

HEALTH WEALTH CAREER

# PORTFOLIO CARBON FOOTPRINT ANALYSIS LONDON BOROUGH OF ISLINGTON PENSION FUND ("THE FUND")

June 2016

**Aled Jones**

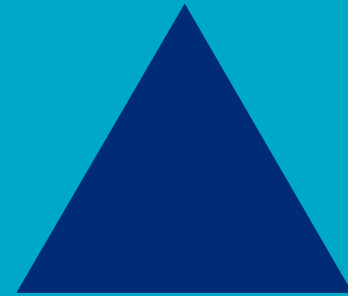
Principal, Responsible Investment

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# EXECUTIVE SUMMARY

## FINDINGS AND RECOMMENDATIONS



# EXECUTIVE SUMMARY

## FINDINGS AND RECOMMENDATIONS

- The Fund's carbon footprint (CF) results – shown on slide 10 and in more detail in Appendix 2 – show that the aggregate listed equity portfolio has a CF that is approximately 30% lower than the FTSE All World.
- This aggregate CF result reflects two things:
  1. The relatively high CF of the UK passive equity assets (50% of the aggregate portfolio) is driven by the overweight exposure in the UK to the Energy and Utilities sectors, and
  2. The very low CF of the Fund's two active equity mandates (40% of the aggregate portfolio) which have a moderating effect on the overall CF.
- Although the LGIM portfolio has a very high CF – driven by the EM and RAFI components – it accounts for a minority (approx. 10%) of the aggregate portfolio and therefore does not significantly influence the overall CF result.
- A key question when presented with CF data is: **What steps should the investor take?** To help the Fund address this question we provide suggestions for next steps, which we summarise below and set out in more detail on slides 20 to 28.

# EXECUTIVE SUMMARY

## FINDINGS AND RECOMMENDATIONS

- On the basis of our analysis, we provide the Pensions Sub-Committee (the Committee) with four options for it to consider, covering a range of measures to address climate risk more explicitly in its listed equity portfolio:
  1. Include climate risk within the broader manager due diligence in the ongoing active EM equity search process e.g. by asking specific questions of shortlisted managers.
  2. Allocate some of the Fund's UK passive equity assets to a lower carbon UK passive equity fund.
  3. Allocate assets to an active Global equity strategy with a thematic sustainability focus.
  4. As an alternative to point 3, allocate assets to a lower carbon Global passive equity fund.

# EXECUTIVE SUMMARY

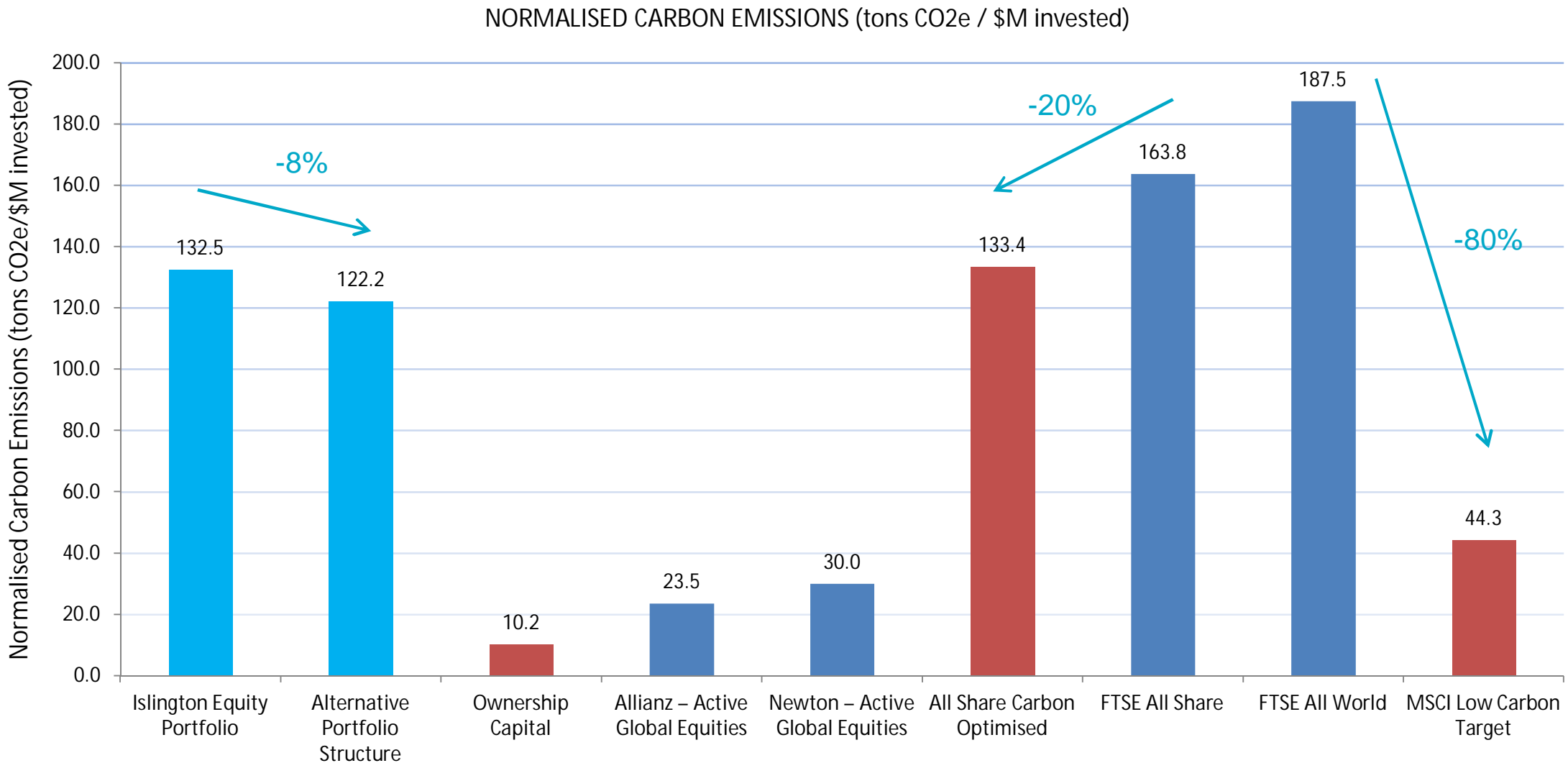
## FINDINGS AND RECOMMENDATIONS

- It is important to note that Mercer does not recommend that the Fund focuses on reducing its CF purely for the sake of having a lower number.
- We believe that it is useful to know what the Fund's CF is, and in particular what is driving the number, as it can inform a broader perspective on risk. However, actions to manage portfolio climate risk should be based on a clear objective which should consider aspects other than just the CF.
- For example, an allocation to a sustainability-themed equity strategy would most likely produce a lower CF over time but would not necessarily actively target a specific reduction in a given time frame.
- We have provided the Committee with an alternative portfolio structure (for illustrative purposes) to highlight what would happen to the Fund's aggregate CF if it made allocations to:
  - A low carbon UK passive equity index, and
  - A global active sustainability-themed strategy (Ownership Capital).

# EXECUTIVE SUMMARY

## FINDINGS AND RECOMMENDATIONS

- Alternative portfolio structure results in an 8% reduction in total CF versus the current aggregate equity portfolio.



# CARBON FOOTPRINT OF THE FUND'S LISTED EQUITY ASSETS





# CARBON FOOTPRINT ANALYSIS

## OUTLINE OF ANALYSIS

- Mercer has undertaken carbon footprinting analysis for the Fund. The analysis was conducted using MSCI ESG Analytics and focused on the following listed equity portfolios and benchmarks:

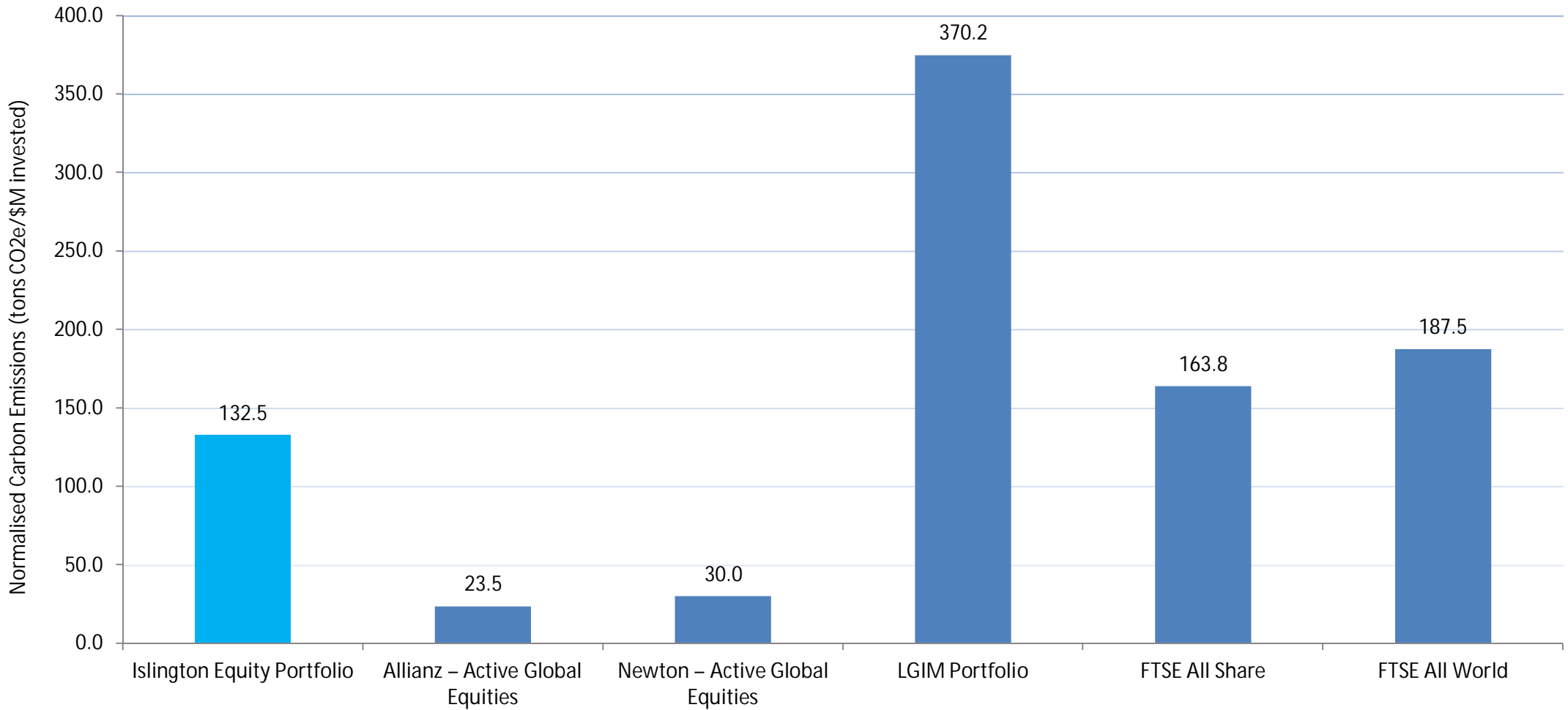
| Portfolio                          | Benchmark(s)   |
|------------------------------------|--|
| In-house UK passive equity         | FTSE All Share   |
| LGIM Global (ex-UK) passive equity | FTSE North America<br>FTSE Europe ex-UK<br>FTSE Developed Asia ex-Japan<br>FTSE Japan<br>FTSE Emerging Markets<br>FTSE RAFI 3000 |
| Allianz active Global equity       | FTSE All World   |
| Newton active Global equity        | FTSE All World   |
| Total equity portfolio             |  |

- Analysis is based on holdings data as at 30 November 2015 (prior to London CIV pooling).
- The Fund's aggregate asset allocation has been based on information as at 31 December 2015 (provided by State Street), with the exception of the LGIM regional fund allocations which have been pro rated based on LGIM's valuation as at 30 November 2015.

# CARBON FOOTPRINT ANALYSIS

## HIGH LEVEL RESULTS

NORMALISED CARBON EMISSIONS (tons CO<sub>2</sub>e / \$M invested)



# CARBON FOOTPRINT ANALYSIS

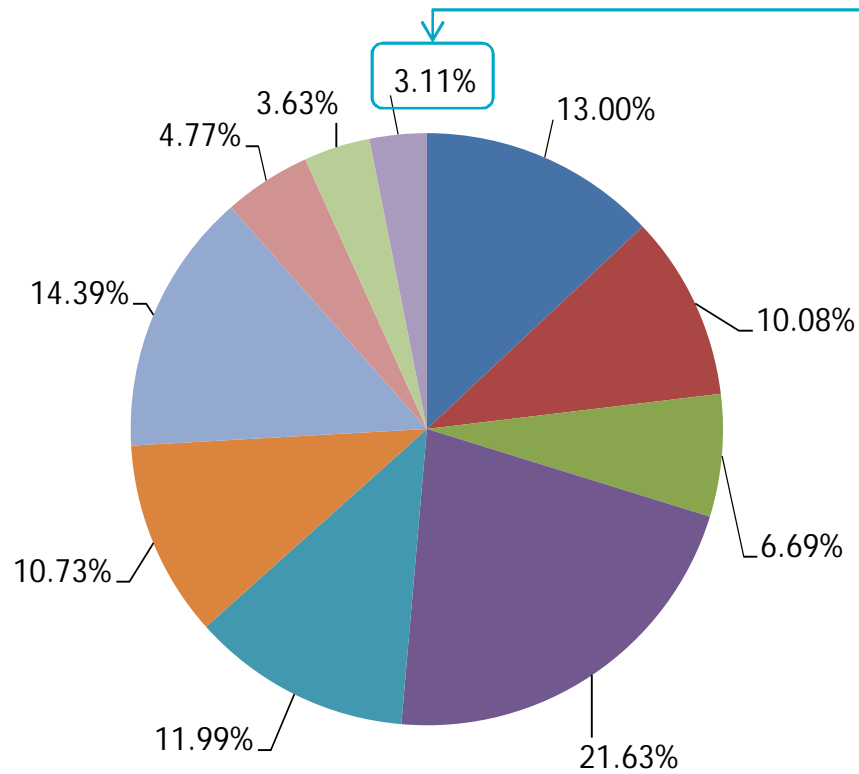
## SUMMARY COMMENTS

- A portfolio level carbon footprint is driven by significant over or underweight positions in companies or sectors with higher carbon emissions.
- The impact of sector exposure on a portfolio carbon footprint can be demonstrated with the two charts overleaf. These charts show the sector weights of the FTSE All World vs the carbon emissions of each sector.
- The three largest contributors in terms of carbon emissions at the sector level are:
  - Utilities: 40%
  - Materials: 26%
  - Energy: 17%
- An interesting point is that the Energy sector – despite being in the top three – has less than half of the carbon emissions compared to the Utilities sector. However, it is important to note that MSCI only considers Scope 1 and 2 emissions in its carbon footprint tool (Appendix 1 provides an overview of carbon footprinting).

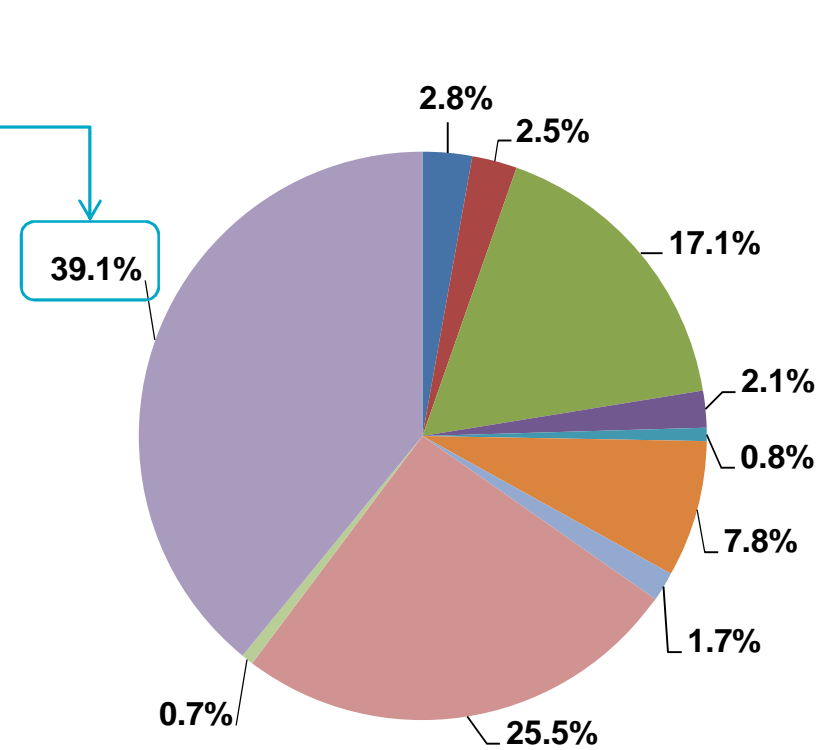
# CARBON FOOTPRINT ANALYSIS

## SUMMARY COMMENTS

FTSE All World – Sector weights



FTSE All World – Sector carbon emissions



- Consumer Discretionary
- Consumer Staples
- Energy
- Financials
- Health Care
- Industrials
- Information Technology
- Materials
- Telecommunication Services
- Utilities

# CARBON FOOTPRINT ANALYSIS

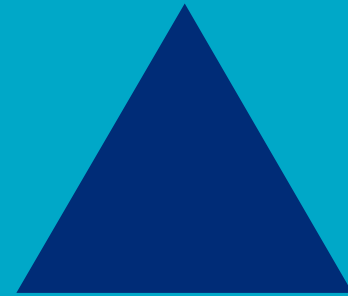
## SUMMARY COMMENTS

3. The **LGIM Portfolio** has the highest carbon footprint. This results from the allocations to the **LGIM FTSE RAFI 3000** and **LGIM FTSE Emerging Markets** passive portfolios, which have the highest carbon footprints of all the indices analysed (see Appendix 2 for additional detail).

- Of the 15 companies with the largest carbon footprint in the **FTSE Emerging Markets** index, 11 are in the Energy and Utilities sectors.
  - A similar picture is evident in the **RAFI 3000** portfolio i.e. 13 out of the 15 companies with the largest carbon footprint are in the Energy and Utilities sectors.
- Options available to the Fund for managing or reducing exposure to carbon risk within its equity portfolios are addressed in the next section.

# OVERVIEW

## CLIMATE CHANGE RISKS AND OPPORTUNITIES



## OVERVIEW

# CLIMATE CHANGE RISKS AND OPPORTUNITIES

- This document provides the Committee with summary information of the CF of the Fund's listed equity investments, using the MSCI ESG Analytics platform.
- Carbon footprinting has become a popular means of identifying exposure to 'high carbon' companies i.e. those with higher levels of carbon emissions.
- Whilst CF data comes with a number of caveats (see Appendix 1) it is one of the few tools currently available to investors that can provide a snapshot of their exposure to companies that are exposed to policy risk with regards to climate change.
- All else equal, investors should expect to see increasing policy measures, in particular in Developed Markets, to reduce carbon emissions and adapt the economy and society to the expected physical impacts of a changing global climate.

# OVERVIEW

## CLIMATE CHANGE RISKS AND OPPORTUNITIES

- These policy measures will likely have implications for investors. Indeed, Mercer's own research indicates that under a '2 degree scenario' – whereby efforts are made to keep the average global temperature increase to 2 degrees above pre-industrial levels – sectors with higher carbon intensity and/or exposure to fossil fuels may experience a significant reduction in annual returns due largely to climate policy measures.
- Specifically, our study suggests that Coal and Oil sector returns could be eroded by -2.0% per annum (p.a.) and -0.7% p.a. respectively. Further, returns from Utilities could fall by approximately 4% p.a. under the same scenario.



# OVERVIEW

## CLIMATE CHANGE RISKS AND OPPORTUNITIES

- From a portfolio perspective, investors have two broad options:
  1. **Low carbon or fossil fuel free equity indices:** These can be defined as equity benchmarks that reduce or remove exposure to high carbon and/or fossil fuel (i.e. Energy) companies. Low carbon index strategies have a risk management focus i.e. they aim to provide a ‘hedge’ against the risk of carbon pricing and/or other policy measures aimed at reducing carbon emissions (see example of MSCI Low Carbon index on slide 18, below). Fossil fuel free approaches are likely to be more attractive to investors concerned about ‘stranded assets’ and/or the reputational risks of holding oil, gas or coal producing companies. Implementation of this approach is via passive equity allocations.
  2. **Sustainability-themed investments:** For the purposes of this report, these are defined as active strategies that provide exposure to sustainability themes (such as low carbon energy, energy efficiency, health and water). These strategies focus on solutions to broad environmental and social challenges and are generally growth-oriented investments.
- Summary risk and return information on selected low carbon indices and sustainability-themed global equity strategies is provided in Appendix 3.

# OVERVIEW

## PASSIVE EQUITY EXAMPLE – MSCI

Passive Investment approaches can be used as a ‘hedge’ against future carbon pricing.

- Carbon pricing adds a cost per unit of carbon emitted by companies.
- Polluters either purchase carbon permits sufficient to offset their emission levels or invest in ways to reduce emissions.

Current innovation abounds in considering low-carbon alternatives in RAFI, Low-Volatility, Smart Beta strategies and across asset classes (e.g. green infrastructure).

Low carbon indices can significantly reduce exposure to emissions and reserves (see table for MSCI example).

### MSCI Low Carbon Target Index vs. MSCI World

|                             | MSCI WORLD | MSCI WORLD LOW CARBON TARGET |
|-----------------------------|------------|------------------------------|
| Total Return (%)            | 12.7       | 13.1                         |
| Total Risk (%)              | 10.0       | 10.1                         |
| Realised Tracking Error (%) | 0.0        | 0.4                          |
| Carbon emissions (Gt)       | 5.5        | 1.1                          |
| Carbon reserves (Gt)        | 108        | 12                           |

Source: MSCI, data for the period from November 2010 to May 2015 (annualised)

**80% REDUCTION**  
IN CARBON  
EMISSIONS



**90% REDUCTION**  
IN CARBON  
RESERVES



# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND



# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

- Investors interested in managing their exposure to higher carbon assets have tended to consider the following options:
  1. Excluding or divesting fossil fuel assets from their portfolio – in practice this tends to be companies involved in the extraction of coal, gas, oil and tar sands.
  2. Employing some form of alternative index construction for passive equities – to reduce portfolio weightings to higher carbon companies.
  3. Investing in sustainability-themed strategies in order to generate returns from the long-term shift to a lower carbon economy and the growth in products and services that this shift results in.
- Selective divestment of individual companies can be problematic from an implementation perspective, especially within passive portfolios. It also raises wider issues about the use of ‘exclusion’ policies which the Fund has not adopted in recent years.
- Engagement with companies is another option often employed by investors, in particular to encourage greater disclosure of climate risks facing a company and its measures to understand and mitigate those risks.

# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

- Mercer encourages asset owners to adhere to principles of good stewardship (e.g. as outlined in the UK Stewardship Code). However, we do not consider engagement in detail on this occasion, other than in relation to the ongoing EM equity search.
- The options we discuss further in this section are as follows:
  1. Include climate risk within the broader manager due diligence in the ongoing active EM equity search process e.g. by asking specific questions of shortlisted managers.
  2. Allocate some of the Fund's UK passive equity assets to a lower carbon UK passive equity fund.
  3. Allocate assets to an active Global equity strategy with a thematic sustainability focus.
  4. As an alternative to point 3, allocate assets to a lower carbon Global passive equity fund.
- The remainder of this section explores these options in more detail. We also provide additional CF analysis for an alternative scenario for the Fund (for illustrative purposes) – incorporating points two and three.

# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

- It is important to note that Mercer does not recommend that the Fund focuses on reducing its CF purely for the sake of having a lower number.
- We believe that it is useful to know what the Fund's CF is, and in particular what is driving the specific number. However, actions to manage portfolio climate risk should be based on a clear objective which should consider broader aspects of this risk.
- In our view, this objective should comprise the following elements:
  - Identify portfolio exposure to climate risk (e.g. at the sector or stock level) – CF analysis can be helpful in this regard.
  - Reduce or 'hedge' some of that risk e.g. using a low carbon index approach.
  - Consider the investment opportunities arising from climate risk via sustainability-themed equity strategies.
- The third point above (an allocation to a sustainability-themed strategy) would most likely produce a lower CF over time but would not necessarily actively target a specific reduction in a given time frame.

# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

1. **Include climate change considerations in the ongoing EM equity search.** For example, manager due diligence should include questions to help the Fund determine a manager's views on climate risk in general, how these views are implemented in a portfolio context and the extent of any engagement with portfolio companies. The Fund could also consider EM equity managers that explicitly integrate ESG issues into their investment strategy (e.g. by using Mercer's ESG Ratings).
2. **Allocate some of the Fund's UK passive equity assets to a lower carbon UK passive equity alternative.** There are limited existing options for UK investors to track a low carbon UK equity index. Mercer is aware of one fund, provided by LGIM, that is based on the FTSE All Share. The fund is optimised to reduce the carbon footprint of the parent index (by approximately 20%) whilst closely matching its return and risk characteristics. The fund was seeded by the BT Pension Scheme in 2011. An allocation to this fund could help the Fund manage some of the climate policy risk inherent in the UK market, with the additional benefit of lowering the Fund's overall CF.

# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

- Mercer conducted CF analysis on the LGIM fund (based on holdings data as at 30 November 2015)– the result confirmed that this fund has a CF approximately 20% lower than the FTSE All Share. The impact of incorporating an allocation of 10% to this index on the Fund’s overall CF of aggregate portfolio is shown on slide 28.
  - Further analysis would be required to determine whether the LGIM fund would be suitable for Fund in terms of its risk/return characteristics, fees etc.
3. **Allocate assets to an active Global equity strategy with a thematic sustainability focus.** An additional approach is to consider an active, global mandate that targets specific sustainability themes. This is a more positive approach in that it aims to benefit from the shift to a lower carbon economy and the broader growth in demand for sustainable products and services. Strategies in this universe generally do not have explicit policies to reduce their carbon footprint or exposure to fossil fuels. However, they implicitly tend to avoid these sectors.



# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

- In order to highlight the CF characteristics of sustainability-themed strategies, we also conducted CF analysis of Ownership Capital (OC) (based on holdings data as at 31 March 2016) – a highly rated strategy from Mercer’s research database (GIMD).
- The results show that the OC portfolio has a significantly lower CF versus the Fund’s existing active equity managers – approximately one third of the CF achieved by Newton.
- Slide 28 shows the CF impact – at the aggregate Fund level – of switching 5% of the Newton assets into the OC strategy (alongside the allocation to the UK low carbon index).

# MANAGING CLIMATE RISK

## OPTIONS AVAILABLE TO THE FUND

4. **Allocate assets to a lower carbon Global passive equity alternative.** A further option for the Fund to consider is an allocation to a fund tracking a low carbon global passive equity index. This approach is presented as an alternative to an active sustainability-themed allocation.
- The availability of funds tracking a low carbon global index is also limited. Coincidentally, LGIM also manages one of the few funds available in this market. This particular fund tracks the MSCI Low Carbon Target index. This index aims to reduce the CF (measured as carbon emissions relative to sales) and its exposure to carbon reserves versus the parent index whilst targeting 30bps of tracking error. This LGIM fund was seeded in 2015 by the Environment Agency Active Pension Fund.
  - Our analysis of the CF of this fund (slide 28) shows that the LGIM fund has a CF approximately 80% lower than the FTSE All World index. **Note:** the LGIM fund tracks the MSCI World (rather than All Country World) – although a similar reduction in CF is achieved vs that index.

# MANAGING CLIMATE RISK

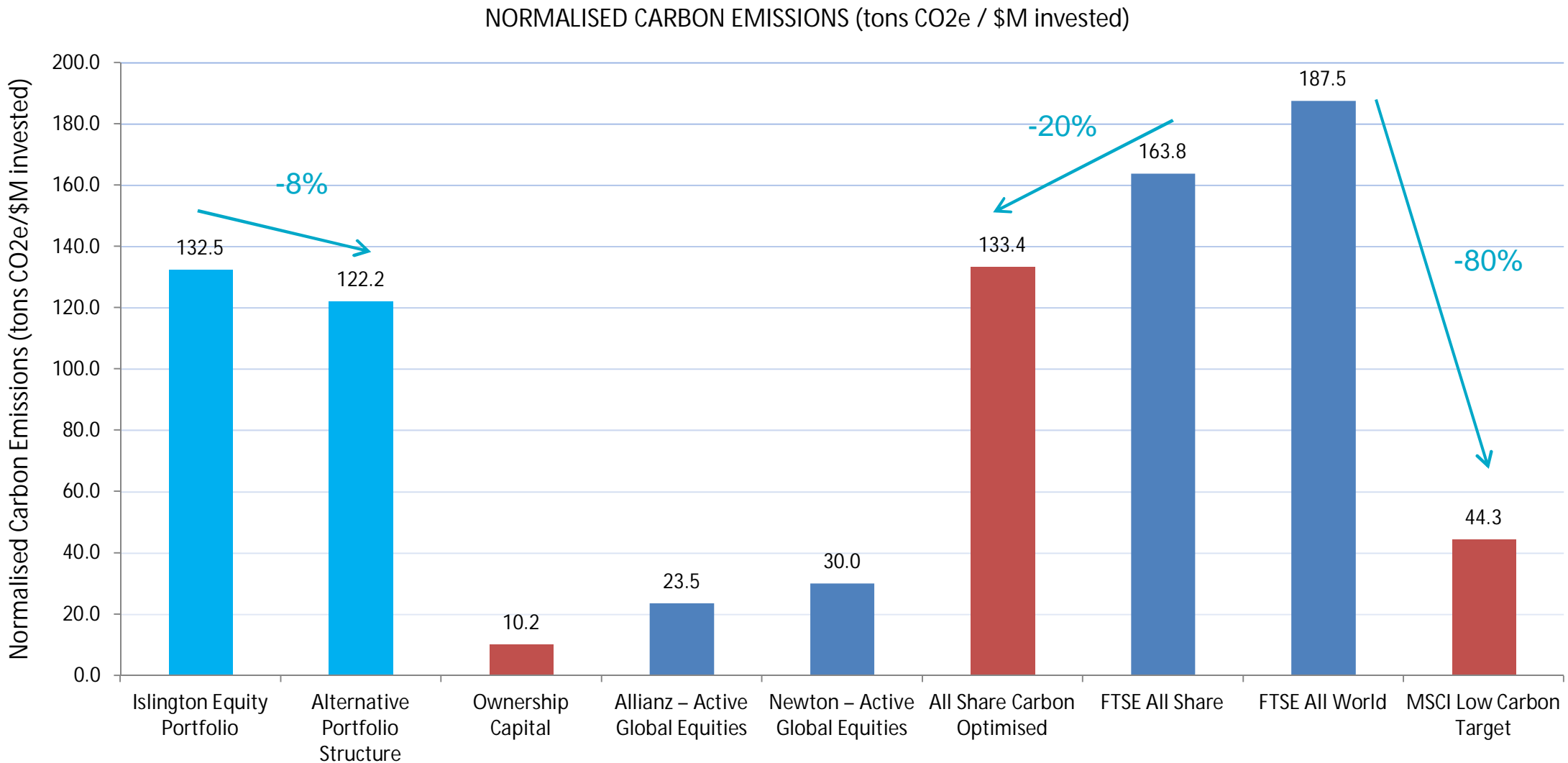
## ALTERNATIVE PORTFOLIO STRUCTURE

- In order to demonstrate the CF impact of the approaches discussed above, we created an alternative portfolio structure as set out below. **Note:** this is for illustrative purposes only.
- **Alternative portfolio structure**
  - Reducing the current UK Passive portfolio by 10% and allocating this amount to the **LGIM UK carbon optimised fund**.
  - Reducing the current allocation to Newton by 5% and allocating this amount to **Ownership Capital**.
- The impact of this alternative structure on the CF of the Fund's aggregate portfolio is shown in the chart on the following slide.

# MANAGING CLIMATE RISK

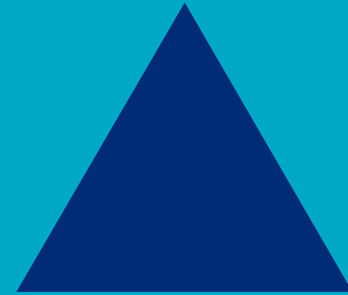
## ALTERNATIVE PORTFOLIO STRUCTURE

- Alternative portfolio structure results in an 8% reduction in total CF.



# APPENDIX 1

## BACKGROUND TO PORTFOLIO CARBON FOOTPRINT ANALYSIS



# PORTFOLIO CARBON FOOTPRINT ANALYSIS

## WHAT IS IT?

A measure of the carbon emissions “owned” by an investor i.e. the emissions attributable to an investor’s portfolio.

The measure is based on:

- Company-level carbon emissions, and
- Portfolio weightings.



Generates an *aggregate measure of portfolio carbon emissions*.

Portfolio carbon footprint is typically compared to the footprint of the relevant benchmark (e.g. Portfolio vs. MSCI World).

Provides a basic measure of an investor’s exposure to ‘carbon risk’.

Carbon footprint data comes with a number of caveats – mostly over *data quality and availability*.

Carbon footprint analysis is primarily a tool for listed equity portfolios.

- Fixed income and Unlisted assets are more challenging.

# PORTFOLIO CARBON FOOTPRINT ANALYSIS

## HOW IS IT PRODUCED?

Producing a portfolio carbon footprint requires the following steps:

Obtain absolute carbon emissions data for all portfolio companies.

Calculate the “owned” percentage of absolute emissions using portfolio weightings.

Normalise the data to allow for comparisons (e.g. by revenue; size).  
Creates a “carbon intensity” measure for each company / portfolio.

Perform the same analysis for all companies in the relevant benchmark.

Compare the portfolio and benchmark results.

# PORTFOLIO CARBON FOOTPRINT ANALYSIS

## STRENGTHS AND WEAKNESSES

### Strengths

- *Useful starting point* for carbon exposure assessment.
- Relatively *simple measure* of “owned” portfolio emissions / intensity.
- Provides *Management Information*:
  - If “portfolio decarbonisation” is an objective – progress can be tracked.
  - Enables sector- and benchmark-relative comparisons.
- Highlights *areas for further analysis and engagement*, with:
  - Investment managers.
  - Portfolio companies.

### Weaknesses

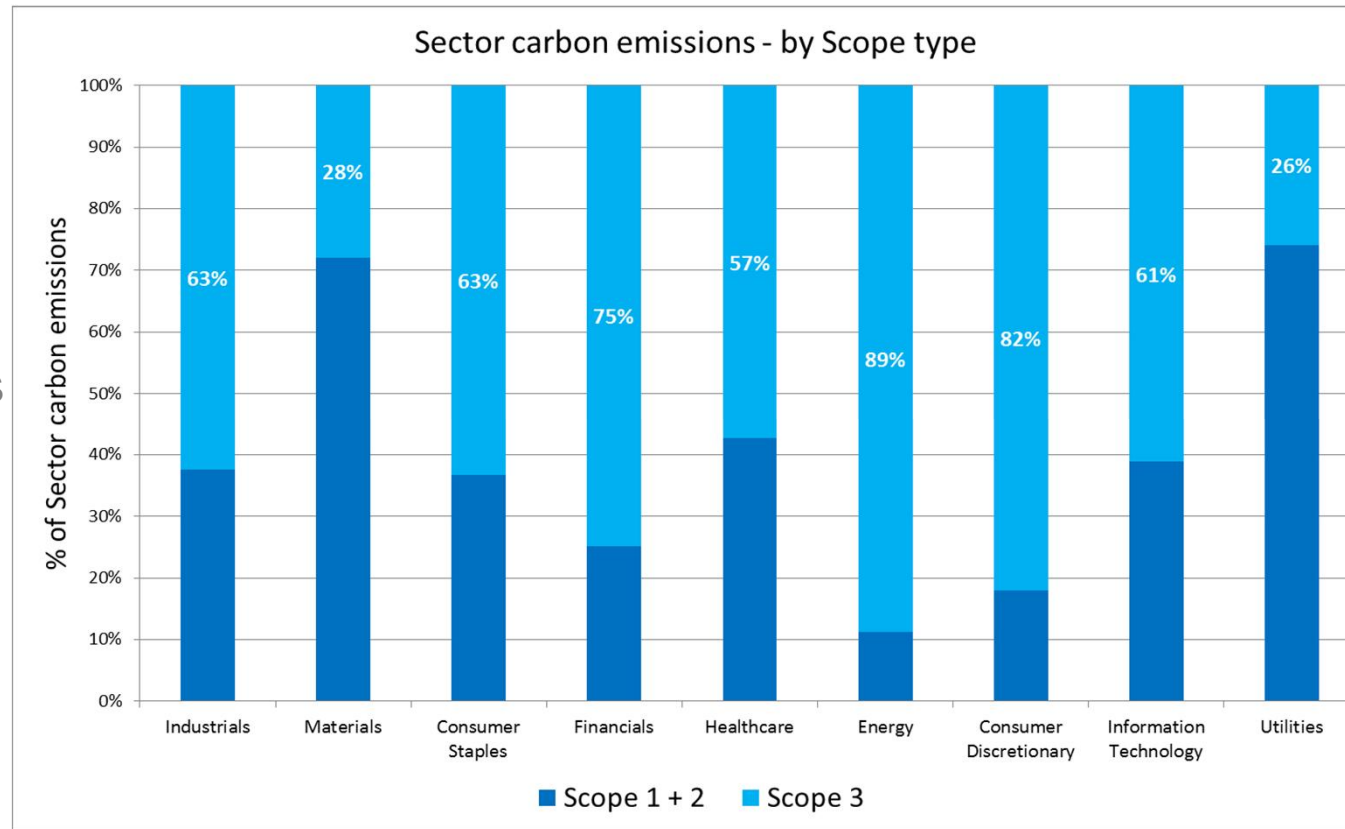
- *Disclosure risk* i.e. inconsistent company disclosure of emissions :
  - Scope 1, 2, 3...
  - Comparability: CO<sub>2</sub>; CO<sub>2</sub>e; other Greenhouse Gases (GHGs)
  - Bias towards Large Caps and DM (EM data largely absent).
  - Limited data verification.
- *Relevance risk*
  - Scope 1+2 emissions may not correlate to corporate policy risk.
- *Measurement risk*
  - Estimation is required to fill gaps (e.g. by data vendors).
  - Methodologies (and results) vary.
  - Normalisation approaches (ratios)



# PORTFOLIO CARBON FOOTPRINT ANALYSIS

## EMISSION SCOPES 1-3

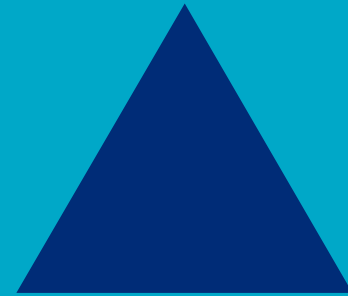
- The GHG Protocol defines emissions as:
  - Scope 1: operational emissions
  - Scope 2: purchased electricity
  - Scope 3: indirect emissions
- A significant proportion of emissions fall within *Scope 3* – data for which is not widely reported.
- Carbon footprinting tools either:
  - Exclude Scope 3 by focusing on Scopes 1 & 2 only, or
  - Use estimates and industry averages to fill in data gaps.
- Scope 3 data would help to form a fuller picture of company exposure to future carbon pricing scenarios.



Source: UN PRI; South Pole Carbon

# APPENDIX 2

## DETAILED CARBON FOOTPRINT RESULTS



# CARBON FOOTPRINT RESULTS

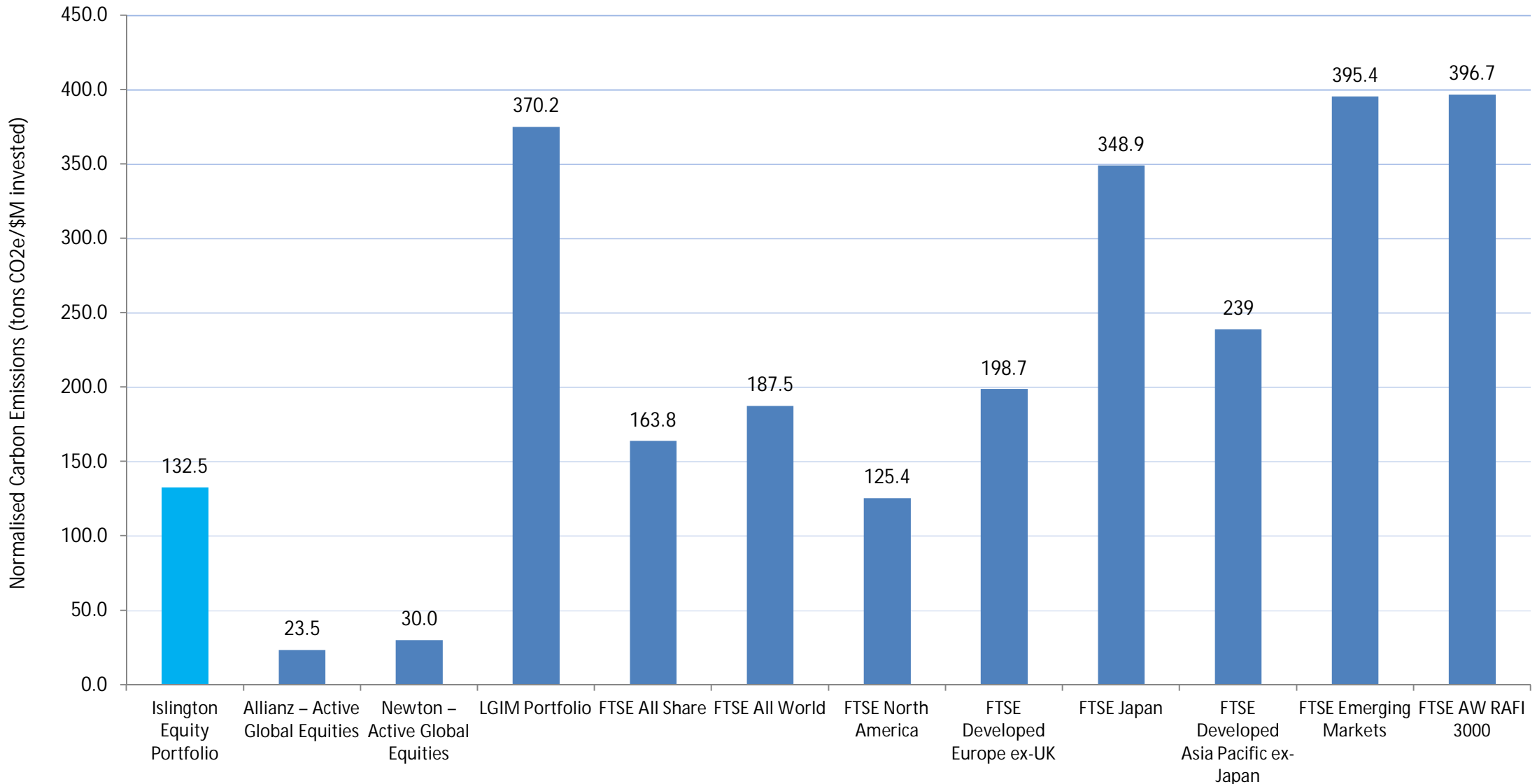
## SUMMARY OF RESULTS – ALL MARKETS

| MANAGER                          | PORTFOLIO/BENCHMARK ANALYSED         | COVERAGE (%) | NORMALISED CARBON EMISSIONS (tons CO <sub>2</sub> e / \$M invested) | Percentage of equity portfolio (%) |
|----------------------------------|--------------------------------------|--------------|---|------------------------------------|
| Entire equity portfolio          | Portfolio Holdings                   | 95.4         | 132.5   | 100.0                              |
| In-House – Passive UK Equities   | FTSE All Share                       | 91.2         | 163.8   | 47.1                               |
|                                  | LGIM Portfolio                       | 97.3         | 370.2   | 11.8                               |
| LGIM – Passive Global Equities   | FTSE North America                   | 99.9         | 125.4   | -                                  |
|                                  | FTSE Developed Europe ex-UK          | 98.1         | 198.7   | 1.4                                |
|                                  | FTSE Japan                           | 99.4         | 348.9   | 0.2                                |
|                                  | FTSE Developed Asia Pacific ex-Japan | 98.1         | 239.0   | 0.8                                |
|                                  | FTSE Emerging Markets                | 94.7         | 395.4   | 5.0                                |
|                                  | FTSE AW RAFI 3000                    | 99.4         | 396.7   | 4.4                                |
| Allianz – Active Global Equities | Portfolio Holdings                   | 100.0        | 23.5  | 13.7                               |
| Newton – Active Global Equities  | Portfolio Holdings                   | 99.9         | 30.0  | 27.5                               |
|                                  | FTSE All World                       | 99.0         | 187.5   | -                                  |

# CARBON FOOTPRINT RESULTS

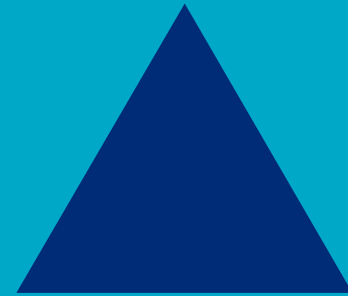
## SUMMARY OF RESULTS – ALL MARKETS

NORMALISED CARBON EMISSIONS (tons CO<sub>2</sub>e / \$M invested)



# APPENDIX 3

## LOW CARBON AND SUSTAINABILITY- THEMED INVESTMENTS



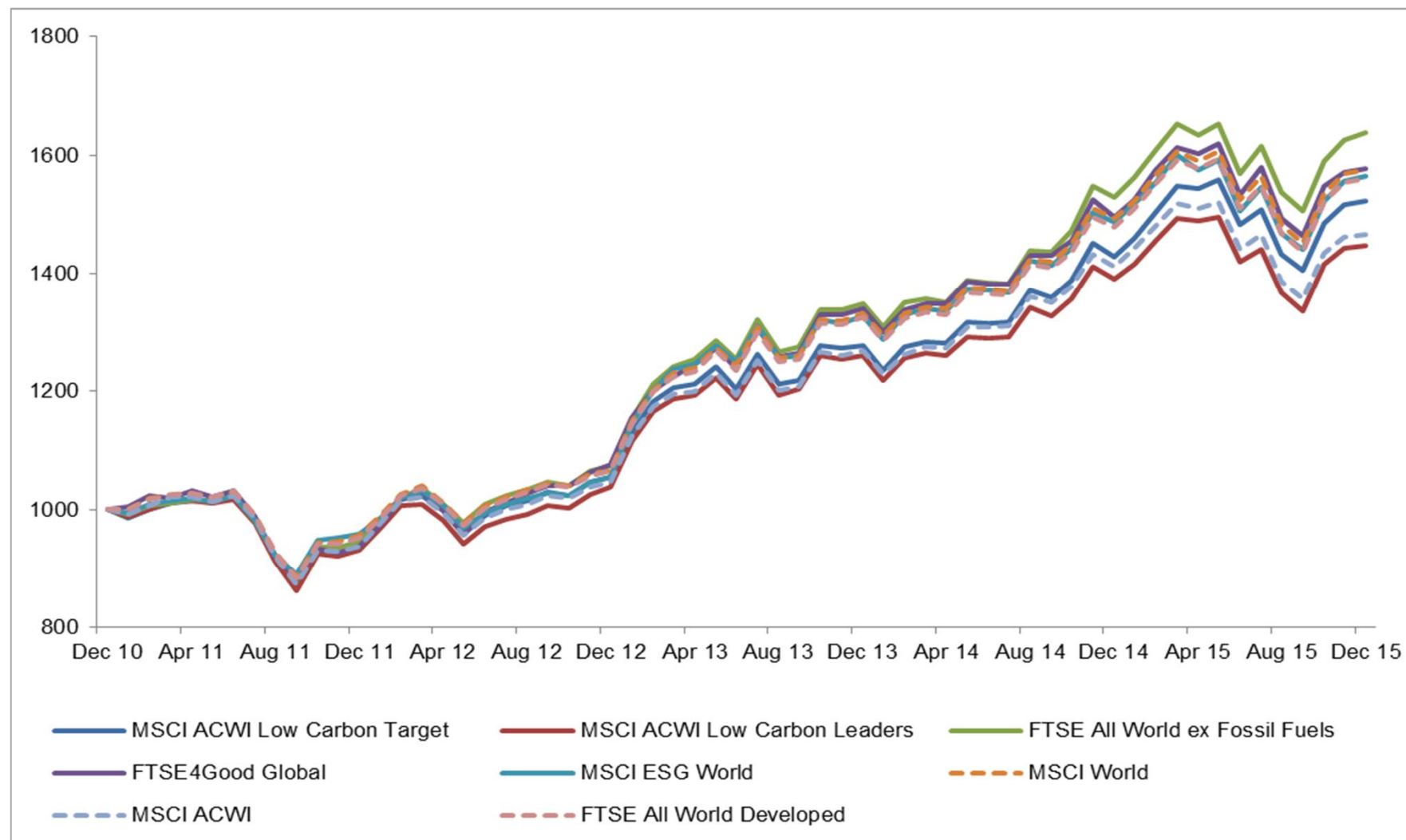
# LOW CARBON & FOSSIL FREE PASSIVE EQUITY OVERVIEW

- There are three broad categories of low-carbon indices:
  - **Broad-market optimized:** Does not exclude any companies but tilts allocations to companies with lower-carbon intensities.
  - **Best-in-class:** Typically involves screening out companies with the highest carbon intensity. Maintains parent index sector exposures but re-weights towards companies with the lowest carbon intensity within each sector.
  - **Fossil free:** Excludes fossil fuel companies (typically companies who have fossil fuel reserves or are involved in the extraction process).
- There are several questions for investors in determining the most appropriate approach, including:
  - What risks do low-carbon/fossil-free indices protect against?
  - Are there any unexpected consequences from the construction methodology?
  - Could an investor be taking unexpected biases as a result?
  - Which category of low-carbon index is most suitable for the investor?
- **The use of low carbon or fossil free indices is one of many tools available for tackling climate change risks. Low carbon and fossil free index strategies do not typically offer exposure to investment opportunities aligned with a shift to a low-carbon economy.**
- **The “premium” associated with these indices is reduced carbon exposure rather than performance. This reduced exposure may be rewarded in financial terms, all else equal, as policy measures develop to reward lower carbon activities.**
- **Investors need to be fully aware of the underlying construction methodology – in particular, ‘fossil free’ does not have one consistent definition’.**
- **The use of such indices should not be seen as equivalent to, or as a substitute for, actively managed equities with a high level of ESG integration.**
- **Both low carbon and fossil free indices can serve to meet external commitments to align with a decarbonising economy and help to send a strong signal to stakeholders that they are proactively managing climate risk.**

**Mercer has reviewed the indices provided by the leading index providers and has assessed a number of the current investment strategies available. This information is now available to support investor decision making.**

# LOW CARBON & FOSSIL FREE PASSIVE EQUITY OVERVIEW

- Performance of low carbon and ESG indices versus parent index (as at 31 December 2015)



# LOW CARBON & FOSSIL FREE PASSIVE EQUITY OVERVIEW

- Performance of low carbon and ESG indices versus parent index (as at 31 December 2015)

| Index Name                            | Return      |              |              | Vol          |              |
|---------------------------------------|-------------|--------------|--------------|--------------|--------------|
|                                       | 1 year      | 3 year       | 5 year       | 3 year       | 5 year       |
| <b>FTSE4Good Global</b>               | <b>5.5%</b> | <b>13.7%</b> | <b>9.6%</b>  | <b>10.2%</b> | <b>10.5%</b> |
| <i>FTSE All World Developed</i>       | 5.5%        | 13.6%        | 9.3%         | 10.2%        | 10.2%        |
| <b>FTSE All World ex Fossil Fuels</b> | <b>7.2%</b> | <b>15.1%</b> | <b>10.5%</b> | <b>10.2%</b> | <b>10.3%</b> |
| <i>FTSE All World</i>                 | 4.0%        | 11.9%        | 8.0%         | 10.1%        | 10.4%        |
| <b>MSCI ACWI ESG</b>                  | <b>4.0%</b> | <b>12.6%</b> | <b>8.5%</b>  | <b>10.3%</b> | <b>10.2%</b> |
| <b>MSCI ACWI Low Carbon Target</b>    | <b>6.6%</b> | <b>13.0%</b> | <b>9.1%</b>  | <b>10.1%</b> | <b>10.5%</b> |
| <b>MSCI ACWI Low Carbon Leaders</b>   | <b>4.1%</b> | <b>11.7%</b> | <b>8.0%</b>  | <b>10.2%</b> | <b>10.6%</b> |
| <i>MSCI ACWI</i>                      | 3.8%        | 11.8%        | 8.0%         | 10.1%        | 10.3%        |



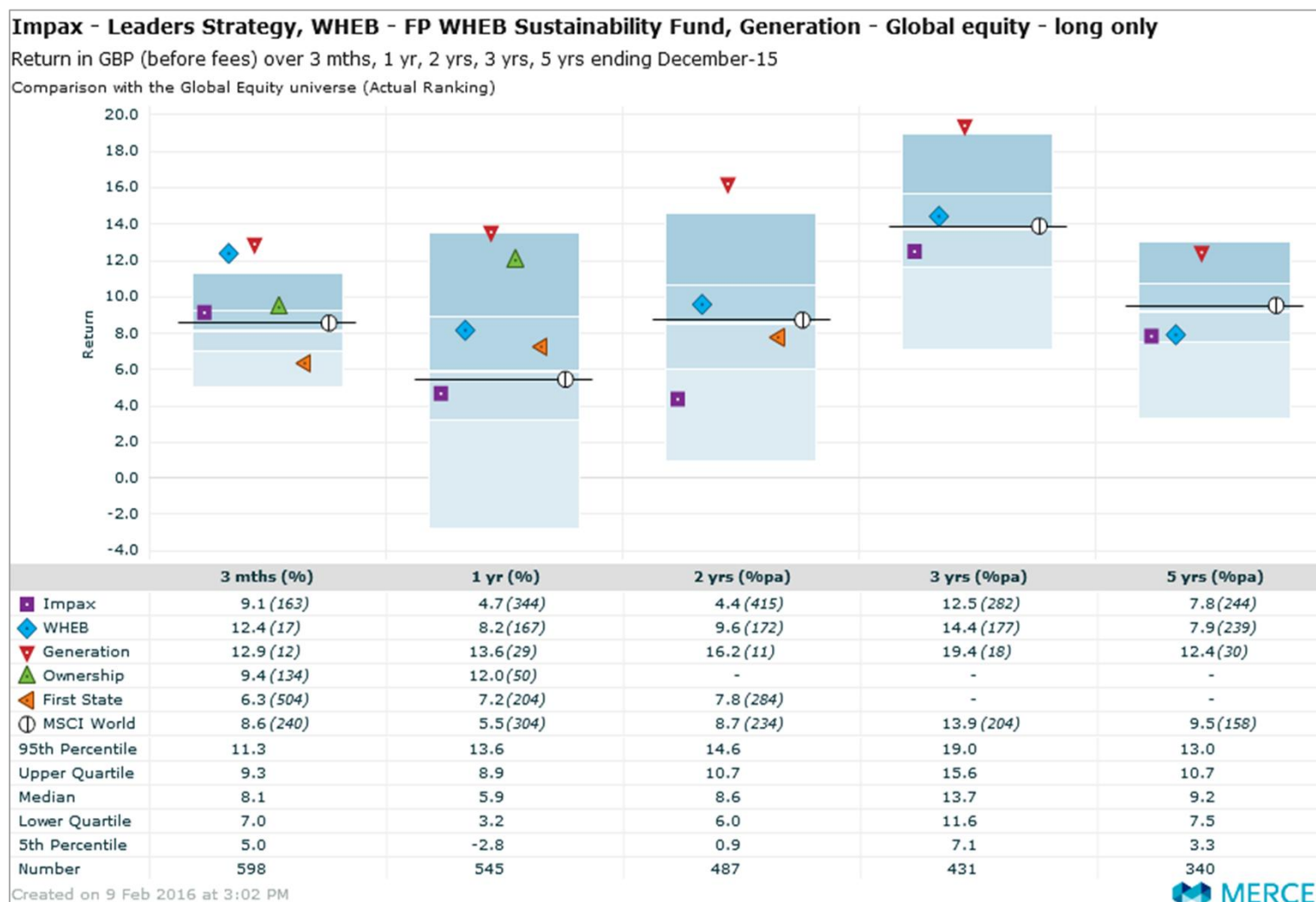
# SUSTAINABILITY-THEMED INVESTMENTS

## OVERVIEW

- Sustainability-themed investment strategies generally focus on a range of sectors or companies whose products and services are specifically aimed at contributing to positive environmental and social development.
- Although sustainability themes are wide-ranging, and new themes are emerging, some of the most prevalent investment ideas include:
  - **Environmental themes**, focused on solutions to environmental problems, increasing efficiency, and addressing resource scarcity: renewable energy; energy efficiency and clean technology; water and waste management; sustainable timber and agriculture.
    - Environmental themes can be accessed through either pure-play investment strategies (which focus on one particular theme) or through blended investment products (capturing a number of themes concurrently).
  - **Social themes**, encompassing demographic trends such as increasing and aging populations, consumption patterns for a rising middle class, investment in low-income areas (such as impact investing), and health issues. Opportunities are typically captured in healthcare, education and sustainable goods and services.
    - Social themes are generally accessed through broad sustainability investment strategies (which combine both environmental and social themes).

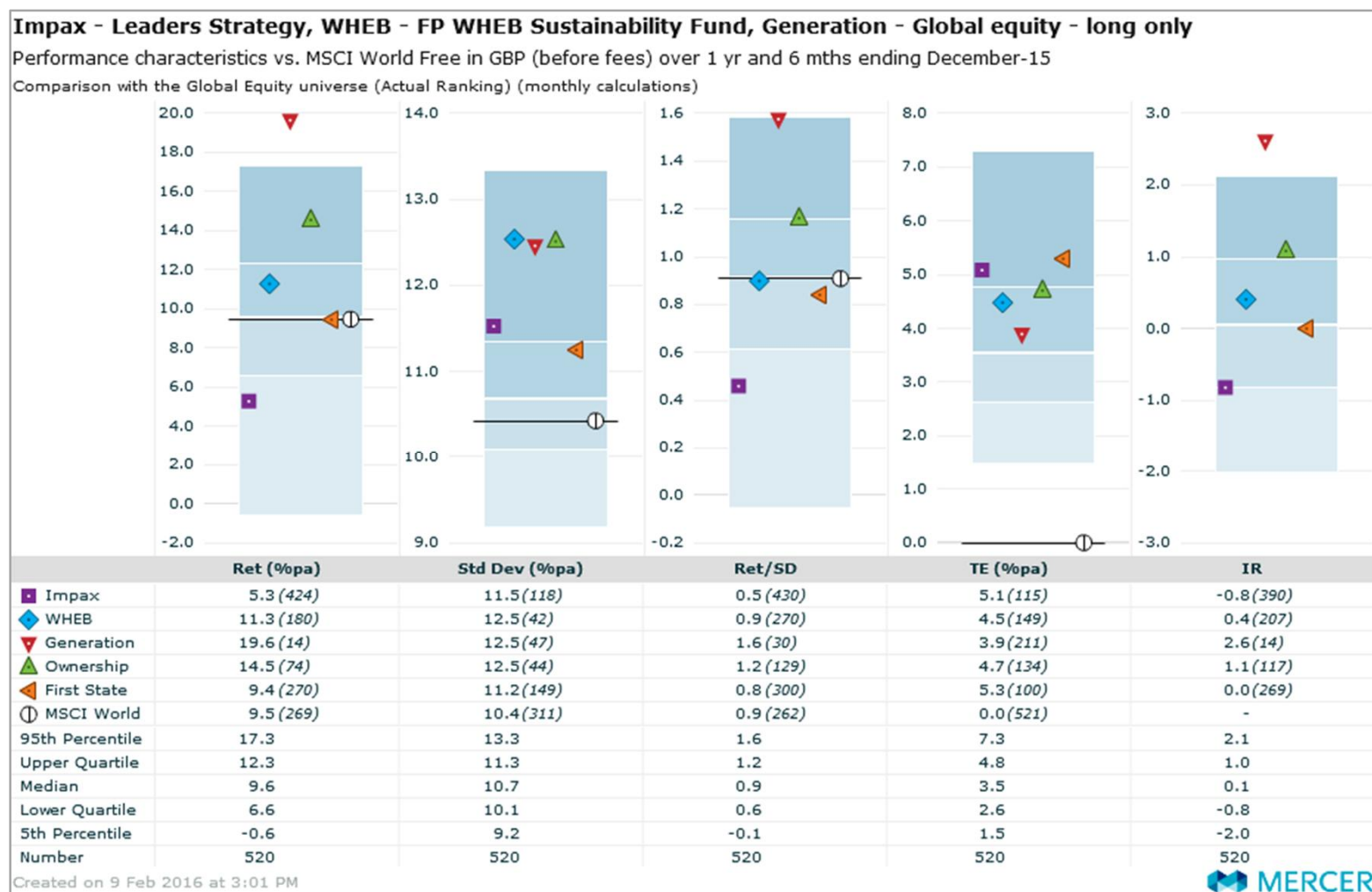
# SUSTAINABILITY-THEMED INVESTMENTS OVERVIEW

- Comparative return data for five Sustainability-themed Global Equity strategies (as at December 2015)



# SUSTAINABILITY-THEMED INVESTMENTS OVERVIEW

- Additional performance characteristics of for five Sustainability-themed Global Equity strategies (as at December 2015)



**MAKE**



**TOMORROW,  
TODAY**