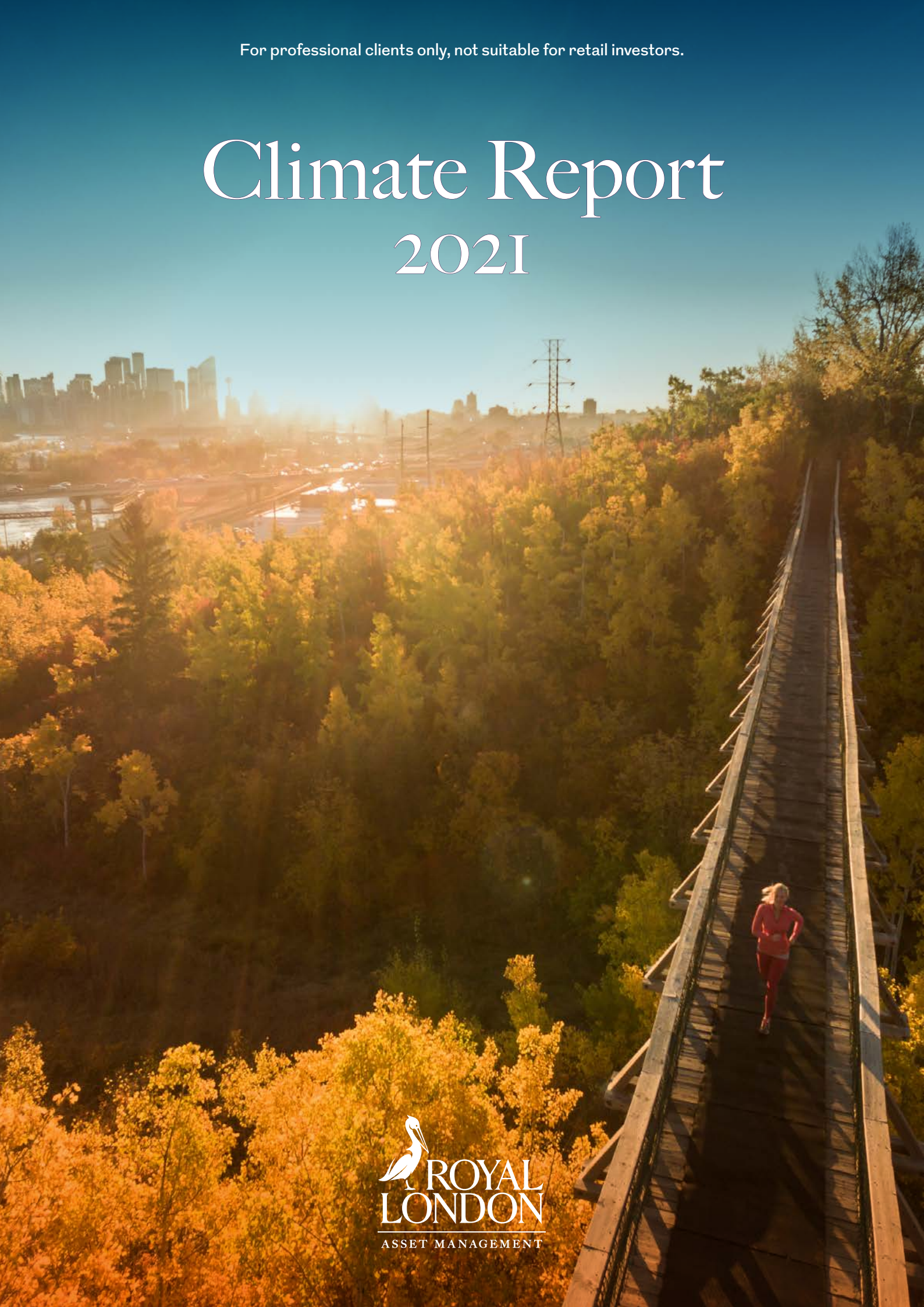
For professional clients only, not suitable for retail investors.

Climate Report 2021



ROYAL LONDON
ASSET MANAGEMENT

Contents

Highlights 2021

1. **RLAM has made a net zero commitment (see page 4). This provides us with a clear objective that we can build our climate strategy around.**
2. **We moved circa £25bn of passive equities to lower carbon and ESG (environmental, social and governance)-tilted funds.**
3. **Our carbon footprint, weighted average carbon intensity (WACI) and warming potential decreased in 2021 and, as in 2020, remains better than the benchmark (see page 12).**
4. **We elevated climate and ESG to a principal strategic risk, recognising its importance to our clients and their investments, as well as RLAM as a business.**
5. **We continue to critically assess the climate risk metrics and data that we use and have access to, looking to improve these or replace as market guidance suggests.**

Commitment to net zero

For Royal London Asset Management (RLAM), 2021 was a defining year for our climate strategy with the most important development being our commitment to net zero by 2050 (see box detailing our net zero commitment and the basis on which it is made on page 4). Our commitment is based on the expectation that governments and policy makers will deliver on their commitments to achieve the 1.5˚C temperature goal of the Paris Agreement. RLAM's commitment goes beyond just setting a 2050 target[1] and includes a goal of reducing financed emissions by 50% by 2030 and seeking to develop climate solutions that will allow clients to invest in the low carbon transition. As part of this, the property portion of our assets under management (AUM) has also committed to net zero by 2040 (see page 19 for more information on our property net zero commitment, and page 47 for the description of all footnotes).

Our commitment will be central to our climate strategy and direction of travel, something that is already reflected in our governance structure and our approach to risk management. Over the next year, we will be working to develop a transition plan which we will look to align with guidance from the Transition Plan Taskforce when it becomes available.

Delivering change

Mitigating and understanding climate risk from an investment perspective means delivering change on our way to net zero. During 2021 RLAM looked for ways to continue our progress in this area. Some of this was more high profile, such as the launch and expansion of specialist strategies that incorporate ESG and climate considerations (see box left).

But if we look beyond metrics such as WACI, we believe that stewardship and engagement will deliver meaningful change over the long term. We increased activity in this area in 2021, as well as making further improvements in how our investment teams integrate climate considerations into decision-making through our ESG Dashboard.

Climate data trends

Although our commitment is a significant step for us, in 2021 we also undertook work to help us reduce our carbon emissions year-on-year. Specifically, our carbon footprint has decreased 18.8% and outperformed the benchmark by 48.3%. Our forward looking metric, warming potential, has also decreased 8.5% and outperformed the benchmark by 0.7% (see page 7 onwards).

While we are pleased to see that our climate data is showing a positive trend, we are also conscious of the fact that such data is continuously evolving and our methods for measuring and monitoring our climate risk and opportunities will change. This trend is something we have recognised in our second Climate Risk report, where we have introduced new metrics. We will also be phasing out metrics such as warming potential which we do not intend to disclose in our 2022 report.

Advances in our climate strategy

Though our commitment and the trends in our data are central to our approach to climate risk management, in 2021 we also advanced our strategy by embedding it further within our

business and maturing our outputs. For instance, we recognised climate and ESG as a principal strategic risk within our risk register, which tracks all the risks in our risk universe. Furthermore, we also now embed ESG and climate into our investment performance risk within the risk register. By recognising climate in these two ways, we are better positioned to ensure that climate risk and opportunities are considered and managed across the business.

We also advanced the number of strategies which have explicit carbon or climate transition objectives.

We recognise the limitations of climate data, but while it is imperfect, it remains a useful input, and helps us integrate climate into our investment decision-making. For example, we have been able to use data to identify which sectors our clients are most exposed to from a climate risk perspective and thus where we should focus our efforts. This allows us to take a more targeted approach to issuer-level climate research.

In 2021 we also continued our engagement efforts, something that will continue to be central to our net zero transition plan as we move towards 2030 and beyond. In 2021 we undertook engagement with 116 companies and had 194 meetings on climate. To support this, we also developed our net zero expectations for companies which set out detailed good practice requirements we would like to see as part of a commitment to transition.

Notable fund changes and activity in 2021

Strategy	Climate objective
RLAM Equity Tilt funds	The funds' new objective is to reduce carbon intensity and improve their ESG and responsible investment profile relative to benchmark, while still providing similar returns.
RLAM Global Equity funds	We launched two Article 8 compliant global equity funds (see page 18 for definition of Article 8 and Article 9 funds). The funds promote climate mitigation, focusing on a company's willingness and ability to transition to a net zero world by 2050, and have material and tangible 2030 plans to give confidence in the longer-term pathway.
RLAM Sustainable fund range	We added to our existing range by launching the Royal London Global Sustainable Credit fund and the European Sustainable Credit fund. These funds have no direct exposure to fossil fuels, are much lower in carbon intensity than their benchmark, and seek to invest in companies that provide a net benefit to society.

Our net zero commitment

At the heart of our approach is our commitment to achieving net zero by 2050[1] and reducing our carbon equivalent emissions by 50% by 2030 for our in-scope assets, using 2020 as the baseline year. Our in-scope assets are those in funds managed and controlled by RLAM, excluding segregated mandates managed on behalf of external clients. Our commitment is based on the expectation that governments and policy makers will deliver on their commitments to achieve the 1.5°C temperature goal of the Paris Agreement and that this action does not contravene our fiduciary duty to our external investors. We are actively working to support our external clients with assets in segregated mandates where they have made an explicit commitment to achieving net zero, as disclosed to the Net Zero Asset Managers Initiative (NZAMI).

Our objective is to evaluate and/or influence through engagement with issuers representing 70% of our corporate financed emissions, pushing for adoption of emissions reduction targets linked to science-based sector specific alignment methodologies (such as SBTi, the Science-Based Targets initiative) and climate transition plans. We also expect client engagement alongside methodology development in particular asset classes and any development of climate solutions should increase the proportion of AUM in line with net zero over time. We will review the progress of our implementation and commitments on an annual basis as part of our continued Climate Report disclosures.

Foreword

Piers Hillier
Chief Investment Officer

> “Systemic climate risks will impact every country, company and individual in the coming years.”

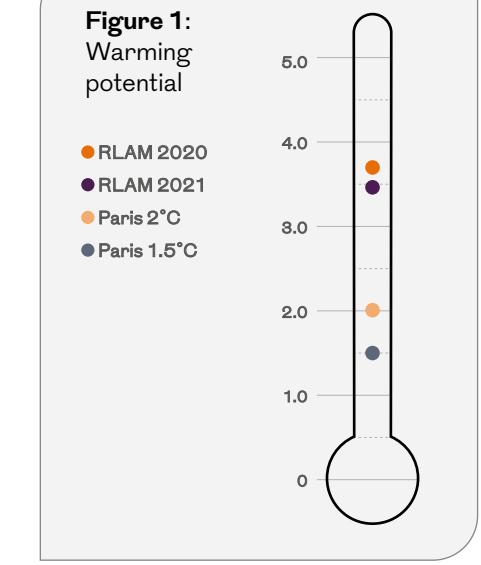
Climate change remains perhaps the greatest long-term risk facing humanity today. It is also one of the most complex. In 2021, RLAM's efforts in relation to climate change have built on the progress made in 2020, with a view to accelerating both our understanding and action. At the heart of our approach is our net zero commitment (see page 4), which you will see referenced through this report, starting with our highlights section.

While it is now broadly accepted that climate change is a systemic financial risk, as stated by both the Bank of England and International Monetary Fund among others, we also need to recognise the complexity and interlinked nature of physical climate change risks (for example, extreme weather, mass migration and water shortages), and transitional climate change risks (such as regulatory risks, reputational risks and stranded asset risks). For example, the actions we take to mitigate physical risks such as shifting to renewable energy, may trigger significant knock-on transition risks, such as unemployment for those in left behind sectors. As such, the way we implement change must be carefully considered and managed.

Systemic climate risks will impact every country, company and individual in the coming years. Companies without an approach to managing these risks could incur unnecessary financial losses. At RLAM we understand the role we can play in minimising the impact our investment decisions may have on climate change. In line with what we ask of the companies we invest in, RLAM is committed to a transparent approach to climate change – as shown in our climate risk policy and our commitment to net zero. Our key message is that we don't have all the answers today, but we are working methodically with our clients, the companies we invest in, industry bodies, regulators and governments so we can collectively achieve our goals.

Not only is it difficult to know the right actions to take, it is equally challenging to accurately measure and judge our progress. At present, there is no perfect way to accurately measure an asset manager's contribution to global climate change. We know that the measures used today are highly unlikely to be the ones used in five to 10 years time. To date, we have used weighted average carbon intensity (WACI) as the most appropriate proxy for our portfolios. However we know market expectations are changing and we have started to incorporate new metrics and measures into this report.

Figure 1: Warming potential

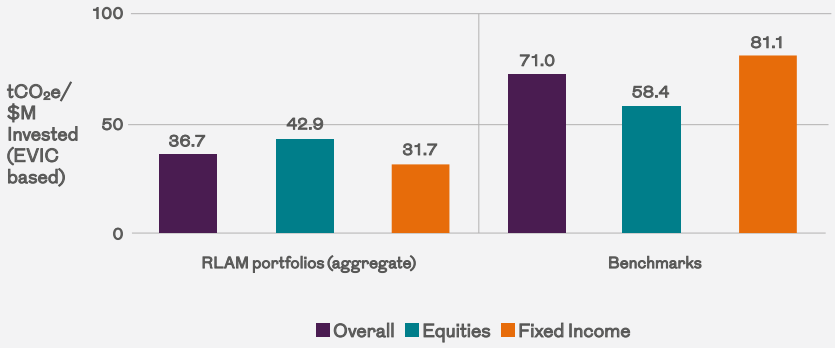


Source: MSCI, as at 31 December 2021. Chart shows RLAM's warming potential alignment with future temperature goals for 2020 and 2021.

There are also a number of targets being used – primarily around whether we should be looking to limit temperature rise to 1.5°C or 2°C. The Paris Agreement of 2015 set out a goal of limiting global warning to 2°C, preferably 1.5°C. Many people still see 2°C as the target, but in our view, we should all be targeting a 1.5°C increase given the information and data seen since Paris was signed. But whichever is used, there is still a sizeable gap between those targets, and the implied temperature gains as a result of current policies or when we assume that all current policy pledges are implemented in full. Figure 1 shows the 'perfect scenario' whereby all policies are implemented – and while there is an improvement in 2021 over 2020, it is still some way short of even the 2°C target.

Our objective in 2021 was simple – to commit to a net zero target, and determine what this means for RLAM as we look to reduce the gap for RLAM's assets under management and what this means for RLAM as we work with our clients towards meeting the goal of the Paris Agreement. We know we cannot do this in one year if we want to have real world impact: at an individual portfolio level, high carbon holdings can be sold to give a cosmetic carbon reduction improvement in a portfolio. However, that high carbon emitter would still be operating and thus our divestment would have had no real world impact on global emissions. Exit will sometimes be the right option, but in many cases, engagement and support will produce better long-term results for both investors and wider society.

Figure 2: RLAM carbon footprint 2021



Source: RLAM proprietary data and MSCI data as at 31 December 2021. 'RLAM' refers to equities and corporate bonds fixed income assets – 76% of our AUM.

Our focus this year has therefore been similar to last year: analysing and enhancing the quality of climate data, evolving the way that we assess and mitigate climate risk, and giving our investment teams better qualitative and quantitative information. In addition to this, we took a big step forward in 2021 by moving circa £25bn of our passive equity funds away from market-weight index funds to become ESG and carbon tilted funds. This is a significant step forward on our climate transition plan and demonstrates that we are already taking real action towards meeting our 2050 target.

Overview

The 2021 RLAM Climate Report incorporates the Task Force on Climate-Related Financial Disclosures (TCFD) requirements. RLAM has been an official supporter of the Financial Stability Board's (FSB) TCFD since June 2020, aiming to increase and improve our own disclosure and that of the companies we invest in. Having produced our first report a year ahead of the mandatory requirement, we are pleased to provide this update on our activities.

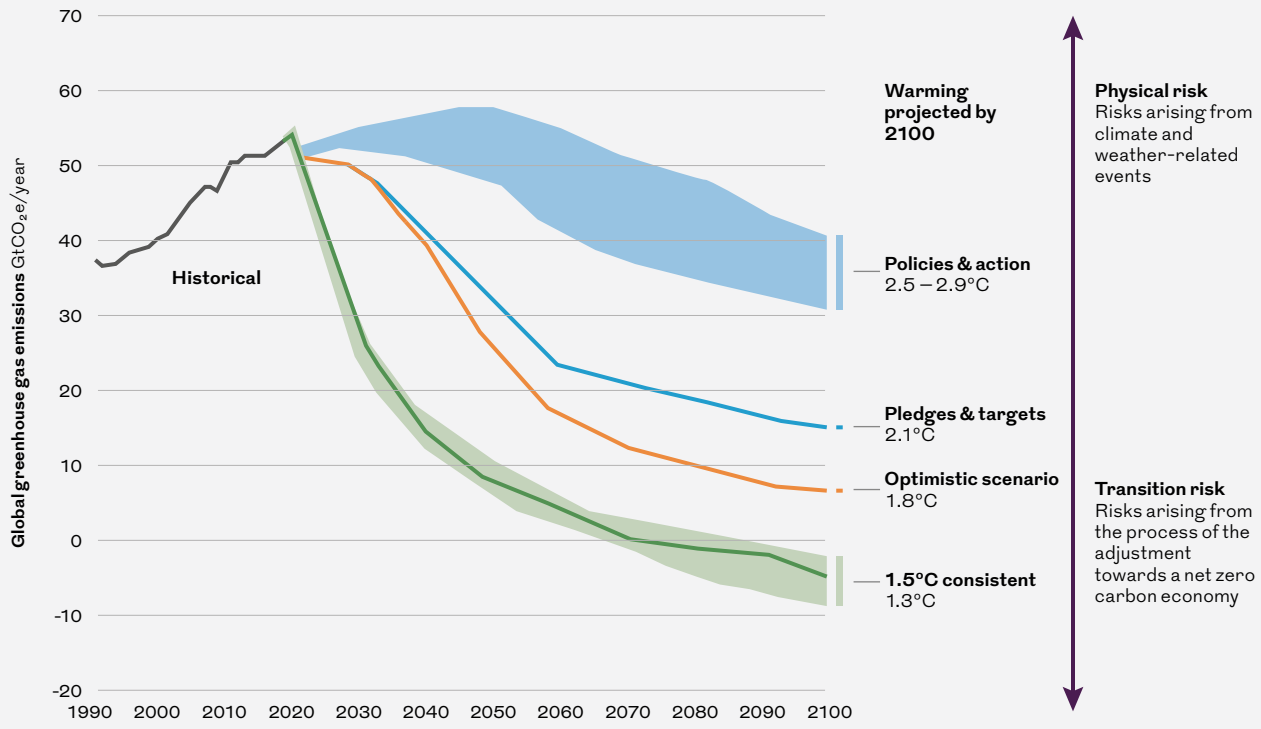
We are long-term advocates of responsible investment at RLAM – we acknowledge the potential for investments to impact wider society, and also the very real and positive impact of responsibility on both our business and investment performance. Climate change, and our approach to it, is a fundamental part of our thinking and analysis. We recognise the science of climate change and the dramatic impact that this can have on our clients' financial outcomes if not managed appropriately.

This is our second Climate Report in response to the Climate Financial Risk Forum (CFRF) guidelines. It builds on our first report last year. It starts with an overview of governance – the process by which we set our risk appetite – and then moves on to risk management, which explains how we manage these risks. These sections are relatively short, but give the context for our strategy section, which looks in turn at how we embed climate considerations into our investment and strategic business decisions. It provides a snapshot of exposure to and consideration of climate risk in our investment portfolios. This year's report evidences the advances we have made to our approach in this critical area.

During 2021, we have progressed the

Figure 3: Definition of climate-related risks: physical and transition risk

Possible carbon emissions pathways and their implications to global mean temperature – November 2021 update



Source: Climate Action Tracker.

way we look at climate risk throughout our business to reflect the reality that climate risks are constantly evolving. Climate risks are complex, and ultimately, as regulation, technology, and the science on climate changes with time, the risks we must manage will evolve. As a result, the targets and strategy we use to manage these risks must be dynamic and able to capture these changes to remain fit for purpose. We have reflected the close link between strategy and targets in how we have structured this year's report, by integrating climate strategy and metrics and targets into one chapter.

RLAM emissions data

There are two factors to consider when looking at the climate metrics in this report. First, the collection and assessment of climate data is still in its infancy. In this report we use a wide variety of metrics as these are the best available or are seen as industry standard. But as companies focus on this issue more, and demand from investors grows, we expect the quality and relevance of data to increase. While positive in the long run, it does mean that we would expect some of the metrics used here to be seen as obsolete in the next few years. Second, year-on-year comparisons are especially difficult when looking at 2021 compared to 2020, as economic activity levels have been significantly impacted by Covid-19. Lockdowns and restrictions mean that some industries have seen huge dips and spikes in activity that were entirely pandemic driven, making it difficult to see long-term trends.

Figure 4: RLAM Climate Report data coverage 2021

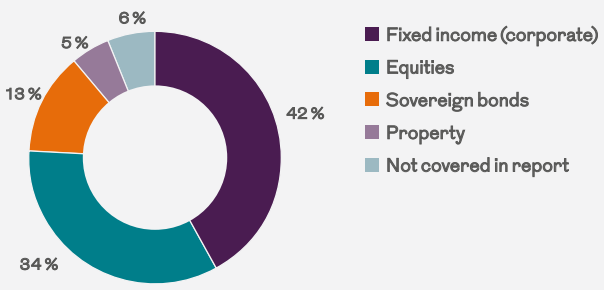


Figure 4 outlines the proportion of RLAM assets which are covered in this report. The equity and credit portfolios share climate metrics and are broadly referred to in this report as the RLAM-wide portfolio. Sovereign bonds and property are reported with their own metrics. The 6% not covered in the report are derivatives, cash, and investment funds outside RLAM.

RLAM's carbon impact

When reporting emissions, it is important to note the different scopes of emissions, as outlined below, all of which are reported in figures 5 and 6. Scope 3 emissions are very important for understanding the climate impact of some sectors such as banking (emissions from investments or project finance) and oil and gas (emissions from vehicle tail pipes). However, these emissions can often be double counted when aggregating them up to portfolio level, and the quality of disclosures and estimation models are often poor for this metric. Despite some of these limitations, we think it is important to disclose scope 3 emissions for transparency, and to help us understand how we compare with our peers.

Our largest impact on the climate is through our investment activity, which is why our commitment to net zero and strategy refers to our scope 3 investments. RLAM's scope 1, 2 and direct scope 3 (i.e. non-investment) emissions are also committed to net zero. The strategy for delivery of these emissions is led by Royal London Group.

Our scope 3 (investment) emissions

There are two main metrics investors use to measure the impact of their investment on the climate (their scope 3 – investment emissions): financed emissions, and weighted average carbon intensity (WACI). These measures are similar in that they take a carbon emissions figure, and then divide by a factor denoting the size of the company to arrive at a metric that can be used to compare the performance of companies of different sizes.

Financed emissions refers to the proportion of a company's carbon emissions that can be attributed to an investor depending on their enterprise value (often referred to as EVIC or enterprise value including cash, as this sums equity, debt and cash) they have invested in. As a basic example only (please refer to the appendix for precise calculations), if company A emits 100 tonnes of carbon (tCO_2e) per year, an equity investor that owns a 10% share in company A would have financed 10 tCO_2e of its carbon emissions for the year. This also applies for fixed income, though the exposure comes through financing via bonds rather than ownership.

The metric is useful for public equities and fixed income issued by public companies, and can be aggregated across these asset classes for multi-asset portfolios. However, it doesn't work so well for private company debt because there is often significant divergence between how markets value equity and how equity is valued within company accounts: this means the two approaches often result in incomparable data. For this reason, we have only disclosed data for the public companies held within our fixed income portfolios. We are pleased that our investments have significantly lower carbon intensity than the relevant benchmark (figure 7).

Scope 3: Business Travel

Scope	Definition
Scope 1	Emissions from operating our business
Scope 2	Electricity and heating in our offices
Scope 3 - direct	Air and rail transport from our staff
Scope 3 - investments	The sum total of Scope 1 and 2 emissions (reported or estimated) of the companies in our investment portfolios

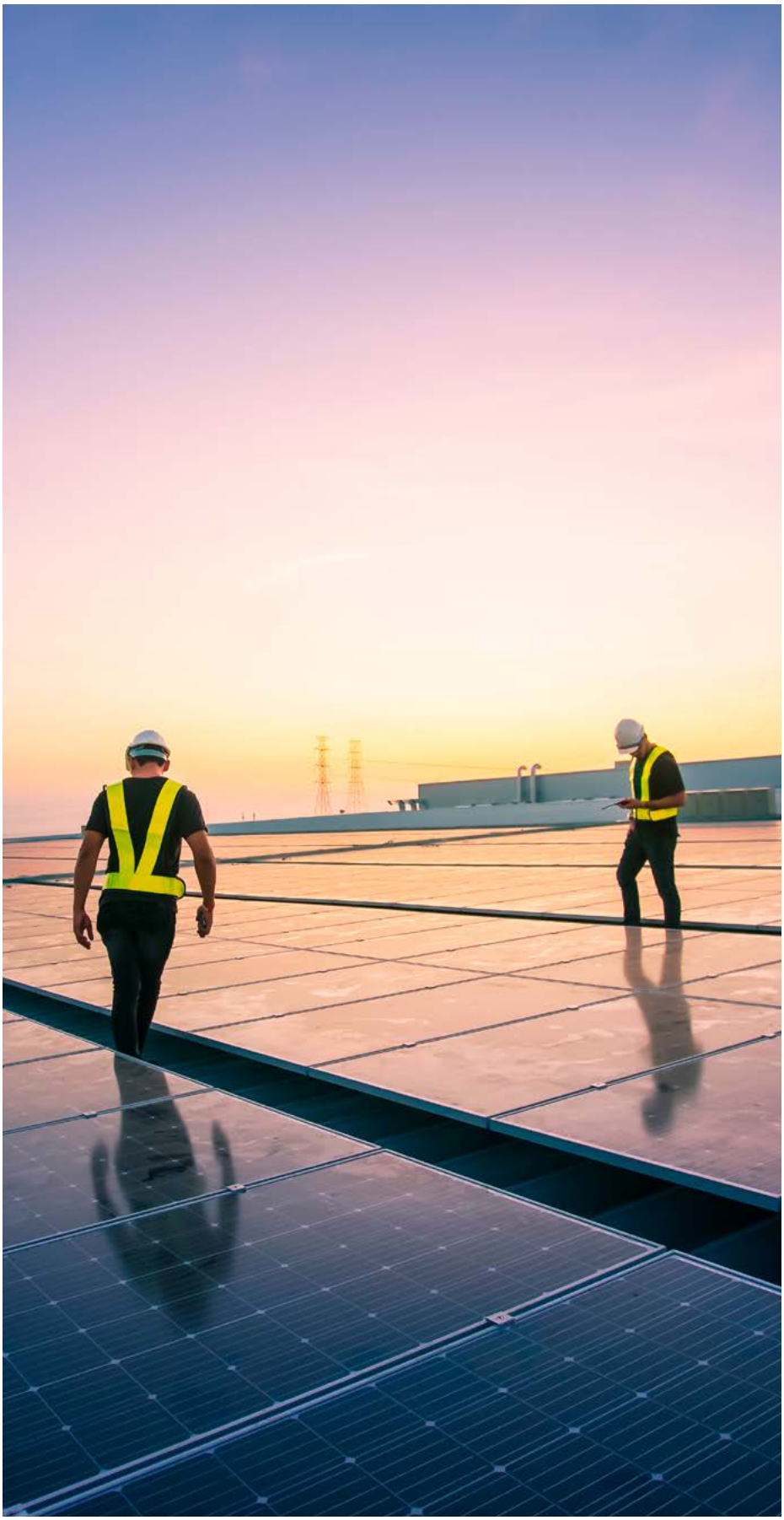
Figure 6: RLAM carbon emissions, 2020 to 2021

Scope	Unit	2021	2020	y-o-y
Scope 1	tCO_2e	0.13	0.19	-31.6%
Scope 2	tCO_2e	65.25	69.80	-6.5%
Scope 3 - direct	tCO_2e	11.69	15.00	-22.1%
Scope 3 - investments	tCO_2e	3.05million	3.23million	-5.6%

Figure 7: RLAM investment carbon emissions 2021

	RLAM			Equities			Fixed income		
Financed emissions (EVIC-based) tCO_2e									
	Portfolio	Benchmark	Difference	Portfolio	Benchmark	Difference	Portfolio	Benchmark	Difference
Financed scope 1&2 emissions	3.0m	6.1m	-50.0%	3.2m	4.3m	-26.5%	2.9m	7.5m	-60.8%
Financed scope 3 emissions (reported)	21.7m	41.3m	-47.4%	32.1m	38.1m	-15.9%	13.4m	43.8m	-69.5%
Financed scope 3 emissions (estimated)	21.3m	34.0m	-37.3%	22.8m	26.6m	-14.1%	20.1m	40.0m	-49.7%
Carbon footprint (EVIC-based) tCO_2e/$M invested									
Carbon footprint scope 1&2	36.72	70.97	-48.3%	42.91	58.40	-26.5%	31.74	81.06	-60.8%
Carbon footprint scope 3 (reported)	272.02	490.51	-44.5%	430.90	512.35	-15.9%	144.41	472.96	-69.5%
Carbon footprint scope 3 (estimated)	256.98	398.32	-35.5%	306.55	356.68	-14.1%	217.16	431.77	-49.7%

Source: RLAM proprietary and MSCI, 31 December 2021. For more details on benchmark, please see methodology section in Appendix I.



We use WACI following the recommendations published in 2017 by the FSB Taskforce, as using this metric typically allows us to reach a reasonable data coverage across equities and fixed income. It allows us to aggregate data at portfolio and entity level across multiple asset classes (and private and public markets), and it allows us to track performance over time. However, as an intensity measure, it does have its drawbacks, and we encourage you to read our methodology section to understand its limitations. WACI data is slightly different to financed emissions in that it takes the average emissions per million dollars of revenue in the year. This can mean, however, that absolute emissions are diluted by high profitability or revenue.

Figure 8 shows that RLAM's WACI for 2021 was 86.35 tCO_2e/$m, a figure that could arguably be named the net zero gap. The WACI was 12.3% lower than the previous year – in comparison the intensity of the benchmark reduced by 2.1%. This can be explained through the choices of our fund managers in picking stocks and constructing portfolios that shifted away from higher-emitting companies, and through the companies themselves decarbonising or increasing their revenues relative to their emissions. Tilting our existing passive funds will have also had a positive impact on our WACI.

As RLAM is not at net zero, the warming potential of the RLAM portfolio (i.e., how far temperatures would rise by 2050 should companies not change their current behaviour) is above our 1.5°C target at 3.4°C (figure 9). To meet the climate goal set at the Paris climate conference in 2015 – to restrict global temperature rises to 1.5°C at the most – RLAM portfolios' carbon

Figure 8: RLAM weighted average carbon intensity (WACI)

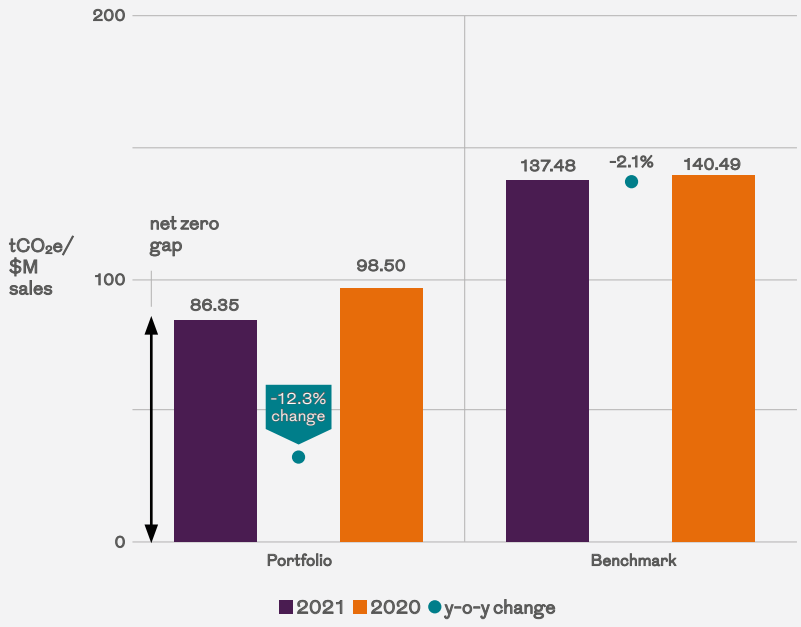
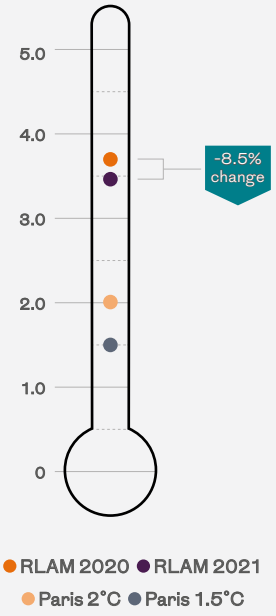


Figure 9: RLAM warming potential



Source: RLAM proprietary and MSCI, 31 December 202 . See page 37 for description of definition of benchmark

emissions aim to be net zero under a 1.5°C warming scenario. Therefore, in warming potential terms, the net zero gap is 1.9°C .

RLAM reduced its aggregate-level portfolio warming potential by 8.5% year-on-year. During 2021 different organisations have tried to push for methodological convergence of implied temperature rise metrics and portfolio alignment metrics in general.

In the future, we will be moving away from the warming potential metric in favour of an implied temperature rise metric. This tracks what value of an investment portfolio is operating in alignment with limiting temperature rises to 1.5°C and to 2°C. A company's alignment is assessed by considering the targets it has set itself with regard to reaching net zero, and whether or not they are likely to achieve these targets given the strategies they have in place, subject to assessment and ratification of those plans and targets by the Science-Based Targets initiative. Currently, 56% of RLAM's investment portfolios are aligned to preventing warming of greater than 2°C by 2050, although RLAM's goal of net zero by 2050 targets warming of no more than 1.5°C, with 22% of our investment portfolio on track to meet this goal.

Figure 10: RLAM implied temperature rise 2021

Value in portfolio with issuers below 2°C	56%
Value in portfolio with issuers below 1.5°C	22%

Source: RLAM proprietary and MSCI, 31 December 2021

Governance

Governance refers to the process and structures RLAM has in place to ensure we assess, monitor and mitigate risks to our business and our clients.

The RLAM Board has ultimate responsibility for setting RLAM's risk appetite and reviewing our strategic risks, including our new strategic risk centred on ESG and climate change. The Board oversees the RLAM Executive Committee, which is responsible for ensuring we achieve our net zero commitment. The Executive Committee approved our net zero commitment in early 2021 and is involved in setting out our net zero plan.

Climate risk management is embedded in RLAM's governance structure. RLAM expects investment teams to manage material climate risks in line with client expectations and investment mandates. Subject matter support is provided by the Responsible Investment team and monitored by the Investment Committee and the Board Risk Committee.

Since our report last year, we have introduced a new Responsible Investment Forum. The forum is chaired by the Head of Responsible Investment and is a regular meeting attended by leaders across the business, including the Heads of Investment Desks, Head of Compliance, Head of Client Reporting and Heads of Institutional and Wholesale Businesses. The forum offers an opportunity to discuss best practice, provide feedback and make recommendations to the business on how to improve and advance our practices in responsible investment (RI) and climate change.

Figure 11: Climate risk governance and responsibilities

Role	Responsibility
Head of Asset Class and all investment managers	Responsible for ensuring material ESG risks, including climate risks, are considered within investment decisions and contributing to engagement and proxy voting decisions.
Head of Responsible Investment (RI) and the RI team	Provides subject matter expertise, support, information, data and analytics to the investment teams, and oversees day-to-day implementation of engagement and proxy voting activities across all asset classes. Product owner of the ESG Dashboard.
Chief Investment Officer (CIO)	Senior Management Function with Executive Committee responsibility for RI, including climate change.
Responsible Investment Forum	Chaired by the Head of RI. Provides an informal place to discuss best practice, provide feedback and make recommendations to the business on Responsible Investment matters.
Investment Committee	Chaired by the CIO. Responsible for monitoring, oversight and advice to the CIO on investment matters as they relate to RI and climate change.
Risk & Capital Committee (RCC)	Chaired by RLAM Chair Shirley Garrood, the RCC undertakes capital and risk oversight of the RLAMH Group to ensure that the interests of shareholders and stakeholders are properly protected through the application of effective risk and capital management frameworks.
RLAM Board	Overall responsibility for agreeing RLAM's approach to climate risk.
Royal London Group Board	The Royal London Board has ultimate responsibility for the way that the Royal London Group manages its response to climate change. For more information, see the Climate section on page 30 of the Royal London Annual Report.

Risk management

Our risk management framework is used to manage our exposure to all known or expected risks and ensure our business performance is not undermined by unexpected events. As part of this framework, RLAM defines risk strategy, risk appetite and policies which set out the objectives, limits and tolerances within which the board expects the business to operate. Such an approach provides assurance that the risks to which RLAM may be exposed are being appropriately identified and managed within risk appetite, while the impact is being minimised.

Since last year's report, we have integrated climate and ESG as a principal strategic risk within RLAM's risk register, which tracks all the risks within RLAM's risk universe (see figure 13). Furthermore, we also now embed climate into the investment performance risk within the risk register, given the potential impact of climate on investment returns. This means we now consider climate in two ways: first, as a stand-alone strategic risk, and second, as an investment performance risk. Both of these climate risks are subject to the same process for risk assessment and mitigation as other principal business risks.[2]

The decision to recognise climate and ESG as a principal risk is a natural consequence of a number of factors, listed below, and echoes the approach of our parent, Royal London Group.

- Growing regulatory expectations, including disclosure requirements.
- Changing public sentiment towards climate change and ESG.
- Growth in advanced ESG investment strategies, including our Sustainable Funds.
- Greater interest and demands from our clients in relation to both existing and new fund developments.
- Commitment to net zero by 2050.

Our move to integrate climate risk into our risk management system (RMS) and identify it as a principal risk, means we are working towards having a holistic approach to climate risk management which is both bottom-up (where we assess this as part of our ESG integration) and top-down (assessing as a principal risk).

Strategic risk management

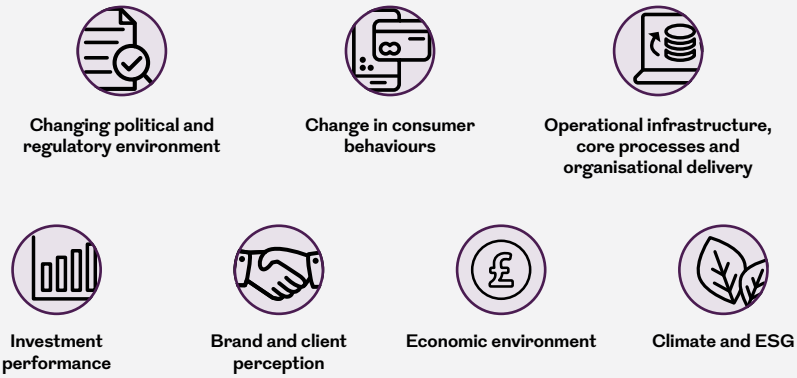
We consider climate and ESG risk as a stand-alone strategic risk, because failing to do so within our corporate strategy would risk failure in the following areas:

- Meeting the needs and expectations of clients.
- Meeting regulatory requirements.

To manage these risks we have undertaken a number of activities in 2021, focusing mainly upon client needs as well as climate and ESG regulation activity. Our product strategy sets the aspirations of our current and future product range with respect to climate. Based upon client views and market intelligence it outlines our intentions for new products and product intentions over the next five years. Our five-year product strategy plan is revisited on an annual basis, taking into account a number of inputs and is overseen by our Distribution & Product Committee, which is chaired by our Chief Distribution Officer.

With regards to ESG regulation, to ensure effective oversight, we set-up an ESG Regulation Steering Committee to oversee our interpretation and application of upcoming regulations, including Sustainable Finance Disclosure Regulation and European Union (EU) taxonomy. The Steering Committee is also overseen by our Chief Distribution Officer and is attended by leaders across the business, including our Chief

Figure 13: Principal risk – a current or existing risk that could lead to losses



Investment Officer, Head of Compliance, Head of RI and Heads of Asset Class.

In addition to these largely internal activities, we are engaging with organisations around client reporting and data requirements to meet clients' evolving needs and continue to look at how home market and international regulation will impact these outputs, particularly in respect to potential barriers to entry.

In 2021, we undertook an internal audit of our responsible investment disclosures to assess if appropriate processes are in place for us to deliver on our commitments to customers, including those relating to climate. The purpose of the audit was to determine whether we have appropriate controls in place to ensure we are not misleading investors. These results were presented to a number of key stakeholders across the business, including our Chief Executive Officer and Chief Investment Officer. Results were positive and centred on RLAM ensuring we continue to embed RI and associated principles across the business as our RI strategy evolves.

Climate risks can be classified into two main categories: transition risks, which relate to the risks posed to a company by the transition to a zero carbon economy – new regulations, for example; and physical risks, which relate to the risks posed to companies by the changing climate such as flooding and extreme weather.

Investment risk management

Climate risks can have a material impact on a company's financial performance, and must be assessed in the investment decision making process.

To better manage our climate risks we have been working to integrate a greater number of transition and physical risk metrics and information sources into our processes and climate analytical tools, reporting and research. The aim is to provide investment teams a more complete view of the risks posed to any potential investee companies, so that these can be built into their assessment of the potential risk / reward profile of any investment (see figure 14). These sources of information are also central to our ability to effectively transition to net zero, via which we can set interim targets and measure fund-level exposure to climate transition risk.

We will continue to expand the use of climate transition and physical risk data so as to help reduce exposure to investment performance risk as a result of climate change.

Climate value at risk (C-VaR)

Another metric that we are seeking to use for information and risk monitoring purposes is climate value at risk (C-VaR).

The C-VaR model provides an assessment of how climate change may impact the investment returns of an asset, essentially by taking a range of transition and physical risk metrics and transforming them into a single 'value at risk' data point, which is the proportion of investment returns at risk of loss due to climate change. Further detail on the metric is included in the glossary and appendix.

In 2020, we reported C-VaR analytics only for the equity portion of our portfolio due to a lack of data across other asset classes. In 2021, we selected C-VaR across four main potential scenarios of how the economy will transition to net zero:

1. A disorderly transition to prevent a temperature rise of more than 1.5°C – on the understanding that the time for orderly policy making to achieve 1.5°C has already passed.
2. A disorderly transition to prevent a temperature rise of more than 2°C – for example due to late policy intervention.
3. An orderly way to prevent a temperature rise of more than 2°C.
4. A scenario of a 3°C hot-house temperature rise, which represents the best estimate of the effect of current policies.

Figure 14: RLAM climate risk metrics

Climate Information Type	Risk Type	Scope	Purpose	Data Source
Emissions and intensity metrics	Transition	Fixed income and equities	To understand overall emissions intensity and help fund managers in security selection and portfolio construction. Also used to measure year-on-year progress.	MSCI/RLAM
		Operational carbon emissions	To measure our operational carbon emissions and compare against our target	Mitie Energy
Climate alignment metrics - warming potential	Transition	Fixed income and equities	To understand our overall alignment with the goal of the Paris Agreement and aid with determining engagement priority companies.	MSCI
In-house climate score	Transition	Fixed income and equities	A new tool being rolled out to aid fund managers in portfolio construction by understanding a company's exposure to climate risk and their ability and willingness to transition.	RLAM
Energy Performance Certificate (EPC) ratings	Transition	Properties	To identify where property energy efficiency upgrades are required, aid fund managers in portfolio construction and track our performance against targets.	Braithwaite
Flooding data	Physical	Properties	To identify exposure to properties at increased risk of flooding and aid portfolio construction.	Landmark

Although climate models are accurately predicting future warming, the extreme weather events full impact are hard to predict. Despite this, we also report two physical climate risk scenarios:

1. A moderate physical risk scenario.
2. An aggressive physical risk scenario. As outlined in the 6th Assessment Report from the Intergovernmental Panel on Climate Change (IPCC).[3]

We included C-VaR metrics in our report last year (See page 32 of our RLAM TCFD report 2020). This year, we moved to a different source for the underlying data as we felt that this was both broader and more robust. As well as calculating the 2021 figures, we re-calculated the 2020 figures and have included these here for comparison. It is important to note that for all scenarios, transition and physical risk are two sides of the same coin. Figure 15 demonstrates that it is the disorderly transition scenarios – whether 1.5°C or 2°C – that have the worst impact on the markets. Equally, physical risk is more likely to have a significant impact on markets as global temperatures rise. This is because physical risk will create value erosion as climate change impacts resources, supply chains, economies and the very environments and resources that are needed for the companies in our portfolios to deliver the value and wealth that is expected.

The RLAM equities portfolio performed better than benchmark in both 2020 and 2021 (Figure 15). The benchmark has shown an improvement over the year under most scenarios (the negative percentage change showing overall risk has decreased). However, the RLAM equity portfolios have shown greater improvement than the benchmark under each of the assessed scenarios.

Figure 15: Climate value at risk in RLAM equity portfolios

	RLAM equities portfolio			Equities benchmark		
	2021	2020	Change	2021	2020	Change
1.5°C Disorderly	-18.7	-19.6	-4.9%	-21.5	-22.4	-4.1%
2°C Disorderly	-13.8	-14.4	-4.5%	-16.2	-16.6	-2.5%
2°C Orderly	-1.05	-1.1	-7.4%	-1.6	-1.6	0.5%
3°C ("Hot house")	-0.6	-0.7	-5.4%	-0.9	-0.9	0.7%
Moderate physical risk	-6.8	-7.0	-2.6%	-7.8	-7.9	-1.8%
Aggressive physical risk	-10.5	-11.1	-4.7%	-12.0	-12.3	-2.7%

Source: RLAM proprietary and MSCI, 31 December 2021

This data gives us the headline risks and challenges from different scenarios. Looking ahead, we will continue to work to gain a more granular understanding of how these risks transmit through our different portfolios, including the sector and company breakdown of C-VaR. This year we also calculated RLAM-wide[4] C-VaR using the Network for Greening the Financial Systems (NGFS) scenarios, which incorporate our fixed income assets (figure 16). Our business-wide portfolio performs better than the benchmark in all scenarios, and considerably better in the 1.5°C disorderly scenario of rapid decarbonisation (27%).

Figure 16: RLAM Climate Value-at-Risk

	RLAM 2021	Benchmark 2021	Difference
1.5°C Disorderly	-13.37	-18.31	-27.0%
2°C Disorderly	-8.93	-11.98	-25.4%
2°C Orderly	-0.63	-0.89	-29.4%
3°C ('Hot house')	-0.41	-0.52	-20.9%
Moderate physical risk	-3.79	-4.39	-13.6%
Aggressive physical risk	-6.50	-9.25	-29.7%

Source: RLAM proprietary and MSCI, 31 December 2021

Strategy

Our strategic goal to be net zero by 2050

In 2021, RLAM formally made a commitment to achieve net zero by 2050. This is an important commitment for us and something we do not take lightly.[1]

RLAM's climate transition plan is currently in the development stage, and we aim to disclose our progress on this during 2022 as part of our commitment to the Net Zero Asset Managers Initiative (NZAMI)[5] – see page 4 for details of this commitment. We are also working to align with the new requirements of the Financial Conduct Authority (FCA), which will require the publication of a climate transition plan.[6]

Our commitments include:

- Achieve net zero across our investment portfolio by 2050.
- Reduce carbon equivalent emissions from our investment portfolios by 50% by 2030.
- Develop solutions that enable clients and customers to invest in the low carbon transition.

Setting our commitments was a key step. Now, we are focusing on creating a climate transition plan, currently based around the following four key actions:

Understand: What is climate change and how is it affecting our business and clients?

Assess: Where are we invested? Where are the risks/opportunities in our assets and strategies? Which entities are willing and able to transition and which are not? What are our options?

Respond: Influence production of better data and analytics. Make science-based decisions that align our business to the goals of the Paris Agreement. Evaluate the decarbonisation pathways of assets and portfolios and redeploy capital towards lower carbon options. Engage with current and future high-impact issuers.

Embed: Incorporate more climate metrics into everyday investment decision-making. Measure, monitor and act on performance. Recalibrate if needed. Report our progress.

Article 8 funds

According to the Sustainable Finance Disclosure Regulation (SFDR), an article 8 fund is one that "promotes, among other characteristics, environmental or social characteristics, or a combination of those characteristics, provided that the companies in which the investments are made follow good governance practices".

Article 9 funds

According the SFDR, an article 9 fund is "a fund that has sustainable investment as its objective or a reduction in carbon emissions as its objective".

Building an agile climate strategy

To reach our net zero ambitions, RLAM's climate change strategy is focused both on opportunities as well as risks; we seek to reduce the negative impact of our business on the climate, while increasing our resilience to change, and remaining open to the opportunities that arise from the transition to net zero.

As the impacts of climate change will evolve over time, our strategy must be prepared to change in response. We use a variety of inputs to inform our approach to climate, including external and internal data, climate expertise, and engagement insights from companies. These inputs will change as we learn and obtain better quality information. Our climate strategy is influenced by external factors while also responding to the outcomes of our own activity and is consistent with our fiduciary duty.

Product development opportunities

Product development will help RLAM achieve its net zero goals both by improving our current product range and by developing new products to give clients greater choice. As such, in 2021 we enhanced our product range to offer more funds that have an explicit carbon or climate transition objective. We also worked closely with a number of our institutional clients to understand their needs around carbon and climate change, and made changes to reduce the carbon intensity of their portfolios and focus our investment more on companies with a credible climate transition pathway.

RLAM Equity Tilt funds

Last year, we also transitioned our

passive equity funds from index trackers to ESG and climate-tilted funds. Our updated investment process continues to deliver a risk and return profile similar to the index, but it now incorporates ESG and climate-related investment criteria, and has introduced the ability to tilt the funds towards or against these factors. The funds' new objective is to reduce carbon intensity and improve their ESG and responsible investment profile relative to the benchmark, while still providing similar returns.

The six funds (two focused on UK markets, four looking at Europe, Japan, Asia ex Japan and the US respectively) target a 30% reduction in carbon intensity relative to the reference benchmark for global funds and approximately 10% for the UK funds, conditional on remaining within a 1% risk tolerance from their respective benchmarks. These funds reduced their carbon footprint by 16% by the end of 2021.

For more details on the changes to these funds, please see the fund prospectus at www.rlam.co.uk or read our update in the 2022 RLAM Stewardship Report.

RLAM sustainable fund range

In 2021, we added to our sustainable fund range by launching the Royal London Global Sustainable Credit fund and the European Sustainable Credit fund, both of which are Article 9 compliant in the new EU Sustainable Finance Disclosure Regulations (SFDR) (see box on page 18 for more information). These integrate the expertise of our sustainability experts and fixed income investment teams. It builds upon our experience of running this strategy on a segregated basis over the past two years, and makes this investment proposition available to a wider client base. These funds have no direct exposure to fossil fuels, are much lower in carbon intensity than their benchmark, and seek to invest in companies that provide a net benefit to society.

Property – net zero pathway

RLAM published a net zero target and strategy for our property funds in 2021, which complements our net zero strategy for equities and fixed income assets. For property, we aim to achieve net zero by 2030 for our directly managed property assets and developments, and by 2040 for our indirectly managed property assets. In setting these targets, we are responding to the demand being seen from policymakers, investors, clients and occupiers to reimagine the future of the built environment as one that is positive for people and the planet. We are also making this commitment because it aligns with our belief that we must effect change on the issues that matter most – including climate change.

To undertake this ambitious approach we assessed the carbon impact of our property portfolio and estimated what reductions and interventions will be needed to meet our net zero plan. We have identified ways that we can reduce embodied carbon and operational energy used for standing assets and new developments. We are also planning to increase on-site renewable energy capacity, purchase off-site renewable energy to help run our buildings, and investigate a carbon offsetting strategy.

With the direction of travel outlined, we have developed a detailed delivery plan for achieving net zero carbon that has concrete actions for the short, medium and long term. We are now starting to embed this action plan into our governance structure, acquisition process, leasing strategy, property management approach and development pipeline.

For more detail please refer to RLAM's dedicated Property net zero pathway report.

Global equity funds

In 2021 we launched two global equity funds in the Irish market, both of which are Article 8 compliant (see box on page 18 for more information). Within the funds, we promote climate mitigation, focusing on a company's willingness and ability to transition to a net zero world by 2050, and have material and tangible 2030 plans to give confidence in the longer-term pathway. As part of our investment management process for these funds, we have built a bespoke dataset of our holdings as we believe forward-looking qualitative analysis is an important way of addressing transition risks and opportunities. For more details of our Global Equity funds, see our 2022 Stewardship and Responsible Investment Report.

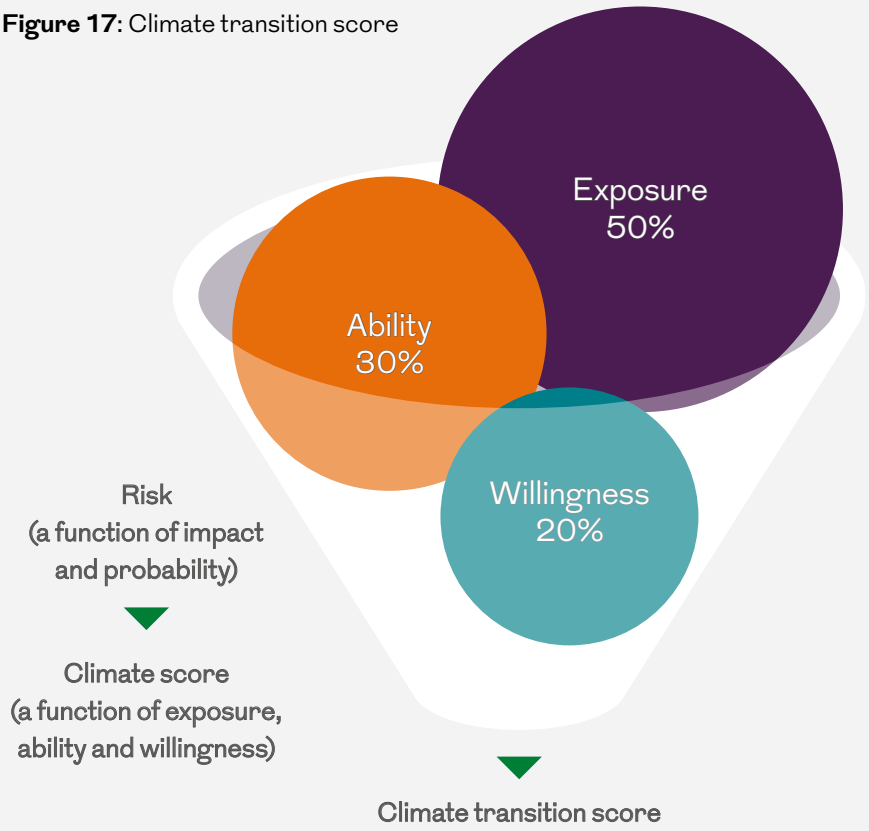
ESG integration

We believe that it is essential to integrate the assessment and consideration of material ESG issues into our investment processes across asset classes. Climate change will have a material impact on our investments, but the impacts will vary by asset class, strategy and fund. Therefore we are working to provide good quality data and insights to our investment teams so they can continue to enhance their approach to integrating climate considerations into investment decisions.

Our climate score

Last year we developed our bespoke ESG dashboard to act as a central repository for ESG and climate research. Critically, the dashboard consists of bespoke, bottom-up research, opinions, and ESG and climate scores that give our fund managers instant access to the knowledge and experience of our experts, opening up discussions on company climate strategies and enabling more efficient ESG integration. Creating this central point helps us to respond to the imperfect nature of existing climate data, allowing us to add context and bespoke in-house data to give investment decision-makers better information.

Figure 17: Climate transition score



Our proprietary data model scores issuers and investee companies on their performance across four distinct pillars: environment, social, governance and climate. This reflects the importance we place on tackling climate change, which we see as separate and distinct to other RI issues. It also includes a controversies overlay. (For more information on the pillars, see our Stewardship and Responsible Investment Report 2022).

Our RI and investment teams have worked together to build our proprietary climate score (see figure 17) which helps improve our understanding and ability to incorporate backward- and forward-looking climate data into security analysis. The climate score seeks to measure:

- A company's current exposure to climate transition risk (exposure).
- Future-looking considerations or possible trajectories towards net zero emissions (ability).
- The company's record in reducing emissions and its targets (willingness).

The score aims to capture our view of whether a company is able to transition to a lower carbon model or not. This is information that we can use in engagement with companies, and that can also help inform investment decisions or portfolio construction. We believe it will also help us monitor and manage our climate transition risks across our portfolios.

Avoiding blanket exclusions

While RLAM does implement fossil fuel exclusions across a number of investment strategies, including in our sustainable fund range and our cash funds, we do not have RLAM-wide fossil-fuel based sector exclusions. Rather than exclude, we favour engagement to support companies closing their brown assets rather than selling them onto another entity. This is the responsible retirement of fossil fuels, and managed decline over simply selling of the brown assets and having no real world impact. Although the exclusion of carbon intensive sectors from our portfolios would certainly help to reduce portfolio carbon emissions, it would have little real-world impact. Furthermore, we believe that these sectors have a key part to play in the climate transition process. The materials and utilities sectors are key examples of this. Utilities are a key component of fixed income markets (Figure 18) as their desire for long-term funding fits well with fixed income investors such as pension funds which are looking for long-term streams of cashflows to help meet liabilities.

We see a similar concentration within equity markets, where the WACI of the utilities and materials sectors accounts for around half of total emissions, and further analysis shows that within these sectors, it is electricity generation (utilities) and mining (materials) that account for most. This is perhaps what one would expect intuitively, but helps focus our efforts into sectors that can make the greatest difference in aggregate.

The materials sector is a significant source of greenhouse gas (GHG) emissions. The largest component of this sector is mining – physically digging metals and other commodities out of the ground. In 2021 materials overtook utilities to be the largest contributing sector to our equity funds' carbon

Figure 18: Weighted average carbon intensity – fixed income

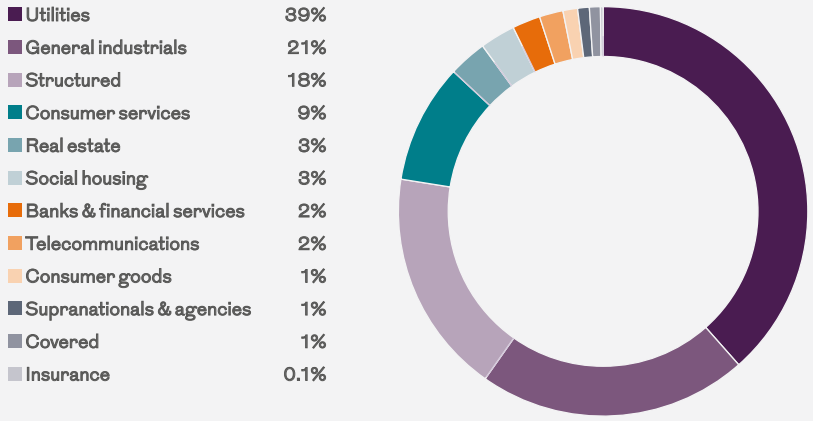


Figure 19: Weighted average carbon intensity – equities

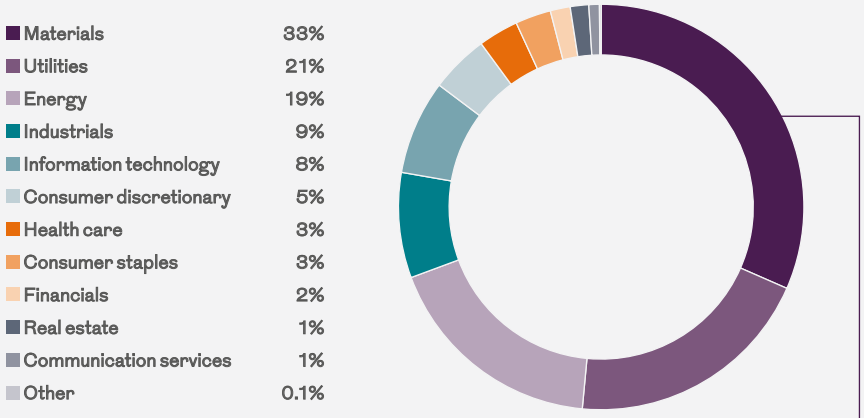
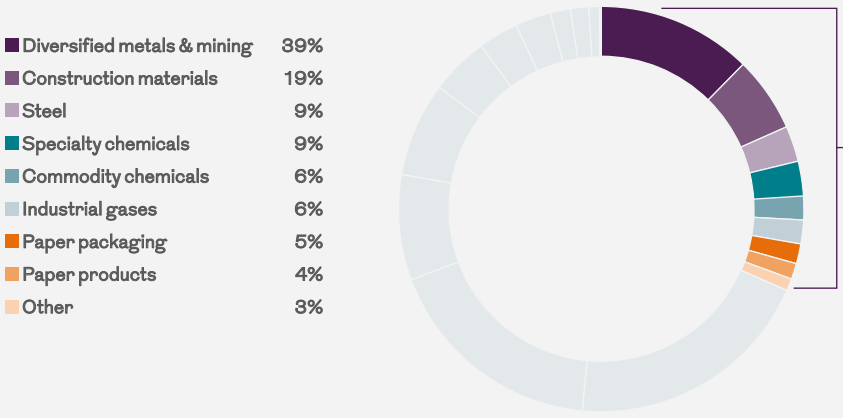
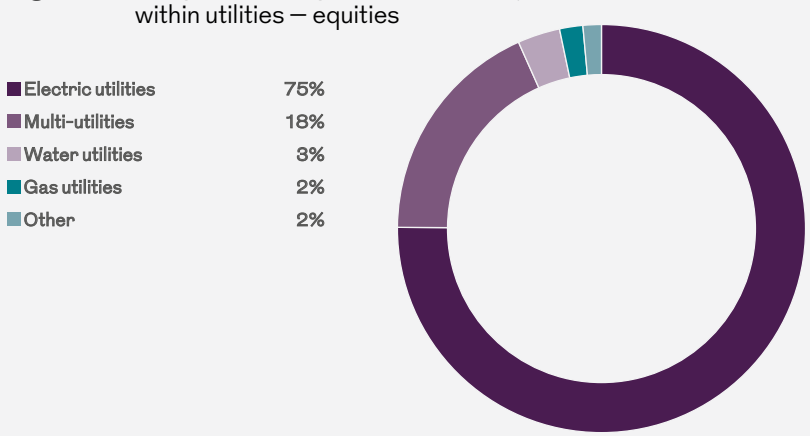


Figure 20: Weighted average carbon intensity within materials sector – equities



Source: RLAM proprietary, MSCI 31 December 2021. Percentages may not add up to 100% due to rounding.

Figure 21: Weighted average carbon intensity (WACI) within utilities – equities



Source: RLAM proprietary and MSCI, 31 December 2021

intensity (see figure 19). It is hard to attribute this change, but we believe that raw materials production recovered as demand picked up from the Covid-19-depressed levels of 2020. In addition, materials sectors revenues were still relatively low and this would impact the WACI calculation as it is an intensity metric which is based partly on company turnover.

Whatever lies behind the change, although they are significant contributors to global carbon emissions, mining companies also play a vital role in providing the raw materials that we need to build critical infrastructure, such as housing and hospitals. Furthermore, mining is also critical in supporting the climate transition, providing the materials to construct renewable energy infrastructure, batteries and much more. That is why our preference is to identify mining companies at the forefront of managing their climate impacts while supporting them as they transition their businesses and become more efficient.

Green and brown revenues

Green and brown revenue metrics try to measure the proportion of a company's revenue gained from either: fossil-fuel activities in oil and gas, thermal coal mining and, thermal coal generation (brown revenues); or activities associated with climate and natural capital solutions (green revenues). For both green and brown revenues, we use a binary approach to calculating the data point on

Anglo American

Anglo American is a leading diversified mining company. It historically incorporated a legacy thermal coal business, however, this part of the business was spun out in July 2021, and now operates independently as Thungela Resources Limited. The firm today continues to produce large quantities of rare earth metals, essential for renewable and carbon capture technologies that will drive the transition. Recently, Anglo American has committed to reducing GHG emissions by 30% by 2030[7], equivalent to 60 of the FTSE 100's lowest emitters going carbon neutral. As a result of both the spin-off, the company's role in providing key materials in supporting the transition and its own carbon commitments, we believe that Anglo American continues to be an attractive investment.

WACI – what you need to know

Weighted average carbon intensity, or WACI, measures a company's carbon intensity by dividing scope 1 and 2 emissions by revenues. It used to be the metric of choice for many investors, but is now being replaced by other measures that are less volatile. WACI is an imperfect measurement because it fluctuates with company revenues, which change from year to year and quarter to quarter. If a company is making more sales, its emissions intensity will reduce, but there may be no real-world impact on emissions – the carbon emitted could be the same or even higher. So a portfolio's carbon intensity could look like it is decreasing, when in fact emissions to the atmosphere have not declined.

It is for this reason that the investment industry is moving away from using WACI to favour other metrics like financed emissions and carbon footprint. We are keen to differentiate between net zero portfolios and investing in a net zero economy – these are in fact two different things. A narrow focus on WACI, carbon footprint or financed emissions that fails to incorporate their trajectories, climate transition plans and other metrics can lead to a net zero portfolio in accounting terms, but without real-economy impact.

At portfolio level we use implied temperature rise metrics which consider the sum of all emissions a company is expected to generate from now until net zero is achieved and calculates the impact on global warming this would have if it were replicated all over the planet. While this is conceptually elegant, it is practically impossible to ascertain without a vast array of increasingly subjective assumptions (see the annex for further detail).

Figure 22: Exposure to green revenues

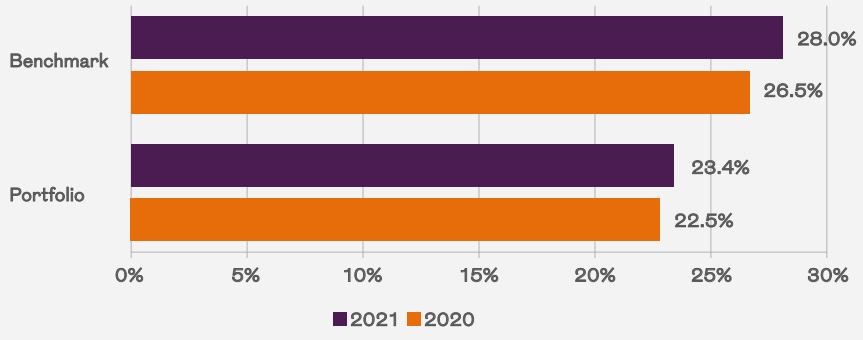
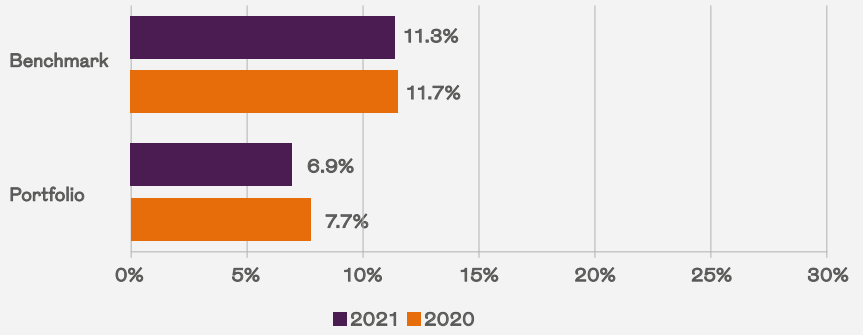


Figure 23: Exposure to brown revenues



Source: RLAM proprietary and MSCI, 31 December 2021

a portfolio level – if a company has even a small amount of brown revenues, we count the entire company in our brown revenue total. Similarly, if the same company has exposure to green revenues, all its revenue is additionally counted as green.

We see this metric as relatively blunt and unsophisticated and we don't tend to use it when implementing investment decisions. However, we believe this has some value as an output metric to look for evidence of climate risk integration, and as such information has been used for some time, we still find clients that like to use these figures, and hence are happy to provide them. In the medium term however, we would expect popularity and use of this approach to decline as alternative data points emerge. (See Appendix III for a critique of green and brown revenue metrics).

We have calculated exposure to companies with green revenues from climate and natural capital solutions, such as renewable energy, energy efficiency, sustainable water, and pollution prevention solutions (see figure 22). The exposure to these activities is 23.4% of our portfolio (lower than the aggregated benchmark's 28%).

Green revenue assessment suggests that RLAM investment portfolios as a whole have less exposure to green revenues than the broad market. This hides a noticeable difference between equity and fixed income exposure. Equity exposure has a higher exposure to green revenues than the benchmark – partly reflecting portfolios such as our sustainable funds, which tend to have higher exposure to the energy companies that are leading the transition in terms of renewables.

Fixed income portfolios have a much lower green revenue exposure than the benchmark. This does not reflect a significant position in mining or gas generation. Instead, it reflects a technical factor in the calculation: a significant proportion of our sterling corporate bond portfolios are invested in off-benchmark bonds such as structured bonds. Many of these are unlisted companies and assets, for which carbon data is limited or non-existent – examples include PFI (private finance initiative)-funded hospitals, mortgage-backed securities or social housing bonds. In many ways, this is a good example of why we believe the green revenues measure is of only limited use. It flags fixed income exposure for further investigation, but if we used it to drive investment decisions, it would push us out of areas that we believe will benefit investors in the long run – even though many of these are clearly not in carbon intensive sectors.

Overall, both our portfolio and the benchmark increased their exposure to issuers that have at least some revenues from climate or natural capital solutions when comparing the end of 2020 and end of 2021, which we interpret as a positive trend.

Exposure to brown revenues fell by 10.8% year-on-year, and is 39.4% lower than the benchmark (see figure 23 on page 23).. We typically favour investment in companies with robust transition plans and/or where stranded asset risk is accounted for in the price or characteristics of the investment. This is particularly evident in our fixed income portfolios, where brown revenues are 59.8% lower than the benchmark and have decreased year-on-year by 27.4%.

Climate metrics

The other key metrics we use at RLAM to track the impact of our portfolios on climate are summarised in figure 24. We use backward- and forward-looking metrics to track both the current carbon emissions of our portfolio (via the WACI and GHG intensity of GDP measure), and our portfolios' alignment to the Paris Agreement (via the warming potential metric).

Focusing on the right risks

One risk of focusing too much on carbon is that you can miss other important ESG risks and, just as importantly, opportunities. A great illustration of this is a bond issued by the Thames Tideway Tunnel, a £3bn super sewer currently being constructed under the river Thames in London. The bond is secured on the project, benefits from its highly regulated cashflows and offers an attractive credit spread for the fundamental credit risks.

When we look at the WACI of this bond, it is very high at around 15x the average bond in the index. But this tunnel provides a fantastic non-carbon-related environmental benefit. Currently, whenever there is heavy rainfall in London, the city's Victorian sewer system cannot cope. Excess rainfall, together with sewage, is pumped directly into the Thames. But once the tunnel is complete, this will remove this last significant source of pollution for the Thames. As such, this is a fantastic environmental and credit opportunity that could well have been missed with a more rigid carbon-only approach.

Figure 24: RLAM key metrics

		RLAM portfolio			Benchmark		
		2020	**2021**	**y-o-y difference**	**2020**	**2021**	**y-o-y difference**
WACI	**RLAM**	98.50	86.35	-12.3%	140.49	137.48	-2.1%
	Fixed income	81.67	70.60	-13.6%	142.0	135.49	-4.6%
	Equities	121.33	105.94	-12.7%	138.44	139.96	1.1%
GHG intensity of GDP	**Sovereign**	0.201	0.140	-30.1%	0.20	0.20	-30.1%
Warming potential	**RLAM**	3.76	3.44	-8.5%	3.72	3.47	-6.7%
	Fixed income	4.0	3.63	-9.4%	3.85	3.59	-6.7%
	Equities	3.76	3.22	-14.6%	3.72	3.32	-10.7%
	Sovereign	3.5	3.11	-11.6%	3.83	3.09	-19.2%

Source: RLAM proprietary and MSCI, 31 December 2021

Sovereign bonds

Climate risk in sovereign bond portfolios evaluates how a country's exposure to climate risks is likely to impact its ability to repay debt - this is somewhat more complex than assessing climate risk within corporate credit. However, we can assess if the issuers' emissions trajectories are exacerbating climate change as well as if their territory is particularly exposed to climate-related physical risk. For this reason, and because we want to be in line with industry standards, we have selected backward-looking metrics for emissions intensity calculated as volume of greenhouse gases per monetary unit of GDP (CO_2e/GDP). This can be interpreted as an equivalent to WACI for corporate fixed income bonds. We have continued to use warming potential as a forward-looking metric, as it allows us to evaluate sovereign alignment with the goals of the Paris Agreement. The Climate Performance Index and the Climate Risk Index assess the issuers' exposure to transition and physical climate risk respectively.

As can be seen in figure 25, we have improved year-on-year across three of the four metrics that we are using to measure and monitor sovereign performance in relation to climate risk. The Climate Risk Index performance, being the only outlier where we worsened year-on-year. Specifically, the Climate Performance Index and the Climate Risk Index assess the issuers' exposure to transition and physical climate risk respectively. As can be seen, though performance was mixed we have outperformed the benchmark in terms of year-on-year performance in all instances. RLAM portfolios are predominantly exposed to nations that are leading the way in working towards achieving net zero in terms of commitments and strategies. As a result, the movement in performance in both directions is more likely to be coincidental than an intentional investment decision output.

Figure 25: RLAM sovereign bond climate metrics

	RLAM			Benchmark		
Metric	2021	2020	Difference	2021	2020	Difference
GHG intensity of GDP	0.14	0.20	-30.1%	0.14	0.20	-30.1%
Warming potential ndc*	3.11	3.52	-11.6%	3.09	3.7	-19.2%
Climate Performance Index 2022	66.21	54.85	+20.6%	66.34	63.53	+4.4%
Climate Risk Index 2021	74.12	65.75	+12.7%	73.97	65.47	+13.0%

*Nationally determined contribution.

Property

As a real asset, the metrics we use to measure the impact of our property holdings have on the climate differ significantly from other asset classes. Monitoring the environmental performance of the properties we own is fundamental to tracking progress towards achieving our net zero goals, while it also highlights opportunities to improve asset efficiency and create a more resilient portfolio.

Over 2021, we have observed a 4% reduction in our combined scope 1 and scope 2 greenhouse gas (GHG) emissions. This is driven by a 10% decrease in our scope 2 emissions, while our scope 1 emissions have, in fact, increased. This increase is entirely attributed to our office assets which have become more occupied compared to 2020 as Covid-19 restrictions have eased, leading to more occupiers returning and placing a higher demand on fuel usage.

We have disclosed our Energy Performance Certificate (EPC) ratings within this report as it is a key indicator in helping us monitor exposure to climate transition risk. 82.5% of our portfolio is covered by EPC ratings, of which 1% have an F or G rating (the weakest rating). As per the requirements of the Minimum Energy Efficiency Standards (MEES), these F and G ratings will need to be improved to at least an E rating by 1 April 2023. To address this, we are currently undertaking detailed assessments of assets with an F or G rating in order to improve the rating.

As part of our latest new construction and major refurbishment sustainability standards, we are now committed to targeting a minimum EPC rating of A for all new-build development projects and a B for all refurbishment projects. This performance standard will help to ensure that our overall portfolio EPC rating average improves over time, ensuring we comply with relevant legislation and meet our net zero ambition.

Figure 26: Carbon emissions from RLAM property portfolio

	Office space		Industrial		Retail shopping centres	
	2020	2021	2020	2021	2020	2021
Total electricity consumption (kWh)	27,372,286.57	25,874,941.86	2,073,262.67	2,043,563.68	384,563.49	380,521.87
Total fuel consumption (kWh)	15,604,658.99	17,560,061.43	455,364.81	550,038.61	212,043.96	200,642.54
Total building energy intensity by floor area (kWh/m²)	133.52	137.35	n/a	n/a	n/a	n/a
Total GHG emissions intensity by floor area (kgCO_2e/m²)	28.72	27.61	n/a	n/a	n/a	n/a
Scope 1 GHG emissions (tCO_2e)	2,678.61	2,959.29	31.25	25.97	38.99	36.75
Scope 2 GHG emissions (location-based) (tCO_2e)	4,816.86	4,290.17	246.11	268.05	89.36	77.65
Total GHG emissions (tCO_2e)	7,495.47	7,249.46	277.36	294.02	128.35	114.4

	Retail		Retail warehouse		Total	
	2020	2021	2020	2021	2020	2021
Total electricity consumption (kWh)	1,003,171.61	1,351,804.09	1,059,989.12	982,616.96	31,893,273.46	30,633,448.47
Total fuel consumption (kWh)	715,794.61	638,526.49	-	-	16,987,862.38	18,949,269.07
Total building energy intensity by floor area (kWh/m²)	85.89	71.59	1.68	1.83	119.06	121.6
Total GHG emissions intensity by floor area (kgCO_2e/m²)	13.91	13.91	0.39	0.39	25.1	24.04
Scope 1 GHG emissions (tCO_2e)	121.48	100.54	-	-	2,870.33	3,122.55
Scope 2 GHG emissions (location-based) (tCO_2e)	224.72	201.38	246.78	208.59	5,623.82	5,045.83
Total GHG emissions (tCO_2e)	346.2	301.91	246.78	208.59	8,494.15	8,168.38

Note: Due to the nature of properties' carbon, energy and water data, the data presented in this section is taken from the period 1 October 2020 to 30 September 2021 (Q4 2020 – Q3 2021). In reporting this way, RLAM has been able to report a full year of actual data rather than rely on estimates. The need to report Q4 – Q3 data is common within the properties management industry and is driven by delays in data availability. Like-for-like intensity metrics are calculated only where whole building coverage is available in order to align with INREV reporting guidelines.

EPC rating	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**No rating**	**Not in scope**
RLAM assets %	5%	12%	32%	22%	11%	0.31%	0.34%	17%	0.47%

Note: The 17% of assets with no EPC ratings are the result of the EPC ratings expiring during in 2021. In 2022 we are undertaking a project to ensure all units within our portfolios have EPC ratings. Not in scope assets include property such as car parks, listed buildings and substations. Source: RLAM as of 30 September 2021

Stewardship and advocacy

To reach net zero by 2050, it might at first glance seem prudent to prioritise decarbonising our own portfolios by directing capital away from the largest contributors to global carbon emissions. However, we believe exclusions of this kind would remove our ability to influence the decisions and activities of these businesses, ignore the existing supply-demand dynamics and the key role they play in the world's journey to a greener economy. Our efforts, therefore, are focused on engaging with our holdings individually or through our participation in collaborative partnerships with other members of the investment community to bring about meaningful change.

The quantitative and qualitative research we conduct to direct our engagement projects and voting decisions, and the information we gather during interactions with companies, is all channelled back into our ESG integration process. While we obviously do not claim ownership for the changes companies make, we believe that as investors we play an important role in supporting the decarbonisation of the economy.

Net zero engagement framework

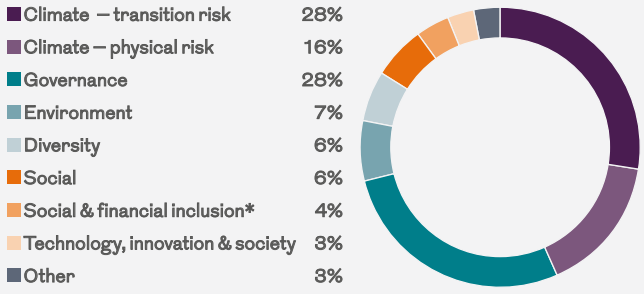
As part of our strategy to deliver on our commitment to decarbonising our investment portfolio to net zero by 2050, we significantly increased our engagement activity on investee companies' climate strategies during 2021, as shown in figure 28. Of the 116 companies we engaged with on climate, we wanted to ensure robust and credible climate transition plans to net zero. We spoke to at least 70 companies in one-to-one meetings on climate transition risk, with the majority seeing progress (figure 29). We selected these 70 companies by largely focusing our efforts on companies which contributed significantly to our total WACI and warming potential, as well as those who sit in high emitting sectors. In 2022 we plan to scale our efforts up even further.

Figure 27:
Total RLAM engagements on climate 2021

116 companies

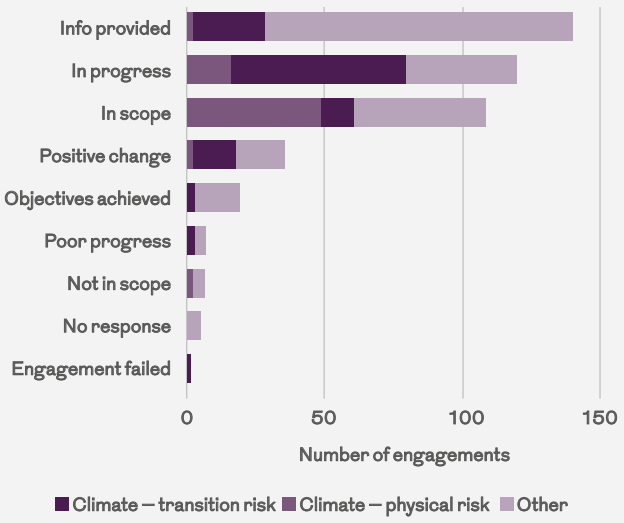
194 meetings

Figure 28: Engagement by topic, 2021

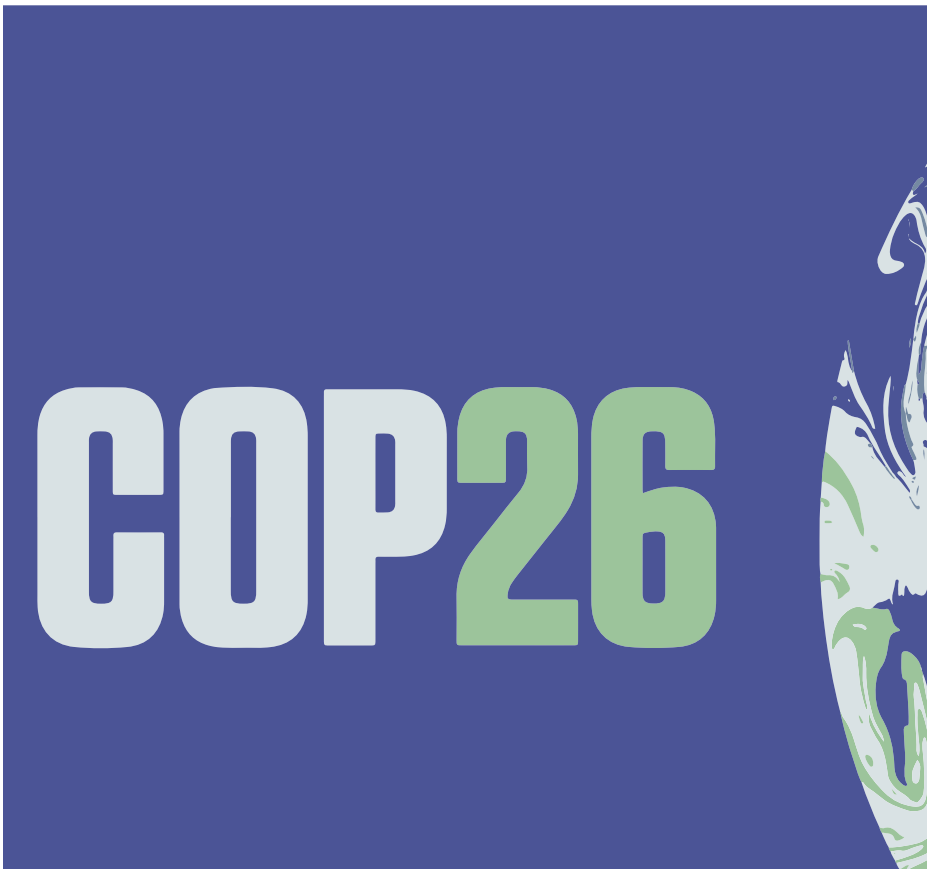


*Includes engagement in support for a just transition.

Figure 29: RLAM climate engagement by outcome 2021



Where engagement fails, we follow our engagement escalation process, which can be read in our responsible investment policy



RLAM expectations for companies

1. Set target aligned with 1.5°c ambition

- Reach net zero emissions at the earliest feasible timeframe, with 2050 as the backstop date.[8]
- Include in your target all scopes of emissions and only offset residual emissions following net zero aligned offsetting principles. [9]

2. Help bring the broader economy to net zero

- Commit to scaling-up technology and solutions required to achieve net zero.[10]
- Lobby for a policy that accelerates the transition.[11]
- Engage with communities, and workers to ensure a just transition.

3. Demonstrate action now

- Set ambitious short-term targets.
- Align the board , management and employees' incentives to achieving net zero targets.[12]
- Develop an action plan with specific operational implications and any business model transformation to becoming a net zero business.[13]
- Align capital expenditures with Paris goals, accounting practices to the delivery of net zero.[14]
- Be transparent about targets and climate transition plans by including them in advisory shareholder votes where appropriate.
- Invest in adaptation measures to ensure resilience against locked-in climate impacts.[15]

COP 26 – our observations

In November 2021, a member of our RI team, Simonetta Spavieri, Senior Engagement Analyst, attended the COP26 intergovernmental climate change conference in Glasgow. Here are some of her main observations:

- The implementation gap is growing as goals become clearer (net zero) and ambition outstrips action taken.
- For the first time, all countries explicitly agreed that fossil fuels must be phased down taking Just Transition into consideration.
- The conversations around climate solutions grew in nuance and specificity, with nature and social impact tied inextricably to climate impact. Adaptation, reparations, and resilience grew in importance as we recognise that we are too late to avoid a large part of the worst impact. 'Who pays?' is the central unsolved question.
- Private sector and finance are portrayed as the central delivery mechanism, having a bigger role than in previous years – but there is pushback on their legitimacy and efficacy. An orderly regulated global transition seems out of reach, with expectations that the market will need to fill part of the climate policy gap.
- Financial regulation and disclosure standards seem focused on adding more metrics and avoiding greenwashing. ESG taxonomies and standards will continue to proliferate and will be nation specific.

Engagement

Not all sectors are equal when it comes to engaging on the climate. Some sectors are more significant contributors to climate change than others, and some have a greater potential for real world impact, positive and negative. These considerations help us to focus our engagement efforts where it matters most, and where it can have the greatest outcome. The energy utilities sector is a major focus for RLAM as a result, as is the banking sector due to its exposure to financed emissions. However, our engagement team remains agile to engage across any sector both proactively and reactively to encourage companies to address both physical and transition risks, and to protect our climate.

Engagement with the utilities sector

The energy utilities sector is a major contributor to global carbon emissions – in 2019 the burning of fossil fuels to generate electricity accounted for 41% of total global energy emissions (IEA, 2019). Despite the pandemic-induced 5% reduction of global emissions in 2020, emissions in 2021 rebounded. And although renewables continue to grow exponentially, 70% of the additional electricity demand in 2021 came from thermal generation, which in reality is almost entirely coal.

While the sector is the largest emitter, it also has a key role to play in the global energy transition. As we expect more and more sectors to switch their energy sources from fossil fuels to renewables, decarbonising electricity not only reduces the sector's own carbon intensity, but will be key in enabling other sectors to transition. This means utility companies are pivotal in reaching the Paris Agreement.

Utility companies were once again among the largest contributors to RLAM's total carbon emissions this year. In 2021 we therefore focused a significant amount of our engagement effort on utilities with the aim of supporting climate transition.

In October 2021, the Climate Action 100+ (CA100+) initiative published its report *Net zero in the power sector: what it looks like and how investors can accelerate and track progress*.[16] Co-authored by RLAM, the report is being used as a tool by investor signatories to this initiative for sector-wide dialogue with power companies, and encourages both collaborative action and individual engagement.

At the time of writing, there are more than 615 investor signatories to CA100+, managing $65trn in assets and representing a significant collective force for engagement. It sets out several actions which investors should encourage power companies to carry out:

- Set a target to reach net zero in electricity generation by 2040 globally and by 2035 in advanced economies, with more than 50% of decarbonisation achieved by 2030.
- Map out a clear decarbonisation strategy that minimises reliance on carbon capture, utilisation and storage (CCUS), avoiding the use of carbon offsets to reduce generation emissions to net zero, and sets a date to phase out unabated coal generation.

- Align capital expenditure with 1.5ºC pathways, including an immediate halt to investments in new coal generation, and commit that new natural gas generation will be net zero by 2040 globally, and by 2035 in advanced economies.
- Set a net zero target for all sold or distributed energy, with a focus on natural gas for heating.
- Commit to a just transition, setting out in a board-level report how the the company intends to manage the wider societal impact of the net zero transition and who will be responsible for implementation.

The climate actions for energy utilities published by the CA100+ reinforce the message that urgent and accelerated ambition is needed, that more companies need to set net zero targets with credible transition plans, and that those with existing targets need to bring them forward by 10-15 years.

Bringing utilities to net zero by 2040

In June 2021, we reviewed the recommendations for decarbonisation of different sectors, from the likes of the International Energy Agency (IEA), and wrote to four energy utility companies that are held across a number of RLAM funds. The aims of our engagement were to request companies to bring forward net zero targets to 2040, and to ensure they are working to a 2030 trajectory to align them with a 1.5ºC pathway.

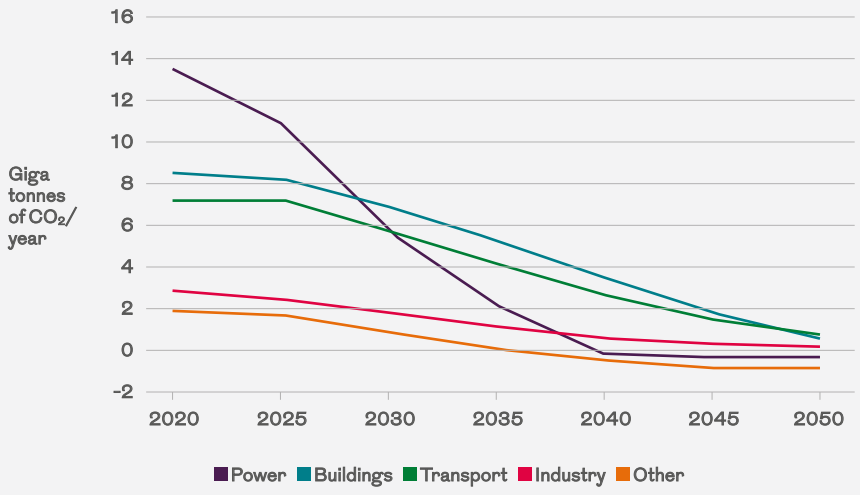
The main conclusion we have reached is that the path to net zero for electricity, and even an accelerated trajectory to net zero by 2035, is technically feasible but requires a scale of investment, infrastructure build-out and change that is complex to deliver, with the major barriers to transition remaining mainly regulatory and socio-political.

Just transition thinking

In last year's report, we elaborated on the work we have be doing on just transition in partnership with the Friends Provident Foundation (FPF). In line with our view, and considering our exposure to the utilities sector, we remain focused on this issue. While remaining in partnership with the FPF, we have undertaken further work with UK utility companies helping them to draft and ultimately publish their own just transition plans. Ultimately, six of the seven companies we contacted published a just transition strategy in 2021. Our feedback on draft plans during the course of our engagements centred on a set of key expectations developed to ensure that all stakeholders likely to be impacted by decarbonisation were included.

For further information on our just transition engagement, please see our just transition engagement project report for 2021.

Figure 30: Sectoral CO_2 emissions pathways – net zero IEA report (2021)



Source: IEA. From Net Zero by 2050 report

Net zero and the banking sector

In 2021, we prioritised engaging with the banking sector and, specifically, companies with high scope 3 (estimated) emissions. This decision was driven by analysis of forward-looking data using warming potential projections to identify which sectors and companies had a potential unmitigated climate risk based on scope 3 and forward-looking metrics.[17]

Until recently, banks have not been very focused on the emissions profile of their lending books, and many of the banks in our portfolios had high estimated scope 3 emissions as a result of lending and financing activity. This changed in the run up to COP26 in 2021, when banks started to think more seriously about the carbon emission impacts of their lending, and made new commitments to address this part of their business activity.

We are asking the banking sector to:

- Reach net zero financed emissions at the earliest feasible timeframe, with 2050 as the backstop date.
- Include all financing activities across different asset classes and sectors within their plans.

- Avoid using offsetting for financed emissions.
- Commit to scaling-up finance for solutions required to achieve net zero.
- Engage with clients to implement net zero commitments and, over time, phase out finance for clients that are unable or unwilling to transition.

During the third quarter of 2021, we had constructive conversations with Nationwide, HSBC, The Co-operative Bank, NatWest and Virgin Money UK. Each embraced our recommendation to focus some of their climate work on just transition alignment, and to progress with the decarbonisation of their lending. We discussed the data in detail, reporting and target-setting challenges for financed emissions, and the challenges faced by different banks.

IIGCC physical risk

RLAM co-signed an open letter to 50 companies in key sectors that were identified as highly exposed to climate physical risk. The letter asked companies to measure, monitor and adapt to climate risk and also provided detailed information on full investor expectations. The expectations included steps on how companies could ensure they were building a more resilient business in relation to physical climate risk, and steps that companies could take.

UK green gilts

The UK government's announcement of its first planned green bond issuance 2021 led us to write to the Chancellor of the Exchequer, both to offer our support of the announcement and to provide our insights on the green bond sector. We received a response inviting us to attend a meeting with the Debt Management Office and Her Majesty's Treasury to discuss our views in more detail. This meeting took place in January 2021. The meeting was attended by Piers Hillier, RLAM's Chief Investment Officer, as well as representatives from our Responsible Investment and Rates & Cash teams.

We were particularly keen to emphasise the UK's opportunity to be a leader in the green bond market, and offered suggestions on how the government could go about this – for example, by leading a global effort to standardise green bond labels and issuing enough green bonds to ensure the creation of benchmarks and help meet the needs of investors with different maturity requirements.

The UK issued its first green gilt (a 12-year bond maturing in 2033) in September 2021, and a further £6bn was raised in October 2021, with a maturity date of 2053. As set out in the government's Green Financing Framework, the £16bn raised by the green gilts will be used to finance expenditures in clean transportation, energy efficiency, renewable energy, pollution prevention and control, living and natural resources, and climate change adaption. However, our challenge is that the assets are not ring-fenced, and as a consequence we cannot be sure the cashflows used to pay the coupons will necessarily come from those assets – which is what we would want from a best-in-class structure. We will continue in our engagement efforts, to help ensure green bonds issued by the UK government are robust, contribute to supporting a climate transition in the UK, and merit consideration for inclusion in our funds.

Case study: HSBC

During 2021, we met with HSBC's Global Chief Sustainability Officer to discuss our expectations on how banks can meet net zero targets. During the meeting, HSBC agreed to ensure quality disclosure on the methodological assumptions and limitations of achieving this target. We specifically discussed the coverage and quality of the data to assess baselines for the bank's targets and to ensure key emitters are covered. HSBC informed us it would refresh its lending policies and add detail to its commitment to phasing out coal lending by 2040: the latter was indeed announced in December 2021. During the same and subsequent meetings, and ahead of the company's thermal coal phase-out policy publication, we asked for further clarity on what HSBC understands and defines as transition finance and how it engages with its banking clients to support this. Furthermore, HSBC agreed with us to consider the social impact of its climate plans and embed just transition considerations. Later in the year we provided feedback on the bank's coal policy, we made recommendations to improve the aim, scope, accountability and oversight, timelines and the use of climate transition plans as a tool. We asked them to specify different aspects of the policy to strengthen its immediate effect.

Case study: Royal Dutch Shell

In 2021, Royal Dutch Shell put forward an energy transition plan for a vote at its AGM. At the time, only a handful of companies had done this, mainly in an effort to address the pressing issue of climate change. In Shell's plan, targets were set towards meeting the goal of the Paris Agreement, limiting the increase of the average global temperature to 1.5°C, thus becoming a net zero company by 2050. While we welcomed Shell's decision to publish a strategy for shareholder approval, upon further review, we found concerns with its significant reliance on offsets as part of the company's long-term ambition to reach net zero. We were also concerned its intensity-based target may not be covering the full impact of the emissions that come from its products. Moreover, we would have preferred to see a stronger push by the company toward its short- to medium-term targets. Therefore, we elected to abstain on the vote. In parallel to the above management proposal, FollowThis – a Dutch shareholder activist group – had also presented a resolution to shareholders regarding its aim for Shell to set firmer targets on its greenhouse gas emissions. While this proposal closely mirrored much of what Shell's energy transition plan would incorporate, in our view, FollowThis suggested more stringent absolute emissions targets and short- to medium-term goals. These were key areas lacking in Shell's original plan and as such, we voted in favour of the shareholder resolution. We continued engaging with the company after the AGM to explain our vote and will continue doing so as they fine tune their transition plans.

Voting policy

Climate was increasingly on the voting agenda during 2021 as more companies put climate transition plans to a shareholder vote. As this was an emerging and rapidly evolving area, we approached each on a case-by-case basis, evaluating the merits of the proposal, the company's past actions on climate, and the quality and credibility of the climate transition plan. Our climate votes were reviewed by a member of our governance team working alongside our internal climate experts. For the 2022 voting season, we have formalised our voting policies and our expectations of companies, and also the types of questions we ask when assessing their climate transition plans.

Of the 104 times where it was possible for us to vote on climate-related themes, we supported 49 (or 47%), voted against nine times (9%) and abstained on 46 votes (44%).

Votes against

RLAM will normally vote against a climate transition plan where:

- Measurable targets have not been set.
- It is not possible to adequately assess the plan or its potential consequences due to lack of detail.
- Governance of the implementation of the plan has not been disclosed.
- The strategy is over-reliant on offsetting and does not drive down overall emissions or does not have impact in the next decade.
- The strategy can have important unmitigated negative impact on nature or communities.
- The strategy does not cover material sources of emissions (i.e. scope 3 for banking or oil and gas).
- The strategy is over-reliant on selling off key assets rather than managing or winding down activities.

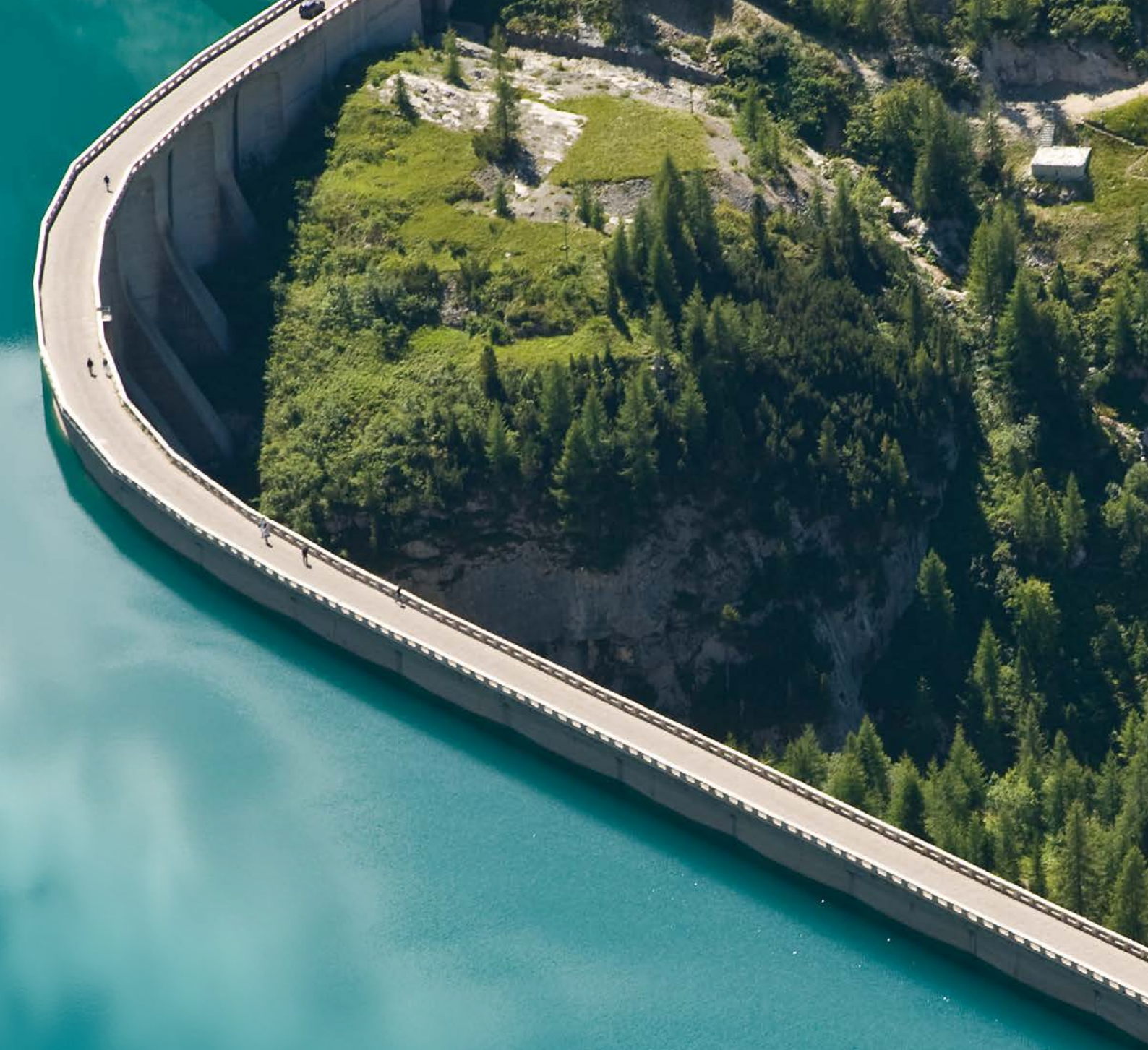
Communications

As society changes, climate change awareness is increasing. Interest in what asset managers are doing is exploding – meaning we have had to change how we communicate with our clients, and provide more ESG data, as we look to incorporate climate risks and opportunities. One of the most obvious changes we have made is to increase the number of experts in our Responsible Investment team who can advise on climate risk. This expertise focuses on the latest information on climate science, risk analysis tools and reporting frameworks, including the Task Force on Climate-related Financial Disclosures (TCFD), as inputs to the investment decision-making process. We have also purchased additional climate research and analytics, and are building tools and systems to help us interrogate data to build new products and capabilities.

2021 was the year when climate reporting made a leap forward in the UK, with several government departments and regulators consulting on and publishing requirements for climate reporting: for example, climate risk reporting became mandatory for a number of our clients. This means our clients are under further pressure and scrutiny to understand the potential climate risks and opportunities in their investments and question how managers are managing those risks. As we have established in our Climate Risk Policy, we aim to encourage an open dialogue with our clients about climate change risks and opportunities. In this report, we have endeavoured to disclose further information and data in line with the TCFD recommendations and our clients' regulatory obligations.

In 2021 we worked to advance our climate metrics disclosure capabilities and undertook the following actions:

- We added financed emissions and carbon footprint to our in-house climate metrics tool.
- We added implied temperature rise and Paris-alignment metrics into our data sets.
- We began building an automated in-house reporting solution for clients' climate reporting needs.



Conclusion

Addressing climate change is one of the most complex challenges we have ever faced. As investors, we have a role to play, but the path is not straightforward. We have set out our net zero ambition, and we are making progress by setting targets, measuring and monitoring our progress, assessing our risks, and creating the right governance structures to help us manage them. We will continue to improve and evolve as we develop the climate transition plan for our business. We want to be transparent with our clients and stakeholders about the challenges we face and the progress we are making, and we hope this report sheds light on how we are tackling this tricky issue.

You can read more detailed information on our approach to responsible investing, including our voting, engagement and ESG integration, in our Stewardship and Responsible Investment 2022 Report.

APPENDIX I

Definitions, metrics descriptions and methodologies

The metrics we disclose are following PCAF Global GHG Accounting and Reporting Standard for the Financial Industry, Task Force on Climate-Related Financial Disclosures TCFD and CFRF industry recommendations. These methodologies are also captured in SFDR, FCA, Bank of England and DWP regulations, among others. Following updates to the calculation methodology of our assets under management, our 2020 data points have been re-baselined and restated in this report.

Figure 31: Metrics definitions

Metric	Asset class	Brief explanation
Financed emissions	Equities, corporate bonds	The emissions associated with the investments in the portfolio, expressed in tCO_2e. Emissions are attributed to a portfolio based on the portion of the company's value the portfolio holds, and using different accounting values for public and private corporates. We provide financed emissions for scope 1 and 2 emissions. For scope 3 emissions we distinguish between company reported and estimated data from our data providers. We excluded in this disclosure emissions associated with private issuers corporate bonds as the outputs from using different attribution factors are incomparable due to using a very different valuation methodologies (market vs. accounting). As market values tend to be systematically higher than accounting values, private issuers emissions will look artificially higher. Financed emissions = $\sum_c$ attribution fraction$_c$ x company emissions$_c$ Listed companies attribution fraction$_c$ = $\frac{\text{current value of investment}_c}{\text{enterprise value including cash}_c}$
Carbon footprint	Equities, corporate bonds	Portfolio's exposure to high emitters in the portfolio, expressed in tCO_2e/$M invested. Financed emissions (explained above) are divided by the portfolio value, the same approach for listed companies and private issuers is applied in this metric. Carbon footprint=$\sum_n^i \frac{\text{financed emissions}}{\text{current portfolio value}}$
Weighted average carbon intensity	Equities, corporate bonds	Portfolio's exposure to carbon-intensive companies, expressed in tCO_2e / $M revenue. scope 1 and scope 2 GHG emissions are divided by companies revenues, then multiplied based on portfolio weights (the current value of the investment relative to the current portfolio value). This follows the recommended methodology by the Task Force on Climate-Related Financial Disclosures. E09 - Carbon footprinting - metrics.pdf (tcfdhub.org). The WACI is calculated as a weighted average sum of the holdings with carbon intensity coverage. WACI = $\sum_n^i \frac{\text{current value of investment}_i}{\text{current portfolio value}_c}$ x $\frac{\text{company emissions}_i}{\text{company \$M revenue}_i}$
Warming potential	Equities, corporate bonds, sovereign bonds	Warming potential metrics aim to quantify the alignment of a company's activities against pathways commensurate with future temperature goals. This metric incorporates current scope 1, 2 and 3 emission intensity and assumptions to estimate expected future emissions intensity for an entity. It also incorporates some of the companies' reduction targets and emissions it will commit to avoid. The estimate is then translated into a projected increase in global average temperature above preindustrial levels. It is expressed in °C. The portfolio level warming potential is calculated as a weighted average sum of the holdings with warming potential coverage. For the portion of the fund where warming potential data is not available, the holdings are removed, and the remainder of the fund is re-weighted to 100%. The % of coverage by market value of the portfolio is based on all of the portfolio holdings including cash.

Implied temperature rise	Equities, corporate bonds	Implied temperature rise aims to measure the warming the emissions from a company would drive by year 2100, if the whole economy had the same over or undershoot level of greenhouse gas emissions. It is based on the companies' most recent scope 1, 2 and 3 emissions, projecting these to the future and incorporating the companies targets. It is expressed in °C. The implied temperature rise aggregation at portfolio level will be updated in Q1 2021. The % of coverage by market value of the portfolio is based on all of the portfolio holdings including cash
Value at risk	Equities, corporate bonds	Climate value-at-risk (Climate VaR) model aims to provide an assessment on how climate change may affect the investment return in portfolios based on conditions associated with global temperature trajectories (e.g. 1.5, 2, 3C). By evaluating policy impact, technology opportunities and climate physical risk, under different scenarios associated with those temperature trajectories, the metric provides insights into the potential stress on market valuation, translating climate-related costs into possible valuation impacts. Regionalized model of investment and development (REMIND) is a global multi-regional model that couples an economic growth model with a detailed energy system model and a simple climate model It is hosted at the Potsdam Institut fur Klimafolgenforschung (PIK), Germany. We selected four scenarios from REMIND – IAM modelling group following NGFS scenarios: • a 'hot house' tracking NDC scenario • a 2 degrees orderly transition • a 2 degrees disorderly transition • a 1.5 degrees disorderly transition Orderly or disorderly depends among other variables on global cooperation and adequate policies being in place. The variables behind each scenario can be reviewed here: https://data.ene.iiasa.ac.at/ngfs
Weight of companies with brown revenues	Equities, corporate bonds	The percentage of instruments (by value) held in the portfolio through equity stake or bonds that have any exposure to revenues from oil and gas activity, coal mining and/or coal-based generation of electricity. This does not measure the total brown revenue derived from the portfolio just the count of issuers with any exposure to the activities defined above. As our trust in the revenue calculations increase, we will re-evaluate this metric.
Weight of companies with green revenues	Equities, corporate bonds	The percentage of instruments (by value) held in the portfolio through equity stake or bonds that have any exposure to revenues from renewable energy, energy efficiency, green building, sustainable water and agriculture, and pollution prevention. This does not measure the total green revenue derived from the portfolio just the count of issuers with any exposure to green activities. As our trust in the revenue calculations increases we will re-evaluate this metric.
GHG intensity of GDP	Sovereign bonds	GHG intensity of an economy per USD million GDP nominal. As disclosed in Emissions Database for Global Atmospheric Research (EDGAR), The metric is expressed in Kg CO_2e/USD GDP. GDP is in 2011 purchasing power terms. https://data.jrc.ec.europa.eu/collection/edgar
Climate Change Performance Index	Sovereign bonds	The Climate Change Performance Index (CCPI) tracks countries' efforts to combat climate change, assessing the country's emissions, its energy mix and use and its climate policies. https://germanwatch.org/en/CCPI
Global Climate Risk Index	Sovereign bonds	The annually published Global Climate Risk Index (GCRI) analyses to what extent countries have been affected by the impacts of weather-related loss events. It is thus a measure of climate physical risk. https://germanwatch.org/en/cri
Energy Performance Certificate (EPC) Rating	Property	EPCs are a rating scheme to summarise the energy efficiency of buildings in the European Union (including the UK post Brexit). The building is given a rating between A (very efficient) and G (inefficient).
Total electricity consumption (kWh)	Property	RLAM's EPCs have been allocated per demise, rather than per asset. This is because areas within assets can be allocated different EPC ratings e.g. retail shopping centres can consist of a mix of buildings with different EPC ratings.
Total fuel consumption (kWh)	Property	Electricity consumption (kWh) kilowatt hour – based on metred building consumption data.
Total building energy intensity by floor area (kWh/sqm)	Property	Energy (electricity + fuels) (kWh / m^2) kilowatt hours per meter squared.

Total GHG emissions intensity by floor area ($kgCO_2e/sqm$)	Property	GHG (total scope 1 & 2) ($kgCO_2e/m^2$) kilogram of carbon dioxide equivalent per meter squared. Calculated using the Greenhouse Gas Protocol methodology and by applying the UK Government's GHG Conversion Factors for Company Reporting (2019)(2020).
Scope 1 GHG emissions (tCO_2e)	Property	Direct greenhouse gas (GHG) emissions (emissions from sources that are owned or controlled by the reporting entity). Calculated using the Greenhouse Gas Protocol methodology and by applying the UK Government's GHG Conversion Factors for Company Reporting (2019)(2020).
Scope 2 GHG emissions (Location based) (tCO_2e)	Property	Indirect greenhouse gas (GHG) emissions from consumption of purchased electricity (indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity). Location based: A location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). Calculated using the Greenhouse Gas Protocol methodology and by applying the UK Government's GHG Conversion Factors for Company Reporting (2019)(2020).
Total GHG emissions (tCO_2e)	Property	Scope 1 GHG emissions plus scope 2 GHG emissions Calculated using the Greenhouse Gas Protocol methodology and by applying the UK Government's GHG Conversion Factors for Company Reporting (2019)(2020).
Benchmark	Equities, corporate bonds, sovereign bonds	The Equity benchmark is created using a weighted composite of all RLAM equity fund benchmarks, including for example FTSE All-Share Index and MSCI ACWI. The individual benchmarks are aggregated using the values of their associated portfolios. For Fixed income, the composite benchmark adds the ICE BofA Sterling Non-Gilt Index and ICE BofA BB-B Global Non-Financial High Yield Constrained Index, in the same proportion of RLAM's fixed income investment grade and high yield assets. The Sovereign bonds benchmark is built by weighting the FTSE Actuaries UK Conventional Gilts All Stocks Index in the same proportion as RLAM's exposure to UK Gilts and JPM GLOBAL – All Maturities Ex United Kingdom.

APPENDIX II

Definitions and acronyms

CA100+

Climate Action 100+ is an investor-led initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change. At the time of writing, the group comprised 615 investors with $65trn in assets.

CCUS/CCS

Carbon capture, usage and storage, and carbon, capture and storage refer to technologies and methods to remove CO_2 emissions from direct emission points or the atmosphere, to direct it to its inclusion in products or other uses and/or to be stored away.

CFRF

The Climate Financial Risk Forum (CFRF)[18] is an industry body jointly convened by the Bank of England Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA) in early 2019. The forum's aim is to build capacity and share best practice across industry and among financial regulators to advance the sector's responses to the financial risks from climate change. In 2021, the CFRF published guidelines covering risk management, scenario analysis, disclosure and innovation.

Climate physical risk

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organisations, such as direct damage to assets and indirect impacts from supply chain disruption. Organisations' financial performance may also be affected by changes in water availability, sourcing and quality; food security; and extreme temperature changes affecting organisations' premises, operations, supply chain, transport needs and employee safety. (Source: TCFD)

Climate stress-testing

A stress test is a projection of the financial condition of a firm or economy under a specific set of severely adverse conditions. This may be the result of several risk factors over multiple periods of time. Stress testing is a risk management tool used to increase a firm's awareness of its business model vulnerabilities to climate risks. Firms might consider sources of transition and physical risks that will be particularly difficult for them to withstand. (Source: CFRF)

Climate transition risk

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations. (Source: TCFD)

IIGCC

The Institutional Investors Group on Climate Change is an investor membership body, with a major presence in Europe and the UK, focusing on climate change.

IPCC

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. The IPCC was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options.

Net zero (adapted from the Paris Agreement article 4)

To achieve the long-term temperature goal set out in the Paris Agreement, a global peaking of greenhouse gas emissions must occur followed by rapid reductions thereafter. This is to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases (net zero emissions).

NGFS

The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) is a group of central banks and supervisors willing, on a voluntary basis, to share best practices and contribute to the development of environment and climate risk management in the financial sector and to mobilise mainstream finance to support the transition toward a sustainable economy.

Paris Agreement

The United Nations Framework Convention on Climate Change's Paris Agreement was signed in December 2015.[19] Nearly 200 governments agreed to strengthen the global response to the threat of climate change by "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C ". (Source: TCFD)

PCAF

The Partnership for Carbon Accounting Financials is a financial industry-led partnership with the aim of facilitating transparency and accountability through the standardisation of the assessment and disclosures of greenhouse gas emissions associated with loans and investments.

SBTi

The Science-Based Targets initiative is a consortium of organisations that set up the definition and promotion of science-based target setting.

TCFD

The Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD) was set up to develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers and other stakeholders. In our 2020 report we used the recommendations published by the TCFD in 2017. For this year's report we have followed the TCFD recommendations published in 2021 and some additional guidelines provided by UK regulators including the FCA.

tCO_2e scope 1

All direct company greenhouse gas (GHG) emissions from owned or controlled sources. Other greenhouse gases such as methane or nitrous oxide are converted to carbon dioxide hence reporting is under tCO_2e, where the e stands for equivalent and t for metric tonnes. This follows the Greenhouse Gases Protocol, the most widely used accounting standard for emissions. See ghgprotocol.org for details.

tCO_2e scope 2

Indirect company emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Other greenhouse gases such as methane or nitrous oxide are converted to carbon dioxide hence reporting is under tCO_2e, where the e stands for equivalent and t for metric tonnes. This follows the Greenhouse Gases Protocol, the most widely used accounting standard for emissions. See ghgprotocol.org for details.

tCO_2e scope 3

Indirect company emissions that occur in a company's value chain both upstream (before their production) and downstream (after the sale of their products). Other greenhouse gases such as methane or nitrous oxide are converted to carbon dioxide hence reporting is under tCO_2e, where the e stands for equivalent and t for metric tonnes. This follows the Greenhouse Gases Protocol, the most widely used accounting standard for emissions. See ghgprotocol.org for details.

APPENDIX III

Methodological and data assumptions, limitations and disclaimers

Our disclosed metrics are subject to potential limitations due to the emerging nature of climate data applications and methodologies in finance. Low levels of data coverage may give inaccurate portfolio statistics. All data is supplied for information purposes only and should not be relied upon for investment decisions. We endeavour to improve climate data in finance through our engagement with companies and data providers. We believe that technological innovations will make data more easily accessible and auditable in the future. We are also working with regulators, such as through the Climate Financial Risk Forum (CFRF) in the UK, to support disclosure standardisation.

Although Royal London Asset Management Ltd's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the ESG parties), obtain information from sources considered reliable, none of the ESG parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose.We have found four areas where limitations are most evident:

1 Issuers' carbon emissions data is incomplete and can be inconsistent across sectors, asset classes and regions.

Most greenhouse gas disclosures are voluntary, relative to financial data, and are subject to less rigorous auditing. Issuers disclose emissions with different levels of transparency, coverage and methodologies, making disclosures less comparable. For example, they may aggregate all greenhouse gases into CO_2 equivalent values or reveal their operations' carbon intensity and not the absolute emissions. Furthermore, there are instances in which emissions are inherently hard to monitor and measure, such as methane emissions that leak from oil and gas infrastructure. Specific countries, such as the US and China, are further behind in disclosure along with relatively low emitting sectors such as finance.

When issuers don't report scope 1 and 2 emissions, data providers' estimation methodologies that allow for further coverage make emission data less reliable. Methodologies to estimate emissions can be based on a company's production data, historical companies' emissions reports or by using the sub-industry segment intensity average. We have enhanced scope 1 and 2 emissions with in-house research for fixed income sterling credit instruments based on detailed knowledge of the issuers, capital structure considerations and underlying assets.

Given the lack of issuer data and inconsistencies in reporting we selected to disclose our holdings' scope 3 emissions as estimated by data providers following the GHG Protocol methodology. The scope 3 estimation methodologies cannot follow entirely the GHG Protocol as it would require complete understanding of each company's entire value chain and market. Nonetheless, the methodologies are based on bottom-up company-specific data when available, but can also use top-down sector intensities.

The comparability and timeliness of companies' disclosures is limited by data providers' research cycles and the rapidly moving landscape of corporate and policy climate pledges. Timing of disclosure varies across jurisdictions and companies, with announcements on climate strategy or emissions targets not necessarily following the financial disclosure schedules. This is compounded by data provider schedules (the workflow by which they prioritise companies' research). The result is that carbon data is often 12-18 months out of date.

2 Issuers' financial data can be inconsistent. The allocation of revenues to specific company green or brown activity has boundaries which can be disputable and uncertain.

The financial data standardised by ESG data providers used in this report may differ to data used in our internal financial analysis. For example, conversion rates and differences in tax system reporting make data less comparable. To assess companies' performance, we use the financial data from various data providers, including the ESG data vendors used in this assessment. This includes revenue, market capitalisation and enterprise value used in this analysis. We cross-refer these data sets to ensure the financial data quality of our investable universe, but some uncertainties still persist.

Issuers seldom disclose the percentages of revenues for business activities specific to the green and brown taxonomies. Therefore, this is estimated by ESG data providers. For our definition of fossil fuel revenues, we chose revenues generated from three sources: oil and gas, coal mining and thermal coal generation. We selected the percentage of issuers in our portfolio with any revenue related to a brown activity as the best proxy for our selected metric. While this approach is binary, it limits the data providers' assumptions needed to allocate a specific percentage of revenues to a business segment.

Taxonomies for defining green are being developed, but standardised green revenue data is not yet available. Notably, the EU taxonomy that entered into force in early 2022 will bring standardisation to green product definitions. We used MSCI's sustainable impact definition to identify companies with revenue streams from climate and natural capital solutions. This includes activities in renewable energy, energy efficiency, green buildings, sustainable water and agriculture, and pollution prevention. We decided to disclose the percentage of issuers with any revenue related to these activities.

3 Metrics to assess Paris alignment or the implied-temperature response of issuers' emissions trajectories are still evolving. Warming potential, and implied temperature rise are our current selected metrics, and both make various necessary assumptions that embed uncertainties in its results.

Data providers' methodologies, using the latest available science widely used to inform policy, will inevitably need to evolve with changes in scientific understanding. This could make our year-on-year disclosures non-comparable. The scientific inputs to the warming potential model used by our data provider are UNEP Emissions Gap Report carbon budgets based on IPCC reviewed research. Carbon budgets link economic activity to levels of carbon emissions and these emissions to a level of warming by the end of the century. The relationship between emissions and warming is well-established by science, but other assumptions remain subject to scientific debate. IPCC assertions and models have inherent uncertainties, probabilistic claims and confidence ranges typically used in climate science. For instance, the remaining carbon budget may change with new findings, as well as the upper boundary or worst-case warming scenario, s indeed occurs in the 2022 with the Sixth Assessment Report's publication by the IPCC. Some modelling assumptions are socio-political such as the rates of population and economic growth and the relative importance of carbon removal strategies to expand the carbon budget through negative emissions (taking greenhouse gases from the atmosphere).

Further uncertainties arise when the global scientific carbon budget concept is applied to company emission intensities and their trajectories over time. Warming potential to assess alignment, companies' current and future carbon intensity is placed on curves establishing the relationship between emission intensity per dollar of revenue and temperature. These curves are based on carbon budgets and are designed for scope 1, 2 and 3 emissions and for avoided emissions from low-carbon technology. A temperature/intensity curve is calculated for each sector for scope 1 emissions, effectively distributing the carbon budget across industries. The distribution of sector emissions follows national policies but has futher embedded assumptions. The curves for scope 2 and 3 have additional sources of uncertainty. For instance, the energy mixes for electricity production are assumed to be the same globally and we find shortfalls on scope 3 emissions estimations, as explained above. For implied temperature rise the allocation of a carbon budget to a company is similarly based on the company's emission intensity per dollar of revenue. This means that changes in the company's revenues, for factors unrelated to its emissions reductions such as M&A or sector cyclicality, affect the company's implied temperature scores. Finally, the curve estimating the contribution of avoided emissions to warming potential has major assumptions and uncertainties arising from the trajectories of low carbon technology development and their revenue contributions. This curve

and the implied cooling potential of avoided emissions has been removed from the implied temperature rise model which we value as an enhancement.

A key assumption in alignment metrics is that companies' emission targets are met. Other sources of uncertainty in the methodology include company emissions targets, which required standardisation. The targets are made comparable by using the number of years the target is applicable to, and the percentage reduction of emissions per year. There is lack of clarity on how these targets help evaluate a company's alignment with the Paris goals.

4 Metrics that stress-test the value of financial instruments due to climate change transition and physical risk are still evolving. Climate value at risk (C-VaR), our selected metric, relies on necessary climate model socio-economic assumptions and cost and valuation calculations that reduce confidence in the metric.

The metric consists of three models, policy C-VaR, physical C-VaR and technology C-VaR, in each climate impact is calculated at asset-level and translated into impact on cost or return for the next 15 years.

i **Policy C-VaR calculations make necessary assumptions on how much a company may need to reduce its greenhouse gas emissions due to climate policy and how much this may cost**. Assumptions include countries adequately disclosing their plans to the United Nations Framework Convention on Climate Change (UNFCCC) and implementing them. Carbon prices used to estimate costs are taken from IPCC referenced integrated assessment models (IAM) and scenarios. IPCC and NGFS IAM scenarios assumptions are openly auditable and can be considered the latest science which informs policy. However, these models have assumptions around GDP growth, technology uptake, and marginal abatement costs which mean inherently each scenario for which a carbon price is taken will show only one possible alternative future.

ii **Physical C-VaR makes assumptions on the climate impact on a company's assets from climate change and how costly this could be in terms of increased business interruptions and/or asset damage**. It uses climate impact models that include chronic hazards such as gradual temperature, precipitation and snowfall changes as well as acute hazards such as coastal flooding and cyclones. Generally speaking, the impact of emissions on warming has lower uncertainties than the planet's warming effects on weather and climate and its implications in specific locations. Beyond the difficulty of accurately estimating the increase in vulnerability of assets due to climate change, estimating how much this may cost the business has additional assumptions, for example how costs are aggregated from asset to business balance sheets, assumptions of companies' lack of adaptive capacity and insurance costs.

iii **Technology C-VaR has embedded various assumptions on green technology ownership and uptake to estimate how much a company may benefit from transitioning to a low carbon economy**. For this analysis, millions of low carbon patents granted by various patent authorities are assessed. Using current green revenues and patent analysis to understand companies' low carbon innovation, a model simulates which companies may benefit when policies from IPCC IAM models that reach different warming goals are implemented globally. Assumptions are made on: technology uptake, the returns these technologies will yield and crucially that patent ownership and citations are a good starting point to understand transition opportunity.

Further assumptions are embedded in the consolidation of each of the sub-model costs and its expression as a final aggregated financial metric. Yearly costs from the three models are added using different assumptions in line with IAM climate modelling, for example that climate policy cost peaks in the next decades and that climate physical risk costs grow steadily. Once all costs are added, a discount rate is applied to bring these to present value. Discount rates are controversial within climate models, and economists have argued for different discount rates to be applied to climate cost, given that tail risk has very high impact. The final C-VaR expresses the present-value costs of climate impacts over the current enterprise market value. An additional model splits this C-VaR into equity and debt following reasonable assumptions in line with market practice.

APPENDIX IV

Data coverage

The percentage coverage by market value of RLAM data is based on all the portfolio holdings including cash. For the portion of our portfolios where data (emissions or financial) is not available, the holdings are removed and the remainder of the portfolio is re-weighted to 100%. The portion not covered by carbon intensity values are assumed to behave as the holdings with data available.

		% Value in portfolio					
		Equity 2021		Fixed income 2021		RLAM-wide 2021	
	UNIT	Portfolio	Benchmark	Portfolio	Benchmark	Portfolio	Benchmark
Weighted average carbon intensity	tCO_2e / $wM sales	97.7%	96.3%	80.5%	89.5%	88.1%	92.6%
EVIC	$ M	100.0%	100.0%	47.9%	51.1%	71.1%	72.9%
Financed scope 1&2 emissions/carbon footprint	tCO_2e/$M invested	97.6%	96.3%	47.9%	51.1%	70.0%	71.2%
Financed scope 3 emissions (reported)/ carbon footprint	tCO_2e/$M invested	73.0%	70.9%	39.7%	40.2%	54.5%	53.9%
Financed scope 3 emissions (estimated)/ carbon footprint	tCO_2e/$M invested	97.6%	96.2%	47.6%	50.8%	69.9%	71.0%
Scope 1&2 emissions reported data	tCO_2e	87.2%	85.5%	63.1%	74.4%	73.9%	79.3%
Scope 1&2 emissions estimated data	tCO_2e	10.5%	10.8%	17.3%	15.2%	14.3%	13.3%
No data available scope 1&2 emissions	tCO_2e	2.3%	3.7%	19.5%	10.5%	11.9%	7.4%
Scope 1 &2 RLAM research	tCO_2e	0.0%	0.0%	50.2%	55.9%	27.8%	31.0%
Scope 1 &2 emissions MSCI data	tCO_2e	97.7%	96.3%	30.3%	33.6%	60.3%	61.5%
Warming potential	C°	97.7%	96.4%	61.2%	65.3%	77.5%	79.1%
Implied temperature rise	C°	97.5%	96.2%	61.3%	65.3%	69.8%	71.0%
C-VaR transition risk (average of each scenario)	%Market value at risk	97.6%	96.4%	35.2%	49.7%	63.0%	70.5%
C-VaR physical risk	%Market value at risk	95.2%	93.8%	34.0%	44.4%	61.3%	66.4%

		% Value in portfolio					
		Equity 2020		Fixed income 2020		RLAM-wide 2020	
	UNIT	Portfolio	Benchmark	Portfolio	Benchmark	Portfolio	Benchmark
Weighted average carbon intensity	tCO_2e / $wM sales	97.4%	94.5%	78.3%	92.0%	86.4%	93.1%
EVIC	$ M	100.0%	100.0%	46.0%	54.0%	68.9%	73.5%
Financed scope 1&2 emissions/carbon footprint	tCO_2e/$M invested	97.3%	94.4%	46.0%	53.8%	67.8%	71.0%
Financed scope 3 emissions (reported/ carbon footprint	tCO_2e/$M invested	63.3%	61.3%	32.3%	37.4%	45.6%	47.5%
Financed scope 3 emissions (estimated)/ carbon footprint	tCO_2e/$M invested	97.1%	94.2%	45.9%	53.9%	67.7%	71.0%
Scope 1&2 emissions reported data[22]	tCO_2e	84.3%	81.3%	Not available	Not available	Not available	Not available
Scope 1&2 emissions estimated data	tCO_2e	13.1%	13.2%	Not available	Not available	Not available	Not available
No data available scope 1&2 emissions	tCO_2e	2.6%	5.5%	21.7%	8.0%	13.6%	6.9%
Scope 1 &2 RLAM research[23]	tCO_2e	0.0%	0.0%	Not available	Not available	Not available	Not available
Scope 1 &2 emissions MSCI data	tCO_2e	97.3%	94.4%	Not available	Not available	Not available	Not available
Warming potential	C°	71.0%	73.0%	51.1%	57.5%	70.9%	73.4%
Implied temperature rise	C°	Not available	Not available	Not available	Not available	Not available	Not available
C-VaR transition risk (average of each scenario)	%Market value at risk	95.0%	93.7%	Not available	Not available	Not available	Not available
C-VaR physical risk	%Market value at risk	93.0%	91.7%	Not available	Not available	Not available	Not available

		Sovereign 2021		Sovereign 2020	
	UNIT	**Portfolio**	**Benchmark**	**Portfolio**	**Benchmark**
GHG Intensity of GDP[24]	Kg CO_2e/USD GDP	100%	99.8%	99.8%	100%
Warming potential	C°	100%	99.8%	99.8%	100%
Global Performance Index	Score	100%	100%	99.8%	100%
Global Climate Risk Index	Score	87.0%	88.2%	99.8%	100%

Scope 1 & 2 emissions data for equities	Our equity emissions data comes wholly from MSCI.
Scope 1 & 2 emissions data for fixed income	For fixed income securities, RLAM has developed its own emissions research process. The report uses RLAM data for the fixed income securities as a first port of call, supplementing with MSCI estimates where no reported or better estimate exists. RLAM's data for emissions includes a combination of company disclosures through annual reporting, sustainability supplements and filings to the carbon disclosure project and primary research by our RI team. Where we lend to ring-fenced subsidiaries we have tried to source carbon data and revenues specific to those subsidiaries. We disclose % of reported data we have collected, and % of estimated and calculated, when we have used approximations.
Scope 3 emissions data	All our scope 3 data is from MSCI. We provide separate portfolio aggregate metrics for scope 3 emissions reported by companies and for scope 3 emissions estimated by our data provider.
Financial data	Portfolio data is from RLAM financial data systems. Revenues and EVIC data are from MSCI.
Forward-looking climate metrics	Our forward looking climate data is provided by MSCI. RLAM selects the scenarios from Climate value at risk (C-VaR), that most closely links to Bank of England scenarios for climate stress-testing.

APPENDIX V

Cross reference to TCFD elements

TCFD (Task Force on Climate-Related Financial Disclosures) sections and where to find them

	TCFD indicators	Section
 **Governance** Disclose the organisation's governance around climate related risks and opportunities.	Describe the board's oversight of climate-related risks and opportunities.	Annual report and accounts (ARA) – Strategic Report Governance (page 13)
	Describe management's role in assessing and managing climate-related risks and opportunities.	Governance (page 13)
 **Risk management** Disclose how the organisation identifies, assesses, and manages climate-related risks.	Describe the organisation's processes for identifying and assessing climate-related risks.	ARA – Strategic Report Risk management (page 14)
	Describe the organisation's processes for managing climate-related risks.	ARA – Strategic Report Strategy (page 18) Risk management (page 14)
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	ARA – Strategic Report Risk management (page 14) Investment risk management (page 16)
 **Strategy, metrics and targets** Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	Risk management (page 14-17)
	Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning.	Risk and strategy (page 14 onwards)
	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Risk and strategy (page 14 onwards)
	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Risk management (page 14)
	Disclose scope 1, scope 2, and, if appropriate, scope 3 greenhouse gas (GHG) emissions and the related risks.	Strategy (page 18)
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	Strategy (page 18)

Notes

1 Our intention is to decarbonise our in-scope directly managed funds in line with the real economy. We will also work closely with our segregated clients towards this goal where they have made explicit public commitments to net zero. Our efforts are focused on supporting the decarbonisation of the constituents of our funds through engagement (and not decarbonising our portfolio regardless of the real economy). The commitment is based on the expectation that governments and policy makers will deliver on commitments to achieve the 1.5ºC temperature goal of the Paris Agreement. It also assumes this action does not contravene RLAM's fiduciary duty to external investors. The commitment is baselined on the year 2020 and is being tracked using scope 1 and 2 carbon footprint using EVIC as an attribution factor (tCO_2e/$m invested) for our corporate fixed income and equities portfolios.

2 For more detail on principal and operational risks addressed by RLAM, please see pg 16 in the RLAM Annual Report and Accounts: https://www.rlam.com/globalassets/media/literature/policies-and-regulatory/rlam-annual-report-and-accounts-2021.pdf

3 https://www.ipcc.ch/assessment-report/ar6/

4 This includes 76% of RLAM AUM and comprises listed equities and fixed income only.

5 https://www.netzeroassetmanagers.org/

6 https://www.gov.uk/government/publications/fact-sheet-net-zero-aligned-financial-centre/fact-sheet-net-zero-aligned-financial-centre

7 https://www.angloamerican.com/sustainability/environment/climate-change

8 https://netzeroclimate.org/race-to-zero/

9 https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf

10 https://www.energy-transitions.org/publications/making-mission-possible/

11 https://ca100.influencemap.org/index.html

12 https://chapterzero.org.uk/wp-content/uploads/2021/09/Chapter-Zero-Board-Toolkit-2020.pdf

13 https://exponentialroadmap.org/wp-content/uploads/2020/11/1.5C-Business-Playbook-v1.1.1pdf.pdf?utm_source=The%20 1.5%C2%B0C%20Business%20 Playbook&utm_medium=tools-library&utm_campaign=NZC

14 https://cdn.ifrs.org/content/dam/ifrs/news/2019/november/in-brief-climate-change-nick-anderson.pdf

https://www.iaasb.org/publications/consideration-climate-related-risks-audit-financial-statement

15 https://racetozero.unfccc.int/wp-content/uploads/2020/12/Race-to-Resilience-Minimum-Criteria.pdf

16 CA100+ is an investor -led initiative to ensure the world's largest listed greenhouse gas emitters take necessary action on climate change. RLAM has been a member of this initiative since its inception in 2017. https://www.climateaction100.org/news/climate-action-100-sets-decarbonisation-expectations-for-electric-utility-companies-to-achieve-net-zero-emissions-globally-by-2040/

17 See a description of the methodology and approach to this calculation in Appendix I.

18 https://www.fca.org.uk/transparency/climate-financial-risk-forum

19 https://unfccc.int/sites/default/files/english_paris_agreement.pdf

20 https://www.fca.org.uk/transparency/climate-financial-risk-forum

21 https://unfccc.int/sites/default/files/english_paris_agreement.pdf

22 85.6% of reported emission data (by value in portfolio) is from 2020, 11.83% of data is from 2019, 0.14% of data is from 2021, 0.09% from 2018 or earlier.

23 Our equity data comes wholly from MSCI. For fixed income securities, RLAM has developed its own carbon intensity tool. The report uses RLAM data for the fixed income securities as a first port of call, supplementing with MSCI estimates where no reported or better estimate exists. RLAM's data for the emissions includes a combination of company disclosures through annual reporting, sustainability supplements and filings to the carbon disclosure project and primary research by our RI team. Where we lend to ring-fenced subsidiaries, we have tried to source carbon data and revenues specific to those subsidiaries.

24 Currently country-level GHG is using 2020 CO_2 emissions data and 2018 other GHG emissions data.

All information is correct at December 2021 unless otherwise stated.

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