

Task Force on Climate-related Financial Disclosures Report 2022



About the Board's TCFD Report

The Church of England Pensions Board is pleased to publish its third report aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and its first standalone climate change report. This report explains the governance arrangements and actions taken by the Pensions Board's Trustees in identifying, assessing and managing climate-related risks and opportunities. The executive summary pages are intended to be accessible to Scheme members without any specialist or technical climate expertise, whereas the length and depth of this report is intended to fulfil 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 TCFD.¹

The TCFD is a market-driven initiative, set up by the Financial Stability Board (FSB) to develop a set of recommendations for consistent climate risk disclosure. Its recommendations are structured around four sections, Governance, Strategy, Risk Management, and Metrics and Targets, and the Board has voluntarily reported in line with the TCFD framework since 2020.

The Scheme covered by this report is the Church of England Funded Pensions Scheme (CEFPS), whose members are Clergy of the Church of England. It is a defined benefit scheme, with assets under management of £2.4bn as of 31 December 2022. All data in this report is as of 31 December 2022 unless otherwise stated.

The Church of England Pensions Board and its asset managers carry out significant climate-related activity, based on the Trustees' 'Statement of Investment

Principles', which includes the statement that "The Trustees recognise climate change as a major financial, social and ethical risk, and one that has potential to impact gravely on the financial well-being of the members of its schemes, as well as their quality of life in retirement" (CEFPS Statement of Investment Principles 2022). Climate change has been one of two stewardship priority topics for the Pensions Board since 2018.

While the CEFPS is the only scheme in scope of the statutory requirements, the Board has previously reported on the climate governance and actions relating to the Board's common investment fund, which serves the DB Schemes and sections administered by the Board, namely the CEFPS, the Church Workers' Pension Fund Defined Benefit Scheme, the Church Workers' Pension Fund Pension Builder schemes (2014 and classic), and the Church Administrators Pension Fund Defined Benefit Scheme. Though they fall outside the regulatory requirement identified above due to their size, much of this report also applies to those schemes (due to the nature of the common fund), and the Board's climate-related stewardship governance and actions apply to and are conducted in the interests of those schemes' members alongside CEFPS. The scenario analysis and stress testing detailed below is specific to the CEFPS.



This report sets out how the Board's trustees are taking steps to understand and respond to climate change, specifically in relation to our largest scheme (for clergy: CEFPS). By taking action to address climate change, we can protect our members' retirement income, and we can also help to build a more sustainable future.



Summary for members

Introduction

Climate change is one of the most significant risks facing the world today. It is also a major risk to pension schemes, which rely on investments to provide retirement income for members. The Regulator and Government expect Trustees to demonstrate they have understood the risks and opportunities presented by climate change. This report sets out how the CEFPS is taking steps to understand and respond to climate change. By taking action to address climate change, we can protect our members' retirement income, and we can also help to build a more sustainable future.

This report shows how climate change is considered and acted upon, from the level of the Board, through its committees and executives, through investment decision-making and stewardship activity (including engagement and voting at company annual general meetings). We report on initiatives like the Transition Pathway Initiative (TPI), that we chair and has generated support from investors with over \$50 trillion of assets under management. Our stewardship initiatives are reported in more detail annually in our Stewardship Report, which is available on the Board's webpages [here](#).

Understanding the future

One of the core tools required by the regulations and reported below, is climate scenario analysis and stress testing. This involves creating a range of different possible future scenarios, based on how climate change might unfold, and then testing the impact of those futures on the global economy and our portfolio. This is a complex and imprecise business with many assumptions underpinning each scenario. However, the outcomes can help Trustees and the Executive understand the potential impact of climate change in general terms. In our case, in rapid

and orderly transition climate scenarios the way we invest creates a small positive outcome over the long term, and in the failed transition scenario (where climate change is left unchecked and global warming exceeds 4°C above pre-industrial levels by 2100), the Scheme's funding position is significantly negatively impacted; it is 33% worse than a relevant baseline, and becomes under-funded. This clearly shows the financial interest we have in driving the climate transition to a low carbon economy. We should be aware that climate modelling into scenarios is still very much in development and could underplay climate impacts. To mitigate this we engage in dialogue with peers, regulators and other key experts to ensure we are well placed to understand any limitations.

Measuring climate performance

This report also includes details of metrics the Board uses to monitor climate performance over time. These metrics are only part of the story because we focus our efforts on engagement with companies we own and sectors we are invested in, encouraging them to change their emissions over time (we want to influence change in the real world, rather than just avoiding emissions in our own portfolio). That said, the metrics show a positive picture, and a steady decarbonisation, ahead of our target since the baseline year (2019). Our portfolio is also, according to a 'portfolio alignment' methodology detailed below, better aligned to the climate transition (over the short, medium, and long term) than relevant benchmarks. This is no accident and reflects intentional steps the Board has taken in developing TPI and integrating that insight into the passive mandate and active managers.

Future reports

Overall, this is a report, rather than an assessment. It shows the governance structures, strategies, risk management approaches and metrics and targets for the clergy scheme in 2022. It does not include full details of the collaborations we have built and contribute to, nor the outcomes of our engagement (see our Stewardship Report for these). Also, the metrics and analysis are limited in several ways: data availability, methodological challenges and the difficulty investors have in interpreting the way their portfolio impacts on and is impacted by the future, all contribute to the challenge. As we continue to report in future years, this disclosure will improve in breadth, depth and clarity. Nonetheless, we hope that this report will give members a sense of the amount of time and effort the Board is putting into understanding and acting on climate change.

Why is climate risk important to pension funds?

The Pensions Board's trustees have selected climate change as a key priority for risk management and our ethical and responsible investment approach. This means the Trustees and executives prioritise the integration of climate considerations in investment decision-making and undertake dedicated and impactful stewardship with portfolio companies. It also means the Pensions Board dedicates significant efforts to pursuing strategic projects to limit the impacts of climate change, such as our strategic focus on mining and corporate climate lobbying as two examples.

The Board's climate change policy notes that "greenhouse gas emissions are the most significant contributor to changes in the world's climate, and that urgent action is needed if we are to avert the worst consequences of climate change on ecosystems, and on present and future generations... Climate change is a present day reality and already leading to significant impacts on the poorest and most marginalised in the world. The poorest are least able to adapt to climate-related extremes, yet suffer disproportionately the ecological, social and economic consequences that flow from these changes".²

Specific risks that can manifest from climate include:

- Death, injury, ill-health, or disrupted livelihoods in low-lying coastal zones, in small island developing states and in other small islands due to storm surges, coastal flooding and sea level rise.
- Severe ill-health and disrupted livelihoods for large urban populations due to inland flooding in some regions.

- Breakdown of infrastructure networks and critical services such as electricity, water supply, and health and emergency services as a result of extreme weather events.
- Increased rates of mortality and morbidity during periods of extreme heat, particularly for vulnerable urban populations and those working outdoors in urban or rural areas.
- Food insecurity and the breakdown of food systems as a result of warming, drought, flooding, and precipitation variability and extremes, particularly for poorer populations in urban and rural settings.
- Loss of rural livelihoods and income due to insufficient access to drinking and irrigation water and reduced agricultural productivity, particularly for farmers and pastoralists with minimal capital in semi-arid regions.
- Loss of marine and coastal ecosystems, biodiversity, and the ecosystem goods, functions and services they provide for coastal livelihoods, especially for fishing communities in the tropics and the Arctic.
- Loss of terrestrial and inland water ecosystems, biodiversity, and the ecosystem goods, functions and services they provide for livelihoods.³

The risks and related information detailed throughout this report provide the rationale for the time and resources the Trustees have spent on the governance of climate-related risks and opportunities.

What is transition and physical risk?	Examples
<p>Transition risk relates to the financial implications of the rapid required transition to a low carbon economy.</p>	<ul style="list-style-type: none"> • Technology change • Policy and regulatory change • Opportunities (e.g. critical minerals, green infrastructure) arising from the transition
<p>Physical risk relates to the physical impacts (direct and indirect) of extreme weather and climate changes arising from global warming.</p>	<ul style="list-style-type: none"> • Chronic risks such as water and food insecurity • Acute damage to infrastructure from storm, fire or flooding

Why is climate risk important to pension funds? continued

WHAT DRIVES INVESTMENT-RELATED CLIMATE RISK?

From an investment perspective, the Trustees view climate change as creating both systemic and idiosyncratic risks and opportunities. That is, risks to the entire global economic system, as well as individual companies within that system.

Broadly speaking, on the negative side, there is risk that unchecked climate change will damage the global economy, and risk that individual companies in which we invest will be worse off due to valuation changes, regulatory burden, stranded assets, acute (e.g. storms, fires) and chronic (e.g. water stress) risks manifesting. We believe that investment markets are not fully pricing in climate change risks, due to a range of systemic obstacles including the tragedy of the horizons (time horizon mismatches between capital markets and our beneficiaries climate-related interests), complexity,

pricing failures, behavioural economics, and slow adoption of effective stewardship among regulators and within capital markets.

The Board's approach to stewardship directly addresses a number of these obstacles, for example the TPI providing analytical clarity and comparability, the integration of TPI analysis changing incentives, investor networks galvanising collaboration, and the development of a global corporate climate lobbying standard contributing to improved public policy dialogue through improved alignment between corporations and their industry associations. The rapid transition to a low carbon economy may also benefit a subset of portfolio companies, particularly those offering climate solutions, critical transition minerals and green infrastructure.

Governance

Roles and responsibilities

The Board of Trustees has responsibility for responsible investment, and this includes oversight of climate-related risks and opportunities relevant to the Schemes. The Investment Committee (a sub-committee of the Board) supports the full Board of Trustees by making recommendations and by overseeing the implementation of the Board's investment and climate strategies. The Chief Executive Officer, Chief Investment Officer and Chief Responsible Investment Officer, are the lead executives responsible for making sure appropriate strategies are in place to understand, identify, measure, monitor, control, and report risks and opportunities related to climate change, and responsible investment concerns more broadly. They are supported by management, which includes in-house responsible investment specialists, who advise the Board and its Investment Committee with standing agenda items at meetings, and regularly review the Board's approach and implementation of relevant strategies.

How the Board assesses and manages climate change risks

The Board of Trustees receives updates from a number of parties on climate-related risks and opportunities:

- The Investment Committee provides updates to the Board at every meeting as a standing agenda item, which includes a review of progress against the Board's stated objectives on responsible investment, asset manager climate-related assessments, and company engagements. It also updates on investment strategy on an annual basis, and scenario analysis biannually.

- The Church of England Ethical Investment Advisory Group (EIAG) provides ethical investment advice to the Board and Investment Committee, and has committed to review their climate advice annually.
- Where appropriate, the Board engages consultants to produce detailed work on climate change to better understand risks and opportunities. For example, the Board has worked with Mercer, Ortec Finance and Cambridge Econometrics (on climate change scenario analysis), LCP/the Scheme Actuary (who provide advice on climate change risks/impacts upon CEFPS's funding strategy and the triennial actuarial Scheme valuations), MSCI (carbon footprint data), the Transition Pathway Initiative (company-level climate assessments and asset allocation via the TPI Climate Transition Index), and Cardano (employer covenant climate change scenario analysis).
- External climate change experts also provide relevant training and further 'deep dives', for example on regulatory requirements related to TCFD, and undertook a detailed session on scenario analysis (in 2022).

The Board of Trustees reviews specific data via specific indicators established by the Board to track and monitor progress on climate change within the Scheme. These metrics are covered in more detail in section 4.

How management assesses and manages climate change risks

The Trustees have considered and provide the following rationale for the management time and resources spent on climate change: Climate change is recognised in our Schemes' Statement of Investment Principles and Beliefs as "a major financial, social, and ethical risk" for trustees

and executives to consider, and is the topic of a Board-approved dedicated Ethical Investment Policy. As such it is appropriately considered a key stewardship priority, demanding a significant proportion of the investment team's time and effort. The Board's Climate Change Policy is available [here](#).

The Board of Trustees has developed significant in-house expertise within the management team on climate change, and executives' various memberships, global leadership positions, and collaborative initiatives present significant opportunities for ongoing training and skills development. Relevant initiatives include:

- Management participate in and to a large extent have leadership roles in initiatives such as Transition Pathway Initiative (TPI), The Paris Aligned Investment Initiative and its Net Zero Investment Framework (NZIF), the Powering Past Coal Coalition, and Financing the Just Transition Alliance.
- Management and team members regularly chair investor dialogues between high carbon sectors and investors.
- Formal training such as courses by the Principles for Responsible Investment and the CFA institute are supported with paid study leave where appropriate.

The process by which the Trustees satisfy themselves that the CEO, CIO, CRIO, relevant 'in-house' staff and advisors take adequate steps to identify, assess, and manage the climate risks and opportunities includes the steps set out in this governance section, and includes formally reviewing and discussing reports and detailed presentations from executives and external advisors at Investment Committee and Board meetings.

Governance continued

Establishing a culture of climate risk awareness

The Board of Trustees ensure staff are informed on progress against climate objectives. In climate change meetings and presentations, where management presents, external advisors are expected to challenge and comment, and when advisors present, management is expected to challenge and comment.

Process of selecting advisors and providing data

Advisors are selected through the Board's established procurement processes, to ensure the relevant competency/expertise and value for money. For the investment advisor, advice on climate change is explicitly mentioned in the Advisors' formal documentation ('Strategic Objectives for Investment Consultancy Services'), the investment advisor is reviewed against their strategic objectives annually. Advisors undertaking scenario analysis were provided with liability and asset allocation information during the Scheme year (2022), carbon footprint data was calculated on the basis of holdings data from the Board's Custodian, also during the Scheme year (2022). The Board most recently conducted, and the Audit Committee reviewed audits on its climate change approach and on ethical compliance in 2020, receiving the highest levels of assurance: 'substantial' and 'full'. Some minor process improvements were identified and implemented, including policy document formatting.

Plans for the next reporting period

The Board plans to undertake scenario analysis at least every three years, or at the discretion of the Investment Committee, which monitors other climate information on an ongoing basis (quarterly).

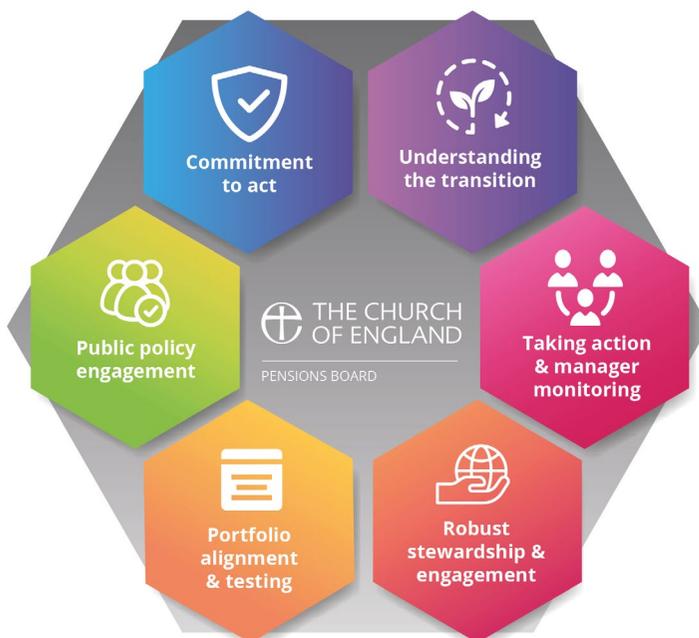


Strategy

Our strategy to incorporate climate risks and opportunities

The Church of England Pensions Board's strategy to climate is focused on driving a transition of the global economy to net zero emissions through using the levers at our disposal as a responsible investor and stakeholder in the operations of the Scheme's employers. We see climate change as a significant risk to the value of pensions but also to the future of the planet, the communities our beneficiaries serve, and our society. Our focus is therefore to drive changes in the real economy via improving policy and industry action aligned with a swift, fair, just transition to net zero by 2050. Our strategy includes six levers: our commitment to act, understanding the transition, taking action and manager monitoring, public policy engagement, portfolio alignment and testing, and robust stewardship and engagement.

APPLYING OUR INTERCONNECTED STRATEGIC APPROACH TO CLIMATE CHANGE



Commitment to act

The Board remains committed to Net Zero by 2050, or sooner.



Understanding the transition

The Board continues to Chair the TPI (which in 2022 saw the launch of the Global Climate Transition Centre at the London School of Economics), leads developments in Net Zero investor practice through the Paris Aligned Investor Initiative, which we Chair, and has convened UK pension funds to develop principles for the just transition in emerging market investments.



Public policy engagement

In addition to supporting the public policy engagement of the Institutional Investors Group on Climate Change, in 2022 we launched the climate corporate lobbying standard in collaboration with a large group of investors.



Taking action and manager monitoring

We continue to monitor climate characteristics of the portfolio at an asset manager level, and engage with them to enhance their approach to climate.



Portfolio alignment and testing

A summary of our 2022 climate scenario analysis, stress testing and alignment are included below.



Robust stewardship and engagement

A list of climate-related initiatives is included on [page 17](#). In addition to which, we engage companies directly, voting on the basis of climate assessments at company AGMs and, for example, encouraging companies to publish corporate climate lobbying reviews. We also integrate climate stewardship into our passive investments, through the FTSE TPI Climate Transition Index, which we helped to design and is based on TPI data.

Climate scenario analysis

Stress testing our strategy using climate scenario analysis

The Pensions Board has been carefully considering and testing the impact of climate risks and opportunities. For example, we partnered with Mercer as part of their 'Future Makers Working Group' to produce the report *Investing in a Time of Climate Change* in 2015⁴ and The Sequel report in 2019⁵ both critical reports in supporting the investment industry to understand the impact of climate change on portfolios. We undertook climate scenario analysis and stress testing in 2015 and 2019, and in 2022.

What drives investment-related climate risk?

From an investment perspective, the Trustees view climate change as creating both systemic and idiosyncratic risks and opportunities. That is, risks to the entire global economic system, as well as individual companies within that system. Broadly speaking, on the negative side, there is risk that unchecked climate change will damage the global economy, and risk that individual companies in which we invest will be worse off due to valuation changes, regulatory burden, stranded assets, acute (e.g. storms, fires) and chronic (e.g. water stress) risks manifesting. We believe that investment markets are not fully pricing in climate change risks, due to a range of systemic obstacles including the tragedy of the horizons (time horizon mismatches between capital markets and our beneficiaries climate-related interests), complexity, pricing failures, behavioural economics, and slow adoption of effective stewardship among regulators and within capital markets.

The Board's approach to stewardship directly addresses a number of these obstacles, for example the TPI providing analytical clarity and comparability, the integration of TPI analysis changing incentives, investor networks galvanising collaboration, and the development of a global corporate

climate lobbying standard contributing to improved public policy dialogue through improved alignment between corporations and their industry associations. The rapid transition to a low carbon economy may also benefit a subset of portfolio companies, particularly those offering climate solutions, critical transition minerals and green infrastructure.

Climate scenario analysis – the scenarios

In accordance with paragraphs six and seven of the Schedule of the Regulations,⁶ the Trustees have chosen the following scenarios (and their key assumptions, which are described below), because they test potential impacts on, and resilience of, the Schemes' investments and funding position. The Regulations specify that at least two scenarios are modelled, and that they include at least one scenario that limits the global average temperature increase to between 1.5 degrees and 2 degrees Celsius above pre-industrial levels. The trustees have chosen to model three scenarios in order to cover high and low ambition outcomes, along with orderly and disorderly transitions. Due to the complexity of the modelling involved, and the significant number of variables, assumptions, and estimates involved, the trustees have chosen to report at a relatively high level of analysis.

- **A Rapid Transition** – Average temperature increase of 1.5°C by 2100. Sudden divestments across multiple securities in 2025 to align portfolios to the Paris Agreement goals which have disruptive effects on financial markets with sudden repricing followed by stranded assets and a sentiment shock. Following this shock there is a partial recovery. Long-term physical risks are reduced but deviations from the present climate are still expected.

- **An Orderly Transition** – Average temperature increase of less than 2.0°C by 2100. Political and social organisations act quickly and predictably to implement the recommendations of the Paris Agreement to limit global warming to below 2°C. Transition impacts do occur but are relatively muted across the broad market.
- **A Failed Transition** – Average temperature increase above 4°C by 2100. The world fails to co-ordinate a transition to a low carbon economy and global warming exceeds 4°C above pre-industrial levels by 2100. Physical climate impacts cause large reductions in economic productivity and increasing impacts from extreme weather events. These are reflected in repricing events in the late 2020s and late 2030s.⁷ Limited transition risks over and above existing commitments and policies.

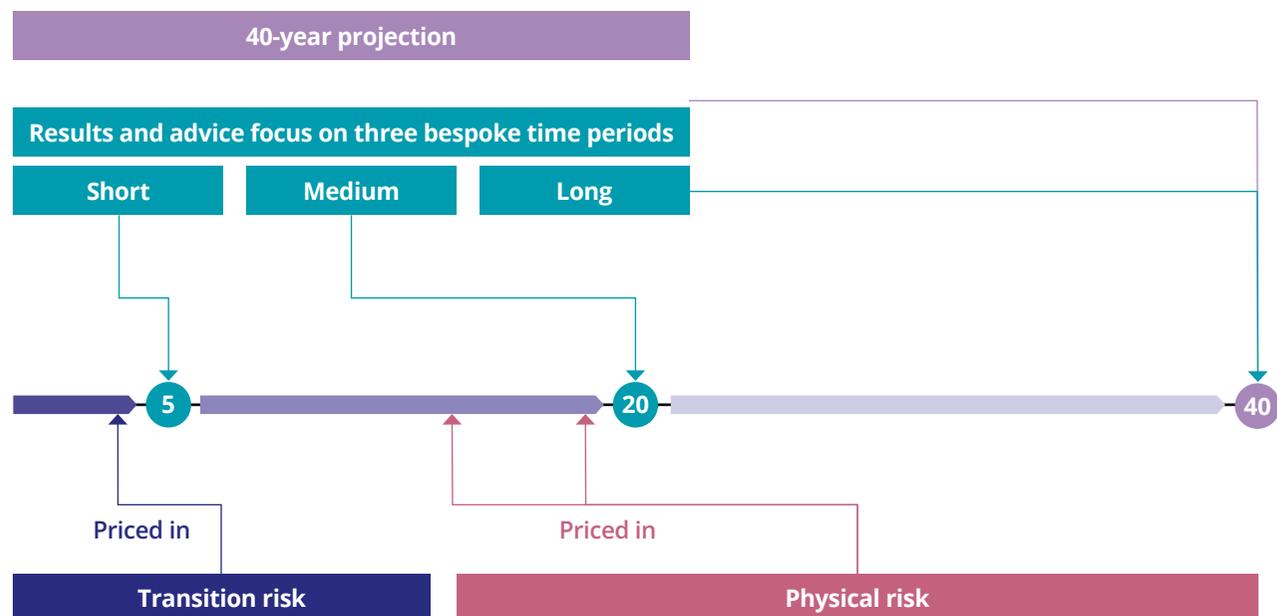
In summary, over shorter time frames (<5 years), transition risk tends to dominate while over longer time frames (20-40 years) physical risk will be the key driver of climate impacts on the Scheme. All of the climate scenarios included in the Strategy Section 'price-in' transition risk over the short term, and two separate physical risk-based shocks over the medium term. The transition risk shock is more pronounced under the 'rapid transition' scenario and the physical risk shocks are more pronounced in the 'failed transition' scenario.

Climate scenario analysis continued

In accordance with paragraph 4 of the Schedule of the Regulations, the Trustees have determined, taking into account the Schemes' liabilities and obligations, that the appropriate timeframes are: Short-term (five years), Medium-term (20 years), and Long-term (40 years). The modelling assumes that at a market level orderly transition risks are reasonably priced in, however longer-term physical risks are more likely to be mispriced. Transition risks remain at sector level and at the market level due to the potential for more extreme transition scenarios to occur. The climate scenario analysis described below applies these timeframes in relation to the Scheme's assets, liabilities and covenant.

The modelled risks and their time frames are illustrated in this diagram:

THE MODELLED RISKS AND THEIR TIMEFRAMES



Climate scenario analysis continued

Results of climate scenario analysis

In accordance with paragraphs 6 and 7 of the Schedule of the Regulations, the following section describes the potential impacts on the scheme's assets and liabilities, identified in climate scenario modelling and stress testing during 2022.

This analysis is based on the Scheme's 2022 asset allocation, and all asset classes are in scope.

The climate model underlying this analysis is the Cambridge Econometrics E3ME climate model, and the baseline Mercer has provided is a 'climate aware' baseline, comprising a mixture of Orderly Transition (40%), Rapid Transition (10%), Failed Transition (10%), and low impact scenarios, which include the potential for the transition to have an overall positive impact (40%).

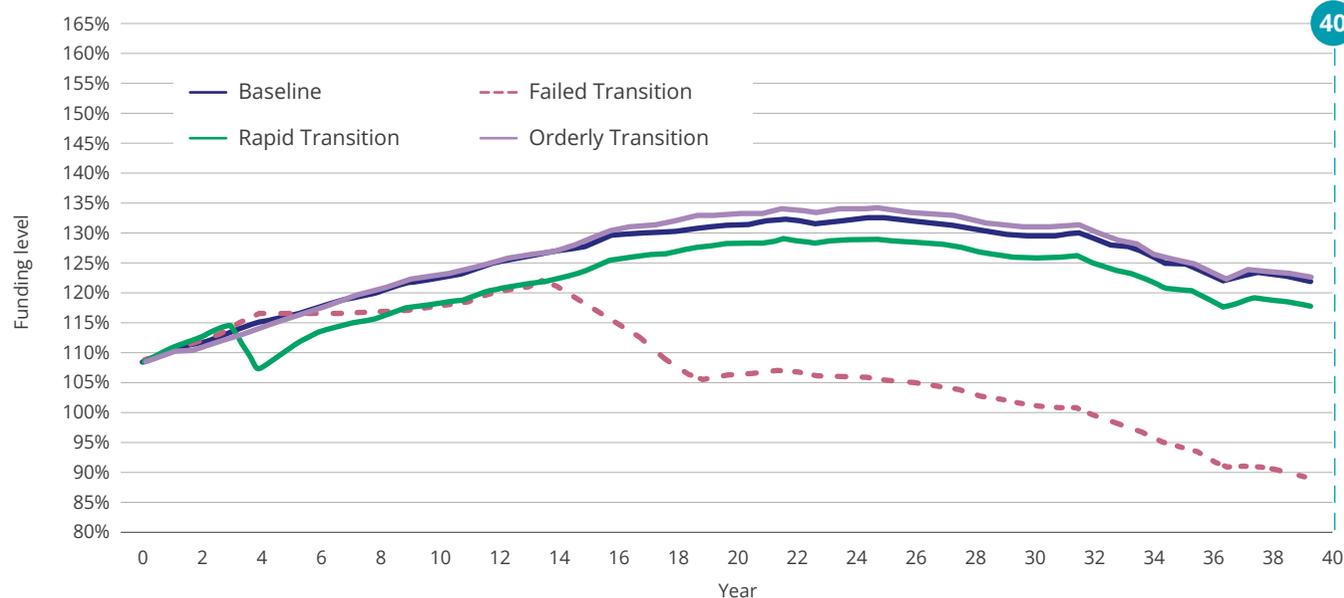
In relation to the assets and modelled funding position of the Clergy Scheme (CEFPS), the Board noted the following highlights:

- The Board's significant allocations to sustainable investments limit the climate impact under a Rapid Transition scenario e.g. a funding level 1.6% higher over five years for the long-term strategic asset allocation (SAA) relative to a comparator SAA without sustainable tilts. Over the medium and long term, the failed transition scenario generates the most significant financial impact, incurring investment return losses between 0.5 and 1% pa. Over a 40-year period, the financial losses arising from a failed transition are estimated to equate to a loss of around a third of the Board's assets relative to a baseline. This is consistent with previous climate scenario analysis undertaken by the Board, and demonstrates a clear fiduciary interest in avoiding a Failed Transition.

CEFPS ASSET-ONLY ANALYSIS CUMULATIVE ANNUALISED RETURNS



FUNDING LEVEL ANALYSIS (LONG-TERM PROJECTION)



Climate scenario analysis continued

- Comparing the Scheme's SAA (which includes allocations modelled as 'sustainable' and with some degree of climate awareness factored in) to a similar SAA without any sustainable or climate-adjusted allocations is instructive as it suggests the position of the Scheme relative to a peer without any climate-related investment decision-making. Across orderly and rapid transition scenarios, our allocations to climate and sustainability investments generate a positive impact, reducing the climate sensitivity of the funding level, with a funding level premium of between +0.4% and +2.1%. Under the Failed Transition Scenario, our sustainability tilt creates a funding level discount of between -0.2% and -0.6% (i.e. a small increase in climate sensitivity of the funding level).
- Though there is a risk of 'spurious accuracy' given the long-term nature of the projection and layers of assumptions, and there is no adjustment made to reflect the dynamic nature of asset allocation (the analysis is based on a snapshot SAA that endures 40 years) the trustees consider that this analysis demonstrates (further) fiduciary interest in avoiding a failed transition.
- A Failed Transition would have a drastic long-term negative impact on the Scheme's financial position, regardless of whether the Board invests sustainably or non-sustainably, since both result in a funding level nearly 33% lower than the Baseline. This gives a clear fiduciary motivation for the Board to seek to avoid a Failed Transition by allocating to sustainable assets and continuing to use its significant influence with global decision makers.

- The consideration of climate risks and opportunities is incorporated into funding strategy decision-making, principally in the context of the CEFPS's surplus. In this context, the Board's view is that there is a good level of risk mitigation in place, and climate-related opportunities can be explored.

Covenant-related analysis and results

While Mercer modelled the impact of the three climate scenarios on the Scheme's funding position, in 2022 the Board commissioned further funding-related analysis, modelling effects on the Scheme covenants. This involved a qualitative assessment of 10 risk categories:

CORRELATION OF RISK FACTORS AND SPONSORS

Identified climate risk factors are unlikely to impact the Sponsors uniformly, given their differing exposure to assets classes, donations and inflation; Broadly Balanced DBFs appear most exposed to climate risk impacts, while property and inflation are clear risks for the majority of Sponsors.

Risk factor	Asset Reliant DBF	Asset Rich DBF	Broadly Balanced DBF	NCI Reliant DBF	Church Commissioners
GHG emissions	●	●	●	●	●
Access to renewable energy	●	●	●	●	●
Operational property	●	●	●	●	●
Investment property	●	●	●	●	●
Longevity of congregation	●	●	●	●	●
Longevity of clergy	●	●	●	●	●
Migration	●	●	●	●	●
Environmentally friendly trends	●	●	●	●	●
Donations and parish share	●	●	●	●	●
Inflation	●	●	●	●	●

- Limited expected exposure
- Medium expected exposure
- High expected exposure

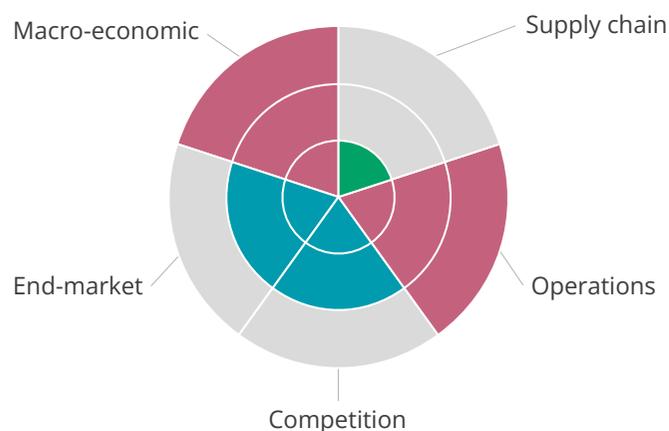
Climate scenario analysis continued

On the basis of how the Scheme's overall sponsor covenant is supported by the individual Sponsors, and considering the potential manifestation of these risk factors over the short, medium and long term, Cardano made the following assessment, which the Board has taken into consideration:

ASSESSED POTENTIAL BUSINESS RISK OVER TIME

	Near-term (5 years)	Mid-term (20 years)	Long-term (40 years)
Rapid	● Medium risk	● Medium risk	● Medium risk
Orderly	● Lower risk	● Medium risk	● Medium risk
Failed	● Medium risk	● Higher risk	● Higher risk

TRANSMISSION CHANNEL EXPOSURE IN FAILED TRANSITION SCENARIO



Overall, over the medium and long term Cardano identify 'medium risk' to the covenant under rapid and orderly transition scenarios, and 'higher risk' in a failed transition scenario.

The key driver over the short term is the cost of aligning property to net zero. Based on the Sponsors' total operational property value (£3,271m) and the average emissions of a household (8.1tCO₂ per £292,000 property), the potential cost Cardano calculate of offsetting all emissions could range from c.\$6m to c.\$68m per annum. This is treated as a potential strain to the sponsors. We note the 2022 announcements from the Church Commissioners which release funding to improve operational emissions across the Church of England. This additional net zero funding was not factored into the covenant analysis.

Over the medium and long term, macro-economic and physical risk-based impacts dominate. The analysis identifies that three of the five largest Responsible Bodies (excluding the Church Commissioners) are expected to be exposed to both flooding and extreme heatwaves by 2050.

This analysis coheres with Mercer's analysis that the Board operates under strong fiduciary reasons to avoid the failed transition scenario, and that the investment and funding strategies are more resilient under rapid and orderly transition scenarios.

The Trustees have noted a number of recommendations made by Cardano in relation to developing the analysis, including a suggestion that the Board may wish to undertake an assessment of the impact of climate change on mortality, as this is a key component of Scheme liabilities and the covenant of the Sponsors. The funding position agreed at the December 2021 valuation was based on mortality assumptions that have climate

information incorporated into them in line with LCP's central assumptions.

Limitations of climate scenario analysis

The Trustees note that the multi-dimensional nature of climate change makes it challenging to form a reliable comprehensive view as to which risks and opportunities will affect the Scheme's investments directly. Nor is it easy to identify which climate scenario pathway the global economy will follow. The following limitations (which might apply to the investment, funding, and/or covenant scenario analysis undertaken) were considered:

- Climate risks are manifested in the form of economic shocks/impairments which may not fully account for the full systemic nature of the risks posed by climate change. There are a range of risks that it is not possible to model and/or are not included in the analysis. These include for example intersecting risks (where overlapping/intersecting impacts would cause increased harm), and cascading risks (where the realisation of some climate-related impact acts as a tipping point which exacerbates some future risks and changes the set of possible outcomes for the worse), both of which have the potential to multiply impacts in particular locations, affecting sectors or regions.
- **Scenario uncertainty:** Any climate scenario only reflects one possible way to achieve a certain temperature goal, while in reality many different scenarios are possible for the same temperature outcome.
- **Model uncertainty:** Different models lead to different results, due to different model structure and assumptions.

Climate scenario analysis continued

- **Uncertainty around assumptions:** For example, ambitious scenarios depend on future (negative emissions) technologies such as carbon capture and storage.
- **Gaps:** On the other hand, certain necessary changes to achieve zero emissions are currently not included in most models, such as changes in lifestyle (e.g. plant-based diets) or economic systems (e.g. circular economy). Furthermore, certain high-risk impacts cannot be covered in most models, such as impacts of sea level rise, migration, health and tipping points in the climate system.
- **Limitations of the macro-economic model used (E3ME):**
 - Land use is not included; therefore, high use of Bioenergy and Carbon Capture and Storage (BECCS) in the energy mix is modelled to offset hard-to-abate emissions. Note that fossil fuels + CCS results in zero emissions, while bioenergy + CCS results in negative emissions.
 - E3ME is an econometric model, so it can only include technologies that already exist, and where sufficient data is available to make assumptions on future changing costs.
- Liability projections allow for interest rate and inflation impacts across the scenarios. To the extent interest rate and inflation exposures are unhedged, this will impact funding level projections.
- Any assumptions underlying the Liability Benchmark Portfolio regarding financial (e.g. RPI/CPI wedge) and demographic assumptions (e.g. lack of transfers and long-term improvements in mortality) are expected to play out as expected.
- For the avoidance of doubt, the analysis presented in this report does not take into account scenario specific impacts upon longevity. Initial research commissioned by Mercer suggests that climate impacts, solely from temperature changes (e.g. hot/cold related deaths), are unlikely to significantly impact a typical UK DB scheme's funding. This does not, however, take into account wider macro-economic and health-related impacts of climate change. This remains an area of active investigation and the expectation is that this will be incorporated into future analysis.
- The analysis is based on a current snapshot of the portfolio and underlying investments. It does not, therefore, take into account changes to the Scheme's asset allocation that would take place over time (for example the de-risking that would take place if the Scheme were more than fully funded).
- As the analysis is 'top down' (i.e. its focus is asset classes rather than underlying holdings) the model does not capture individual company climate commitments, nor changes to these over time, though sustainable asset classes are modelled to have lower climate sensitivity in general).
- Mercer's analysis relies on mapping our actual SAA to a selection of similar modelled funds/asset class exemplars within their model. Given the use of our restricted list (which removes some high-emitting companies), the FTSE TPI Transition index (which includes tilts and rules to underweight companies that perform poorly on climate metrics), trustees take the view that our portfolio is likely to be better aligned than the modelled portfolio (offering further short-term protection).

Historical analysis

The trustees, recognising the methodological challenges inherent in climate scenario analysis, note the positive outcome but put little emphasis on prior assessments. In 2020 analysis identified that we could expect the strategic asset allocation of the Board's common fund (of which the CEFPs is a significant part) to benefit under a 2°C scenario, achieving a +3.4% return benefit on a cumulative basis by 2030 (Mercer analysis, 2020), negligible impact under a 3°C scenario and negative in a 4°C scenario. Stress testing analysis of the Board's portfolio (as opposed to the SAA) conducted in 2020 indicated that even under an 'immediate 1.5 degree' scenario, we should expect a modest positive uplift in valuations (approx. 1%), relative to reductions in valuation for our baseline (2019) and benchmark portfolios of -4 to -5% under the same scenarios (Vivid Economics analysis 2020).

Risk management

In accordance with paragraphs 12 and 13 of the Schedule of the Regulations, this section outlines the processes by which the Trustees identify, assess, monitor, and manage climate-related risks that are relevant to the Scheme, and describes how the processes are integrated into the trustees' overall risk management.

The Board operates three levels of climate-related risk management. These are:

- Board Level
- Investment Strategy
- Investment Implementation and Stewardship

Board Level:

At the Board level a dedicated line item is devoted to climate change in the Board's risk register, which is 'Failure to understand and respond to the paradigm shifts caused by climate change'. This register is actively maintained by the Board and its Audit and Risk Committee, and regularly updated. Risks are managed at this level through a determination of the likelihood and impacts of risks materialising and impacting the Scheme, the consideration and adoption of appropriate mitigating controls (along with a suitable executive 'owner'), and where required, actions are taken to avoid, transfer or accept the risks. In order to assist it with monitoring and managing emerging risks, the Board receives advice at least annually in relation to the employer covenant which takes into account possible climate-related risks. The Board's broader climate strategy is reviewed annually.

Investment Strategy:

At the level of investment strategy, monitoring and assessment is focused on climate-change scenario analysis (conducted periodically, every 2/3 years), monitoring emissions through carbon foot-printing and carbon

intensity metrics, which are reported at the Scheme level annually, monitored at the asset manager level quarterly. Risks are managed through trustee decision-making on the basis of risks and opportunities identified. As an example of climate-related decision-making at this level, the development and selection of the FTSE TPI Climate Transition Index for the Scheme's passive investments in 2019 provided a way to integrate investment strategy with climate considerations.

Investment Implementation and Stewardship:

At the level of investment implementation and stewardship the Board integrates climate considerations into the selection and appointment of asset managers, monitors their climate commitments (across asset classes, reported to the Investment Committee quarterly), and their climate performance forms part of our manager engagement programme. The Board receives a report on investment and responsible investment activity at every meeting.

Scheme-related stewardship activities are not confined to the selection, appointment, monitoring and engagement of asset managers. As described above, the Board's Stewardship team undertakes system level engagement, deliberately attempting to lead and catalyse an improvement in climate risk-related activity in the wider financial ecosystem, and ultimately the real economy. For example, co-founding and continuing to Chair the Transition Pathway Initiative, which provides the investment industry (and the public) with a decision useful assessment of the climate transition alignment of 599 of the highest emitting corporations. TPI is now supported by investors with more than \$50 trillion AUM. A list of other climate-related initiatives is included below. The stewardship team engages directly with companies

in the portfolio on the basis of TPI assessments (and other climate-related assessments) seeking directly to manage climate-related risk. For example, if a company receives a poor TPI management quality assessment or does not disclose or is misaligned in its targets, it will be underweighted in the Scheme's passive investments, and in addition to proxy voting on climate-specific resolutions, will be subject to a vote 'against' the re-election of the Chair. In this way we are able to use our influence to mitigate climate transition risk in the portfolio. Finally, stewardship activities aim to bring about decarbonisation in the real economy and improve climate change disclosure, both directly (direct and through collaboration with other investors, as outlined on page 16).

FTSE TPI CLIMATE TRANSITION INDEX

The Board's passive equity investments track the FTSE TPI Climate Transition Index, which the Board's stewardship team helped to design, in collaboration with FTSE Russell. A 'passive' index is attractive to an investor who wants to limit the number of transactions (buying and selling) within their portfolios, which helps to minimise their costs. This is in contrast to 'active' investment strategies, which are generally more expensive as they involve numerous complex trades and more fluctuation in the stocks that are held. This index integrates five different climate adjustments into its methodology, in order to mitigate climate transition risk. These are:

Fossil fuel reserves

Underweight companies with fossil fuel reserves.

Carbon emissions

Over/underweight companies according to their greenhouse gas emissions whilst applying sector neutrality.

Green revenues

Overweight companies generating revenues from the global green economy.

Management quality

Over/underweight companies based on the extent to which they are managing the risks and opportunities related to the low-carbon transition, and how they are addressing key aspects of the Task Force on Climate-related Financial Disclosures (TCFD).

Carbon performance

Over/underweight companies according to the extent they are committed to carbon emissions pathways that are aligned with 2-degrees or below-2-degrees Celsius warming scenarios.

The Board views carbon performance as particularly important, because it is a forward-looking assessment that identifies companies' commitment to transition. If a company does not disclose enough data to allow TPI to make an assessment, and if a company's transition plan is not in line with the Paris Commitments, the company weighting is reduced to '0' in the index. This is a de facto exclusion, which is also applied to all of the Board's public market investments (active equities and bonds).

Climate-related activities

Transition Pathway Initiative (TPI)

The Board co-founded the TPI and continues to chair this US\$50trn AUM investor tool that assesses 599 publicly listed companies on transition risk, both in relation to management quality and future carbon performance.

Climate Action 100+ (CA100+)

The largest engagement coalition of investors ever assembled coordinates efforts to mitigate transition risk at the world's largest and highest carbon-emitting companies. The Board leads on engagement with European Auto manufacturers, and co-chairs the mining and steel working groups that are developing net zero standards for these sectors.

The Global Standard on Responsible Climate Lobbying

The Board co-chaired the development of the this Standard ([climate-lobbying.com](https://www.climate-lobbying.com)), which identifies best practice in corporate climate lobbying disclosure. The Standard supports companies and investors to assess the governance and practice of corporate climate lobbying and consistency with company commitments to support the Paris Goals. Fifty-five of the largest emitting companies now regularly review their climate lobbying and report annually on progress. The Standard was launched in 2022 with the support of the world's investor networks.

Assessing Sovereign Climate Opportunities and Risks (ASCOR)

ASCOR is an initiative the Board co-chairs alongside the BT Pension Scheme. The initiative is developing a public standard assessment framework for sovereign issuers, to enable improved understanding of the risks and opportunities within Sovereign bonds. The resulting assessment tool will support investor stewardship in this asset class.

Deforestation

During the Scheme year, the Board published a new policy on ethical investment in relation to deforestation, and began a deforestation stewardship programme conducting a portfolio assessment of exposure to deforestation.

Financing a Just Transition Alliance (FJTA)

We are a member of this coalition of 40 investing institutions and banks, coordinated by the Grantham Research Institute at London School of Economics, which works to support a just transition in key energy-intensive sectors so that workers and communities are not left stranded by climate policies.

Institutional Investors Group on Climate Change (IIGCC)

The IIGCC is a European coalition of over 370 investors across 22 countries (€50 trillion in assets) acting to address climate change. We sit on IIGCC's board and co-chair the Corporate Programme overseeing European-wide engagement with companies.

The Board founded an initiative within IIGCC, the Paris Aligned Investing Initiative to develop a Global Net Zero Investment Framework (NZIF), so that investors can have a common framework to set net zero targets. The Board continues to co-chair the Global Asset Owner Steering Committee together with Europe's largest pension fund APG for ABP.

Powering Past Coal Alliance (PPCA)

We are a member of the PPCA, which works to advance the transition from unabated coal power generation to clean energy.

Just Transition in Emerging Markets

During the Scheme year, the Pensions Board convened 12 UK pension funds (representing 18 million members with assets of £400bn), who committed to collaborate to support the climate transition in emerging markets. The group published a consultation on a set of principles on a just transition in emerging markets, in order to support investment decision-making, investment stewardship approaches, and future allocations to emerging markets.

Metrics and targets

The selection of metrics and targets

1. The Pensions Board uses, as described above, a range of different monitoring and internal reporting methodologies to monitor and manage climate related-risk in the portfolio. In addition to the regular flow of climate-related data that informs trustee and executive decision-making, the trustees are required by regulation to select, track and report certain climate metrics, with a view to using the metrics to identify and assess climate-related risks and opportunities that are relevant to the Scheme.

2. The Trustees, in this first year of reporting, have chosen to report on a range of metrics, some applying across a number of asset classes (for example weighted average carbon intensity), others specific to a single asset class (for example our sovereign bond-related climate metrics are not appropriate in other asset classes).

3. It is important to note the relationship between the Pensions Board's common fund, the Scheme in scope for TCFD reporting (the CEFPS), and the various climate metrics described below. Due to the unitisation process that allocates proportional ownership of the common fund to various pension scheme (including CEFPS), intensity metrics and portfolio alignment metrics will apply equally to all of the pension schemes that make use of the common fund. Absolute emissions data, however, needs to be divided according to the proportion of the common fund owned by the various Schemes. Were we to aggregate climate metrics across asset classes, as we may do in the future, the different asset allocations (the relative proportions invested in different asset classes due to the differing risk/return budgets of the schemes) would need to be taken into account.

Metric	Description	Rationale for inclusion
Absolute emissions (also described as total carbon emissions) [tCO₂e, Scope 1 and 2]	Total carbon dioxide and carbon dioxide equivalent greenhouse gas emissions (CO ₂ e) measured in tonnes attributable to the portfolio. A more detailed description of Scope 1,2 and 3 data is included in the appendix.	<ul style="list-style-type: none"> Recommended by statutory guidance. This metric is useful in terms of a baseline, but for a scheme that is still open and growing, may be challenging to manage because any portfolio growth (whether or not the investments are aligned to the transition) will increase the measure. Furthermore, this number is highly sensitive to asset allocation changes, where an artificial reduction can be achieved if funds are allocated from public equity to other asset classes without good data.
Carbon footprint (also described as financed emissions) [tCO₂e/\$m invested, Scope 1 and 2]	The amount of carbon (CO ₂ e) emitted per million US dollars invested.	<ul style="list-style-type: none"> Recommended by statutory guidance. This common carbon intensity metric can be used to compare portfolios of different sizes. This metric does not factor in the carbon efficiency of individual companies' outputs.
Weighted average carbon intensity (WACI) [tCO₂e/\$m revenues, Scope 1 and 2]	The amount of carbon (CO ₂ e) emitted, normalised per million US dollars of company revenues	<ul style="list-style-type: none"> This common carbon intensity metric is used by the TPI in its assessment of the carbon performance of companies, and TPI assessments have been incorporated into the Board's climate stewardship strategy and tools. This metric is useful because it provides portfolio-weighted exposure to emissions in a similar way to other measures of investment risk, such as market beta. It enables comparison between portfolios and sectors and against benchmark data. The metric also highlights portfolio exposure to carbon intensive companies, however revenue volatility (particularly in high emitting sectors) may add complexity when making assessments over time.
Portfolio data coverage [%]	The proportion of a portfolio (amount invested) that is covered by the relevant data	<ul style="list-style-type: none"> This metric identifies gaps in data.
Portfolio alignment [%]	This metric shows the proportion of portfolio investments that are aligned to net zero.	<ul style="list-style-type: none"> There is little consistency across the wide range of portfolio alignment methodologies that are available for pension funds. The methodology the trustees have chosen is based on the alignment of portfolio companies' forward-looking carbon performance assessments relative to the net zero benchmarks identified in TPI analysis. This tracks companies' future contribution to climate change, relative to sector-appropriate carbon budgets. The result is a simple measure of the proportion of aligned investments in the portfolio. Due to the limited scope of data available relative to the portfolio, this is best assessed relative to a benchmark. A Portfolio Alignment Metric is required under the legislation.

Metrics and targets continued

CEFPS Metrics

The following metrics are drawn from the data provider MSCI.

	2019		2020		2021		2022	
	Equity portfolio	Bond portfolio						
Weighted average carbon intensity (tCO ₂ e/\$M Sales)	142.2	13.5	83.1	15.1	67.5	12.9	65.4	32.7
Weighted average carbon footprint (Scope 1 and 2)	170.29	0.58	77.12	1.06	76.70	1.64	68.04	2.19
Data coverage by amount invested	92.45%	4.43%	89.27%	5.56%	91.53%	8.28%	92.62%	19.00%

Absolute emissions

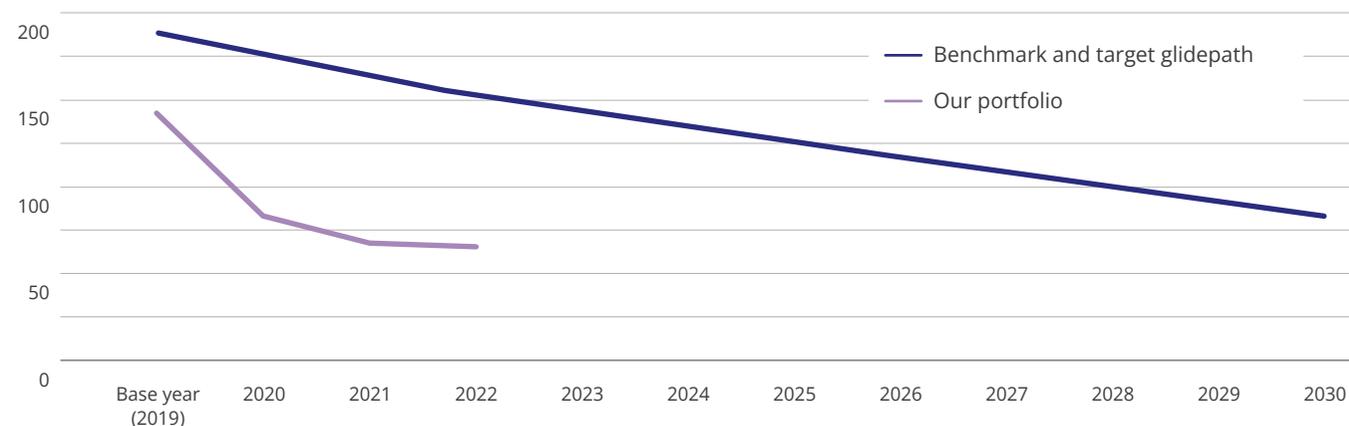
The Common Investment Fund's equity portfolio generated 48,131 tCO₂e (portfolio data as of 31 December 2022). The CEFPS Scheme 'owned' 85.75% of the common fund at the end of 2022, which equates to 42,716 tCO₂e. In prior years, the common fund's tCO₂e amounts were: 240,134 tCO₂e (2019), 111,090 tCO₂e (2020) and 108,599 tCO₂e (2021). The CEFPS's proportion of those emissions was 77% (2019), 79% (2020) and 79% (2021) respectively. Data coverage (%) is the same as reported for public equity WACI/WACF above. This is because the data provider is the same, for consistency.

Targets

4. The trustees have set a public equity decarbonisation target using the weighted average carbon intensity metric, that the portfolio will fall below a transition curve based on a year-on-year improvement of at least 7%, beginning with a 2019 benchmark (MSCI ACWI). This target decarbonisation pathway is shown in the blue curve (right), and the portfolio's emissions intensity is shown in the purple curve. The Scheme is currently ahead of its relative target.

EMISSIONS INTENSITY TARGET TO 2030 VS PORTFOLIO PERFORMANCE

Weighted average Carbon intensity (tCO₂e/\$m sales)



Metrics and targets continued

Note on corporate bond metrics and target

5. Compared to public equity data, the Scheme's bond portfolio metrics suffer from extremely low data coverage percentages, and significant changes in the data coverage over time.

6. This has the effect of distorting the trend, which we would expect to be comparable to the trend in public equity, given that the climate-related exclusions the fund has applied are applicable both to the equity and bond portfolio (as described above). The trustees believe that it is not possible to assess with a meaningful degree of reliability, based on the current data provision, whether the bond portfolio is decarbonising in line with its 7% year-on-year reduction (from the 2019 benchmark level). This will remain under review.

Data quality, scope and limitations

7. Emissions data are continually improving, and we expect significant advances year-on-year. The Pensions Board is actively working on the development of metrics and targets they apply to our own schemes, and is active in the investment industry on the development of relevant data and assessment frameworks, for example through TPI, the Institutional Investors Group on Climate Change (IIGCC), Assessing Sovereign Climate-related Opportunities and Risks (ASCOR), and as described above and in our Stewardship Report.

8. In terms of how far the reported data covers the entirety of the CEFPS investments, the following table shows that:

Asset Class	% CEFPS portfolio at 31 December 2022
Public Equity	30.75
Real Estate	9.6
Private Equity	5.1
Infrastructure	15.7
Private Debt	6.6
Emerging Market Sovereign Debt	2.65
Alternative Income	1.46
Cash	2.7
LDI	17.18

9. The trustees have, as far as they are able, obtained Scope 1 and 2 GHG emissions data. Unfortunately, gathering reliable Scope 3 emissions data remains challenging due to poor data quality, non-standardised reporting, changing estimation methodologies, and the risk of double counting.

10. The Board purchases third-party emissions data, however, this only covers equity and corporate credit investments. We are working with our asset managers to provide comparable and methodologically consistent carbon emissions data, however we note that some managers have been unable to provide any 2022 climate reporting, even by the end of Q1 2023. With a view to consistency and comparability, this report has focused on third-party emissions data and analysis. This is a major engagement issue for us with our managers.

11. As a stark illustration of the general point being made in relation to the importance of consistent methodology, when we input the very same 2022 portfolio data into two third-party data systems, markedly different results emerge:

	Benchmark and target glidepath	WACI (Analysis A)	WACI (Analysis B)
Base year (2019)	187	203.5	142
2020	173.9	91.6	83
2021	160.8	74.3	67.5
2022	149.6	65.4	65.4

12. Though the cause of this apparent discrepancy is straightforward to explain (differences in portfolio coverage over time, differences and changes in assumptions used etc.) the variance of more than 25% in one year is dramatic and indicates the level of caution that should be applied to the metrics in this report. Analysis B is presented in the table above, though prior years' stewardship reporting used analysis A. Analysis B has been selected in 2022 because it enables 'look through' into the underlying company assessments, and includes portfolio coverage data.

13. Unlike public markets, gathering GHG data for other asset classes and reviewing methodological consistency remains time consuming and costly.

Metrics and targets continued

14. Infrastructure, private debt and private equity suffer from material data gaps and a lack of methodological consistency. However, we are members of the ESG Data Convergence Initiative, hosted by the Institutional Limited Partners Association. Only in its second year, we are supporting this initiative to standardise ESG data disclosure (including climate metrics) across private markets. The project so far has been gathering data to create a first-of-its-kind ESG benchmark for private markets, which will provide a useful comparator.

15. Our property investments are managed in a fund-of-funds, and with this additional degree of intermediation, accessing good quality reportable climate metrics has proven challenging.

16. In terms of other asset classes, Sovereign Debt accounts for a substantial percentage of the Scheme's assets. Gilts and LDI accounts mainly comprise UK sovereign debt (gilts), and our emerging market debt account is invested in sovereign bonds. The UK Government is committed to Net Zero by 2050, and while we engage with UK policy-makers on climate change (for example through participation in HM Treasury Transition Plan Taskforce), tracking the climate metrics of these assets is not as high a priority relative to our other investments. We are able to report metrics for our emerging market debt portfolio, relative to an appropriate emerging market index (see below), however, in order more effectively to understand and assess climate risk and opportunities in sovereign asset classes (including both UK and emerging market allocations), we set up and are co-Chairing the ASCOR project (Assessing Sovereign Climate-related Opportunities and Risks), which is currently piloting a methodology and metrics that we will apply to our holdings. The pilot of the methodology will be applied to 25 countries later this year before wider universe

EMERGING MARKET DEBT CLIMATE METRICS

	Portfolio	Index
CO ₂ per capita emissions (ton CO ₂ /cap/yr) x MV%	3.95	4.54
CO ₂ per GDP emissions (ton CO ₂ /1k\$/yr) x MV%	0.23	0.22
GHG per capita emissions (CO ₂ eq/cap/yr) x MV%	6.48	6.97
GHG per GDP emissions (CO ₂ eq/1k\$/yr) x MV%	0.39	0.36

Data source: EDGAR – Emissions Database for Global Atmospheric Research

assessment in 2024. We will though be able to use the results partly to inform our future TCFD reporting.

17. Finally, our Alternative Income allocation is a relatively unusual investment in private equity asset managers. There are no clear guidelines or standard methodology for how to attribute carbon emissions data within this form of investment. We have engaged the asset manager on this point over time and some climate data was provided for the first time in early 2023. The data relates to 2021 so is not included in this report. We continue to engage with the manager on climate stewardship (they offer ESG support and services to the portfolio asset managers, including in relation to climate metrics), and on the development of their climate data systems.

Portfolio alignment methodology

18. The trustees have chosen to report a portfolio alignment metric, expressed as a %, that is based on a novel methodology entitled “cumulative benchmark divergence”, that has been developed by Dan Gardiner,

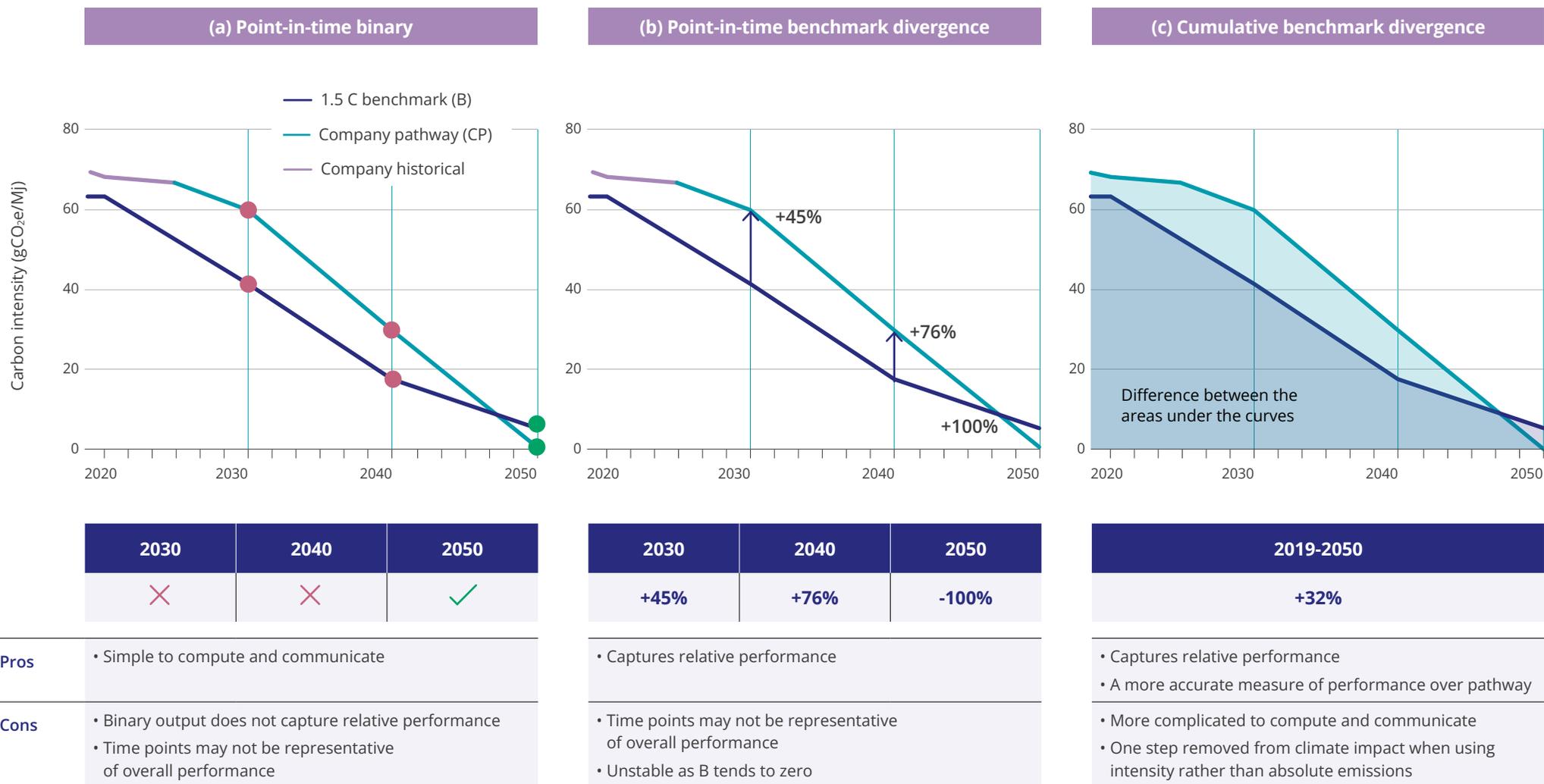
Dr Sam Cornish, and Dr Adrian Fenton, all of IIGCC. Full details of the methodology, including reflections on areas of improvement, are available on the IIGCC platform⁸.

19. Portfolio alignment methodologies in general resist concise and accessible descriptions, and this methodology is relatively straight-forward. Essentially, once it is possible to plot the forward looking climate commitments of companies (TPI's carbon performance assessment), and a net zero decarbonisation benchmark on the same axes, it is possible to measure alignment in three ways, firstly by looking at a point in time (e.g. whether or not a company decarbonisation pathway is above or below the net zero benchmark in 2050), secondly by measuring how far above or below the benchmark a company's decarbonisation commitments are above or below the benchmark at a particular point in time (expressed as a percentage + or -) or thirdly, by capturing the divergence (amount above or below the benchmark) over time, resulting in a single percentage score that measures performance over time, and against a net zero pathway.

Metrics and targets continued

COMPARISON OF CARBON PATHWAY ALIGNMENT ASSESSMENTS

A company carbon intensity pathway is compared to a 1.5°C sector benchmark from a base year (2019) to 2050, using: (a) a point-in-time binary approach; (b) point-in-time benchmark divergence metrics; (c) a cumulative benchmark divergence approach.



Metrics and targets continued

20. This analysis can be conducted at the individual issuer level, where it is helpful in addressing cases where a company's decarbonisation plan relies on sudden sharp improvements (e.g. in technology) in the late 2040s in order to achieve net zero alignment by 2050.

21. The methodology can also, and importantly for our purposes, be aggregated across a portfolio to create portfolio weight-adjusted benchmark divergence percentages, and emissions-adjusted percentages. In this way we are able to measure (to a limited degree) forward-looking alignment with a 1.5 Degree pathway, quantitatively compare our alignment with relevant comparators, and use the analysis/methodology to support stewardship and our engagement with underlying holdings (so there is a consistent methodology being used at company and portfolio level).

22. The scope of the underlying data is a common theme in this report, and is also true here, where the underlying data typically only covers 40% of the total portfolio by emissions, and less than 10% by number of companies and market capitalisation.

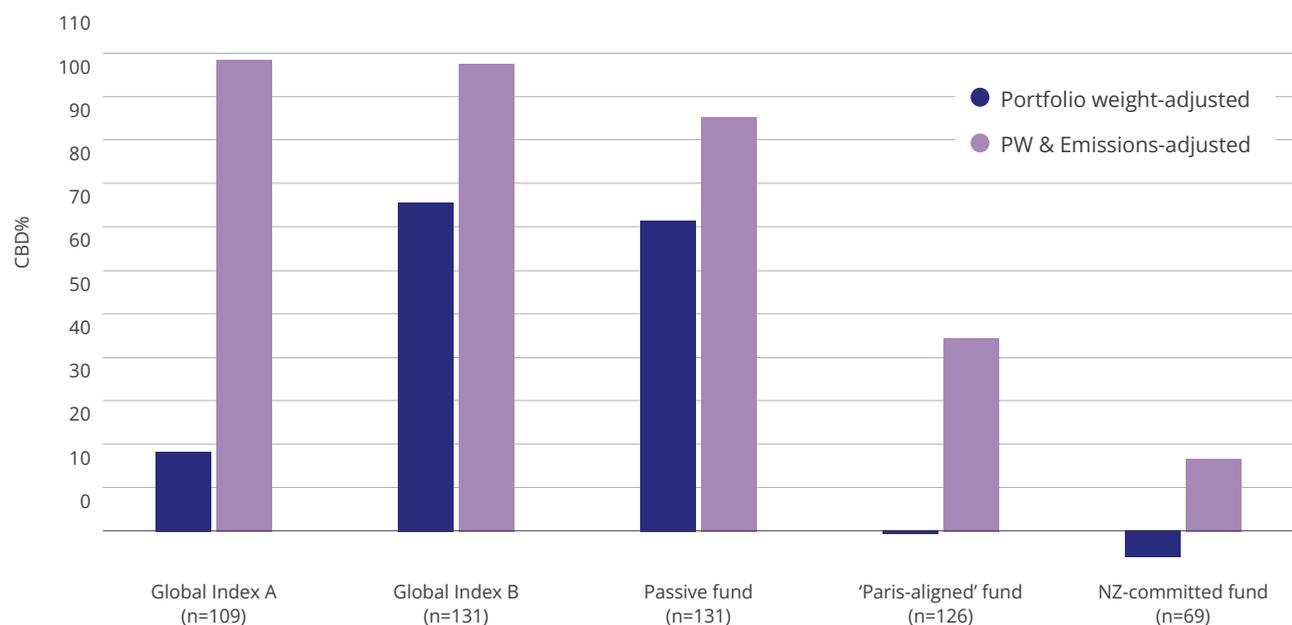
Portfolio alignment outcome

23. The Pensions Board equity portfolio can be considered aligned, achieving a cumulative benchmark divergence of -5.9% when the scores are aggregated by portfolio weight. However, when emissions are included in the weighting, the score increases to 16.3%, implying a degree of misalignment.

24. In order to support the interpretation of these figures, relevant comparators are included in the chart below. The Pensions Board's equity portfolio is labelled 'NZ-committed fund', and is on the right hand side.

PORTFOLIO CBD SCORES

Calculated across two global indices, a passive fund, a 'Paris-Aligned' fund, and a 'Net zero (NZ) committed' fund. Note how the number of stocks covered by the analysis, n, changes across the assessments. A lower score indicates a higher degree of alignment with a 1.5°C pathway. Aggregated CBD scores are weighted either only by portfolio weight (PW; blue columns), or by both portfolio weight and current emissions (lilac columns), according to a sectoral approach for counting emissions scopes.



25. As you can see, the Board's climate alignment compares very favourably to global indexes, the passive fund, and even the 'Paris Aligned' fund (managed to meet the European Paris Aligned Benchmark designation).

26. Data coverage remains a concern, and limitation. Out of 1,139 equity holdings, 69 were covered by the underlying analysis (compared to 109 companies from a global index that was also assessed) 131 companies (a passive fund), and 26 (a 'Paris Aligned' fund).

27. There is further scope for research, and the Stewardship team is actively supporting IIGCC in the development of this methodology, and the Board has played an instrumental role in working with other asset owners to ensure that TPI can scale the breadth and depth of its carbon performance assessments.

Appendix

EMISSIONS SCOPES

Source	Description	Definition
DIRECT	Scope 1	Emissions from sources that are owned or controlled by the reporting company.
INDIRECT	Scope 2	<p>Emissions from consumption of electricity, heat, steam and cooling. This can be calculated via two methods:</p> <ul style="list-style-type: none"> • Location-based refers to emissions calculated through emission rates of the local power grid. • Market-based refers to emissions calculated based on purchasing agreements with electricity suppliers. For most corporates, this tends to result in lower estimations than location-based emissions.⁹
	Scope 3	<p>Upstream: GHG emissions embedded by processes in the value chain that contribute to a company's products or services.</p> <p>Downstream: GHG emissions originating from the activities of customers using a company's products and services.</p>

Endnotes

- 1 See [Task Force on Climate-related Financial Disclosures 2022 Status Report](#).
- 2 See [EIAG Climate Change Policy](#).
- 3 See EIAG Policy and IPCC (2014), Working Group II – Impacts, Adaptation and Vulnerability. [Summary for Policymakers](#).
- 4 See [Investing in a Time of Climate Change \(2015\), Mercer](#).
- 5 See [Investing in a Time of Climate Change The Sequel \(2019\), Mercer](#).
- 6 Schedule, paragraph 27(g) of the Regulations.
- 7 This report includes climate scenario analysis from two sources; that conducted by Mercer (relating to Assets and Funding) and Cardano (Covenant) respectively. Both advisors used “Rapid Transition”, “Orderly Transition”, and “Failed Transition”, and the descriptions above apply to both. In terms of underlying detail and assumptions, the two sources are broadly aligned.
- 8 [IJGCC paper: Assessing climate target alignment with cumulative benchmark divergence – from asset level to portfolio alignment](#).
- 9 Jerry Patchell, [Can the implications of the GHG Protocol's scope 3 standard be realized?](#) Journal of Cleaner Production, Volume 185, 2018, Pages 941-958.
- 10 Greenhouse Gas Protocol. Scope 2 Guidance, accessed 10/03/2022.