



Carbon Exposure

London Borough of Hammersmith and
Fulham Pension Fund

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1 Executive Summary

This paper has been prepared for the Pensions Sub-Committee (“the Sub-Committee”) of the London Borough of Hammersmith & Fulham Pension Fund (“the Fund”). The purpose of this paper is to provide the Sub-Committee with information on the Fund’s investment exposure to fossil fuels, the potential risks this may cause and the options available to mitigate this risk.

This paper should be read in conjunction with the Equity Portfolio Review paper, which provides detail on alternative passive equity strategies which track a low carbon index.

The Sub-Committee should also liaise with the London CIV to understand if it is looking to implement a solution in this space.

2 Defining Carbon Exposure

2.1 Introduction

'Carbon footprint' is a term used to quantify the exposure a stock or portfolio may have to fossil fuels, however there is no agreed method on how this footprint should be measured. A simple method at the portfolio level is to analyse the **carbon emissions** of each company within a portfolio.

However carbon emissions may not be the best measure, albeit probably the simplest. A change in policy or change in society which impacted or even restricted the use of fossil fuels would more likely affect companies who own fossil fuel assets. This is known as **carbon reserves**.

2.2 Carbon Emissions

Carbon emissions can be split into the following three types:

- Scope 1: All direct greenhouse gas emissions from sources owned or controlled by the company.
- Scope 2: Indirect greenhouse gas emissions from consumption of purchased electricity, heat, or steam.
- Scope 3: Other indirect emissions that occur from sources not owned or controlled by the company. This includes extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

As would be expected, the oil and gas and utilities sectors have significant direct and indirect emissions, whilst food retailers for example generate significant emissions as part of their supply chain. An investment portfolio that tracks a market capitalisation based index (such as the FTSE All World that the Fund invests in), where developed markets dominate and consequently contain a significant proportion of energy-related holdings, will have substantial exposure to carbon-intensive companies.

2.3 Carbon Reserves

Carbon emissions, defined above, give the current level of impact that companies have. However, a change in policy or change in society which impacted or even restricted the use of fossil fuels would more likely affect companies with high carbon reserves (fossil fuel assets owned by companies that are still in the ground to be extracted and sold on) as opposed to current emissions. Current emissions can be quickly changed and companies can adapt whereas companies with fossil fuel reserves are likely to experience a greater impact from such a change in policy. Naturally, companies in the oil and gas and basic materials sectors will have the greatest exposure by this measure

2.4 Measuring Carbon Exposure

One of the major issues with measuring carbon emissions is that company disclosure is voluntary in many jurisdictions and when there are gaps, data

providers are required to make assumptions. Scope 1 and 2 emissions are disclosed relatively widely but scope 3 less so, with the disclosure methodology varying between companies and industries.

Largely, the main source of information on carbon emissions is through publicly available information such as annual reports, financial reports, corporate social responsibility or environmental reports and company websites.

Furthermore, with the companies that do disclose carbon emissions, there is often a quality issue regarding the information. In many regions, carbon disclosure remains voluntary and is not always audited by external third parties, therefore there is a variation in disclosure amongst different companies and sectors.

Lastly, it is important to note that carbon footprint should not only be measured on the basis of negative impact. New innovations are transforming the way we generate, store and consume energy and the argument could be made that companies that are involved in this transformation are likely to benefit (in the same way that carbon intensive companies are likely to suffer) from political and social change.

3 What are the risks?

3.1 Investment Risks

Pension schemes, particularly within the public sector, are increasingly being encouraged to consider their exposure to fossil fuels and the potential risks associated with fossil fuel investments. The investment arguments are:

- Fossil fuels are contributing to climate change and greater onus is being put on organisations to control their emissions of greenhouse gases.
- Given the non-sustainability of fossil fuels, companies which are run with "carbon-intensive" operations are at risk of not being able to sustain their operations in the future. When this point in the future may be is unknown, as it is hard to measure the rate at which societies around the world will make the transition to a "clean" or low carbon energy mix. However, if a company's sustainability is in question, the investment return of its shares are expected to be directly affected over the longer term.

The Paris Agreement, adopted at the Paris Climate Conference in 2015, is the first legally binding global climate deal which sets out a plan to avoid dangerous climate change by limiting global warming to "well below" 2 degrees Celsius above pre-industrial levels. Assuming this Agreement is upheld this will have a big impact on the use (or non-use) of the current carbon reserves.

This creates the risk of 'stranded assets' i.e. companies with fossil fuel reserves, whose assets are valued much lower, impacting on the valuation and therefore share price of the company.

Secondly, energy is often one of the biggest costs businesses face and being a commodity, it is exposed to volatile price fluctuations. Companies with high exposure to fossil fuels are therefore at risk. Price change as a result of political or social impact (for example carbon taxes) could result in a significant change to a company's operating costs, resulting in an impact in the share price valuation.

4 What are the options?

4.1 Assessing the carbon exposure

There has been a recent trend of investors moving from reporting of carbon exposure to actively attempting to manage / reduce the exposure. In response, the asset management industry have developed investment solutions both actively managed, and passively managed (with the development of new benchmarks by index providers).

A number of data suppliers offer carbon portfolio analysis systems and bespoke reports on an investment portfolio in order to assist investors with carbon footprint and climate risk measurement and reporting.

4.2 The Equity Portfolio

Equities is much easier to assess than other assets, and is likely to be the first to be affected in the event of change. With equity investments, there are a number of options available:

- Negative screening – exclude stocks based on fossil fuel exposure and carbon based measures.
- Positive screening – selects companies that have best climate credentials.
- Thematic – focus on themes such as clean technology.
- Active ownership – investing and engaging with companies.

4.3 MSCI Low Carbon

The MSCI Low Carbon indexes were developed to address carbon emissions and carbon reserves and have seen increasing interest from investors over the past couple of years. The MSCI World Low Carbon Target Index is designed to:

- reduce exposure to carbon emitting companies, measured in current carbon emissions (relative to sales) and potential emission from future fossil fuel reserves (per dollar of market capitalisation); and
- to maintain global equity exposure with close tracking to the MSCI World Index.

The emissions data is produced by MSCI and is based on data from annual reports, corporate social responsibility reports, the Carbon Disclosure Project (an organisation which runs a global disclosure system that enables companies, cities, states and regions to disclose greenhouse gas emissions), oil and gas industry bodies and other relevant third-party sources.

The constituents of the Index are selected from the parent (MSCI World) index using MSCI's optimisation process. This process seeks to minimise the carbon exposure of the constituents of the index relative to the parent index, whilst also applying a 0.30% cap on the tracking error. The optimisation process also seeks to limit the extent to which the weightings of the companies, sectors and countries represented in the index differ from

the weightings of those companies, sectors and countries in the parent index. The weight of each company in the index will not exceed 20 times its weight in the MSCI World Index and the weight of each country and sector represented in the index will not deviate more than 2% (upwards or downwards) from its weighting in the MSCI World Index (with the exception of the energy sector, where no such constraint is applied).

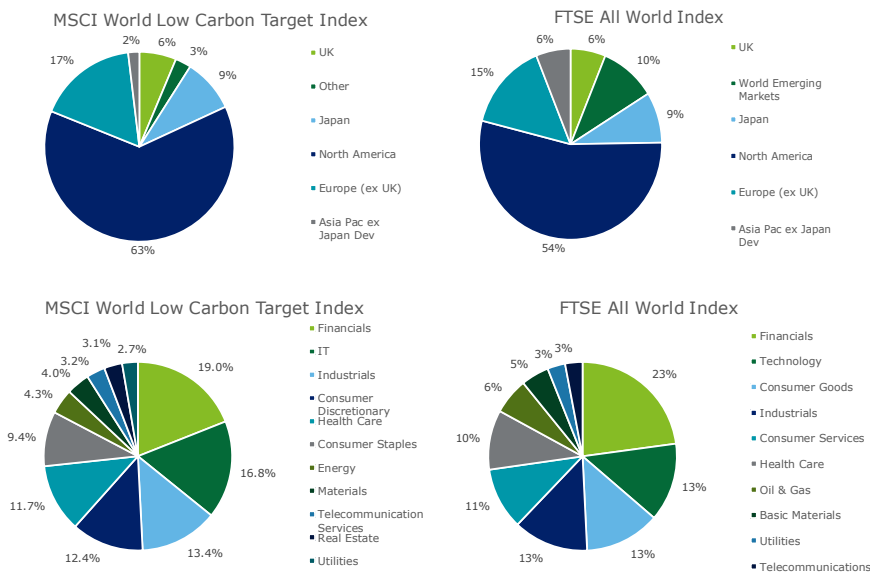
4.3.1 Performance

The FTSE All-World Index has outperformed the MSCI World Low Carbon Target Index over all periods considered since August 2015. However, when considering the cumulative quarterly return from Q1 2011 to Q4 2017, the MSCI World Low Carbon Target Index has outperformed the FTSE All-World Index, as can be viewed in the chart below.



4.3.2 Asset allocation

The country and sector breakdown for the two indexes as at 31 December 2017 are given below.



The two indexes have comparable allocations to European (ex UK), UK and Japanese equity markets. The MSCI World Low Carbon Target Index however has a higher allocation to North America, with a lower allocation to Asian and emerging markets.

4.3.3 Additional details

The table below gives details of the number of stocks comprising each index.

	MSCI World Low Carbon Target Index	FTSE All-World Index
Number of stocks	1225	3167

As at 31 December 2017, the MSCI World Low Carbon Target Index contained c. 40% of the number of stocks in the FTSE All-World Index. The Low Carbon Index is therefore a more concentrated portfolio although is still significantly more diversified than alternative low carbon solutions.

5 Conclusion

In this paper we have outlined how fossil fuel exposure can be defined within an investment portfolio. However given the lack of formal reporting requirements to report on carbon emissions, information is often inconsistent and lacking quality. Therefore establishing the 'carbon footprint' of a given company is challenging. There are data providers who can assist investors to better understand their portfolio's carbon footprint by providing bespoke reports and analysis on a given investment portfolio.

The majority of the Fund's investments is within pooled funds and therefore there is little scope for the Sub-Committee to alter the investments within these funds. Should the Sub-Committee wish to make any divestment decisions, it is important to highlight and consider its key fiduciary responsibility which is to manage the investments in the interests of the members, where the focus is on generating the best risk adjusted return.



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