

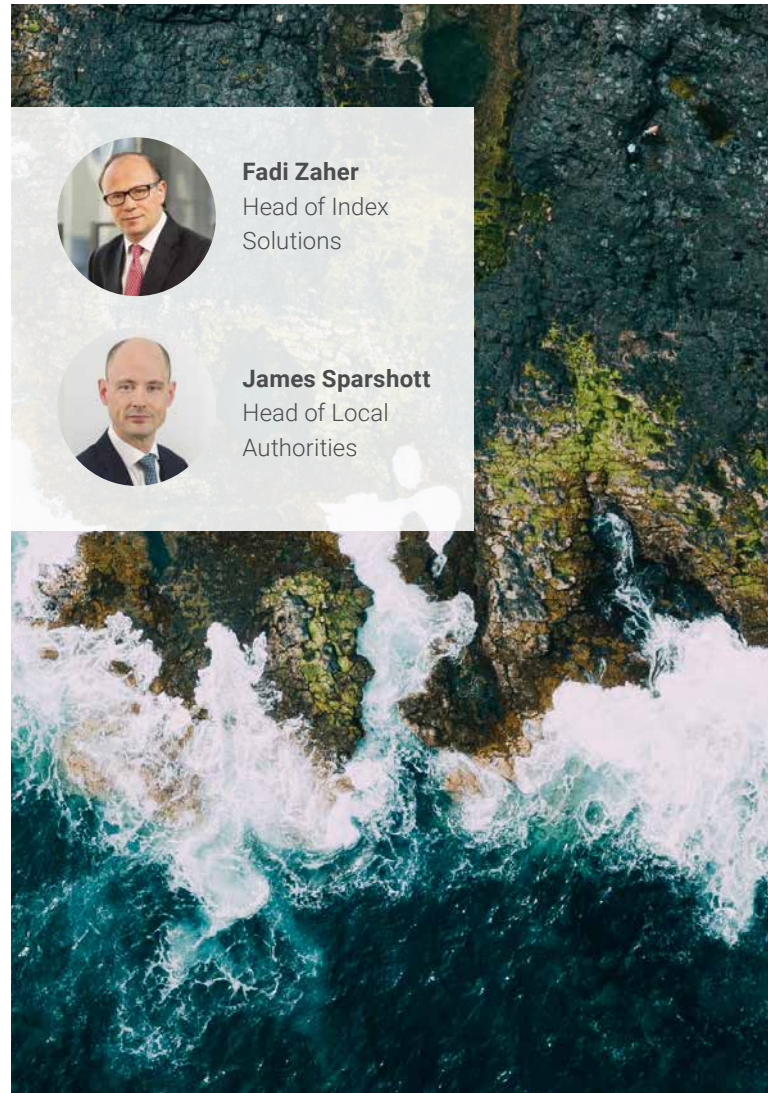
Defining and aligning climate investment intentions for the LGPS

We believe an index decarbonisation strategy may allow pension funds to demonstrate their commitment to climate-focused investing whether or not they have adopted net-zero targets.

Local authority pension scheme funds across the UK are likely to be aligning their investments with climate-positive goals, whether to mitigate their portfolio's climate risk, prepare for forthcoming regulation¹, address the concerns of members and campaigners or for a combination of these considerations.

A recent survey² of local authority pension scheme funds in England and Wales revealed that while 42% of respondents said they had set a net-zero target date, almost all funds that had not set one stressed that they are actively tackling climate change within their portfolios. Additionally, around 300 councils across the UK as well as the Local Government Association have declared climate emergencies³, demonstrating that climate is a major and urgent concern to the UK's local governments as well as the LGPS. We at LGIM are experiencing widespread adoption of ESG integration into local authority clients' portfolios.

An index decarbonisation strategy may offer the ability to clearly articulate a net-zero pathway and monitor its progress year on year. This provides pension funds with the assurance that their investments are working coherently toward the avoidance of the worst-case climate scenarios.



Fadi Zaher
Head of Index Solutions



James Sparshott
Head of Local Authorities

Reaching net-zero emissions by 2050 is considered the safest way to limit global temperature rises to 1.5°C above pre-industrial levels, avoiding some of the worst impacts of climate change⁴. As a result, we believe many investors are looking to reduce the exposure to carbon emissions within their index strategies and align their portfolios with climate scenarios that may avoid the most severe impacts. This process requires a decarbonisation pathway that could align to a 1.5°C scenario.

There are different avenues to delivering a decarbonised index strategy with net-zero ambitions. We focus on the exclusion and capital allocation methods, as well as a combination of the two.

1. Local Government Pension Scheme (England and Wales): Governance and reporting of climate change risks - GOV.UK (www.gov.uk)

2. Local Government Chronicle, 10 March 2022

3. Local Government Association, Climate change hub | Local Government Association

4. Intergovernmental Panel on Climate Change: Special Report on Global Warming of 1.5°C (2018)

1. Sin stocks and high misalignment– the role of exclusions

The exclusion approach, also known as negative screening, has been used to avoid having specific stocks or industries in an index. The most prominent exclusions have tended to be of the ‘sin stocks’, which include tobacco, alcohol, gambling, fossil fuels and controversial weapons.

Some of these exclusions have been related to normative or ethical principles and go beyond purely carbon-related considerations. In addition, climate exclusions may come with elements of ethical and norms-based exclusions, such as the violation of international conventions; e.g. the United Nations Global Compact (UNGC).

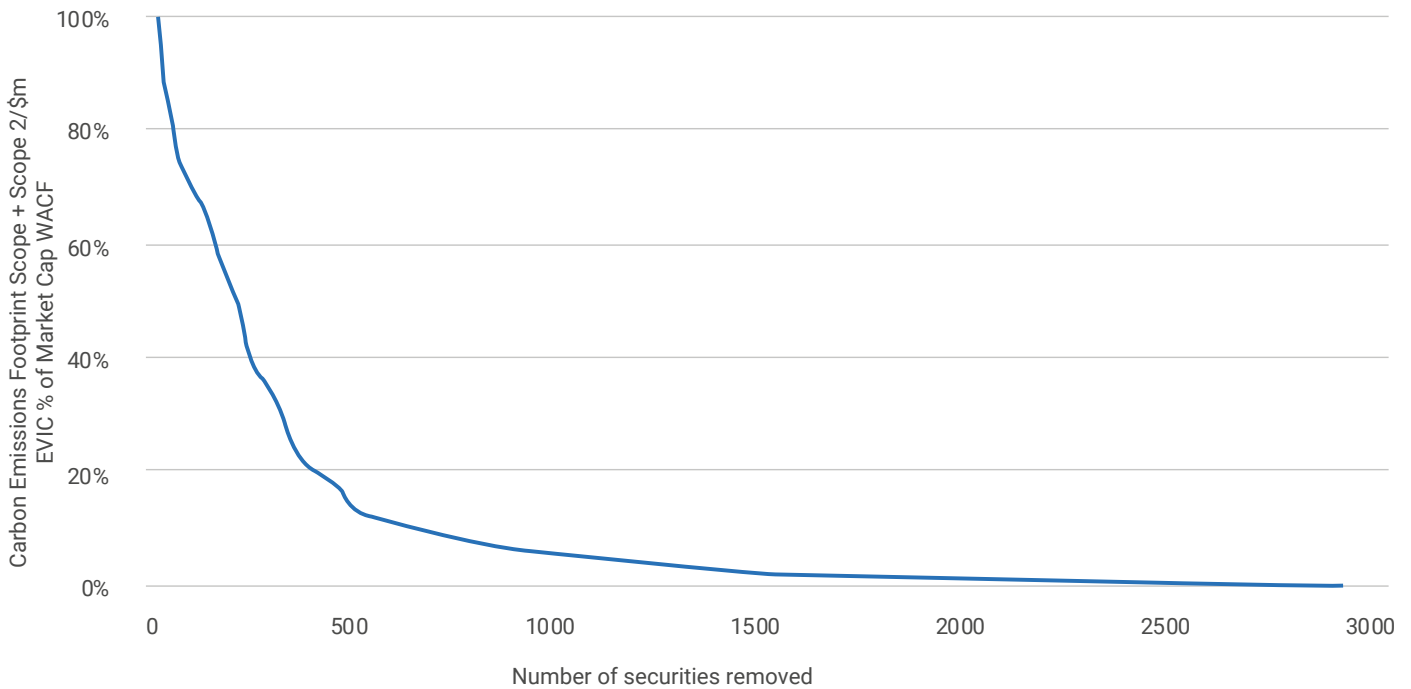
Different exclusions can resonate with different types of investors and across different regions. Some prefer this approach as it is transparent, easy to communicate and offers peace of mind if an investor’s ultimate objective is to remove exposure to specific securities and sectors.

But aggressive exclusions may alter the portfolio’s profile quite significantly. As the level of exclusions increases, the adjusted index often strays from its parent benchmark, and the index may no longer deliver a market-like, risk-return profile. This means that there is potential for the index to incur unintended active risk as compared to its benchmark.

Global market capitalisation indices offer two observations. First, a stock can have a high-carbon intensity and contribute a sizable amount of carbon to the portfolio. Second, a stock may have a low intensity but if it is heavily weighted in the benchmark it may still contribute sizeably to the overall emissions of the index.

Figure 1 shows that by removing just 30 securities (out of 2,827 in a global stock index) it is possible to achieve a 37% emission reduction in a global stock index from the Q1 2022 total emissions intensity level and a 50% emissions reduction from 2019 portfolio levels. This reduction can be achieved, typically, with a tracking error⁵ of less than 0.50% for a globally diversified strategy.

Figure 1. Carbon intensity reduction and number of removed securities in a global stock index



Source: LGIM, Source: ISS 2022, Source: Refinitiv Information 2022., MSCI, Solactive as at 29 April 2022.

5. Tracking error is a measure of financial performance that determines the difference between the return fluctuations of an investment portfolio and the return fluctuations of a chosen benchmark.

It should be noted that diversification is no guarantee against a loss in a declining market.

There is a role for exclusions in a net-zero approach, for example, to remove companies that are highly misaligned and have little likelihood of being willing or able to transition. Relying solely on an exclusionary approach to achieve net-zero portfolios, however, could be problematic, as some high emitters, such as mining companies and utilities will have an important role to play in developing and investing in order to facilitate a successful net zero approach.

For these types of emitters, an engagement approach may be more fruitful in achieving carbon emissions reductions. LGIM has a long history of climate-focused corporate engagement activities undertaken by its Investment Stewardship team, which focuses on holding companies to account for the pledges they make and actions they take.

Therefore, unilaterally divesting holdings is not guaranteed to lead to the decarbonisation of the real economy and indeed could impede necessary investment in climate solutions.

2. Choosing or planning to choose a net-zero pathway

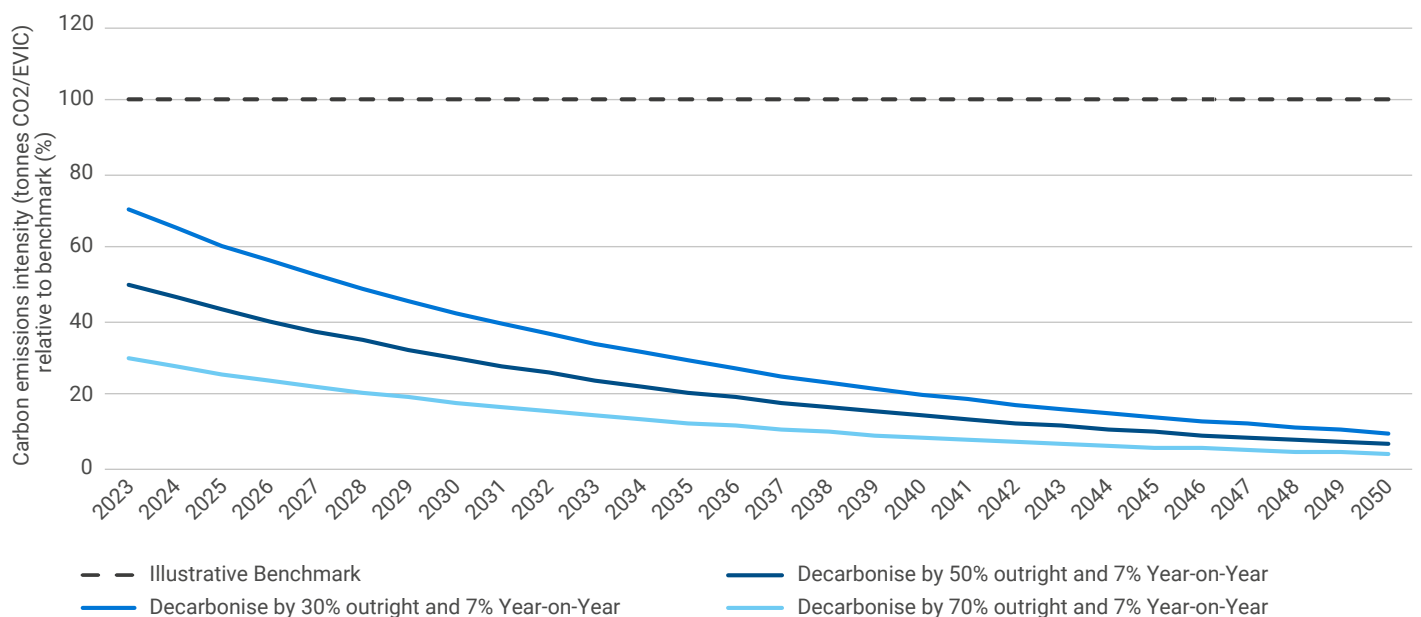
For those LGPS funds which have set a net-zero target date or anticipate setting one, there are various decarbonisation pathways from which to choose. A common decarbonisation pathway, based on recommendations from the Intergovernmental Panel on Climate Change (IPCC) and the EU Paris-aligned Benchmarks (PAB), is to reduce carbon emissions intensity by a fixed percentage relative to a parent



benchmark. The index portfolio would then continue to be decarbonised by additional percentage points each year.

Figure 2 shows different decarbonisation objectives that investors may choose from to embark on a net-zero pathway. The middle line shows a pathway which reduces an index portfolio's carbon intensity by 50% by 2030 before continuing with a carbon reduction trajectory of 7% year-on-year, with a goal of reaching net-zero by 2050.

Figure 2. Decarbonisation or net-zero pathways



Note: For illustrative purposes only. The illustrated baseline assumes no changes to the level of carbon emissions in aggregate. Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass. The future emissions intensity of the underlying benchmark is unknown (dashed line).

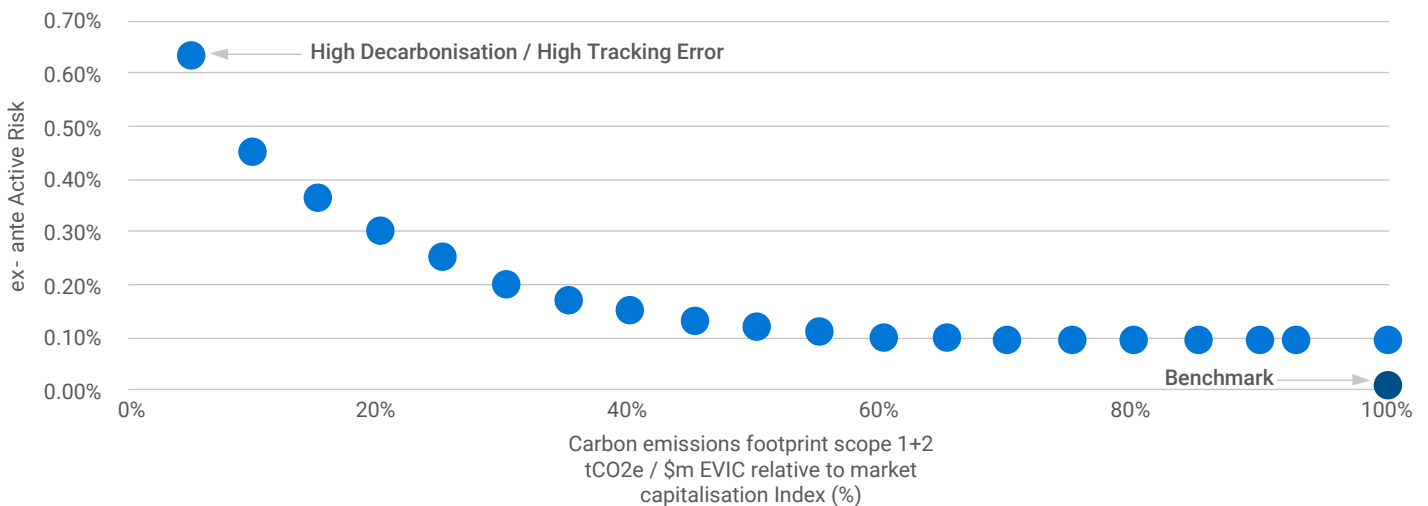
The aim here is to reallocate and adjust the exposure from stocks with high-carbon intensity to those that have less carbon intensity, subject to various investment constraints which may include security or sector deviations from the parent benchmark. As a result, a decarbonised index may have different constituents and/or a different number of holdings than its parent benchmark.

Below, we provide an example of creating a holistic index solution for transitioning to a 1.5°C environment to aim to reduce potential climate risks. The starting stock universe is based on market capitalisation for developed and emerging markets. We can illustrate the tracking error implications for

various degrees of decarbonisation rates subject to a range of investment constraints.

Figure 3 indicates that it could be possible to decarbonise a global index with a low tracking error, demonstrating that a 50% carbon intensity reduction can be achieved with about 15 basis points (0.15%) of tracking error. However, the tracking error rises sharply when the decarbonisation increases beyond 50%. The results may vary for specific regions and more concentrated indices. Furthermore, the construction of the example aims to mimic the market risk and return profile by applying various security, sector and geographical constraints.

Figure 3. Decarbonisation rates versus tracking error



Notes: Constraints on security +/-3%, sector +/- 3% and regional neutral. Minimal exclusions applied: thermal coal, UNGC violators, which represent 1.2% of the total weight of a global market universe (developed and emerging markets). Calculations based on: Qontigo. Portfolio Holdings and Risk model as at 29/04/2022. Broad market capitalisation global equity Index is based on MSCI ACWI, Solactive.
 Data source: LGIM, Solactive, MSCI, Source: ISS 2022, Source: Refinitiv Information 2022. Carbon footprint measured as tCO2e Scope 1 + Scope 2 / \$m EVIC.



Capital allocation and minimal exclusions combine for net-zero alignment

In our view, effective decarbonisation of index portfolios could involve a combination of minimal exclusion standards and greater reallocation of capital between leaders and laggards. We expect to see continued demand from investors seeking to align portfolios with a net-zero pathway, who recognise that potential financial and climate risks are different across different regions and industry sectors.

We also expect that increasing investor attention may be paid to broader climate themes such as biodiversity, as well as social and governance factors, all of which may complement a net-zero index strategy.

Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass. The above information does not constitute a recommendation to buy or sell any security.

Contact us

For further information about LGIM, please visit [lgim.com](https://www.lgim.com) or contact your usual LGIM representative



Key risks

The value of an investment and any income taken from it is not guaranteed and can go down as well as up, you may not get back the amount you originally invested.

Important information

The information contained in this document (the 'Information') has been prepared by Legal & General Investment Management Limited, Legal and General Assurance (Pensions Management) Limited, LGIM Real Assets (Operator) Limited, Legal & General (Unit Trust Managers) Limited and/or their affiliates ('Legal & General', 'we' or 'us'). Such Information is the property and/or confidential information of Legal & General and may not be disclosed by you to any other person without the prior written consent of Legal & General.

No party shall have any right of action against Legal & General in relation to the accuracy or completeness of the Information, or any other written or oral information made available in connection with this publication. Any investment advice that we provide to you is based solely on the limited initial information which you have provided to us. No part of this or any other document or presentation provided by us shall be deemed to constitute 'proper advice' for the purposes of the Pensions Act 1995 (as amended). Any limited initial advice given relating to professional services will be further discussed and negotiated in order to agree formal investment guidelines which will form part of written contractual terms between the parties.

Past performance is no guarantee of future results. The value of an investment and any income taken from it is not guaranteed and can go down as well as up, you may not get back the amount you originally invested.

The Information has been produced for use by a professional investor and their advisors only. It should not be distributed without our permission.

The risks associated with each fund or investment strategy are set out in this publication, the relevant prospectus or investment management agreement (as applicable) and these should be read and understood before making any investment decisions. A copy of the relevant documentation can be obtained from your Client Relationship Manager.

Confidentiality and Limitations:

Unless otherwise agreed by Legal & General in writing, the Information in this document (a) is for information purposes only and we are not soliciting any action based on it, and (b) is not a recommendation to buy or sell securities or pursue a particular investment strategy; and (c) is not investment, legal, regulatory or tax advice. Any trading or investment decisions taken by you should be based on your own analysis and judgment (and/or that of your professional advisors) and not in reliance on us or the Information. To the fullest extent permitted by law, we exclude all representations, warranties, conditions, undertakings and all other terms of any kind, implied by statute or common law, with respect to the Information including (without limitation) any representations as to the quality, suitability, accuracy or completeness of the Information.

Any projections, estimates or forecasts included in the Information (a) shall not constitute a guarantee of future events, (b) may not consider or reflect all possible future events or conditions relevant to you (for example, market disruption events); and (c) may be based on assumptions or simplifications that may not be relevant to you.

The Information is provided 'as is' and 'as available'. To the fullest extent permitted by law, Legal & General accepts no liability to you or any other recipient of the Information for any loss, damage or cost arising from, or in connection with, any use or reliance on the Information. Without limiting the generality of the foregoing, Legal & General does not accept any liability for any indirect, special or consequential loss howsoever caused and on any theory or liability, whether in contract or tort (including negligence) or otherwise, even if Legal & General has been advised of the possibility of such loss.

Third Party Data:

Where this document contains third party data ('Third Party Data'), we cannot guarantee the accuracy, completeness or reliability of such Third Party Data and accept no responsibility or liability whatsoever in respect of such Third Party Data.

Publication, Amendments and Updates:

We are under no obligation to update or amend the Information or correct any errors in the Information following the date it was delivered to you. Legal & General reserves the right to update this document and/or the Information at any time and without notice.

Although the Information contained in this document is believed to be correct as at the time of printing or publication, no assurance can be given to you that this document is complete or accurate in the light of information that may become available after its publication. The Information may not take into account any relevant events, facts or conditions that have occurred after the publication or printing of this document.

Telephone Recording

As required under applicable laws Legal & General will record all telephone and electronic communications and conversations with you that result or may result in the undertaking of transactions in financial instruments on your behalf. Such records will be kept for a period of five years (or up to seven years upon request from the Financial Conduct Authority (or such successor from time to time)) and will be provided to you upon request.

Legal & General Investment Management Limited. Registered in England and Wales No. 02091894. Registered Office: One Coleman Street, London, EC2R 5AA. Authorised and regulated by the Financial Conduct Authority, No. 119272.

Legal and General Assurance (Pensions Management) Limited. Registered in England and Wales No. 01006112. Registered Office: One Coleman Street, London, EC2R 5AA. Authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, No. 202202.

LGIM Real Assets (Operator) Limited. Registered in England and Wales, No. 05522016. Registered Office: One Coleman Street, London, EC2R 5AA. Authorised and regulated by the Financial Conduct Authority, No. 447041. Please note that while LGIM Real Assets (Operator) Limited is regulated by the Financial Conduct Authority, we may conduct certain activities that are unregulated.

Legal & General (Unit Trust Managers) Limited. Registered in England and Wales No. 01009418. Registered Office: One Coleman Street, London, EC2R 5AA. Authorised and regulated by the Financial Conduct Authority, No. 119273.