer Total Return Fund (RTRF), considered representative of overall Ruffer strategy, under several temperature scenarios shows different levels of Climate Value at Risk. The equity component of the Ruffer portfolio accounted for 40% of the total portfolio as at 31 March 2022.

### Global warming scenarios

Temperature	Policy	Physical risk	Climate VaR Ruffer equities %
1.5°C	Orderly	Average	-35.1
1.5°C	Orderly	Aggressive	-41.6
2°C	Orderly	Average	-24.3
2°C	Disorderly, delayed	Average	-40.5
3°C	Orderly	Average	-16.1

Source: Ruffer, MSCI as at 31 March 2022

The estimate of a 35% loss of value for a 1.5°C orderly transition seems like a big number. If we scale this estimate by the proportion of the portfolio that is equities (all else being equal), we get a -14% CVaR contribution at portfolio level. Note this is a point estimate based upon a static portfolio, a time horizon out to 2100, a 15 year time horizon for the impact of physical risk and underlying data which is part reported and part estimated.<sup>2</sup> We raise several possible limitations of the climate model.

If we compare the 3.0°C orderly transition with the 1.5°C orderly transition, the difference in CVaR estimate is minus 19 percentage points. The logic is the 1.5°C scenario imposes higher transition costs, and therefore higher value at risk, on companies than the 3.0°C scenario. Intuitively, one might expect exposure to and value at risk from physical climate change risks to be much greater in a 3.0°C scenario relative to a 1.5°C scenario, enough to offset the reduced contribution from lax transition-related costs.

We also raise a more fundamental observation: it is possible the value of climate risk has been priced into the market capitalisation of the security. The quantitative model may be unfairly and blindly penalising some securities for either transition or physical risks which have already been incorporated into analysts' estimates. Unlike many investors who are constrained by a benchmark, Ruffer can trade in or out of companies and entire sectors based upon our fundamental analysis or macro views. This implies we may neither hold securities at index weights nor necessarily be permanent providers of capital. A quantitative model estimate (we argue) is best suited to benchmark constrained and universal owners.

<sup>2</sup> Scope 1 and 2 emissions data was available for 92.1% of the equities held by weight. Of this, 91.1% of the data was reported by companies, with the remainder requiring some level of estimation by our third party ESG data provider, MSCI. Scope 3 data is estimated using MSCI's proprietary model and was available for 93.0% of the equities by weight

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The CVaR was the result of an active decision to hold significant absolute positions in the energy, oil and gas, mining and bank sectors. The allocation was based upon our view of the then prevailing macro conditions and the sectors and the securities (based upon fundamental research) we believed offered the best risk/return profile to preserve capital and grow wealth for our clients. The nub: we are comfortable holding risk whenever we believe our clients will be compensated for that risk. And, in the context of climate change and the need to decarbonise the real economy, we had conviction in the companies' strategies with respect to shifting the business model to low or Net Zero carbon emissions whilst generating shareholder returns. Once we perceive risk-adjusted returns are more attractive in alternative companies or sectors, we may rotate the portfolio accordingly. This may result in a lower (or potentially higher) CVaR.

**DISCLOSE SCOPE 1, SCOPE 2 AND, IF APPROPRIATE, SCOPE 3 GHG EMISSIONS AND THE RELATED RISKS**

**KEY METRICS AS REQUIRED BY THE DEPARTMENT FOR WORK AND PENSIONS AND PROPOSED BY THE FCA**

Metric	31/03/2022	1.5°C scenario, orderly	2°C scenario, orderly	31/03/2021	1.5°C scenario, orderly	2°C scenario, orderly
Scope 1 (tonnes)	125,368.1			255,691.0		
Scope 2 (tonnes)	37,949.3			83,074.4		
Scope 3 (tonnes)	2,062,157.3			4,560,113.0		
Total carbon emissions, scope 1+2 (tonnes)	163,317.4			338,765.4		
Carbon footprint (tonnes/£m invested)	123.3			209.2		
Weighted average carbon intensity (tonnes/£m revenue)	190.7			182.1		
Climate VaR %		-35.1	-24.3		-37.5	-19.5
Implied temperature rise (with company targets)	4.02°C			4.16°C		
Sovereign bond carbon intensity (tonnes/£m GDP)	256.7			n/a		

## EQUITIES

### CARBON INTENSITY ANALYSIS FOR THE LF RUFFER TOTAL RETURN FUND

Ruffer conducts carbon metrics analysis on its core funds and for clients when requested. This analysis only covers the direct equities held in the portfolio as at the valuation point. It currently incorporates only Scope 1 and 2 emissions.

LF Ruffer Total Return Fund	As at 31 Mar 2022	As at 31 Mar 2021
Weighted average carbon intensity (tonnes/£m revenue) <sup>3</sup>	190.7	182.1
Total carbon emissions (tonnes)*	163,317.4	338,765.4
Carbon footprint (tonnes/£m invested)*	123.3	209.2
Carbon intensity (tonnes/£m revenue) <sup>4</sup> *	191.5	139.4

\*In line with recent guidance, we have calculated the highlighted carbon intensity metrics above using enterprise value including cash (EVIC) to apportion emissions ownership, rather than using market capitalisation as the denominator. In simple terms, EVIC adjusts for debt, whereas market capitalisation does not as it is a multiplication of the number of shares by the current market price.

Top contributors to weighted average carbon intensity	% as at 31 Mar 2022	% as at 31 Mar 2021
Barrick (mining)	15.5	Barrick (mining) 8.5
Kinross (mining)	12.9	BP (energy) 7.7
BP (energy)	12.4	Shell (energy) 7.2
Chesapeake Energy (energy)	7.9	ExxonMobile (oil) 6
Shell (energy)	7.6	Veolia (utilities) 5.1
<b>Top 5 Contributors</b>	<b>56.3</b>	<b>34.5</b>
Other equities	43.7	Other equities 65.5

Source: Ruffer LLP

3 Weighted average carbon intensity (WACI) measures portfolio exposure to carbon-intensive companies

4 Carbon intensity measures how efficient the portfolio is, reflected in terms of carbon emissions per unit of output



## CLIMATE SCENARIO ANALYSIS

Ruffer's scenario analysis is currently conducted on the equity portion of the portfolio only.

### CLIMATE VALUE AT RISK CONTRIBUTION [1.5°C AVERAGE POLICY SCENARIO]

Scenario	As at 31/3/2022 CVaR contribution, %	Coverage, %	As at 31/3/2021 CVaR contribution, %	Coverage, %
<b>Low-carbon transition risk scenarios Selected model: AIM-CGE   1.5°C   SSP2</b>	<b>-20.0</b>		<b>-29.6</b>	
Policy risk direct emissions (Scope 1)	-12.3	98.3	-12.2	98.4
Policy risk electricity use (Scope 2)	-6.4	99.5	-8.4	98.4
Policy risk value chain (Scope 3)	-14.5	99.5	-17.4	98.4
Technology opportunities	+13.2	99.9	8.6	99.4
<b>Physical climate scenarios selected model: average</b>	<b>-15.1</b>		<b>-7.9</b>	
Extreme cold	+0.5	96.1	0.5	89.8
Extreme heat	-8.3	96.1	-2.9	89.8
Precipitation	-0.0	96.1	-0.3	89.8
Extreme snowfall	+0.0	96.1	0	89.8
Extreme wind	-0.0	96.1	-0.1	89.8
Coastal flooding	-5.0	96.1	-4.7	89.8
Fluvial flooding	-1.5	96.1	-0.4	89.8
Tropical cyclones	-1.0	96.1	0	89.8
River low flow	-0.0	13.3	n/a	n/a
Wildfire	-0.00	96.1	n/a	n/a
<b>Aggregated Climate VaR</b>	<b>-35.1</b>		<b>-37.5</b>	

From the table above, we observe that policy risk is the largest contributor to CVaR, offset by technology opportunities. Physical risk makes a smaller contribution, with extreme heat and coastal flooding being the main constituents. Policy risk is a component of transition risk (as is technology and disruption) and is relatively easy to model on a top-down basis given the theory of carbon budgets and how carbon emissions must be reduced to deliver (in this scenario) a 1.5°C outcome.

From our engagement with MSCI on its climate risk data model, we have established that the policy risk component provides the most useful estimates. Given its focus on modelling potential carbon tax regimes, it is best suited to informing a qualitative assessment of potential climate risk in different scenarios. Whilst technology opportunities have some utility, we believe the methodology is missing key avenues of climate opportunity assessment by not capturing R&D and innovation potential. We supplement it with our own in house research and alternative data sources. The physical risk component is the furthest from being useful, in our view, largely due to the complexity of modelling physical asset locations against climate models. The crucial takeaway for us is that these types of forward-looking risks are inherently unknowable, so metrics should always be considered as one input into a qualitative analysis process.

## SOVEREIGN BONDS

For sovereign bonds (bonds issued by countries), we are currently limited to providing portfolio-level carbon footprint data. We treat its efficacy with caution, as the boundaries between company-level emissions and sovereign-level emissions are somewhat blurred, meaning a real risk of double-counting. We have not yet implemented a scenario analysis for the sovereign bond portion of the portfolio.

## PROTECTION STRATEGIES

In addition to conventional assets, we invest directly, and through specialist external managers, in securities and instruments designed to protect against an increase in financial market volatility (not just equities, but currencies and bonds too) or a widening of credit market spreads. The main instruments used to protect against a widening of credit market spreads are credit default swaps (CDS). To protect against other risks, such as adverse currency or interest rate movements, we use financial instruments, including forwards, futures and options.

Currently, these securities are not covered by MSCI in their climate database and there is no industry standard upon which to structure an analysis.

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## **DESCRIBE THE TARGETS USED BY THE ORGANISATION TO MANAGE CLIMATE-RELATED RISKS AND OPPORTUNITIES AND PERFORMANCE AGAINST TARGETS**

Ruffer delayed publishing carbon reduction targets in 2022 for two reasons. We hired a dedicated senior-level resource to help the research team develop a model and approach to evaluate climate risk and opportunity, in terms of identifying investment ideas and the barriers to decarbonisation. On becoming a signatory to NZAM, Ruffer has 12 months to develop a considered and thoughtful approach to setting interim and 2050 Net Zero emission targets. We are due to submit these targets by March 2023.

### The Net Zero Asset Managers Commitment

*In this context*, an organisation commits to support the goal of Net Zero GHG emissions by 2050, in line with global efforts to limit warming to 1.5°C. It also commits to support investing aligned with Net Zero emissions by 2050 or sooner.

Specifically, an organisation commits to

- a. Work in partnership with asset owner clients on decarbonisation goals, consistent with an ambition to reach Net Zero emissions by 2050 or sooner across all assets under management (AUM).
  - b. Set an interim target for the proportion of assets to be managed in line with the attainment of Net Zero emissions by 2050 or sooner
  - c. Review our interim target at least every five years, with a view to ratcheting up the proportion of AUM covered until 100% of assets are included
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# Managing our carbon footprint

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Over the past year, Ruffer has taken steps to ensure we assess and manage the carbon emissions of our own business, just as we ask of the companies in which we invest our clients' assets.

We monitor the firm's energy usage, waste management and business travel. We disclose these figures each year to a third party verification provider, commissioned to carry out a full analysis of our business's greenhouse gas footprint. Our aim is to reduce carbon emissions and to purchase carbon offsets for Ruffer's Scope 1 and Scope 2 estimated emissions only.

We have excluded Scope 3 emissions from this report due to difficulties in collecting and verifying requisite data from third parties. We estimate and offset our Scope 1 and 2 emissions. We are reviewing our approach to Scope 3 emissions in the context of signing up to the NZAM initiative.

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## Ruffer's estimated emissions (tonnes of CO<sub>2</sub>)

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<b>SCOPE</b>	<b>2021</b>
Scope 1	1.4
Scope 2	6.7

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The building we occupy at 80 Victoria Street in London is certified with 100% renewable energy from April 2020 to March 2023.

# Ruffer's carbon footprint

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## DEFINING SCOPE 1, SCOPE 2 AND SCOPE 3 CARBON EMISSIONS

**Scope 1:** direct emissions come directly from things such as company vehicles, buildings and facilities.

**Scope 2:** indirect emissions come from purchased electricity (and steam, heating and cooling) for the firm's own use.

**Scope 3:** upstream activities include employee commuting, business travel and supply chain activities. Downstream activities include things such as investments and all activities relating to customers and product(s).

# Glossary

## CARBON FOOTPRINT

Total carbon emissions for a portfolio normalised by the market value of the portfolio, expressed in tonnes CO<sub>2</sub>e/\$m invested. Scope 1 and scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for total carbon emissions. The current portfolio value is used to normalise the data.

## CARBON INTENSITY

Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio), expressed in tons CO<sub>2</sub>e/\$m revenue; scope 1 and scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for total carbon emissions. The company's (or issuer's) revenue is used to adjust for company size to provide a measurement of the efficiency of output.

## IMPLIED TEMPERATURE RISE (ITR)

or portfolio warming/cooling potential

An **implied temperature rise metric** attempts to estimate a global temperature rise associated with the greenhouse gas emissions of a single entity (eg a company) or a selection of entities (eg those in a given investment portfolio, fund or investment strategy).<sup>5</sup> While ITR can be used as an impact metric or communication and engagement tool, its disclosure could also provide insight on climate-related risks and opportunities associated with select assets to better inform capital allocation decisions. However, the ITR metric is new and still evolving. There are several technical and methodological challenges related to calculating

ITR, no commonly agreed terminology to refer to the metric and little understanding of advancements that would be needed to improve the usefulness of ITR disclosures. ITR ratings provided over time could also provide insight into progress against strategic objectives or targets.

## INTEGRATED ASSESSMENT MODEL (IAM)

Climate change IAMs are tools that bring together very different types of information (eg knowledge about climate, economics, ecology) in a coherent framework that is usable by researchers and decision makers. In the assessment of climate change, integrated assessment refers to activity that considers the social and economic factors that drive the emission of greenhouse gases (GHG), the biogeochemical cycles and atmospheric chemistry that determines the fate of those emissions, and the resultant effect of GHG emissions on climate and human welfare. IAMs can provide a framework for understanding the climate change problem and for informing judgments about the relative value of options for dealing with climate change.

## AIM-CGE

The AIM-CGE model was developed by the Japanese National Institute for Environmental Studies (NIES) to analyse the future of climate change mitigation and its impact on economic conditions. AIM-CGE is classified as a computable general equilibrium model, which covers all economic goods while considering production factor interactions. The trade of goods and services is also considered.

#### **GCAM4**

The global change assessment model (GCAM) is a dynamic-recursive model with technology-rich representations of the economy, energy sector, land use and water linked to a climate model that can be used to explore climate change mitigation policies, including carbon taxes, carbon trading, regulations and accelerated deployment of energy technology. The Joint Global Change Research Institute (JGCRI) is the home and primary development institution for GCAM.

#### **IMAGE**

IMAGE is an ecological-environmental model framework that simulates the environmental consequences of human activities worldwide. It represents interactions between society, the biosphere and the climate system to assess sustainability issues such as climate change, biodiversity and human well-being. The IMAGE modelling framework has been developed by the IMAGE team under the authority of PBL Netherlands Environmental Assessment Agency.

#### **SHARED SOCIOECONOMIC PATHWAYS (SSPs)**

Future carbon prices differ according to each IAM but can also differ within an IAM, depending on the Shared Socioeconomic Pathway (SSP) deployed by the IAM during a model run. The key elements of an SSP aim to characterise a global socio-economic future for the 21st century as a reference for climate change analysis. Five SSPs were designed to represent different climate change mitigation and adaptation challenges. Their resulting storylines/narratives and quantifications span a wide range of different futures. The narratives relate to sustainability,

regional rivalry, inequality, fossil-fuel-based development, and a middle of the road pathway.

#### **SSP1**

A global green growth pathway, ie sustainability. This is a world making relatively good progress towards sustainability, with ongoing efforts to achieve development goals while reducing resource intensity and fossil fuel dependency.

#### **SSP2**

A middle of the road (or dynamics as usual, current trends continue or continuation) development pattern. In this world, trends typical of recent decades continue, with some progress towards achieving development goals, reductions in resource and energy intensity at historic rates and slowly decreasing fossil fuel dependency.

#### **SSP3**

Regional rivalry – a rocky road (high challenges to mitigation and adaptation). A resurgent nationalism, concerns about competitiveness and security, and regional conflicts push countries to increasingly focus on domestic or, at most, regional issues. Policies shift over time to become increasingly oriented towards national and regional security issues. Countries focus on achieving energy and food security goals within their own regions at the expense of broader-based development. Investments in education and technological development decline. Economic development is slow, consumption is material-intensive and inequalities persist or worsen over time. Population growth is low in industrialised and high in developing countries. A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions.

# Glossary

## SSP4

Inequality (or unequal or divided world), characterised by low challenges to GHG mitigation and high challenges to climate change adaptation. This pathway envisions a highly unequal world both within and across countries. A relatively small, rich global elite is responsible for much of the emissions, while a larger, poorer group contributes little to emissions and is vulnerable to impacts of climate change, in industrialised as well as in developing countries.

## SSP5

Fossil fuel based economic development (or conventional development). This world stresses conventional development oriented towards economic growth as the solution to social and economic problems through the pursuit of enlightened self-interest. The preference for rapid conventional development leads to an energy system dominated by fossil fuels resulting in high GHG emissions and challenges to mitigation.

## TOTAL CARBON EMISSIONS

The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO<sub>2e</sub>. Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach. Under this approach, if an investor owns 5% of a company's total market capitalisation, then the investor owns 5% of the company as well as 5% of the company's GHG (or carbon) emissions.

## CLIMATE VALUE AT RISK (CVaR)

MSCI's Climate VaR metric provides a forward-looking and returns-based impact metric for investors. The development of this metric leveraged an integrated approach, considering

the latest academic findings from climate science as well as input from the financial services industry. Climate VaR can be used to inform action, eg diversify, divest or engage. MSCI assesses each individual impact in terms of the potential financial impact on the company's operation: from a business interruption and corresponding loss in productivity and therefore revenue, to an acute extreme weather event which damages assets and renders them inoperable. Costs are factored from increasingly stringent legislation into this calculation process – the costs to decarbonise and meet national targets in the countries of operation – and model potential future revenues and profits arising from low-carbon innovation.

We apply these cost and revenue projections to individual securities and value the impacts across asset classes, through equities, fixed income and real estate assets; these calculations can be aggregated upwards to the scale of the entire portfolio.

## WEIGHTED AVERAGE CARBON INTENSITY

The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO<sub>2e</sub>. Scope 1 and Scope 2 GHG emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value), rather than the equity ownership approach (as described under methodology for total carbon emissions).



# Contact us

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## **FURTHER INFORMATION**

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The following documents are available at  
[ruffer.co.uk/responsible-investing](https://ruffer.co.uk/responsible-investing)

- ESG and responsible investment annual reports
  - Quarterly stewardship activities reports
  - Quarterly responsible investment reports
  - Stewardship and responsible investment policy
  - Our response to the UK Stewardship Code
  - Our response to the Japan Stewardship Code
  - Climate change framework
  - Our voting summary
  - A selection of articles on responsible investment topics
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