TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

2024 GLOBAL REPORT

Russell Investments

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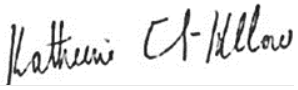
Foreword

As fiduciaries, our duty is to consider all factors that influence financial performance and client capital. The climate, which shapes our daily lives and yields substantial implications for financial markets, continues to play an important role in this context. Whether it is the risks associated with the increasing frequency of extreme weather events, or the opportunities of a carbon-conscious economy - the climate is shaping market dynamics, asset values, and investment returns. Our commitment to address climate-related risks and capitalise on emerging opportunities is fundamental to our mission of protecting and enhancing our clients' investments.

In this report, we detail how we assess and manage climate-related risks and opportunities through comprehensive governance, strategic planning, risk management processes, and via detailed metrics and analysis. Our scale and multi-manager platform help deepen our understanding of the climate's impact on financial markets and influences on our client's portfolios.

Our TCFD report is a testament to our unwavering commitment to our clients, showcasing how we incorporate climate-related risks into our analysis and our dedication to transparency. It highlights our efforts to provide in-depth insights and to align investment portfolios with a future that is both sustainable and resilient.

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

President and Chief Investment Officer, Russell Investments

Executive summary

The challenge

Recognising that the global response to climate change will create financial impacts, Russell Investments formally endorsed the Taskforce for Climate-related Financial Disclosure (TCFD) in 2019. Since then, we've seen the important implications that this global response will have on our clients' portfolios. Climate change-driven shifts in capital flows and consumer preferences can impact the financial performance of companies in which we invest, and incorporating climate-related risks into the financial system continues to be 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

We have made considerable progress incorporating climate change considerations into our business. In this TCFD report, we show how we integrate climate awareness into our investment process. This includes:

- **Establishing appropriate governance** – Establishing governance around climate risks, including development of a climate change policy, addition of climate metrics to our risk management dashboard, and identification of individuals responsible for our climate response.
- **Extending quantitative research** – Expanding the depth of our quantitative risk assessment capabilities for transition and physical risk, including increased granularity through a partnership with a climate model specialist.
- **Policy development** – Enhancing the process through which climate risk is managed in portfolios, as detailed in our Sustainability Risk Policy, which was reviewed and approved by our Investment Division Responsible Investment Committee. The key elements of this policy direct investment professionals to leverage data, sub-adviser insights and in-house expertise to identify and manage sustainability risks.
- **Active ownership** – Engaging with investee companies on the topic of climate change risk and natural capital – with over 50% of our corporate engagements covering environmental issues in 2023.
- **Solution development** – Continuing to enhance how we are managing carbon reductions in our portfolios, as we have done since first launching low carbon strategies in 2015. This includes launching new funds and evolving our internal resources for investment professionals.

In recognition that tackling climate change requires global coordination, we emphasise collaborative action including:

- Aligning with other investors to encourage comparable disclosures and consistent regulatory frameworks, which is a necessary step to improving the availability and quality of data.
- Engaging collectively with systemically important emitters as a powerful tool for addressing systemic risk. This includes our support for Climate Action 100+ and other collective engagement channels.
- Sharing best practices across industry practitioners to facilitate information sharing and collective knowledge building. This includes collaborations with, and support for, the Institutional Investors Group on Climate Change (IIGCC) and the Transition Pathway Initiative (TPI), among others.

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.

Additionally, we are working with clients to leverage our open architecture investment platform as a tool for implementing their climate-related policies and objectives. In 2023, we launched bespoke and commingled strategies, targeting both listed and private markets, with a range of sustainable and carbon-related goals, and we have laid the groundwork for additional solutions in 2024. Our sustainable multi-manager solutions will continue to leverage our market-leading overlay capabilities, while moving beyond carbon-focused metrics to include forward-looking sustainability insights. In addition, we developed a proprietary Sustainable Transition Stock Universe and have begun work on evolving our decarbonisation strategies to meet the rapidly evolving needs of our clients and the broader industry, including our Decarbonisation 3.0 framework which is set to be released in 2024. These efforts support our global solutions platform and underpin our ability to customise and deliver tailored outcomes for clients.

For assets in scope for net zero alignment, our work will continue to meet interim targets – in particular, digging deeper into specific portfolios, asset classes, and geographies that are further behind relative to global interim targets. We are developing 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 with their portfolio objectives.

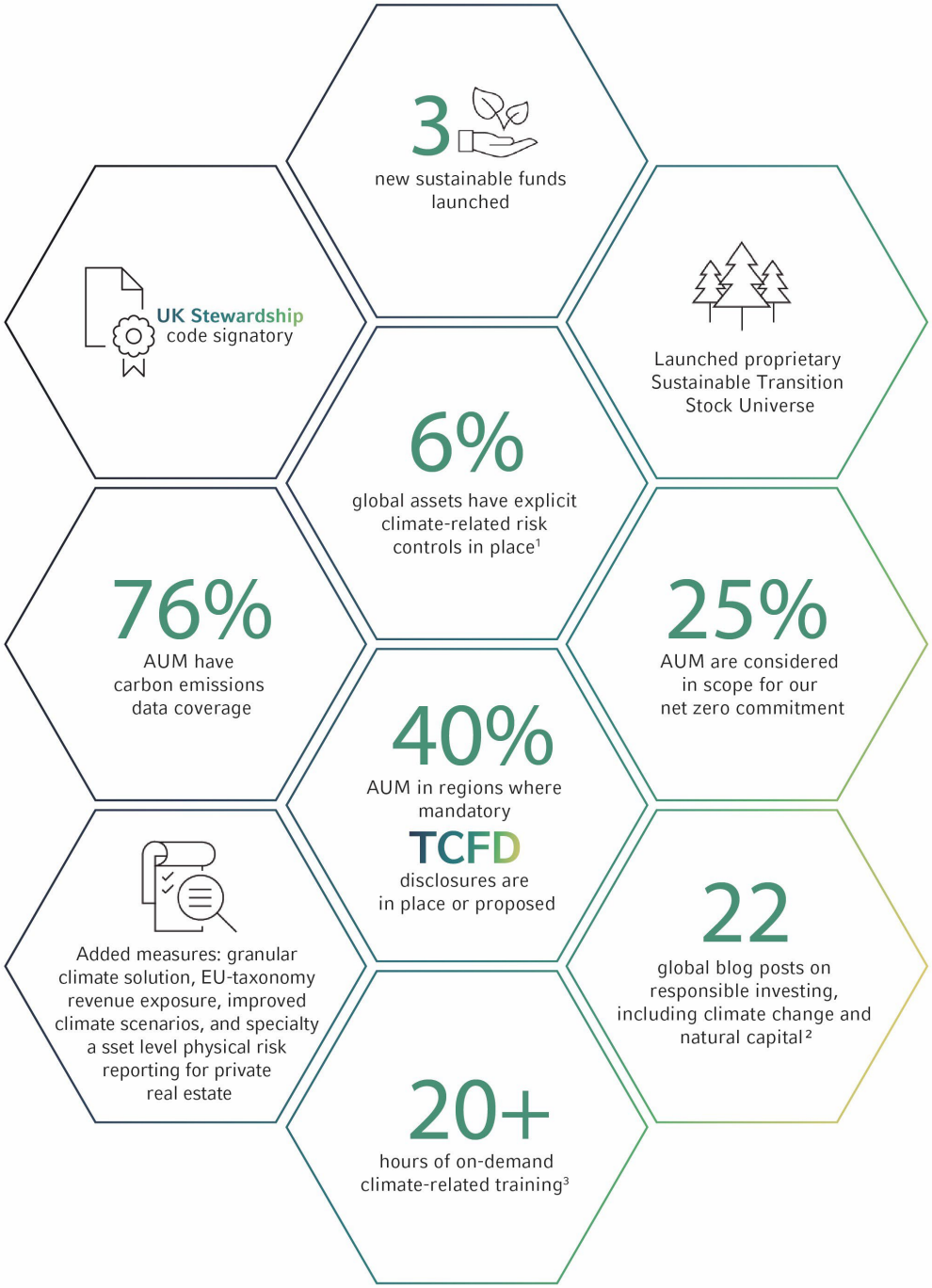
This report

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 taken across our client base and by the managers in our open architecture platform, we are committed to continuing our own disclosure in line with the TCFD recommendations, as well as enhancing our ability to deliver robust, climate-aware solutions for clients.

Numbers at a glance



[1] Strategies using climate-related constraints such as reductions in carbon emissions.
[2] These posts ensured that our clients are kept abreast of key industry developments.
[3] Climate metrics, stewardship, climate-regulation, compliance and sales enablement.

Note, these stats are based on approximate numbers.

Summary disclosure against TCFD recommendations

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

Exhibit 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 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 exhibit 5 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 management.	Detailed in section 2 and governance sections.	2a, 1
METRICS & TARGETS	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Carbon emissions (WACI and financed emissions), scenario analysis, supplemented by temperature alignment and climate solutions.	2b
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Detailed in section 2.	2b
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	See section 2d for a description of our Net Zero by 2050 Commitment.	2d

Section 1: Governance of climate-related risks and opportunities

Russell Investments' Board of Directors has ultimate responsibility for the strategic priorities, corporate governance, and long-term stewardship of the firm. Climate-related risks and opportunities have been identified as a strategic priority for the business. As a result, we have established appropriate governance frameworks to identify, assess, and manage these risks and opportunities. We review our governance approach to climate-related areas on an annual basis to ensure these impacts are given the appropriate focus and attention by our senior executives.

Global governance

Russell Investments' Board, through the Executive Committee (EC) and Audit and Risk Committee, and under the Investment Strategy Committee, has delegated oversight of the risks associated with climate change to our Responsible Investing Councils (the Investment Division Responsible Investing Council and the GTM Responsible Investing Council) as well as the Global Risk Management Committee. This TCFD report is tabled annually at the Audit and Risk Committee meeting and provides the Board with an opportunity to further deepen their understanding of the firms' exposure to climate risk.

The EC also allocates 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.

Responsible investing governance

We favour an integrated approach to responsible investing (including climate-specific risk management and opportunities) and have subject matter experts embedded throughout our organisation. As mentioned above, the Investment Division Responsible Investing Council (IDRIC) and the Go-to-Market Responsible Investing Council (GTMRIC) oversee responsible investing practices and initiatives.

Exhibit 2: Global governance committees

Source: Russell Investments, for illustrative purposes only.

Investment Division Responsible Investing Council (IDRIC)

The Investment Division (ID) is responsible for undertaking all investment activities for clients. As an ISC sub-committee, the IDRIC has a written charter outlining its documentation requirements; such as records of approvals, decisions, and oversight activities.

The IDRIC is responsible for devising and leading the ID's response to a broad set of sustainable investing challenges and requirements emanating from our clients, our business strategy, and a changing regulatory environment. The IDRIC consists of responsible investing experts from across our research and portfolio management teams. These experts are empowered to propose improvements in stewardship and investment practice, which are then approved by the ISC. The IDRIC:

1. Ensures the data, infrastructure, and processes are in place to support effective management of climate change specific risks and identify opportunities in the investment process. The IDRIC also ensures an integrated approach to incorporating financially material ESG factors and risk mitigation into investment decision making.
2. Reviews and maintains the firm's Sustainability Risk Policy which guides investment professionals to leverage data, sub-adviser insights, and in-house expertise, in order to identify and manage sustainability risks (including climate risk).

Exhibit 3: Investment Division Responsible Investing Council structure

GTM Responsible Investing Council (GTMRIC)

Russell Investments' GTMRIC is responsible for guiding our investment deliverables and Go-To-Market (GTM) activity on responsible investing (including climate-specific risk management and opportunities), as well as being charged with ensuring we deliver the best possible responsible investing solutions, insights, reporting, and transparency to our clients globally.

The council consists of representatives from across the business, including the ID, Product Solutions, Marketing, Legal, Compliance, and Client-Facing teams.

Exhibit 4: GTM Responsible Investing Council structure

Global Risk Management Committee (GRMC)

The GRMC oversees Russell Investments' corporate risk management practices. The GRMC was established by the EC 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 an essential role in managing climate risk at Russell Investments globally, acting as an independent authority for evaluating such risks and the necessary controls for the firm's effective climate risk management.

GRMC membership comprises the most senior officers of Russell Investments, including the Chief Operating Officer, Vice Chairman and Head of APAC, President and Chief Investment Officer, Chief Financial Officer, Chief Risk Officer, Chief Legal 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. GRMC meets at least three 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

In line with the TCFD framework, we begin by identifying climate risks and opportunities and include relevant measurement tools and time horizons. We then assess these risks and opportunities using carbon footprint metrics and scenario analysis. Finally, we outline our management of climate-related issues. This includes our sustainability risk policy, enhanced oversight practice, active ownership process, 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 sections useful, while others may prefer to skip directly to disclosures.

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.

Exhibit 5: Snapshot of the climate risk identification and assessment process

RISK OR OPPORTUNITY IDENTIFIED	DESCRIPTION	EXAMPLES OF ASSESSMENT TOOLS	MOST RELEVANT TIME HORIZON
Transition risks & 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.

A note on Russell Investments' Global Portfolio

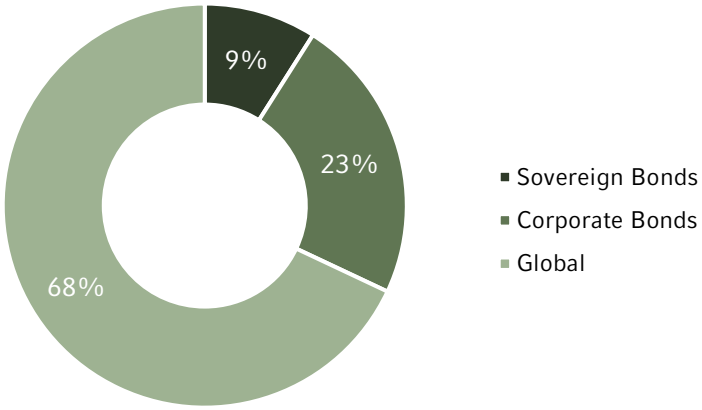
As an outsourced CIO provider, Russell Investments manages portfolios that are multi-asset and multi-manager. To understand our exposure to climate-related risks and opportunities, we aggregated approximately 80% of our total traditional assets under management (excluding assets managed for investments 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 as part of the mandate.

Exhibit 6: Summary of the Russell Investments' Sample Global Portfolio

	TOTAL AUM COVERED	% SOVEREIGN BONDS	% CORPORATE BONDS	% EQUITY
Russell Investments' Sample Global Portfolio	$155Bn (USD)	9%	23%	68%

Russell Investments' Sample Global Portfolio Asset Allocation



Source: Russell Investments

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 an appealing metric; it is easy to interpret for non-expert stakeholders and therefore, we expect to continue using it in our assessment process. However, we note considerable variation exists in current methodologies for the temperature alignment metric, as detailed in the sections that follow.

By measuring our exposure using this multidimensional approach, we hope to develop a more robust understanding of risk exposures on a current and forward-looking basis. This, in turn, helps us build a corresponding strategy to manage the identified risks.

For more information on the different types of carbon footprinting considered by Russell Investments, please see the Appendix.

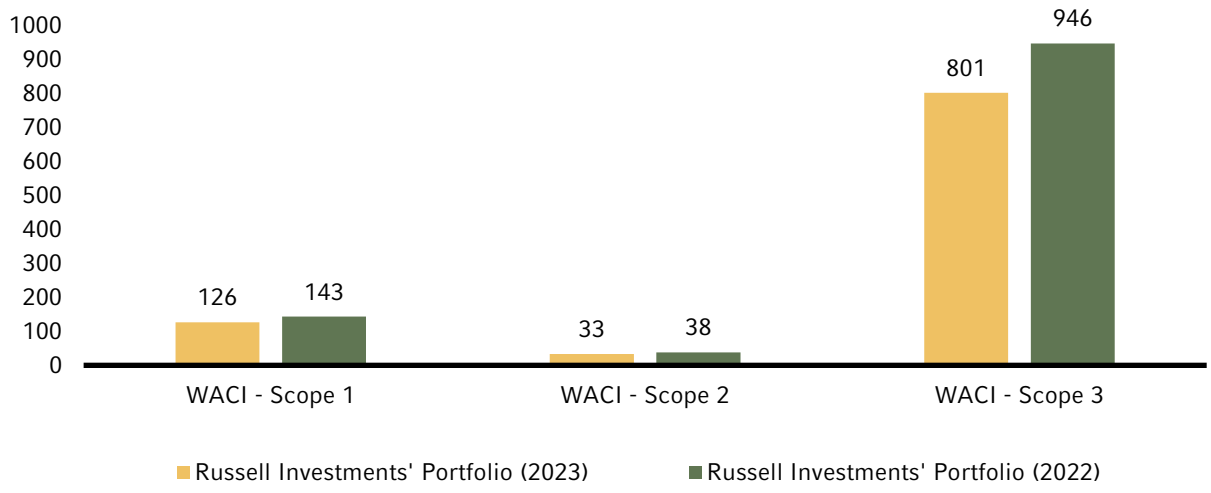
Russell Investments' Global Portfolio carbon emission metrics

Exhibit 7: 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	126	33	801
MSCI World Index	83	23	702
MSCI Emerging Markets Index	266	62	969
Bloomberg Global Aggregate Credit	180	29	936

Source: Russell Investments, MSCI, Bloomberg, Portfolio, and emissions data as of 31 December 2023.

Exhibit 8: Weighted Average Carbon Intensity (WACI) 2023 vs. 2022



Source: Russell Investments, MSCI, Bloomberg, Portfolio, and emissions data as of 31 December 2023.

Exhibit 9: Financed Emissions

FUND	FINANCED EMISSIONS – SCOPE 1 (TCO2EQ)	FINANCED EMISSIONS – SCOPE 2 (TCO2EQ)	FINANCED EMISSIONS – SCOPE 3 (TCO2EQ)
Russell Investments' Portfolio	6,390,314	1,677,517	48,891,957

Source: Russell Investments, MSCI, Portfolio, and emissions data as of 31 December 2023.

Exhibit 10: 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	52	14	400

Source: Russell Investments, MSCI, Portfolio, and emissions data as of 31 December 2023.

Exhibit 11: Sovereign bonds

FUND	GHG INTENSITY (T/USD MILLION GDP NOMINAL)	GHG PER CAPITA (TCO2EQ PER CAPITA)	GHG OWNERSHIP (TCO2EQ)
Russell Investments Portfolio	249	14	5,977,306
FTSE World Government Bond Index	274	13	N/A

Source: Russell Investments, MSCI, FTSE, Portfolio, and emissions data as of 31 December 2023.

Exhibit 12: Data quality

FUND	CARBON DATA REPORTED	CARBON DATA ESTIMATED	CARBON DATA UNAVAILABLE
Russell Investments Portfolio	81%	14%	4%

Source: Russell Investments, MSCI, Portfolio, and emissions data as of 31 December 2023.

On their own, carbon metrics can be challenging 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:

- For the second year in a row, the Scope 1 and 2 weighted average carbon intensity of our Global Portfolio declined, supporting the notion that firms globally continue to become more carbon efficient.
- After the increase in Scope 3 emissions last year (2021 to 2022) due to our switch in carbon data providers, we experienced a year-over-year decrease from 2022 to 2023.
- Emerging markets continue to have significantly higher emissions than either developed equity markets or the global bond index. Reflecting this multi-regional and multi-asset exposure, our Global Portfolio continues to have higher carbon exposure than developed equities and lower than either emerging markets or global bonds.
- This year, we have the ability to assess year-over-year changes in sovereign carbon emissions. We saw a decrease from 260 to 249 in the sovereign GHG intensity metric. Interestingly, the FTSE World Government Bond index experienced a slight increase over this same period. Overall GHG ownership at the sovereign level stayed relatively consistent, due to increased AUM within our sovereign bond portfolios.

Looking forward:

- We will continue to track carbon metrics to understand the organic decarbonisation taking place in the broad market, in addition to tracking our relative exposure over time.
- To supplement our tracking, we have developed new capabilities that allow us to understand and attribute the decarbonisation that is achieved within portfolios; allowing us to categorise carbon emission reductions into security selection, sector rotation, and/or from firms organically reducing emissions. This is crucial for understanding if, and where, real world decarbonisation is occurring.
- 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 broader use of Scope 3 in line with methodologies such as Partnership for Carbon Accounting Financials (PCAF) and the EU's Sustainable Finance Disclosure Regulations.
- We are reviewing methodologies and data sources to allow us to expand the disclosure of carbon emissions to additional asset classes such as private real estate, unlisted infrastructure, and private equity.

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.

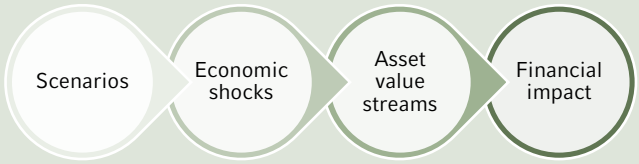
A key input in scenario analysis is the scenario narrative, or the underlying assumptions to each scenario.[1] In the analysis that follows, we use three Network for Greening the Financial System (NGFS) scenarios: the hot house world scenario, a net zero 2050 scenario, and a delayed transition scenario. Details on the key assumptions for each scenario are shown below:

Scenario	Description	Median 2100 warming (unless otherwise stated)	Net zero (CO_2) year	Technology change	Carbon Dioxide Reduction (CDR) assumption	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 are assumed through high climate sensitivity, specifically 90th percentile temperature increase (4.2°C by 2100), high levels of ice sheet melt, and higher responsiveness of tropical and European windstorm frequency and intensity to changing temperatures.	4.2°C (90th percentile)	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. This scenario includes regional carbon price variation. Regional net-zero targets for countries with clear commitments (China, EU, Japan, and USA) are applied from 2030 onwards, but for other countries ambition equivalent to the overall temperature target of below 2°C in 2100 is assumed leading to strong regional differentiation.	1.6°C	N/A	Slow until 2030; fast thereafter	Low/medium use	High variation
Net Zero 2050	Limits global warming to below 1.5°C (the median temperature returns to 1.4°C in 2100, after a limited temporary overshoot) through stringent climate policies and innovation, reaching global net zero CO_2 emissions around 2060. Some jurisdictions such as the US, EU and Japan reach net zero for all GHGs by 2050.	1.4°C	2050	Fast change	Medium/high use	Medium variation

Source: Planetrics based on NGFS Technical Documentation (2022).

These scenarios are the first of 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.

Four-step climate modelling framework



[1] 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.

Following the four-step scenario analysis methodology, company-level valuation impacts are assessed 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.

Exhibit 13: 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	-0.84%	-0.84%	0.00%
	Delayed transition	-3.00%	-0.25%	-2.86%
	Net Zero 2050	-4.36%	-0.17%	-4.21%

Source: Russell Investments, Planetrics[2] as of 31 December 2023.

Key observations from scenario analysis impact on portfolio value:

- Our Global Portfolio continues to experience 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.
- We acknowledge that it may be surprising that the transition scenarios (delayed transition and net zero by 2050) show greater financial impacts than the hot house world scenario. However, these scenarios involve more short and medium-term risks (largely transition-related). Because these risks are discounted back to the present day, they 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. Thus, understating the worst physical hazards in the hot house world, which will continue to 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 still not pricing in the low carbon 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 both the sector and security levels.

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 we need to upskill to use the information in a critical manner. Fortunately, the climate-data industry is maturing and we are better equipped to understand where these models may be underestimating risks due to model construction and/or a lack of available data.
- Climate risk scenario analysis is complex. Thus, it is unlikely that any single model can sufficiently capture all aspects of future climate risk. This has led us to explore expanding our climate risk capabilities to include additional models designed to analyse specific elements of climate risk, such as individual physical hazards or the interaction with nature-related risks and a changing climate.

[2]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.

Discussion regarding the underestimation of physical risks

It's 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 using the expected average annual damages (AAD), 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 the 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.

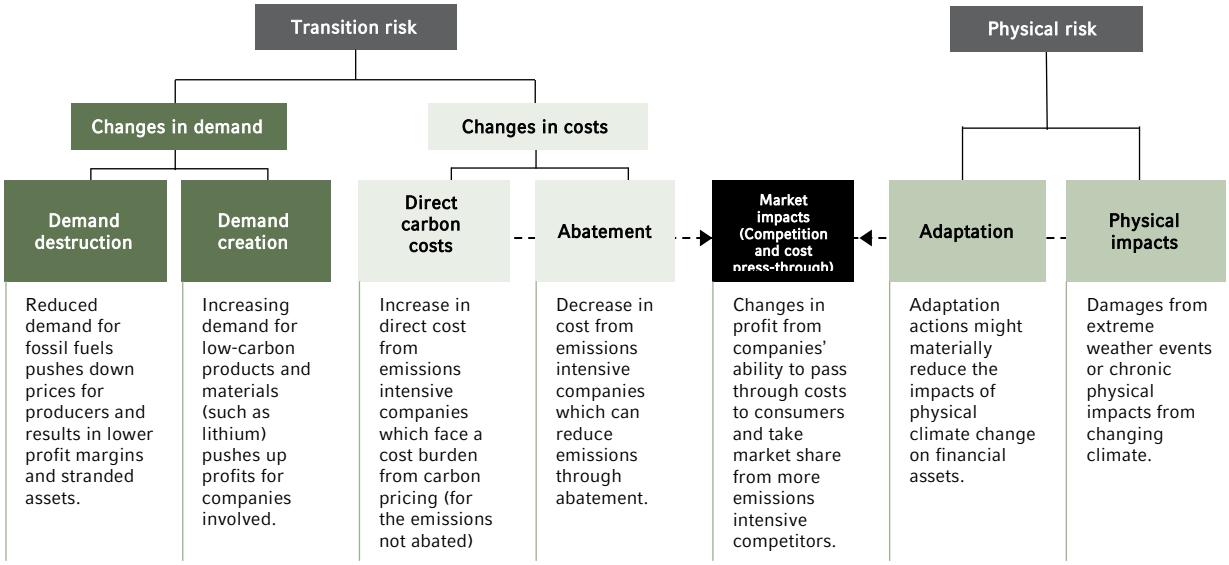
Another key model limitation is coverage of disruptions in the supply chain stemming from physical vulnerabilities. Instances where supply chain disturbances are triggered by physical hazards, like floods or hurricanes, have the potential to impact earnings. This is a recognised gap and the plan moving forward is to incorporate these risks 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 one-time 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 increase, not cease, beyond the modelling 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.

Portfolio valuation impacts by channel

Building upon the transition and physical risk categories introduced in Table 3, 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.

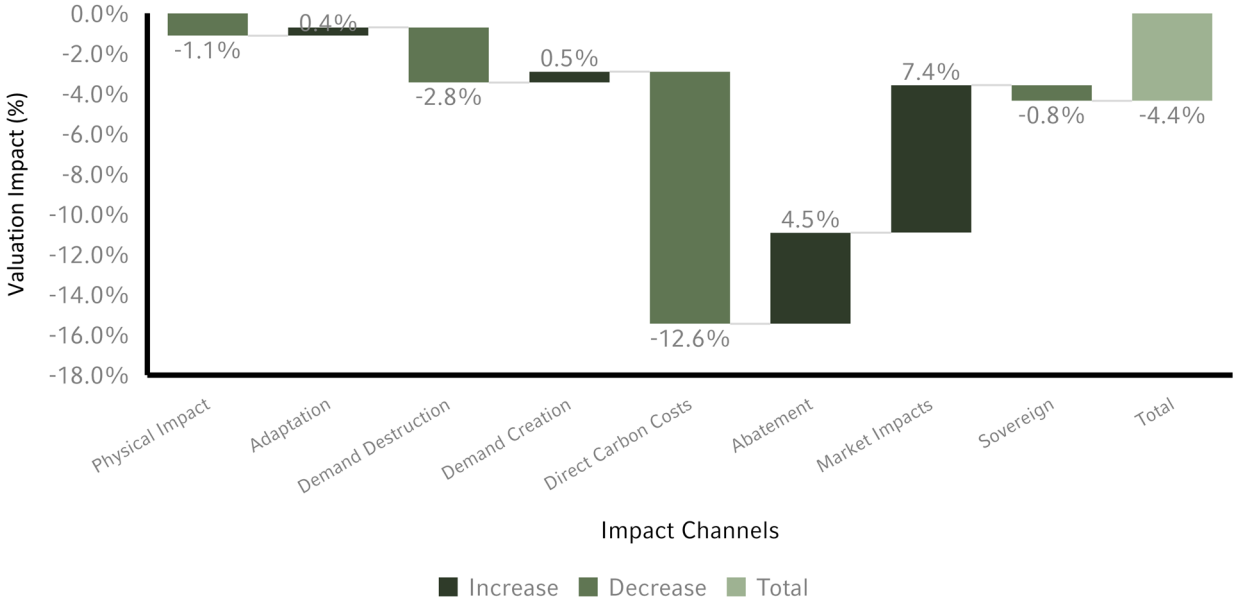
Exhibit 14: Physical and transition risk: seven channels of impact



Source: Planetrics[2].

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



Source: Russell Investments, Planetrics[2] as of 31 December 2023.

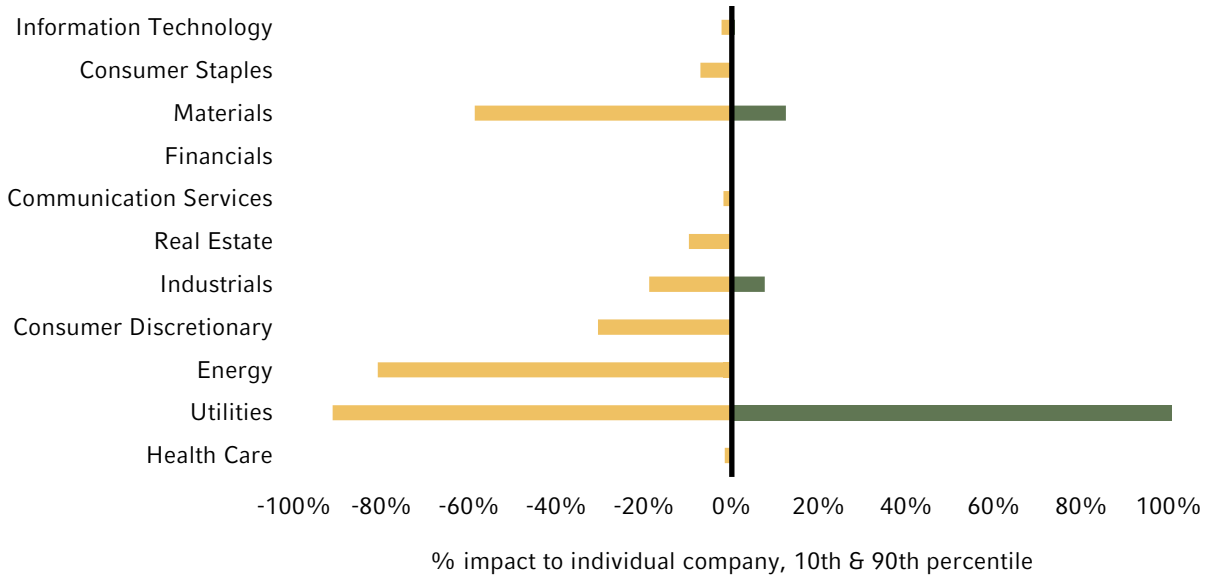
Key observations from portfolio valuation impacts by channel in net zero scenario:

- The main driver of valuation impact is the direct carbon cost channel, responsible for a valuation impact of approximately -13% in both transition scenarios (down slightly from the 15% impact in 2022). In terms of magnitude, this swamps the impact of other risks. It also reinforces why transition scenarios are showing the largest losses as carbon costs are highest in these scenarios.
- 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. However, 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 -1.1% 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. This is not surprising considering these are all high-emitting sectors. It is noteworthy that, within some of these sectors, the impact is very heterogenous: materials, consumer discretionary, industrials, and utilities sectors have a very wide range of winners and losers.

Exhibit 16: Variation of valuation impacts within sectors



Source: Russell Investments, Planetrics[2] as of 31 December 2023.

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 critical sectors like utilities and materials.
- The chart shows the intra-sector variance and the range between the 10th percentile and the 90th percentile firms within each sector. Using the utilities sector as an 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 which experience an almost 125% valuation increase (the chart above is truncated to range between –100% and +100%).

Thoughts on the energy transition

In 2023, the task of trying to better understand the potential implications of the energy transition for investment portfolios was taken on within our Investment Strategy and Research Teams. You can access the full report here, but some of the key findings are highlighted below:

- A transition away from fossil fuels is likely required to avert a significant warming of the planet.
- Net zero targets require the green transition to be twice as fast as past energy transitions.
- Key challenges include politics, intermittency, transmission, and tight supply of raw minerals.
- Failure to transition to a low carbon economy risks physical damage to the global economy.
- There is wide disagreement about these damages - ranging from 8% to 35% of global income in 2100.
- Disruptions to agriculture appear to be the most relevant concern within an investor's time horizon.
- Food price volatility and shortages could challenge lower-income economies.
- The primary risk to markets is the energy transition itself, which would require substantial capital expenditure.
- An investment boom would likely pressure higher long-term interest rates.
- The details of how governments incentivise the transition will inform the growth-inflation mix. Another challenge is that an energy transition is not as simple as just decarbonising electricity generation through the adoption of renewable power. We must address another key aspect of an effective transition: substituting the direct use of fossil fuels.
- Energy transitions are complex and slow processes that have historically taken decades or even centuries to unfold. Today's energy transition, driven by a sense of urgency due to climate change rather than economic factors, needs to be unnaturally speedy to succeed.

Portfolio valuation impacts by asset class

Exhibit 17: Valuation impacts based on asset class

	SCENARIO	VALUATION IMPACT
Equity	Hot house world	-1.15%
	Delayed transition	-3.75%
	Net Zero 2050	-4.41%
Corporate debt	Hot house world	-0.09%
	Delayed transition	-1.73%
	Net Zero 2050	-3.27%
Sovereign debt	Hot house world	0.00%
	Delayed transition	-0.59%
	Net Zero 2050	-5.00%

Source: Russell Investments, Planetrics[2] as of 31 December 2023.

Key observations from portfolio valuation impacts by asset class:

- Asset class impacts are less prominent than sector impacts.
- Sovereign debt experiences a larger impact in transition scenarios due to the high inflationary pressure from high carbon prices. Net Zero 2050 requires a sharp increase in carbon prices starting immediately, causing a more immediate shock than the delayed transition.[3]
- The degree of impact on sovereign debt due to high inflationary pressure varied by country. For example, if a country's GDP is forecast 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 leads to increasing interest rates, resulting in a negative impact on the country's sovereign debt. Impact also varies depending on if the asset is inflation-linked.
- Duration also plays a role in asset-specific valuation impacts. Longer duration assets experience larger impacts 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 a multi-asset manager, we are focusing on developing our climate-related approach for other asset classes such as private real estate, private credit, and alternatives. Since data availability and methodologies specific to these asset classes are still developing, we leverage the managers we hire to assess these risks. 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 can be used to identify asset classes, sectors, mandates, and securities for further investigation and oversight as we assess climate risk in our holdings and look to understand the relative magnitude of risks. Utilising this type of analysis can be quite helpful for our investment professionals. However, climate scenario analysis is still a relatively new process that relies on significant amounts of estimation and simplification of complex data. Therefore, we make sure to supplement this type of analysis with other robust sources of information and will continue to monitor this evolving area of climate analysis. We outline our management of climate-related issues further in section 2c.

[3] 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

Discussion regarding the incorporation of nature-related risks

While the focus of this report is to understand climate-related risks, there is an increasing awareness of the parallels between climate-related risks and natural-capital risks. These include the mismanagement of nature, biodiversity, and ecosystem services; maintenance of which is vital to the global economy. Climate change is intricately interconnected to these risks acting as a key driver of biodiversity loss and causing the degradation and redistribution of ecosystem services. Looking forward, we plan to take a more holistic approach and integrate these risks alongside conventional climate-related risks. In support of this, we have joined the Nature Action 100 as a founding signatory; are members of the Taskforce on Nature-related Financial Disclosures forum; and continue to prioritise natural capital as one of our key areas of engagement focus.

Portfolio temperature alignment

At a portfolio level, we saw the temperature alignment score increase from 3.25-degrees in 2021 to 3.31-degrees in 2022 and then to 3.34 in 2023. This increase occurred in both the MSCI World index and the global bond index, whereas the emerging markets universe (as measured by the MSCI Emerging Markets index) saw a slight decrease in temperature alignment (3.92 in 2022 to 3.89 in 2023).

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.

Temperature scores, including implied temperature rise and temperature alignment, are a new class of metrics used to assess the alignment of a company or portfolio with the goal of limiting global warming to 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. This class of metrics aims to estimate expected future emissions, and alignment with the sector-region decarbonisation pathways associated with different levels of global warming. The 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 consider 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?

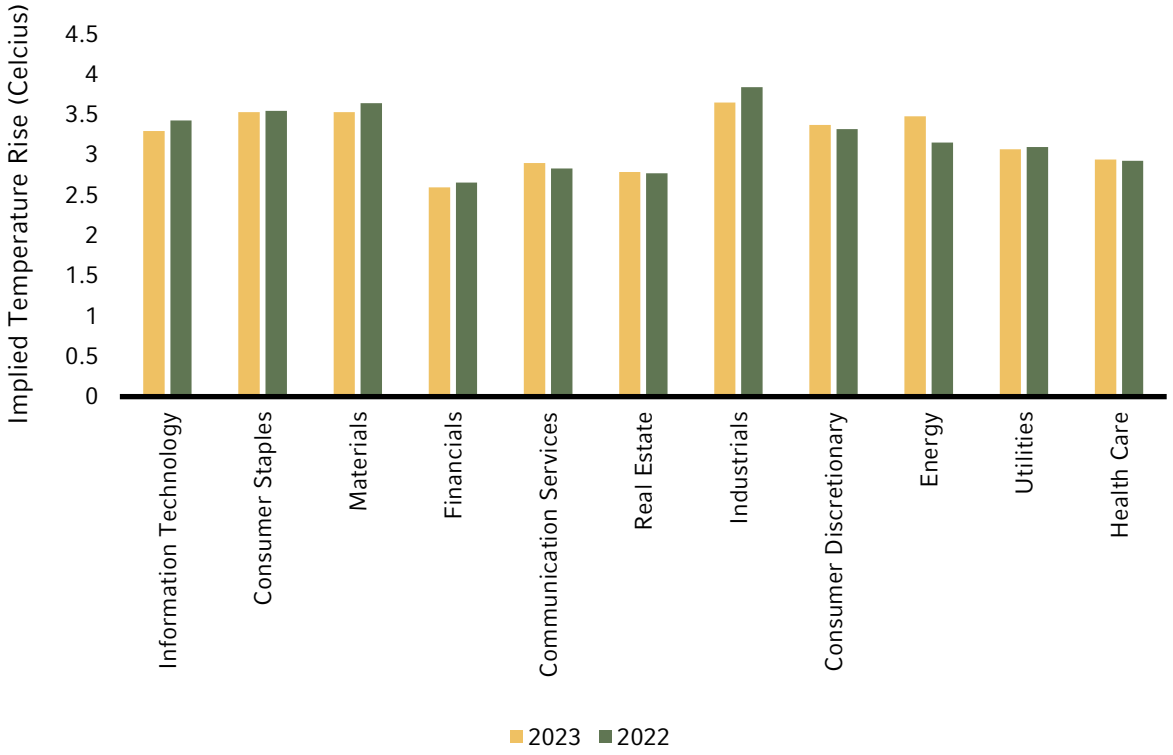
Despite this complexity, and less transparency than more explicit carbon metrics, the appeal of temperature alignment means the use of these metrics is likely to increase, especially as investors look to express portfolio alignment with global temperature targets. We, therefore, will supplement our carbon 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 develops.

Exhibit 18: Temperature Scores of Global Russell Investments Portfolio & Benchmarks

UNIVERSE	TEMPERATURE ALIGNMENT SCORE (CELSIUS)
MSCI Emerging Markets Index	3.89
MSCI World Index	3.17
Bloomberg Global Aggregate Credit Index	3.30
Russell Investments Global Portfolio	3.34

Source: Data as of 31 December 2023. Russell Investments, Planetrics[2], MSCI, Bloomberg, Value and sector-intensity weights methodology.

Exhibit 19: Sector Temperature Alignment Scores (GICS sector classification)



Source: Russell Investments, Planetrics[2], Data as of 31 December 2023. Value and sector-intensity weights methodology.

Key observations from portfolio temperature alignment

- Unlike prior years, temperature alignment experienced only minor year-over-year changes. Meaning, that sectors across the board failed to make significant progress (or fall further behind) when compared to their respective sector-region decarbonisation pathways.
- Overall, about half of the sectors saw their temperature alignment slightly increase year-over-year.
- Comparing sectors; Real Estate, Financials, Health Care, and Communication Services had a temperature alignment closest to the 2 degrees Celsius goal. Whereas, the Industrials, Consumer Staples, and Energy sectors had temperature alignments well above the stated goal.
- The Energy sector experienced the largest temperature increase year-over-year, whereas the Industrials sector saw a significant decrease in temperature alignment. This is notable, given the Industrials sector experienced the most substantial increase in temperature alignment from 2021 to 2022. This serves as an example of how the implied temperature rise metric can be volatile when analysing it year-over-year.
- The Information Technology and Consumer Staples sectors have temperature alignments above 2 degrees Celsius which is surprising considering these sectors typically have low scope 1 and 2 GHG emissions. This finding highlights how the temperature alignment metrics can be additive to portfolio climate analysis.

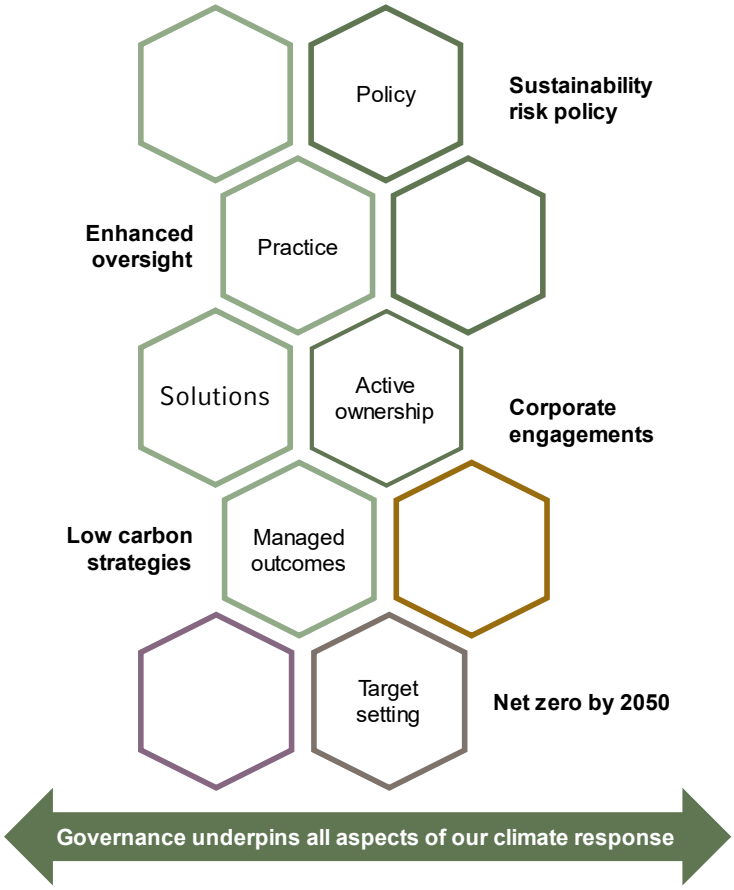
Looking forward

- 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 as carbon emissions.
- For the time being, we continue to use carbon emission metrics as our primary reference point for target setting and progress tracking. However, we will consider temperature data as a supplementary reference point.

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, climate-aware solutions, and target setting.

Exhibit 20: A multi-layered approach to our climate response – key pillars



Source: Russell Investments.

Sustainability risks

Russell Investments' policy is to integrate sustainability risk management into our investment solutions by identifying, evaluating, and managing relevant risks in our investment manager review process, portfolio management, and through implementing proprietary solutions. This is formalised in our Sustainability Risks 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.

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.

Enhanced oversight

Portfolio managers assess sustainability risks in our investment solutions through our quarterly and annual manager review process known at Russell Investments as 'Enhanced Oversight' (EO). Portfolio management teams assess sustainability risks in funds and explain how those risks are being monitored and managed. EO is designed to provide sufficiently granular insights into fund/portfolio exposures - without adopting a 'checklist' approach that would fail to recognise the breadth, complexity, and relevance of sustainability issues. EO focuses on broad ESG themes as well as specific securities identified from:

- Our own quantitative analysis, where we monitor the highest and most material sustainability risks at the total portfolio level;
- Sub-adviser insights, whom we explicitly direct to highlight financially-material sustainability issues;
- Other third-party sources, including those providing company and thematic ESG research.

Active ownership

Active ownership is an important component of our investment responsibilities and decision-making process. Our active ownership programme utilises proxy voting, engagement, and industry collaborations to manage climate-specific risks in our portfolios.

Proxy voting

For 30 years, Russell Investments has executed a robust, global proxy voting programme that is a foundation for our stewardship efforts. Russell Investments has documented Proxy Voting Policies and Procedures and maintains custom Proxy Voting Guidelines carefully drafted to achieve votes that promote the best interests of our clients. At least annually, our Guidelines Sub-Committee reviews and updates these guidelines to ensure they remain aligned with shareholders' best interests.

In 2023, we updated our Proxy Voting Guidelines specifically to management sponsored "Say on Climate" proposals which emerged as a new channel for investor engagement in climate change strategies during 2021. We believe these votes can drive better carbon disclosures, encourage more credible climate strategies, and enhance shareholder engagement. However, we are also wary of unilaterally supporting these resolutions, given that shareholders could approve plans with emission targets or strategies that prove inadequate going forward. Companies might then try to avoid updating those plans in future years by anchoring to the fact that they received shareholder approval.

We expect companies to provide a level of transparency that allows investors to better understand how they may be impacted by climate-related risks and opportunities, and how they have embedded climate change into their strategy. We evaluate management-sponsored votes on climate plans and reports on a case-by-case basis, and we may consider several factors, including but not limited to the governance of the vote, the materiality of climate risk to a company compared to its peers, and any information gained from our engagement activities and/or sub-adviser input.

Engagement

As part of our stewardship activities, we aim to engage with companies on overall business strategy, capital allocation and responsible investing practices, while encouraging appropriate levels of risk mitigation. Furthermore, through ongoing dialogue, we can better understand both the risk factors and potential returns associated with the ownership of a company.

Through our engagement activities, we aim to promote changes by encouraging good practices on material issues that may protect and enhance long-term sustainable value creation and shareholder rights, and ultimately benefit our clients as the beneficiaries of our investments.

Our engagement programme is structured around eight core Engagement Focus Area's, one of which is Climate Change Resilience. Under this focus area, we discuss with our holding companies their approach to adapting and mitigating negative impacts from a changing climate in their business value chain. In 2023, 52% of our engagements related to climate change resilience.

Industry collaborations

Russell Investments leverages third-party industry initiatives to extend our reach across regions and markets. In 2023, we continued our membership with the Climate Action 100+ initiative and joined the Net Zero Engagement Initiative (NZEI) and the Nature Action 100 initiative.

Climate Action 100+

As members of the Climate Action 100+ initiative since early 2020, Russell Investments has engaged with a selected number of companies on climate transition to support the initiative's goal to encourage companies to improve and strengthen climate-related financial disclosures and transition plans. Our efforts with the initiative are paralleled by 27% of our funded sub-advisers who are also participants in the Climate Action 100+ initiative, showcasing the value the initiative can have in expanding our active ownership programme.

Nature Action 100

Estimates suggest that more than 50% of global GDP is dependent on nature and, therefore, exposed to risks relating to biodiversity loss and natural resource degradation. Nature Action 100 is a global investor engagement initiative mobilising institutional investors to establish a common high-level agenda for engagements and a clear set of expectations to drive greater corporate ambition and action to stem nature and biodiversity loss. Investors participating in the initiative are engaging with 100 companies in key sectors deemed to be systemically important in reversing nature and biodiversity loss by 2030. Russell Investments joined Nature Action 100 at its launch in 2023 as a co-signatory of the letter sent to the targeted companies. Initial engagement actions are scheduled to take place in early 2024. With our participation in Nature Action 100, we aim to contribute to the transition toward a more sustainable and resilient global economy for the protection of our clients' interests.

The Net Zero Asset Managers initiative

As members of the Climate Action 100+ initiative since early 2020, Russell Investments has engaged with a selected number of companies on climate transition to support the initiative's goal. Our efforts with the initiative are paralleled by 27% of our funded sub-advisers who are also participants in the Climate Action 100+ initiative, showcasing the value the initiative can have in expanding our active ownership programme.

For an in-depth understanding of our active ownership approach, please refer to our Annual Investment Stewardship Report.

Climate aware solutions

As responsible investing has become more complex, Russell Investments' approach has evolved to address those complications for institutional investors. While a decade ago a climate-aware portfolio may have revolved around divesting from fossil fuels, our approach today is much more nuanced. We now take a total portfolio view within our multi-manager framework.

Building a sustainable transition universe

Russell Investments began developing decarbonisation overlays in 2015. However, our investment professionals recognised that investing in a way that actively contributes to a more sustainable future requires a deeper level of scrutiny and a more careful application of data than a simple de-risking approach. Thus, we designed a systematic approach to identifying investments that capture a company's positive impact on the environment and society while acknowledging the trade-offs between positive and negative outcomes. The high-level criteria include:

- Positive Impact Today: We evaluate companies based on their revenues or services linked to Sustainable Development Goals (SDGs) and other positive impact themes.
- Emerging Technologies: We consider technologies in development, measured by capital expenditure and patents held. These technologies are critical for driving sustainable change in the future.
- Negative Impact Assessment: We assess companies based on the significance of their negative impact. This isn't about excluding all companies with negative impacts, as all companies have some level of negative impact. Instead, we focus on those with a substantial overall negative impact that hinders their potential to contribute positively to sustainability.

The Sustainable Transition Universe truly shines in its ability to be used within multi manager portfolios through our Completion Portfolio framework. We build sustainability-focused funds while controlling for the potential factor and sector biases that may materialise at the total portfolio level - all while ensuring that each name held within the portfolio still meets our rigorous sustainability standards.

Carbon-managed 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 built with a specific carbon reduction target, such as 25% or 50% reduction in weighted average carbon intensity or exposure to fossil fuel reserves. We work with clients to utilise our open architecture investment platform as a tool for implementing climate-related policies and objectives.

This can include combining a multi-manager portfolio in a centralised portfolio which enables improved transparency and control over climate-related measures; or we can specify 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 this space evolves. As of 31 December 2023, approximately $14.4Bn USD of our AUM was invested in carbon-managed strategies.

Target setting

Russell Investments recognises climate change as a challenge to the global economy and the financial well-being of clients. We collaborate with investors to address this challenge and achieve positive financial outcomes. In 2021, we joined the Net Zero Asset Manager initiative (NZAMi) to support the global goal of net zero GHG emissions by 2050. As part of this commitment, we work in partnership with interested clients to develop a roadmap for portfolio alignment.

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.

As part of our participation in 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[4].
- **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.

[4] 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

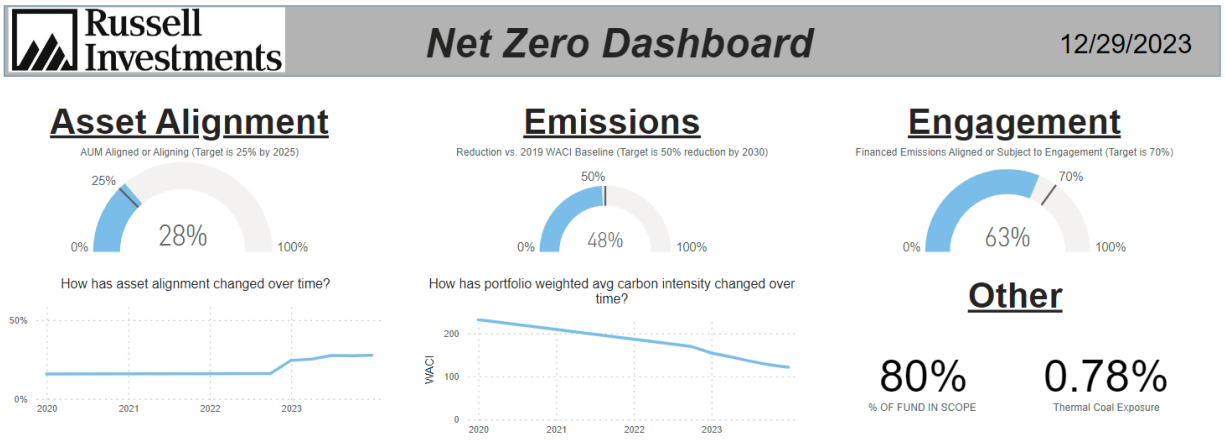
- **Emission Reduction Target:** Achieve a 50% reduction in the portfolio's carbon emissions intensity by 2030, relative to 2019.

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 expand 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 21: 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 Net Zero Portfolio. This aggregated portfolio only represents 25% of Russell Investments' AUM currently in scope for net zero alignment. Below, we report progress for 2023 against the interim targets for the aggregated portfolio.

Exhibit 22: Net zero target progress

TARGET TYPE	2019 BASELINE	TARGET (YEAR, IF APPLICABLE)	CURRENT VALUE (12/29/2023)	STATUS CHECK
Asset alignment	15% of AUM aligned or aligning to net zero	25% (2025)	28% of AUM aligned or aligning to net zero	On track
Emissions reductions	0%	50% (2030)	48% 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%	63% 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 percentage 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. When a company reduces 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.

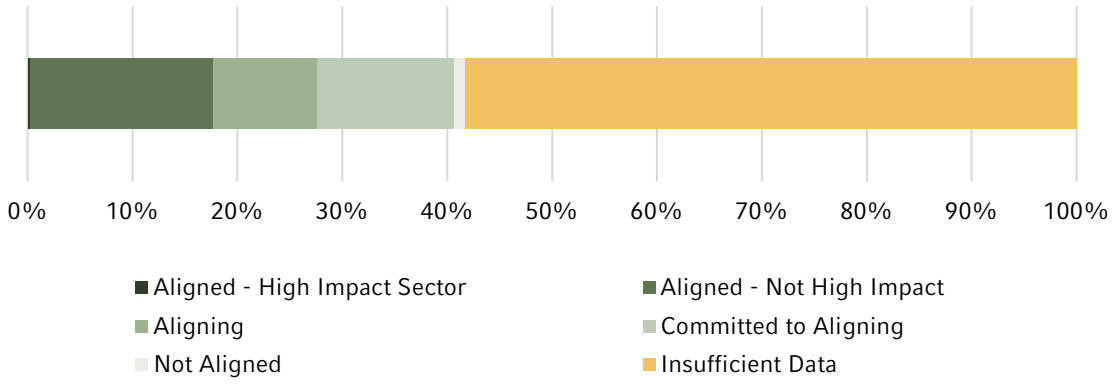
Exhibit 23: Assessing asset alignment.

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 Russell Investments Net Zero Portfolio is distributed today against this rubric.

Exhibit 24: Global portfolio distribution



Source: Rusell Investments

As 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 issue of the assessment will gradually diminish over time.

Section 3: Business operations

In April 2021, Russell Investments became a signatory to the NZAMi, therein committing 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 2023, 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 2023. We have provided our 2023 GHG emission footprint below.

Exhibit 25: Russell Investments' 2023 GHG emission footprint

SCOPE	TOTAL EMISSIONS (TCO2E) MARKET BASED	% TOTAL
Scope 1	102	0%
Scope 2 - Market Based	997	1%
Scope 3 (Categories 1-14)	91,452	99%
Total (Market Based)	92,551	100%

Market Based reporting reflect the 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, we referenced industry guidance such as the SBTi's Net Zero for Corporates, to ensure the decarbonisation trajectory meets our target and emphasising real world emissions reductions.

Russell Investments will look to support Beyond Value Chain Mitigation[5] 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).

[5] 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 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 our internal practices reflect what we advocate to the wider investment community including our clients, prospects, and investment 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 "Sustainability innovation across the globe", immediately below.

Sustainability innovation across the globe

Our associates serve as the catalysts for change within our organisation and communities. In 2023, through the global Sustainable Work Practices team, associates enhanced their offices and contributed positively to their communities. This involved switching to more sustainable suppliers, giving office furniture a second life by donating it, and adopting better practices in our offices. Additionally, they organise volunteering days for associates and host events to raise awareness about global movements like Earth Day, demonstrating our commitment as responsible global citizens. Below are some examples of the activities undertaken in 2023.

Wormwood Scrubs

London associates volunteered at Wormwood Scrubs for the second year in a row. They were tasked with building a new path for the public to continue enjoying the area while preventing the degradation of understory habitat. They used leftover woodchips sourced from a nearby construction site. Located just over nine kilometers west of the Regent Street office, Wormwood Scrubs is a large open space covering around 200 acres. It includes a nature reserve, sports fields, a children's play area, and HM Prison Wormwood Scrubs.

North America

Seattle associates volunteered at Denny Park, about one mile North of Russell Investments Center, to pick up litter, weeds, and spread mulch in the park. Denny Park was created in 1883 and is Seattle's oldest park. A peaceful green island in a sea of traffic, the park features broad pathways planted with rhododendrons and azaleas, and thick crowned maples and pines, among other trees. Our associates had a great time working together to clean up the urban oasis.

APAC

Associates in our Sydney office volunteered at the Hawkesbury River Bushfire Recovery Nursery to support the Foundation for National Parks & Wildlife for the second year running. Together, they planted 1,240 native seedlings to support the foundation in helping regenerate areas extensively damaged by the recent bushfires and floods.

Earth Day 2023

Earth Day 2023, an annual celebration honoring the environmental movement's achievements, took place globally on 22nd April. The day aims to raise awareness of the need to protect our planet's natural resources for future generations.

The Earth Day Network, which brings together more than 20,000 partners and organisations in 190 countries, supports the Earth Day mission year-round. This mission is founded on the premise that all people, regardless of race, gender, income, or geography, have a moral right to a healthy, sustainable environment. The Earth Day Network pursues this mission through education, public policy, and activism campaigns. These campaigns bring together more than 1 billion participants every year, making it one of the largest public, secular events in the world.

In 2023, the theme of Earth Day was “Invest in Our Planet” - a continuation of the 2022 theme, designed to persuade businesses, governments, and citizens around the world of the need to invest in the planet to improve the environment and give our descendants a better and safer future.

To mark the event, London associates organised an Earth Day bake sale, with prizes for the best baker and best vegan baker. All proceeds from the sale went to support Monitor Conservation Research Society (Monitor), our partner charity fighting illegal wildlife trafficking across the world. Donations were matched by the Russell Investments’ Spark! Giving Tool.

Additionally, Russell Investments welcomed Monitor’s Executive Director, Dr. Chris Shepherd and Programme Officer, Dr. Rachel Boratto, for a fireside chat about the vital work of Monitor in saving some of the world’s lesser-known species from the illegal wildlife trade.

To help fund their efforts, Russell Investments has made a grant to Monitor to investigate the illegal trade of Binturongs in Indonesia.

Green Building Standards

We lease all our offices, many of which have sustainability certifications and ratings, reflecting how they limit GHG emissions. These include:

Sustainable improvements in our offices

Seattle

- Ricoh Recognition: Our mail and print services vendor, Ricoh, achieved global acclaim by being selected as one of the 2023 Global 100 Most Sustainable Corporations in the World, a testament to our commitment to partnering with environmentally conscious entities.
- Comprehensive Office Cleaning: In line with our commitment to responsible waste management, our annual office cleaning initiatives in Seattle went beyond mere tidying. We incorporated elements such as donation bins for Mary's Place, e-cycling of electronics, and systematic recycling and shredding of documents, underscoring our dedication to environmental stewardship.
- Waste Awareness Month: Partnering with our building landlord, CommonWealth Partners, we commemorated November 2023 as Waste Awareness Month. Through various initiatives such as responsible electronics usage, food composting, and material reuse campaigns, we joined hands to address the pressing issue of global waste accumulation.

Tokyo

- Natural Ventilation Promotion: During spring and autumn, we prioritised natural ventilation within our premises, minimising the use of HVAC systems and advocating for energy conservation, thereby reducing our carbon footprint.
- Reusable Cup Advocacy: Emphasising personal responsibility, we encouraged all associates to utilise their reusable cups, leading to a significant reduction in single-use plastic consumption within our Tokyo office.
- Food Bank Donations: Demonstrating our commitment to community welfare, we ensured that surplus emergency food items nearing expiration were promptly donated to the Food Bank, aligning our sustainability efforts with social responsibility.

Sydney

- Eco-Friendly Cleaning Practices: By collaborating with base building cleaning teams, we embraced eco-friendly cleaning products, fostering a healthier office environment while minimising our ecological impact.
- Comprehensive Recycling: From coffee pods to batteries and e-waste, our Sydney office implemented robust recycling protocols, diverting significant quantities of waste from landfills and promoting a circular economy ethos.
- Zero-Waste Kitchen: In a bid to reduce single-use plastics, we transitioned to a zero-waste kitchen model, eschewing disposable plates, cups, and cutlery in favour of reusable alternatives, thus embodying sustainability in our daily operations.

London

- Expanded Waste Management: Implementing innovative waste receptacles for diverse waste streams and donating old office furniture to local schools, our London office showcased a holistic approach to waste reduction and community engagement.
- Biophilic Office Design: Embracing biophilic design principles, we introduced moss walls and vegetation within our workspace, enhancing employee well-being while fostering a connection with nature.
- Procurement: From recyclable feminine hygiene products to refurbished office furniture, our procurement practices prioritised sustainability, supporting environmentally conscious businesses and minimising resource consumption.

Appendix

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	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).
	Sovereign Equivalent	"GHG Intensity (t/USDM GDP Nominal)": The higher value, the more carbon-intense 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:

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 which estimates 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. Expressed as a temperature score (e.g., 5 degrees Celsius). *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 the influence of key assumptions.

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IMPORTANT INFORMATION

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