

Taskforce on Climate-Related Financial Disclosures





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Chair's message to members

Climate change is one of the most pressing issues of our time. Climate science tells us there will be catastrophic implications for current and future generations if we do not address this challenge in the current decade. The physical effects of climate change, and the policy and technological measures introduced to mitigate climate-related damages, are likely to have financial consequences for investors. On behalf of our members, we recognise and seek to address the financial risks posed by climate change, while also acknowledging our responsibilities towards the world into which our members retire.

Railways Pension Trustee Company Limited (RPTCL), the corporate Trustee of the railways pension schemes, is focussed on our mission to pay pensions securely, affordably, and sustainably. When it comes to climate-related risks, we have a duty to ensure good governance of climate risks and to monitor the potential impacts on investment returns, liabilities, and employer covenant.

We are supported in this endeavour by our wholly-owned subsidiary Railways Pension Investments Limited (Railpen). Railpen's purpose, governance, and operating arrangements ensure a good degree of alignment with the Trustee's mission, giving us both a clear line of sight of our shared objectives.

The Trustee is supportive of the positive and proactive stance adopted by Railpen in relation to climate change. Over the years this has included engagement with policy makers, early adoption of climate scenario analysis, development of proprietary climate risk frameworks and tools, use of engagement and voting to encourage portfolio companies to set credible decarbonisation plans, investment in renewable energy infrastructure in the UK and, in 2021, publication of a Net Zero Plan, one of the first of its kind in the UK. These activities connect with the Trustee's updated Investment Beliefs in which we record our "responsibility to make a Scheme assets resilient to systemic threats and position portfolios for long-term opportunities."

At the time of drafting this report, the world is beset by uncertainty. Russia's invasion of Ukraine, the challenges of emerging from COVID-19 and inflationary pressures on the cost of living have highlighted the close links between energy security, affordability, and climate change. Whilst the global response to these factors might contribute to short-term increases in greenhouse gas (GHG) emissions, a transition to a low carbon economy remains essential for limiting harmful temperature rises in line with the Paris Agreement on climate change. The analytics in this report suggest we have a vested interest in supporting a lower temperature outcome, as this would benefit – economically as well as societally – the half a million members on whose behalf we invest.

We endorse the increased transparency brought about by investor requirements to report in line with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). We are pleased to share our first official TCFD report with our members and trust this gives confidence that RPTCL is both managing climate-related risks, and contributing our part to a more sustainable future.

Signed,

Chris Hannon
Chair of Trustees, RPTCL



1. About this report

The purpose of this report is to explain the governance and actions taken by the Trustee in identifying, assessing and managing climate-related risks and opportunities. The report fulfils the requirements of the *Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021* ("the Regulations"), which are themselves designed to align with the recommendations of the Taskforce on Climate-Related Financial Disclosures¹.

The Scheme in scope for this report is the Railways Pension Scheme. The Railways Pension Scheme is comprised of six parts (including defined benefit and defined contribution arrangements) with over 100 individual underlying sections². As permitted by the relevant statutory guidance³, we have grouped defined benefit sections for the purposes of climate strategy disclosure (including scenario analysis) and climate metrics disclosure, since the sections have broadly similar characteristics.

The TCFD Recommendations – and therefore the Regulations and associated statutory guidance – are structured around four pillars:

- (i) Governance
- (ii) Strategy
- (iii) Risk Management, and
- (iv) Metrics & Targets

In structuring our report we have found it expedient – in terms of the ease with which members could engage with the report – not to structure the report in a way that progresses sequentially from (i) to (iv). Instead, we have prepared our disclosure in such a way as to maintain readability, though we provide an index at the back of the document for those wishing to look up particular statutory or TCFD reporting requirements.

All data in this report is as of 31 December 2021 unless otherwise noted.

Day-to-day operation of the railways pension schemes is delegated to Railway Pension Investments Limited (Railpen), a subsidiary wholly owned by the Trustee. Railpen undertakes a significant amount of climate-related activities on the Trustee's behalf. This is reflected in the content of this report, which includes references to activities carried out both by the Trustee and by Railpen.

Further information in relation to Railpen's approach to climate change can be found at railpen.com and in Railpen's Net Zero Plan.

1.1 Internal Audit

Whilst not a mandatory requirement to seek assurance over the TCFD report, Railpen's Internal Audit team were engaged on the Trustee's behalf to undertake work on the report prior to publication. This team is independent, objective and has an extensive track record in providing challenge and insights across the wider Railpen business, in conformance with the International Standards for the Professional Practice of Internal Auditing ('the Standards') and the Chartered Institute of Internal Audit's guidance, 'Effective Internal Audit in Financial Services'. An internal review of this report was chosen owing to the Internal Audit team's extensive experience and the value that this would add to the process.

The objective of this review was to provide assurance over the Trustee's TCFD report and an independent and objective view on the process, content and statements made within the report. This was approached in two phases:

- Phase 1 - review the draft TCFD report produced against the relevant guidance and requirements to assess whether key reporting obligations have been met, and
- Phase 2 - review a sample of assertions made within the report to evaluate the statements made. We reviewed the evidence the organisation holds to support making these specific disclosures.

Internal Audit found that the TCFD report was aligned to the statutory guidance and reporting requirements and that for the sample of assertions tested that these were supported by clear evidence. The Internal Audit team provided recommendations and enhancements to the report to ensure that the requirements of the report were met. They also provided challenge to statements and disclosures made. Following productive conversations, a number of recommendations were raised, which have been applied within the final version of the report.

¹ <https://www.fsb-tcfd.org>

² Please see the Annual Report and Accounts for more detailed information.

³ Governance and reporting of climate change risk: guidance for trustees of occupational schemes", Department for Work and Pensions, June 2021



2. Summary for members

Climate-related risks are financial risks. Over the long term, companies, consumers, and the financial industry are likely to have to adapt to new and bold climate policies like carbon taxes, or adapt to the potentially catastrophic consequences of uncontrolled climate change like sea level rises and increasingly frequent extreme weather, or a mixture of both.

Whilst climate risk is likely to play out over many decades to come, its effects are already evident both in the dramatic and tragic weather events you might see on the news and, from time to time, in financial markets. There is some evidence that investors have decided they have enough certainty about the future evolution of, for example, energy policy that they have begun to factor climate change issues into the way they buy and sell financial assets. Attending to climate risk is part and parcel of an investor's 'fiduciary duty' – the promise to act in the best interests of the person whose money is being invested.

Climate risks have the potential to affect almost every sector, region, and asset class, depending on how the risks play out. This makes climate risk a systemic risk, because its effects are likely to be felt by a large part of the financial system, rather than being localised to one or two areas. This means long-term investors like pension funds are unlikely to be able to completely avoid climate risks by simply refusing to invest in certain sectors or countries.

The Trustee of the railways pension schemes treats climate risk with the seriousness it deserves. As we explain in this, our first "TCFD⁴ Report", the effects of climate change could impact three key areas of a pension scheme like ours:

- **Threats to the employer covenant:** the pension fund depends on ongoing contributions from your employer. If your employer turns out to be vulnerable to climate risks, this could threaten the employer's ability to contribute in the future.
- **Threats to scheme liabilities:** the liabilities of the Scheme – the amount of cash we need to pay out in pension benefits over a long period of time – might be affected by climate change if, for example, changes in weather patterns affect life expectancy in the UK. This is very hard to predict, but is something pension funds need to monitor.
- **Threats to investment returns:** a large part of our members' pension is provided by investment returns which are generated when Railpen, the Scheme's investment manager, invests money on your behalf. Railpen is well-regarded for taking a leading approach to climate change issues, but the possibility remains that climate-related risks could affect the amount of investment return generated by investing the Scheme assets. Trustees and their investment managers need to take account of this.

The railways pension schemes are among the largest and most complex schemes in the UK. Good governance is essential when managing complexity. In 2021, we implemented a new Risk Governance Framework, updated our Investment Beliefs to explicitly reference climate change, and established a Trustee Training programme that incorporates climate change training provided by Railpen and other climate experts. The Trustee's 'climate governance' – the arrangements in place to manage climate risk – also benefits from Railpen's Climate Working Group, which was established in 2020 and made further strides in 2021. You can read much more about climate governance in [section 4](#) of this report.

⁴ TCFD stands for Taskforce on Climate-related Financial Disclosures, a body that has recommended a reporting structure for organisations wanting to make a disclosure about climate change. Starting in 2022, large UK pension funds are required to produce a report that complies with the recommendations of the TCFD.





We have a framework for managing climate risks that spans the climate-related threats to covenant, liabilities, and investment returns. As we explain later in this report this has in 2021 included a range of activities. A summary is included in the table to the right.

Covenant	<p>On our behalf, Railpen has assessed and keeps under review the way in which climate risks affect and are affected by (i) UK policy, (ii) sectoral issues in the rail industry, and (iii) particular issues at individual employers. This provides the Trustee with a valuable assessment of climate risks to the Scheme’s employers.</p> <p>Whilst there are over 150 employers in the Scheme, around 75% of the Scheme assets relate to sections sponsored by government-linked bodies including Network Rail and 27 train operating companies. These employers have been the focus of this year’s TCFD report.</p> <p>Railpen’s forward-thinking team co-authored an innovative industry guidance document this year, which supports others in analysing climate risks in the context of an employer covenant⁵. You can read more about this in section 5.2.</p>
Liabilities	<p>To improve our understanding of the sensitivity of the Scheme’s liabilities to climate risks, we undertook ‘climate scenario analysis’. This means we made assumptions about the ways in which climate change might play out over the long term, then considered the potential impacts to the Scheme’s liabilities. In particular, we reviewed the impacts that climate change might have on life expectancy.</p> <p>While the results of the analysis suggested the impact of climate change on liabilities is likely to be relatively low, the relationship between climate change and life expectancy is inherently unpredictable, so we will be monitoring this again in the future.</p> <p>We compared the impacts climate change might have on liabilities to the impacts it might have on investment returns. The results suggest that climate change might have a bigger impact on investment returns than on liabilities. You can read more about this in section 5.3.</p>
Investments	<p>Working on the Trustee’s behalf, Railpen incorporates climate risks and opportunities into the investment management process. Briefly put, Railpen aims to reduce climate-related risks, and identify climate-related opportunities, because it is likely that doing so would support the Trustee’s mission to pay pensions securely, affordably, and sustainably. This includes:</p> <ul style="list-style-type: none">■ excluding companies we think might face elevated risks of asset stranding, such as thermal coal and tar sands companies■ incorporating assessments of climate risk and net zero alignment into investment decisions using a framework and tool developed in-house■ engaging companies and voting at company AGMs in a way to hold companies to account for the management of climate risks and the transition to ‘net zero’■ overseeing external fund managers to make sure they meet our own high standards on climate change issues <p>You can read more about this in section 5.4.</p>

⁵ Employer Covenant Practitioners Association, “Reflecting climate change impact and risks in employer covenant assessments”



Whilst this is the first year the Scheme has been required to provide a carbon footprint, Railpen, as the Scheme's investment manager, has voluntarily disclosed a carbon footprint for scheme assets every year since 2015, as part of its status as a Montreal Carbon Pledge signatory.

In December 2021, the Scheme's investment portfolio had a carbon footprint of c63 tonnes of greenhouse gases (GHGs) per £million invested. This is significantly below the market average, because Railpen's portfolio managers tend to invest in lower carbon companies than the average. The carbon footprint has decreased by approximately 10% since December 2020.

The Trustee has adopted climate target that, if achieved, should put the Scheme on track to be 'net zero' by 2050 or sooner. 'Net zero' is a state in which the emissions created by the Scheme's investments are very close to zero, and any leftover emissions are removed from the atmosphere either by natural or technological means. The Scheme aims to halve its carbon footprint by 2030, and to have reduced it by 25-30% by 2025.

A significant amount of the Scheme assets are invested in renewable energy and other sectors that could benefit from the UK's transition to a greener economy. For example, the Scheme owns two large wind farms in Scotland that produce enough energy to power around 50,000 homes. Green investments can be attractive to long-term investors like pension funds, providing the price of the investment makes financial sense. The transition to 'net zero' could provide significant investment opportunities, and the Scheme's investment manager continues to locate sustainable

investments that match the needs of our members. In producing this TCFD report, we have provided as much climate-related information as we have been able to source, but unfortunately investors are still some way away from having perfect information on climate risk. For example, reporting annual GHG data is not compulsory in most markets, meaning that plenty of companies do not tell investors the amount of GHGs emitted each year. It is not always possible to estimate a company's GHG emissions to plug gaps in the data. Issues like these mean that the carbon footprint data we have provided in this report covers 57% of the defined benefit scheme's investments (62% of the defined contribution arrangements), rather than the whole lot. The Trustee and Railpen are members of several industry initiatives that support improvements in climate-related information (see [section 6.4.3](#)). More information should improve our ability to take action on climate risk, and keep our stakeholders better informed via the annual TCFD report.

We recognise that many readers may be encountering this topic for the first time, and we have tried to make this report as readable as possible to members. Writing a report on climate change, and its complex connections with pension investing, cannot be done without having to resort to concepts that are somewhat technical in nature and unfamiliar to many. We have tried to avoid jargon where we can, and we have provided a [glossary](#) of key terms to aid the report's readability.

Members who wish to contact the Scheme or learn more about the Scheme's approach to climate change are encouraged to email contactus@railpen.com



3. Climate change and its relevance to pension schemes

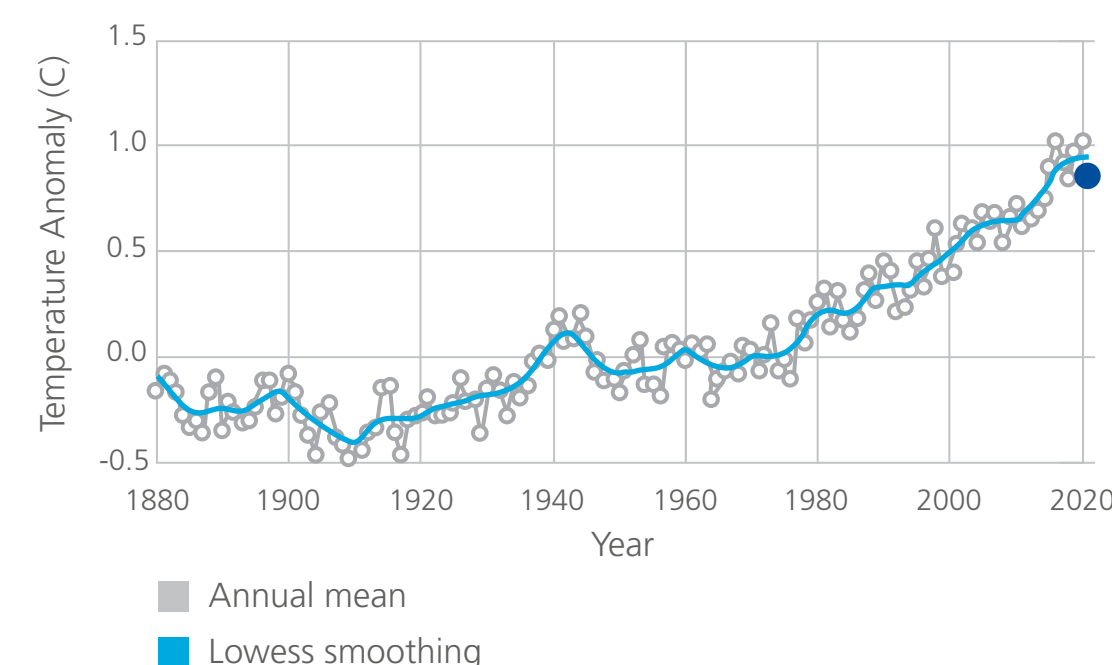
3.1 Climate change summary

The overwhelming scientific consensus is that the Earth's average surface temperature has risen by approximately 1°C since pre-industrial times and that this temperature rise has been caused by human activity, particularly the consumption of fossil fuels and changing how we use the land.

Figure 3.1.1: Historical average surface temperature rise for the Earth; Source: NASA

Global land-ocean temperature index

Data source: NASA's Goddard Institute for Space Studies (GISS)
Credit: NASA/GISS



Anthropogenic climate change is linked to more frequent and severe extreme weather events, the impacts of which are both societal and economic. Climate change is one of the greatest challenges of the present generation and, in the past few decades, has caused irreversible damage to our planet and way of life.

The impacts of human-induced climate change are not a phenomenon for tomorrow - they are visible today. Examples include wildfires in Australia and California, US hurricanes Katrina, Ida and Sandy, floods in Europe, UK and Asia, and increasing devastation in the global south. These events have resulted not only in devastation for current and future generations and their families, but also in cumulative historical costs of more than \$1 trillion to the global financial system⁶. The future economic impact of climate change continues to be highly researched, with a 2021 study from University College London indicating that, by 2100, global GDP could be 37% lower when taking the effects of climate change on economic growth into account⁷.

There is clear evidence that the pace of warming in recent decades has increased. The Earth's average land and ocean surface temperature in 2021 was 0.84°C above the 20th century average, the 45th consecutive annual rise since 1977. The years 2013-2021 rank as the warmest years on record.

Figure 3.1.2: Historical CO2 levels from 2005 to present; Source: NASA⁸.

Direct measurements: 2005-present

Data source: Monthly measurements (average seasonal cycle removed)
Credit: NOAA

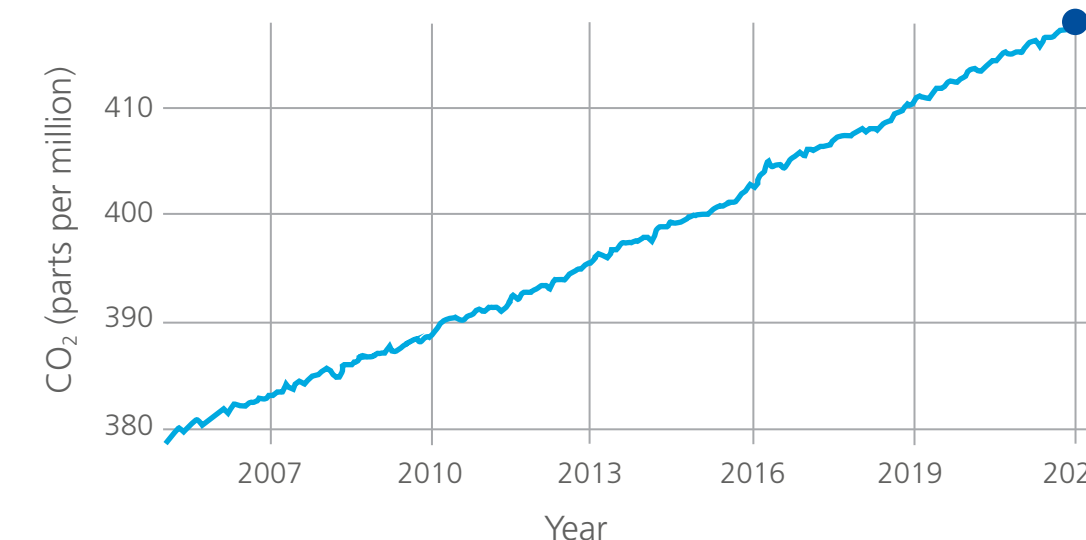
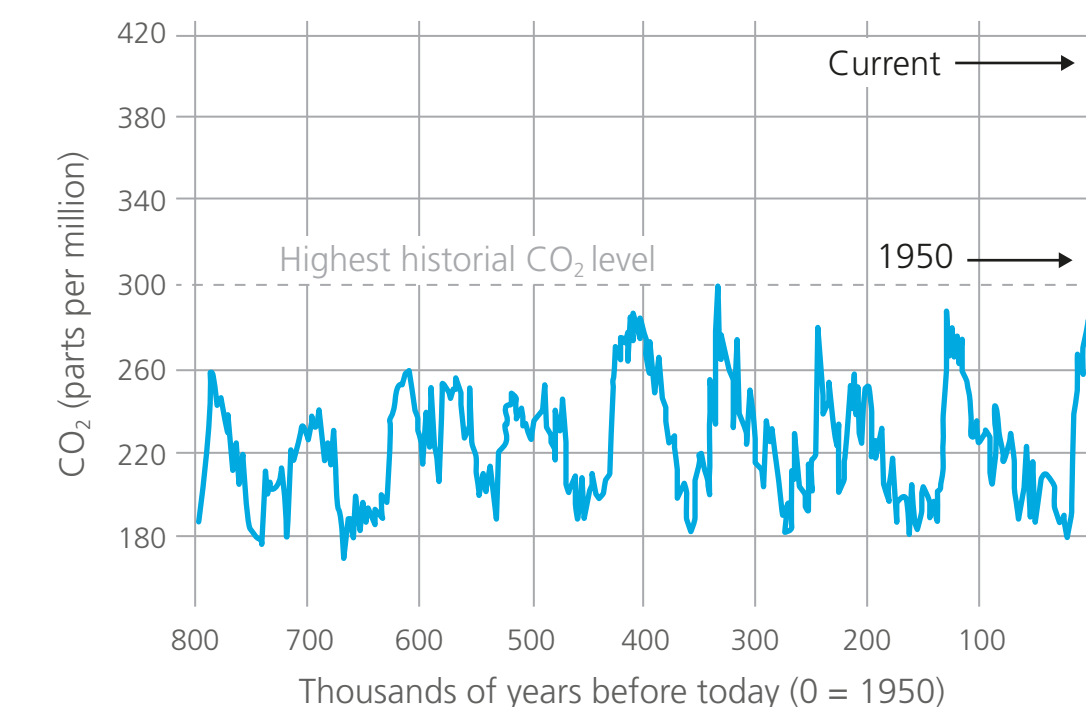


Figure 3.1.3: Historical CO2 levels from 800,000 years ago to present; Source: NASA .

Proxy (indirect) measurements

Data source: Reconstruction from ice cores
Credit: NOAA



⁶ Source: Reuters, on climate change <https://www.reuters.com/article/us-climate-change-companies-disclosure-idUSKCN1T50CF>

⁷ Source: University College, London <https://www.ucl.ac.uk/news/2021/sep/economic-cost-climate-change-could-be-six-times-higher-previously-thought>

⁸ Source: NASA; <https://climate.nasa.gov/vital-signs/carbon-dioxide/>

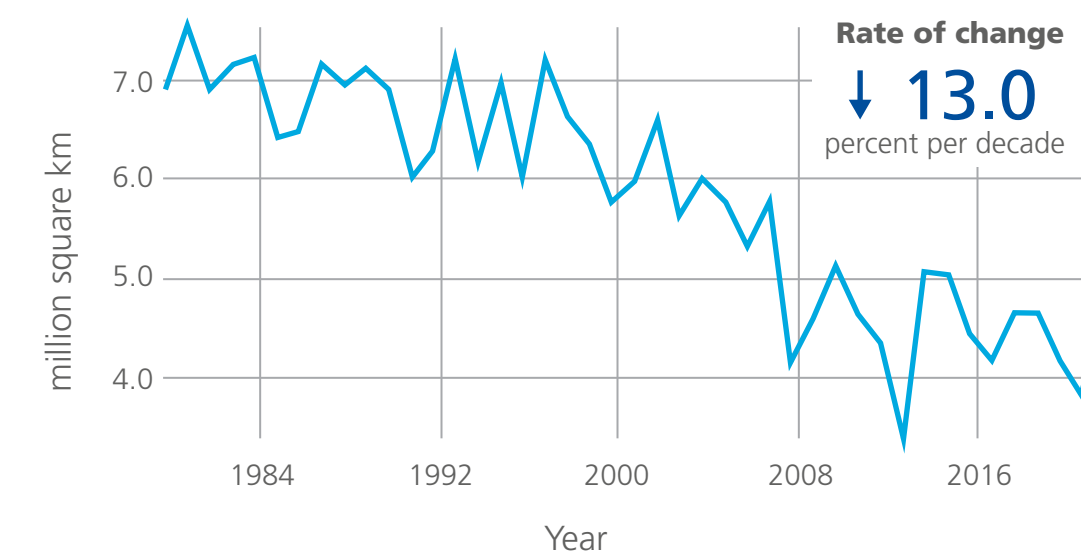
⁹ Source: NASA; <https://climate.nasa.gov/vital-signs/carbon-dioxide/>



Figure 3.1.4: Decline in annual minimum Arctic sea ice;
Source: NASA¹⁰

Annual September minimum extent

Data source: Satellite observations
Credit: NSIDC/NASA



The Intergovernmental Panel on Climate Change (IPCC) identified, in their latest climate science synthesis report that it is now certain global temperatures will continue to increase until at least 2050¹¹.

Arctic sea ice reaches its minimum each September. The ice is now declining at a rate of 13% per decade, relative to the 1981 to 2010 average. Figure 3.1.4 shows the annual Arctic sea ice minimum each September since 1979, derived from satellite observations.

The evidence from climate science suggests that, over the coming decades, the impacts of global climate change will become worse as a result of historic human-induced GHG emissions. The extent of future climate change impacts will depend on our success in controlling global emissions over the coming decades. The average surface temperature in the UK has risen by 1.2°C since pre-industrial times, and further warming is predicted under all decarbonisation pathways set out by the IPCC. Whilst the Paris Agreement on Climate Change sets out an aim to limit warming to 1.5°C, current trends imply that warming up to 4°C is not implausible.

3.2 Physical, Transition, and Litigation Risks

It has become common to follow the TCFD in subdividing climate-related risks into two major categories:

- physical risks – those related to the physical impacts of climate change, and
- transition risks - those related to the transition to a lower-carbon economy.

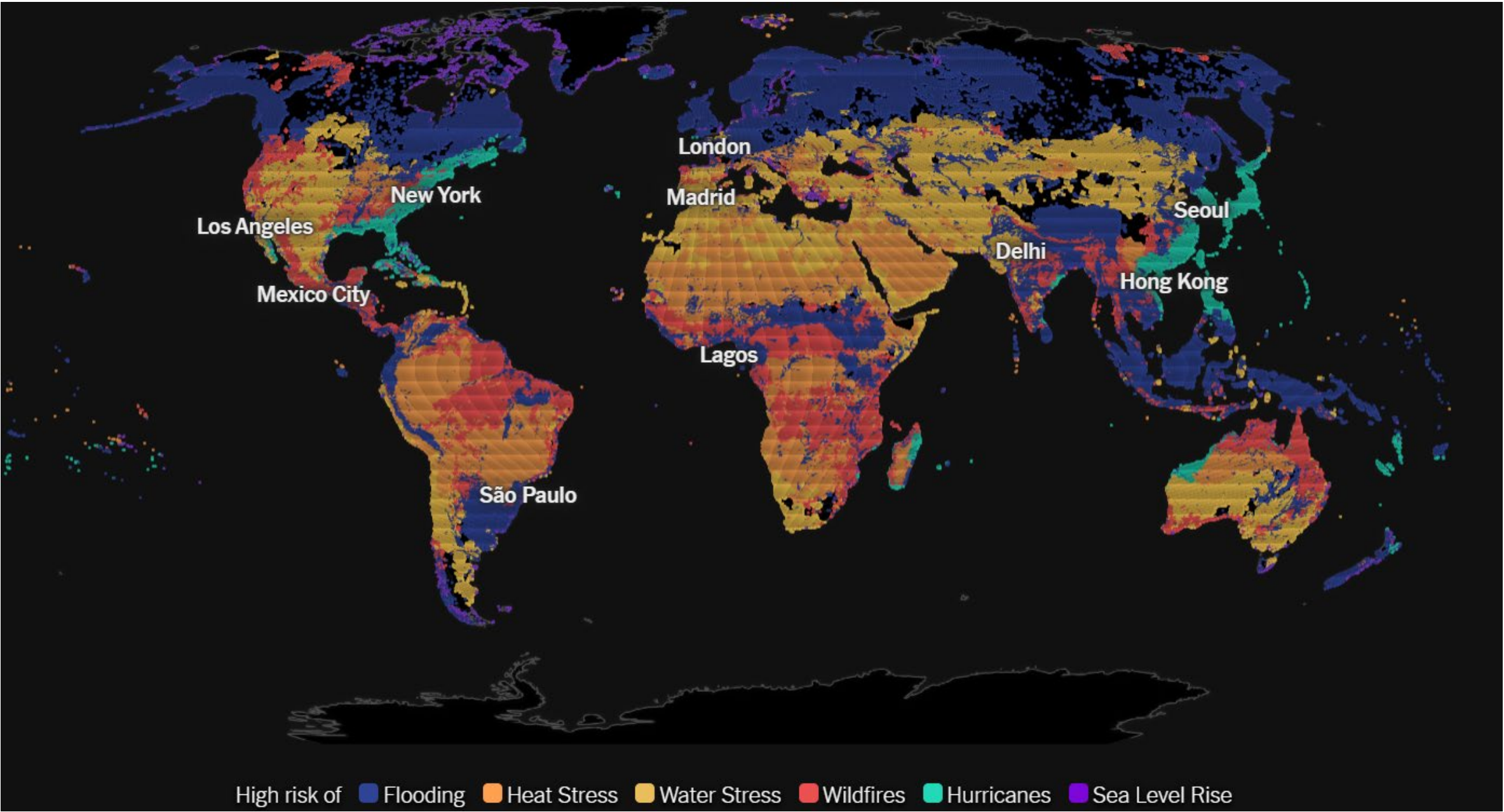
¹⁰ Source: NASA; <https://climate.nasa.gov/vital-signs/carbon-dioxide/>

¹¹ Source: IPCC; <https://www.ipcc.ch/sr15/chapter/spm/>

Figure 3.2.1: Definition of physical and transition risks

Physical risks	Transition risks
<p>Physical risks are those that pertain to the physical impacts that occur as the global average temperature rises. For example, the rise in sea levels could have impacts such as flooding and mass migration.</p> <p>Physical risks event-driven (acute) or relate to longer-term shifts (chronic) in climate patterns.</p> <p>Physical risks have direct and indirect financial implications for companies, including damage to assets, impacts from supply chain disruption, water availability, sourcing, and quality, food security, extreme warming affecting premises, operations, supply chain, transport needs, and employee safety.</p>	<p>Transition risks arise as we seek to realign our economic system towards low-carbon, climate-resilient solutions.</p> <p>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. For example, this includes policies to phase-in (EV), phase-out (coal), subsidies, carbon tax. It also includes development of specific low carbon energy technologies.</p> <p>Depending on the nature, speed, and focus of these changes, transition risks pose varying levels of financial and reputational risk to organisations.</p>

Figure 3.2.2: Global distribution of areas at high risk of floods, sea level rises, heat stress, water stress, wildfires and hurricanes. Source: New York Times¹².



Investors should also be aware of litigation risks. Litigation risks may result where businesses and investors fail to account for the physical or transition risks of climate change, and are prone to legal action from potential claimants.

¹² Source: New York Times. Requires subscription to view. <https://www.nytimes.com/interactive/2021/01/28/opinion/climate-change-risks-by-country.html>

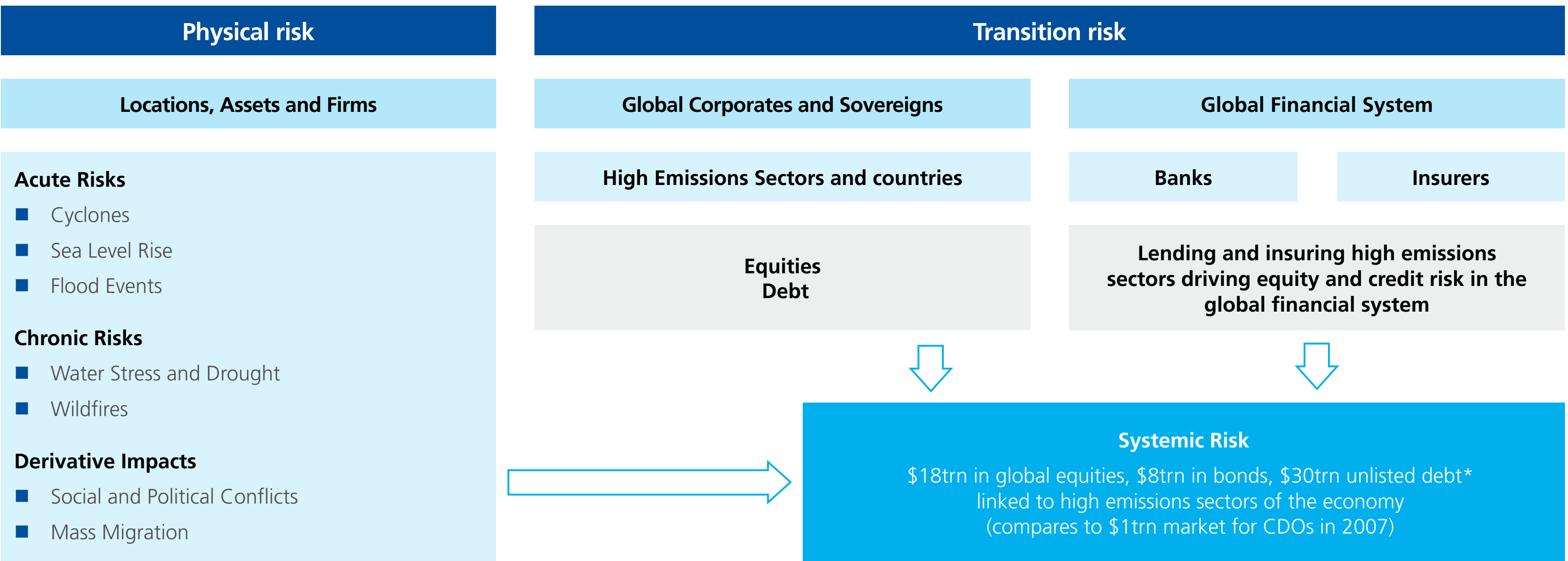
3.3 Why climate change matters to pension schemes

From an investment perspective, physical and transition risks can affect the assets, operations and financial performance (i.e. profits) of the companies in an investor's portfolio. When climate-related risks crystallise at the company-level, it is likely they would also affect the value of the investor's asset, for example the financial value of some particular company's shares in the market place. As a result, investors have a fiduciary duty to consider climate-related risks.

It is important to recognise that climate risk is "systemic" in nature. This means that its impacts are so wide-ranging that they are likely to affect, in some way, the majority of the entire financial system, as opposed to being localised to one or two sectors or regions of the economy. Since climate risk is systemic, a long-term investor cannot eliminate this risk simply by avoiding certain sectors or regions.

Figure 3.3.1 depicts physical and transition climate risks, and their transmission into systemic risks. As an indicator of the systemic nature of climate risk, Carbon Tracker estimated in 2020 an outstanding amount of c\$56 trillion in shares, bonds, and other financial instruments linked to high emissions sectors of the global economy.

Figure 3.3.1: Climate Risk and the Global Financial System



* Carbon Tracker Estimates

In addition to investment returns, sustainable pension schemes must attend to climate risks to the covenant strength of participating employers and to scheme liabilities.

- **Covenant:** Employers that contribute to (or sponsor) a pension fund may themselves be vulnerable to climate-related risks. As a result, their ability to contribute to the Scheme over the long term could, if risk management activity proves insufficient, be compromised by physical and climate risks.

- **Liabilities:** The liabilities of a defined benefit pension scheme could be affected by changes to mortality assumptions, other macroeconomic variables such as inflation (i.e. if climate change or climate policies affect the general level of prices for goods and services), or influences on the discount rate.

Our governance and activities in relation to climate risk, therefore, span the areas of Covenant, Liabilities, and Investments, and this report is structured so as to provide disclosure on each area.



4. Climate governance at our Scheme

‘Climate governance’ means the arrangements in place within the Scheme to manage climate-related risks and opportunities. This section describes the Scheme’s climate governance, in line with the Regulations.

4.1 The railways pension schemes

Railways Pension Trustee Company Limited (RPTCL) is the corporate Trustee¹³ of the railways pension schemes and for each separate section within the Railways Pension Scheme. The Trustee is responsible for managing four railways pension schemes:

- BR (1974) Fund
- British Transport Police Force Superannuation Fund
- British Railways Superannuation Fund
- Railways Pension Scheme

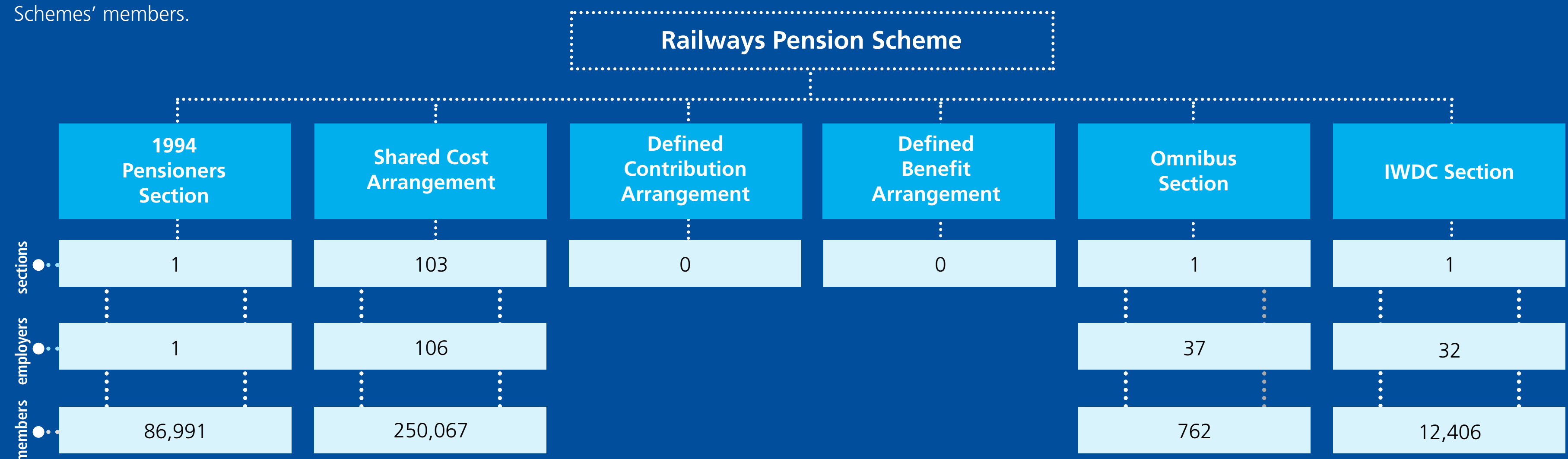
The Schemes are occupational pension schemes providing defined benefit (“DB”) and defined contribution (“DC”) benefits. The Railways Pension Scheme (RPS) is the largest of the four and was created in 1994 after the privatisation of the railway industry and reorganisation of the British Rail Pension Scheme. It is one of the largest schemes in the UK. It provides pensions for over 150 companies operating within the privatised railway industry.

Railpen (the trading name of Railway Pension Investments Limited), is a wholly owned subsidiary of the Trustee. Railpen is authorised and regulated by the Financial Conduct Authority (FCA). Railpen acts as the investment manager and fiduciary adviser for the railways pension scheme and is responsible for the day to day operation of the Schemes and the management of around c.£37 billion of assets. The Trustee is Railpen’s only investment client, ensuring that its activities are aligned with the interests of the Schemes’ members.

The Trustee Board is comprised of 16 persons, eight nominated by employers and eight by members of the railways pension schemes (six are nominated on behalf of employees and two on behalf of pensioners). Directors are appointed for a six year term of office with a third of them retiring by rotation every two years.

Further information on the Schemes and the composition of the Trustee Board is available in the 2021 Annual Report and Audited Financial Statements¹⁴.

Figure 4.1.1: Overview of the railways pension scheme



¹³ We use “RPTCL” and “Trustee” interchangeably in this report. ¹⁴ Available at www.railpen.com

4.2 Climate governance overview¹⁵

The Trustee places great emphasis on maintaining high standards of fiduciary governance. Governance means having the people, structure and processes in place to provide the foundation for the efficient operation and effective decision-making of the Trustee Board. The experience and skills of Trustee Directors are the cornerstones of the Board's effective ways of working.

When it comes to climate-related risks, the Trustee has a duty to ensure good governance of climate risks and to monitor the potential impacts on investment returns, liabilities, and employer covenant.

Governance is multi-faceted: climate governance – including the Trustee, others undertaking scheme governance activities, and advisers – may be considered in six parts, as shown in Figure 4.2.1. Taken in aggregate, the six subsections below (4.3 - 4.8) explain how the Trustee maintains oversight of climate-related risks and opportunities which are relevant to the Scheme.

Figure 4.2.1: Six parts of climate governance



The Trustee Board has chosen to take an approach to the oversight and management of climate-related risks and opportunities that integrates as far as possible into the processes for how it considers other risks and opportunities. However, given the unique challenges posed by climate risk, some monitoring and reporting is carried out separately to other risk management processes.

The Investment Risk Governance Framework (see [section 4.4](#)) is reviewed annually and approved by the Trustee Board. At the present time the Trustee is satisfied that this framework is sufficient for the management of investment risk including climate-related risk.

The Scheme is one of the most complex in the UK. The day-to-day operations of the Scheme are delegated to Railpen, with oversight maintained by the Trustee through reporting quarterly, annually, and as required. Within Railpen, oversight of climate risk management is ensured by the application of the Investment Risk Governance Framework and, in an investment context, through the oversight of the Railpen's Investment Management team by its Fiduciary team. Physical and transition climate risks are identified, assessed and managed using several tools and approaches as described later in this report, particularly [section 5](#).

RPTCL's Statement of Investment Offering (see below) prescribes a list of pooled funds that individual sections subscribe to according to their investment and funding requirements. Given the one-to-many mapping of pooled funds to the sections that invest in them, it is efficient from a governance and reporting standpoint to consider the impacts of climate risk at a pooled fund level. This means that, in this TCFD report, we produce analytics and pass comment at a pooled fund level (for example when reviewing climate scenario analysis or climate metrics).

Railpen is responsible for ensuring that external fund managers invest scheme assets in line with RPTCL's investment policy. Railpen also requires that the fund managers' climate, ESG, stewardship and sustainable investment policies align with RPTCL's own policies. This includes assessing how the relevant manager makes investment decisions based on the medium to long-term financial performance and climate and ESG risks of investee companies and engages with investee companies to improve their performance. The climate and ESG practices of a selection of external managers are reviewed at least once a year.

In the interests of providing for the reader a simplified exposition of climate governance at the railways pension scheme, we refer in the prose and diagrams below only to those bodies, committees, and documents, that have a relation to the governance of climate risk, i.e. the arrangements detailed below do not represent an exhaustive mapping of governance at the railways pension schemes and Railpen.

¹⁵ In this report we adopt the definition of 'Governance' used in the relevant Statutory Guidance: "the way a scheme operates and the internal processes and controls in place to ensure appropriate oversight of the Scheme... This includes – but is not limited to – decisions relating to investment strategy or how it should be implemented, funding, the ability of the sponsoring employer to support the Scheme and liabilities."

4.3 Investment beliefs

The Trustee's Investment Beliefs serve as a foundational and reliable guide to investment decision-making. The investment activities that Railpen carries out on behalf of the Trustee must align to the Trustee's beliefs. As noted in the Statement of Investment Principles, the Asset Management Committee (AMC) is responsible for monitoring Railpen's alignment with the Trustee's Investment Beliefs.

The Trustee reviewed and updated its Investment Beliefs in 2021. The Trustee's previous Investment Beliefs referred to a link between ESG¹⁶ factors and investment performance, and a duty to incorporate ESG into investment decision-making. The updated Investment Beliefs refer explicitly to climate change, reflecting its significance for the successful delivery of the Trustee's mission (see Figure 4.3.1). Climate change could be said to relate to all six of the Trustee's Investment Beliefs, though we highlight one particular belief for its explicit reference to climate change.

Figure 4.3.1: Trustee's Investment Beliefs, updated in 2021

Beliefs	Belief narrative
1. Managing asset-liability risk is integral to a scheme's long-term success.	<p>"Environmental, social, and governance ('ESG') factors affect corporate financial performance, asset values, and asset-liability risk. Well-informed and financially material ESG analysis, as part of a holistic investment process, supports the identification and ultimately the pricing of ESG risk and opportunity. Constructive engagement combined with thoughtful voting can protect and enhance investment value.</p> <p>A long investment horizon exposes a pension scheme to societal and systemic risks, such as climate change. These risks are growing and need to be managed. Capital allocation by investors and corporates makes a difference in how these risks play out. Railpen has a responsibility to make a scheme assets resilient to systemic threats and position portfolios for long-term opportunities. We believe it is possible and necessary to deliver the returns the Schemes' need, whilst positively contributing to the world our members retire into."</p>
2. Long-term focused investment decision making has many advantages that should be carefully exploited.	
3. Diversification of the overall investment portfolio, across different structural drivers of return, improves the resilience of a scheme assets in an uncertain world.	
4. Incorporating and acting upon climate risk and other environmental, social and governance factors is a significant driver of investment outcome and part of our fiduciary duty.	
5. Effective portfolio management requires flexibility around a thoughtfully considered investment strategy.	
6. Investments should be selected, structured and sized in a manner aligned to a scheme's long-term objective.	



¹⁶ Environmental, social, and corporate governance investment factors

4.4 Documentation and Processes

The Investment Risk Governance Framework (the 'Framework') defines the structure and relevant processes for the governance surrounding the management of investment risks across the Schemes, sections and Pooled Funds. A risk governance framework principally provides clear ownership and accountability for all investment decisions. It creates a well-defined set of expectations regarding risk-taking and assessing adherence with those expectations, thus facilitating intentional business outcomes.

This is achieved by having a structure with distinct levels of authority. Risk governance is divided into three 'levels' as shown in [Figure 4.4.1](#). The levels allow the risk governance framework to provide a strong link between delegation, oversight and decision-making. This in turn ensures the right decisions are made by those with the most specialism and experience, whilst sufficient oversight is guaranteed.

Figure 4.4.1: Three levels of risk authority



More information on the roles of Level 1, 2, and 3 risk authorities is provided in [section 4.5](#).

A thorough, consistent and aligned set of governing documents forms the cornerstone to successful governance. The Investment Risk Governance Framework establishes a document hierarchy that is driven by the three levels, and which defines oversight and accountability for the entirety of items within the Trustee's purview, including climate risk. This confers responsibilities on the Trustee, others undertaking scheme governance activities, and advisers.

The Investment Risk Governance Framework ensures a clear understanding of which governing documents are required and who owns them. The documents owned by the Boards & Sub-Committees provide the well-defined parameters from which all subsequent investment risk decisions are derived. These documents include Mission and Beliefs, Statement of Principles (SIP), Railpen Investment Manager Agreement (IMA), Terms of References and Policies. The Investment Risk Governance Framework also establishes a decision authority matrix with governing authorities and investment approval delegated authorities. Ultimately, the Investment Risk Governance Framework enables boards and committees to satisfy themselves that persons advising or assisting take adequate steps to identify and assess any climate-related risks and opportunities which are relevant to the matters on which they are advising or assisting.

Figure 4.4.1.2: Document hierarchy in the Investment Risk Governance Framework

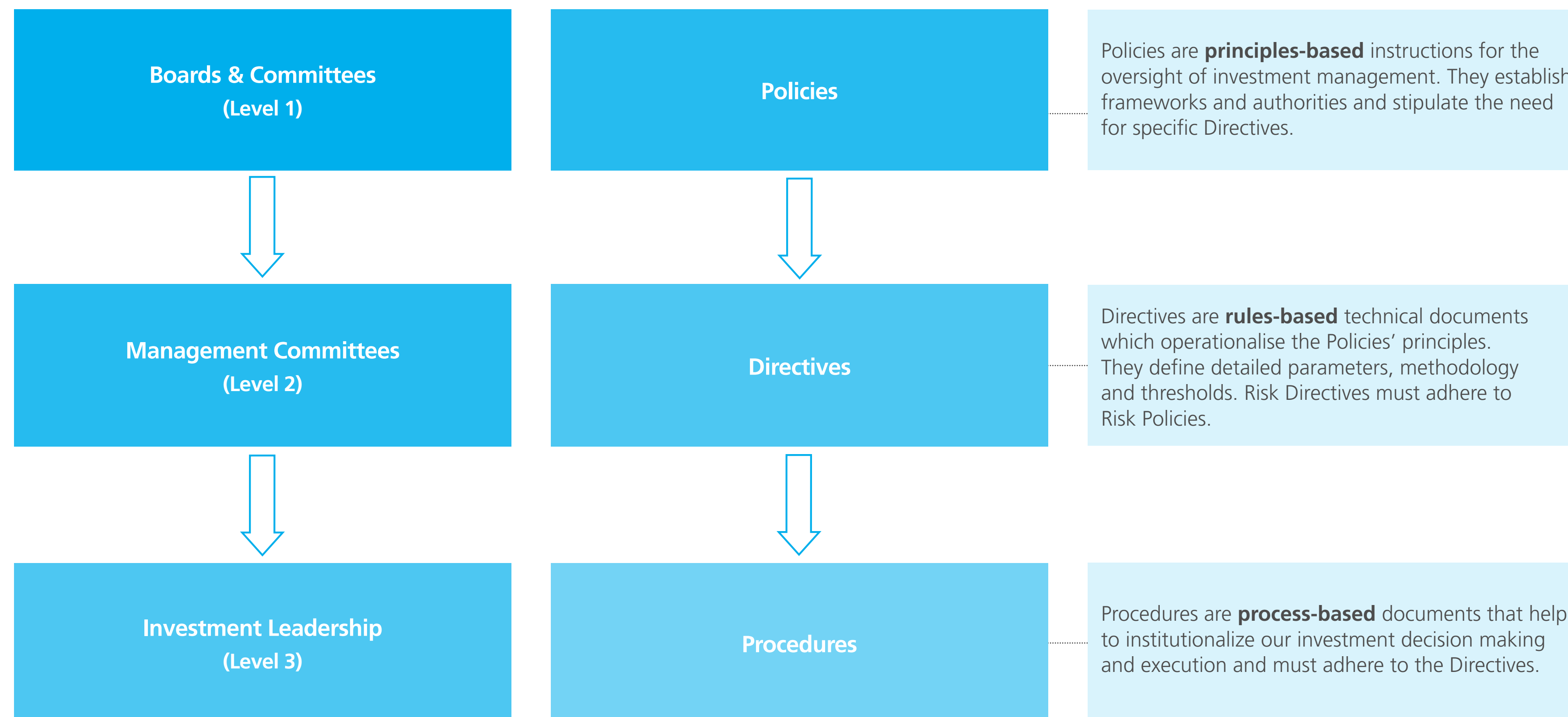


Figure 4.4.1.3 lists the key level 1, 2, and 3 documentation that relate to the management of climate risk. The tables that follow explain the specific relation between the document and climate risk for levels 1 and 2 documents.

Figure 4.4.1.3: Documentation relating to climate risk, levels 1, 2 and 3

	Risk authority	Document type	Documentation relevant to climate risk
Level 1	Boards and Sub-committees	Policies	Investment Risk Governance Framework RPTCL - Railpen Investment Management Agreement (IMA) Statement of Investment Principles Investment Beliefs Statement of Investment Offering Pooled Fund Policy & Pooled Fund Mandates Investment Risk Policy Board & Sub-committee Terms of Reference & Meeting Minutes Investment & Risk Report
Level 2	Management Committees	Risk Directives	ESG Risk Directive Investment Transaction Approval Directive Investment Management Agreements
Level 3	Investment Leadership	Procedures	Team Procedures Investment Recommendations

Level 1 documents relating to climate change¹⁷

Investment Risk Governance Framework	
Purpose	This document defines the structure and relevant processes for the governance surrounding the management of investment risks across the Schemes, sections and pooled funds.
Relevance for Climate Governance	The Investment Risk Governance Framework documents: <ul style="list-style-type: none">■ inventory of major investment decisions■ authority for delegation and oversight of decisions■ authority for making of decisions, and■ approval processes and governance documentation.
RPTCL-Railpen IMA	
Purpose	Establishes the terms of the discretionary investment management agreement given to Railpen by the RPTCL.
Relevance for Climate Governance	Requires Railpen to invest in line with the Trustee’s SIP, which refers to climate change. Delegates investment powers and voting rights to Railpen. Requires Railpen to provide the Trustee with information that enables the Trustee to review and monitor engagement activities, the exercise of voting rights and the “financially material considerations” and “non-financial matters” (as set out in the Investment Regulations) taken into account in the selection, retention and realisation of investments.

¹⁷ Please note that Investment Beliefs are described on [page 14](#) and the Investment & Risk Report is described on [page 25](#)

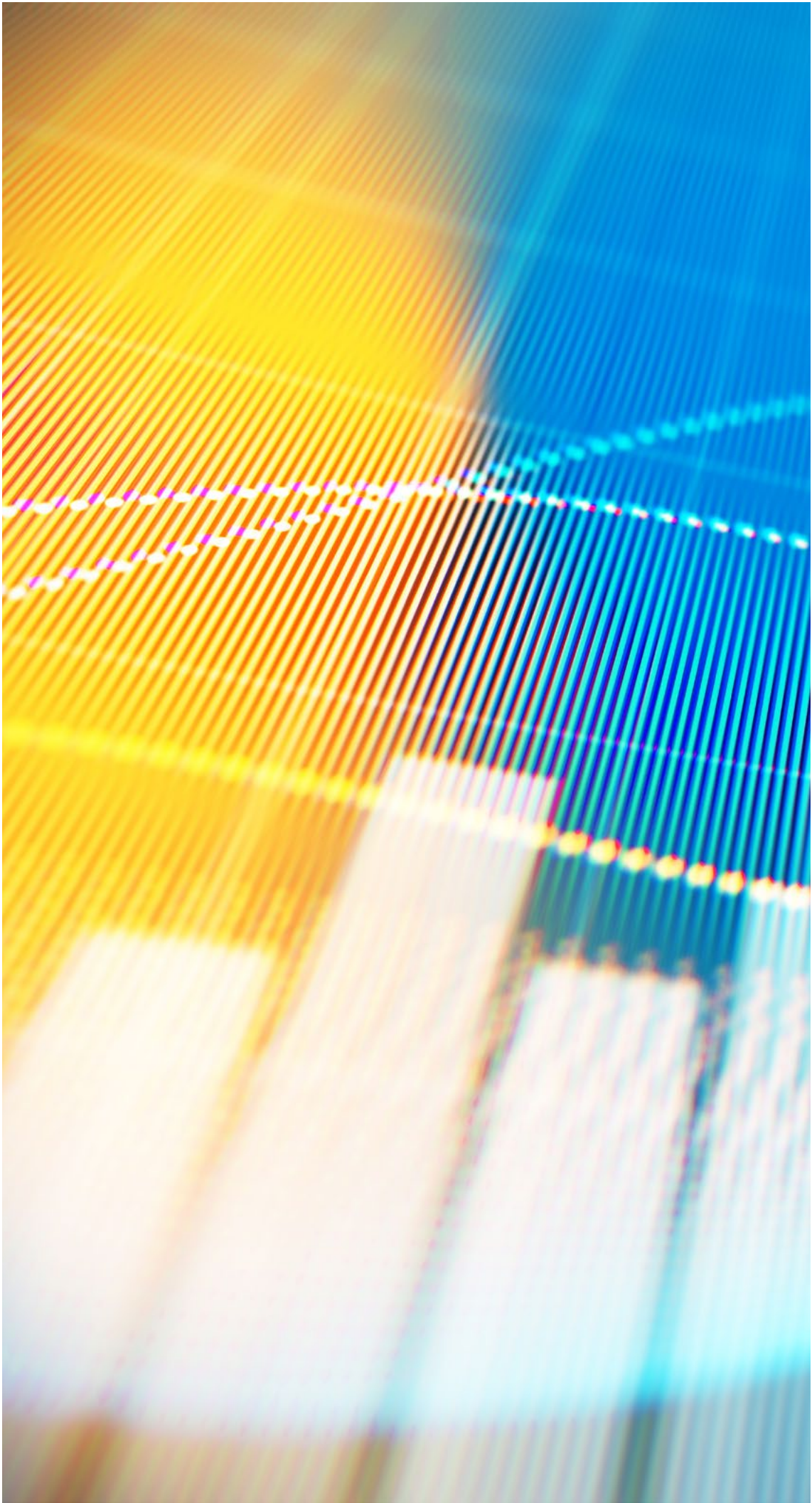
Statement of Investment Principles (SIP)	
Purpose	The RPTCL SIP sets out the Trustee’s arrangements in respect of investing scheme assets.
Relevance for Climate Governance	The SIP recognises that climate change can have a financially material impact on investment returns, and that the Trustee has a legal duty to consider financially material climate factors. In the SIP, the Trustee commits to undertake annual training on ESG and climate change.

Statement of Investment Offering	
Purpose	This document defines the range of investment products to be used in client investment strategy and, importantly, sets out the Trustee’s expectation that its investment beliefs should be integrated into the investment process.
Relevance for Climate Governance	Investment beliefs include explicit reference to climate change (see above).

Pooled Fund Policy & Pooled Fund Mandates	
Purpose	This document sets out the investment objectives and investment risk guiding principles and limits for investment management activities within the pooled funds.
Relevance for Climate Governance	The document states that ESG risk, which includes climate risk, should be integrated into the investment process, minimised and diversified. It should be risk-managed as part of the ongoing active management of assets.

Investment Risk Policy	
Purpose	This document sets out the investment objectives and investment risk guiding principles and limits for investment management activities within the pooled funds.
Relevance for Climate Governance	The Investment Risk Policy defines ESG risk (which includes climate change) and sets a requirement for a Level 2 document, namely an ESG Risk Directive (see below).

Board & Sub-committee Terms of Reference & Meeting Minutes	
Purpose	Terms of Reference (ToR) for the Trustee Board, the Integrated Funding Committee, and the Defined Contribution Committee, are approved by the Trustee Board; the ToR for the Asset Management Committee are approved by the Railpen Board; the ToR for the Investment and Risk Committee are approved by the Asset Management Committee.
Relevance for Climate Governance	Duties laid out in ToRs cover roles and responsibilities for activities that have a bearing on funding and investment issues. Climate-related risks where material are considered to be within the scope of the duties laid forth in Board and Sub-committee terms of reference.





Level 2 documents relating to climate change

ESG Risk Directive	
Purpose	This document specifies how ESG Risk, as defined in the Investment Risk Policy, should be monitored, measured, and managed.
Relevance for Climate Governance	ESG Risk is defined to include climate risk. The directive sets certain pooled fund-specific requirements in respect of ESG risk management, and directs a policy of excluding carbon intensive businesses (thermal coal and tar sands) in order to reduce the risk of asset stranding.

Investment Transaction Approval Directive	
Purpose	This document defines the framework for determining the classification of investment transactions (by size and nature) and the relevant approval authorities.
Relevance for Climate Governance	Investment approvals may be escalated for reasons relating to ESG risk including climate risk. The directive requires investment managers to provide all relevant investment and due diligence information to Railpen’s Investment Risk and Sustainable Ownership teams. More information is provided in section 4.5 .

Investment Management Agreements (external managers)	
Purpose	These documents establish the terms of appointment of external managers.
Relevance for Climate Governance	IMAs and similar documentation place requirements on external investment managers in relation to ESG and climate change. Requirements are in place for the management of climate risks, and the reporting of risk management activities on an agreed basis. Specific requirements are set out for those managers in-scope of Railpen’s Net Zero Plan.

In addition to the above, a number of third party suppliers support the governance of climate-related risks. Supplier contracts document the requirement for climate-related data, proxy advice, climate scenarios, consultancy and so on. Certain significant suppliers are required by contract to produce Key Performance Indicators or other indicators of activity such that the Trustee, or Railpen acting on its behalf, can measure delivery of services to RPTCL.

Key documents are stored, managed, reviewed, and processed for approval via a Sharepoint site.

4.5 Roles and Responsibilities

This subsection describes the roles of those undertaking scheme governance activities, and those advising and assisting the Trustee with scheme governance activities, in identifying, assessing and managing climate-related risks and opportunities relevant to those activities.

As described in [section 4.4](#), the Investment Risk Governance Framework establishes three levels of risk authority for the Trustee and Railpen:

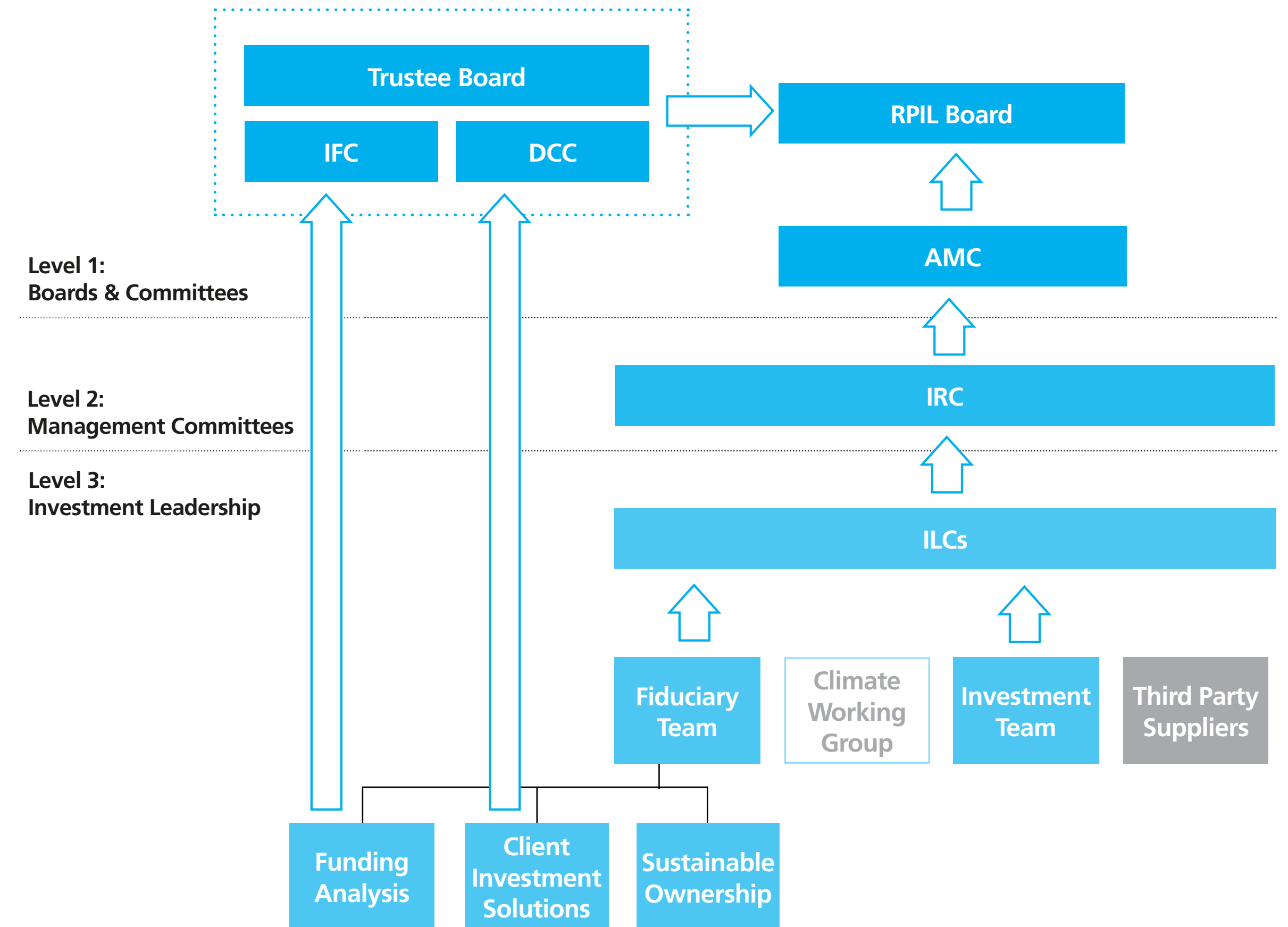
Level 1 - Boards and their Sub-committees oversee the governing parameters, which set the necessary expectations and context for all investment decisions. Level 1 also provide the valuable role of oversight ensuring delegated authorities are thoughtful and well maintained.

Level 2 - The second level of authority are various Management Committees. These operate within the Level 1 defined frameworks and policies. These Management Committees are granted authority to make various investment decisions, which are overseen by Level 1. In addition, these Management Committees are eligible to further delegate more detailed but less material investment decisions to individual investment teams/members. For example, the Investment and Risk Committee would approve risk thresholds (which fall below the AMC approval limit), and for example, would recommend to AMC any changes to Pooled Fund Mandates.

Level 3 - The last level represents Investment Leadership, including the Investment Teams, who are ultimately responsible for execution of bottom-up investment decisions. These are investment experts who are employed to deliver investment returns in line with Railpen's mission. These may be teams or individuals who make security and portfolio level investment decisions or, for example, recommend (for approval) investments to a Management Committee. These include Investment Leadership Committees (ILCs), which comprise the Public Markets Investment Committee (PMAC), Private Markets Investment Committee (PMIC), and the Real Assets Investment Committee (RAIC).

In the context of climate risk governance, key level 1, 2, and 3, risk authorities are displayed in Figure 4.5.1. The remit of each authority as relating to climate risk is explained below.

Figure 4.5.1: Summary of climate governance at the railways pension scheme and Railpen¹⁸



¹⁸ Level 1 relates to what the TCFD Recommendations refer to as “the Board” and Levels 2 and 3 relate to what the TCFD Recommendations refer to as “Management”.



Section 4.4 (page 19) describes the Investment Transaction Approval Directive, which determines which risk authority may approve which transaction depending on its nature classification, where transaction nature classification depends on a range of factors including the perceived degree of climate risk. Figure 4.5.2 summarises which risk authorities approve which transactions, and further information is available below.

Figure 4.5.2: Risk authorities for investment approvals

	Risk authority	Nature Classification
Level 1	Boards and Sub-committees	Special Nature transactions
Level 2	Management Committees	Material transactions
Level 3	Investment Leadership	Significant transactions

Railpen undertakes a range of activities to assist or advise the Trustee with its oversight responsibilities relating to climate-related risks and opportunities. This includes delivering training (see section 4.6), investment management services including climate risk integration (see section 5.4), advice relating to climate impacts on employer covenant and liabilities (sections 5.2 and 5.3), external manager monitoring, delivery of programmes to support the Trustee's climate targets, provision of climate scenario analysis, and support in the production of the Scheme's TCFD Report.

As relayed in the Statement of Investment Principles, the Trustee is satisfied that Railpen has the appropriate knowledge and experience for managing the investments of the Schemes and it carries out its role in accordance with the criteria for investment set out in Investment Regulations, the principles contained in the SIP, the Trustee's investment policy and any applicable investment guidelines and restrictions agreed with the Trustee.

The following tables describe the composition and remit of the committees and other groups depicted in Figure 4.5.1.

Level 1 risk authorities relating to climate change

Trustee Board	
Composition	Eight Board members nominated by employers and eight by members of the railways pension schemes (of which six are nominated on behalf of employees and two on behalf of pensioners).
Relevance for Climate Governance	Trustees have ultimate responsibility for ensuring effective governance of climate-related risks and opportunities. These responsibilities are discharged, delegated, and overseen as described throughout this TCFD report.

Integrated Funding Committee (IFC)	
Composition	Four employer-nominated and four member-nominated directors of the Trustee Board.
Relevance for Climate Governance	The IFC is responsible for: principles for integrated risk management; discount rates and other funding assumptions; the Return, risk and liquidity framework (RRL); covenant ratings; client portfolio management principles. Material climate risks relating to these duties are considered within the purview of the IFC. The IFC oversees the appointment and monitoring of the Scheme actuary.

Defined Contribution Committee (DCC)	
Composition	Three employer-nominated and three member-nominated directors of the Trustee Board.
Relevance for Climate Governance	Ensures appropriate management and governance of BRASS, AVC Extra, and the Industry-Wide Defined Contribution (IWDC) Section of the Railways Pension Scheme, including compliance with the requirements of master trust authorisation for the IWDC Section. It helps to shape and articulate the Trustee's policy on DC matters. DCC's mission is to provide DC arrangements, which are designed for the long term and offer good value for members, including default investment strategies, which are suitable for the majority of members throughout their scheme membership, and an appropriate range of fund choices for those who wish to self-select. IWDC is the authorised master trust.

Railways Pension Investments Limited Board (RPIL Board)	
Composition	Three independent non-executive directors; four directors of the Trustee Board (two employer-nominated and two member-nominated); Railpen Chief Executive Officer; Railpen Chief Financial Officer.
Relevance for Climate Governance	Responsible for the governance and management of Railpen. Reports to and is accountable to the RPTCL on the management of the business. Oversees the AMC.



Asset Management Committee (AMC)

Composition	Two independent non-executive directors; two Trustee Board directors (one employer-nominated and one member-nominated); Railpen Chief Executive Officer; and the Chair, who must be an independent non-executive director of the RPIL Board.
Relevance for Climate Governance	Provides advice on the pooled funds, investment planning, macro and investment risks, and oversees investment and fiduciary activities on behalf of the RPIL Board. The AMC engages with the Trustee and the IFC on fund management, Pooled Fund, investment and ESG risk issues, including climate change. AMC receives a quarterly Investment & Risk Report which includes reporting on ESG issues including climate change. AMC receives a KPI report in relation to the Railpen pooled funds, which includes a KPI on ESG (including climate change). AMC approved Railpen's Net Zero Plan. Reports to the Trustee Board at least annually, including a report containing KPIs relating to Railpen's performance. Reviews and approves "Special Nature" investment transactions, which might include those escalated for reasons of climate risk.

Level 2 risk authorities relating to climate change

Investment and Risk Committee (IRC)

Composition	Chief Fiduciary Officer, Chief Investment Officer, Head of Investment Risk, Head of Client Investment Solutions, Head of Investment Strategy & Research, Head of Real Assets, Head of Public Markets, Head of Private Markets.
Relevance for Climate Governance	Oversight of investment risks relating to investment activities, including climate risks, across Total Fund, Pooled Funds, Strategies, and Manager Portfolios. Approves the ESG Risk Directive (which includes climate change). Is authorised by and directly accountable to AMC. Reviews and approves "Material" investment transactions, which might include those escalated for reasons of climate risk.

Other relevant teams and working groups

Fiduciary Team and Investment team

Relevance for Climate Governance	Within Railpen, oversight of climate risk management is ensured by the application of the Investment Risk Governance Framework and, in an investment context, through the oversight of the Railpen's Investment Management team by its Fiduciary team. Climate risks are considered in their appropriate context, whether Covenant, Liabilities, or Investments and in respect of the latter whether the investment relates to Public Markets, Private Markets, or Real Assets.
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Client Investment Solutions Team

Relevance for Climate Governance	Support the DCC in discharging its duties. Where climate risks are material, this would involve supporting the DCC in reviewing and monitoring relevant risks.
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Funding and Analysis Team (includes Employer Covenant team)

Relevance for Climate Governance	Support the IFC in discharging its duties. This includes support with employer covenant ratings and establishing integrated funding plans. The support provided to the IFC incorporates climate risk where material.
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Sustainable Ownership team

Relevance for Climate Governance	Railpen's in-house ESG expert team. Includes a dedicated resource overseeing a specific workstream related to climate risk, alongside complementary resources that support the analysis and monitoring of climate risks and delivery of Railpen's Net Zero Plan.
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Climate Working Group (CWG)

Relevance for Climate Governance

In 2020, Railpen set up an internal Climate Working Group (CWG) with members from across the Investment and Fiduciary businesses encompassing public and private markets, real estate, infrastructure, employer covenant, risk, investment strategy and client investment solutions. The CWG is co-chaired by the Chief Investment Officer (who is also a member of Railpen’s Executive team) and the Head of Sustainable Ownership, a member of the Fiduciary Leadership Team.

The purpose of the CWG is to support a coordinated and cross-team approach to managing climate risk across Railpen, ultimately supporting the Trustee in discharging its duties. The objectives for the CWG are to:

- increase knowledge of climate risk impacts on investment and fiduciary outcomes
- coordinate and support delivery of projects that improve Railpen’s approach to managing climate risk, and
- disseminate learnings to CWG members’ local teams

This is achieved through the pillars of Climate Integration, Intelligence and Innovation, and Disclosure and Reporting as presented in Figure 4.5.3.

Figure 4.5.3: Principal workstreams in the Climate Working Group Workplan 2022

Integration	Intelligence and Innovation	Disclosure and Reporting
Integrate climate risk and Net Zero considerations into the investment and funding processes	Absorb, disseminate and incorporate relevant climate intelligence and solutions across RPTCL and Railpen	Facilitate meaningful and relevant climate disclosure for RPTCL, stakeholders and regulators

Third party suppliers	
Relevance for Climate Governance	The Trustee’s oversight of climate-related risks depends on the support of third party suppliers, for example those rendering services relating to climate scenario analysis, GHG data, and proxy voting advice. Climate-relevant service providers are appointed after careful selection process driven by procurement specialists. Contracts are established to ensure high quality service delivery and enable supplier monitoring.



4.6 Training, Trustee Knowledge and Understanding

This section describes the training opportunities provided for Trustee Directors and relevant employees in relation to climate change risks and opportunities.

Directors have a comprehensive training programme on appointment and throughout their tenure. They complete Training Skills Analyses and a programme of training and workshops is provided, which is designed to support individuals and the Board as a whole, and facilitate effective succession planning based on the Board's Skills Matrix. All Trustee Directors must achieve a minimum standard of Trustee Knowledge and Understanding which meets the Pensions Regulator's requirements, and are required to complete the Trustee Toolkit prior to appointment. A wide range of training is offered by external providers and Railpen, including training on the unique characteristics and complexity of the railways pension schemes. To further support Trustee Directors, information relevant to their role is easily accessible to them electronically in one convenient place, alongside all Board and Committee papers.

In respect of the identification, assessment and management of climate risks in particular, the Trustee Board undertakes training at least annually. This includes understanding how scenario analysis works, why climate change poses a material financial risk, and its relevance to overall risk management. Recognising that the Trustee Directors themselves delegate the act of identifying and assessing climate risks, the objective of the training is not to achieve technical mastery, but rather to confer the Trustee Directors with the ability to challenge the risk information they receive from others. The Trustee Directors receive training and engagement on other aspects of risk management outside climate change (for example on the general Investment Risk Governance Framework) further supporting the governance of climate risk.

In 2021, Railpen convened two half-day training sessions for the Trustee Board on (i) ESG including climate change, regulations, fiduciary duty and (ii) climate change specifically. Given the lockdowns in place at the time, the training sessions were delivered in virtual format, using multi-media, polling, interactive activities, and climate scientists and other external speakers. Topics covered included regulation, climate science, stewardship, net zero, climate as an investment opportunity, metrics and targets, 'net zero', and climate impacts on covenant strength. The 2022 Trustee training session on climate change focussed on climate scenario analysis, climate impacts on covenant, and Railpen's progress against its Net Zero Plan. The extent of Trustee training and level of engagement with Railpen's Sustainable Ownership team are reviewed and agreed each year.

As the primary adviser to the Trustee, Railpen also undertakes training on climate change. Railpen employees (in particular, those responsible for managing investment, liability, and covenant risk) have attended three detailed workshops on climate scenarios provided by Ortec Finance and WTW¹⁹ in relation to the 2021 climate scenario analysis. Railpen's Climate Working Group maintains an active Microsoft Teams channel for sharing of climate intelligence and investment views, and a monthly climate newsletter is distributed to Railpen's Investment and Fiduciary Teams covering relevant climate-related investment news and a dashboard of climate-related market information. A member of Railpen's Sustainable Ownership Team is undertaking the CFA UK's Certificate in Climate and Investing. Railpen has appointed a range of suppliers to support with climate risk management covering GHG data, scenario analysis, proxy advice, and so on. The appointment of high quality service providers, and external fund managers, provides a valuable source of information and discussion. The Trustee and Railpen have the opportunity to attend conferences to further build climate change expertise, and engage in industry collaboration and knowledge sharing through a range of industry initiatives (see [section 6.4.3](#)).

From time to time external counsel may be procured in relation to investment management undertaken on behalf of the Scheme. Where material, expertise in climate change is considered when procuring external legal counsel. For example, in 2021 a particular firm was retained for the purposes of drafting an Investment Management Agreement, partly due to their competence and track record in climate-related matters.

¹⁹ WTW is also the Scheme actuary



4.7 Risk Monitoring

The Trustee has approved an annual programme of engagement with Railpen’s Sustainable Ownership team, with clear objectives relating to the fulfilment of regulatory, fiduciary, and disclosure requirements (now and forthcoming) in respect of environmental, social, and corporate governance (ESG) issues including climate change. The Trustee is satisfied that, at the present time, the governance and risk monitoring arrangements in place are sufficient. This is, however, reviewed at least annually.

The Trustee Board receives a quarterly Sustainable Ownership report, which includes reporting on climate-related matters. The quarterly reports contain information related to integration (which when relevant may include the consideration of climate risk in investment decision-making), active ownership (engagement and voting data including on climate risks), and longer-term themes (including but not limited to climate change and the transition to net zero). Separately to this, the Trustee Board has received four additional climate-related updates at board meetings in the past twelve months, covering: ‘net zero’; TCFD reporting (twice) and; metrics & targets. In the round, climate risks have been a substantive agenda item in the past twelve months. The training sessions described in section 4.6 provide time to discuss climate scenario analysis and other risk metrics and give Trustees further opportunity to challenge the information provided to them.

Railpen’s Enterprise Risk and Trustee Governance teams support the Trustee in an annual review of its risk register. This includes reviews of the risks associated with those undertaking scheme governance activities and other significant suppliers. Supplier service levels are also monitored through the receipt of KPI reports and other relevant means. The specific frameworks and tools used to monitor climate risks are detailed in [section 5](#).

All Trustee Board reports are required to include a “Risks” section – which should include climate-related risks where relevant – for the purposes of Trustee discussion and challenge. Examples of recent challenge provided by the Trustee include questioning the metrics and targets proposed, including the stringency and potential unintended consequences of climate targets, and other challenges related to TCFD reporting. Other risk authorities within the Investment Risk Governance Framework offer challenge on the Trustee’s behalf, for example by requesting asset-level climate scenario analysis when an investment is brought to an ILC for approval.

The extent of Trustee Board time devoted to monitoring climate-related risks is reviewed annually. Following the first TCFD report published by the Scheme, the time devoted to climate risks will in future be based partly on the results of climate scenario analysis and other risk analytics. Going forward, the production of annual TCFD reports will provide a natural focal point for climate risk monitoring at Trustee-level and detailed discussion.

The Asset Management Committee (AMC) receives an Investment & Risk Report, which includes Sustainable Ownership (including climate change) reporting on a quarterly basis. The AMC has oversight of the climate-related exclusion policies (which apply to thermal coal and tar sands companies). In addition, the AMC is able to request ad-hoc information on climate-related matters and provide challenge, as it did in relation to the impact of Russia’s war in Ukraine on global energy markets and consequences for the climate transition (and Railpen’s Net Zero Plan). In addition the AMC receives a quarterly KPIs report, which includes an ESG KPI (where ESG includes climate change). In turn the Trustee Board receives an annual update of KPIs from the AMC chair.

Railpen’s climate risk monitoring include: weekly SO team meeting on ESG risks (including climate risks) at key portfolio holdings, quarterly portfolio reviews, external manager monitoring, company engagement, and reviews of carbon metrics data. In 2021, Railpen launched an internal climate newsletter named “Heated”, which covers news items related to climate finance, a dashboard of climate metrics and relevant market measures, and is distributed to all investment professionals at Railpen.

4.8 Reporting

The preceding sections detail the non-public facing reporting on climate-related issues within the Trustee and Railpen. In addition, climate-related information is reported through the following channels:

Report	Content
Scheme Report and Accounts	Includes a detailed “Implementation Statement”, explaining how the Trustee has fulfilled its Statement of Investment Principles, including detail on sustainable ownership including climate change. Also includes a link to the TCFD Report.
Annual TCFD Report	A report delivering against the Regulations.
Stewardship Report	An annual report against the 12 principles of the Financial Reporting Council’s Stewardship Code. The report includes climate-related information in several areas.
Voting disclosure	A portal available via Railpen.com detailing the outcomes of Railpen’s voting decisions. Includes climate-related voting.
Principles for Responsible Investment Report	An in-depth report detailing RPTCL’s commitment to the six PRI principles; contains climate-related disclosures.
Sustainable Ownership Review	A brief, member-focussed document explaining Sustainable Ownership activities (including but not limited to climate change) carried out on behalf of the Scheme membership.



5. Climate risks in the Scheme, impacts on strategy and the actions we are taking

5.1 Overview and climate scenario specifications

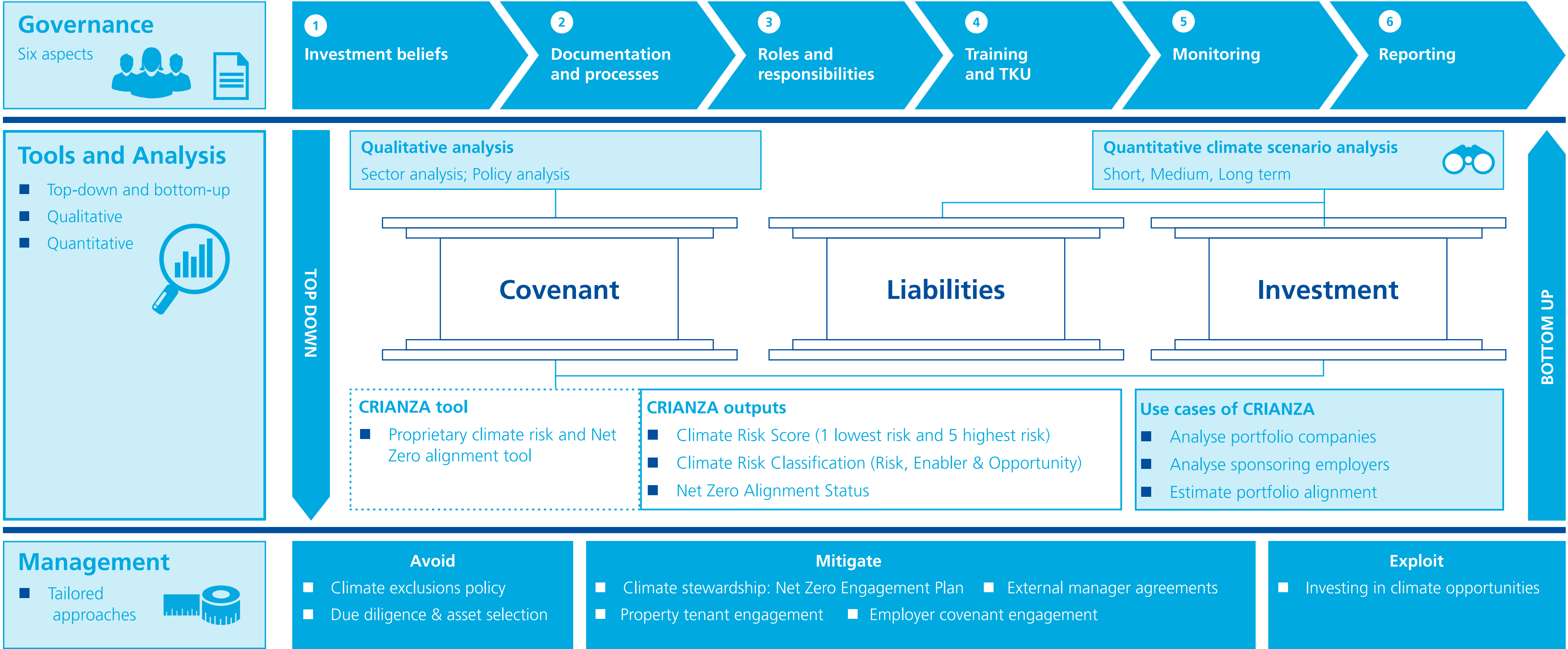
Transition and physical risks are identified and assessed using quantitative and qualitative approaches. These approaches are applied as appropriate for assessments of covenant, liabilities, and investments. This includes the use of proprietary tools and frameworks developed in-house by Railpen, in addition to the analytical capabilities of respected third parties.

Once risks have been identified and assessed, risk management is achieved through approaches tailored to context (i.e. covenant, liabilities, or investment, and the detail of the risk type within each of these areas). Depending on the type of risk, actions are taken to avoid, reduce, or exploit the risk. Risk management activities are described in more detail in the sections that follow.

Although the focus of this report is on the management of Scheme-wide climate risks, the Trustee believes a combination of top-down and bottom-up perspectives is important for the purposes of analysing and managing physical and transition risks. Bottom-up perspectives are particularly significant in assessing (i) employer covenant, and (ii) particular investments made on the Trustee's behalf.

Ultimately, the Scheme utilises a framework of Governance, Tools & Analysis, and Management (GTAM) for identifying, assessing, and managing climate-related risks across the three areas of covenant, liabilities, and investment. This is depicted in [Figure 5.1.1](#) and further explained on page 27.

Figure 5.1.1: Governance, Tools & Analysis, Management (GTAM)



5.1.1 Selection of climate scenarios

Climate scenario analysis is a means by which investors can understand the potential financial consequences of climate risks in certain plausible scenarios. It is important to note that climate scenarios are hypothetical constructs that assess sensitivities to potential climate change outcomes, not forecasts or predictions. The Trustee uses quantitative climate scenario analysis to understand the potential impacts on scheme liabilities and investment returns.

Services from Railpen, Ortec Finance, and WTW were procured in order for the Trustee to assess, using scenario analysis methods, climate-related risks to scheme liabilities and investment returns. The following scenarios were used: “Paris Orderly”, “Paris Disorderly”, and “Failed Transition”. These scenarios are summarised in Figure 5.1.1.1. The Trustee, on the advice of Railpen, selected these scenarios having regard to the following criteria:

- Plausibility – given national and international climate agreements on limiting GHG emissions, and given recent trends in emissions growth
- Statutory Guidance – aside from the requirement to consider a scenario within a temperature warming range of 1.5-2C above pre-industrial temperatures, the Trustee agrees with the Guidance to consider different scenarios with the same temperature outcome, in addition to a higher temperature outcome
- Simplicity – there is no limit to the number of scenarios one could compute for systems so complex and long-term; in order to facilitate effective risk management it is necessary to streamline and simplify the scenarios in use

Figure 5.1.1.1 - Description of the climate scenarios selected by the Trustee. The scenarios are developed by Ortec Finance as part of its Climate MAPS tool. The mortality impacts in different scenarios are inferred from modelling by WTW.

	Paris Orderly transition	Paris Disorderly transition	Failed transition
Use case	Tests exposure to the risks/ opportunities from the systemic drivers of an orderly transition and locked in physical risk	Shows resilience of the portfolio to sudden transition triggering a market dislocation centred on high emitting stocks	The main focus of this scenario is physical risk, results show the exposure to plausible, severe climate change impacts
Risk transmission and key assumptions	<ul style="list-style-type: none">■ Large transition impact due to policy measures and technology drivers■ Transition is assumed to occur as smoothly as possible■ Market pricing-in dynamics occur smoothed out over the 2020-2025 period■ Physical impacts occur up to 1.5/2°C which are greater than today but still much less than under a Failed Transition	<ul style="list-style-type: none">■ Large transition impact due to policy measures and technology drivers■ Transition has disruptive effects on financial markets with repricing followed by a sudden sentiment shock and stranded assets in 2024/2025■ Physical impacts occur up to 1.5/2°C which are greater than today but still much less than under a Failed Transition	<ul style="list-style-type: none">■ Limited transition impact economies follow the business as usual track without additional new policy measures■ Severe physical impacts occur and continues to increase over time both gradual physical changes, as well as more frequent and severe extreme weather events■ Markets price in physical risks up to 2050 by end of this decade, and price in post 2050 physical risks from the mid-2030s onwards
Mortality impacts	By 2050, life expectancy ²⁰ increases by around 3 years	By 2050, life expectancy increases by around 2.25 years	By 2050, life expectancy is essentially unchanged
Temperature outcomes	<ul style="list-style-type: none">■ Average temp increase of 1.6°C by 2100.■ In line with: Emissions ≈ IPCC RCP 2.6■ 97% probability of limiting warming to 2°C and c.29% probability of limiting to 1.5°C.		<ul style="list-style-type: none">■ Expected global warming of 3.8°C by 2100■ In line with: Emissions ≈ IPCC RCP 6.0

Further information on Ortec Finance’s Climate MAPS model is available at <https://www.ortecfinance.com/en/insights/product/climate-maps>

²⁰ In this table, “life expectancy” means the number of years after the age of 60 lived by an average male pension scheme member. Life expectancy increases in this table ignore potential improvements or deteriorations to life expectancy that could result for reasons other than climate change.

Climate scenario analysis on RPS assets was first undertaken in 2019, ahead of it becoming a regulatory requirement. In the years since, the uptake of climate scenario analysis by investors has increased and the sophistication and reliability of climate scenario models has improved. Nevertheless, the need for care, consideration and contextualisation, in making sense of the outputs of climate scenario analysis, is highlighted by the following limitations and assumptions:

- Time lags in the scientific and econometric data that are used as model inputs.
- Climate scenario analysis depends on climate scientific modelling. If the scientific modelling is precautionary this might lead to an under-estimate of physical risks and their financial impacts.
- The need to use proxies for modelling climate risks in investment portfolios. These proxies might be imperfect representations of the actual investments in the RPS investment portfolio.
- Typically climate scenario analyses assume investment strategy remains constant for many decades, whereas this is unlikely to be the case.
- Actual climate-induced mortality impacts might be influenced by exogenous factors such as lifestyle changes and public health interventions.
- Challenges in identifying a probability for a given climate scenario (climate scenario analysis tends to focus on impact rather than likelihood).
- The requirement to make assumptions about when climate risks will be priced into asset values.

Further limitations are described in [section 5.3](#). Overall, climate scenario analysis is useful for identifying outliers and direction of travel, rather than pin-point accuracy.

5.1.2 Selection of time horizons

The financial impacts within climate scenarios are time-sensitive: the impacts in a given scenario might be different in the short term compared to the long term. For example, transition risks might be a dominant influence in the short term, but physical risks might dominate in the longer term. In the context of climate scenario analysis, the Trustee defines short term, medium term and long term in the following way:

Figure 5.1.2.1 - Trustee’s definition of short, medium, and long term in the context of climate scenario analysis.

	Short Term	Medium Term	Long Term
Time	10 years	20 years	40 years

Given that 75% of the assets in the RPS are with open defined benefit sections, the investment strategy is long-term, and the Trustee Investment Beliefs make explicit reference to the long term, we believe the time horizons in Figure 5.1.2.1 are appropriate for the Scheme.

When analysing climate impacts to scheme liabilities, the Trustee focusses on the Long Term time horizon (40 years).

The time horizons considered for the DC arrangements link to the timeframe for which current members’ monies will be invested to and through retirement. It is therefore appropriate, when applying climate scenario analysis to DC arrangements, to adopt the same time horizons as those in Figure 5.1.2.1.

For the climate scenario analysis presented below, asset allocation data and membership liability data are as of 31 December 2021 and 31 December 2019²¹ respectively.

The climate scenario specifications detailed are reviewed on a regular basis.

5.2 Climate Risks to Employer Covenant

The Pensions Regulator defines the employer covenant as “the extent of the employer’s legal obligation and financial ability to support the Scheme now and in the future”. The strength of an employer covenant is, therefore, driven by a combination of:

- an employer’s legal obligation to support a scheme
- an employer’s financial capacity to do so, and
- an employer’s longevity – the time horizon over which the employer might be expected to support a scheme (given the Scheme’s duration)

Physical and transition climate change risks could have a bearing on both an employer’s financial capacity and longevity. Such impacts could be wide-ranging – affecting, for example, business operations, infrastructure, supply chain, key customers, etc., and vary from employer to employer. Such risks

are analysed by Railpen’s Employer Covenant Team and overseen as detailed in [section 4](#).

5.2.1 Employer covenant and approach to climate risk

The RPS is a multi-employer scheme, and employer covenant is analysed and reviewed on a case-by-case basis. At the present time, the Trustee does not utilise model-driven quantitative climate scenario analysis when reviewing information on employer covenant.²² Short, medium, and long-term climate risks are considered within an employer covenant context using the following three tiers of assessment:

Figure 5.2.1.1: Three tiers of climate risk integration in employer covenant analysis

UK Policy	UK government climate policy, support and regulation of the rail industry – current and forthcoming
Sector risks	Sector-based analysis of climate risks and Net Zero alignment in UK rail, construction and engineering
Employer-specific risks	Employer covenant specific climate risks, Net Zero alignment assessment, adaptation potential and mitigation efforts

²¹ The date of the most recent RPS valuation.

²² Where individual employers have undertaken quantitative climate scenario analysis, this could be factored into the covenant analysis where appropriate.

The covenant strength of each section within the RPS is rated on a 1-6 scale, where “1” is the strongest rating and “6” the weakest. Employer covenant ratings take account of credit risk and longevity as well as specific legislative, contractual or other structural support from the rail industry or central, local and/or devolved government where appropriate.

Rail in the UK is considered the most environmentally friendly form of mass transport and there are a number of initiatives underway within the UK railways industry to decarbonise further and to encourage passenger and freight modal switch towards rail. Where climate factors are financially material to the employer and could impact in the employer’s ability to support the section now and in the future, they could impact the covenant rating positively or negatively. To date, a number of RPS sponsoring employers have already witnessed physical climate-related risk e.g. weather-related resilience of railway infrastructure, and transitional risk e.g., the reduction of coal loads within the rail freight industry following the 2015 doubling of carbon tax on coal. The covenant impacts of such physical and transitional risks have been considered, taking account of the specific covenant strength characteristics on a section-by-section basis. Going forward the Trustee, advised by Railpen’s Employer Covenant team, intends to adopt and incorporate Railpen’s CRIANZA framework (see [section 5.4](#)) within its covenant assessment framework for the purposes of climate integrated covenant analysis.

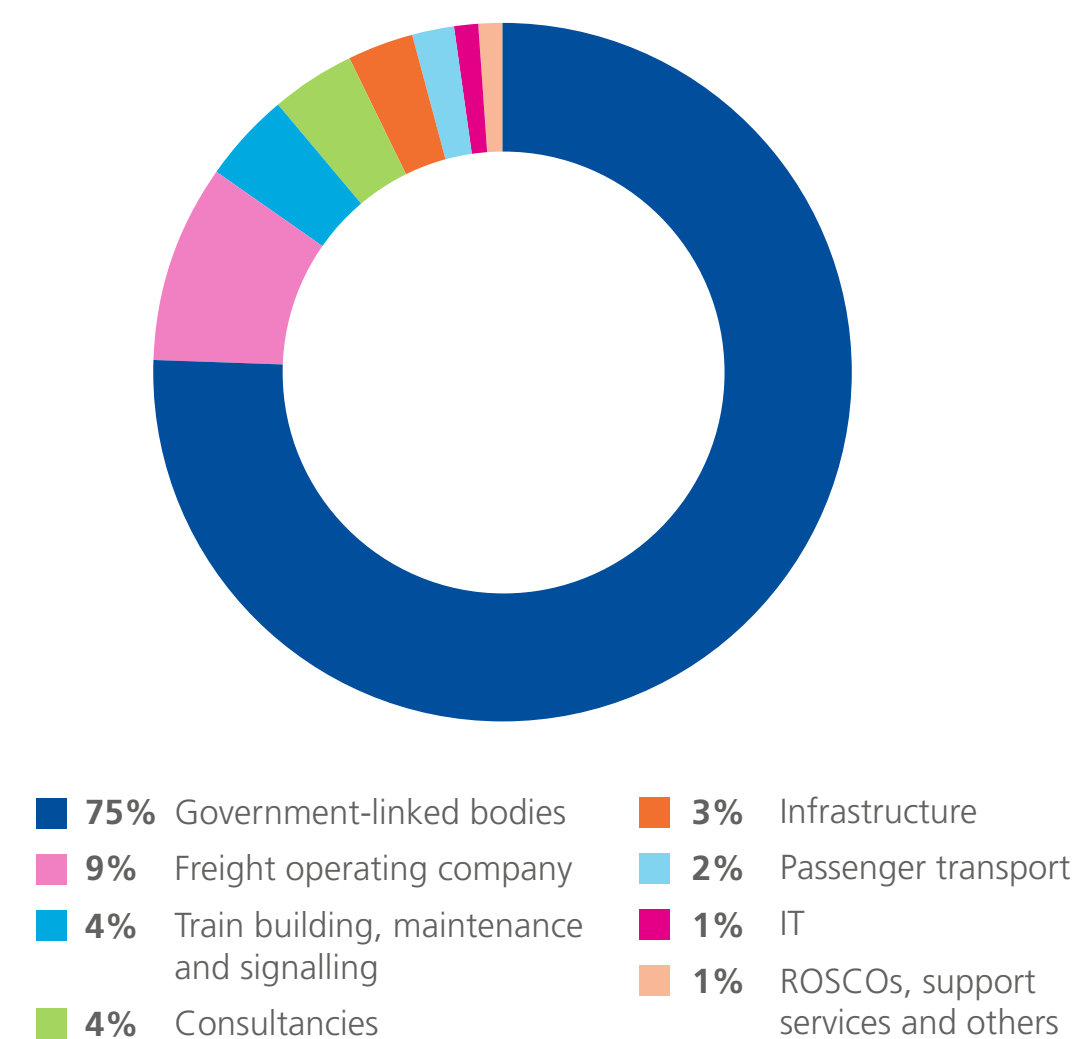
Thinking about climate risks as a regular and required item within employer covenant analysis is a new and developing discipline. Railpen’s forward-thinking team co-authored an innovative industry guidance document this year, which supports others in analysing climate risks in the context of an employer covenant.²³

5.2.1.1 Supplemental data on RPS covenant

The RPS administers pensions for more than 150 companies operating in the rail industry, spanning sectors including government-linked bodies like Network Rail and the train operating companies (TOCs); freight operating companies; train building, maintenance and signalling; passenger transport; infrastructure; ROSCOs (rolling stock leasing companies); consultancies; IT; support services; and others.

Figure 5.2.1.1.1 Summarises how the assets under management (AUM) are split between the different categories/sectors.

Employer covenant sector by AUM



As illustrated above, the majority of the AUM relate to sections sponsored by government-linked bodies (c. £22bn and 75% of the overall AUM), including the Network Rail section and the 27 Train Operating Company (TOC) sections. The aggregate of those sections are the focus of this report. Climate-related covenant issues in relation to the tail of smaller RPS sections (individually each has less than £1.5bn in AUM, and in aggregate these sections account for less than 25% of total scheme AUM), will be covered in future TCFD reports as appropriate.

The rail network plays a vital role in our transport system and the UK economy. It is a fast, safe and reliable way of moving people and goods over long distances, in and around our city centres and internationally. It enables people to get to work, visit friends and family, and do business. It also enables the efficient movement of goods from ports, quarries, and distribution centres to urban centres, and helps alleviate the need for trucks on roads.

Given the social and economic importance of the railways in the UK, the UK Government plays a central role in the UK rail industry. The resultant regulatory and contractual relationships between government and key rail companies mean that a number of RPS sponsoring employers benefit from direct and indirect government support.

From an employer covenant perspective, RPTCL recognises where the employer’s ability to support the pension liabilities of a section on an ongoing basis benefits from specific legislative, contractual or other structural support from the rail industry or the UK government, usually demonstrated by one or more of:

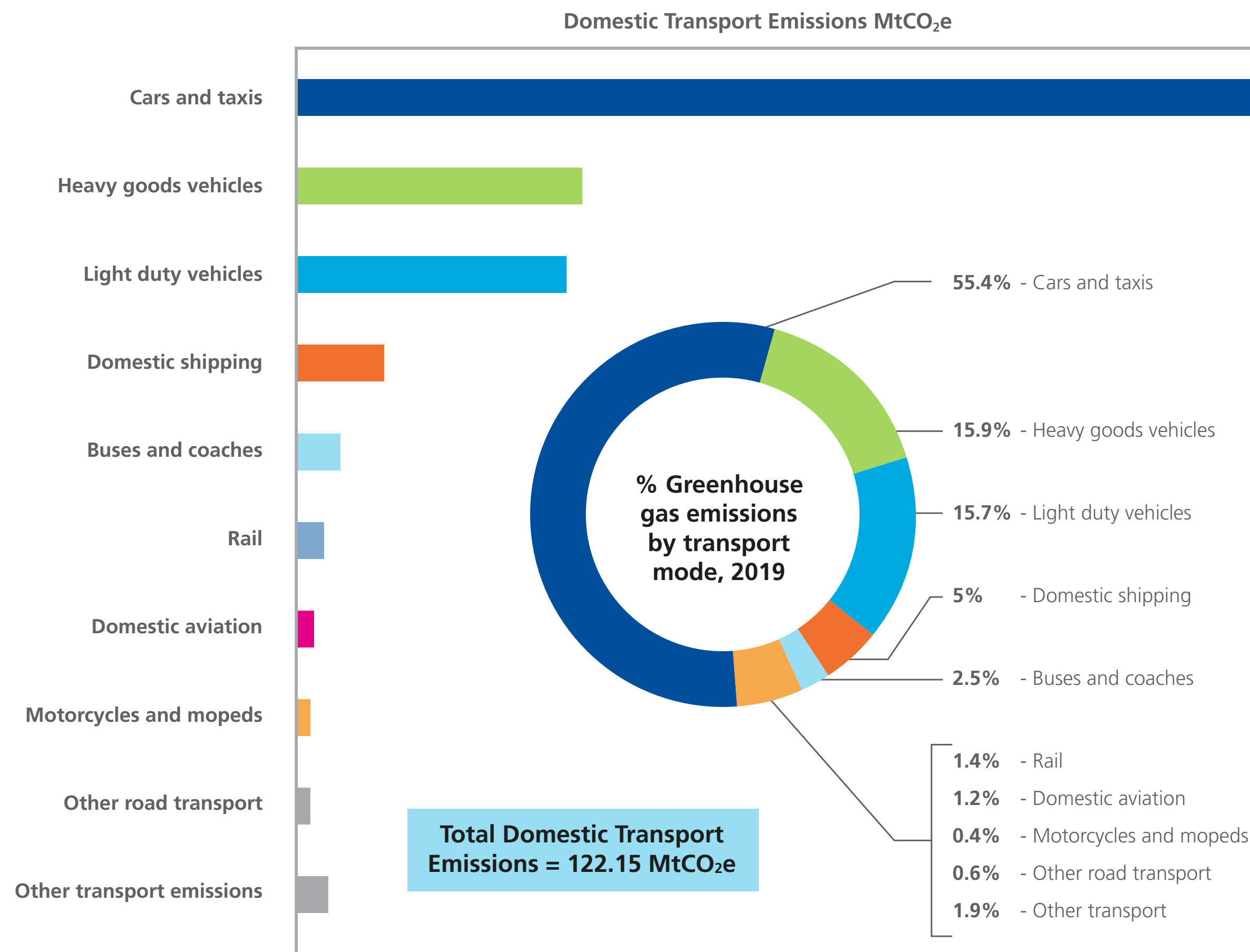
- specific legislative provisions
- a Crown guarantee
- written correspondence from UK central or local government bodies, or devolved government bodies, or
- other specific documented arrangements confirming the effective ongoing support by the industry to the Scheme.

²³ *Employer Covenant Practitioners Association, January 2022, “Reflecting climate change impact and risks in employer covenant assessments”.*

5.2.2 UK Policy

Climate transition risks and opportunities arise as we move to a more sustainable, low carbon economy. In the UK, the transition is likely to be driven partly by changes in legislation and technologies, the impacts of which will vary widely by sector and geography. Transport is the largest contributor to UK domestic greenhouse gas (GHG) emissions, responsible for 27% in 2019. As shown and explained in Figure 5.2.2.1, rail is the least carbon intensive form of mass transport.

Figure 5.2.2.1 Illustration and description of GHG intensity by transport mode in the UK. Source: Department of Transport document; “Decarbonising Transport: A Better, Greener Britain”



In 2019, greenhouse gas emissions from rail made up just 1.4% of the UK’s domestic transport emissions, despite rail accounting for 9% of passenger miles travelled in Great Britain. In terms of the movement of goods, rail freight trains emit around a quarter of the CO₂ equivalent (CO₂e) emissions of HGVs, per tonne mile travelled. Even though rail is lower carbon than other long-distance transport modes, it is becoming even less carbon intensive as the National Grid decarbonises.

At a high level, UK government policy aimed at decarbonising transport in the short term is to encourage a modal shift away from the more carbon intensive modes, towards rail, for passengers and freight. It also aims to encourage the rail industry to decarbonise further in the short, medium and long term.

The Williams-Shapps Plan for Rail White Paper introduced the creation of Great British Railways. As a public body with responsibility for a major national asset, Great British Railways will have a responsibility to put environmental sustainability at the heart of its operations. The establishment of Great British Railways, a single organisation responsible for track, trains and stations, will better support the delivery of environmental objectives.

A specific duty will be placed on Great British Railways to consider environmental principles across all its operations. It will be accountable for and will lead the sector’s delivery of a more environmentally sustainable rail network in line with its mission to make the railway the ‘backbone of a cleaner, greener public transport network’.



Against this backdrop, in July 2021 the Department for Transport set out its key climate-related policy positions in respect of transport in general, and rail in particular, within two key documents:

- “Decarbonising Transport: A Better, Greener Britain”, and
- “Rail Environment Policy Statement: On Track for a Cleaner, Greener Railway”

5.2.2.1 Decarbonising Transport: A Better, Greener Britain

The Decarbonisation Plan highlights electrification as the primary method of decarbonising the majority of the rail network. The report claims that electrification will not only decarbonise existing rail journeys, but also has the potential to attract new passengers to rail.

The report notes that in the last twenty years, while the cost of motoring fell by 15%, over the same period the cost of rail fares went up by over 20%. The plan calls for simpler, cheaper fares for public transport to help make trains (as well as buses) better value and more competitively priced. The report outlines that the Government will also look to newer technologies such as hydrogen and battery trains, deploying the most appropriate technology for each route across the network. The plan – which will include all transport modes but particularly road, rail and aviation – sets a transition pathway to achieving net-zero carbon emissions across the transport sector by 2050.

The rail-specific elements within the Decarbonisation Plan include:

- electrification - to deliver an ambitious, sustainable, and cost-effective programme of electrification guided by Network Rail’s Traction Decarbonisation Network Strategy
- hydrogen / battery technology - supporting the development of battery and hydrogen trains and will deploy them on the network as we decarbonise
- network capacity - building extra capacity on the UK’s rail network to meet growing passenger and freight demand and support significant shifts from road and air to rail
- modal shift - the Government will work with industry to modernise fares ticketing and retail to encourage a shift to rail and cleaner and greener transport journeys
- freight - the Government will introduce a rail freight growth target to encourage the continued growth of rail freight

These initiatives are further developed within the Rail Environment Policy Statement.

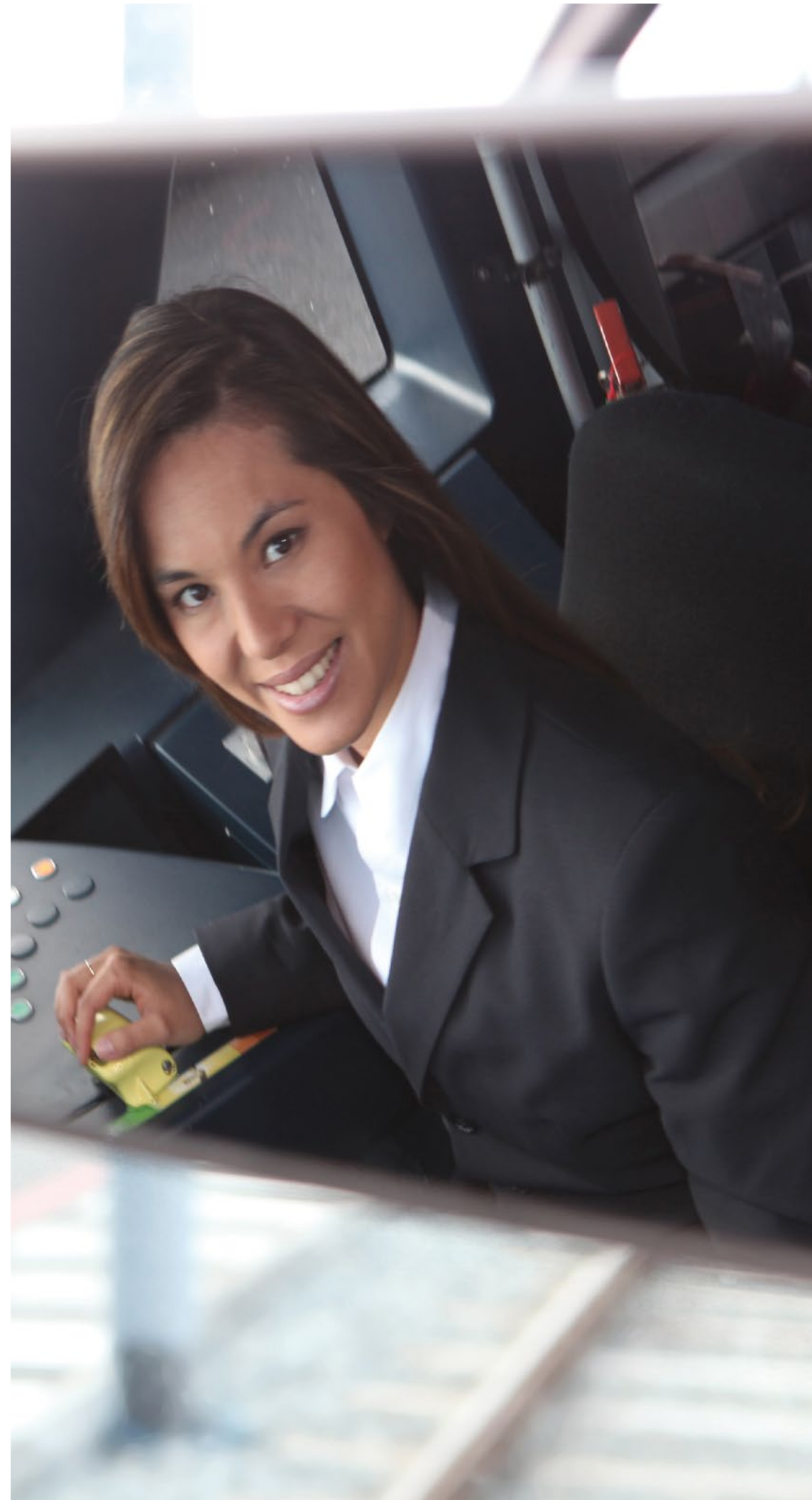
5.2.2.2 Rail Environment Policy Statement: On Track for a Cleaner, Greener Railway

The purpose of the Rail Environment Policy Statement (REPS) is to set a clear direction for the rail industry on environmental sustainability and to outline policy priorities for the Sustainable Rail Strategy. The report emphasises how the reform of the rail sector provides an opportunity to transform rail sustainability, noting that in order to support a green recovery from the pandemic, railways can shift away from polluting forms of transport such as planes, cars and lorries, to become the best option for long-distance travel, and improve the whole journey experience. This will include making it easier to get to and from stations by walking, cycling or other public transport, supporting green infrastructure outside cities, modernising fares to compete with air travel, improving freight connectivity through interchanges, and creating better links with freports.

There is a notable emphasis in the report on the role that rail will have to play in maximising the environmental benefits of moving freight, with Great British Railways (GBR) having a “statutory duty” to promote rail freight. The report also notes that GBR will develop a methodology to better assess the value of rail freight to support decision making, building on the “Value of Rail Freight” report commissioned by the Rail Delivery Group in April 2021.

The plan lists the following priorities for the rail industry:

- net zero greenhouse gas emissions from trains by 2050
- an ambition to remove all diesel-only trains from the rail network by 2040
- a commitment to a sustainable deliverable programme of electrification that delivers a higher-performing net zero railway
- air quality targets will be set for all parts of the railway (to be published in 2022), with the ambition of meeting those targets by the end of 2030
- the industry will be required to develop air quality improvement plans for all stations identified as having poor air quality
- Network Rail will achieve net zero biodiversity by 2024 and biodiversity net gain by 2035
- 100% of Network Rail’s cars and vans will be zero emission by 2027
- zero waste from railways activities will go to landfills by 2025
- targets will be set for renewable energy generation and use at stations



Traction decarbonisation/electrification plays a significant role in the rail industry's environmental plans. This includes decarbonising rail freight by electrifying more of the network to enable electric rail freight to run on more routes and developing further interventions, in partnership with industry, to help Freight Operating Companies have the confidence and business assurance to invest in new rolling stock to overhaul their largely diesel fleets. There is a defined aspiration to achieve a stable, ongoing rail electrification programme that learns from past mistakes. Great British Railways will lead an efficient electrification programme, working with funders and suppliers to minimise the cost and disruption of further electrification. Future rolling stock procurements will need to consider how to enable the use of hydrogen and battery trains where they are the best way to deliver decarbonisation targets.

In relation to **Passenger Modal Shift**, the policy is to make rail the first option for suitable journeys in the UK and encourage commuters to cycle, walk or take public transport to and from rail stations, making their journey environmentally sustainable from door to door. In the future, each Passenger Service Contract will be designed by Great British Railways to support the needs of passengers and the whole network as part of an integrated system.

In relation to **Freight Modal Shift**, the Government is supportive of modal shift from road to rail, wherever possible, to reduce emissions from the freight sector. The Government will introduce a rail freight growth target for all areas of the network to provide a common objective for industry collaboration, help provide private operator investment confidence, and

galvanise action across local partners and industry. To further grow rail freight for 2021/22, the Government has invested £20 million in the Mode Shift Revenue Support (MSRS) scheme and will continue to work with the rail freight industry, Innovate UK, and the Rail Safety and Standards Board to look at how best to progress options on innovation, research and development to reduce emissions from rail freight.

These policies and plans clarify the transition risks and opportunities facing the UK Rail sector, and challenge the industry to develop its own plans to meet them. In addition, unlike most other UK sectors, the rail industry is already facing the challenges of physical climate-related risks.

5.2.3 Sector risks

Britain's railway operates in a wide range of weather conditions and is one of the safest in Europe. The increasingly frequent severe and prolonged weather events due to climate change present a growing challenge, with climate changes already affecting the infrastructure, causing significant disruption to the network with impacts felt by customers, staff and the communities in which we live and work. For instance, heavy rainfall may require delays to the arrival or departure of trains. In more challenging cases, trains can be stopped from running, and railway infrastructure may be obstructed and damaged, resulting in costly repairs. In rare more extreme cases, there is a much bigger effect, with widespread delays, the need for more substantial repair work and the potential for severe safety consequences.

Network Rail owns, operates and develops Britain's railway infrastructure including 20,000 miles of track, 30,000 bridges, tunnels and viaducts and thousands of signals and level crossings. Network Rail also manages 20 of the UK's largest railway stations and are responsible for running a safe, reliable and efficient railway that serves customers and communities. Between 2006/07 and 2020/21, Network Rail reported that weather-related incidents caused over 322,000 delay events, 26 million delay minutes and over £1 billion of compensation payments.

The figures in [Figure 5.2.3.1](#) indicate the cumulative costs for each weather impact category from 2006/07 to 2020/21 across the whole network and for England, Wales and Scotland respectively. Nationally, the two biggest challenges come from wind and flooding incidents costing £275 million and £223 million each. There are also significant impacts associated with adhesion and snow, each costing more than £100 million over the same period. While wind, flooding and snow remain the top impacts across all three, flooding has the largest impact in Wales. In Scotland, snow, cold and adhesion are greater challenges than elsewhere, while England and Wales see more issues related to heat, with England seeing the greater impact. Of the three nations, Wales shows the greatest impact from lightning, relative to other regions.

Figure 5.2.3.1: Cumulative costs by weather impact category from 2006/07 to 2020/21 across the rail network in England, Wales and Scotland

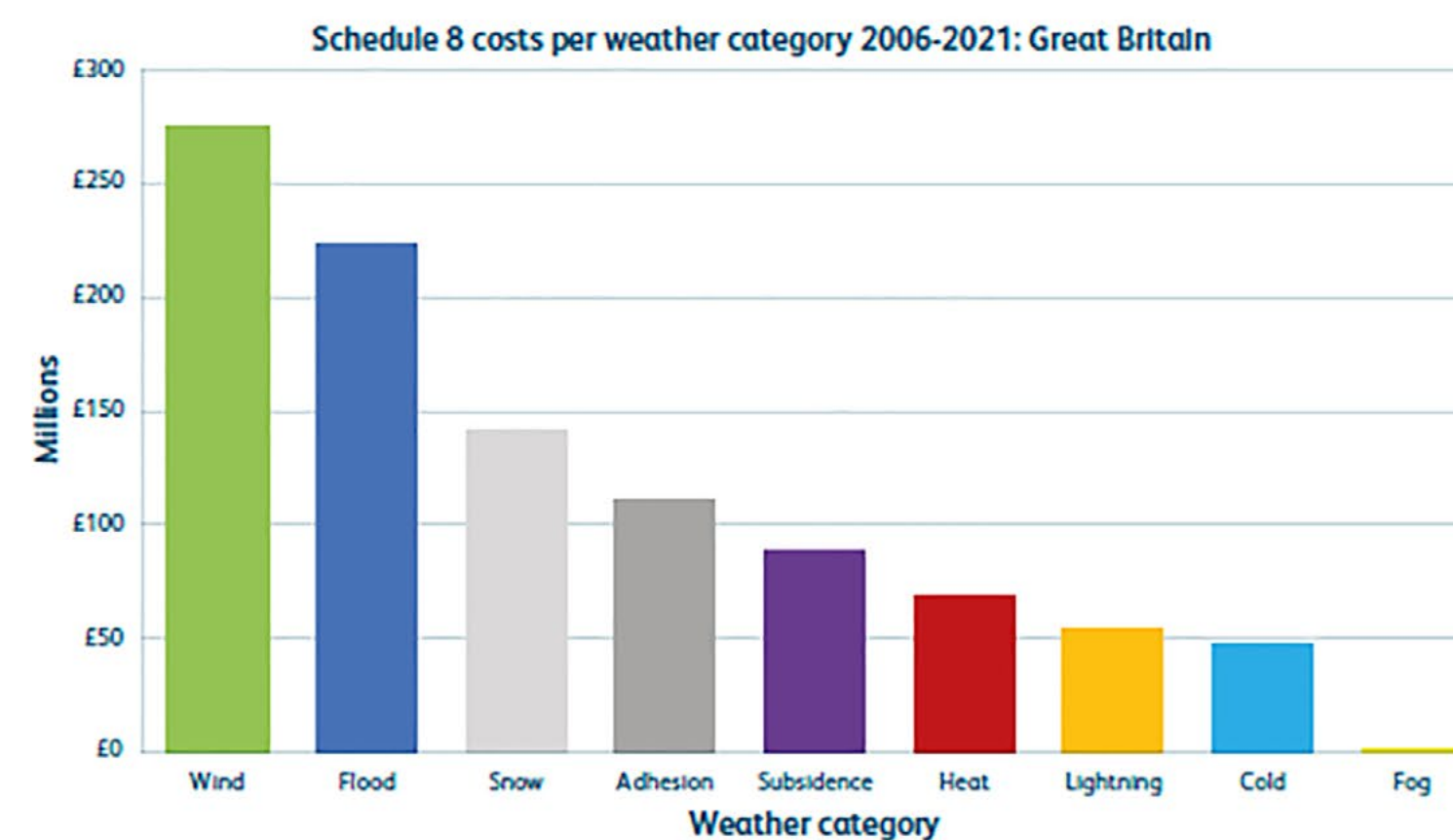
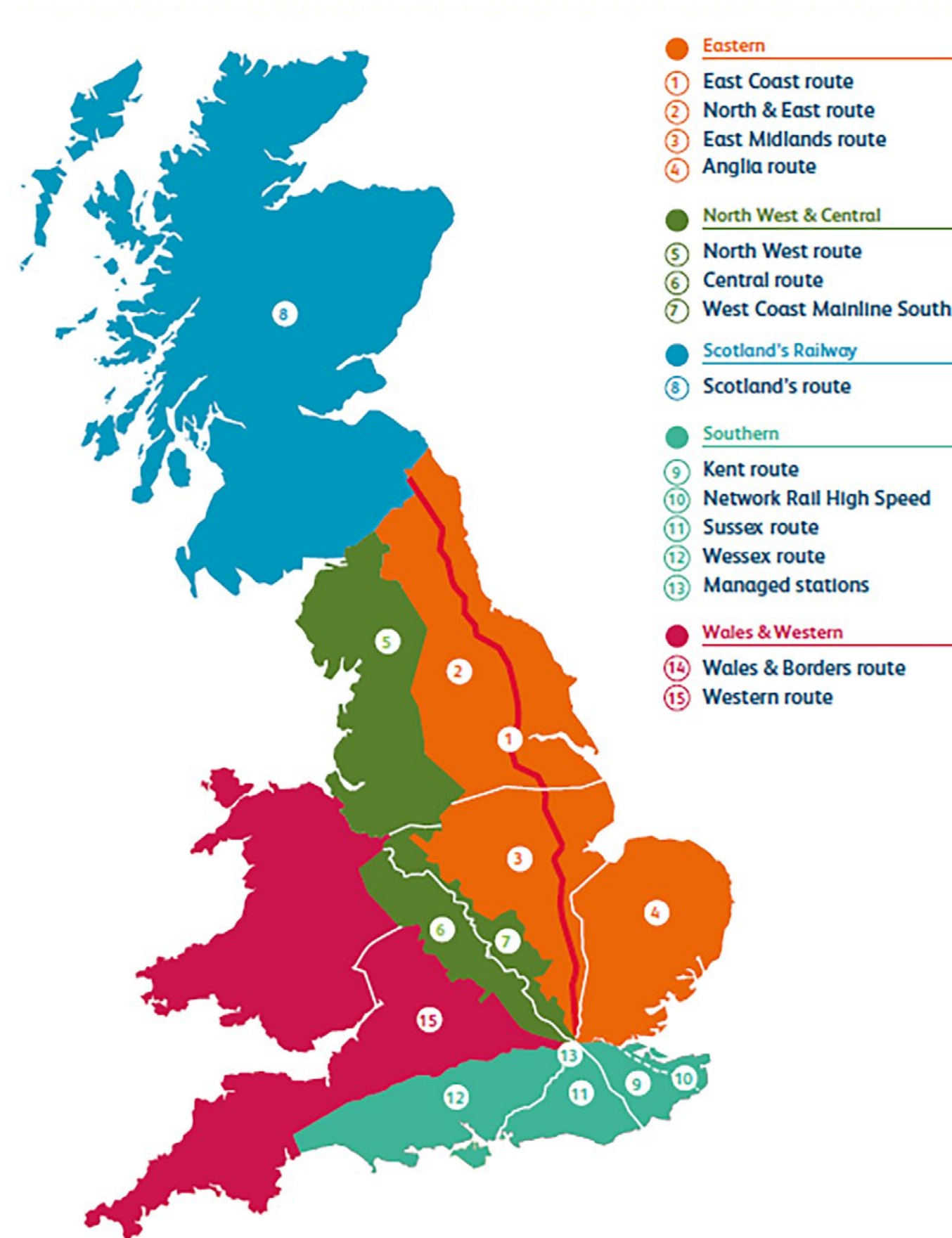


Figure 1-5 – Cumulative Schedule 8 weather category costs 2006/07 to 2020/21 (England)

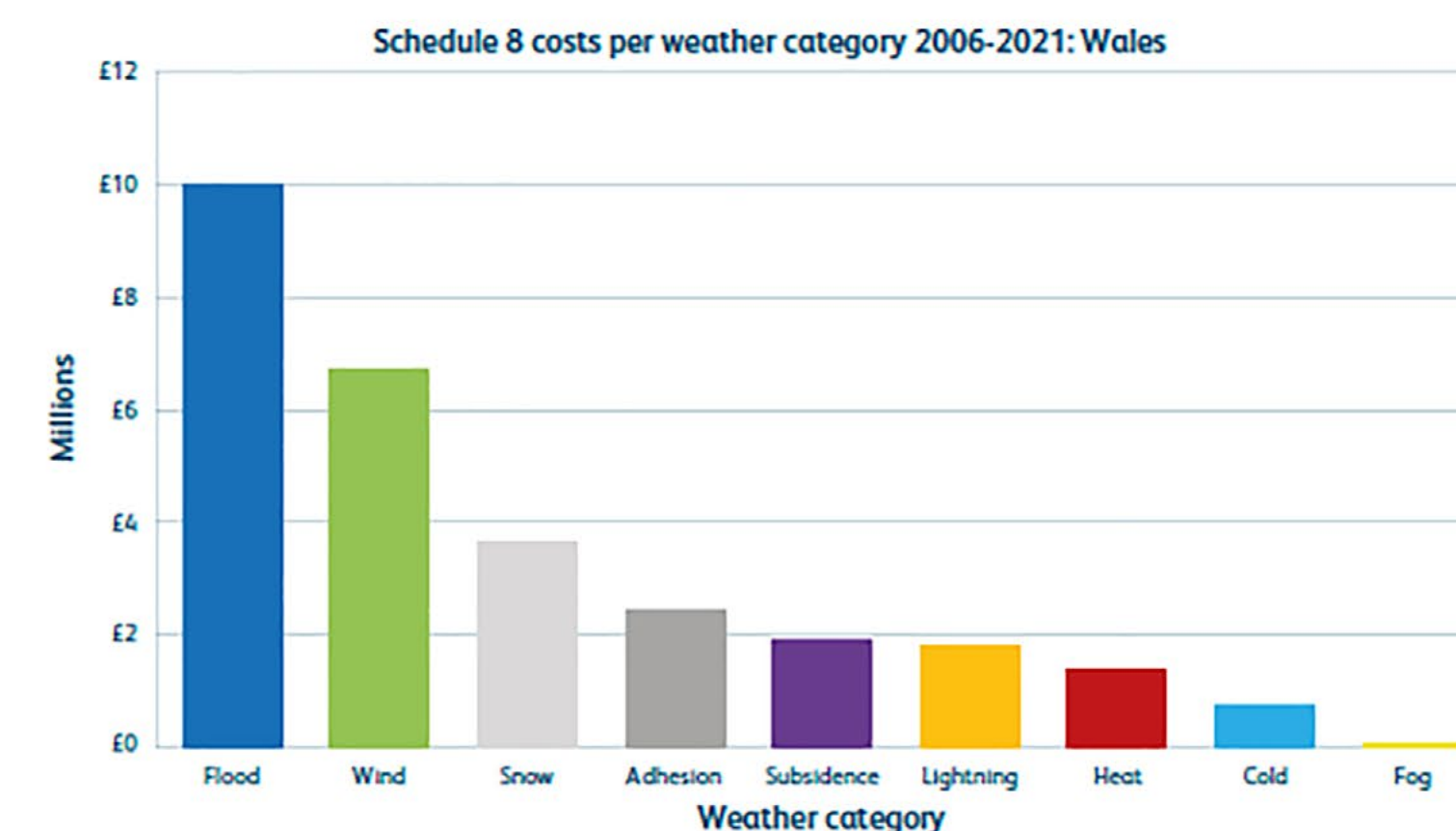
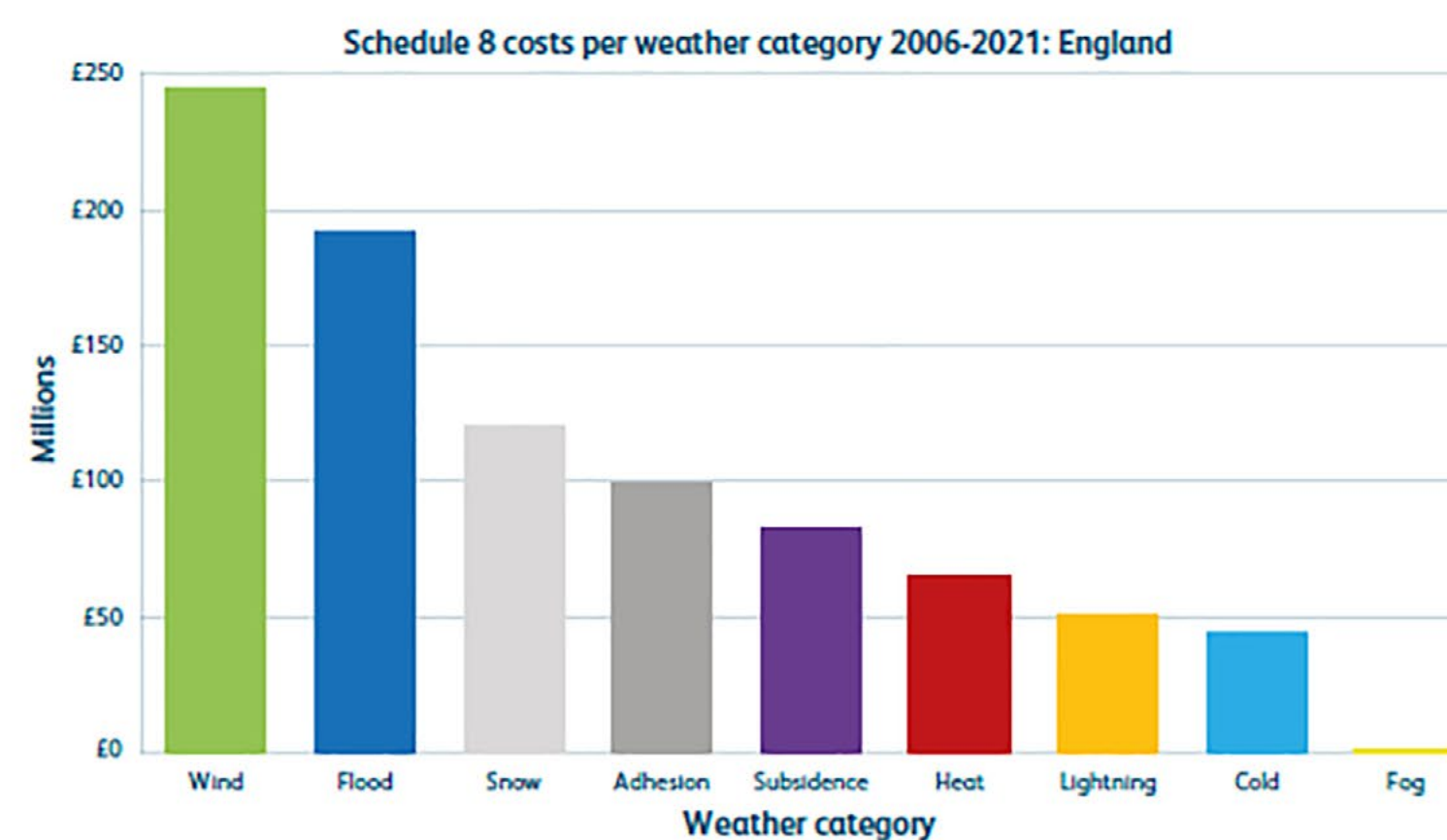
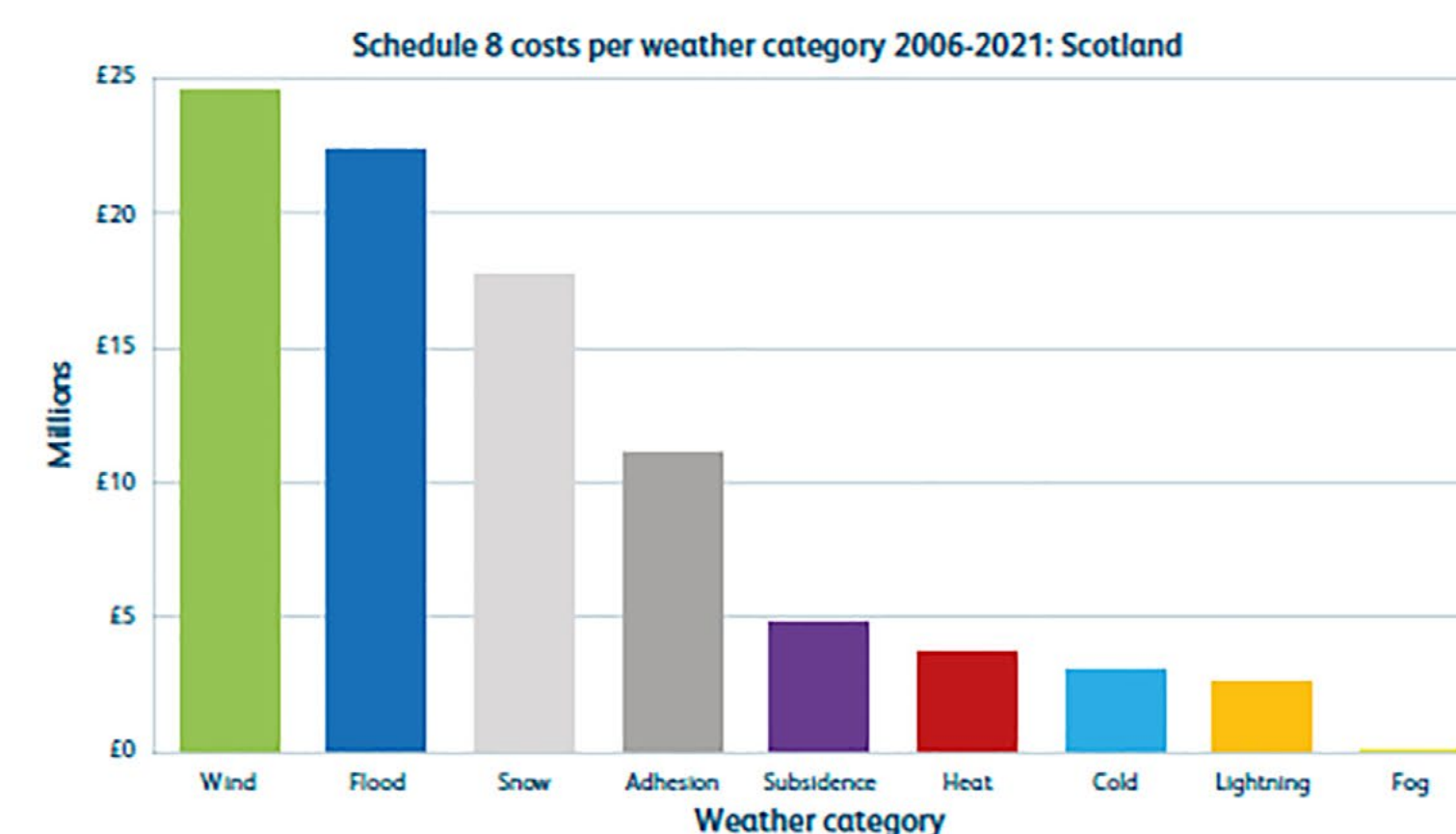


Figure 1-7 – Cumulative Schedule 8 weather category costs 2006/07 to 2020/21 (Scotland)



Source: <http://www.networkrail.co.uk/running-the-railway/our-regions>

5.2.4 Employer specific risks

As noted above, the regulatory and contractual relationships between Government and key rail companies results in a close proximity between the Government / DfT, who set high-level ambitions and policies, and the industry players responsible for meeting those challenges and realising those ambitions.

The rail industry is dominated by Network Rail. Network Rail Limited (“NRL”) and its subsidiaries, including the section’s sponsoring employer within the RPS, Network Rail Infrastructure Limited (“NRIL”), are a “Non-Classified Arm’s Length Public Body of Central Government”. NRL is a not-for-dividend company limited by guarantee with a Special Member, the Secretary of State for Transport (SoS). NRIL owns all the assets of the group and carries out all the trading of the group. The SoS, supported by the DfT and in conjunction with the Office of Rail and Road (ORR), has a significant level of control over the strategic, operational and financial activities of NR and the SoS is accountable to Parliament for the activities/ performance of NR. As noted within the Williams-Shapps Plan for Rail, NR is to become part of Great British Railways, a new public body.

Train Operating Companies (TOCs) are another category of key rail companies where the employer’s ability to support the pension liabilities of a section on an ongoing basis benefits from specific legislative, contractual or other structural support from the rail industry or the UK government. Great British Railways is to be created via legislation and will become the governing body for the TOCs. The Williams-Shapps Plan for Rail sets out that GBR will manage costs and revenue decisions for the network, that Ministers will hold GBR to account through a structured framework underpinned by legislation, and that Ministers will have statutory powers to set long term strategy and have powers to issue guidance and mandatory direction to GBR on any matter at any time.

The transition risks and opportunities faced by these key central rail companies are, therefore, determined by Government to a significant degree, and are inherently linked to Government’s own appetite to fund the accompanying costs in an efficient manner – one that is fair to the taxpayer and the fare-payer.



5.2.4.1 Case study: **Managing climate-related risks at Network Rail**

Since extreme weather events are becoming more frequent and intense, the UK rail network will likely suffer more damage and greater disruption unless there is investment in climate adaptation technologies to improve the climate resilience of the network.

In 2020 Network Rail became the world's first railway company to set an approved science-based target (SBT) aligned to a 1.5C temperature outcome. Through the initial target-setting process Network Rail worked with Carbon Intelligence to quantify Network Rail's emissions, finding that 66% of overall emissions were in the supply chain. To address this they set a target for 75% of their suppliers (measured by emissions) to set science-based targets by 2025. These targets extend across the entire value chain of Network Rail and will require collaboration to reduce carbon emissions from Network Rail's own operations and those of suppliers and customers. Since 2020 Network Rail has been working on a Supplier Engagement Programme to educate suppliers and work with them on developing their own ambitious carbon reduction targets. By engaging with the supply chain and asking their suppliers to set science-based targets, Network Rail will create a domino effect that should reduce supply chain emissions by 50% by 2030 and help drive the UK closer to hitting its 2050 net zero target.

Supplier engagement is a task faced with several challenges ranging from the accuracy of GHG data, securing internal buy-in, and education and engagements with very large and complex organisations. Ensuring clear objectives backed up with data enabled Network Rail to overcome some of these challenges. The data gathering process enabled Network Rail to identify 70 high impact suppliers, from which Network Rail could collect further information to understand the individual decarbonisation targets and plans. By collating this information, Network Rail were able to develop a supply chain emissions reduction roadmap.

EDF – Network Rail's energy partner – was identified as one of the high impact suppliers. For several years EDF has been actively seeking to reduce its emissions and decarbonise the energy it supplies to its customers. Network Rail were able to engage EDF through the supplier engagement programme and highlight the importance of aligning their own SBT journey to their customers. As of December 2020, EDF's SBT was approved by the Science-based Targets Initiative (SBTi). EDF is committed to:

- reduce Scope 1, 2 & 3 emissions from electricity by 50% against a 2017 baseline
- an absolute reduction of 25mtCO₂e

- a GHG intensity target of ~35gCO₂e / kWh, and
- reduce Scope 3 emissions from gas sold to end customers by 28% against a 2019 baseline

EDF aims to enable £50 billion in UK investment in low carbon electricity generation from wind, nuclear and solar, as well as investing in low carbon technologies to decarbonise transport, heat and industry through affordable zero carbon energy. EDF's targets and the actions it will take to achieve them will directly impact Network Rail's own Scope 3 reduction target.

The UK Government and Network Rail's extensive decarbonisation, adaptation, investment, and supplier engagement programme provide strong adaptation initiatives and mitigation efforts to the physical risks faced by the UK rail industry and set the stage for the rail industry to be a "climate enabler" for the UK.

While the UK Government is responsible for setting policies and challenges, and Network Rail is primarily responsible for meeting those challenges, the regulatory and contractual arrangements which underpin Network Rail's funding regime are such that Network Rail will only need to meet the challenges that the UK Government agree to fund. This results

in the covenant strength of the Network Rail section and those of the other sections sponsored by government-linked bodies being protected from the challenges that the employers themselves face.

In addition, the UK Government and Network Rail climate transition roadmap provides a template for other employers in the UK rail industry.

RPTCL will continue to engage with the RPS sponsoring employers (including the tail of employers not discussed in this report) to review their decarbonisation strategies and mitigation efforts to reduce potential climate change-related covenant impacts. We expect to report more on these activities and their impact in future TCFD reports.

Source: Network Rail, EDF, Carbon Intelligence

5.3 Climate Risks to Scheme Liabilities

This section of the report describes:

- the climate-related risks and opportunities relevant to the Scheme over the time periods that the Trustee has identified
- the potential impacts on the Scheme's liabilities which the Trustee has identified in those scenarios

In order to do that, we illustrate the sensitivity of the funding level of the defined benefit (DB) sections of the RPS under the three climate scenarios being considered (described in [section 5.1](#)). The analysis has been carried out by WTW (the RPS Scheme Actuary), with financial assumptions informed by the asset-side analysis carried out by Ortec Finance (further described in [section 5.4](#)). Unless otherwise stated, the results disclosed below aggregate all DB sections of the RPS into a "total scheme"²⁴ view.

The analysis considers (i) the asset-side climate impact on investment returns, and (ii) liability-side impacts through potential changes to mortality assumptions in different climate scenarios. The analysis does not consider climate-induced inflationary impacts on liabilities because (a) liabilities have a relatively low degree of sensitivity to inflation and (b) the climate scenarios used assume relatively modest changes to future rates of inflation. The analysis does not adjust discount rates because doing so would risk double-counting the asset-side loss or gain which is accounted for by (i).

The results in [Figures 5.3.2.1, 5.3.2.2, and 5.3.2.3](#) represent the cumulative impacts to assets and liabilities over the long-term (defined per section 5.1 as 40 years).

Limitations to the analysis include:

- those described in [section 5.1](#)
- the impacts on both assets and liabilities of climate scenarios are highly uncertain, and a number of subjective judgements are required in order to calculate the indicative impacts
- other uncertainties related to mortality assumptions (outlined below)

5.3.1 Mortality assumptions

When projecting the expected benefit cash flows of these DB sections, there are direct impacts of climate change on mortality to consider, along with indirect impacts on mortality that may result from behavioural and lifestyle changes. The mortality impacts of climate change scenarios are impossible to predict accurately and will depend on several climate and non-climate related factors and the complex interactions between them. Non-climate related factors include the geographical composition of members, medical breakthroughs, lifestyle choices and the increased rates of diseases associated with these, reduced prosperity, and cuts to health services, e.g. due to the long term consequences of Covid-19.

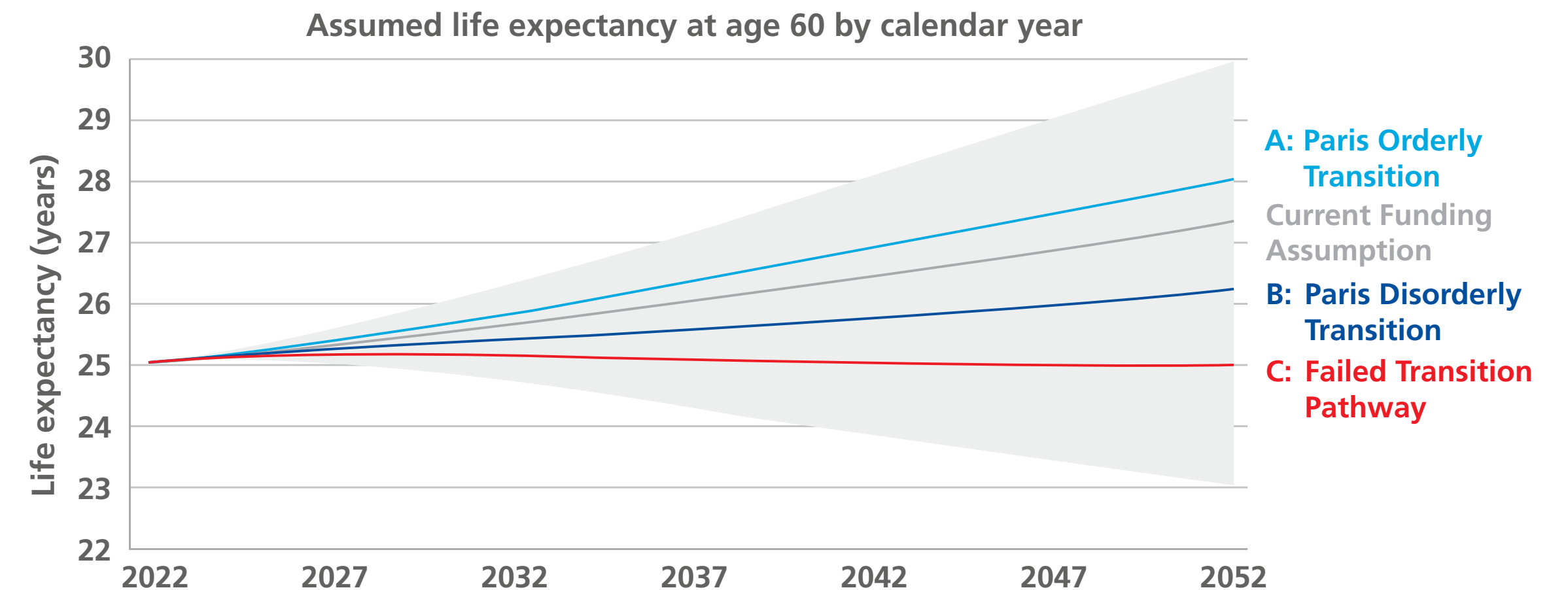
When considering the potential impact of climate change on the mortality rates for the RPS, unlike the assets, the country of interest is almost exclusively the UK. The Met Office's UK Climate Projections (UKCP18) provide estimates of probable UK climate outcomes for a range of global warming scenarios.

Under these projections, global warming is expected to lead to both warmer UK winters and summers. The most obvious direct consequences are a reduction in

cold-related winter deaths and an increase in heat-related summer deaths. Translating climate-induced mortality changes in our three scenarios, WTW assumes the following:

- The Paris Orderly Transition leads to a high to very high improvement in longevity
- The Paris Disorderly Transition leads to a moderate improvement in longevity
- The Paris Failed Transition leads to a moderate deterioration in longevity

Figure 5.3.1.1 - projected changes to life expectancies in different climate scenarios under the typical funding assumptions for the DB Shared Cost Sections of the RPS.



²⁴ I.e. including defined benefit arrangements, but excluding defined contribution arrangements.

5.3.2 Climate Scenario Analysis of Scheme liabilities and funding level

The impact of life expectancy changes on scheme liabilities in the three climate scenarios is shown in Figure 5.3.2.1. The data in Figure 5.3.2.1 represent the cumulative climate impact on scheme liabilities over 40 years in each climate scenario, summed and discounted into a present value. The annualised impact on liabilities would be far smaller. The mortality of the RPS membership (and hence the liabilities of the Scheme) will change over a 40 year period for non-climate reasons. The numbers in Figure 5.3.2.1 therefore represent the difference that climate change makes, given hypothetical scenarios, to the way in which liabilities would evolve for non-climate reasons. For example, if in 40 years' time liabilities turn out to be 5% greater for non-climate demographic reasons, WTW's climate modelling suggests that a Paris Orderly scenario would increase this by a further 1.6% (this is the first number in Figure 5.3.2.1).

Figure 5.3.2.1: Impacts of climate change on scheme liabilities in selected climate scenarios

Scenario	Indicative change in value of the overall liabilities for the:		
	RPS (overall)	Shared cost sections	1994 Pensioners
Paris Orderly	+1.6%	+1.7%	+0.7%
Paris Disorderly	-2.6%	-2.8%	-1.2%
Failed Transition	-5.4%	-5.8%	-2.4%

The scenario analysis suggests that climate change has a low to moderate impact on scheme liabilities over the long term. In a Failed Transition scenario, climate change is assumed to diminish liabilities and improve the funding level. In this analysis, the impacts to liabilities of the 1994 Pensioners section are more muted than the Shared Cost sections owing to the members of the 1994 Pensioners section being older. Overall, the analysis suggests that from a liabilities perspective, climate impacts on mortality does not pose a significant challenge to the resilience of the Scheme's funding position

For comparison, the modelled impacts to asset values over 40 years are shown in Figure 5.3.2.2. The analysis uses the assumed changes to future expected returns provided by Ortec Finance (further described in section 5.4) to apply a one-off shock to the assets under each scenario. The data in Figure 5.3.2.2 represent the cumulative climate impact on asset values over 40 years in each climate scenario, summed and discounted into a present value. The annualised impact on asset values would be far smaller. The value of Scheme assets will change over the next 40 years for non-climate reasons. The numbers in Figure 5.3.2.2 represent the difference that climate change makes, given hypothetical scenarios, to the growth in asset value for non-climate reasons. For example, if total scheme asset value in 40 years' time turns out to be 150% greater for non-climate reasons, WTW's and Ortec Finance's modelling suggests that a Paris Orderly scenario would decrease this by 5.9% (this is the first number in Figure 5.3.2.2).

Figure 5.3.2.2: Impacts of climate change on assets in selected climate scenarios

Scenario	Indicative change in value of the overall assets for the:		
	RPS (overall)	Shared cost sections	1994 Pensioners
Paris Orderly	-5.9%	-5.9%	-5.3%
Paris Disorderly	-12.3%	-12.4%	-12.1%
Failed Transition	-19.1%	-19.1%	-18.5%

In the climate scenarios analysed, the impacts to asset values are not significantly different between the Shared Cost sections and the 1994 Pensioners section. It is noteworthy that climate impacts are always negative for asset values, regardless of climate scenario. This is explored in more detail in [section 5.4](#).

For the Shared Cost Arrangement (the largest in the RPS), around 75% of the defined benefit sections remain open, while 25% have closed. Over time the closed sections might be expected to “de-risk” and develop rather different investment strategies compared to open sections. For example, the closed Shared Cost Sections might be expected to gradually invest in more defensive asset classes over time. WTW considered what would happen if we were to assume that, in twenty years' time, there had been a shift of 40% of closed section assets from the growth pooled fund to defensive pooled funds. Based on the analysis provided by Ortec Finance and WTW, the negative impacts on asset values would reduce only modestly: by less than 0.5% for the Paris Orderly scenario, around 1% for the Paris Disorderly scenario and around 1.5% for the Failed Transition scenario.

5.3.3 Combined impact on Scheme Funding

Combining the impacts on Scheme assets and liabilities, the hypothetical funding levels for the RPS in the three climate scenarios are shown in [Figure 5.3.2.3](#). Similarly to Figures 5.3.2.1 and 5.3.2.2, the numbers in the table represent the difference climate makes over 40 years to the ways in which assets, liabilities, and funding levels change for non-climate reasons.

Figure 5.3.2.3: Combination of impacts to asset returns and scheme liabilities and resulting impacts to scheme funding level

Scenario	Indicative change in value of the RPS:		
	Assets	Liabilities	Funding Level
Paris Orderly	-5.9%	+1.6%	-7.3%
Paris Disorderly	-12.3%	-2.6%	-10.0%
Failed Transition	-19.1%	-5.4%	-14.4%

The scenario analysis suggests that a Failed Transition scenario is the largest negative for the Scheme's funding level, even accounting for reduced liabilities. From a pensions perspective as well as a societal perspective, Scheme members appear to be better off in the long term in a scenario where the Paris Agreement on climate change is implemented.

The analysis suggests that asset impacts are likely to be greater than impacts to scheme liabilities. This finding is consistent with the prioritisation of the Scheme's climate governance activities to date, which have focussed on the investment portfolio over scheme liabilities.

WTW believes climate change represents a demographic risk to be managed by pension schemes and their sponsors. The Integrated Funding Committee, which agrees integrated funding plans with each scheme and/ or section, has not to date included the outputs of the quantitative scenario analysis in specific integrated funding plans, though this is subject to review based on advice from Railpen and the Scheme Actuary.

5.4 Climate Risks to Investment Returns

5.4.1 Scenario analysis and Investment Strategy

This part of the report describes

- the climate-related risks and opportunities relevant to the Scheme over the time periods that the Trustees have identified
- the potential impacts on the Scheme assets which the Trustee has identified in its selected climate scenarios
- the resilience of the Scheme's investment strategy

From an investment perspective, the Trustee uses a pooled fund lens when reviewing the results of climate scenario analysis. The sections within the RPS, including Defined Benefit and Defined Contribution arrangements, invest in a discrete set of pooled funds permitted by the Statement of Investment Offering which is approved by the Trustee. Each section's investment strategy allocates to pooled funds as required to meet the section's investment strategy.

Adopting a pooled fund lens, rather than a section by section lens, has the following advantages:

- simpler to produce, understand, and communicate
- less costly in terms of fees paid to third parties
- reduced complexity in determining risk management activities and ongoing monitoring

Ortec Finance generates scenario analysis at the asset class level, and these are then translated to the pooled fund level based on individual asset class allocation within each pooled fund (see [section 5.4.1.1](#)). The climate impacts for the DB scheme and the DC arrangements are then determined based on the pooled fund allocations across RPS.

In order to model impacts to investment returns in different climate scenarios, Railpen's investment portfolio as of 31 December 2021 was mapped to chosen proxy benchmarks (for common asset classes and regions) in Ortec Finance's climate scenario analysis (MAPS) model. While Ortec Finance is a well-established specialist in climate scenario analysis, it is possible that the proxies used in a model are imperfect representations of the RPS investment portfolio. This might affect the validity of analysis for unlisted asset classes like private equity, infrastructure, and property, which might be proxied using publicly listed benchmarks such as a listed equity index.

For the purposes of this analysis, Ortec Finance assumed no changes to RPS's allocations to asset classes, sectors and geographies over time. Although this is a necessary assumption to make, it is unlikely that asset allocation will remain constant for decades to come.

5.4.1.1 Supplementary data on asset allocation

The overall asset allocation of the RPS reflects the fact that the majority of the sections in the Scheme are non-maturing. Their long investment horizons and ability to tolerate relatively high levels of investment risk leads to asset allocations with significant public and private equity exposures, followed by real assets and bond exposures. These assets are invested globally.

The Growth Pooled Fund is the largest pooled fund in the Scheme and is a multi-asset fund with exposures across public equities (67%), real estate (10%), credit (7%), total return (5%), and other (11%). The Illiquid Growth Pooled Fund is invested in private markets investments primarily in private equity and private debt.



Figure 5.4.1.1.1: RPS asset values as at 31 December 2021

	£m
Defined Benefit Pooled funds	
Growth	22,731
Private Equity	2,557
Illiquid Growth	2,442
Government Bond	1,429
Passive Equity	1,075
Long Term Income	1,181
Short Duration Index Linked Bond	809
Global Equity	660
Non Government Bond	375
Infrastructure	123
Long Duration Index Linked Bond	195
Cash	66
	33,643
Defined Contribution Arrangements and other assets	
BRASS and other AVCs	1,851
Substitution orders	830
Annuities	45
Cash and other assets	110
	36,479

Figure 5.4.1.1.2: RPS asset allocation by asset class, 31 December 2021

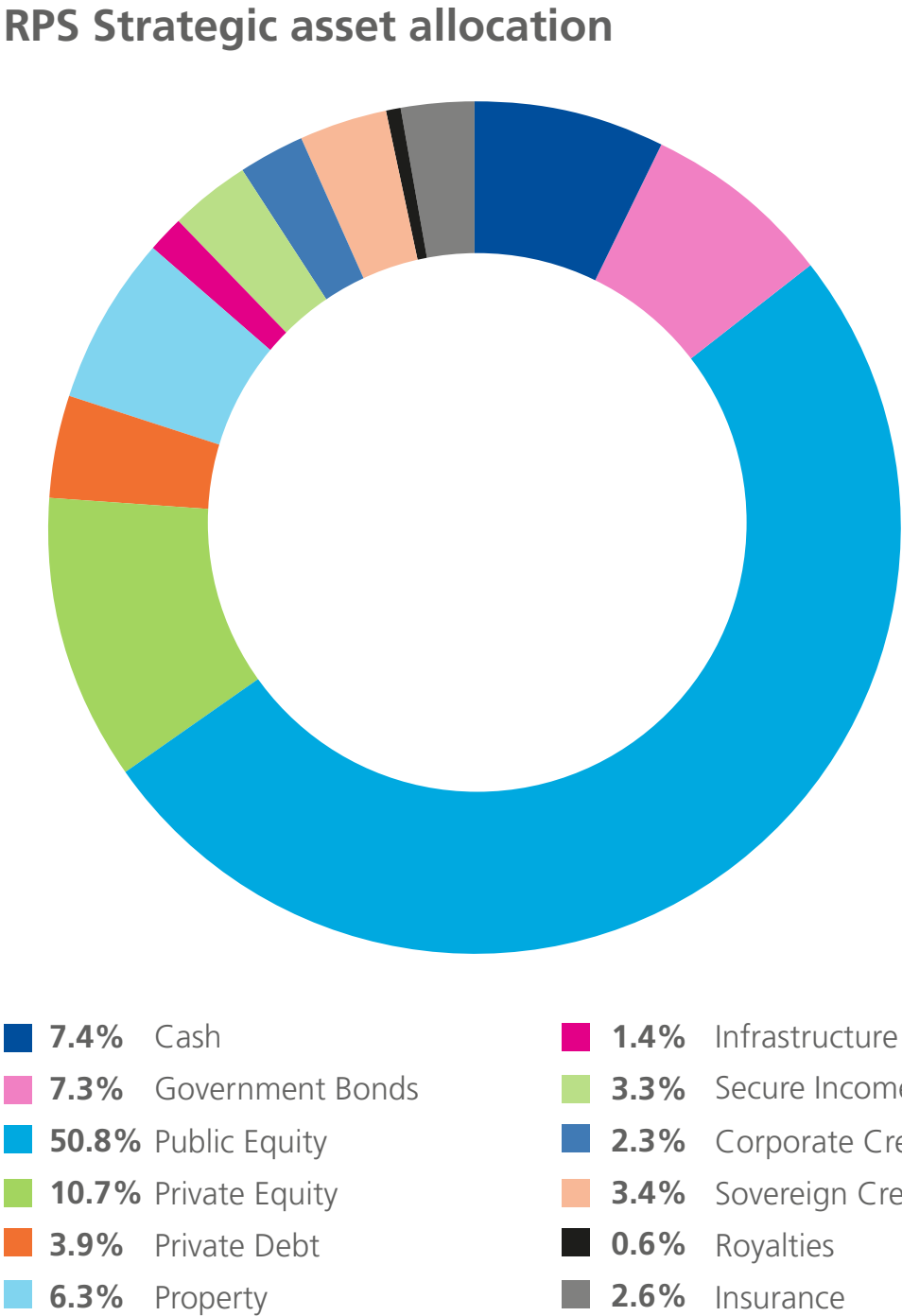


Figure 5.4.1.1.3: RPS asset allocation by geography, 31 December 2021

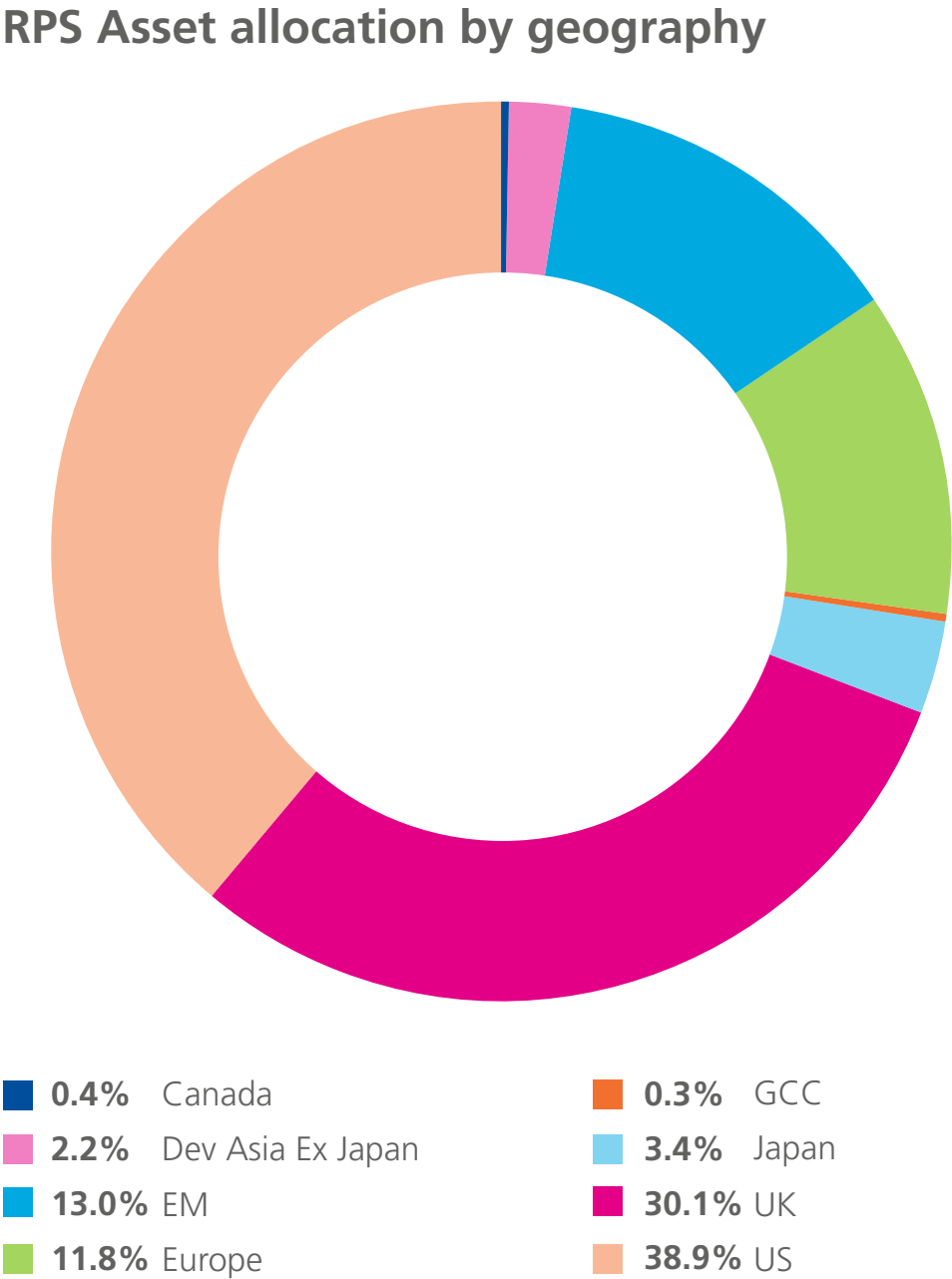
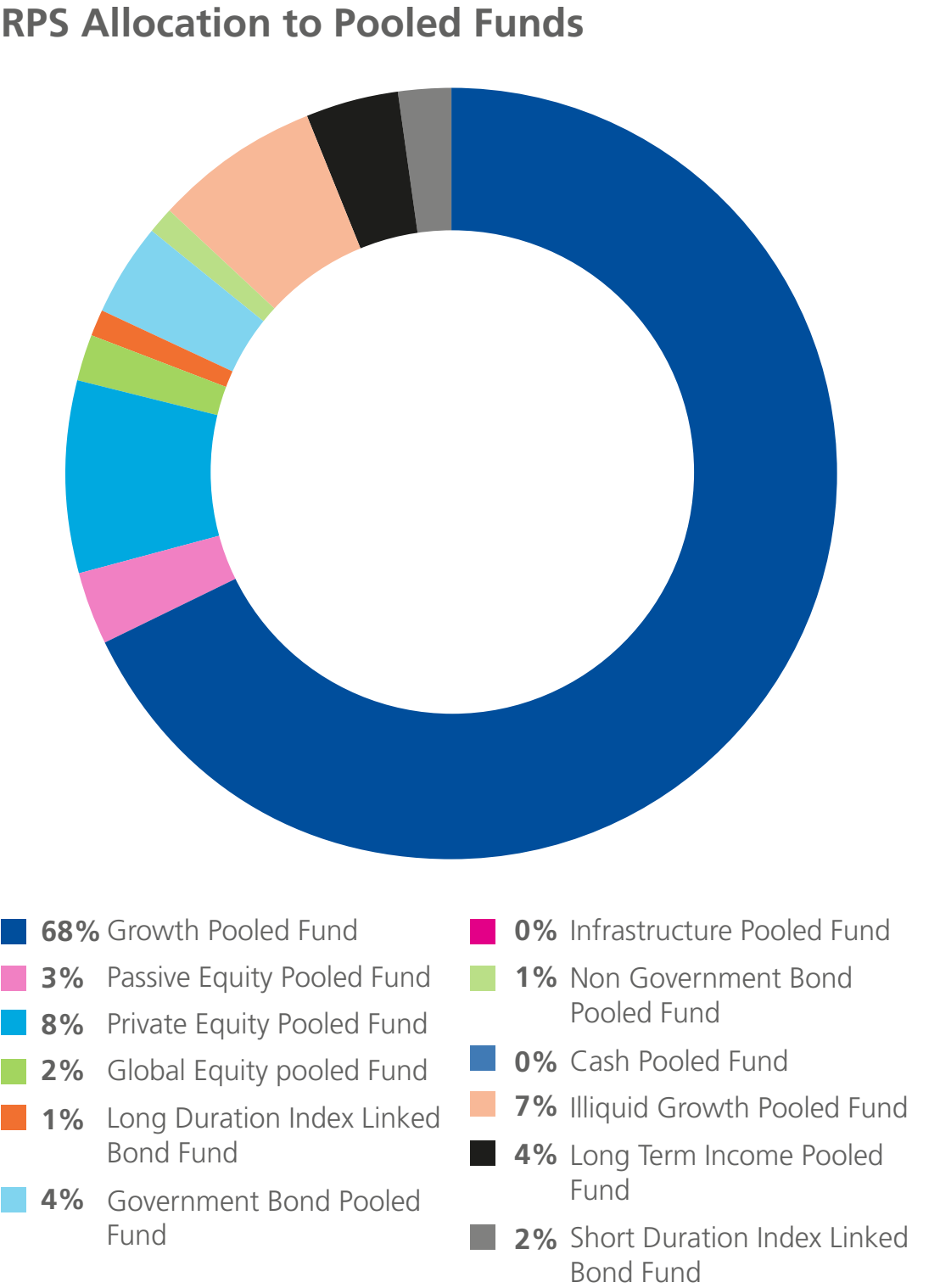


Figure 5.4.1.1.4: RPS asset allocation by pooled fund, 31 December 2021²⁵.



²⁵ The pooled fund data is from Railpen internal systems and reporting as of 31 December 2021.



5.4.2 Climate Scenario Analysis in Defined Benefit pooled funds and resilience of the investment strategy

Impacts on investment returns at a “Scheme-wide” level are discussed in [section 5.3.2](#). This section dives deeper into the drivers of these results.

Figure 5.4.2.1 displays the climate scenario analysis results at a pooled fund level²⁶.

The data in the table represent the difference in annualised real returns, for some given scenario and time horizon, that climate impacts have on a climate-unadjusted baseline. For example, if your expectations of the Growth Pooled Fund is that its annualised real return over the next years will be 10%, the climate scenario analysis results in Figure 5.4.2.1 suggest this return should be adjusted by -0.4% in a Paris Orderly climate scenario over years 1-10 (this is the first box in the table).

Figure 5.4.2.1: Modelled impacts to future investment returns of DB pooled funds in the three selected climate scenarios

	Paris Orderly			Paris Disorderly			Failed Transition		
Pooled Fund	Years 1-10	Years 1-20	Years 1-40	Years 1-10	Years 1-20	Years 1-40	Years 1-10	Years 1-20	Years 1-40
Growth	-0.4%	-0.3%	-0.2%	-1.4%	-0.8%	-0.5%	-0.4%	-1.6%	-1.1%
Long Duration Index Linked Bond	0.0%	-0.1%	-0.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Illiquid Growth	-0.6%	-0.3%	-0.3%	-0.7%	-0.4%	-0.4%	-0.4%	-1.4%	-0.9%
Long Term Income	-0.1%	-0.1%	-0.1%	-0.3%	-0.2%	-0.2%	-0.2%	-0.6%	-0.4%
Private Equity	-1.2%	-0.7%	-0.6%	-1.9%	-1.1%	-0.8%	-0.8%	-3.3%	-2.2%
Government Bond	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Non-Government Bond	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Infrastructure	-0.3%	-0.3%	-0.4%	-1.1%	-0.7%	-0.6%	-0.5%	-1.8%	-1.4%
Passive Equity Pooled Fund*	-0.4%	-0.3%	-0.2%	-1.4%	-0.8%	-0.5%	-0.4%	-1.6%	-1.1%
Global Equity Pooled Fund*	-0.4%	-0.3%	-0.2%	-1.4%	-0.8%	-0.5%	-0.4%	-1.6%	-1.1%
Short Duration Index Linked Fund*	0.0%	-0.1%	-0.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%

* In order to protect the intellectual property of Ortec Finance, we do not display the actual modelled impacts for these pooled funds, but instead use the return impacts for the Growth Pooled Fund as a proxy for the impacts in the Passive Equity Fund and Global Equity Pooled Fund, and we use the return impacts to the Long Duration Index Linked Pooled Fund as a proxy for the impacts in the Short Duration Index Linked Fund. The actual treatment of these pooled funds in the model differs from the proxied values displayed in this public report.

²⁶ The climate scenario analysis is conducted at the underlying investment asset class level first and the results are then translated to the pooled fund level based on the pooled funds’ allocations to the individual asset classes.

The climate scenario analysis on the investment portfolio suggests the following conclusions in respect of the resilience of the Scheme-wide investment strategy:

- Expected returns are affected negatively versus baseline across all pooled funds and in every time horizon over the next 40 years. The failed transition has the most negative impacts, suggesting that long-term investors have an economic incentive to support a Paris-aligned transition.
- The greatest climate-related risks relevant to the Scheme over the time periods that the Trustees have identified are:
 - physical climate risk in scenarios, particularly when the transition to a greener economy fails. The regions most affected by the financial impacts of physical climate risk are Asia (South Asia, East Asia, South-East Asia), North America, and Australasia. In terms of sectors, consumer discretionary, industrials, and consumer staples are the most affected by physical risk in the climate modelling used in this analysis. Ortec Finance's analysis suggests the RPS should be more concerned about potential physical risks than potential transition risks.
 - transition climate risk when global climate policy is uncoordinated and market reactions are more sudden. Regions like North America, Australasia, and China, are most vulnerable to the risk of a disorderly transition. The RPS has a significant exposure to the US, in particular to US equities. The US economy, given its position as a net fossil fuel exporter,

with low energy efficiency, low carbon pricing, pricing of physical and transition risk prior to market impact and high sensitivity to market sentiment s make it exposed to transition risks and this is reflected in the scenario analysis results.

- in terms of strategic asset allocation, growth assets (notably listed equities and private equity) are modelled to be less resilient across climate scenarios than defensive assets (such as fixed income). However, growth assets are expected to deliver a higher rate of return than defensive assets, even accounting for climate-related impacts in the different scenarios. This suggests that growth investors ought to continue to monitor portfolio risks and take risk reduction actions (including investment stewardship) where beneficial to risk-adjusted investment outcomes. According to the analysis, maintaining a diversified portfolio helps to soften the magnitude of climate risks in different scenarios. Investors should consider the merits of incorporating climate impacts on investment returns in asset-liability modelling.
- on sector allocations, as might be expected, oil and gas, fossil fuel utilities, road, air and sea transportation, and consumer discretionary sectors, are impacted the most across all three climate scenarios. At the time of analysis, the RPS had very low exposure to oil & gas (suggesting the investment strategy might exhibit resilience to Paris-aligned scenarios), but a significant allocation to consumer discretionary (which could undermine

investment strategy resilience in the longer term in a Failed Transition scenario). As a result, RPS' investment in private equity (which is exposed to the consumer discretionary and industrial manufacturing sectors) is modelled as having the greatest impacts to returns (driven primarily by physical risks), followed by public equities. Given the dispersion of climate-related return impacts across sectors and regions, investors and investment risk professionals ought to monitor sector and region exposure.

- The greatest climate-related opportunities relevant to the Scheme over the time periods that the Trustees have identified are:
 - regions such as Europe and the UK that could prove to be 'winners' in scenarios where the Paris Agreement is achieved
 - stewarding high emitting companies in which the RPS has significant investments could enable these companies to realise the opportunities that come with aligning their business models to a lower risk pathway, and could thereby reduce risk at Scheme level. (see [section 6.4](#) for more information)
- The timing of risk realisation is scenario-dependent. Scenarios that align with the Paris Agreement experience greater impacts in the short term, but the Failed Transition scenario has greater impacts in the medium and short term. This suggests investors should monitor the global policy response to climate change to attempt to understand which scenario has the greatest likelihood of playing out, and whether action is required in the short

or longer term. Investors should also review their selection of scenarios as a scenario not considered in their analysis might unfold.

Ultimately, climate scenario analysis is useful for modelling direction of travel, rather than pin-point accuracy. The most interesting findings lie not in the average performance for portfolios or asset classes, but rather in identifying the outliers (such as certain sectors or certain positions), which improves the efficiency of ongoing risk management.

As a result of climate scenario analysis and other analysis conducted from time to time, the Trustee (or Railpen acting on the Trustee's behalf) intends to:

- continue to analyse, monitor, manage the highest emitting portfolio companies for transition and physical risks, building on work done to date
- conduct further analysis of physical risks, and review potential enhancements to analytical capabilities
- consider the merits of incorporating climate impacts on investment returns in asset-liability modelling
- continue to identify climate-related investment opportunities
- review the selection of climate scenarios as appropriate

5.4.3 Climate Scenario Analysis in Defined Contribution pooled funds

RPTCL is responsible for three RPS DC arrangements BRASS, AVC Extra and the IWDC section (IWDC).

- BRASS, the main Additional Voluntary Contributions (AVC) arrangement, is open to all contributing members of the DB Sections of the RPS.
- AVC Extra is the second contribution top-up arrangement for contributing members of the DB Sections (other than the Network Rail Section) of the RPS.
 - AUM in the BRASS and AVC Extra was approximately £2bn at 31 December 2021
- The IWDC Section is the authorised DC Master Trust of the RPS for rail industry employees and, other than AVCs, it is the only Section in the Scheme which provides money purchase benefits.
 - AUM in the IWDC Section was approximately £228m at 31 December 2021

Climate governance, strategy, and risk management within DC arrangements are described in [sections 4](#) and [5](#).

In assessing, monitoring and managing climate-related risks in the DC pooled funds we are primarily interested in physical and transition risks to asset returns. The purpose of this section of the report is to describe climate scenario analysis impact on investment returns in the DC arrangements. The same service providers (Ortec Finance and WTW) are used to produce climate scenario analysis results. The same scenarios and time horizons are selected. The same methodological limitations described above apply to the climate scenario analysis for the DC arrangements.

A consistent DC pooled fund range is used by BRASS, AVC Extra and the IWDC section. These pooled funds are also used as the building blocks of the various default and alternative lifestyle strategies. On a look-through basis, the allocations to each of the DC pooled funds as of 31 December 2021 is shown in Figure 5.4.3.1.

Figure 5.4.3.1: DC sections allocations to pooled funds as of 31 December 2021

DC Pooled Fund Allocations	BRASS	AVC Extra	IWDC	Total DC	Mapping ²⁷
DC Long Term Growth Fund	62%	17%	45%	59%	DB Growth Pooled Fund
DC Global Equity Fund	14%	48%	38%	17%	DB Passive Equity Pooled Fund
DC Index Linked & Global Bond Fund	1%	3%	1%	1%	DB Long Duration Inflation Linked Bond Fund
DC Aggregate Bond Fund	1%	22%	12%	2%	n/a
DC Deposit Fund	23%	11%	3%	20%	n/a

²⁷ For the purposes of conducting climate scenario analysis, the DC pooled funds are modelled using a mapping to DB pooled funds that share suitably similar asset classes and risk characteristics. The DC Deposit fund is not mapped as it primarily invests in money market funds and UK government treasury bills which exhibit close to zero climate risk in commonly used climate scenario analysis models.

Figure 5.4.3.2 shows the modelled impacts of climate risk on RPS DC arrangements for the three selected climate scenarios. The data in the table represent the difference in annualised real returns, for some given scenario and time horizon, that climate impacts have on a climate-unadjusted baseline. For example, if your expectations of the overall DC arrangement is that its annualised real return over the next years will be 10%, the climate scenario analysis results in Figure 5.4.3.2 suggest this return should be adjusted by -0.24% in a Paris Orderly climate scenario over years 1-20 (this is the first box in the table).

Given the similarities in investment strategy between the DC pooled funds and the DB pooled funds, the same findings as laid out in [section 5.4.2](#) apply here. In addition, the activities taken to manage the risks identified in climate scenario analysis of DC pooled funds are the same as those laid out in [section 5.4.4](#) and elsewhere. Rather than duplicate the content, we refer readers to the content above and below.

Figure 5.4.3.2: Impacts of climate change on DC assets in selected climate scenarios

Scenario	Indicative change in value of the overall assets for the:							
	DC (overall)		BRASS		AVC Extra		IWDC	
	Years 1-20	Years 1-40	Years 1-20	Years 1-40	Years 1-20	Years 1-40	Years 1-20	Years 1-40
Paris Orderly	-0.24%	-0.17%	-0.21%	-0.15%	0.00%	0.00%	-0.03%	-0.02%
Paris Disorderly	-0.60%	-0.37%	-0.53%	-0.33%	-0.01%	0.00%	-0.07%	-0.04%
Failed Transition	-1.21%	-0.86%	-1.06%	-0.75%	-0.01%	-0.01%	-0.14%	-0.10%



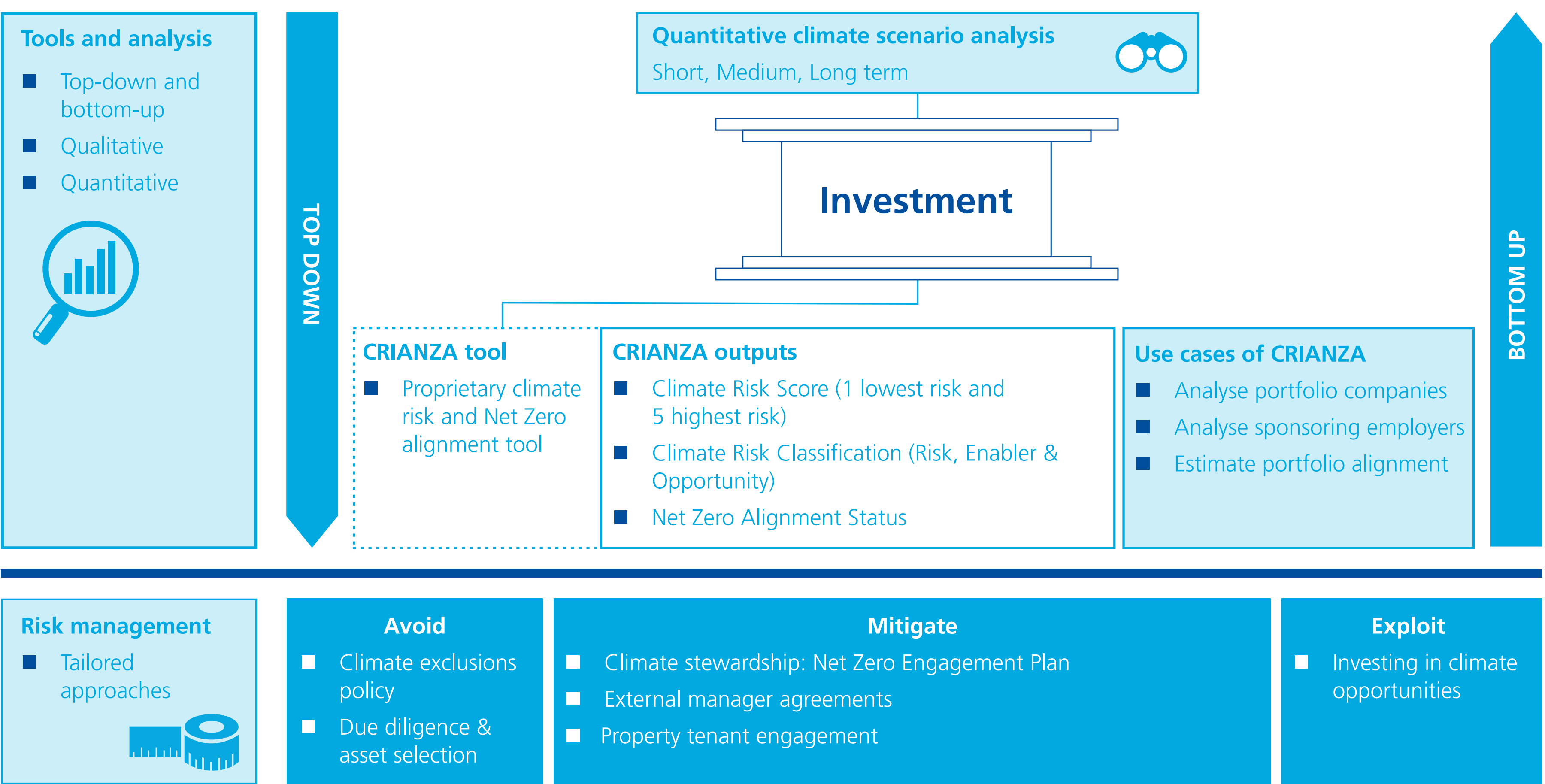
5.4.4 Climate risk integration

This section of the report describes how climate risks are identified and assessed within the investment process, and describes the risk tools the Trustees use and the outputs/outcomes of using those particular tools.

Transition and physical risks are identified and assessed using quantitative and qualitative approaches. Once risks have been identified and assessed, their management is achieved through a variety of activities the nature of which (typically risks are avoided, mitigated, or exploited) depends on the context. Although the focus of this report is on the management of Scheme-wide climate risks, the Trustee believes that a bottom-up perspective is important for the purposes of analysing and managing physical and transition risks in an investment decision making-context.

As explained in [section 4](#), day-to-day operation of the Scheme is delegated to Railpen, with regular reporting to, and oversight by, the Trustee. Railpen's approach to climate risk integration is documented in the ESG Risk Directive, which is part of the Investment Risk Governance Framework. Railpen's Net Zero Plan goes beyond the directive and sets goals for the investment portfolio to align with net zero by 2050 or sooner. Figure 5.4.4.1 provides an overview of climate risk integration at the Scheme, with a focus on the Investment pillar; explanations are provided in the following subsections.

Figure 5.4.4.1: Schematic depicting CRIANZA and scenario analysis for climate risk integration in the investment portfolio





5.4.4.1 Climate risk management in the investment process

Risk identification and assessment are powered by quantitative scenario analysis (explained above), qualitative analysis (for example in assessing the way climate risks could threaten employer covenant strength), and use of Railpen's proprietary CRIANZA framework and tool, which we explain in section 5.4.4.2 below. The rest of this subsection describes climate risk management in the investment process.

Climate change presents various types of investment risks that could present challenges and opportunities for the investment portfolio in a number of ways. Depending on the type of risk, we typically take actions to avoid, reduce, or exploit the risk:

- Avoid the risk – for example we have reduced the Scheme's exposure to stranded asset risk by excluding thermal coal and tar sands companies
- Mitigate the risk – either mitigating climate risk as a systemic risk, or as an idiosyncratic risk. Mitigating climate risk as a systemic risk includes taking measures to align the investment portfolio to net zero by 2050 or sooner, engage policy makers to encourage measures that support a 1.5C temperature outcome, and collaborate with peer investors to help drive down GHG emissions in the real economy. These measures could mitigate the level of systemic risk by reducing the likelihood of a harmful temperature outcome. Mitigating climate risk as an idiosyncratic risk involves analysing potential investments for climate risk, monitoring and engaging companies to encourage them to adopt business plans

that manage against physical and transition climate risks, and setting agreements for external managers to mitigate climate risk when managing money on the Trustee's behalf. These measures could mitigate the level of idiosyncratic risk by ensuring companies in our portfolio are more robust to the risks posed by climate change.

- Exploit the risk – for example by investing in climate opportunities, as described in [section 5.4.5](#).

As described in [section 4](#), the ESG Risk Directive (where ESG includes climate risks) makes specifications across asset classes in regards to how ESG risks must be measured and managed. The Directive notes that different asset classes vary in respect of (i) the nature and materiality of climate and ESG Risk and (ii) the availability of ESG Risk information. Climate risk in particular varies by asset class, sector, business model, and geography of the underlying holdings. As a result, the approaches for identifying and assessing ESG (and climate risk) vary across asset classes (and in some cases across sectors, business models, and geographies). The selection of approach is driven by factors including: expected climate impact on returns of the asset class, vulnerability to physical and transition risk, availability and quality of data, specific stewardship and engagement mechanisms available, and, potential pathways to net zero alignment. [Figure 5.4.4.1.1](#), which is adapted from a table in the risk directive, shows the climate risk management techniques used across different asset classes.

Idiosyncratic ESG risk is managed by a wide range of actions including climate-related and other portfolio

exclusions, ESG risk analysis, securing ownership rights, negotiating contracts and terms, engagement, monitoring, improving asset quality, and supporting value at exit. Systematic ESG risk is managed primarily by engagement (with policy makers, peer investors, and portfolio companies) and shareholder voting.



Figure 5.4.4.1.1: techniques used to identify and assess climate risks in the investment portfolio. Adapted from Railpen’s ESG Risk Directive (ESG includes climate change).

(n.b. not every technique is applied for every investment transaction; rather the techniques most appropriate for the investment in question are identified and executed accordingly.)

Pooled Fund	Quantitative Equities	Pre-Investment	Asset Management	Divestment/Exit
Growth Pooled Fund	Quantitative Equities	a	e, f, g, h, j	
	Fundamental Equities	a, b	e, f, g, h, j	l
	External Managers	a, c, d	e, j	
	Property	b, d	j	l
Illiquid Growth Pooled Fund	Co-investments (Private Equity, Private Debt, Venture)	a, b, d	e, f, g, i, j	l
	External Managers	c, d	j	
Long Term Income Pooled Fund	Directs	a, b, d	e, f, g, i, j	l
	External Managers	c, d	j	
Equity Pooled Funds	External Managers (Global Equity; Passive Equity)	a, c, d	e, g, h, j	
DC Pooled Funds	Global Equity	As per Equity Pooled Funds above		
	Long Term Growth	As per Growth Pooled Fund above		

Avoid		Mitigate		Exploit	
a	Climate risk exclusions	d	Legals & contracts	j	Value Creation Plan
b	Climate and ESG Analysis/ Due Diligence	e	Ownership rights	k	Value at exit
c	External Manager Due Diligence	f	Dialogue		
		g	Escalation		
		h	Collaboration		
		i	Monitoring & re-measuring		



From an investment perspective, the priority focus to date has been on public markets portfolios, because (i) this is the largest allocation across the Scheme, (ii) climate data is of greater quality and completeness and (iii) quantitative scenario analysis suggests public equities is one of the asset classes most likely to face the higher climate-related impact on returns. As set out in [Figure 5.4.4.1.1](#), climate-related exclusions (thermal coal and tar sands companies) are applied to Quantitative Equities, Fundamental Equities, External managers, Equity Pooled Funds and DC Pooled Funds. Each Fundamental Equity investment requires ESG risk (including climate risk) analysis, and large emitters in public markets portfolios are additionally analysed using the CRIANZA framework and tool. We provide detail on risk management in public markets portfolios in [section 6.4](#). We comment briefly below on activities undertaken within private markets and real assets.

5.4.4.2 CRIANZA Framework and Tool

CRIANZA (**C**limate **R**isk **A**nd **N**et **Z**ero **A**lignment) is a proprietary framework and tool developed by Railpen to assess and score the extent of climate risk and net zero alignment at individual companies, and hence in the portfolio at large. At the present time, CRIANZA is used to assess companies within scope of Railpen's Net Zero Plan (which covers 70% of financed emissions in material sectors in public markets), but it has been designed such that it can be applied across asset classes and to analysis of sponsoring employers in the future. The framework incorporates sector specific features for alignment assessment and physical and transition risk assessment and can be used for risk management, regulatory reporting, and for climate stewardship activities (for example by identifying gaps

in a company's current practice, which forms a basis for discussion with a company and can suggest how to direct votes at the company AGM).

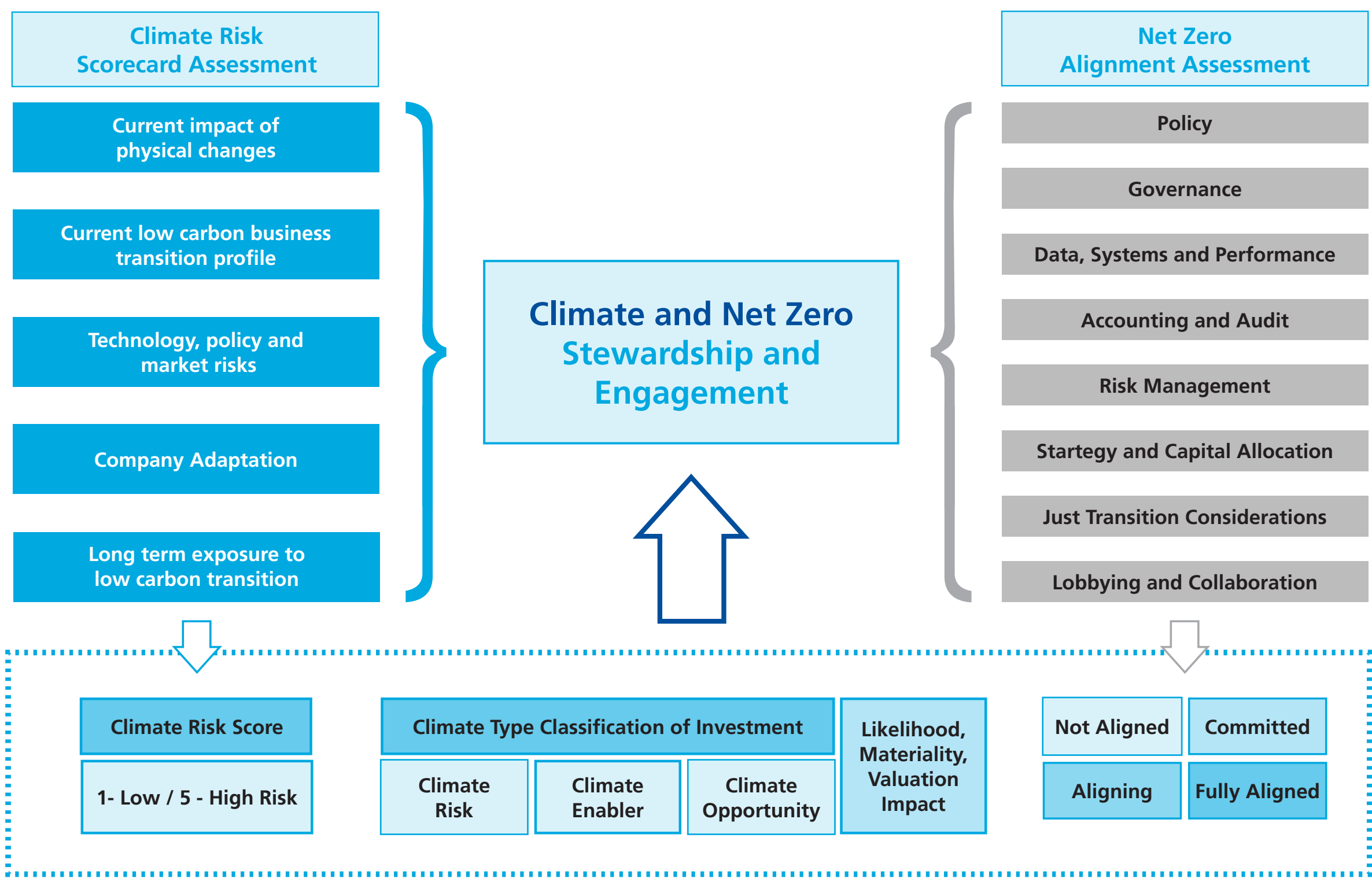
CRIANZA produces two types of score for each company: a risk score (companies are scored between 1 and 5 and given a classification as a 'climate risk', 'climate enabler', or 'climate opportunity'), and a net zero alignment status (companies are assessed as being 'not aligned', 'committed' to aligning, 'aligning', or 'fully aligned').

For the risk scores, a combination of third-party data and proprietary methodology are used within the CRIANZA framework and tool to assess a company's physical risk and transition risk. The assessments are updated after learning more about a company during company engagement.

For the alignment scores, the tool uses a milestone-based approach to assess and score a company's alignment with a net zero pathway. This means that companies are expected to do more – i.e. they are expected to reach additional alignment milestones – each year following the baseline assessment. This approach is consistent with the Institutional Investor Group on Climate Change (IIGCC) Net Zero Stewardship Toolkit, which Railpen co-authored. The assessment framework also draws on the Climate Action 100+ Benchmark and the Transition Pathway Initiative (TPI) scoring, with additional proprietary inputs from Railpen.



Figure 5.4.4.2.1: Overview of the CRIANZA assessment methodology



The objective of the portfolio alignment assessment is to enable a feedback loop between company analysis and company engagement. I.e. the insights from the analysis feeds into climate stewardship, which ultimately should improve company alignment over time. The Trustee has adopted a target to increase the proportion of portfolio companies rated as “aligning” and “fully aligned” (see [section 6](#)). The CRIANZA framework and tool uses sector and asset class specific analysis in its scoring thereby providing a consistent data and metrics means that enable the Trustee to measure and track progress against this target.

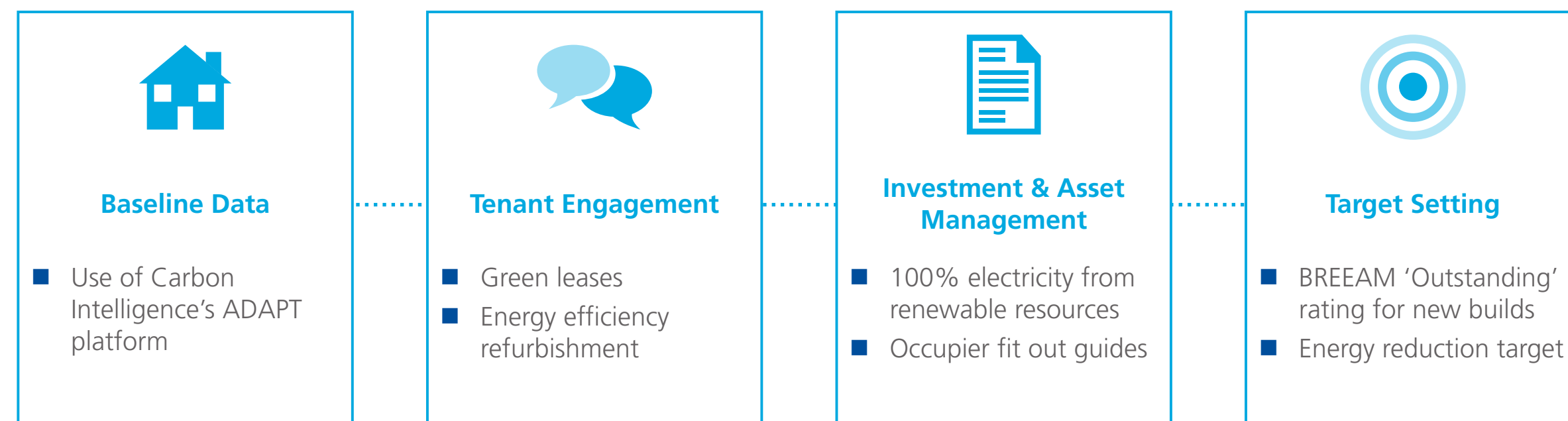
5.4.4.3 Climate Risk Integration in Private Markets and Property

Private markets represented c11% of Scheme assets at December 2021. Private markets investors are beset by a lower level of climate-related information compared to public markets. In addition, private markets have been a little slower to develop net zero methodologies. Railpen has sought to work with industry peers to develop a private markets methodology for net zero and to that end Railpen has been an active member of the Paris Aligned Investing Initiative’s Private Equity Working Group, whose draft methodology was published in February 2022.

Our investments in real assets consist mainly of property and infrastructure assets located in the UK. The portfolio is therefore impacted by trends in UK climate data. The UK climate data indicate that there has been, and will continue to be, a shift to a warmer climate. The most recent assessment from the UK Government and the Climate Change Committee (CCC) indicates strong evidence that even under low warming scenarios, the UK will be subject to a range of significant and costly impacts unless significant further policy action is taken in the near-term.

Real assets can be particularly vulnerable to physical climate risks. These risks can be event-driven and acute, like heatwaves, bushfires or floods, or longer-term shifts such as rising sea levels or an increase in major weather events. Financial implications include direct damage to assets, business disruption and indirect impacts from supply chain disruption. Real assets can also be vulnerable to transition climate risks, for example if increasingly stringent climate policy measures affect an asset’s ability to generate income, or requires unanticipated capital expenditure. Railpen, acting for the Trustee, takes a number of risk management activities to reduce, mitigate, or exploit physical and transition risks within real assets investing. [Figure 5.4.4.3.1](#) outlines some of these activities in the Property portfolio (c£2bn Scheme assets at December 2021).

Figure 5.4.4.3.1: Climate risk management activities in the property portfolio



5.4.4.4 External Managers and Climate Risk Integration

Scheme assets are managed by a mixture of internal and external investment managers, although we have significantly reduced the number of external managers over the last few years. Railpen oversees the selection, appointment, and monitoring of external fund managers. Prior to appointment, an assessment of the external manager's approach to climate risk is conducted using Railpen's Manager Assessment Framework (MAF). External managers are expected to align with the Scheme's climate exclusion lists, to factor climate risk into investment decision-making, and report to Railpen on portfolio climate risks and, if the external manager is within scope of the Net Zero Plan, the portfolio's alignment to net zero²⁸. These expectations are set out in Investment Management Agreements (IMAs), with the Trustee's Statement of Investment Principles being appended to all IMAs.

The output of the MAF is an ESG risk score (ESG risk includes climate risk). To produce the score, Railpen sends a due diligence questionnaire to the external manager. Following review of the questionnaire response and additional analytics, a meeting is arranged to close information gaps and explore areas of concern. Railpen's External Manager team and Sustainable Ownership team members then assign an ESG score, using the assessment criteria in the MAF. A list of actions for follow-up and review is also created. Issues identified in the MAF process might lead to particular clauses in the IMA or side letter. Although many of our external managers score well in the MAF, we have noted some areas for improvement in the climate stewardship and engagement processes and objective-setting at some managers, and are in regular contact to close remaining gaps.

5.4.5 Climate opportunities

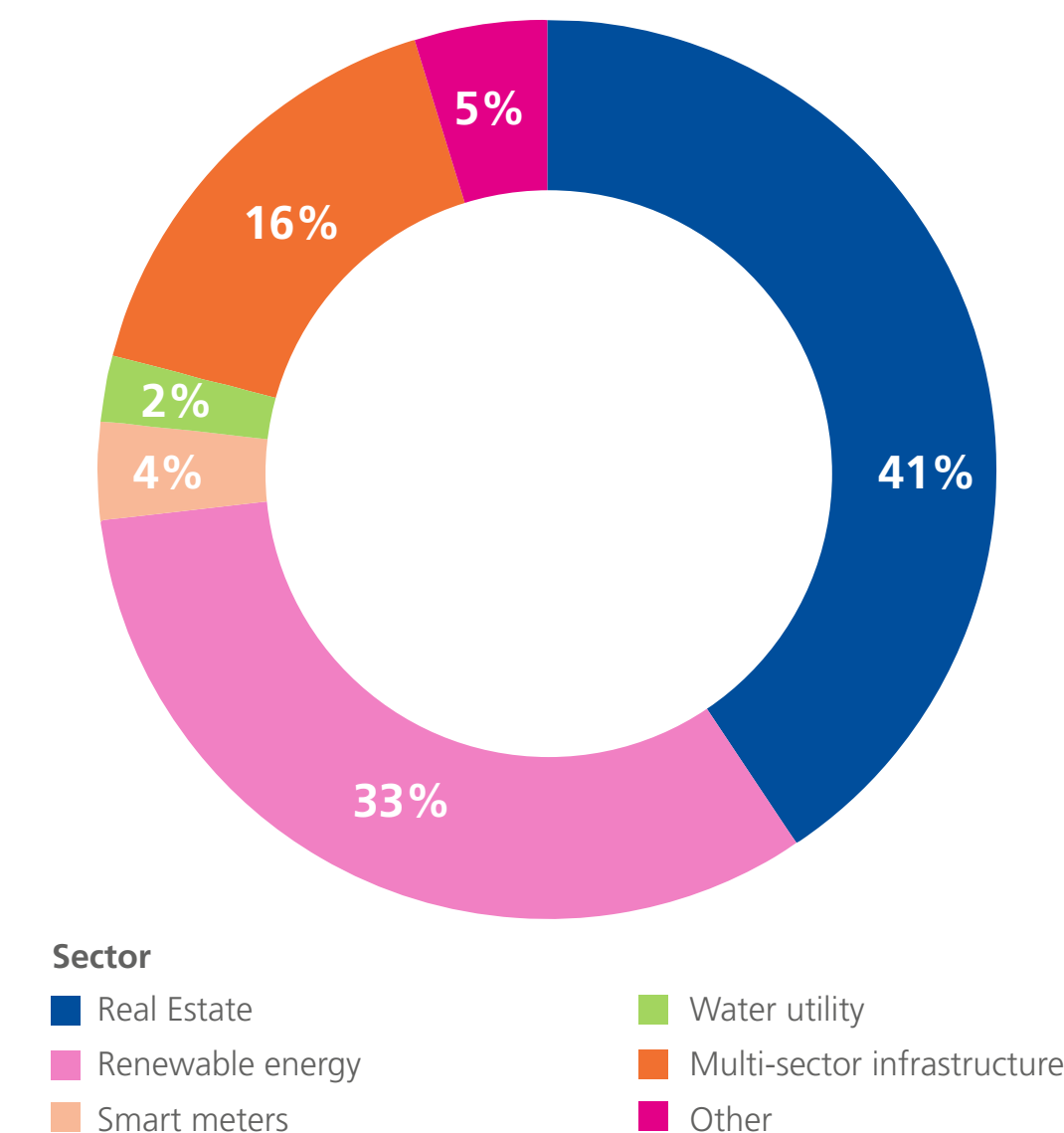
This section discloses information about how climate-related opportunities are identified, assessed and managed.

Climate change is likely to present new investment opportunities. These can include technologies that address climate mitigation (such as clean energy, energy efficiency, natural carbon stores), climate adaptation (improved infrastructure resilience, and health, wellbeing and productivity solutions). The UK Government's independent Climate Change Risk Assessment concluded that early adaptation investments deliver high value for money with benefit-cost ratios typically from 2:1 to 10:1 – i.e., every £1 invested in adaptation could result in £2 to £10 in net economic benefits²⁹. A recent UK energy strategy aims for 95% of UK electricity to be from low-carbon sources by 2030, and has relaxed some aspects of planning for renewable energy deployment. In identifying climate transition investment opportunities, investors need to attend to valuations to prevent investing beneficiaries' capital in a 'green bubble'.

Railpen's investment teams have been sourcing and investing in the climate transition for several years. Investment ideas are sourced within each individual teams' investment process, as best suits the particular asset class in question. The Long Term Income Fund, for example, sources direct and indirect infrastructure investments into sectors likely to benefit from the UK's climate transition. As shown in Figure 5.4.5.1, about 33% of the fund's investments are in renewable energy and smart meters.

Figure 5.4.5.1: Investments in the Long Term Income Fund by sector

Sum of Value



To date, given the importance of valuations noted above, Railpen's (and by association the Trustee's) approach to identifying climate opportunities has been bottom up, as opposed to setting a top down target for such investments. Railpen's Climate Working Group has in its 2022 Workplan agreed a workstream on climate solutions that will further research climate-related investment opportunities. This includes biodiversity and natural capital and to support this work Railpen has become a member of the Taskforce for Nature-Related Financial Disclosure (TNFD) forum.

²⁸ Relevant external managers are signatories to the Net Zero Asset Managers (NZAM) initiative ²⁹ For the avoidance of doubt, this is not an expectation about investment return.



Figure 5.4.5.2: Case study of a Long Term Income Fund investment in renewable energy

Carraig Gheal and Tralorg Wind Farms



Carraig Gheal Wind Farm



Tralorg Wind Farm

- Located in Scotland
- Provide significant contribution to UK's decarbonisation agenda and clean energy supply
- Supporting local communities
- Sites produce 190 gigawatt hours of electricity per year
- Powering around 60,000 homes
- Avoided 2,090,000 kg of CO2 Emmisions



Contributing over £3m to local community projects over their life including:

- Local restoration for healthy pasture in the Avich & Kilchrenan community
- Refurbishment of Dalavich village hall in Argyll
- Funding the Quay Zone community leisure centre in Girvan

6. Metrics, targets and the transition to net zero

6.1 Selection of Metrics and targets, data availability and limitations

Pension schemes are required by Regulation to select certain climate metrics for the purposes of monitoring and reporting on climate-related risks. In addition, the Trustee is required to set at least one target in relation to at least one of the selected climate metrics. The Trustee has selected the metrics and targets indicated in Figure 6.1.1. The Trustee's selection of climate metrics and targets will be reviewed from time to time as appropriate. Further information on the metrics is available in [Appendix B](#).

Figure 6.1.1: Trustee's selection of climate metrics

	Description	Selection Rationale	Target
Total GHG Emissions³⁰ (tCO₂e)	This is an absolute emissions metric that measures the total greenhouse gas emissions attributable to a portfolio.	Recommended by statutory guidance.	-
Carbon Footprint (tCO₂e/ £m invested)	Also referred to as Financed Emissions, this is a common measure of emissions intensity and is interpreted as "the amount of GHGs emitted for each £m invested in the portfolio".	Recommended by statutory guidance. By dividing emissions by the £m invested in the fund, the metric can be used to compare portfolios.	25-30% reduction by 2025 50% reduction by 2030
Portfolio Alignment (%)	Proportion of the portfolio ³¹ , measured by AUM, that is classified either as 'aligning' or 'fully aligned' to a net zero pathway. Defined in the statutory guidance as an 'additional metric'.	<ul style="list-style-type: none">■ Forward-looking metric■ Simple to understand■ Linked to industry frameworks such as the Net Zero Investment Framework³²■ Conducive to investment stewardship activities, e.g. engaging portfolio companies for net zero alignment	100% of the AUM in material sectors to be rated as 'aligning' or 'fully aligned' by 2040
Company engagement (%)	Proportion of the portfolio ³³ , weighted by financed emissions, being engaged.	PCRIG ³⁴ 's definition of best practice recommends disclosing a "process-based" metric.	70% of financed emissions under engagement (or already aligned to net zero), rising to 90% by 2030

³⁰ *Scopes 1 and 2, as explained in this section*

³¹ *Considering companies that are the biggest contributors to the Schemes' financed emissions in relevant investment portfolios, as further detailed below*

³² *Authored by the Paris Aligned Investing Initiative*

³³ *See footnote 32*

³⁴ *Pensions Climate Risk Industry Group*



Data we have been able and unable to gather:

For the purposes of the 2021 TCFD report, the Trustee has obtained Scope 1 and Scope 2 GHG emissions as far as able to do so³⁵. At present, gathering reliable Scope 3 emissions data remains a challenge owing to data availability, nascent reporting and estimation methodologies, potential for double-counting across sectors in the global economy, and overall data quality³⁶. The Total GHG Emissions and Carbon Footprint metrics cover the Scheme's investments in public equities and corporate fixed income.

Whilst Railpen, on behalf of the Trustee, has begun to gather GHG data for property, infrastructure, and private markets, the quality and availability of GHG data in these asset classes is unfortunately not sufficiently mature for the production of useful metrics at this time. Unlike public markets, gathering GHG data for other asset classes remains time consuming and costly.

- Property as an asset class suffers from missing data in tenant electricity and gas consumption, leading to a lack of tenant emissions data (tenant emissions comprise the vast majority of a building's GHG emissions, so excluding tenant emissions from property metrics would undermine their usefulness).
- Private equity and infrastructure suffer from persistent data gaps as private companies are usually not required to publish GHG data. Whilst commercial GHG data providers offer estimations or proxies, these are challenged by varying quality of estimation models, cost, and reliance on company financial data that might not be easily accessible.

Despite the paucity of available GHG data, the Trustee and those acting on the Trustee's behalf monitor and manage climate risks in property, private equity, and infrastructure portfolios, as detailed above. Railpen is a member of several initiatives and working groups with a remit to improve sustainability disclosure³⁷. To the extent able, the Trustee aims to report GHG data for additional relevant asset classes in future TCFD reports.

We have not in this year's report provided GHG data in relation to the Scheme's investment in government bonds. For methodological reasons, GHG emissions associated with government bonds cannot be aggregated to public equities and corporate fixed income. As of 31 December 2021, the RPS' largest allocation to government bonds is in UK government bonds. Climate scenario analysis suggests that the yields on UK gilts are unlikely to be significantly affected by climate change, suggesting that disclosure and action on other asset classes ought to take priority.

Methodology: For the Total GHG Emissions and Carbon Footprint metric, emissions are apportioned to our portfolio based on the proportion of each portfolio company's enterprise value (including cash) owned by our portfolio. Using enterprise value (which comprises both equity and debt) to apportion emissions legitimises the aggregation of apportioned emissions across listed equity and corporate fixed income investments. Further information on the metrics is available in [Appendix B](#).

Most of the reported GHG data relate to investments managed internally by Railpen, though two portfolios managed externally are also included in the analysis. The climate metrics for both internally and externally

investments are calculated by Railpen using a consistent methodology and a consistent set of climate data service providers (i.e. it has not been necessary to combine distinct GHG data from several fund managers based on divergent methodologies).

Data quality and proportion of assets for which data was available (and on which we are reporting):

We consider emissions data that have been (i) company-reported and verified, (ii) company-reported, or (iii) estimated by Railpen's climate data providers "acceptable". Where emissions data are unavailable, we consider the data availability as "poor". We have not made use of proxies for emissions data. For the purposes of this TCFD report, the Total GHG Emissions and Carbon Footprint metrics are calculated including only the asset classes with an "acceptable" data quality measure.

As a result, the metrics reported in [section 6.2](#) relate to public equities and corporate fixed income. In terms of the Total GHG Emissions metric and the Carbon Footprint metric, this means the metrics reported in [section 6.2](#) represent 57% of the RPS DB arrangements by AUM, and 62% of the RPS DC arrangements. Some GHG data within these metrics have been estimated by Railpen's climate data service providers.

³⁵ GHG emission scopes are defined in the Glossary below. See category 15 emissions (investment emissions) in the GHG Protocol Technical Guidance for more information.

³⁶ Trustees are not required to obtain Scope 3 emissions data in the first scheme year that they are subject to the requirements.

³⁷ See [section 6.4.3](#)

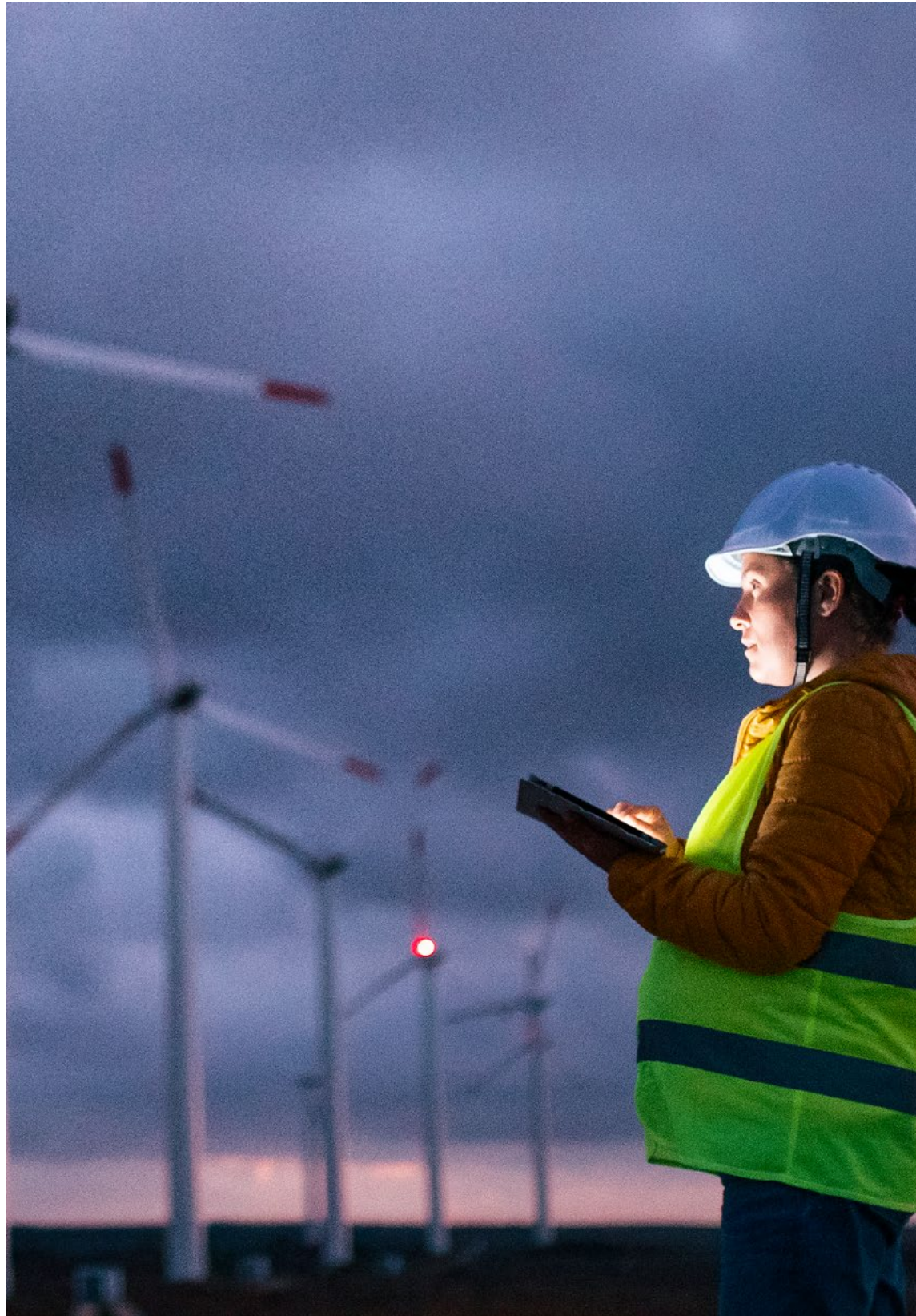


Coverage and methodology of the alignment

metric: for the alignment metric, the data coverage is 70% of financed emissions in material sectors³⁸ (across listed equities and corporate fixed income portfolios)³⁹. The underlying data that support the generation of the Scheme's alignment metric are sourced from a proprietary information set developed by Railpen. As described in [section 5.4](#), Railpen's analysts perform a forward-looking assessment of a company's decarbonisation trajectory, exposure to climate-related risks, ability to capitalise on opportunities in the low-carbon transition over time, and overall investment strategy, and thereby determine an alignment status for each company. The alignment status for any particular company can be one of: 'fully Aligned', 'aligning', 'committed to aligning', or 'not aligned'.

Methodology used to measure performance

against targets: The Trustee has selected climate targets as noted in [Figure 6.1.1](#) and further detailed below. These targets are consistent with Railpen's targets in its Net Zero Plan (see [section 6.3](#)). Performance against the targets is explained below. The same methodology used in generating climate metrics is used to assess performance against targets. For example, to measure progress on the carbon footprint target, the same methodology is used to calculate the carbon footprint metric in the base year and in the current year, facilitating an observation of the rate of improvement. Measuring performance against targets is subject to the same degree of estimation as is present in the generation of climate metrics.



The 2021 TCFD report produces climate metrics for investment holdings as of 31 December 2021⁴⁰. The base year is, however, December 2020 and the base year metrics are provided in [section 6.2](#).

6.2 Metrics & Targets: 2021 data

The metrics and their values as of 31 December 2021 and the base year (December 2020) are as indicated in [Figure 6.2.1](#) below.

Figure 6.2.1: Scheme-wide climate metrics and targets, 2021

	2021	Base year	Performance	Target
Total GHG Emissions⁴¹ (tCO₂e)	1,090,989	1,191,915	-9.25%	-
Carbon Footprint (tCO₂e/ £m invested)	63	70	-10%	25-30% reduction by 2025
Portfolio Alignment (%)	1%	1%	-	100% by 2040
Company engagement (%)	70%	70%	Target met	70% today, rising to 90% by 2030

The 10% reduction in Carbon Footprint suggests that the Scheme is on track to meet its 2025 target. This reduction was driven by an investment decision taken by Railpen in 2021. The Trustee believes it is important that investors' emissions reductions targets are driven as far as possible by activities that lead to emissions reductions in the real world (as oppose to changes in portfolio emissions driven by the act of one investor selling investments to another investor). The steps taken to achieve the climate targets are motivated by this belief. These steps are outlined in [section 6.4](#).

³⁸ 'Material Sectors' is defined in the [Glossary](#).

³⁹ Owing to the skew in GHG data, despite covering 70% of financed emissions, this accounts for only 10% of AUM in these portfolios.

⁴⁰ The alignment metric was calculated in February 2022. This also represents the base year for the alignment metric.

⁴¹ The Scopes 1 and 2 GHG emissions. Data Source: Bloomberg, MSCI (Disclaimer in [Appendix C](#)).

The portfolio alignment metric was calculated through company-specific analysis conducted by Railpen’s Sustainable Ownership team, using a proprietary “CRIANZA” assessment framework explained in [section 5.4](#). In order to avoid “greenwashing”, this framework sets a high bar for a company to be described as ‘aligning’ to net zero, and the baseline data shown in [Figure 6.2.1](#) reflect this high bar: very few companies are as of today taking sufficient action to align to a net zero pathway. The metric covers the portfolio companies that constitute 70% of the financed emissions in material sectors across equities and corporate fixed income portfolios⁴². Given the concentration of financed emissions in certain sectors, this amounts to 47 companies⁴³, around 10% of the AUM in equities and fixed income portfolios. It should be noted that a further 50% of these companies are rated as ‘committed’ to aligning to net zero, but are not taking sufficient action to achieve a rating of ‘aligning’. The majority of companies rated as ‘not aligned’ are emerging markets companies. Portfolio alignment performance is not recorded because the baseline data was gathered in February 2022.

Figure 6.2.2: Climate metrics for Defined Benefit pooled funds (as of 31 December 2021)

	Total GHG Emissions ⁴⁴ (tCO ₂ e)	Carbon Footprint (tCO ₂ e)/£m invested)	GHG data coverage (AUM as % of total ex-cash)	Reported GHG data (AUM as % of total ex-cash)	Estimated GHG data (AUM as % of total ex-cash)
Growth Pooled Fund ⁴⁵ <small>int, eq</small>	856,898	58	51%	32%	19%
Passive Equity Pooled Fund <small>ext, eq</small>	71,134	69	3%	2.5%	0.5%
Global Equity Pooled Fund <small>ext, eq</small>	76,464	114	2%	1.6%	0.4%
Non-Government Bond Pooled Fund <small>ext, fi</small>	52,805	138	1%	0%	1%
Total	1,057,301	63	57%	36%	21%

int internally managed portfolios

eq listed equity portfolios

ext externally managed portfolios

fi corporate fixed income portfolio

- For the DB pooled funds, the data in Figure 6.2.2 suggest that:
- the pooled funds investing in index-tracking equities (Passive Equity Pooled Fund and Global Equity Pooled Fund) are more emissions intensive than equity portfolios managed on an active or quantitative basis (Growth Pooled Fund)
 - between the two index tracking equities pooled funds, the Global Equity Pooled Fund is more emissions intensive than the Passive Equity Pooled Fund, potentially due to more emerging markets concentration in the former
 - the pooled fund investing in corporate fixed income assets (the Non-Government Bond Pooled Fund) is more emissions intensive than any of the pooled funds that invest in equities
 - the pooled funds managed by external fund managers happen to be more emissions intensive than the pooled fund managed internally by Railpen

⁴² Following guidance from the Paris Aligned Investing Initiative’s Net Zero Investment Framework.

⁴³ Of which six have been selected for disinvestment.

⁴⁴ GHG scopes 1 and 2; Source: Bloomberg; MSCI (please see [Appendix C](#) for disclaimer).

⁴⁵ Includes listed equity investments in the Growth Pooled Fund only.

6.2.1 Metrics: 2021 Data – supplement on Defined Contribution sections

The Total GHG Emissions and Carbon Footprint metrics for DC pooled funds as of 31 December 2021 are as indicated in Figure 6.2.1.1⁴⁶.

Figure 6.2.2.1: Climate metrics for Defined Contribution pooled funds (as of 31 December 2021)

	Total GHG Emissions ⁴⁷ (tCO ₂ e)	Carbon Footprint (tCO ₂ e)/£m invested	GHG data coverage (AUM as % of total ex-cash)	Reported GHG data (AUM as % of total ex-cash)	Estimated GHG data (AUM as % of total ex-cash)
DC Long Term Growth Fund ⁴⁸ <small>int, eq</small>	32,941	58	44%	27%	17%
DC Global Equity Pooled Fund ⁴⁹ <small>int, eq</small>	747	69	18%	14%	4%
Total	33,688	61	62%	41%	21%

int internally managed portfolios eq listed equity portfolios

⁴⁶ Please note that columns might not sum properly owing to rounding errors. See also [Appendix A](#) for additional information on the scope of the GHG metrics disclosure for Defined Contribution arrangements.

⁴⁷ GHG scopes 1 and 2 Source: Bloomberg; MSCI (please see [Appendix C](#) for disclaimer)

⁴⁸ Includes listed equity investments in the Growth Pooled Fund only

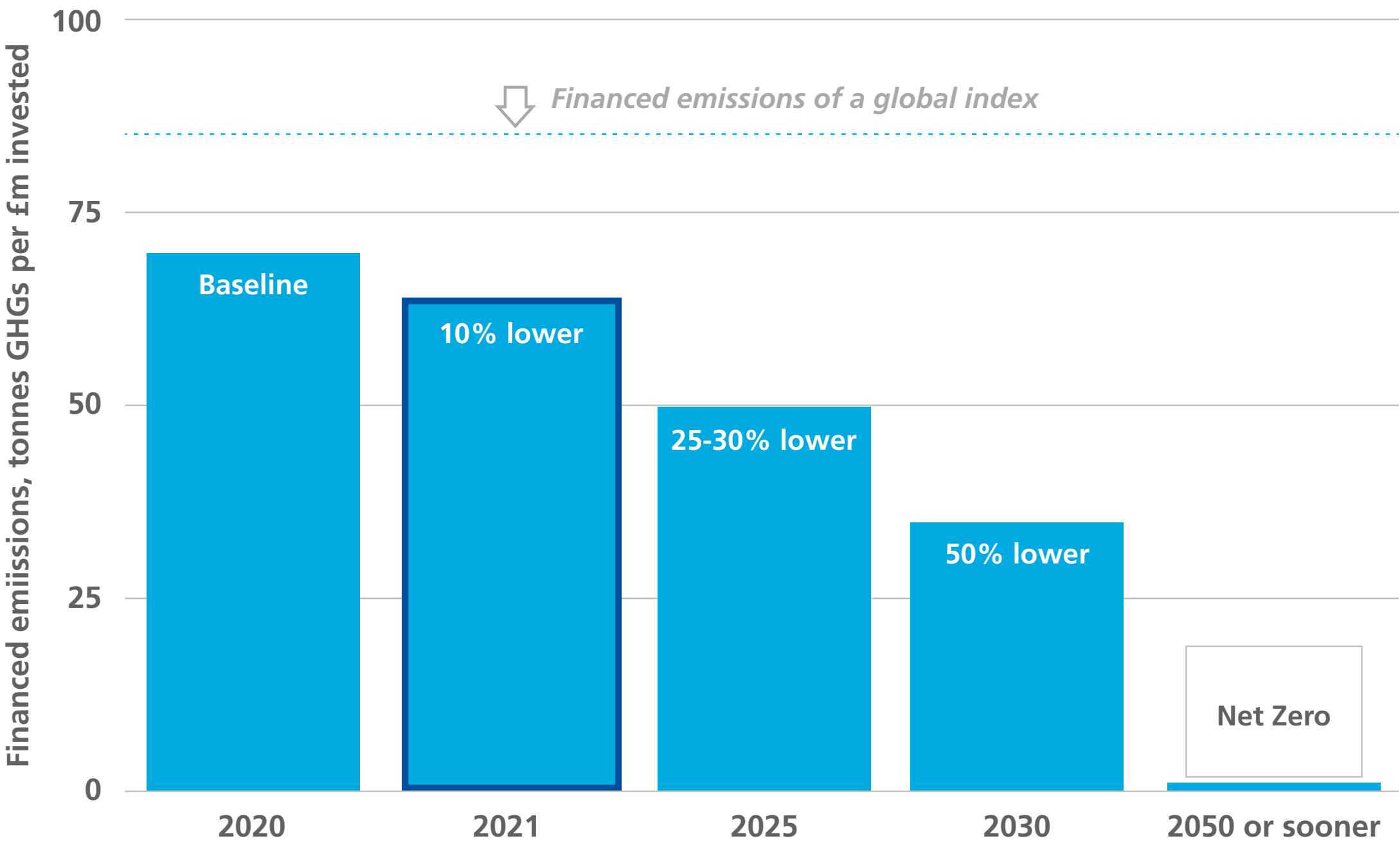
⁴⁹ Includes listed equity investments in the Passive Equity Pooled Fund

⁵⁰ https://cdn-suk-railpencom-live-001.azureedge.net/media/media/dyiflcd5/railpen-net-zero-plan_2020.pdf



6.3 Net Zero Plan

The climate targets selected by the Trustee are consistent with those in Railpen's Net Zero Plan. The targets were developed by drawing on the Paris Aligned Investing Initiative's Net Zero Investment Framework, and other practitioner resources including Partnership for Carbon Accounting Financials (PCAF) and the Institute for Sustainable Futures (ISF). For further information please refer to Railpen's [Net Zero Plan](#)⁵⁰.



6.4. Net Zero Stewardship

Whilst the ways in which climate-related risks play out is highly uncertain, the Trustee believes it is important to take actions that reduce climate-related risks, including through investment stewardship. Climate stewardship activities are taken on the Trustee's behalf primarily by Railpen. Certain service providers and external fund managers also carry out investment stewardship activities for the Trustee. Done well, climate stewardship can help to reduce the impact of a disorderly transition on companies in the Scheme's investment portfolio, or of a shock to the financial system from catastrophic climate change.

Further, as noted above, the Trustee believes it is important that investors' emissions reductions targets are driven as far as possible by activities – primarily stewardship activities – that lead to emissions reductions in the real world (as oppose to changes in portfolio emissions driven by the act of one investor selling investments to another investor). There is a causal connection between engaging companies for

improved alignment, and reducing the carbon footprint of the portfolio. Referring to the Trustee's targets set out in [section 6.1](#): the Company Engagement target support the Alignment Target, which in turn supports the Carbon Footprint Target (Figure 6.4.1). At the present time, company engagement is the main step the Trustee is taking to achieve its climate targets.

If engagement proves unsuccessful, disinvestment will be considered. Any potential disinvestments will be weighed in the context of the broader mandate objectives.

Other steps available to the Trustee to achieve its climate targets include asset allocation changes, tightening the existing climate-related exclusions policies (for example lowering the threshold for exclusion of thermal coal and tar sands companies from 30% of revenue to 20% of revenue), or updating mandates and re-negotiating investment management agreements to include climate targets alongside traditional mandate objectives.

Figure 6.4.1: Relationship between Climate Targets

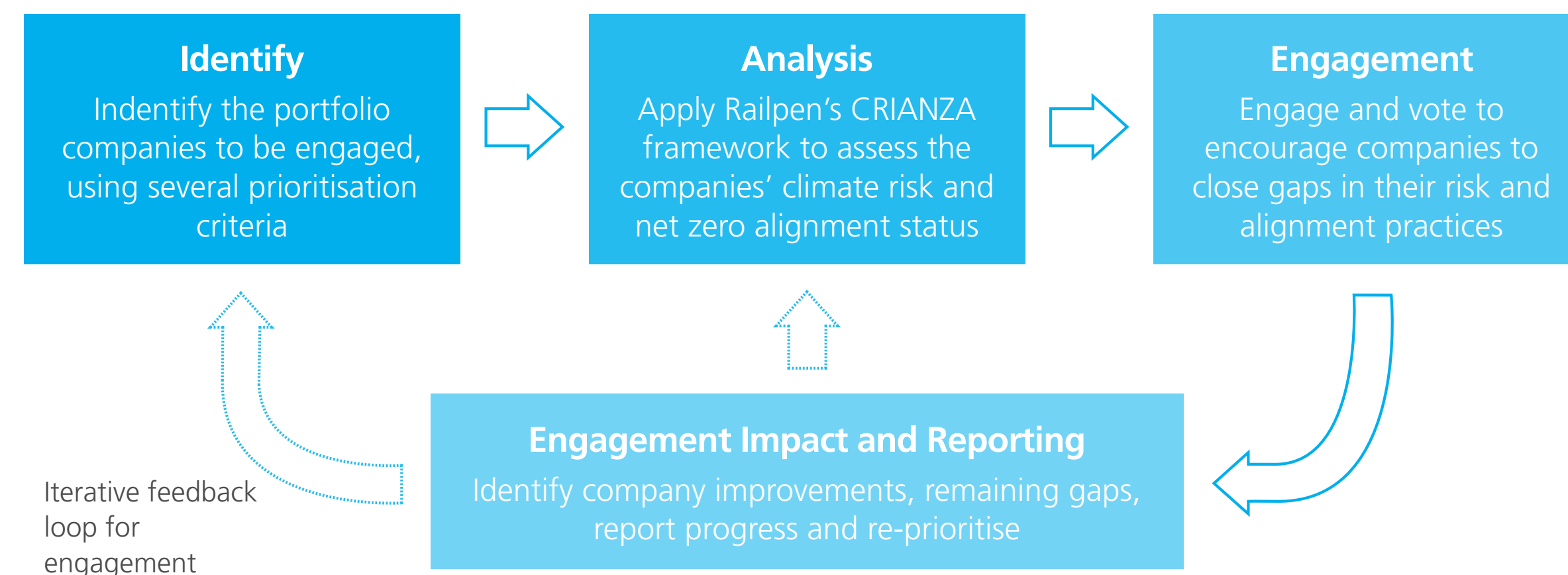


6.4.1 Net Zero Engagement Plan (NZEP)

Railpen has set out a Net Zero Engagement Plan (NZEP), the purpose of which is to deliver against the reference targets outlined in the Net Zero Plan (these targets are consistent with the Trustee's targets in [section 6.1](#)). By executing on the NZEP, Railpen is taking steps that support the achievement of the Trustee's climate targets.

The NZEP uses a four-step approach of prioritisation, analysis, engagement and voting, and reporting of the decarbonisation impact on portfolio companies (Figure 6.4.1.1). This approach draws heavily on the Institutional Investor Group on Climate Change's (IIGCC) Net Zero Stewardship Toolkit, which provides investors with a foundational process to enhance their stewardship practices to deliver the rapid acceleration in decarbonisation required to achieve net zero by 2050⁵¹.

Figure 6.4.1.1: Four-step approach in Railpen's NZEP



⁵¹ Railpen co-chaired and co-authored the Net Zero Stewardship Toolkit

The initial prioritisation of companies for engagement was based on holding amount and financed emissions. However prioritisation can be enhanced following analysis and/or engagement, so the NZEP operates an iterative feedback loop as depicted in [Figure 6.4.1.1](#). Analysis and/or engagement can improve prioritisation through more informed consideration of: the forward-looking importance of Scope 3 emissions, the expected duration of the holding in Railpen portfolios, expected level of company access and likelihood of achieving change. The current prioritisation is summarised in [Figure 6.4.1.2](#) below.

Figure 6.4.1.2: Current prioritisation of companies within the NZEP

	Tier 1	Tier 2	Tier 3	Total
Companies in scope for engagement (#)	16	11	20	47
Financed emissions (% of total in material sectors)	31%	13%	26%	70%
Companies in Climate Action 100+	7	4	6	17
Direct engagement	9	7	14	30

Analysis is conducted by applying Railpen’s proprietary CRIANZA assessment framework (see section 5.4.4) to the companies in scope for engagement.

The aim of the Engagement phase of the NZEP is to align key emitters to a net zero trajectory, adopt interim and long term targets, and improve climate risk management. This is intended to be achieved through a combination of collaborative engagements (for example via Climate Action 100+), direct engagements with companies, and public policy engagement.



- Companies are allocated to tiers based on the form and substance of the engagement activity:
- Tier 1 companies are subject to collaborative and direct engagement including (as appropriate) meetings, calls, and written contact with management, investor relations and the company board. Shares are actively voted for ‘say on climate’ votes in addition to more routine resolutions.
 - Tier 2 companies are subject to analysis, CA100+⁵² collaborative engagements, and shares are actively voted for ‘say on climate’ votes in addition to more routine resolutions.
 - Tier 3 companies are analysed, monitored, and shares are actively voted. Climate policy engagements targeted on certain jurisdictions is also carried out.

The Net Zero Engagement Plan inceptioned in 2022. However, we present some early-stage engagement case studies in [Figures 6.4.1.3](#), [6.4.1.4](#), and [6.4.1.5](#).

⁵² *Climate Action 100+, a global investor engagement initiative, seeking improved climate disclosure and practice by 161 of the most systemically important GHG emitters.*



6.4.1.3 Case study: **Direct engagement case study for a European airline held in Railpen's Fundamental Equities portfolio**

A European airline is one of the largest contributors to financed emissions in the Railpen portfolio and a key direct engagement target in Railpen's Net Zero Engagement Plan. Railpen's proprietary alignment CRIANZA framework (see above), characterises the airline as exhibiting low physical risk, a strong current transition profile versus peers (given its lower carbon emissions intensity compared to other airlines), and strong climate adaptation potential, though these advantages are offset by the intrinsically high level of GHG emissions in the aviation industry. The airline has committed to net zero emissions by 2050.

However there are some concerns with the current extent of the airline's net zero alignment, including:

- the use of emissions intensity (rather than absolute GHG emissions) for medium-term targets
- lack of detail on the long term decarbonisation strategy for a low carbon transition
- insufficient climate-related disclosures in the financial accounts, and
- climate disclosures not yet fully compliant with the TCFD recommendations

As part of the European Green Deal, with the European Climate Law, the EU has set itself a binding target of achieving climate neutrality by 2050, which requires current GHG emission levels to drop substantially in the next decades. As an intermediate step towards climate neutrality, the EU has raised its 2030 climate ambition, committing to cutting emissions by at least 55% by 2030 ("Fit for 55"). Following the CRIANZA assessment, Railpen reviewed its valuation assumptions to take into account EU's "Fit for 55" policy directive.

During engagement, Railpen aired the concerns detailed above to the airline's Head of Investor Relations and the Sustainability team. In line with an EU requirement for European airlines to be owned by European investors, voting rights of UK investors have been restricted at this company post-Brexit. As a result, using voting rights alone would not be an optimal strategy for escalating the engagement. Rather, for the time being, Railpen will continue to maintain a line of communication with the company, seeking improved disclosure and practice.

6.4.1.4 Case study: **Collaborative engagement case study for a US utilities business held in Railpen's Fundamental Equities portfolio**

Railpen has been a co-lead investor in the CA100+'s engagement at a large US utility since 2021. The US electric utility is a large contributor to Railpen's financed emissions. The company is, however, one of the world's largest producers of wind and solar energy.

So far the focus areas of the engagement have included:

- Net zero ambition and substantiation with a medium-term (2026- 35) GHG reduction target for Scope 1 and 2 and 2050 for Scope 3 emissions
- Publication of a decarbonisation strategy aligned with medium and long term targets
- Alignment of executive performance-linked pay with climate targets
- Climate scenario analysis using a 1.5°C scenario
- Investor access to the Board (including an independent director) for discussion of climate-related disclosures

Shareholders in the CA100+ engagement have co-filed a proposal requiring the US utility to publicly disclose a commitment to achieving net zero emissions (considering GHG scopes 1, 2, and 3) by 2050. As with all climate-related shareholder resolutions, Railpen will give serious consideration to voting in support of the resolution, having due regard to the progress made by the company during the course of the engagement.



6.4.1.5 Case study: **Collaborative engagement case study for a US consumer staples business held in Railpen's Quantitative Equities portfolio**

Railpen has been a supporting investor in CA100+'s engagement with a large US consumer staples business since 2020. This company actively supports the Paris goals on climate change, is currently committed to net zero through science-based targets for emissions reduction, co-leads the Retail Race to Zero campaign, advocates for 1.5°C-aligned, science-based national and international climate policies, and discloses its public policy positions with a partial list of trade associations and coalitions engaged in political activities.

Climate policy lobbying and director access have been the key areas of focus with the company to date, including discussions to:

- establish a specific position statement that commits WMT to conduct its lobbying activities (including via trade associations) in line with the goals of the Paris Agreement;

- conduct and publish a review of its trade associations' climate positions/alignment with the Paris Agreement, and explain actions taken as a result of this review, and
- provide access to the Lead Independent Director for additional insights into board-level governance of climate risks

Members of the CA100+ engagement have co-filed a shareholder proposal urging the Board to conduct a comprehensive review of its lobbying and public policy activities and publicly disclose plans to address any misalignment with the Paris objectives. While Railpen views the company as one of the leading retailers in managing climate-related risks, Railpen continues to be supportive of progressive shareholder resolutions and remains engaged in steering the company towards full net zero alignment.

6.4.2 Climate Policy Engagement

Successful climate policy is crucial to support companies, investors, and consumers in transitioning to a low carbon economy. Railpen continued its policy advocacy activities in 2021, promoting progressive climate action towards a goal of net zero by 2050 or sooner.

Railpen’s focuses its policy on engagement activities based on an assessment of the importance of the topics to Railpen’s Net Zero Engagement Plan, and in recognition of our greater likelihood of influencing domestic policy makers given our relationships with UK policymakers as a UK pension scheme.

In 2021, Railpen’s policy work and interventions were focused on select topics encouraging:

- simple and consistent disclosure of climate change information
- clarity on company reported versus estimated emissions data
- the need for standardised alignment assessment frameworks
- the need for simplicity in the portfolio alignment approach as data and disclosure evolve, and
- a clear focus on areas of misalignment with a feedback loop to engagement and voting activity

In 2021, Railpen submitted written responses to the following climate-related consultations:

Consultation	Position
FCA consultation on climate-related disclosures by asset managers (June 2021)	Suggested differentiating between company reported and data provider estimated data
TPI response to the TCFD consultation (July 2021) on forward-looking financial sector metrics	Railpen, as part of the TPI Steering Committee, urged caution in response to the proposed promotion of highly advanced and complex portfolio alignment metrics ahead of ensuring good quality underlying data, transparent methodologies and standardised frameworks to computing these metrics.
DWP consultation on climate and stewardship reporting by pension schemes (December 2021)	Cautiously welcomed minimum standards on portfolio alignment but urged further consideration of the unintended consequences of certain alignment metrics. Emphasised the importance of linking reportable metrics to company engagement and thereby to real-world decarbonisation.

Railpen’s consultation responses are published on the Railpen website. Additionally, Railpen has been pleased to further share its perspectives with UK government and regulatory officials in direct meetings.

In 2022, Railpen intends to continue its policy engagement on existing priority areas.

Industry Collaborations



The Institutional Investors Group on Climate Change





Principles for Responsible Investment





UK Sustainable Investment and Finance Association



6.4.3 Industry initiatives

RPTCL and Railpen are members of a range of industry initiatives. Membership of industry initiatives support our ambitions to have a positive influence on the climate policy agenda, advance Railpen’s aims in its Net Zero Engagement Plan, and promote good practice in the investment industry.

In 2021, RPTCL and Railpen have collaborated closely with peer asset owners and industry initiatives in support of the finance industry’s push towards Net Zero. We:

- signed the Global Investor Statement on Climate Change
- agreed to co-chair the Investor Practices Programme within the Institutional Investor Group on Climate Change (IIGCC)
- joined the Global Steering Group of the Paris Aligned Investing Initiative (PAII)
- participated as a member of the Steering and Advisory Committee for the Transition Pathway Initiative (TPI)
- joined the Climate Financial Risk Forum (CFRF)
- co-chaired the IIGCC’s Net Zero Stewardship Toolkit Working Group
- took a number of calls, meetings, and teach ins with peers to explain our Net Zero Plan
- contributed to podcasts, webinars, and articles supporting investors looking to set net zero targets



Glossary

- **Aligned to net zero.** A company which, though it might currently be an emitter of GHGs, has a credible commitment to be net zero by 2050 or sooner.
- **Asset Class.** A category of financial instrument, constituents of which share similar characteristics. Examples of asset classes include equities (stocks), bonds (fixed income), private equity, infrastructure, and property.
- **AUM.** Assets Under Management. An amount of money managed or invested.
- **CA100+.** Climate Action 100+, a global investor engagement initiative, seeking improved climate disclosure and practice by 161 of the most systemically important GHG emitters.
- **Carbon Footprint.** In this report Carbon Footprint refers to greenhouse gases (GHG) associated with some particular investment portfolio, measured in terms of the amount of GHGs emitted per £m invested. See Appendix B for more information.
- **Climate solutions.** Goods and services involved either in mitigating the harmful effects of climate change or in providing climate resilience.
- **Engagement.** Communicating with a person or organisation with the aim of raising an issue or achieving change.
- **ESG.** The collective term for referring to “environmental, social and governance” issues.
- **Financed Emissions.** Financed Emissions are GHG emissions that result from activities in the real economy financed by an investor’s lending and investment portfolios. In this Net Zero Plan, Railpen’s Financed Emissions are normalised relative to the amount of capital invested, and expressed as tCO₂e/£m invested. This is referred to by PCAF as “Economic Emissions Intensity”. (PCAF (2020) the Global GHG Accounting and Reporting Standard for the Financial Industry).
- **GHG emissions.** Greenhouse gas emissions relate to the emissions of gases that are capable of absorbing infrared radiation and thereby trapping within the atmosphere. The 1997 Kyoto Protocol defines six gases as GHGs: Carbon dioxide, Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons, and Sulphur Hexafluoride.
- **IIGCC.** Institutional investor Group on Climate Change.
- **Material sectors.** Sectors defined as material according to the Paris Aligned Investing Initiative’s Net Zero Investment Framework. They are sectors with “NACE” codes A-H and J-L. C.f. Appendix E to Railpen’s Net Zero Plan.
- **Net Zero.** A state in which the GHG emissions created by an organisation in a given time period are approximately equal to the GHGs sequestered by the organisation. In this document, “net zero” typically refers to the emissions and sequestration of GHGs associated with companies in Railpen’s investment portfolio.
- **Paris Agreement.** The Paris Agreement on climate change is a 2015 global accord seeking to keep the rise in global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the increase to 1.5°C. As of 2021 the Paris Agreement has been signed by 191 countries, and ratified by 186 countries.
- **Physical risks.** Physical risks are those that pertain to the physical impacts that occur as the global average temperature rises. For example, the rise in sea levels could have impacts such as flooding and mass migration. Extreme weather events, such as flooding and fires, could become more frequent and severe, and these incidents could threaten physical assets and disrupt supply chains.



- **Regulations.** Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021.
- **RPTCL Scheme.** Railways Pension Trustee Company Limited, the corporate trustee of the railways pension schemes.
- **Scope 1 GHG emissions.** An organisation's direct GHG emissions. These might be created as an organisation combusts fossil fuels, or uses fuel in transportation.
- **Scope 2 GHG emissions.** An organisation's emissions associated with the generation of purchased electricity, heating/ cooling, or steam for own consumption.
- **Scope 3 GHG emissions.** An organisation's indirect emissions other than those covered in scope 2. This includes the emissions associated with an organisation's supply chain and its customers.
- **SO.** Sustainable Ownership. The term Railpen uses to describe the incorporation of sustainability factors (including climate change) into the way it invests members' money.
- **Statutory Guidance.** DWP guidance on Governance and reporting of climate change risk: guidance for trustees of occupational schemes.
- **Stewardship.** Stewardship involves using tools such as engagement, voting and advocacy as ways to shape corporate behaviour.

- **Transition Risks.** Transition risks arise as we seek to realign our economic system towards low-carbon, climate-resilient solutions. Changes in industry regulation, consumer preferences and technology will take place and impact on current and future investments.
- **Trustee.** Railways Pension Trustee Company Limited, the corporate trustee of the railways pension schemes.
- **Voting, a vote.** Being a shareholder in a company (usually) gives the opportunity to vote on company matters at meetings such as an Annual General Meeting (AGM). The issues we can vote on include executive pay, the election of board directors, a climate change plan, and the financial report and accounts.





Appendix A: Index of statutory reporting requirements

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Governance		
33	In relation to the governance disclosure requirements, trustees must describe in their TCFD report:	
	■ how they maintain oversight of climate-related risks and opportunities which are relevant to the Scheme	4.2
	■ the roles of those undertaking scheme governance activities, in identifying, assessing and managing climate-related risks and opportunities relevant to those activities	4.5
	■ the processes the trustees have established to satisfy themselves that those undertaking scheme governance activities take adequate steps to identify, assess and manage those risks and opportunities	4.2; 4.4; 4.6; 4.7
	■ the role of those advising or assisting the trustees with scheme governance activities, and	4.5
	■ the processes the trustees have established to satisfy themselves that the person advising or assisting takes adequate steps to identify and assess any climate-related risks and opportunities which are relevant to the matters on which they are advising or assisting	4.2; 4.4; 4.6; 4.7

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Governance		
34	To help contextualise these disclosures, trustees should concisely describe:	
	■ how the Board and any relevant sub-committees are informed about, assess and manage climate-related risks and opportunities and the frequency at which these discussions take place	4.7
	■ whether they questioned and, where appropriate, challenged the information provided to them by others undertaking governance activities – or advising and assisting with governance, and	4.2; 4.6; 4.7
	■ the rationale for the time and resources they spent on the governance of climate-related risks and opportunities	4.7
35	Trustees should also concisely describe, in relation to those who undertake governance activities, or advise or assist with governance of the Scheme:	
	■ the kind of information provided to them by those persons about their consideration of climate-related risks and opportunities faced by the Scheme, and	4.5; 4.7
	■ the frequency with which this information is provided	4.5; 4.7
36	Trustees should describe the training opportunities they provided for their employees in relation to climate change risks and opportunities. Where trustees identified skills gaps, they may also describe whether they encouraged external advisers to provide training opportunities.	4.6
37	Trustees may wish to provide an organogram or structural diagram in their TCFD report, showing which groups / individual roles have responsibilities for governance of climate-related risks and opportunities. This may include executive officers, in-house teams and / or third parties engaged by the trustees. For the avoidance of doubt, there is no expectation that this would involve disclosing personal data of individuals.	4.5

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Strategy		
92	Trustees must describe in their TCFD report:	
	■ the time periods which the trustees have determined should comprise the short term, medium term and long term	5.1.2
	■ the climate-related risks and opportunities relevant to the Scheme over the time periods that the trustees have identified and the impact of these on the Scheme's investment strategy and, where the Scheme has a funding strategy, the funding strategy	5.2, 5.3, 5.4
	■ the most recent scenarios the trustees have used in their scenario analysis;	5.1.1
	■ the potential impacts on the Scheme's assets and liabilities which the trustees have identified in those scenarios and, if the trustees have not been able to obtain data to identify the potential impacts for all of the assets of the Scheme, why this is the case	5.3, 5.4
	■ the resilience of the Scheme's investment strategy and, where the Scheme has a funding strategy, the funding strategy, in the most recent scenarios the trustees have analysed, and	5.3, 5.4
	■ the rationale for the time and resources they spent on the governance of climate-related risks and opportunities	n/a

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Strategy		
93	Trustees should also describe in their TCFD report:	
	■ their reasons for choosing the scenarios they have used, and	5.1.1
	■ the key assumptions for the scenarios used and the key limitations of the modelling (for example, material simplifications or known under/over estimations), and	5.1.1, 5.3, 5.4
	■ any issues with the data or its analysis which have limited the comprehensiveness of their assessment (see section on "as far as they are able" at Part 2 of the Statutory Guidance, paragraphs 1 to 11 above)	5.1.1, 5.3, 5.4.2, 5.4.3
94	Trustees may include information in their TCFD report on any other aspects of the assessment of their investment strategy and, if they have one, funding strategy and scenario analysis that they consider would be helpful to disclose.	n/a



DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Risk Management		
113	Trustees must describe in their TCFD report the processes they have established for identifying, assessing and managing climate-related risks in relation to the Scheme, and how the processes are integrated within the trustees' overall risk management of the Scheme.	4, 5.1-5.4
114	The report should also include concise information on the following:	4, 5.1, 5.4.4.2
	■ the risk tools the trustees used and the outputs / outcomes of using those particular tools	
	■ how the trustees have identified, assessed and managed both transition and physical risks for the Scheme, and	5.1-5.4
	■ how the trustees' assessment of climate-related risks has impacted the Scheme's prioritisation and management of risks which pose the most significant potential for loss and are most likely to occur	4, 5.3.2, 5.4.4.1
115	Trustees should include information on how, if at all, they have used stewardship to help manage climate-related risks to the Scheme. The TCFD provides brief supplemental guidance on engagement activity and risk.	6.4
116	Disclosing information about how climate-related opportunities are identified, assessed and managed is encouraged as this will add further insights for members and others into the Scheme's overall approach to climate-related risk.	5.4.5

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Metrics and Targets		
158	Trustees must describe in their TCFD report the metrics which they have calculated – absolute emissions metric, emissions intensity metric and an additional climate change metric – and explain any data they have been unable to obtain.	6.1
159	If the trustees have chosen to use a metric which is not recommended in this Guidance, they should explain why.	n/a
160	For all metrics, trustees should concisely explain their methodologies and those of any asset managers or third party service providers used, and their rationale for taking the approach that has been adopted.	6.1
161	When reporting total GHG emissions and Carbon Footprint, trustees should report the proportion of assets for which data was available. Trustees should concisely explain where data was estimated, and should indicate any assumptions that have been made that could impact significantly on the results. Where they have data of uncertain quality, trustees should again concisely explain this.	6.1
162	Where trustees report metrics on only a proportion of the portfolio, they should explain the proportion on which they are reporting.	6.1
163	When reporting total GHG emissions and Carbon Footprint, trustees should set out the Scope 1 and Scope 2 emissions of assets separately from the Scope 3 emissions of assets for each DB section and each popular DC arrangement. Trustees may additionally report the Scope 1 and Scope 2 emissions of assets separately. Emissions should be reported in amount of CO2 equivalent (CO2e). ⁵³	6.2
164	If trustees believe that it is not meaningful, in relation to any metric, to aggregate data across certain asset classes, they should not do so, but should instead report at the most aggregated level which remains meaningful (for example at asset class level). If this approach is necessary, they should also report the proportions of the Scheme assets associated with each reported metric (in the above example, the proportion of the portfolio represented by each asset class).	6.2

DWP Statutory Guidance Reference	Reporting Requirement	Report Section
Metrics and Targets		
165	Trustees may choose to disclose some or all of their chosen metrics against a relevant benchmark to identify the relative performance of the portfolio.	n/a
175	Trustees must describe in their TCFD report the target they have set, and the performance of the Scheme against the target.	6.1, 6.2
176	Trustees should report concisely on the steps they are taking to achieve the target or targets.	6.3, 6.4
177	Trustees should provide a concise description of the methodology used to measure performance against the target or targets, including any estimations relied upon in measuring progress.	6.1
178	Where trustees have replaced a target, they should briefly explain why. Similarly, where a target has been missed, trustees should offer a brief explanation. Such explanations could help savers and others understand the trustees' conclusions on the events or circumstances that made the target unachievable or not in members' interests.	n/a

⁵³ The Statutory Guidance recommends that Trustees publish GHG metrics for DC schemes at the same level as for the climate scenario analysis (i.e. to provide metrics for each “popular arrangement” (defined as an arrangement with £100m or more invested) offered by the Scheme). We, however, find it beneficial to aggregate, review, and report GHG data at a pooled fund level, rather than the arrangement level. Where a TCFD report deviates from a recommendation in the Statutory Guidance, the report “should describe concisely the reasons for doing so in the relevant section of their TCFD Report”. This footnote details the reasons for doing so.

Aggregating, reviewing, and reporting at the pooled fund level has the following advantages:

- Consistency: the Trustee considers Scheme-wide and DB GHG metrics at the pooled fund level. Doing so for DC arrangements as well achieves consistency.
- Simplicity: different DB sections and DC arrangements are invested in approved pooled funds, and considering GHG data for the discrete number of pooled funds offered by the Trustee is simpler than considering GHG data for all sections and arrangements.
- Relation to climate risk management framework: climate risks are managed in a way that is tailored to the pooled fund (as noted in [section 4.4](#) above the ESG Risk Directive is detailed at a pooled fund level).
- Relation to Net Zero Plan/GHG targets: the Trustee’s GHG targets and Railpen’s Net Zero Plan include a 50% reduction in financed emissions by 2030. The means by which GHG emissions reductions can be achieved depend on the pooled fund (especially the underlying asset classes within the pooled fund), rather than whether the emissions are in one DC arrangement or another. So detailing GHG emissions by pooled fund is more efficient for the purposes of determining the GHG emissions reduction activities to be carried out.

Appendix B: Further information in relation to selected climate metrics

Total Greenhouse Gas Emissions

What is it?

This metric measures the total greenhouse gas emissions attributable to a portfolio. Trustees are recommended to report this number, covering at least scopes 1 and 2 GHGs.

Equation

$$\sum_i^n \left(\frac{\text{value of investment}}{\text{enterprise value incl. cash}_i} * (\text{scope 1} + \text{scope 2 GHGs})_i \right)$$

Equation in Plain English

To calculate this metric, you assess the proportion of a company you own, let's say 1%. Then you work out the company's annual GHG emissions, let's say 100 tonnes of CO2e. Then you apportion yourself your share of the company's emissions, in this case 1 tonne of CO2e. You repeat this exercise for all the companies in the portfolio, and add up all the apportioned emissions.

Advantages over other metrics	Potential drawbacks
Simple to calculate	No normalisation between funds. The larger the investor, the larger the total emissions figure
Easy to communicate	Difficult to translate into exposure to climate risk
Enables trustees to set a baseline for climate action and to understand the climate impact of their investments	Might not be decision-useful

Carbon Footprint

What is it?

Also referred to as Financed Emissions, this is the most common measure of portfolio carbon footprint. The interpretation of the metric is "the amount of GHGs emitted for each £m invested in the portfolio". Considering public equities and public fixed income, Railpen's carbon footprint was c70 tonnes GHGs per £m invested at the end of 2020. Trustees are recommended to report this metric.

Equation

$$\frac{\sum_i^n \left(\frac{\text{value of investment}}{\text{enterprise value incl. cash}_i} * (\text{scope 1} + \text{scope 2 GHGs})_i \right)}{\sum \text{Assets under management}}$$

Equation in Plain English

To calculate this metric, you follow the same steps as for Total Greenhouse Gas Emissions (see above), then divide by your total AUM in £m.

Advantages over other metrics	Potential drawbacks
Can be used to compare asset classes and portfolios to one another and to a benchmark	Uses a Scheme's proportional share of equity and debt – an increase in share prices, all else equal, would result in a decrease in the Scheme's total emissions
Using the portfolio market value to normalise data is fairly intuitive to investors	Metric does not effectively account for differences in carbon efficiency across companies which are vastly different in size
Metric allows for portfolio decomposition and attribution analysis	

Portfolio alignment metric: proportion of portfolio invested in companies ‘not aligned’ to net zero

What is it?

Portfolio alignment metrics provide a forward-looking metric of carbon exposure that can be applied to a wide range of industries, companies and asset classes. Such metrics estimate expected future emissions associated with a given investment portfolio, fund or investment strategy. Portfolio alignment disclosure using binary targets can help trustees make a forward-looking assessment of an asset owner portfolio’s exposure to climate-related risks, their ability to capitalise on opportunities in the low-carbon transition over time, and overall investment strategy. Trustees must select from a menu of “additional climate change metrics”, of which the Portfolio Alignment Metric is one option.

Equation

$$\sum \textit{Weight of portfolio companies assessed as “aligning” or “fully aligned”}$$

Equation in Plain English

To calculate this metric you need to assess the ‘alignment’ status (i.e. alignment to a net zero outcome) of each portfolio company. Then you need to add the weights of the companies categorised as either ‘aligning’ or ‘fully aligned’.

Advantages over other metrics	Potential drawbacks
Lack of widely available, high quality, historical climate-related information, creates the need for forward-looking metrics	Simple metric
Addressing the increasing regulatory expectations - forward-looking understanding of climate-related risk	Further work will be needed to improve forward looking quality
Portfolio alignment metric allows for a simple representation of extent of climate risk across portfolios and incorporate ongoing changes in company alignment through engagement and climate data developments	

Proportion of portfolio where companies are being engaged on climate issues (process-based metric)

What is it?

Engagement is a key route through which trustees can reduce their exposure to climate change risk. The investments they make give them not just voting rights but significant influence over the direction of a company. Asset managers should be using this influence to manage the Scheme’s exposure to climate change risks and opportunities, highlighting any concerns about the direction of a firm during engagement activity that they undertake. This metric allows a trustee to assess the extent to which an asset manager is prioritising engagement and/or voting on the topic of climate change. Selection of this metric is recommended in the Pensions Climate Risk Industry Group’s (PCRIG) definition of best practice.

Equation

$$\sum \textit{Weight of portfolio companies being engaged on climate change}$$

Equation in Plain English

To calculate this metric you need to identify all companies in the portfolio being engaged on climate change. Then you need to add the weights of the companies that are under engagement.

Advantages over other metrics	Potential drawbacks
Does not require data	Binary measure of engagement with no measure of influence on company direction
Useful for monitoring asset managers	Can be subject to 'greenwashing'



Appendix C: MSCI disclaimer

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