Mercer

Surrey Pension Fund

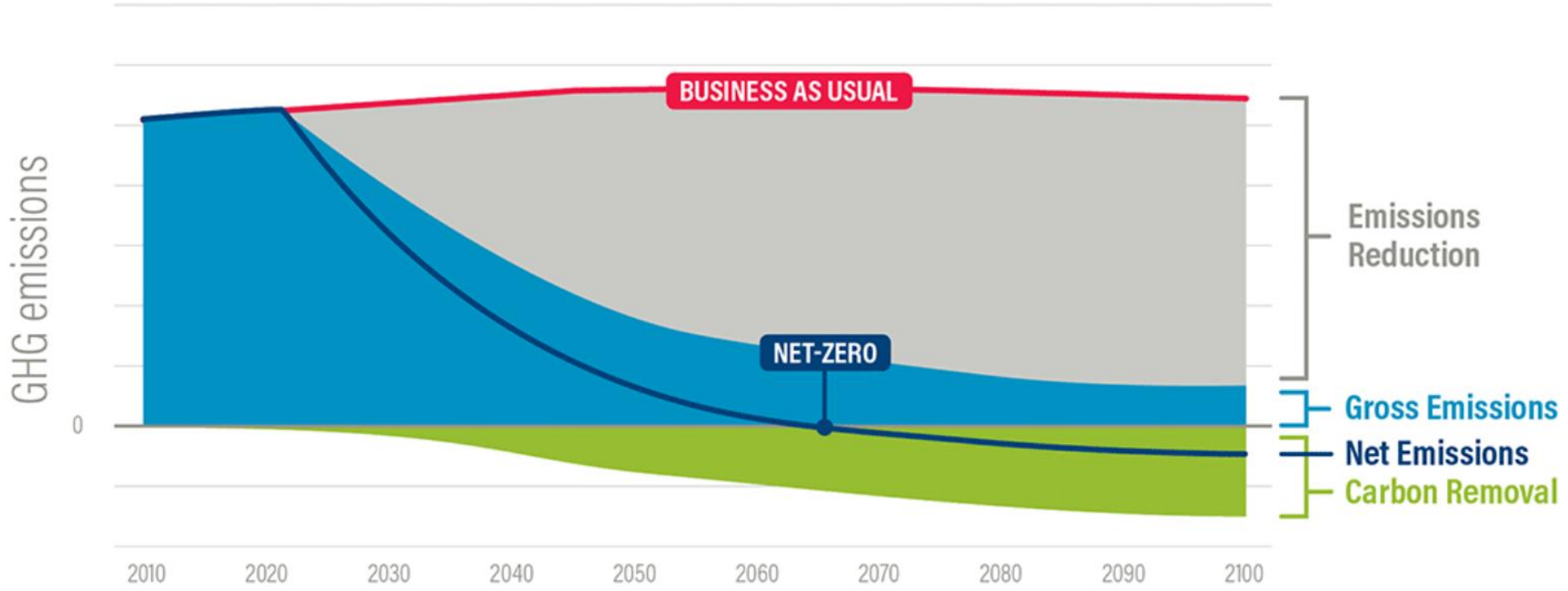
Net-Zero Investing

July 2023

welcome to brighter

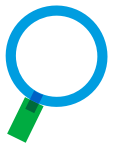
How to get to net zero

- Net zero refers to a state in which there is a balance between the greenhouse gases going into the atmosphere and the amount removed from the atmosphere.
- Reaching net zero across an investment portfolio means greenhouse gas emissions associated with a portfolio's underlying holdings hit net zero.



Source: WRI www.wri.org/blog/2019/09/what-does-net-zero-emissions-mean-6-common-questions-answered

Key elements of analysis



Bottom up analysis: Identify opportunity set and asset class implications

Bottom up analysis informs top down analysis

Top down analysis: Climate Scenario Analysis of asset classes and total portfolio

Executive summary (i)

Legend for table below

Relatively disadvantageous from an investment perspective	Relatively neutral from an investment perspective	Relatively advantageous from an investment perspective

- Mercer has been commissioned by the Committee of the Surrey Pension Fund (the "Fund") to conduct analysis to support an understanding of the investment implications of setting a net-zero target date for the Fund's portfolio.
- The analysis – a combination of bottom up/top down and quantitative/qualitative – considers portfolios with net-zero target dates as at 2030, 2035, 2040, 2045 and 2050. The analysis considers inclusion of asset classes with low/no/net negative GHG emissions, including an allocation to forestry.
- Whilst modelled outcomes are relatively similar for all portfolios under a traditional financial analysis a wider assessment highlights the pros and cons of the different target dates. **Based on this analysis and taking into account the Fund's wider investment objectives, in our view, we consider that the net-zero 2045 or net-zero 2050 portfolios achieve a sweet spot between balancing portfolio decarbonisation and meeting fiduciary duty for the Committee at this time**. This may change in the future, for example, should more companies adopt earlier net-zero targets. Comparing 2050 to 2045 depends on the decarbonisation pathway, e.g. a 2045 target with a more gradual pathway may be preferable.

Consideration	Net zero by 2030	Net zero by 2035	Net zero by 2040	Net zero by 2045	Net zero by 2050	Headline comment
Traditional financial metrics						Under traditional portfolio analysis, the modelled outcomes are relatively similar
Portfolio diversification						The earlier the net-zero date, the smaller the investment universe, with implications for sectoral/regional/company diversification
Rapid transition*						The earlier the net-zero date, the better the portfolio performs under a Rapid Transition scenario over the short- to medium-term
Failed transition (short term)*						The earlier the net-zero date, the worse the portfolio performs under a Failed Transition scenario over the short-term
Financing the Transition						Opportunity for real-world impact through financing the transition increases as the net-zero target date is extended
Implementation implications						Feasibility to implement the portfolio increases as the net-zero target date is extended

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* In terms of what is priced in today Mercer gives a 10% weight to a Failed Transition, 40% weight to an Orderly Transition,10% to a Rapid Transition and 40% weight to a range of low impact scenarios. Over the long-term a Failed Transition is expected to result in significant portfolio losses (regardless of the net-zero target date) resulting from the negative impacts associated with higher physical damages.

Executive summary (ii)

Legend for table below

Relatively disadvantageous from an investment perspective	Relatively neutral from an investment perspective	Relatively advantageous from an investment perspective

	Net zero by 2030	Net zero by 2035	Net zero by 2040	Net zero by 2045	Net zero by 2050	*Current (comparator)*	Headline findings
Strategic Asset Allocation Listed Equities Corporate Bonds Private Markets Forestry Growth Fixed Income Gilts							
Traditional financial metrics							
Expected return (% p.a.)[1]	7.5%	7.6%	7.7%	7.8%	7.9%	8.1%	Portfolio efficiency modestly improves as target date is extended due to additional asset class diversification. **The risk numbers could be understated.**
Downside risk: 1 year 95% VaR (£m)	978	995	1,013	1,032	1,039	1,085	
Excess return / VaR (as % of assets)[2]	0.172	0.175	0.177	0.179	0.179	0.184	
Approximate chance of meeting discount rate[3]	74%	76%	77%	78%	78%	81%	
Concentration analysis[4] - Values omitted for the purposes of public disclosure, but colour coding retained.							
Number of companies in illustrative net zero equity universe							Investment universe diminishes as target date is brought forward with implications for portfolio diversification. Higher active risk introduces greater variability to achieving market index return.
Efficiency ratio of illustrative net zero equity portfolio							
Active total risk relative to parent index[5]							
Contribution to total portfolio risk of top 10 holdings (by risk)							

Analysis as at 31 Dec 2022. [1] Expected absolute return over 10 years. [2] Calculated as expected return minus a risk-free rate (4.2% p.a) divded by 1 year 95% VaR expressed as a percentage of assets (£5,074m). [3] Approximate calculation of the probabilty that the portfolio's annualised return over 10 years exceeds a discount rate of 6.2% p.a.. [4] Portfolios have been grouped by decade with results presented based on the earlier date (i.e. 2030 and 2040). [5] Relative to MSCI ACWI.

Executive summary (iii)

Legend for table below

Relatively disadvantageous from an investment perspective	Relatively neutral from an investment perspective	Relatively advantageous from an investment perspective

	Net zero by 2030	Net zero by 2035	Net zero by 2040	Net zero by 2045	Net zero by 2050	*Current (comparator)*	Headline findings
Strategic Asset Allocation Listed Equities Corporate Bonds Private Markets Forestry Growth Fixed Income Gilts							
Climate scenario metrics (relative to climate-aware baseline)							
Rapid transition impact (5 yr)[6]	0.1% p.a. / 0.7%	-0.1% p.a. / -0.4%	-0.3% p.a. / -1.4%	-0.5% p.a. / -2.5%	-0.8% p.a. / -3.5%	*-1.3% p.a. / -5.7%*	Portfolio performance under a Rapid Transition improves as the target date is brought forward.
Failed transition impact (5 yr)[6]	-0.3% p.a. / -1.4%	-0.3% p.a. / -1.2%	-0.2% p.a. / -0.9%	-0.2% p.a. / -0.7%	-0.1% p.a. / -0.5%	0.1% p.a. / 0.4%	
Failed transition impact (40 yr)[6]	-0.9% p.a. / -28.8%	-0.9% p.a. / -29.3%	-0.9% p.a. / -29.8%	-1.0% p.a. / -30.4%	-1.0% p.a. / -30.9%	*-1.1% p.a. / -34.0%*	
Qualitative assessment							
Opportunity to finance the transition through climate solutions	✘✘✘	✘✘	✘	✓	✓✓	✓✓	Opportunity for real-world impact increases as the target date is extended.
Current ability to implement portfolio and implied transaction costs	✘✘✘	✘✘✘	✘✘	✘	✓	✓✓	Feasibility of implementation increases as target date is extended.

Analysis as at 31 Dec 2022. [6] Analysis considers assets only. Return impact in nominal terms at year 5/40, expressed as annualised % and cumulative %. In terms of what is priced in today we give a 10% weight to a Failed Transition, 40% weight to an Orderly Transition, 10% to a Rapid Transition and 40% weight to a range of low impact scenarios.

We acknowledge that under a failed transition, which we assume markets currently price in with a 10% probability, indiscriminate damages to economies will have negative impacts upon portfolio-wide asset returns.

Executive summary (iv)

- Key takeaways from bottom up analysis based on illustrative equity portfolios

  1. The **number of eligible companies/assets declines** as the net-zero date is brought forward. At the extreme, 126 companies in MSCI ACWI have zero projected gross GHG emissions (scope 1 + 2) by 2030, accounting for 12.4% of the total MSCI ACWI by market capitalisation. This number of companies falls to 35 if scope 3 emissions are included.

  2. Net-zero equity portfolios are expected to result in a **loss in diversification** relative to the parent index from a sectoral, regional and company perspective.

  3. Increasing diversification through the addition of other companies introduces residual emissions that would need to be offset in some form. The purchase of offsets or forgoing return associated with the Fund not selling offsets generated through its assets will act to **reduce return**. The offsetting market is a nascent market with a number of challenges for institutional investors to use within their portfolios at present.

- Key takeaways from top down analysis of strawman portfolios with net-zero target dates of 2030, 2035, 2040, 2045 and 2050

  1. Taking into account a broader set of metrics and the Fund's wider investment objectives, we consider that **the net-zero 2045 or net-zero 2050 portfolios achieve the sweet spot between balancing portfolio decarbonisation and meeting fiduciary duty** for the Committee at present.

- The findings in this report are from an investment perspective and do not explicitly consider the legal or reputational considerations associated with setting a net-zero target date for the Fund's portfolio.

Executive summary (v)

- Implementation considerations

1. By their nature, the net-zero portfolios presented are theoretical with the only design parameter being the net-zero date; in reality others factors will influence stock selection decisions.

2. To our knowledge there are very few investment strategies for listed equities (or other assets) that are currently systematically targeting net zero significantly in advance of 2050.

3. To be able to implement such a strategy new products will need to be developed by the investment industry, or on a bespoke basis for the Fund.

4. For a net-zero target to be credible, having a clear implementation plan will be key. We suggest discussing further with Border to Coast. Their "Net Zero Implementation Plan", launched in October 2022, sets out the steps they are taking to reduce its portfolio's carbon footprint to Net Zero by 2050 or sooner. This includes a 53% reduction and a 66% reduction in normalised financed emissions by 2025 and 2030 respectively (from a 2019 baseline) across listed equity and a proportion of fixed income assets.

5. Other issues that will need to be considered include: potential costs of change, additional complexity, legal opinion and alignment with the pool agenda.

Assumptions and limitations

- The bottom up and top down analysis in this report is subject to a number of assumptions and limitations. Relevant to the key findings, we would highlight:
  - Challenges associated with quantifying the risks resulting from a reduction in the investable universe based on a single criterion (i.e. net zero by a certain target date) over multiple time periods.
  - Constraints/feasibility associated with implementing certain net-zero portfolios, specifically in relation to Border to Coast.
  - Performance under climate scenarios should take into account the context and plausibility of a given scenario occurring.
- **Bottom up analysis**
  - Company projected emissions are based on assumptions and their realisation relies on companies meeting their climate-related commitments. Projected emissions data is also subject to change over time.
  - Scope 3 emissions have been ignored (due to limited reliability of data) unless otherwise stated. Inclusion of Scope 3 emissions is expected to increase company emissions and extend the date at which net zero is achieved.
  - Risk-return analysis at the sector level does not capture the impact of company-level concentration within sectors, which could have a material impact on overall portfolio performance.
  - The analysis considers the inclusion of carbon offsets. The voluntary carbon offset market is unregulated and global best practice is still emerging on what constitutes a "good" offset. A number of challenges exist when considering the inclusion of offsets in an investment strategy including credibility, additionality in respect of carbon reduction, lack of scale and reputational risk.

Results in this report should be considered in light of these assumptions and limitations.

Assumptions and limitations

- **Top down climate scenario analysis**
  - Traditional financial analysis does not capture climate impacts and is based on broad asset class assumptions, which do not capture sector/company concentration. Risk and return numbers have been calibrated based on historical data. Past performance does not guarantee future results.
  - Climate Scenario analysis is subject to a number of limitations:
    - The further into the future you go, the less reliable any quantitative modelling will be.
    - There is a reasonable likelihood that physical impacts are grossly underestimated. Feedback loops or 'tipping points', like permafrost melting, are challenging to model particularly around the timing of such an event and the speed at which it could accelerate.
    - Financial stability and insurance 'breakdown' is not modelled. A systemic failure may be caused by either an 'uninsurable' 4°C physical environment, or due to the scale of mitigation and adaption required to avoid material warming of the planet.
    - Most adaptation costs and social factors are not priced into models. These include population health and climate-related migration.

Results in this report should be considered in light of these assumptions and limitations.

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