TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) REPORT

2023

Russell Investments

EMBRACE THE POSS/BLE®

Contents

Foreword

Investing is a dynamic process that requires constant adaptation and innovation. The world is changing faster than ever, and new forces are shaping markets. As investors we need to account for a range of risks and opportunities, including considering the climate in this ongoing evolution.

Climate events and environmental factors have an influence on consumer preferences and the flow of capital which affects the financial performance of the companies we invest in. There's no one-size-fits-all solution, but we believe that data and transparency are key to understanding the financial materiality of climate risks and opportunities. In this context, I am proud to present our latest report in line with the recommendations of the TCFD, underscoring our unwavering dedication to enhancing the financial security of our clients in an ever-changing global landscape.

Kate El-Hillow

CIO & President,
Russell Investments

Executive summary

The challenge

Russell Investments formally endorsed the TCFD in 2019 in recognition that the global response to climate change will involve financial risks and opportunities. We believe this response will have important implications for our clients' portfolios. Climate change-driven shifts in capital flows and consumer preferences will continue to impact the financial performance of companies in which we invest, and incorporating climate-related risks into the financial system is a crucial first step in pricing such risks.

Our vision

As active owners of the companies in which we invest, we support the TCFD's recommendation that companies should provide effective climate-related disclosures that enable more informed financial decision making for investors. We advocate for companies to have board-level oversight and governance of climate change impacts. We also hold ourselves accountable for providing transparency around our own investments and operations. As a fiduciary, we invest on behalf of our clients and remain steadfastly committed to addressing the needs of our diverse client base.

Progress to date

In the report that follows, we outline the key aspects of Russell Investments' climate-related activities to date, including:

- **Governance:**
  Outlining governance around climate-related risks and opportunities.
- **Extending quantitative research:**
  Expanding the depth of our quantitative risk assessment capabilities for transition and physical risk, including a breakdown by channel. We have also rolled out extensive climate-related data in our portfolio management analytics systems.
- **Training our teams:**
  Training our investment and client service teams, recognising that the relationship between the environment and financial outcomes is complex, and that having an ability to use climate-related information in an informed and critical manner requires continuous education and commitment.
- **Policy development:**
  Enhancing the process through which climate risk is managed in portfolios, as detailed in our Sustainability Risk Policy. The key elements of this policy direct our investment professionals to leverage data, sub-adviser insights and in-house expertise in order to identify and manage sustainability risks.
- **Active ownership:**
  Engaging with investee companies on the topic of climate change – with 34% of our corporate engagements covering climate issues in 2022.
- **Solution development:**
  Managing carbon-aware portfolios, as we have done since 2015, with a focus on continual enhancements to the approach as best practices and data evolve.

Looking ahead

First and foremost, our goal is to continue to evolve our understanding of the financial materiality of climate risks and opportunities. By leveraging data recently incorporated into our portfolio management risk systems, and our extensive network of active money managers, our investment teams will continue to engage deeply on the topic of how climate related themes impact security prices, and what portfolio positioning best reflects the long-term objectives of our clients.

We are also working with clients to leverage our open architecture investment platform as a tool for implementing their climate-related policies and objectives. This includes combining a multi-manager portfolio in a centralised portfolio to enable improved transparency and control over climate-related measures at the total portfolio level. Moreover, the platform would allow for dedicated allocations to systematic sleeves that complement the rest of the portfolio's risk and sustainability exposures. As more investors move from the policy development phase to implementation, these tools become increasingly important in helping turn policy into action while highlighting the financial implications.

For assets in scope for net zero alignment, our work will continue to meet interim targets – in particular, digging deeper into specific portfolios, assets classes, and geographies that are further behind relative to global interim targets. We intend to develop portfolio-specific roadmaps while persisting in our ongoing work to provide information on transition alignment to investment teams, management, and our clients.

We incorporate climate risk information into client reporting based on client demand and regional regulatory requirements. Mandatory TCFD-aligned reporting is being phased in or is under consideration in regions involved with the roll-out of our new systems. Our client service teams will continue to listen carefully to the needs of our clients. Where requirements are evolving, ongoing training enables us to consistently partner and guide clients through the latest developments. In regions where climate considerations are a political flashpoint, we will remain attentive to our clients and maintain alignment to their portfolio objectives.

This report

We provide disclosures in line with the TCFD recommendations, outlining:

- Governance as a cross-cutting theme that impacts all aspects of our climate response.
- Climate risks and opportunities.
- Metrics and scenario analysis to analyse the risks identified.
- Strategies and policies developed for formally and systematically addressing sustainability risks.
- Progress in active ownership, which we believe is an important lever for delivering investment outcomes.

While recognising the spectrum of approaches in both our client base and the managers in our open architecture platform, we commit to continuing our own disclosure in line with the TCFD recommendations, as well as in our ability to deliver robust, climate-aware solutions for clients.

Numbers at a glance

6% of our global assets have explicit climate-related risk controls in place[1].

25%
of our assets have opted in to net zero alignment.

40%
of our assets under management are in regions where TCFD-related reporting requirements are in place or have been proposed.

Additional **measures added** over the **last 6 months** include:

- Sovereign carbon data, added to our existing listed equity and corporate debt.
- Six climate scenarios.

76%
of our assets are now covered by climate risk measures such as carbon emissions.

More than **480 hours** of climate-related training completed across our associate base in 2022, covering 270 investment and client associates.

[1] Strategies using climate-related constraints such as reductions in carbon emissions.

Summary disclosure against TCFD recommendations

The TCFD's recommended disclosures are organised according to the four pillars of Governance, Strategy, Risk Management, and Metrics and Targets. Below we provide a summary of our disclosures against the 11 recommendations, as well as the location of relevant disclosures in our report.

Table 1: TCFD disclosure summary

TCFD PILLARS	RECOMMENDED DISCLOSURE	SUMMARY DISCLOSURE	SECTION
Governance	Describe the board's oversight of climate-related risks and opportunities.	Russell Investments Board of Directors is ultimately responsible for the strategic priority, corporate governance and long-term stewardship of the firm. The Board has delegated oversight of the management of climate-related risk to the Executive Committee (ExCo).	1
	Describe management's role in assessing and managing climate-related risks and opportunities.	The ExCo provides oversight of the firm's strategy and investment risk as it relates to climate-related considerations, both directly and through delegated entities including the Investment Strategy Committee and the Global Risk Management Committee.	1
Strategy	Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	Climate-related investment risks and opportunities include identified transition and physical risks and opportunities in our portfolios, and are detailed in Table 2 of section 2a, along with relevant time horizons.	2a
	Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	Impact on the investment process is material and detailed in section 2. Business operational footprint and targets are set out in section 3.	2, 3
	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Scenario analysis of investment portfolios detailed in section 2b.	2b
Risk management	Describe the organisation's processes for identifying and assessing climate- related risks.	Carbon footprinting and scenario analysis identified as key tools. Further details supplied in section 2.	2a, b
	Describe the organisation's processes for managing climate-related risks.	Formal policies, enhanced practices, active ownership, carbon managed portfolios and target setting. Further details supplied in section 2.	2c
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk.	Detailed in section 2 and governance sections.	2a, 1
Metrics and targets	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in	Carbon emissions (Weighted average carbon intensity (WACI) and financed emissions), scenario analysis, supplemented by temperature alignment and climate solutions.	2b
	line with its strategy and risk management process.	Detailed in section 2.	2b
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	See section 2d for a description of our Net Zero by 2050 Commitment.	2d

Section 1: Governance of climate-related risks and opportunities

Climate-related risks and opportunities have been identified as a strategic priority for the business and as a result significant consideration has been put towards establishing the appropriate governance frameworks to identify, assess and manage these risks and opportunities.

Governance is a cross-cutting theme that touches on all aspects of our climate-related policies. We have established a clear governance framework to identify, assess and manage climate-related risk and opportunities. We will continue to review our approach to ensure that the risk and opportunities arising from climate change are given the appropriate focus and attention by senior executives within our firm.

Board oversight

Russell Investments' Board of Directors, which is chaired by our Chief Executive Officer, is ultimately responsible for the strategic priority, corporate governance and long-term stewardship of the firm. The Executive Committee (ExCo) is the most senior management group at Russell Investments and is responsible for determining the company's business strategy and overseeing its implementation. There are multiple levels at which climate impacts our business, including as part of our strategy and as a risk. On the strategy side, in recognition that climate-related risks and opportunities are receiving increasing focus from the investment community at large and our client base in particular, the ExCo has allocated resources to enhance our climate-related capabilities. These are described in detail in the sections that follow but include headcount, data, external partnerships, development of in house tools and training . At a risk level the Group Board through the ExCo has delegated oversight of the risks associated with climate change to the Investment Strategy Committee and Global Risk Management Committee.

Exhibit 1: Global governance committees

Source: Russell Investments, for illustrative purposes only.

Investment Strategy Committee

The Investment Strategy Committee ("ISC") is authorised by the ExCo to oversee investment activities, review performance and establish investment policy and strategy. Similar to other investment risks, the ISC is ultimately responsible for identification, assessment and management of investment portfolios' climate risk and opportunities.

The ISC has delegated authority to the ID Responsible Investing Committee ("IDRIC") to oversee that the data and processes are in place to support the effective assessment and management of climate related risk and opportunities. The group consists of responsible investing experts from across our research and portfolio management teams and is empowered to propose improvements in stewardship and investment practice to be approved by the ISC. This IDRIC also reviews and maintains the firm's Sustainability Risk Policy. The key elements of this policy direct investment professionals to leverage data, sub-adviser insights and in-house expertise in order to identify and manage sustainability risks (including climate risk).

Global Risk Management Committee

The Global Risk Management Committee ("GRMC") oversees Russell Investments risk management practices. The GRMC was established by the ExCo to assist executive management in its oversight of (i) Russell Investments' risk governance structure, (ii) Russell Investments' risk management framework and policies regarding investment, credit and operational risk, and (iii) Russell Investments' risk exposure and levels. The GRMC plays a critical global role in our risk management and provides an independent global authority on the assessment of climate risk and needed controls essential to effective management of the firm's climate risk.

GRMC membership comprises the most senior officers of Russell Investments including the Chief Operating Officer, Vice Chairman, Global Chief Investment Officer, Chief Financial Officer, Chief Risk Officer, Global Chief Compliance Officer and other senior management. This committee is operated by Global Risk Management ("GRM"), Russell Investments' independent enterprise risk management function. The committee meets at least 3 times annually to review and evaluate the material risks inherent in Russell Investments' business, as reported through the regional risk committees, as well as providing guidance to the senior executives and business units on firm-wide risk issues.

Section 2: Climate risks and opportunities of investment portfolios

The first step in managing climate-related risks in investments is identifying them. We recognise that different risks are likely to manifest over different time horizons and that they require different tools to assess.

The following section details our approach to addressing climate-related risks and opportunities in the investment process, adopting the TCFD framework of identification, assessment, and management. We begin by identifying climate risks and opportunities, including relevant measurement tools and time horizons. We then assess them using carbon footprint metrics and scenario analysis. Finally, we outline our management of climate-related issues including our sustainability risk policy, enhanced practice, active ownership, carbon managed portfolios, and target setting.

For background

Throughout our report we preface topics that benefit from additional detail with a "For background" section in this format. Readers building familiarity with these concepts may find these useful, while others may want to skip directly to disclosures.

Section 2a: Identification of climate-related risks and opportunities

The first step in managing climate-related risks in investments is identifying them. There are many mechanisms through which climate-related factors impact security prices, but these risks can be broadly categorised as transition or physical risks. We recognise that different risks are likely to manifest over different time horizons and that they require different tools to assess, as outlined below.

Table 2: Snapshot of the climate risk identification and assessment process

RISK OR OPPORTUNITY IDENTIFIED	DESCRIPTION	EXAMPLES OF ASSESSMENT TOOLS	MOST RELEVANT TIME HORIZON
Transition risks and opportunities	Risks arising from the shift to a low carbon economy.	Scenario analysis (esp. transition scenarios), metrics.	Medium-term.
• **Changes in cost**	Price on carbon, costs of abatement.	Carbon footprinting metrics.	Short and medium-term.
• **Changes in demand**	Demand destruction and creation arising from shifts in demand.	Scenario analysis (esp. transition scenarios), metrics on green revenues or climate solutions, exposure to potentially stranded assets.	Short and medium-term.
Physical Risks	Physical risks can be event driven (acute) or longer-term shifts (chronic) in climate patterns.	Scenario analysis, (esp. hot house world scenarios).	Long-term.
• **Acute**	Increased severity of extreme weather events.	Scenario analysis (esp. hot house world scenarios), asset-level risk mapping.	All but increasing severity long-term.
• **Chronic**	Changes in weather patterns, rising temperatures, rising sea levels.	Scenario analysis (esp. hot house world scenarios), estimated sensitivity to productivity impacts, heating/cooling days.	Medium and long term.

Climate risk is characterised by a longer time horizon than many traditionally managed risks. To make this more explicit, short-to-medium-term horizons in this document refer to a three-to-ten-year horizon, and a long-term horizon refers to the period out to 2050, although we note these are rough approximations only.

Before diving into the assessment of our exposure to climate-related risk and opportunities, we provide a brief overview of the portfolio used in the analysis that follows.

A note on Russell Investments' global portfolio

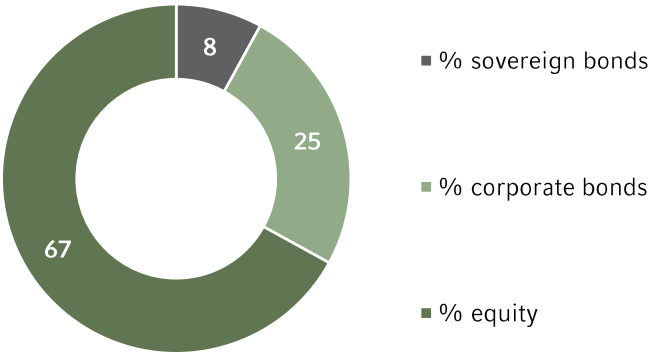
As an outsourced CIO provider, Russell Investments manages portfolios that are multi-asset and multi-manager. For the sake of understanding our exposure to climate-related risks and opportunities, we aggregated approximately 81% of our total traditional assets under management (excluding assets managed for investments services such as transition management) into what we refer to as our global portfolio throughout the remainder of this report.

While we manage assets in almost every asset class, we have chosen to focus this analysis on listed equities, corporate debt, and sovereign debt because this is where we have the most confidence in the available data. As data quality and availability improves across private assets and alternatives, we plan to expand upon this initial analysis in subsequent reports. Russell Investments also offers more bespoke analysis on private markets portfolios through a climate-lens where this part of the mandate.

Exhibit 2: Summary of the Russell Investments Global Portfolio

Total AUM covered
US$148Bn

# of securities covered
21,318



Source: Russell Investments, as at 31 December 2022.

Section 2b: Assessment of climate-related risks in investment portfolios

There are several methodologies available to assess the climate exposure of an investment portfolio. In our own analysis, we have focused on two primary pillars for our core assessment:

1. Carbon footprinting
2. Scenario analysis

The primary pillars of carbon footprinting and scenario analysis are supplemented with an additional metric, a temperature alignment score. This is a metric that is appealing in that it is easy to interpret, and as a result we expect its use to continue to grow. However, we note considerable variation exists in current methodologies, as detailed in the sections that follow.

By measuring exposure on a multidimensional basis, we hope to develop a more robust understanding of risk exposures both on a current and forward-looking basis.

Table 3: Common portfolio carbon footprinting cheat sheet

METRIC	SUPPORTING INFORMATION	
Weighted average carbon intensity **Also known as:** **WACI**	*Description*	Portfolio's exposure to carbon-intensive companies, expressed in tons CO_2e / $M revenue. *Metric recommended by the Task Force on Climate-Related Financial Disclosures (TCFD).*
	Formula	$\sum_i^n (\frac{current\ value\ of\ investment_i}{current\ portfolio\ value}\ X\ \frac{issuer's\ scope\ 1\ and\ scope\ 2\ GHG\ emissions_i}{issuer's\ \$M\ revenue_i})$
	Methodology	Unlike the next three metrics, 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 ownership approach (as described under methodology for total carbon emissions).
	Sovereign Equivalent	"GHG Intensity (t/USDM GDP Nominal)": The higher value, the more carbon-intensity the economy is. $\sum_i^n (\frac{Exposure\ to\ Sovereign\ Bond(USD)_i}{current\ portfolio\ value}\ X\ \frac{Country\ GHG\ emissions_i}{Country\ GDP\ Nominal\ (m\ USD)_i})$
	Key points +/-	+ Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. + Generally interpreted as a more risk-oriented approach versus the later metrics, which are more related to aggregate real-world emissions and hence considered more "impact" related. + Metric allows for portfolio decomposition and attribution analysis. - Metric is sensitive to outliers.
Financed emissions **Also known as:** **Total carbon emissions (EVIC method)**	*Description*	The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO_2e. *Metric recommended by the Partnership for Carbon Accounting Financials (PCAF).*
	Formula	$\sum_i^n (\frac{current\ value\ of\ investment_i}{issuer's\ EVIC_i}\ X\ issuer's\ scope\ 1\ and\ scope\ 2\ GHG\ emissions_i)$
	Methodology	Share of emissions attributable to the investor's holding in the company. If an investor holds an investment worth 5 percent of the company's total financing (enterprise value incl. cash), then 5 percent of the company's emissions are attributable to that investor. Attributable emissions in each company are summed across the portfolio. By using EVIC instead of market cap as the attribution factor, the method can be used for both equity and fixed income.
	*Sovereign Equivalent**	"GHG emissions": Share of sovereign GHG emissions attributable to the investor's share of total debt outstanding. $\sum_i^n (\frac{Exposure\ to\ Sovereign\ Bond(USD)_i}{Public\ Debt\ Outstanding\ (USD)_i}\ X\ Country\ GHG\ Emissions_i)$
	Key points +/-	+ Metric may be used to communicate the carbon footprint of a portfolio consistent with the GHG protocol, generally interpreted as more impact-oriented as opposed to risk-oriented and hence is frequently used in target setting. - Metric is generally not used to compare portfolios because the data is not normalised, increases in portfolio value (or AUM) will lead to increases in portfolio emissions. - Changes in underlying companies' EVIC can be misinterpreted as reductions in real world emissions.
Carbon footprint (EVIC method) **Also known as:** **Financed emission intensity**	*Description*	Total carbon emissions for a portfolio normalised by the market value of the portfolio, expressed in tons CO_2e / $M invested.
	Formula	$\frac{\sum_i^n (\frac{current\ value\ of\ investment_i}{issuer's\ EVIC_i}\ X\ issuer's\ scope\ 1\ and\ scope\ 2\ GHG\ emissions_i)}{current\ portfolio\ value\ (\$M)}$
	Methodology	Financed emissions above, standardised by portfolio value.
	Key points +/-	+ Metric may be used to compare portfolios to one another and/or to a benchmark. - Metric does not take into account differences in the size of companies (e.g. does not consider the carbon efficiency of companies). - Changes in underlying companies' EVIC can be misinterpreted as reductions in real world emissions.

Notes: the term 'portfolio' can be defined as "fund or investment strategy" for asset owners and "product or investment strategy" for asset managers. Total carbon emissions and carbon footprint can also be calculated using a company's market capitalisation instead of Enterprise Value including cash though we do not use this because it cannot be used across asset classes. PCAF has recently released new guidance on sovereign emission financed emissions and after review we may elect to change this attribution factor in the future. Sovereign "GHG Emissions per capita" are also displayed at Russell Investments for completeness, but this measure does not translate to the above standard industry uses.

Supplemental metrics

Following the UK's Department for Work and Pensions mandating TCFD-related disclosures for institutional pension schemes, a standard set of climate-related metrics are increasingly being expected by UK clients and consultants. The following metrics are part of this core template.

Table 4: TCFD climate-related metrics

METRIC	SUPPORTING INFORMATION	
Data quality	*Description*	Proportion of a portfolio where there is high quality data. Additional climate change metric recommended by the Task Force on Climate-Related Financial Disclosures (TCFD).
	Methodology	Calculates the proportion of Scope 1-2 emissions that are verified, reported, estimated or unavailable.
	Key points +/-	+ Metric allows for a better understanding of ESG data accuracy, + More transparency into the breakdown of data quality. - Does not look into climate change analysis directly. - Estimated data coverage is subject to model risk.
Portfolio temperature alignment (Implied temperature rise)	*Description*	Metric that attempts to estimate a global temperature rise associated with the greenhouse gas emissions of a portfolio. It is a forward-looking metric that incorporates current GHG emissions, alongside other assumptions, to estimate expected future emissions. It is as expressed as a temperature score. Portfolio Alignment climate change metric recommended by the Task Force on Climate-Related Financial Disclosures (TCFD).
	Formula	$Temperature\ Score_F = \frac{\sum_{i \in F} Temperature\ Score_i \times GHG\ intensity_S \times Current\ value\ of\ investment\ in\ entity_i}{\sum_{i \in F} GHG\ intensity_S \times Current\ value\ of\ investment\ in\ entity_i}$
	Methodology	Total portfolio temperature alignment is calculated as a weighted average of underlying security temperature scores using sector intensity and AUM weighting. These scores are sourced from Planetrics.
	Key points +/-	+ Forward looking and accounts for inherent differences in carbon emissions across industries and regions. + Can be compared across different benchmarks, portfolios, and asset classes. - Methodology constantly developing, and is likely to change significantly as quantitative methods are researched further. - Complex and opaque regarding influence of key assumptions.

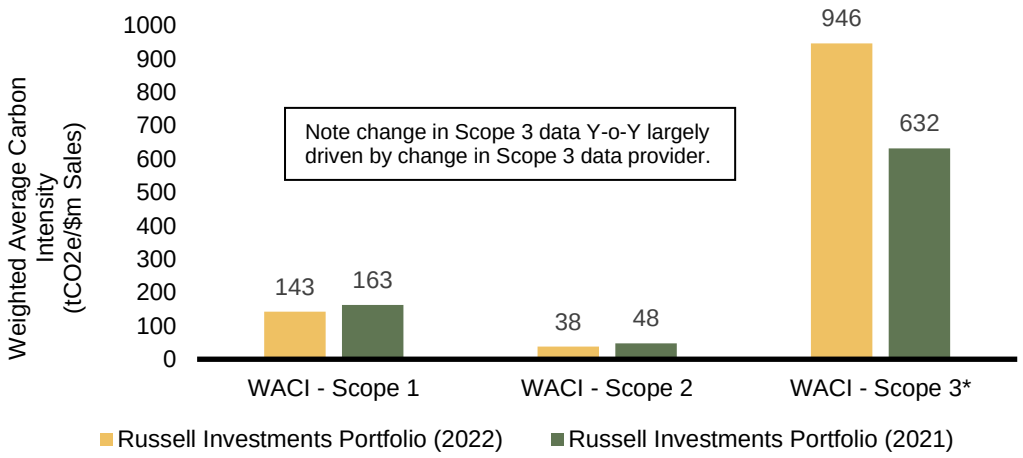
Russell Investments' global portfolio carbon emission metrics

Table 5: Weighted Average Carbon Intensity (WACI)

FUND	WACI- SCOPE 1 (TCO2EQ PER MILLION USD REVENUE)	WACI- SCOPE 2 (TCO2EQ PER MILLION USD REVENUE)	WACI- SCOPE 3 (TCO2EQ PER MILLION USD REVENUE)
Russell Investments Portfolio	143	38	946
MSCI World Index	114	27	799
MSCI Emerging Markets Index	252	64	1,179
Bloomberg Global Aggregate Credit	198	31	961

Source: Russell Investments, MSCI, Bloomberg, Portfolio and emissions data as at 31 December 2022.

Exhibit 3: Weighted Average Carbon Intensity (WACI) 2022 vs. 2021



Source: Russell Investments, MSCI, Bloomberg, Portfolio and emissions data as at 31 December 2022.

*Change in Scope 3 data Y-o-Y largely driven by change in Scope 3 data provider

Table 6: Financed Emissions

FUND	FINANCED EMISSIONS – SCOPE 1 (TCO2EQ)	FINANCED EMISSIONS – SCOPE 2 (TCO2EQ)	FINANCED EMISSIONS – SCOPE 3 (TCO2EQ)
Russell Investments Portfolio	6,220,568	1,642,082	51,479,071

Source: Russell Investments, MSCI, Portfolio and emissions data as at 31 December 2022.

Table 7: Carbon footprint

FUND	FINANCED EMISSIONS – SCOPE 1 (TCO2EQ / $MIL INVESTED)	FINANCED EMISSIONS – SCOPE 2 (TCO2EQ / $MIL INVESTED)	FINANCED EMISSIONS – SCOPE 3 (TCO2EQ / $MIL INVESTED)
Russell Investments Portfolio	54	14	445

Source: Russell Investments, MSCI, Portfolio and emissions data as at 31 December 2022.

Table 8: Sovereign bonds

FUND	GHG INTENSITY (T/USD MILLION GDP NOMINAL)	GHG PER CAPITA (TCO2EQ PER CAPITA)	GHG OWNERSHIP (TCO2EQ)
Russell Investments Portfolio	260	13	5,919,425
FTSE World Government Bond Index	253	13	N/A

Source: Russell Investments, MSCI, FTSE, Portfolio and emissions data as at 31 December 2022.

Table 9: Data quality

FUND	CARBON DATA REPORTED	CARBON DATA ESTIMATED	CARBON DATA UNAVAILABLE
Russell Investments Portfolio	75%	19%	6%

Source: Russell Investments, MSCI, Portfolio and emissions data as at 31 December 2022.

The above metrics are calculated based on coverage of approximately 95% of the global portfolio. New for this year is our inclusion of sovereign carbon metrics.

On their own, carbon metrics can be difficult to interpret, however they serve as a useful baseline for tracking progress against emission reduction targets over time. Comparing the carbon metrics to common benchmarks can also provide useful context.

Key observations from carbon footprint assessment:

- Emerging markets have significantly higher emissions than either developed equity markets or the global bond index. The global bond index has higher emissions than developed market equities. Reflecting this multi-regional and multi-asset exposure, our Russell Investments Portfolio has higher exposure than developed equities and lower than either emerging markets or global bonds.
- The Scope 1 and 2 weighted average carbon intensity declined from 2021 to 2022 for our Russell Investments Portfolio, supporting the notion that firms globally are generally becoming more carbon efficient.
- Interestingly, the Scope 3 emissions increased drastically from 2021 to 2022. This increase is driven by a switch in our carbon data provider which highlights scope 3 emissions can fluctuate between providers due to their unique estimation methodologies. Thus, while we feel it is important to continue to track and report on Scope 3 emissions, we still feel it is premature to draw robust conclusions given coverage and methodologies are changing quickly.

Looking forward:

- We will continue to track carbon metrics to understand the organic decarboniation taking place in the broad market in addition to tracking our relative exposure over time.
- Targets are placed for reducing exposure to carbon metrics in many of our sustainable strategies. Additionally, reduction targets will feature as one component of our approach to managing portfolios in line with a net zero objective, more details of which are provided in the net zero target setting section below.
- We will continue to evaluate the quality of Scope 3 emissions data and look to phase in more broad use of Scope 3 in line with methodologies such as Partnership for Carbon Accounting Financials (PCAF) and the EU's Sustainable Finance Disclosure Regulations.

Scenario analysis

In recognition that climate scenarios are both an important component of the TCFD recommendations but also require considerable domain expertise, Russell Investments partnered with Planetrics to expand our climate risk modelling capabilities. Below we assess the expected impact of different climate scenarios at the portfolio, sector, and asset-class level, and further decompose impact across transition and physical channels.

Table 10: Impact of climate risk scenarios

For background

A key input to scenario analysis is the scenario narrative, or the underlying assumptions to each scenario.[2] In the analysis that follows, we use three NGFS (Network for Greening the Financial System) scenarios: the hot house world scenario, a net zero 2050 scenario, and a delayed transition scenario. Details on the key assumptions for each scenario are shown below:

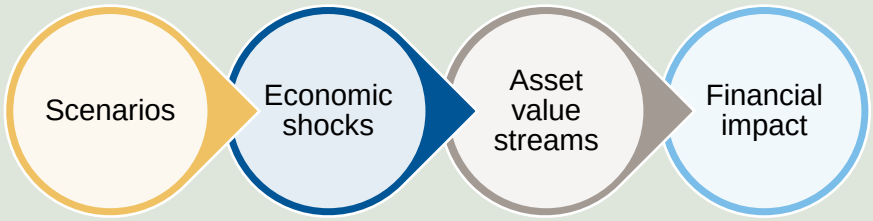
Scenario	Description	Median 2100 warming	Net zero year	Tech change	Carbon Dioxide Reduction (CDR)	Regional policy variation
Hot house world (current policies)	Existing climate policies remain in place, but there is no strengthening of ambition level. Thus, there is no transition risk. **Heightened physical risks dominate**, and are assumed through high climate sensitivity, specifically 90th percentile temperature increase (4.4°C by 2100). This leads to high ice-sheet melt and increasing tropical cyclone risks.	4.4°C	N/A	Slow change	Low use	Low variation
Delayed transition	Imposes the 2°C target in 2100 and allows for temporary overshoot. Annual emissions do not decrease until 2030. Strong policies are then needed to limit warming to below 2°C, and **transition risks dominate especially from 2030 onwards**. This scenario includes regional carbon price variation. Regional net-zero targets for countries with clear commitments at end 2020 (i.e., China, EU, Japan, and USA) are applied from 2030 onwards, but not imposed for other countries.	1.6°C	2055	Slow until 2030; fast thereafter	Low use	High variation
Net Zero 2050	Limits global warming to 1.5°C (the median temperature returns to below 1.5°C in 2100, after a limited temporary overshoot) through stringent climate policies and innovation, reaching global net zero CO2 emissions around 2050. Some jurisdictions such as the US, EU and Japan reach net zero for all GHGs by 2050. **Transition risks dominate, and begin immediately.**	1.5°C	2050	Fast change	Medium use	Medium variation

Source: NGFS Technical Documentation (2021)

These scenarios are the first step in a four-step modelling framework which translates climate scenarios into economic shocks, then asset value streams based on company and industry-level data, and finally, discounted back to present value financial impact at a security-level. This methodology was developed by Planetrics.

[2] As recommended in the TCFD guidance, scenario narratives should be relevant, challenging, and distinctive. They should focus on different combinations of the key factors and should illuminate future exposure to both transition and physical climate-related risks and opportunities.

Four-step climate modelling framework



Following the four-step scenario analysis methodology highlighted above, valuation impacts are derived at a company-level by discounting cash-flow estimates from the asset modelling component to a net present value. We model these impacts to both equities and fixed income, although there are some additional asset-class-specific steps required for fixed income securities. The result is a percent gain or loss on the portfolio in each scenario based on a timeline out to 2050, discounted back to today. This provides an estimated financial impact under the different climate scenarios.

Table 11: Climate scenario analysis: Impact on portfolio value

FUND	SCENARIO	IMPACT ON VALUE TODAY (COMBINED)	IMPACT ON VALUE TODAY (PHYSICAL)	IMPACT ON VALUE TODAY (TRANSITION)
Russell Investments Portfolio	Hot house world	-1.15%	-1.15%	0.00%
	Delayed transition	-3.15%	-0.27%	-3.00%
	Net Zero 2050	-4.92%	-0.17%	-4.76%

Source: Russell Investments, Planetrics[3] as at 31 December 2022.

Key observations from scenario analysis impact on portfolio value:

- Our global portfolio experiences the largest valuation impact in the Net Zero 2050 scenario.
- In this scenario, the economy undertakes a rapid transition to a decarbonised economy, starting immediately. This rapid transition means that most of the financial impact stems from transition-related risks such as the introduction of a large and sudden carbon price.
- It is likely surprising to some readers that the transition scenarios (delayed transition and net zero by 2050) show greater financial impacts than in the hot house world scenario. These scenarios involve more short and medium-term risks (largely transition-related) and because the risks are discounted back to present day, these shorter-term risks dominate the longer-term physical risks of the hot house world scenario.
- It is also important to note that this scenario analysis only extends to 2050 which understates the worst physical hazards in a hot house world which will materialise after 2050. This point is expanded on in the section on underestimating physical risks.
- The high magnitude of the valuation impact in transition scenarios suggests financial markets are not pricing in a transition. If they were, the expected impact on today's prices would be closer to zero.
- Valuation impacts at the portfolio level mask significant variation within the portfolio at the sector or security level.

[3] This figure has been created by Russell Investments drawing on selected data provided by Planetrics Ltd (which does not include investment advice). The figure represents Russell Investments' own selection of applicable scenarios and/or its own portfolio data. Russell Investments is solely responsible for such scenario selection, all assumptions underlying such selection, and all resulting findings, conclusions and decisions. Planetrics Ltd. Is not an investment adviser and has not provided any investment advice.

Looking forward

- Quantitative climate scenario analysis is a new tool and our immediate priority is to make this information more accessible to investment decision makers, while also recognising that the ability to use this information in a critical manner requires upskilling.
- The models are complex and rely on significant assumptions, so we will take time to digest both the outputs and underlying assumptions before basing an investment decision directly on these outputs.

Discussion regarding the underestimation of physical risks

It is important to understand that current models for assessing physical climate risks can underestimate how much damage may be caused to investment portfolios. Specifically, climate risk models often fail to incorporate non-linear feedback loops and tipping points that may be triggered by climate change, resulting in an underestimation of the severity and rapidity of potential physical impacts. The interconnected nature of the global economy also means that effects can cascade, and most models rely on either first order effects or a simplistic extrapolation of past correlations between climate variables and financial metrics. This will further exacerbate the potential for discrepancy between projected and actual outcomes.

However, modelling these tail risks is very challenging. While the Planetrics model focuses on the modelling of physical risk on the expected average annual damages (AAD) and impact from rising temperatures, individual tail events are currently left out of the model. This means that the estimated average physical impacts could obscure the aggregate impact of a sequence of years with severe acute physical risks. For example, a string of consecutive years with severe weather impacts is likely to cause more disruption than that implied by the average annual damage estimates.

In modelling, it is crucial to understand the potential biases inherent to the model. In the case of the Planetrics physical risk model, the largest impacts are projected to come from flood risk. Since the model does not incorporate asset-level spatial data, due to the lack of high-quality spatial data sets, the modelled impacts are predominantly shown for companies possessing large amounts of physical assets (property, plant, and equipment) on the balance sheet. Consequently, it will be inherently biased against those firms, regardless of the exact location of those assets and whether or not they actually fall within projected flood-prone regions. Conversely, the modelling of other physical risks, like chronic heat, presents a challenge due to the lack of robust observational data that accurately captures the complexity involved with an interconnected global economy and a changing climate.

Another key model limitation is coverage of disruptions in the supply chain stemming from physical vulnerabilities. Instances where supply chain disturbances are triggered by physical hazards like floods or hurricanes have the potential to impact earnings. This is a recognised gap and the plan moving forward is to incorporate these risks comprehensively into future iterations of the model.

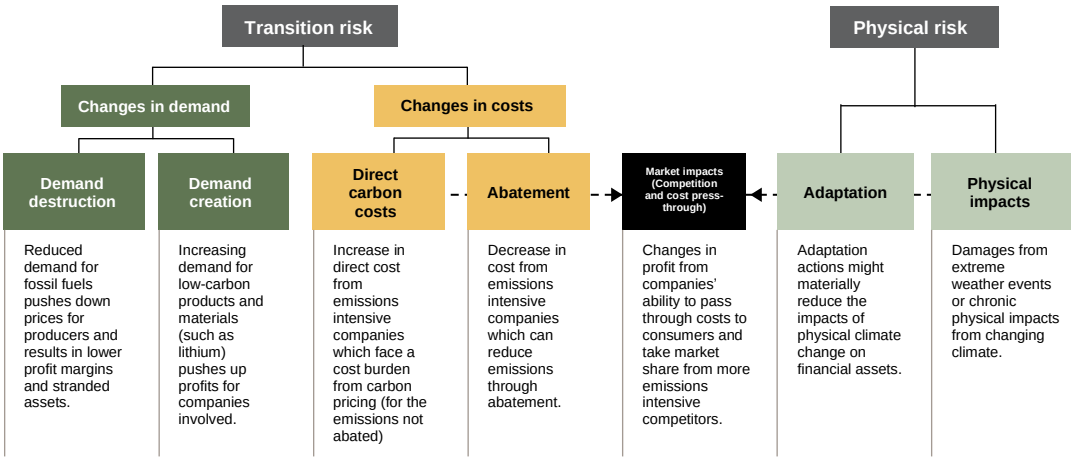
Finally, when addressing the intricacies of modelling physical climate risks, the timeframe emerges as a critical factor warranting thorough consideration. This is particularly evident in the context of employing discounted cash flow (DCF) models to evaluate potential impacts on asset value. The models used here estimate shocks to cash flows out to 2050, and a terminal value to estimate value beyond that. The terminal value is a key assumption as it is common to assume perpetual and constant growth, an assumption that overlooks the dynamic nature of future climate-related effects. Planetrics attempts to reduce this bias by implementing a onetime shock on the terminal value to capture additional physical risk impacts from 2051 through 2080. This is important as estimates of non-transition scenarios predict that physical impacts will actually increase, not cease, beyond the modeling period of 2050. While this is an improvement over many other models, we still expect that physical risk generally, and scenarios where physical risks over longer time horizons are most severe in particular, are likely to be understated.

We hope that by highlighting these limitations and discussing the complexities involved in climate-related scenario analysis, investors can better interpret scenario analysis results.

Portfolio valuation impacts by channel

Building upon the transition and physical risk categories introduced in Table 2, the overall portfolio valuation impacts above can be separated into key risks and opportunities; not only at the level of physical and transition risk, but within these channels too. The following methodology was developed by Planetrics.

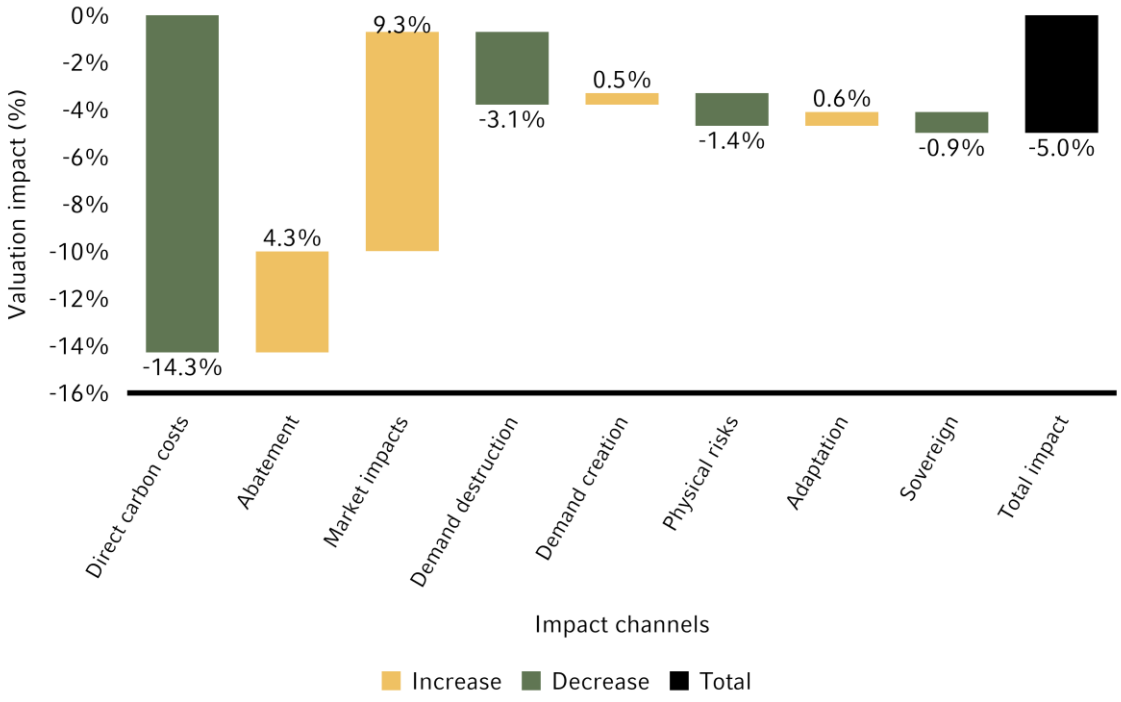
Exhibit 4: Physical and transition risk: seven channels of impact



Source: Planetrics.

These channels are estimated at the company level, using company and industry-specific information. Take, for example, a utility company that experiences relatively inelastic demand. An economic shock, such as an increased carbon price, can be partially mitigated through adopting new technologies capable of reducing emissions and by passing through costs to consumers via higher prices, with relatively little impact on asset valuation. The company's valuation may then be impacted (either positively or negatively) by a change in consumer demand. For example, does the utility company generate power from renewables? Finally, the utility company may experience valuation impacts based on its exposure to, and its ability to adapt to, physical hazards. These asset-level estimates are then rolled up to the portfolio level to produce the impact by channel below.

Exhibit 5: Portfolio impacts based on a high transition risk scenario (Net Zero 2050)



Source: Russell Investments, Planetrics[4] as at 31 December 2022.

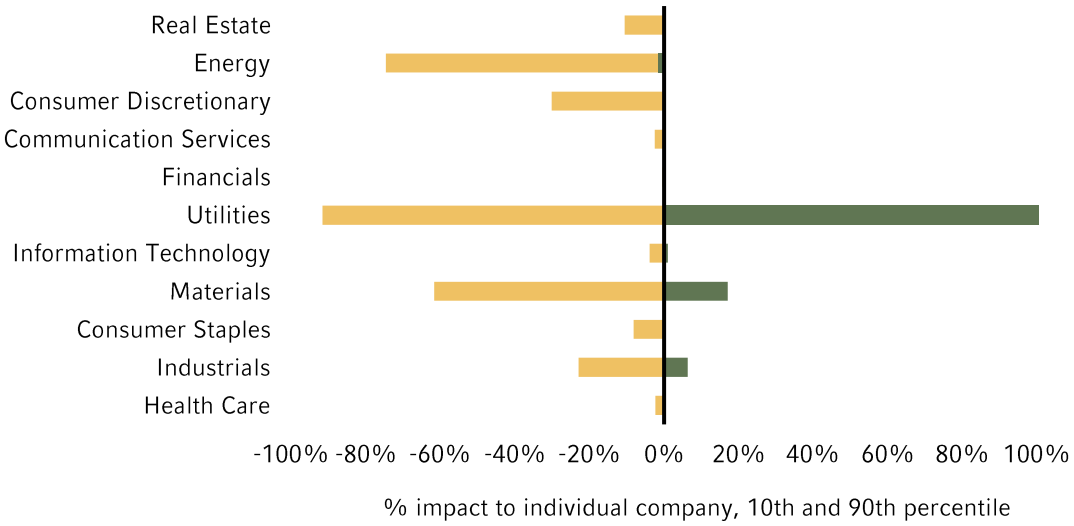
Key observations from portfolio valuation impacts by channel in net zero scenario:

- The main driver of valuation risk is the direct carbon cost channel, responsible for a valuation impact of approximately -15% in both transition scenarios. In terms of magnitude, this swamps the impact of other risks. This reinforces why the transition scenarios exhibited the biggest loss since transition scenarios are where carbon costs are high.
- Firms can abate some of this cost with carbon efficiency measures (abatement) and passing on costs to consumers ("market impact"). Through these measures firms offset much of the direct carbon cost, and this varies by industry.
- Rounding out the transition lens, demand destruction is more than 5x the magnitude of demand creation at the total portfolio level, but again, there are opportunities for demand creation at an individual firm and industry level.
- Physical risk is a relatively smaller valuation impact, at least measured in terms of present value. The firms in our portfolio are estimated to offset roughly half the -1.5% physical impact with adaptation measures. See note above regarding model limitations around physical risk financial impacts.

Portfolio valuation impacts by sector allocation

Sector allocation is a key determinant of a portfolio's climate risk exposure, and we find significant variation both among sectors and within sectors. The highest at-risk sector allocations are energy, utilities and materials, which should not be surprising to those familiar with carbon emissions. What is more noteworthy however, is that within some of these sectors, the impact is very heterogenous: materials, industrials and utilities sectors have a very wide range of winners and losers.

Exhibit 6: Variation of valuation impacts within sectors



Source: Russell Investments, Planetrics[4] as at 31 December 2022.

Key observation from portfolio impacts by sector allocation in net zero scenario:

- These variations, as shown in the chart above, highlight the importance of differentiating between winners and losers in the critical sectors like utilities and materials.
- As an example, above we look at the intra-sector variance and show the range between the 10th percentile and the 90th percentile firms within each sector. In utilities for example, 10% of companies are estimated to lose over 90% of their valuation in the Net Zero 2050 scenario. This is in contrast to other utilities who experience an almost 155% valuation increase (the chart above is truncated to range between –100% and +100%).

Portfolio valuation impacts by asset class

Table 12: Valuation impacts based on asset class

	SCENARIO	VALUATION IMPACT
Equity	Hot house world	-1.53%
	Delayed transition	-3.84%
	Net Zero 2050	-5.05%
Corporate debt	Hot house world	-0.19%
	Delayed transition	-1.63%
	Net Zero 2050	-2.78%
Sovereign debt	Hot house world	-0.03%
	Delayed transition	-0.92%
	Net Zero 2050	-6.33%

Source: Russell Investments, Planetrics[4] as at 31 December 2022.

Key observations from portfolio valuation impacts by asset class:

- Asset class impacts are less prominent than sector impacts
- The larger impact on sovereign debt in transition scenarios can largely be explained by the high inflationary pressure that characterises transition scenarios, due to high carbon prices. Net Zero 2050 requires a sharp increase in carbon prices starting immediately, causing a more immediate shock than the delayed transition[4].
- While this was generally true across sovereign assets, impact varied by country. For example, if a country's GDP is forecasted to slow due to a rising temperature and lower productivity, this could lead to lower interest rates and an appreciation of its sovereign bond. This contrasts with the inflationary pressure of carbon prices, which also vary by region. Rising inflation led to interest rates increases, ultimately having a negative impact on the country's sovereign debt. Impact also varies depending on if the asset is inflation-linked or not.
- Duration also plays a role, with longer duration assets generally experience larger effects than shorter duration assets. This partially explains why equity assets, which have a longer effective duration, experience bigger impacts than corporate debt.
- Finally, we see that most of the physical risk exposure is concentrated within the equity holdings.

As multi-asset asset manager, climate-related considerations faced by other asset classes such as private real estate, private credit, and alternatives are front and center in our development work. Currently, we leverage the managers we hire to assess these risks, as data availability and methodologies are still developing. However, we hope to expand our analysis to incorporate additional asset classes into our global portfolio scenario analysis exercise in future iterations of this report.

Looking forward

Performing climate scenario analysis is only a first step in addressing climate risk, and it can be used to identify asset classes, sectors, mandates, and securities for further investigation and oversight. It is also useful for building a general understanding of the relative magnitude of risks. From a very high level, we can see that the impact of transition scenarios can be significant. However, we also recognise that despite considerable progress in modelling the financial impacts of climate change, these are still very new methods that rely on significant amounts of estimation and simplification. Therefore, we consider these inputs to be an investment decision making process, supplemented by other robust sources of information, rather than something we are likely to directly manage. We outline our management of climate-related issues further in section 2c.

[4] More discussion of this relationship can be found in the Portfolio Testing Report from IIGCC available here: https://www.parisalignedinvestment.org/media/2021/03/Portfolio-Testing-Report-IIGCC-Net-Zero-Investment-Framework-1.pdf

For background

Temperature scores, including implied temperature rise and temperature alignment, is a new class of metrics method used to assess the alignment of a company or portfolio with the goal of limiting global warming to well below 2 degrees Celsius. An advantage of the metrics is that they are designed to be forward-looking and account for inherent differences in carbon emissions across industries and regions. Wide variations exist in methodologies to estimate temperature scores. The class of metrics aim to estimate expected future emissions, and alignment with the sector-region decarbonisation pathways associated with different levels of global warming. This estimate is then translated into a projected increase in global average temperature, above preindustrial levels, which would occur if all companies in the corresponding sector had the same carbon intensity.

While simple in concept, there is a wide divergence in estimates based on who produces temperature scores. Methodologies and final temperature scores can vary considerably depending on subtle choices under the hood. It is a relatively opaque calculation, making it difficult to back into drivers of the differences. For example, at a company-level, do future emission projections take into account company targets? What likelihood is assumed a company will reach those? Or are forecasts not company-specific and instead based on sector-region pathways? According to 'which forecasts?' At the portfolio-level, how are temperature scores aggregated? Is it a weighted average? Ownership share? Or emission weighted? Despite this complexity, and less transparency than more explicit carbon metrics, the appeal of temperature alignment means use of these metrics is likely to increase, especially as investors look to express portfolio alignment with global temperature targets. We therefore will supplement our carbon emission and scenario analysis disclosures with this metric, while noting we still consider these metrics to be in their development phase, and likely to continue to change significantly as methodologies and consistency develop.

Portfolio temperature alignment

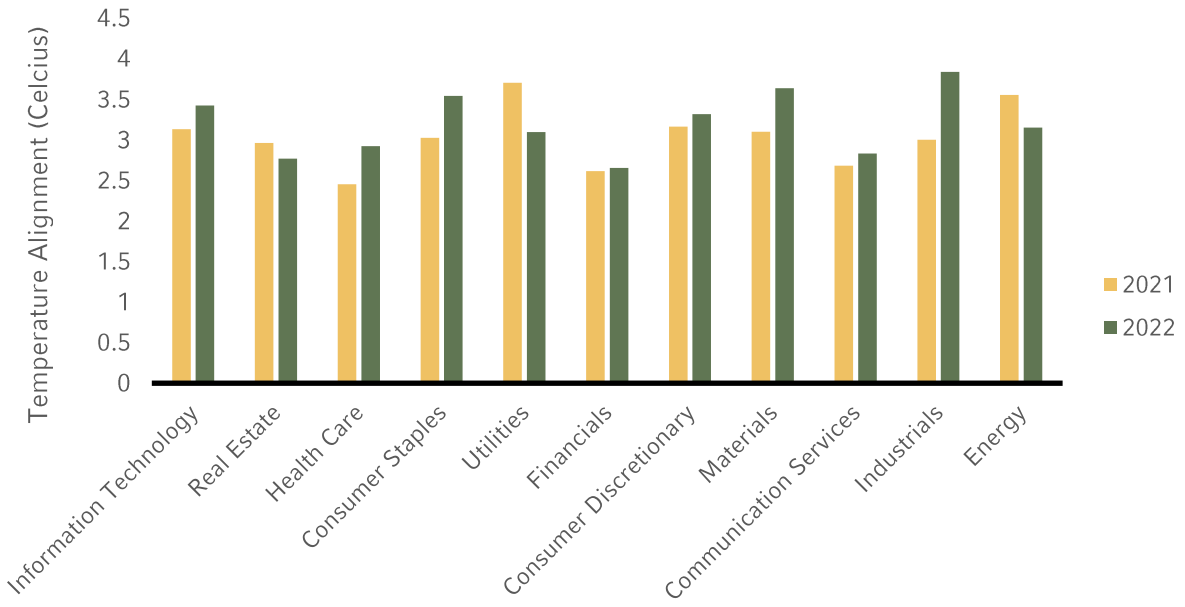
Table 13: Temperature Scores of Global Russell Investments Portfolio and Benchmarks

UNIVERSE	TEMPERATURE ALIGNMENT SCORE (CELSIUS)
MSCI Emerging Markets Index	3.92
MSCI World Index	3.11
Bloomberg Global Aggregate Credit Index	3.26
Russell Investments Global Portfolio	3.31

Source: Data as of 31 December 2022. Russell Investments, Planetrics[4], MSCI, Bloomberg, Value and sector-intensity weights methodology.

At a portfolio level we saw the temperature alignment score increase from 3.25-degrees in 2021 to 3.31-degrees in 2022. This increase occurred in both the emerging markets index and the global bond index, whereas the developed listed equity universe (as measured by the MSCI World index) saw a slight decrease in temperature alignment (3.19 in 2021 to 3.11 in 2022). Both geographical and sector allocations meaningfully drive the aggregate temperature alignment of a portfolio or index. By drilling down to the sector level of our global portfolio, we can see that significant variation exists between sectors, although no sector has achieved a below 2-degrees Celsius temperature alignment.

Exhibit 7: Sector temperature alignment scores (GICS sector classification)



Source: Russell Investments, Planetrics, Data as of 31 December 2022. Value and sector-intensity weights methodology.

Key observations from portfolio temperature alignment

- Temperature alignments have generally increased across sectors, implying that the rate of decarbonisation occurring is less than the modelled sector-region decarbonisation pathways require.
- At a high level, 8 out of the 11 sectors saw their temperature alignment increase year over year. Real estate, financials, and communication services have the lowest temperature alignment while industrials and materials have the highest temperature alignments at 3.8 and 3.5-degrees respectively. In fact, industrials experienced the largest increase year over year from 3.0-degrees to 3.8-degrees, whereas the energy and utilities sectors saw meaningful decreases from over 3.5-degrees to ~ 3.0-degrees.
- Even when looking into what caused materials and industrials to increase so much compared to utilities and energy, it is difficult to track down general themes. This highlights one of the limitations of this metric – it is more of a black box compared to emissions alone.
- It is noteworthy that the sectors with the highest temperature alignment (energy and utilities) last year have meaningfully decreased their temperatures year over year.
- The information technology and consumer staples sectors are aligned with a higher temperature alignment than one might expect based on carbon emissions alone. This highlights one way in which temperature alignment can be additive to the carbon emission lens.

Looking forward

- While useful for providing a more sector-specific forward-looking metric, the disadvantage of temperature scores is that they have not achieved the same level of consistency and transparency that has developed for carbon emissions.
- For the time being, we continue to use carbon emission metrics as our primary reference point for target setting and progress tracking. But we will consider temperature data as a supplementary reference point.

Section 2c: Management of climate risks and opportunities

Following the identification and assessment of climate-related risks and opportunities, we now turn to management. We adopt a multi-layered approach to managing climate issues, including formal policies, portfolio management practice, active ownership, carbon-aware portfolios, and target setting.

Policies and portfolio management practices

Portfolio managers are the front line of defense in managing portfolio risks, and management of climate risk is no different. Rather than building a standalone team, we believe embedding deep expertise and awareness of sustainability risk within investment teams is key to fully integrating climate management into our investment process. This is formalised in our Sustainability Risk Policy.

Sustainability risks policy

Russell Investments' policy is to integrate sustainability risks in our investment solutions by identifying, evaluating and managing relevant risks in our investment manager review process, portfolio management and through implementing proprietary solutions. We believe sustainability risks are most relevant to investment outcomes when they exhibit financial materiality, and, like all investment risks, are incorporated by balancing expected risk with expected reward. In managing investment solutions, we consider financially-material sustainability risks in the context of expected rewards using a blend of inputs from sources including, but not limited to, investment managers, third-party data sources and Russell Investments propriety analysis. Furthermore, we incorporate bespoke sustainability risks based on clients' requirements for customised mandates. Also, we seek to collaborate with our advisory clients to consider, monitor and manage sustainability risk priorities in their portfolios.

In addition to a formal policy, our practices and systems continue to evolve. We continue to extend our Enhanced Oversight practice across asset classes and portfolio manager teams. This practice is detailed in the sections that follow. We released a major enhancement to our portfolio management user interface to include extensive ESG information at the portfolio and security-level. This information now sits alongside traditional investment data such as factor, sector, and country exposures.

Active ownership

Another critical tool employed is active ownership. Our active ownership programme is built upon three core pillars: engagement, proxy voting and industry collaboration. Through our active ownership strategy, we aim to promote good practices in addressing climate-related risks and opportunities where materially relevant. Furthermore, as active owners, we advocate for a regulatory landscape that facilitates the adoption of environmentally responsible practices by businesses. For an in-depth understanding of our active ownership approach, please refer to our Annual Investment Stewardship Report.

Leveraging Russell Investments' open architecture platform to build carbon-aware portfolios

Russell Investments has a history of collaborating with clients to build mandates that explicitly manage climate-related outcomes such as carbon emissions, fossil fuel reserves and renewable energy exposure. We first launched our low carbon strategy in 2015, with a focus on reducing exposure to high carbon emitters and companies' fossil fuel reserves. These strategies are often been built with a specific carbon reduction target such as a 25% or 50% reduction in weighted average carbon intensity or exposure to fossil fuel reserves. Leveraging the implementation platforms developed for use in our own multi-manager funds, we work with clients to leverage our open architecture investment platform as a tool for implementing their climate-related policies and objectives. This can include combining a multi-manager portfolio in a centralised portfolio to enable improved transparency and control over climate-related measures at the total portfolio level, or dedicated allocations to systematic sleeves that complement the rest of the portfolio's risk and sustainability exposures. We continually evolve our approach to incorporating climate risks into portfolios, as well as new data and frameworks, as the space evolves. As of 31 Dec, 2022, approximately $10.9Bn USD of AUM was invested in carbon-managed strategies.

Target setting

In 2021, Russell Investments signed the Net Zero Asset Manager Initiative (NZAMi) to support clients committed to the objective of aligning their investment portfolios with the goal of global net zero emissions by 2050. An important first step is understanding what it means for a portfolio to be aligned with the goal of net zero emissions. After reviewing available methodologies, Russell Investments selected the Paris Aligned Investor Initiative's (PAII) Net Zero Investment Framework as our primary target setting framework. The next step is identifying what funds or products are managed in line with that definition. The decision to manage a portfolio as "in scope" for net zero alignment is client-led, and approximately 25% of our global AUM is currently in scope. As part of our participation with the Net Zero Asset Managers initiative, we provide transparency around targets used for measuring portfolio net zero alignment and tracking progress. For portfolios managed in line with net zero standards, the following interim targets are used to measure progress towards net zero:

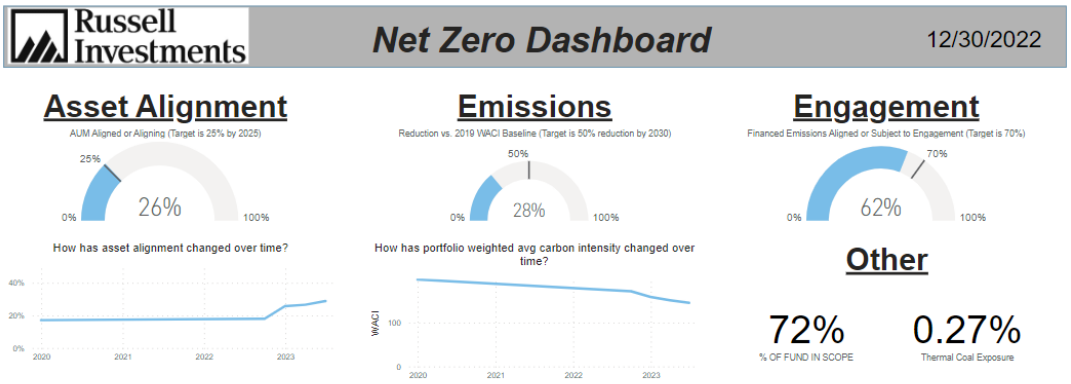
- **Asset Alignment Target:** By 2025, at least 25% of the portfolio by market value is invested in companies that are aligning to net zero. To assess whether a company is aligning to net zero, we leverage the Paris Aligned Investor Initiative's alignment maturity scale[5].
- **Engagement Target:** Engage with companies that are the largest contributors to portfolio emissions. Our goal is for the companies that make up 70% of the portfolio's financed emissions to be either already aligned to net zero, or subject to direct or collective engagement, by 2025.
- **Emission Reduction Target:** Achieve a 50% reduction in the portfolio's carbon emissions intensity by 2030, relative to 2019.

In addition to these interim targets for our investment portfolios, we have also set a goal of reaching net zero in our own business operations by 2030 which we report on in the Operations section of this report.

Progress against interim targets

While acknowledging that the complexity of transition cannot be reduced to a single metric, we believe it is important to provide clear and transparent data points to measure progress. To this end, we invested in building an internal dashboard that monitors our progress across the three primary net zero sub-targets identified above.

Exhibit 8: Snapshot of sample Net Zero Dashboard



Source: Russell Investments, for illustrative purposes

The dashboard tracks progress for each underlying fund or account in scope for net zero alignment, as well as an aggregated Russell Investments Portfolio. This aggregated portfolio only represents the 25% of Russell Investments AUM currently in scope for net zero alignment. Below we report progress for 2022 against the interim targets for the aggregated portfolio.

[5] Asset maturity scale detailed in section 7.2 of PAII Net Zero Investment Framework Implementation Guide. https://www.parisalignedassetowners.org/media/2021/03/PAII-Net-Zero-Investment-Framework_Implementation-Guide.pdf

Table 14: Net zero target progress

TARGET TYPE	2019 BASELINE	TARGET (YEAR, IF APPLICABLE)	CURRENT VALUE (12/30/2022)	STATUS CHECK
Asset alignment	15% of AUM aligned or aligning to net zero	25% (2025)	26% of AUM aligned or aligning to net zero	On Track
Emissions reductions	0%	50% (2030)	28% reduction in weighted average carbon intensity relative to 2019 baseline	On Track
Engagement	62% of financed emissions aligned or subject to direct or collective engagement	70%	62% Of financed emissions aligned or subject to direct or collective engagement	On Track

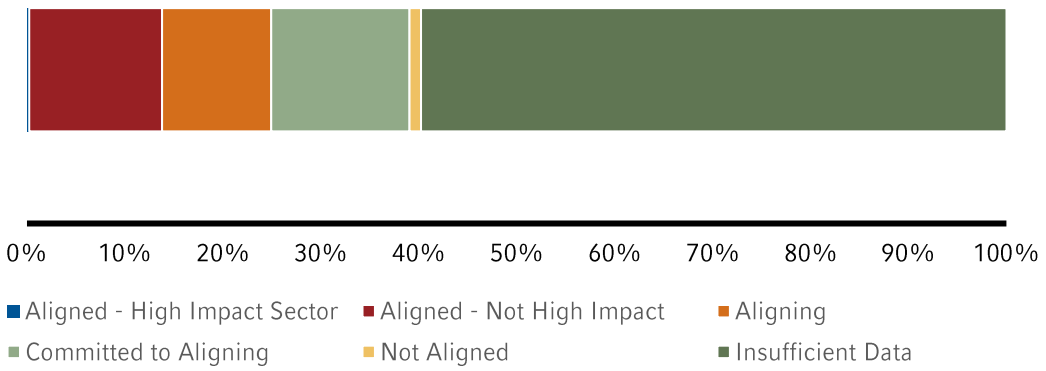
We provide additional background on the asset alignment target as this is a relatively new metric for many audiences. In essence: asset alignment refers to a bottom-up assessment of what percent of the portfolio is invested in companies that are themselves aligned to net zero. For example, if 20% of companies in the portfolio (by market cap) have set a Science Based Target Initiative (SBTi) target, that could be considered 20% asset alignment. At Russell Investments however, instead of relying solely on the SBTi, we adopt the NZIF framework to assess asset maturity. The NZIF directs investors to collect data from the Climate Action 100+ benchmark, the Transition Pathway Initiative, and the Science Based Target Initiative (SBTi). This data is supplemented with available information from our climate data providers. Using indicators from these input data sets, we assess each company against six core criteria designed to measure the maturity of the company in terms of net zero commitment. Have they committed to aligning by setting a long-term ambition to be net zero aligned? This is the first step on the ladder. Beyond that, has the company developed interim targets, provided sufficient disclosure around the target and laid out a decarbonisation strategy? This is the next step in maturity, "aligning to net zero". A company is considered "aligned" when they are on track for all six criteria. Finally, when a company has actually reduced emissions to zero, or the level required of their industry in a net zero scenario, they will be assessed as "achieving net zero". Today, almost no companies are already achieving net zero.

Climate Action 100+ | **Transition Pathway Initiative** | **Science Based Target Initiative**

Core	Criteria	Net zero	Aligned to net zero	Aligning towards net zero	Committed to aligning	Not aligned or insufficient data
1	**Ambition**		✓*		✓	
2	**Targets**		✓	✓		
3	**Emission Performance**	✓**	✓			
4	**Disclosure**		✓	✓		
5	**Decarbonisation Strategy**		✓*	✓		
6	**Capital Allocation Alignment**		✓*			

Below we show how the global portfolio is distributed today against this rubric.

Exhibit 9: Global portfolio distribution



Source: Russell Investments, Data as of 31 December 2022.

Clearly illustrated in the chart above, a major obstacle is the absence of vital data for a substantial portion of the portfolio – roughly 60% of the portfolio lacks the foundational information provided by the public datasets. However, our perspective remains optimistic. We anticipate that as companies continue to bolster their transparency efforts and embrace climate-related targets and commitments, this specific aspect of the assessment will gradually diminish over time.

Section 3: Business operations

In April 2021, Russell Investments became a signatory to the NZAMi and, in so doing, committed to support the goal of net zero greenhouse gas ('GHG') emissions by 2050, in line with global efforts to limit warming to 1.5oC ('net zero emissions by 2050 or sooner'). Russell Investments published its initial target disclosure on 1 May 2022.

Under the NZAMi, Russell Investments has committed to take action to reduce our operational (Scope 1 and 2) emissions in line with the goal of achieving global net zero by 2050 or sooner. To this end, during 2022, Russell Investments went beyond the NZAMi expectations and worked with an external carbon specialist to enhance its Scope 1, 2 and 3, Category 1-14 GHG emissions footprint, achieving a full GHG inventory for 2021. We have provided our 2021 GHG emission footprint below:

Table 15: Russell Investments' 2021 GHG emission footprint

SCOPE	TOTAL EMISSIONS (tCO_2e) MARKET BASED	TOTAL (%)
Scope 1	75	0
Scope 2 – Market Based	1,134*	1
Scope 3 (Categories 1-14)	111,895	99
TOTAL (Market Based)	**113,105**	**100**

Market Based reporting reflect efforts and changes made in purchasing renewable energy.

*We have decided to bring functions that were previously outsourced back in house which may increase our electricity consumption.

In 2023 Russell Investments began constructing its net zero target and roadmap for its scope 1 and 2 emissions. To do so, Russell Investments will reference industry guidance such as the SBTi's Net Zero for Corporates, to ensure the decarbonisation trajectory meets our target, emphasising real world emissions reductions. Russell Investments will look to support Beyond Value Chain Mitigation[6] through the use of additional verified offsetting projects. Once established, we will release the details of our GHG emissions target along with progress made against this target and corresponding initiatives adopted. Regarding Russell Investments' Scope 3 emissions footprint, our GHG inventory shows that our most material source of emissions (secondary to our financed emissions) is from our purchased goods and services (Scope 3, category 1).

Across 2023, we will also construct and adopt a strategic approach to supplier engagement, focusing on the most material suppliers to reduce our scope 3 emissions. Russell Investments will continue to monitor the release of net zero related frameworks, tools and guidance notes specific to the financial services sector, to ensure we are adopting best practice and staying up to date with the latest climate science.

[6] Beyond value chain mitigation refers to mitigation action or investments that fall outside of a company's value chain. This includes activities that avoid or reduce greenhouse gas emissions, and those that remove and store greenhouse gases from the atmosphere.

Global sustainability governance structure

In 2021, we created the Global Sustainable Work Practices Council, chaired by Vernon Barback, our Chief Operating Officer. The Council brings together members to work year-round with the mission to identify and reduce the impact on the environment by ensuring that our day-to-day procedures are carried out in the most sustainable manner. The overarching purpose of the Council is to:

- Develop a set of objectives in line with the firm's commitment to support the goal of achieving net zero by 2050.
- Provide a framework for setting objectives, reviewing initiatives and monitoring performance.
- Ensure a consistent approach to best practice principles is adopted across various regional offices.
- Ensure that our internal practices reflect what we advocate to the wider investment community, including our clients, prospects and investments partners.

The Council is supported by three regional groups across North America, EMEA and APAC. They are critical in bringing awareness to employees and creating a sustainable culture at Russell Investments. The regional groups are also responsible for raising associate engagements via events and training and encouraging associates to adopt sustainable practices in their day-to-day decisions. Initiatives organised by our regional groups are further detailed in the section titled, "Sustainability innovation across the globe".

Sustainability innovation across the globe

Our people are ultimately the drivers of change in our organisation and communities. One of the ways we harness this is through our global sustainable work practices group, made up of associates from across the globe, who implement initiatives to improve our office environment and communities for the greater good. This can involve introducing new infrastructure, suppliers, or practices in our offices, to organising volunteer days for associates and arranging events to raise awareness of global movements such as Earth Day. Below are some examples of the activities undertaken in 2022.

Important information

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