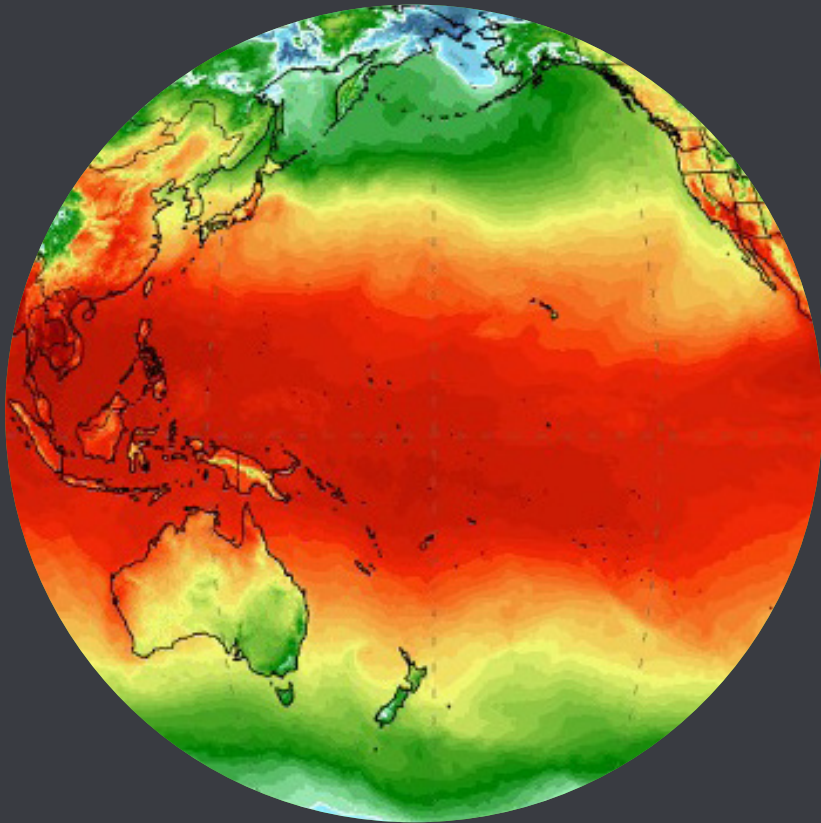




Task Force on Climate-related Financial Disclosures Report



FOR THE 12 MONTHS ENDING 31 DECEMBER 2022

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About Ruffer

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 28 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

Chief Executive Officer's statement

IN MARCH 2023, RUFFER SUBMITTED ITS TARGETS UNDER THE NET ZERO ASSET MANAGERS (NZAM) INITIATIVE. THESE TARGETS ARE TAILORED TO RUFFER AND ITS INVESTMENT OBJECTIVES AND STRATEGY.

They prioritise reducing carbon emissions in the real world, rather than just lowering the portfolio's carbon footprint. This is consistent with our belief that the pathway for carbon emissions is not certain and the decline in emissions will not be linear.

For our third TCFD Report, we have changed the reporting date to 31 December 2022 to align with the forthcoming UK Financial Conduct Authority (FCA) rules and guidance¹. The reporting period will remain the prior 12 months.

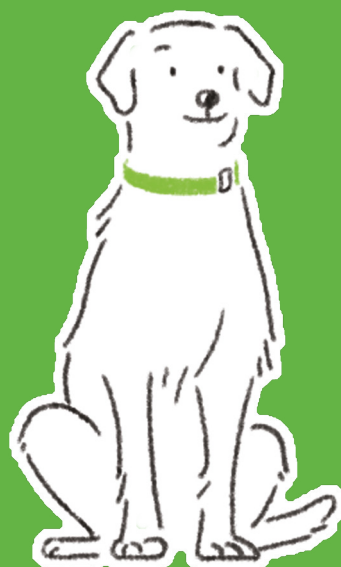
The incoming rules and guidance are functionally similar to the existing TCFD recommendations. These provide a structure which helps us consider (and report on) the nature, scale and management of climate-related risks and opportunities that may affect client portfolios. These risks – if poorly managed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

This TCFD Report has three main objectives

1. To help our pension fund clients meet their regulatory reporting obligations
2. To communicate more broadly to clients and investors how we consider climate-related risks and opportunities in the stewardship of their investments
3. To expand the metrics and targets section, given the progress we have made on implementing the NZAM initiative

CHRIS BACON

Chief Executive Officer



¹ PS21/24: Enhancing climate-related disclosures by asset managers, life insurers and FCA-regulated pension providers. First disclosures under the final FCA rules are required to be published by 30 June 2024, with the reporting period that must be covered in these disclosures starting 1 January 2023

Ruffer's alignment with the TCFD recommendations

In May 2019, we publicly endorsed the TCFD framework.

In September 2021, we published our initial climate change framework, which incorporated a response to the TCFD framework. In March 2022, we signed the NZAM initiative and then, in October 2022, published our second response to the TCFD framework, which introduced our thoughts on the transition to Net Zero. In March 2023, we submitted our targets under the NZAM initiative. In April 2023, we published our third response to the UK Stewardship Code, which updates our stewardship activities including those related to climate risk and opportunity.

TCFD thematic	Recommended disclosures	Ruffer response
Governance Disclose the organization's governance around climate-related risks and opportunities.	a. Describe the board's oversight of climate-related risks and opportunities.	Page 6
	b. Describe management's role in assessing and managing climate-related risks and opportunities.	
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Page 9
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	
Risk Management Disclose how the organization identifies, assesses, and manages climate-related risks.	a. Describe the organization's processes for identifying and assessing climate-related risks.	Page 18
	b. Describe the organization's processes for managing climate-related risks.	
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	
Metrics and targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Page 26
	b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	

1. Governance

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.

The Board has delegated responsibility for stewardship – which encompasses engagement and proxy voting – and responsible investment – integration of environmental, social and corporate governance (ESG) issues into the research process – activities, including climate-related risk and opportunity, to Ruffer's Chief Executive Officer (CEO), Chris Bacon, who is supported by the Executive Committee.

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 its investment risk management approach and scenario analysis. The firm acknowledges that disclosure is an important contributor to effective oversight of climate-related investment risk and opportunity.

Since the last TCFD Report, we have changed the approval process. It is now approved by the Board following review and recommendation to the Board by the Oversight and Control Committee (OCC), recognising that governance is not static and the process of climate reporting, as a relatively new function, has matured at Ruffer.

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 Executive Committee has chosen to implement its approach through an integration (of material ESG factors) and stewardship framework. The CIO is responsible for day-to-day oversight of the effective integration of climate risks and opportunities into the research process.

RUFFER'S STEWARDSHIP AND RESPONSIBLE INVESTMENT POLICY (SRIP) CODIFIES OUR APPROACH.

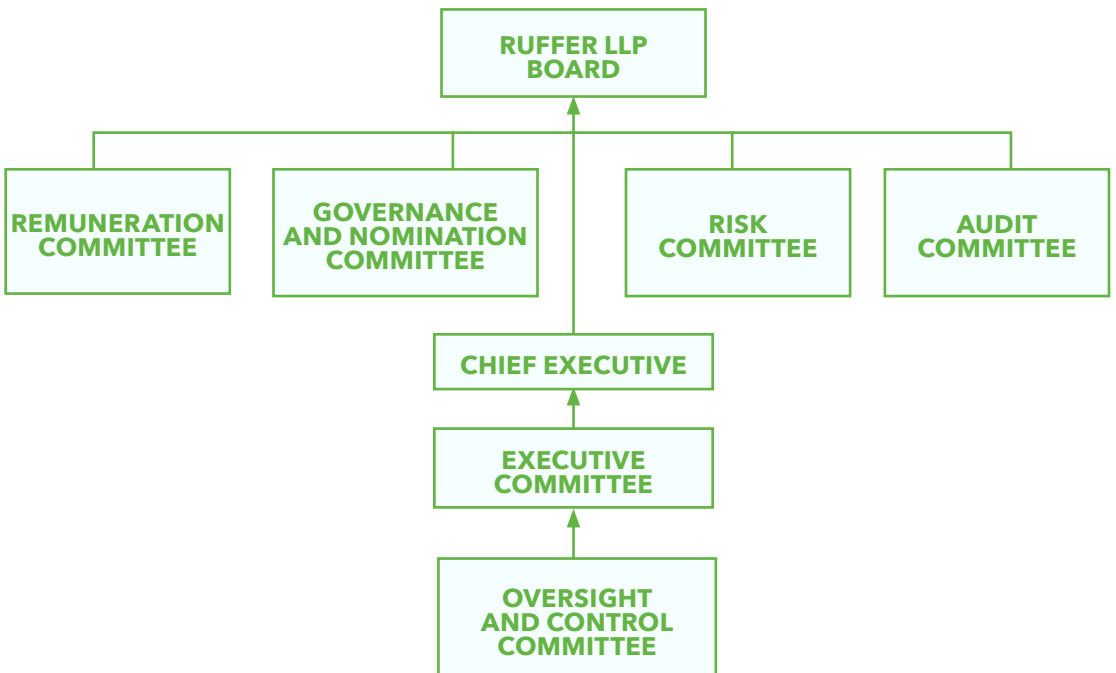
Climate-related risks and opportunities are assessed and managed at two levels

- 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
- Ruffer LLP, the partnership and management entity, which creates a carbon footprint through its business operations and is exposed to some of the physical and transition opportunities and risks linked to climate.

The two are interdependent and reinforcing.

The effective assessment of key investment risks and opportunities and the management of the overall portfolio contribute to delivering upon our investment objectives, which is key to successful client outcomes. Strong client relationships and outcomes mean Ruffer LLP can invest in people and systems to further enable delivery of our investment objectives.

As an asset manager, Ruffer has determined that its exposure to climate-related risks and opportunities comes primarily through the investment of client funds.



Ruffer's internal Responsible Investment Committee has been dissolved, with two entities taking over its responsibilities: the Oversight & Control Committee (OCC), which is a formal sub-committee of the Executive Committee; and the Responsible Investment Council (RIC), which is a Partner-level body and is not a formal sub-committee of the Executive Committee.

- The OCC comprises members of the executive committee who opine on an array of issues and topics. For example, the OCC considered and approved Ruffer's Fossil Fuel Policy as amended within the SRIP.
- The RIC has three voting members comprising Partners from across the business. It draws management input depending on the circumstance. For example, the RIC considered and decided to take alternative action in response to a request from a collaborative engagement body to co-sign a letter which we felt did not serve the best interests of Ruffer's clients and investors or the target company.

The channel for climate risk management is the internal quarterly scenario meeting, chaired by our CIO. The purpose of this meeting is to identify and assess the key sources of risk.

At this meeting, a paper summarising carbon risk for the prior quarter presents quantitative metrics, primarily sourced from MSCI ESG Research but supplemented by additional data points and internal research, and qualitative commentary, including climate scenario analysis for the equity component of the portfolio. This paper is presented to the CIO along with a broad suite of macro data, information and metrics. These reports 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.

For this report, we selected the LF Ruffer Total Return Fund (RTRF) as representative of Ruffer's offering to the UK retail market, given it is both a core fund and an expression of Ruffer's single investment approach.²

² 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.

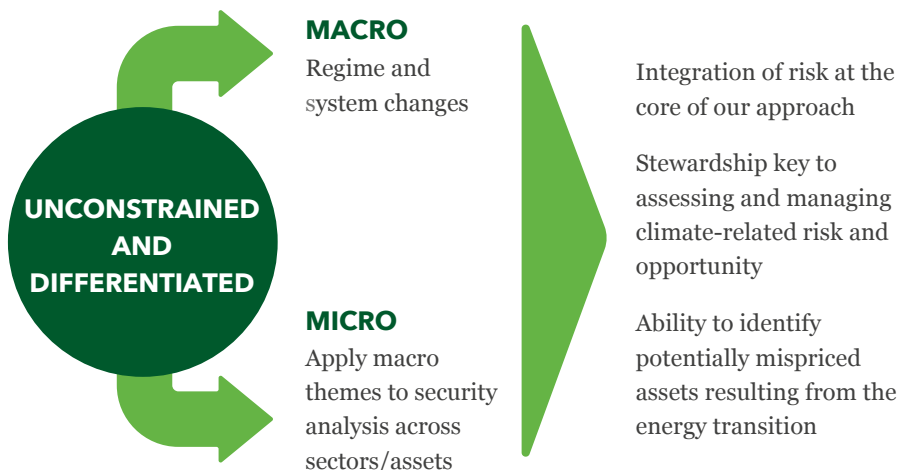
2. Strategy

Ruffer actively manages unconstrained multi-asset-class portfolios with the twin objectives of capital preservation in any 12 month period and returns meaningfully ahead of the return on cash on deposit. Our strategy seeks to position the portfolio to perform whatever the market conditions.

Climate risk is often construed as a systematic risk, meaning it is difficult to diversify away. However, Ruffer's investment philosophy is based upon positioning the portfolio to weather regime or system changes. Climate change, and the Net Zero transition, may represent just such a regime change for investors. Climate-related risks and opportunities may be observed in the risk categories typical of and well understood by financial and capital markets: credit, market, liquidity, currency, interest rate, operational and reputational risk.

Ruffer's investment strategy is predicated on combining our appreciation of such macro regime changes with bottom-up research to allocate capital across growth, inflation and protective strategies and seek to understand the most appropriate individual securities to protect against the relevant risks and capture the resulting opportunities.

COMBINING MACRO AND MICRO ANALYSES IS KEY TO OUR INVESTMENT STRATEGY



The relationship between observable climate-related risks and opportunities and financial materiality and asset class performance – such as risk (measured as standard deviation), estimated returns and correlation (between and within asset classes) – at system-wide or macro level is imperfect. From a top-down perspective, the effects of climate change translate indirectly into capital markets given the majority of carbon emissions are either not priced (ie externalised) or priced inadequately. Further, the debate continues over who should pay the ‘loss and damage’ costs associated with climate change (for example, property losses or land degradation resulting from rising sea levels, high intensity rainfall events or excessive heat).

Furthermore, regulation (a transition risk) such as the US Inflation Reduction Act or the proposed EU Green Deal Industrial Plan has potentially significant implications for sovereign competitiveness and flows of capital (both financial, in the form of public subsidies and private investment, and human and intellectual) which may distort segments of the economy. These regulatory responses highlight where sovereign-level (or macro) policy, which seeks to address the market failures associated with climate change, may have economy-wide implications. We are watchful for these shifts.

Given these regulations have effects in the real economy and on the sovereigns and companies in which we invest, we focus our efforts on fundamental analysis through our investment process. At times, our macro insights and analysis may identify attractive sectors or asset classes. However, it is our fundamental research process which identifies the companies or securities we invest in. For the portfolio’s listed equity investments, this includes ESG due diligence and climate transition analysis.

A key evolution in our framework for integrating climate risk and opportunity has been joining the Net Zero Asset Managers initiative. The initiative, and the targets we have formulated, provide a framework for our approach to assessing the transition to Net Zero. More detail on our Net Zero strategy is available at ruffer.co.uk/responsible-investing and also in the metrics and targets section of this report.

OUR FOSSIL FUEL POLICY

Ruffer follows a pragmatic fossil fuel strategy which prioritises delivering our investment objectives with a desire for decarbonisation in the real world.

This means Ruffer does not exclude companies or securities involved in the exploration, production, extraction, marketing, trading or sale of fossil fuels and related products. Rather, we may choose to not invest in certain companies, sectors or securities where we estimate the return for the given risk (loss of capital or reduced income) does not justify investment, either in isolation or for portfolio construction reasons. This process is not limited to the fossil fuel sector.

However, Ruffer is aware of the need to reduce societal reliance on fossil fuels (non-renewable) energy sources. Therefore, Ruffer extends its investment due diligence to assess company transition plans and, may employ our stewardship approach, including escalation as appropriate, seeking to influence change where we see gaps, weaknesses or a lack of ambition in these transition strategies. Disinvestment, or the sale of company shares, is the last step in our escalation approach and will be used sparingly and only where engagement has failed, coupled with a view that risk assumed outweighs potential return.

Ruffer's strategy for integration and stewardship of climate-related factors references external frameworks and guidance documents, industry initiatives and proprietary analysis. The table below shows where we may be able to credibly deploy our stewardship activities, which asset classes are in scope for Net Zero, where we have climate-related data and metrics and which are covered by the Net Zero Investment Framework (NZIF) of the Institutional Investors Group on Climate Change (IIGCC). Ruffer remains cognisant of industry developments and initiatives. Before implementing or changing our approach, we will consider whether these developments or initiatives align with our fiduciary duty to our clients, any possible implications for our investment process or whether we have sufficient resources to consider and properly implement proposed changes.

TABLE 1: STEWARDSHIP, NZAM ALIGNMENT AND CLIMATE DATA AND METRICS

Asset class	Stewardship			Net Zero in scope	Data and metrics	IIGCC NZIF* coverage
	Proxy voting	Engagement	Integration			
Equities	Yes	Yes	Yes	Yes	Yes	Yes
Sovereign bonds	Not applicable	Limited	Limited	Not yet	Limited	Yes
Commodities [†]	Limited	Limited	Limited	No	Limited	No
Derivatives	Not applicable	No	Limited	No	No	Consultation phase

* Asset class as defined by the NZIF

† Includes gold bullion, equities of companies involved in gold mining and processing and futures instruments with commodities as the underlying. Stewardship activities are limited to listed equity securities

Ruffer includes listed equity and corporate bonds as its Net Zero in-scope asset classes

The IIGCC Paris Aligned Investment Initiative (PAII) published the NZIF, which provides a common set of recommended actions, metrics and methodologies through which investors can maximise their contribution to achieving Net Zero global emissions by 2050 or sooner. The NZIF is the dominant industry guidance for use by investors who seek to maximise their impact in driving real world decarbonisation. Launched in 2021 and initially covering the major asset classes (sovereign bonds, listed equity, corporate fixed income and real estate), the framework is updated and amended from time to time with additional guidance (hedge funds and derivatives and most recently infrastructure).

While we believe climate change is the major contributor to systemic risk, climate risk and opportunity is only one of many ESG factors investors need to manage. Our overall framework for stewardship and responsible investment is outlined on the following pages.

OUR FRAMEWORK



This depicts the circularity of our investment process. As Ruffer is a macro asset manager, our main consideration is deciding our allocation to different asset classes and then our positioning within them. Our micro or fundamental analysis, including integration of ESG and climate factors, is the basis of security selection (decisions to buy, sell or hold securities). Stewardship is a key aspect of our process, as climate risk and the energy transition are central to Ruffer's responsible investment strategy. Finally, our stakeholders, such as our clients, regulators and industry associations, to whom we recognise our duty to deliver our investment strategy consistent with regulated boundaries and to contribute to policy development.

1. MACRO

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

2. MICRO (OR FUNDAMENTAL)

- a. Identification of climate-related opportunities (such as those which support the Net Zero transition) is shared between the research analyst (security level analysis) and the responsible investment team.
- b. Climate-related risks (securities exposed to transition, physical or market risks, and Net Zero transition analysis for listed equity) are the responsibility of the analyst, with support from the responsible investment team.
 - Quantifying the climate exposure of equities is enhanced through footprint data and company strategy (sourced from or via the company or the CDP) and metrics such as Climate Value at Risk (CVaR), calculated by MSCI ESG Research.
 - Quantifying the climate exposure of Ruffer's sovereign bond allocation and protection strategies is a challenge, given the asset class fundamentals, data availability and ability to influence change.

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 RIC, using resources from our front office, research, operations and technology teams.
- b. External stakeholders include regulatory bodies, the TCFD, trade associations, clients and NGOs.

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

Ruffer acknowledges anthropogenic climate change is happening now – witnessed in physical effects such as excessive regional heat, wildfires and floods – but posits that these events do not easily translate directly into investment risk (or returns). The historical trends are indisputable, in terms of rising concentration of carbon dioxide in the atmosphere and increasing ocean and atmospheric temperatures.

The long-term physical and transition risks depend entirely on the actions taken to reduce greenhouse gas emissions in the short and medium term and on investments made in adaptation. The short- and medium-term opportunity is in the incentives which encourage investment in mitigation and adaptation technologies and services. The short and medium-term risk is that emissions of greenhouse gases cross the planetary boundary, meaning non-linear changes to climate and weather patterns. These non-linear changes may impact the economic system as it is today, from agricultural supply chains through to property and infrastructure.

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.

- **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 and seeks to estimate and offset its Scope 1 and Scope 2 carbon emissions.
- **Strategy:** our investment philosophy and investment objectives have remained unchanged since the firm's 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. Ruffer's SRIP articulates how we, as a firm, consider ESG integration and stewardship activity as part of our investment strategy.

- Financial planning: the financial performance of Ruffer LLP is inherently related to the performance of the client funds we are privileged to manage. Effectively managing risk and opportunities, including risks and opportunities presented directly or indirectly by climate, across our clients' assets is critical.

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 deliver upon our investment objectives, whatever happens in financial markets or changes in economic conditions, including the array of climate-related scenarios. Resilience has two interlinked strands: Ruffer's organisational skills, knowledge and capabilities (systems, people and culture); and how the portfolio is structured and re-structured in order to deliver our investment objectives.

Organisational strategy, which we interpret as investment strategy, refers to our implementation of an actively managed, unconstrained and multi-asset class investment approach, which delivers upon our investment objectives.

The dynamic nature of our portfolio – coupled with limitations on data availability (and carbon metrics) across sovereign bonds, commodities and derivatives, and the uncertainty over how climate change will play out in the long run (2035 and beyond) – presents a challenge when modelling climate scenarios. We model 3°C, 2°C and 1.5°C temperature pathways for the equity portfolio using MSCI ESG Research methodology, which provides us with some insight into how the equity component of the portfolio may behave. We are currently unable to duplicate this process for the other asset classes, making it hard to quantify resilience in this regard.

These scenarios are theoretical but nonetheless important in estimating a range of outcomes. As an unconstrained active manager with an absolute return target, we are not bound to own the market like a universal owner (a sovereign wealth or pension fund). Our active, multi-asset class approach implies we seek to anticipate investment risks, including climate risk, and change our asset allocation to mitigate potential adverse impacts to portfolio outcomes. It is our opinion, given the mechanisms through which climate-related events translate into financial market performance, that our use of derivatives should offer protection from unanticipated shocks whilst our position in the sovereign bonds of the largest developed economies should provide a level of stability with respect to long-term and less volatile events.

3. Risk management

AT RUFFER, RISK MANAGEMENT IS MORE THAN A SECOND LINE OF DEFENCE; IT IS CENTRAL TO THE WAY WE INVEST.

Our approach focuses on seeking to understand, where possible both quantitatively and qualitatively, the risk exposures associated with the current portfolio, when and how those risks are likely to appear over the investment horizon and what their impact on investment performance could be. This requires judgement, an investment thesis and a willingness to act on new information.

Our primary risk management technique is scenario analysis. 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 such as oil price spikes, inflationary periods or other events which led to significant market losses. We apply these scenarios to the current portfolio and economic conditions, giving an indication of how the portfolio may behave in a repeat of those prior conditions. This approach guides our understanding of the array of risks to which the portfolio is exposed, helping us to position the portfolio to best withstand vulnerabilities, of which climate risk may be one.

We use the same approach to test the portfolio against a number of prospective market scenarios, principally potential threats. 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 and risk teams.

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

For equities, our processes include

1. Company (or security) level carbon data and transition analysis, which may inform security selection, position size and stewardship activities
2. Scenario analyses (1.5°C and 2°C orderly, 2°C disruptive, 3°C orderly) to identify climate-related exposure under different temperature and policy pathways
3. Portfolio carbon footprint data to identify assets with a potentially greater GHG 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)

For inflation (sovereign bonds and commodities) and protection (derivatives) strategies, Ruffer is currently unable to run climate risk analysis like the analysis

we run for the equity portfolio, due to data and modelling limitations. Only limited carbon footprint data is available for sovereign bonds. This is backward-looking by definition and not a measure of climate risk (or opportunity). Whilst forward-looking metrics like Implied Temperature Rise (ITR) are available, we consider this insufficient as an investment decision tool, given issues with data reliability and model estimation.

However, for sovereign issuers, Ruffer has developed a proprietary ESG model, incorporating several climate-related metrics, to rank sovereign issuers systematically based upon an array of ESG factors. The ranking informs whether the issuer, rather than the specific issue, potentially presents an ESG risk.

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

The formal channel for presenting climate risk information is the quarterly scenario meeting. This meeting considers climate-related risk analysis for the equity portfolio. It is prepared using MSCI metrics and internal research. High-level risk estimates are decomposed into the sources of risk (by sector and security), key metrics over time (primarily CVaR) and scenario analysis. Internally generated metrics include a summary of progress against our NZAM targets (presented to the OCC starting in the first quarter of 2023) and various financial ratios which compare accounting or economic performance with carbon intensity.

The risk information is discussed in this meeting, potentially informing decisions on asset allocation. If, in the analysis of climate risk, the meeting considers 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) level.

It is security-level analysis where the majority of climate-related risks are managed, and this analysis is related to equity securities. The process includes completion of an ESG tear sheet and a high-level analysis of the company's climate transition plan. This indicates key material ESG risks, including climate risk and transition opportunities. For larger positions in terms of absolute invested capital or percentage ownership of the company, top contributors to portfolio carbon footprint (financed emissions) or companies we deem potentially controversial but where climate risk is not or may not be material to the investment case, additional enhanced ESG research and analysis will be undertaken, supported by a deep dive on the company and/or sector if climate risk is a material issue.

In both cases, stewardship – voting, engagement and oversight – are key parts of our process for identifying climate-related risks. Our [Stewardship Report 2022](#) provides greater detail on our process and examples.

Climate-related stewardship examples

RYANAIR

One area where we have started to focus our resources is the aviation industry. It's no secret that plane travel is a high-emitting sector – in 2021, it was responsible for over 2% of global energy-related CO2 emissions. Since the pandemic brought air traffic to a standstill, passenger travel has recovered to nearly two thirds of its previous level, and air cargo has surpassed its pre-covid peak. The industry is therefore poised to keep emitting significant levels of greenhouse gases unless structural progress can be made. Abatement technologies are in their infancy and, whilst they should address the issues aviation companies face, so-called green premiums and low volumes make these solutions expensive. However, demand is growing. Airlines and logistics companies are upgrading their fleets to boost fuel efficiency and are signing deals with producers of sustainable aviation fuel as they focus on their 2030 emissions targets. Some fleet owners are even placing orders for electric aircraft. Whilst this is all at very small scale relative to the demands of Net Zero, momentum is building.

Ryanair holds a market leading position in European short-haul travel. In our opinion, it is well placed to use its brand, convenience and influence – not to mention its superior financial flexibility – to deliver on the aviation industry's transition objectives. We intend to build a relationship with the company (and the wider industry) to gain a better understanding of the challenges and bottlenecks it faces in its pursuit of Net Zero. We began our engagement by meeting with Ryanair's director of sustainability and finance. We also attended the company's Sustainability Day, focused on the industry's pathway to Net Zero.

BP

Leading up to the 2023 Annual General Meeting, there was significant controversy and apparent investor discontent over the perception that BP had rowed back on its aims to be a Net Zero company by 2050. Shareholders signalled their intention to vote against the Chair, the annual report and financial statements or to vote in favour of a shareholder resolution seeking the company to limit its Scope 3 emissions consistent with the goals of the Paris Agreement. Ruffer took a different view based on company disclosure, our engagement with the company, in-house research and our initial investment thesis.

BP has been vocal about the energy 'trilemma': the need for energy which is secure, affordable and lower carbon. Since BP launched its transition strategy and Net Zero ambition in 2020, the world has changed, with the invasion of Ukraine, the recovery from covid-19 and recent inflationary forces. The strategy of any company should evolve over time with the changing external environment, in order to create shareholder value and deliver the company's purpose. BP, in our opinion, is no different.

Whilst BP has changed its intermediate targets within the five aims underlying its Net Zero strategy, what has not changed is its Net Zero ambition covering Scope 1, Scope 2 and Scope 3 emissions (both Net Zero production and sales) by 2050 or sooner. Further, mindful of the cash windfall from high oil prices, BP announced additional capital allocation to its transition growth engines business unit. This invests in anything from wind farms to electric vehicle charging networks, seeking to replace the cash flows which may be lost from the traditional oil and gas business as the world transitions to a lower carbon economy.

Decarbonising BP's products and our wider society is a key issue, but it is not the only problem the company must address. With its global footprint and experience across energy markets, BP is somewhat in the crosshairs of governments seeking affordable, reliable and adequate supplies of energy, shareholders expecting this energy to be provided as safely, cost efficiently and profitably as possible and civil society and non-governmental organisations wanting a faster transition or a complete phase out of fossil-fuel based energy (with no investing or re-investing in oil and gas reserves) in the near term.

Over the year, we engaged with BP on various occasions, holding discussions with the investor relations team, the Chief Financial Officer and the head of gas and low carbon energy (who was appointed in 2022 and has a background in renewable energies). We also participated in a CA100+ collaborative engagement meeting with the Chief Executive and the head of strategy, sustainability and ventures. Topics addressed included safety, the energy transition, capital allocation, financial performance and BP's investment in Archaea Energy, one of the largest renewable natural gas (RNG) producers in the US. We make the following observations from these engagements or our ongoing research.

1. For this year's AGM, BP argued there was no or minimal shareholder demand for a 'say on climate' type proxy voting resolution. BP stated an updated climate transition strategy would be put to shareholders at the 2024 AGM. We believe BP is executing upon the existing shareholder-approved strategy and, whilst the targets have shifted, the direction of travel remains unchanged.
2. Given the senior and experienced hire to lead the gas and low carbon energy business, coupled with regulatory and market changes and the need for financial and commercial discipline, we are pleased that BP's execution has been refined as we wish to see BP deploy its capital wisely, creating shareholder value by investing in opportunities which exceed their cost of capital.
3. The CEO stated BP withdrew from Russia (exiting Rosneft) within 96 hours of the invasion of Ukraine. In so doing, BP lost about a third of its production and a quarter of reserves. Ordinarily, this translates to a reduction in revenue and therefore in valuation. It is in keeping with BP's 'resilient hydrocarbons' strategy that BP subsequently invested more capital to extend the production life of existing reserves or secure additional reserves in order to replace the revenue lost from exiting the Russian assets. This supports our view that the transition to a low carbon economy needs to be part-funded from revenue sourced from the current energy system and that the pathway of carbon emissions leading towards a Net Zero economy will not be a smooth, orderly decline.

Aims	2025 target	2030 aim	2050, or sooner, aim
① Net zero operations ★ Scope 1 and 2	20% ^a	50% ^a 30-35% ^b	Net zero ★
② Net zero production ★ Scope 3	10-15% ^{ac} 20% ^b	20-30% ^{ac} 35-40% ^b	Net zero ★
③ Net zero sales ★ Average lifecycle carbon intensity ^g	5% ^d	15-20% ^d >15% ^b	Net zero ★ 50% ^b
④ Reducing methane	0.20% ^e	50% reduction ^e	
⑤ More \$ into transition	\$6-8bn ^f \$3-4bn ^f	\$7-9 bn ^f ~\$5bn ^f	

Source: BP Net Zero Progress Update

OUR ENGAGEMENT INFORMED OUR VOTING DECISION

We voted in favour of BP's climate transition plan. The company set five aims to transform BP into a Net Zero company by 2050, covering operations, production and sales. We assessed the company's strategy, and we are comfortable with the management and board's commitment to Net Zero.

Resolution outcome: Passed

We voted against a shareholder resolution which required the company to set climate targets. BP has announced an ambition to become a Net Zero company by 2050 and has published targets and objectives, including linking its climate progress to executive remuneration.

Resolution outcome: Failed

Follow on and next steps: we plan to continue our engagements with BP in 2023.

ARCELORMITTAL

In 2022, Ruffer continued to co-lead the Climate Action 100+ group engaging with ArcelorMittal. Our most significant meeting was in December. There have been some changes at the company, and this discussion was an opportunity to reiterate the aims of the initiative.

The company explained how beneficial it has been for it to be part of the Energy Transition Commission (ETC), something we pushed the company to join in 2019. The ETC's most recent analysis highlights the investment required for the steel industry to achieve Net Zero emissions, cumulatively more than \$5 trillion, two-thirds of it needed in the enabling infrastructure. The discussion also focused on how ArcelorMittal has been working with the Science Based Targets initiative (SBTi) to develop a steel sector methodology, expected in June 2023. This reflects a topic of discussion with the company over many years where we have pushed it to partner with organisations that can facilitate progress across the entire sector. We also discussed the Just Transition and were encouraged to learn that the company has been developing a draft framework, which includes guiding principles and a detailed methodology. On the InfluenceMap report on lobbying activity, we pushed ArcelorMittal to address the issues raised. The company acknowledged that it needs to expand its reporting and committed to releasing an update to its report imminently and its next report later in 2023.

Overall, the company has continued to make progress, which has yet to be fully recognised by the Climate Action 100+ Net Zero Benchmark and InfluenceMap. We remain optimistic that this will be reflected once the company has published its third Climate Action report. This is expected in the second quarter of 2023, though we expressed our preference that it should be released ahead of the 2023 AGM to allow investors to provide feedback. We raised the possibility of a 'Say on Climate' vote at the 2023 AGM, but the company felt it would be best to wait until this report had been published.

We signalled our intention to participate in the next AGM with a statement on recent progress and plan to put questions to the board covering areas we have identified as a priority for further progress. We stressed the importance of facilitating shareholder involvement at the AGM when deciding on the format of the meeting.

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

- 1. 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 and proprietary research, which includes a review of company disclosures related to climate.
- 2. ASSESS:** the table on page 29 in the metrics and targets section shows physical risk, transition risk and total risk. Over the year, the absolute weight of equities in the portfolio declined.
- 3. MANAGE:** Ruffer LLP 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 in hard to abate or high emitting sectors, we assess whether, in our opinion, company boards and executive management have the skills, experience and knowledge to execute on strategies we believe will generate value, despite the anticipated or unanticipated risks to which they are exposed.

4. Metrics and targets

Carbon and climate related metrics can be represented in

- absolute terms, such as Scope 1, Scope 2 and Scope 3 GHG emissions in tonnes
- relative (or efficiency) terms, where tonnes of GHG are reported as a ratio of tCO₂e per unit of revenue (sales), market capitalisation or enterprise value including cash (EVIC)
- forward-looking metrics – such as implied temperature rise, portfolio warming potential or CVaR for equities

Whether backward-looking or forecasting, all emissions metrics have limitations (model errors or reliable input data) and assumptions (such as the carbon boundary for emissions accounting). And it is crucial not to conflate metrics with investment risk.

Over 2022, we selected targets under the NZAM initiative which are applicable to an unconstrained, multi-asset class, actively managed strategy. Our guiding philosophy: we prioritise real world emissions reduction over portfolio emissions optimisation.

The core goal of NZAM is reducing emissions in the sectors its signatories invest in. Only through achieving this can real world emissions be lowered in line with the goals of the Paris Agreement.

This approach is very different to building a green portfolio. Investing in a portfolio of low emission stocks and avoiding carbon intensive sectors may well achieve superficial decarbonisation within the portfolio. But it may have little or no impact on reducing real world emissions. 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. And certainly not to reduce real-world carbon emissions.

All elements of the economy, including both the consumers and the producers of carbon intensive goods and services, have a role to play in reducing their emissions. In Ruffer's view, real progress can be achieved only by acknowledging this and working with all sectors, even those that are hard to abate. Blanket divestment is not the answer. We must engage with companies and issuers in order to understand the challenges, opportunities and risks which may enable decarbonising the economy through releasing innovation and capital flows.

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, also described as portfolio warming or cooling potential
5. For sovereign bonds, a variety of country-level factors that can impact an issuer's credit quality

An evaluation of the equity portion of one of our core funds, the LF Ruffer Total Return Fund (RTRF), considered representative of Ruffer's single investment strategy, under several temperature scenarios shows different levels of CVaR.

Global warming scenarios

CVaR Ruffer equities

Temperature pathway	Policy	Physical risk	31 Dec 22	31 Mar 22	31 Mar 21
1.5°C	Orderly	Average	-41.0	-35.1	-37.5
1.5°C	Orderly	Aggressive	-48.4	-41.6	na
2°C	Orderly	Average	-28.5	-24.3	-19.5
2°C	Disorderly, delayed	Average	-53.5	-40.5	-39.6
3°C	Orderly	Average	-17.8	-16.1	-9.1

The equity component of the Ruffer portfolio accounted for 16% of the total portfolio at 31 December 2022, compared with 44% at 31 December 2021. If we scale the 1.5°C (orderly, average) estimate by the proportion of the portfolio that is equities (all else being equal), we get a -6.5% compared with -18.3% CVaR equity contribution at portfolio level, for 31 December 2022 and 31 December 2021. This CVaR estimate is a theoretical and assumption-heavy calculation with questionable relevance to an unconstrained, active strategy which can mitigate risk through changes to its asset allocation.

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	Scenario, orderly			Scenario, orderly			Scenario, orderly		
	31 Dec 2022	1.5°C	2°C	31 Mar 2022	1.5°C	2°C	31 Mar 2021	1.5°C	2°C
Scope 1 (tonnes)	52,330.4			125,368.1			255,691.0		
Scope 2 (tonnes)	12,548.3			37,949.3			83,074.4		
Scope 3 (tonnes)	308,311.2			2,062,157.3			4,560,113.0		
Total carbon emissions, scope 1+2 (tonnes)	64,879.1			163,317.4			338,765.4		
Carbon footprint (tonnes/£m invested)	143.5			123.3			209.2		
Weighted average carbon intensity (tonnes/£m revenue)	246.4			190.7			182.1		
Climate VaR %		-41.0	-28.5		-35.1	-24.3		-37.5	-19.5
ITR (with company targets)	3.76°C			4.02°C			4.16°C		
Sovereign bond carbon intensity (tonnes/£m GDP)	228.7			256.7			na		

EQUITIES
CARBON INTENSITY ANALYSIS

LF Ruffer Total Return Fund	31 Dec 2022	31 Mar 2022	31 Mar 2021
Weighted average carbon intensity (tonnes/£m revenue) [†]	246.4	190.7	182.1
Total carbon emissions (tonnes)	64,879.1	163,317.4	338,765.4
Carbon footprint (tonnes/£m invested)	143.5	123.3	209.2
Carbon intensity (tonnes/£m revenue) [‡]	199.1	191.5	139.4

Source: Ruffer; analysis incorporates only Scope 1 and 2 emissions

Between the 2021 and 2022 datapoints, we switched the calculation basis of these carbon intensity metrics to using EVIC to apportion emissions ownership, rather than market capitalisation, in line with industry guidance. Between the calculations of the March and December 2022 data points, there were methodological changes to better account for missing data points. So data points may not be wholly comparable.

All data points are accurate according to the MSCI ESG research emissions data available as at the time of calculation.

[†] Weighted average carbon intensity (WACI) measures portfolio exposure to carbon-intensive companies

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

TOP CONTRIBUTORS TO WEIGHTED AVERAGE CARBON INTENSITY

Company	Sector	31 Dec 22 %	Company	Sector	31 Mar 21 %
BP	Energy	17.1	Barrick	Mining	15.5
Ryanair	Industrials	13.6	Kinross	Mining	12.9
International Petroleum	Energy	9.7	BP	Mining	12.4
Vopak	Energy	5.6	Chesapeake Energy	Mining	7.9
Jet2	Industrials	4.5	Shell	Mining	7.6
Top 5 contributors		56.3			56.3
Other equities		49.5			43.7

Source: Ruffer

CLIMATE SCENARIO ANALYSIS

CVAR CONTRIBUTION, 1.5°C AVERAGE POLICY SCENARIO

Scenario	31 Dec 22		31 Mar 22		31 Mar 21	
	CVaR contribution	Coverage	CVaR contribution	Coverage	CVaR contribution	Coverage
Low-carbon transition risk scenarios						
Selected model: AIM-CGE 1.5°C SSP2	-24.7		-20.0		-29.6	
Policy risk direct emissions (Scope 1)	-17.6	98.1	-12.3	98.3	-12.2	98.4
Policy risk electricity use (Scope 2)	-6.6	98.5	-6.4	99.5	-8.4	98.4
Policy risk value chain (Scope 3)	-18.8	98.5	-14.5	99.5	-17.4	98.4
Technology opportunities	18.4	99.3	13.2	99.9	8.6	99.4
Physical climate scenarios selected model: average						
Extreme cold	2.0	89.6	0.5	96.1	0.5	89.8
Extreme heat	-11.2	89.6	-8.3	96.1	-2.9	89.8
Precipitation	0.2	89.6	0.0	96.1	-0.3	89.8
Extreme snowfall	0.0	89.6	0.0	96.1	0.0	89.8
Extreme wind	-0.1	89.6	0.0	96.1	-0.1	89.8
Coastal flooding	-5.2	89.6	-5.0	96.1	-4.7	89.8
Fluvial flooding	-1.3	89.6	-1.5	96.1	-0.4	89.8
Tropical cyclones	-0.9	89.6	-1.0	96.1	0.0	89.8
River low flow	0.00	18.1	0.0	13.3	na	na
Wildfire	0.0	89.6	0.0	96.1	na	na
Aggregated climate VaR	-41.0		-35.1		-37.5	

Source: Ruffer, MSCI ESG Research; aggregated CVaR does not sum, due to rounding

INFLATION (SOVEREIGN BONDS AND COMMODITIES)

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.

Commodities include gold bullion, futures instruments with commodity prices as their underlying (exchange traded commodities) and equities involved in gold mining and production. Currently, there are neither agreed metrics nor methodology to estimate, assess or analyse climate risk or opportunity for this asset class.

PROTECTION STRATEGIES AND CASH

In addition to conventional assets, we invest directly in securities and instruments designed to protect against falling equity markets, an increase in financial market volatility or a widening of credit 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.

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

For our NZAM target submission, Ruffer chose the PAII NZIF and selected the following targets.

1. Portfolio coverage target: by 2030, 80% of assets under management (AUM) in scope is considered Net Zero, aligned with Net Zero or aligning with a Net Zero target.
2. Engagement target: by 2025, at least 70% of financed emissions in material sectors will be either Net Zero, aligned with Net Zero or the subject of engagement and stewardship actions. This threshold will increase to at least 90% by 2030 at the latest.
3. Portfolio decarbonisation reference target: a 50% reduction in emissions intensity by 2030, adjusting the baseline to reflect shifts in asset allocation. We calculate portfolio emissions intensity using carbon intensity measured by EVIC (tCO₂e/\$m revenue). We have selected a baseline date of 31 December 2021 and estimated carbon intensity of 147.7 tCO₂e/\$m revenue.

The prioritisation of the portfolio coverage target keeps the focus on whether the companies we hold are aligning with Net Zero emissions, rather than a simple focus on reducing the emissions of the portfolio (which may change with asset allocation). Complementing this with an engagement target means our stewardship activities will be deployed to hold companies accountable for progress on their real-world emissions reduction plans.

Rebasing our emissions reduction target to a normalised 100 baseline as at 31 December 2021 means that it assesses the emissions reduction performance of the portfolio we are holding at any moment in time. This is crucial to account for our active approach, to prevent portfolio optimisation through simply selling the highest emitting holdings and to enable investment in companies that are contributing to the energy transition, even if their emissions starting point is higher. As Ruffer is an active asset manager with the potential for significant asset allocation changes, this removes sector allocation as an option for meeting targets. We think this approach is essential in order to align our approach with the objective of real-world emissions reduction.

Our emissions reduction target will be based on Scope 1 and 2 emissions only. Scope 3 emissions will not initially be included in the emissions reduction target, due to data quality concerns. Scope 3 emissions may be considered when assessing alignment and engagement objectives and will be factored into decision making where appropriate.

The table below gives the complete list of targets we will be monitoring as part of our NZAM commitment.

To help us measure performance against these targets, we have built a proprietary software tool which captures data points (sourced from various organisations and data providers) associated with each of these targets and stores them in a time-stamped database. This allows us to create a time series linked to stewardship activities (engagement and voting), enabling Ruffer to objectively measure performance against these targets. We intend to report on our performance against these targets in our 2024 TCFD report for the year ending 31 December 2023.

NZAM-RELATED TARGETS, METRICS AND POLICY

#	Target name	Proposed target
1	% of assets aligning to transition pathway	80% of assets in scope considered Net Zero, aligned or aligning by 2030
2	Engagement threshold	By 2025, at least 70% of financed emissions in material sectors will be either Net Zero, aligned with Net Zero or the subject of engagement and stewardship actions. This threshold will increase to at least 90% by 2030 at the latest.
3	2030 emissions target	A 50% reduction in emissions intensity, adjusting the baseline to reflect shifts in asset allocation
4	% of asset in scope	Equities and corporate bonds aggregated across Ruffer mandates, which have historically ranged between 15% and 60% of Ruffer's total AUM
5	Methodology used	PAII Net Zero Investment Framework, including SBTi, TPI and proprietary Ruffer methodologies for the 'assets aligning' component
6	Scope of emissions included	Scope 1 and 2 included Scope 3 not included (for targets 2 and 3) but may be considered in the assessment of transition risk and alignment and factored into engagement
7	Fossil fuel policy	Unconstrained: a focus on real world emissions reduction which includes engagement with the hard-to-abate sectors
8	Climate solutions target	A focus on nascent climate solutions, recognising that many are to be found in difficult sectors not captured by the taxonomy
9	Emissions from Ruffer LLP operations	50% reduction in carbon emissions intensity from operations by 2030

These targets relate to measuring real world decarbonisation for equities and credit securities held by the portfolio, rather than directly quantifying climate-related risk and opportunity. For example, the climate solution target outlined above seeks to identify and allocate capital to climate-related opportunities, but this metric does not capture the potential for investment returns or whether these nascent solutions protect the portfolio from climate risk. On the other hand, we have set targets for financed emissions to be either aligned with or aligning to Net Zero emissions. For emissions which are not aligned, we plan to engage with those companies to encourage changing their business strategy.

MANAGING OUR CARBON FOOTPRINT

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 undertake an analysis of our business's greenhouse gas footprint.

Our aim is to reduce our carbon emissions. We estimate and offset our Scope 1 and 2 emissions. We are reviewing our approach to Scope 3 emissions.

The building we occupy at 80 Victoria Street in London is certified provided with 100% renewable energy.

Given the timing of this TCFD report, we are not able to publish our estimated carbon footprint this year.

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).

Appendix:

notes on temperature pathways and scenarios

One measure which allows us to model the sensitivity of the equity component of the portfolio to climate scenarios (including both a 1.5°C and a 2°C scenario) is CVaR. CVaR is a point estimate designed to provide a forward-looking and return-based valuation assessment to measure climate-related risks and opportunities for selected temperature, policy and physical climate risk scenarios. We interpret CVaR as a guide, rather than a dictat, 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 the equity portfolio. 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 equity portfolio. CVaR is only calculable for listed equities and listed credit (corporate debt) and, for the purposes of this report, 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.

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.

Glossary

CARBON FOOTPRINT

Total carbon emissions for a portfolio normalised by the market value of the portfolio, expressed in tonnes CO_{2e}/\$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_{2e}/\$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.

ENTERPRISE VALUE INCLUDING CASH

EVIC is the sum of the market capitalisation of ordinary shares at fiscal year end, the market capitalisation of preferred shares at fiscal year end and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values. EVIC is used as a base to allocate companies' emissions to investment portfolios and thus enable analysis of both equity and corporate bond portfolios.

FINANCED EMISSIONS

The greenhouse gas (GHG) emissions linked to the investment and lending activities of financial institutions like investment managers, banks and insurers.

IMPLIED TEMPERATURE RISE (ITR)

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). 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 give 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, 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 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.

SHARED SOCIOECONOMIC PATHWAYS (SSPs)

Future carbon prices differ according to each IAM but can also differ within an IAM, depending on the shared socio-economic 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 twenty first century as a reference for climate change analysis. Five SSPs were designed, to represent different climate change mitigation and adaptation challenges.

Their resulting storylines 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.

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 tonnes CO₂e. 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 CVaR 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. CVaR 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 tonnes CO₂e. 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

**BEN CRAWFURD-PORTER**

Investment Manager

bcrawford-porter@ruffer.co.uk

+44 (0)20 7963 8195

Joined Ruffer in 2017, having graduated with a master's degree in physics from the University of Edinburgh. Previous roles include Ruffer's responsible investment and UK charities teams, and he is now responsible for Ruffer's LGPS investors. He is a member of the CISI and a CFA charterholder.

**PETER LUNT**

Manager, Responsible Investment

plunt@ruffer.co.uk

+44 (0)20 7824 0559

Joined Ruffer in 2021 from an ESG Investment Specialist role at the BP Pension Fund. Previous roles include Investment Director at Project Snowball, Senior Analyst, Responsible Investment at USSIM and Portfolio Manager, Equities at VicSuper, Australia. He has a Bachelor of economics and a Bachelor of science (forestry) from Australian National University, a Master of environment from the University of Melbourne and a graduate diploma in applied finance and investment. He is also a Member of the Institute of Directors.



SIMON MOUNTAIN

Director

smountain@ruffer.co.uk

Joined Ruffer in 2013 from Bain & Company, where he advised clients on strategic and operational issues. He holds a Master's degree in manufacturing engineering from the University of Cambridge.

FURTHER INFORMATION

The following documents are available at
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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