Hackney

REPORT OF THE GROUP DIRECTOR, FINANCE & CORPORATE RESOURCES		
Carbon Risk Audit – 2019 Interim Results **Special Pensions Committee** **17th February 2020**	**Classification** **PUBLIC** **Ward(s) affected** **ALL**	**Enclosures** **One** **AGENDA ITEM NO. 4**

1. **INTRODUCTION ¶**

1.1 This report presents the results of a carbon risk audit carried out on the Fund's equity and segregated bond portfolios. The audit has been carried out by TruCost to measure the Fund's carbon footprint and exposure to future CO_2 emissions, and to assess progress made against the Fund's target to reduce exposure to future CO_2 emissions by 50% by 2022.

1.2 The results show that the Fund has reduced its exposure to carbon reserves by 31.4% between July 2016 and June 2019. This places the Fund well over halfway to its target of 50% over 6 years, with 60% of the target reduction already achieved. The Fund is therefore on track to achieve its target ahead of time and could even outperform it.

1.3 We are proud to have responded to this issue early and to have been one of the first LGPS funds to set and transparently monitor performance against a carbon reduction target. The results from this interim assessment of the Fund's carbon exposure will be used to help meet our overall target of at least a 50% reduction in exposure to future CO_2 emissions and to help set our investment strategy for the next 3 years.

2. → **RECOMMENDATIONS¶**

2.1 The Pensions Committee is recommended to:

- Note the reduction in exposure to future CO_2 emissions by 31% over 3 years, which places the Fund well over halfway to its target of 50% over 6 years.
- Note that officers are engaging with the relevant fund manager with regards to the Fund's holding in Indonesian coal miner PT Bukit Asam, with a view to looking at options available to remove this holding from the Fund's investment portfolio
- Agree that consideration of performance against the Fund's carbon reduction target will form a formal part of setting the 2020 investment strategy.
- Agree that consideration of approaches to improving alignment with the 1.5^{o}C warming scenarios will form a formal part of setting the 2020 investment strategy.
- Agree that the strategy setting process will consider how the Fund can make a positive contribution to the transition to a low carbon economy, through investment in renewable infrastructure and other suitable asset classes.

3. → RELATED DECISIONS¶

3.1 Pensions Committee - 29th March 2017 - investment Strategy Statement

3.2 Pensions Committee - 24th January 2017 - Investment Strategy Statement

3.3 Pensions Committee - 19th September 2016 - Update on climate change recommendations and presentation of carbon footprinting results.

3.4 Pensions Committee - 28th January 2016 - Future Workstreams - Climate Change

4. → COMMENTS OF THE GROUP DIRECTOR OF FINANCE & CORPORATE RESOURCES¶

4.1 The Pensions Committee acts as Scheme Manager for the Pension Fund and is therefore responsible for the management of £1.7 billion worth of assets and for ensuring the effective and efficient running of the Pension Fund. The investment returns that the Fund is able to deliver have significant financial implications, not just for the Fund itself but also on the Fund's employers in terms of the level of contributions they are required to make to meet the Fund's pension promises, which are underwritten by statute.

4.2 The Fund recognises that investment in fossil fuels and the associated exposure to potential stranded assets scenarios pose material financial risks. These risks apply not only to the Fund's investment portfolio but also, when considered on a wider scale, to long term global economic growth.

4.3 In recognising the risks that climate change and stranded assets scenarios could pose to the Fund, the Committee needs to understand where these risks might apply and how they can best be mitigated within the investment management framework within which LGPS funds operate. This report provides the Committee with a greater understanding of where climate risks are concentrated within its investment portfolio, which can then be used to help mitigate those risks within its investment strategy.

4.4 The Group Director is very pleased to report the reduction in exposure to future CO_2 emissions by 31% over 3 years, which places the Fund well over halfway to its target of 50% over 6 years, with 60% of the target reduction already achieved The Fund is therefore on track to achieve its target ahead of time and might even outperform it. The reduction is fully compatible with the Fund 's wider investment strategy and has been achieved with no negative impact on performance; the Fund's performance has improved relative to its peer group (other local authority pension funds) over the 3 year period since the introduction of the target.

5. → COMMENTS OF THE DIRECTOR OF LEGAL AND GOVERNANCE SERVICES¶

5.1 The Pensions Committee has delegated authority for managing all aspects of the Pension Fund including the following from the Committee's Terms of Reference:

- To formulate and publish an Investment Strategy Statement
- To set the overall strategic objectives for the Pension Fund, having taken appropriate expert advice, and develop a medium term plan to deliver the objectives.
- To determine the strategic asset allocation policy

5.2 Regulation 7 of the Local Government Pension Scheme (Management and Investment of Funds) Regulations 2016 requires the Administering Authority to formulate an Investment Strategy Statement (ISS) in line with guidance published by the Secretary of State. The guidance requires the Fund to include a section on its approach to Environmental, Social and Governance (ESG) factors within its ISS.

5.3 In 2014, the Law Commission produced guidance on the fiduciary duties of investment intermediaries, which indicated that investors should have regard to ESG factors where they are financially material. In its guidance to occupational schemes, the Pensions Regulator has given a clear indicator that it believes this to be the case for climate change.

5.4 This report helps to demonstrate that the Committee is factoring climate risk into its investment strategy setting process as a material financial risk and will make clear disclosures with regards to its approach in the ISS as required by the LGPS (Management and Investment of Funds) Regulations 2016.

6. BACKGROUND TO THE REPORT

6.1 In January 2016, the Fund held its initial strategy meeting to consider in detail the Fund's approach to investment in fossil fuels and management of the financial risks posed by climate change. At that meeting, the Committee considered and approved a set of recommendations reflecting both its recognition of these risks and a strengthened commitment to factor them into its investment approach. The recommendations were as follows:

- Develop a policy statement regarding the London Borough of Hackney's approach to fossil fuel investment with a view to inclusion as a section within the new Investment Strategy Statement (ISS)
- Agree to monitor carbon risk within the London Borough of Hackney Pension Fund and to appoint a specialist contractor to conduct a carbon footprint of the Fund
- Review options for the Pension Fund's passive UK equity mandate
- Continue engagement activities with the Fund's investment managers on their approach to fossil fuel and to promote consideration of climate change issues with managers when making investment decisions.
- Maintain an active approach to climate change issues with investee companies and look for further opportunities to work with others on issues of ESG importance
- Consider options for an initial active investment of approximately 5% of the Fund in a sustainability/low carbon or clean energy fund(s)
- Review options for switching some of the existing property mandate into a low carbon property fund
- In recognition of the financial risks posed by climate change, resolve to amend the Fund's risk register to reflect this as a risk

6.2 The Fund has now completed or commenced work on all of the above recommendations. Since 2016, the Fund has:

- Included a carbon reduction policy statement within the ISS, clearly setting out the carbon reduction target
- Commissioned 2 carbon footprint reports (2016 and 2019) - these have been used to set and monitor the Fund's carbon reduction target
- Reviewed exposure to UK passive equities (one of the Fund's most significant sources of exposure to reserves) and reduced the Fund's allocation from 25% to 10% of assets under management
- Changed the Fund's active equity managers, ensuring that the new manager considers carbon risk as an integral part of its decision making. The Fund continues to engage with both its active and passive equity managers
- Stepped up involvement with the work of the Local Authority Pension Fund Forum (LAPFF), which engages collectively on behalf of local authority pension funds. Cllr Chapman, Chair of the Pensions Committee, is now a member of the LAPFF executive and attends engagement meetings on behalf of the group
- Invested 23% of the Fund in sustainable/low carbon equity funds, far above the initial commitment of 5%
- Switched £25m of the Fund's property mandate into Threadneedle's Low Carbon Workplace Fund, which is a partnership between Columbia Threadneedle Investments, the Carbon Trust and property developer Stanhope. Through the fund, the partnership acquires commercial office buildings and refurbishes them, turning them into energy efficient workplaces. Once occupied, the buildings' energy and carbon performance are monitored against standards set by the Carbon Trust, who also provide support to occupiers to help reduce their energy usage
- Amended the Fund's risk register to include carbon risk/stranded assets within the Fund's Environmental, Social and Governance risks

6.3 We are very pleased by the progress made on implementing these recommendations. The Fund has gone significantly beyond the original recommendation in many cases, perhaps most notably in the case of the carbon footprinting recommendation. The Fund used this initial assessment as the start of a significant 6-year work programme, which is set out in more detail in sections 7-13.

7. CARBON REDUCTION TARGET

7.1 The Fund undertook its first carbon risk audit in summer 2016, following the recommendation made at the January 2016 meeting to commission a carbon footprint report for the Fund. Carried out by Trucost, the audit assessed not only the carbon footprint of the Fund's equity portfolio, but also its exposure to future emissions through fossil fuel reserves.

7.2 The Fund's view is that exposure to future emissions most accurately represents the risk to the Fund from investing in fossil fuel companies. Assessing exposure to emissions from reserves in this way helps the Fund to take a view on its exposure to potentially stranded assets that may provide unusable as a result of the transition to a low carbon economy.

7.3 After careful consideration of how carbon risk could best be reduced within the investment management framework in which LGPS funds operate, and after taking proper advice, the Committee considered it appropriate to propose a quantifiable, time-bound target for a reduction in the Fund's exposure to future fossil fuel emissions. The Committee agreed that the Fund should:

- Reduce its relative exposure to future emissions from fossil fuel reserves (measured in $MtCO_2e$ – million tonnes of CO_2 emissions) by 50% over 2 valuation cycles (6 years)
- Measure the reduction relative to the Fund's position as at July 2016 and adjusted for Assets Under Management (£AUM)

7.4 The proposal represented an initial step in ensuring that the Fund is prepared for transition to a low carbon economy. It clearly set out the timeframe for decarbonisation and defined how it should be measured, making it the most ambitious carbon reduction target amongst the London LGPS funds.

7.5 As the target was to be assessed over 2 valuation cycles, the Committee agreed to have an interim audit carried out at the 3 year point to review progress against the target and assist with decision making for the 2020 investment strategy. The audit was once again carried out by Trucost to ensure that comparable metrics were used. The audit covered the Fund's listed equity portfolio as per the 2016 audit; however, for 2019 the Fund's segregated bond mandate has also been assessed.

7.6 This report presents the results of that interim audit, reviewing progress made against the target to date and setting out some initial recommendations for the next three year cycle. The report sets out the excellent progress made to date against the 50% reduction target and provides a summary of the various metrics calculated. It then provides a more detailed breakdown of 2 key metrics; exposure to future emissions and alignment with the International Energy Agency (IEA)'s 2^{o}C warming scenario. It also considers how the Fund will take this analysis into account in setting its 2020 investment strategy and consider the position against the enhanced 1.5^{o}C warming scenario in the future

8. SUMMARY OF PERFORMANCE AGAINST TARGET

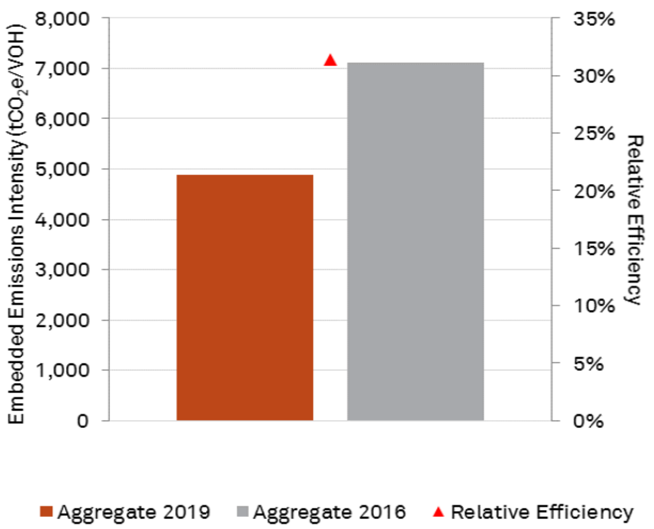
8.1 The audit shows that the Fund has reduced its exposure to carbon reserves by 31.4% between July 2016 and June 2019, as set out in the chart below:

Hackney 2019 Portfolio Audit

Embedded Emissions Intensity Comparison

Trucost
ESG Analysis
S&P Global

Portfolio	Aggregate 2019	Aggregate 2016	Relative Efficiency
Embedded Emissions Intensity (tCO2e/VOH)	4882.75	7113.27	31.4%



8.2 Trucost has analysed the carbon emissions embedded within the fossil fuel reserves that are disclosed by the underlying companies within the Fund's equity portfolio. The emissions measured are the potential future amounts of CO_2 that could be released if the fuel reserves disclosed were to be burnt. The Committee has used this metric to set its target as it gives an indication of the extent to which the Fund is exposed to assets (i.e. coal, oil and gas reserves) that may be at risk of stranding.

8.3 The results shown here are normalised by asset value; the future emissions measured for each portfolio (2016 and 2019) have been divided by the value of holdings for that portfolio. This gives a figure for emissions intensity. This has been done as Trucost have used the most recent data available to assess both portfolios (to ensure comparability of data); this means an adjustment to allow for asset growth over time is required to compare the 2 portfolios.

8.4 The Fund's equity portfolio as at 31st August 2016 (as used in the initial assessment) had an emissions intensity of 7,113.27 tCO_2e/VOH (tonnes of carbon dioxide divided by value of holdings), whilst the equity portfolio as at 31st June 2019 has an emissions intensity of 4,882.75 tCO_2e/VOH. This represents a reduction of 31.4% over the 3 year cycle.

8.5 We are extremely pleased with this overall result, as it indicates that the Fund is on track to achieve its overall target of a 50% reduction in exposure to reserves over 6 years. The plans to reduce exposure put in place for the 2017 investment strategy have had the desired effect, and we are already starting to develop our approach for the 2020 strategy.

8.6 We do, however, recognise that there is more work to do, both in terms of achieving our overall target and in ensuring that the Fund's approach remains in line with the requirements of the IEA's 2^{o}C warming scenario and takes into account the recent recommendation by the Intergovernmental Panel on Climate Change (IPCC) to achieve no more than 1.5^{o}C warming.

8.7 It should be remembered that carbon risk data is complex and has certain inherent limitations. The Fund has tried to avoid some of these; for example, the Committee has chosen to set its reduction target using fossil fuel exposure/stranded assets metrics rather than carbon footprinting metrics, to help avoid issues over disclosure of Scope 3 data. Scope 3 measures the indirect emissions through a company's value chain, including both upstream (supply chain) and downstream (use of product) emissions. Measurement of downstream emissions is extremely challenging and therefore rarely disclosed; it is not included in Trucost's analysis for this reason. Looking solely at the carbon emissions from a fossil fuel company therefore does not include the impact of the use of the products.

8.8 We recognise both that limitations remain around disclosure and that data can be used and interpreted in different ways - this is discussed further in Section 8. The Fund's approach is to use this carbon risk audit as a guide to where the most significant risks are concentrated and to use this to inform decision-making around strategy setting and risk management. The metrics disclosed can also be used to inform the Fund's engagement with its managers and investee companies, as well as potentially assisting us in improving climate-related disclosures.

9. REDUCTION IN EXPOSURE TO RESERVES - WHOLE FUND

9.1 As set out above, the Fund has achieved an overall reduction of 31.4% in its exposure to future CO_2 emissions over the past 3 years. This represents excellent progress towards the overall target of 50% over 6 years.

9.2 The Fund's equity portfolio as at 31st August 2016 (as used in the initial assessment) had an emissions intensity of 7,113.27 t CO_2e/VOH (tonnes of carbon dioxide divided by value of holdings), whilst the equity portfolio as at 31st June 2019 had an emissions intensity of 4,882.75 t CO_2e/VOH. As set out above, these figures have been normalised by asset value to allow direct comparison of the 2016 and 2019 portfolios using up to date carbon disclosure data.

9.3 Whilst we measure performance against our target using emissions intensity, Trucost have also measured the absolute exposure to future CO_2 emissions. The total exposure within the Fund's equity portfolio as at 30th June 2019 was 4.319m tonnes CO_2e.

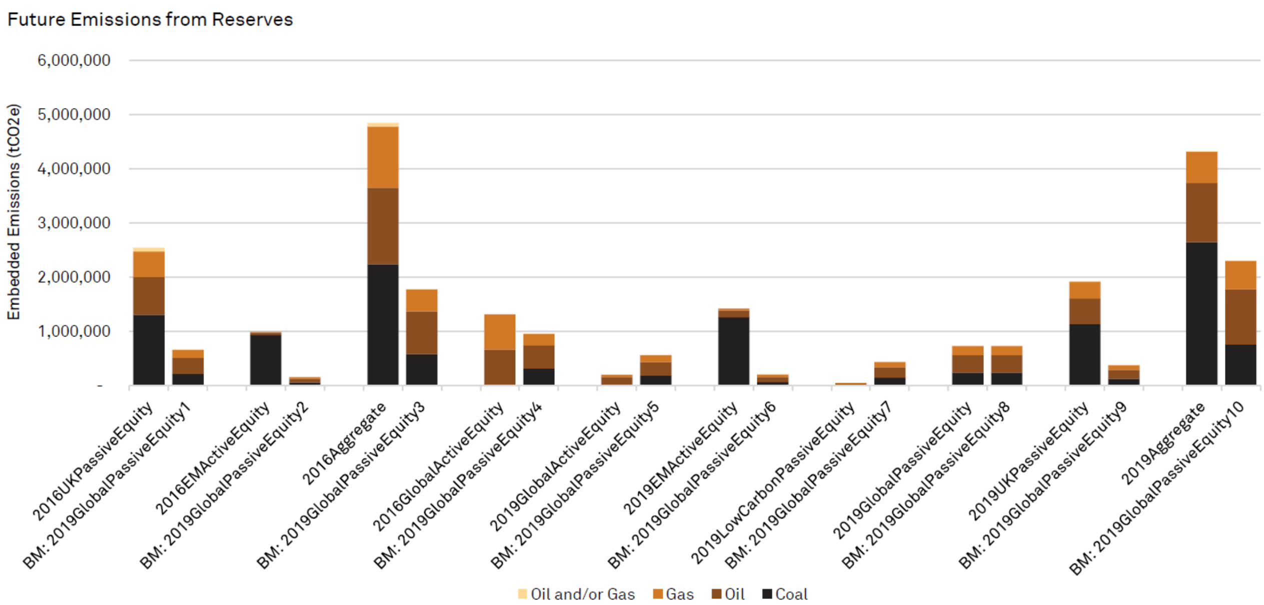
9.4 To compare this absolute emissions measurement to the 2016 portfolio, we need to look back to our original carbon risk audit to make sure we are taking account of the growth in asset values over the 3 years. At the 2016 audit, the July 2016 portfolio had an absolute exposure of 7.11m tonnes CO_2e. Measuring this way suggests a reduction of 39%.

9.5 Both approaches to measurement have advantages and disadvantages; measuring using the same dataset adjusts for improvements in disclosure over the 3 years, whilst comparing the dataset from 2016 to that from 2019 captures the effect of decarbonisation by individual companies over the period. Both approaches are valid; however, measurement using the same dataset and adjusted for asset values is perhaps a clearer indicator of the effect of the Committee's strategic decisions (i.e. it strips out the effect of changes in exposure within individual companies over the 3 year period) and clearly reflects the commitment made in the original target.

10. REDUCTION IN EXPOSURE TO RESERVES - BREAKDOWN BY MANDATE

10.1 As well as measuring the exposure across the aggregate equity portfolios for both 2016 and 2019, the audit assessed exposure to future emissions for each of the Fund's underlying equity mandates. The exposure to reserves from coal, oil and gas was measured for each mandate for both 2016 and 2019, and compared to the exposure for a portfolio of the same value tracking the MSCI World. The benchmark should not be considered as representing the Fund's overall equity investment strategy; rather it provides a useful way of comparing exposure across portfolios of different sizes.

10.2 The chart below sets out the absolute exposure for each of the Fund's equity mandates for both 2016 and 2019, measured using current data. As set out above, each mandate is benchmarked against the MSCI World to indicate the intensity of its exposure. For each mandate, the benchmark exposure represents the level of exposure that would be expected for a portfolio of the same size tracking the MSCI World. A larger version of the chart can be found in Appendix 1 to this report.



10.3 Looking at the 2 aggregate portfolios and their benchmarks helps demonstrate how the 31.4% reduction in exposure has been achieved. The key drivers have been reducing the size of UK passive equity mandate (the Fund's most significant exposure to fossil fuel reserves) from 25% to 10% of total assets, moving to an active global equity mandate with very low exposure to fossil fuel reserves, and investing in MSCI's low carbon target passive index. Both the Fund's current active global equity mandate and the MSCI low carbon target passive mandate have exposures well below that of the MSCI World benchmark.

10.4 Three of the Fund's current equity mandates (2019 Global Active Equity, 2019 Low Carbon Passive Equity, 2019 Global Passive equity) therefore have exposures at or below the benchmark. Taken together, the 3 mandates contribute 0.977m tonnes in future CO_2 emissions - 22.6% of the total. All 3 are new mandates since 2016, indicating that the changes made by the Fund following the 2016 carbon risk audit have achieved the desired effect.

10.5 The other 2 mandates (2019 UK Passive Equity, 2019 EM active Equity) have inception dates prior to 2016. These are the only current equity mandates that were held prior to the 2016 carbon risk audit and between them contribute 3.341m tonnes in future CO_2 emissions - 77.4% of the total.

10.6 The Fund's UK Passive Equity mandate, which tracks the FTSE Allshare, has been reduced substantially as a proportion of total assets since 2016 (from 25% to 10% of total assets). This has materially reduced its absolute exposure to future emissions; however, the mandate remains a significant contributor to the Fund's overall exposure.

10.7 As shown in the chart, a significant proportion (59%) of the UK Passive mandate's exposure comes from coal. Coal has a greater emissions intensity than either oil or gas; for a certain monetary value, investment in coal will result in a greater exposure to future emissions. The exposure to coal in this mandate comes primarily from the presence in the FTSE Allshare index of large, diversified mining companies.

10.8 The other current mandate with significant future emissions exposure is the Emerging Markets Active equity mandate. The majority of this mandate's exposure (89%) also comes from coal; however, unlike the UK Passive mandate, almost all of this exposure is associated with a single company (Indonesian coal miner PT Bukit Asam). This holding therefore represents a significant contribution towards exposure at a whole fund level (approx. 25%). It should be noted that the company is a pure-play coal miner, deriving 97.98% of its revenue from coal.

10.9 Given the concentration of exposure to future emissions in the UK Passive and Emerging Markets Active mandates, the Committee's focus will be on these 2 mandates in terms of ensuring that the 50% reduction target is achieved over the next 3 year cycle. This will form a significant part of the process of setting the Fund's 2020 investment strategy.

10.10 Additionally, given the significance of the exposure through PT Bukit Asam and the fact that the company lacks exposure to other revenue streams, the Committee is recommended to continue a targeted engagement with the relevant fund manager in relation to this holding. As set out in 10.8, this holding represents a significant proportion of the Fund's remaining exposure to reserves and will be a key focus as the Fund moves into the next 3 year cycle.

11. ALIGNMENT WITH 2ºC WARMING SCENARIO

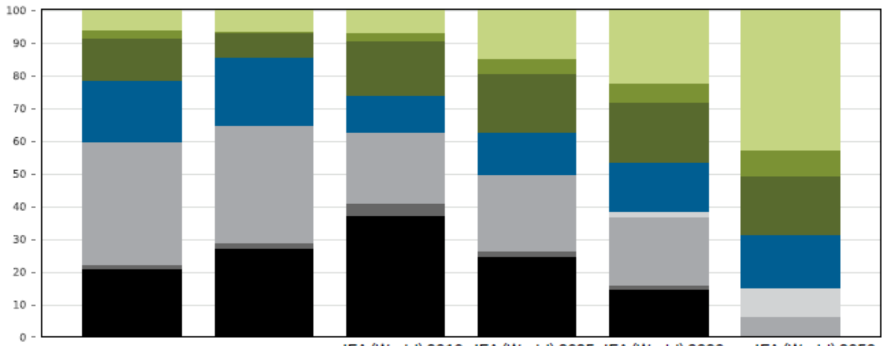
11.1 Another key metric for the Committee to consider is alignment with the IEA's 2ºC targets; a set of globally agreed, forward-looking targets to mitigate climate change. Historically, portfolios have been measured against traditional financial benchmarks which reflect the economy today rather than the low carbon economy needed for the future. This over-represents traditional fossil fuel energy sectors and under-represents greener energy providers.

11.2 To help overcome this issue, Trucost has compared the current energy mix of the Fund's portfolio to the IEA's two degree scenarios to illustrate how to work toward an energy transition goal. This will allow the Fund to assess its transition impact and help to finance the low carbon economy.

11.3 One of the key issues in the debate around fossil fuel divestment is that whilst reduction in exposure to fossil fuels can be a helpful risk management tool for investors, it cannot in isolation reduce CO_2 emissions or support the transition to a low carbon economy. Recognising this, the Fund is aiming to broaden its focus by also considering how it can make a positive contribution towards a lower carbon economy.

11.4 The chart below shows the percentage share in the overall energy mix of each unit of energy apportioned to the Fund's 2019 portfolio and MSCI World benchmark, by type. These are then compared to the IEA's '2 degree aligned' energy mix scenarios for the world in 2016, 2025, 2030 and 2050 respectively.

2 Degree Alignment - 2019 Portfolio



	Portfolio	Benchmark	IEA (World) 2016 2 Degree Scenario	IEA (World) 2025 2 Degree Scenario *	IEA (World) 2030 2 Degree Scenario *	IEA (World) 2050 2 Degree Scenario *
Other renewables	5.86%	6.52%	6.39%	14.60%	22.31%	42.52%
Biomass	2.55%	0.50%	2.63%	4.65%	5.92%	7.91%
Hydroelectric	13.03%	7.38%	16.67%	17.84%	18.16%	17.91%
Other sources (incl. landfill gas)	0.06%	0.01%	0.05%			
Nuclear	18.67%	20.78%	11.14%	12.97%	15.06%	16.29%
Fossil energy with CCS			0.04%	0.19%	1.62%	8.98%
Natural Gas	37.36%	35.69%	21.94%	23.07%	21.04%	6.04%
Petroleum	1.51%	1.85%	3.84%	2.00%	0.96%	0.27%
Coal	20.96%	27.27%	37.31%	24.68%	14.94%	0.08%

11.5 It is worth noting that the portfolio and benchmark generation mixes are based only on disclosed energy production data. Companies operating in the energy sector but not disclosing units of energy produced are not included in the grid mix presented here. For example, the Fund's Global Active Equity portfolio does not have exposure to any companies disclosing figures for energy generation and therefore has no results included within this analysis.

11.6 The Fund is reasonably well aligned with the IEA's 2ºC scenario for 2016 in terms of fossil fuel exposure within its energy mix (59.83%) vs 63.13%). However, to align with the 2025 scenario, it would need to increase its exposure to renewable energy generation from 21.44% to 37.09%. This cannot be done through reduction to fossil fuels alone; as this analysis focuses on the percentage energy mix, the Fund would need to make positive decisions around renewable energy generation and green revenues to improve its alignment.

11.7 This analysis focuses on a 2ºC warming scenario, as Trucost uses data derived from the IEA to assess alignment for its clients. The 2 degree warming scenario has been fully modelled by the IEA in its annual World Energy Outlook (WEO), which is used by businesses, investors and governments as the global benchmark for modelling the energy industry. The WEO currently models 2 degree warming as its Sustainable Development Scenario (SDS) intended to meet the targets of the Paris Agreement.

11.8 We are very conscious of the IPCCs Special Report on Global Warming of 1.5°C, and that the IEA has come under pressure to bring its Sustainable Development Scenario in line with 1.5°C given the conclusions of the IPCC report. This could provide the basis for modelling alignment with a 1.5°C warming scenario in the future and will be considered further when looking to update our investment strategy over the coming months.

11.9 Although for this exercise the Fund's alignment has been assessed using a 2ºC warming scenario, we are mindful of the conclusions of the IPCC special report, and recognise that alignment with a 1.5ºC scenario may be preferable from a transition impact perspective. Making a positive contribution to the transition to a low carbon economy will be a key area of consideration for the Committee in terms of setting the 2020 investment strategy; careful consideration will be given as to how this can best be reflected in the Fund's approach.

12. OTHER METRICS

12.1 Sections 8-10 set out the key metrics for the Fund in terms of carbon risk exposure and alignment with 2ºC /1.5ºC warming scenarios. However, Trucost's audit also assessed a number of other metrics, which are set out in more detail in the Key Findings Report at Appendix 1. These metrics include:

- Carbon footprinting metrics
    - Carbon footprint by scope
    - Carbon intensity
    - Sector carbon intensities
    - Top contributors
    - Attribution analysis
- Carbon disclosure metrics
    - Disclosure analysis
    - Top modelled contributors
- Fossil fuel and stranded assets exposure metrics
    - Financial Exposure to Fossil Fuel Activities
    - Fossil Fuel Activities Revenue Breakdown
    - Emissions from Reserves - **See Sections 9 & 10**
    - Emissions from CAPEX
    - Watch Lists
- 2 Degree Alignment metrics
    - Financial exposure to energy generation and energy revenue

breakdown - **See Section 11**
- Energy generation mix - **See Section 11**

13. BOND PORTFOLIO

13.1 For the first time, the Fund has also had its exposure to carbon risk through its bond portfolio assessed. The assessment covers the Fund's segregated bond mandate as at 30th June 2019, and has been split into 2 parts covering corporate and sovereign bonds respectively.

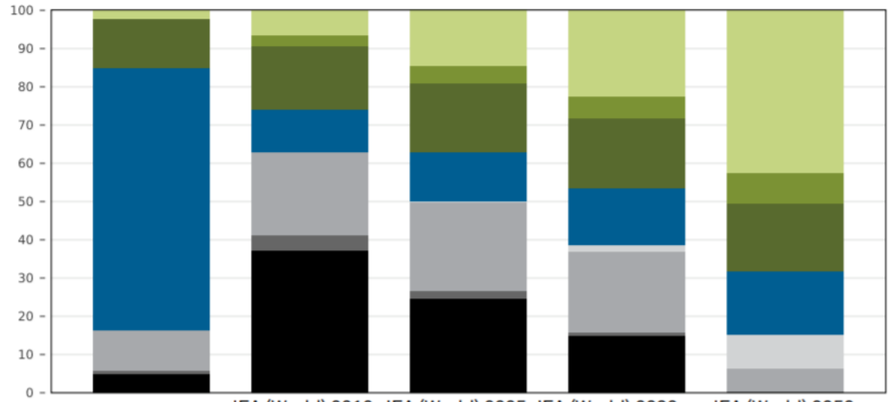
13.2 The assessment of exposure through corporate bonds covers many of the same metrics as the equity portfolio, including carbon footprint metrics, exposure to future emissions and 2 degree alignment metrics.

13.3 The metrics relating to exposure to embedded future emissions and 2 degree alignment metrics are of particular interest to the Committee. As with the equity portfolio, Trucost have assessed the portfolio's total tonnes of apportioned CO_2 from reserves, broken down by reserve type. They have also assessed reserves 'intensity' by normalizing the apportioned embedded emissions by the value of holdings (VOH).

13.4 The portfolio's total exposure to future emissions is 0.280m tonnes CO_2e, with the emissions intensity being 4049 t CO_2e/VOH. The emissions intensity of this section of the portfolio is therefore slightly lower than the emissions intensity for the equity portfolio (4882.75 t CO_2e/VOH). 100% of the exposure comes from embedded coal reserves.

13.5 The exposure comes entirely from bonds held with 2 companies; Glencore and Anglo American. Both are large, diversified miners with significant revenue streams outside of coal mining; extractive activities contribute 4.82% of total revenue for Glencore and 25.17% for Anglo American. It should also be noted that the absolute exposure to reserves for the 2 companies (0.280m t CO_2e) is far lower than that for PT Bukit Asam within the Emerging Markets Active Equity portfolio, which is in excess of 1.2m t CO_2e.

13.6 The portfolio's alignment with a 2^oC warming scenario is shown below; the most notable feature here is the portfolio's exposure to nuclear power generation (68.56% share) relative to the forecast scenarios. To achieve alignment with a 2 degree scenario by 2025, the portfolio's exposure to renewables would need to increase; however, exposure to fossil fuel power generation is well below the 2 degree scenario at 16.54% compared to 49.75% for the 2025 scenario.

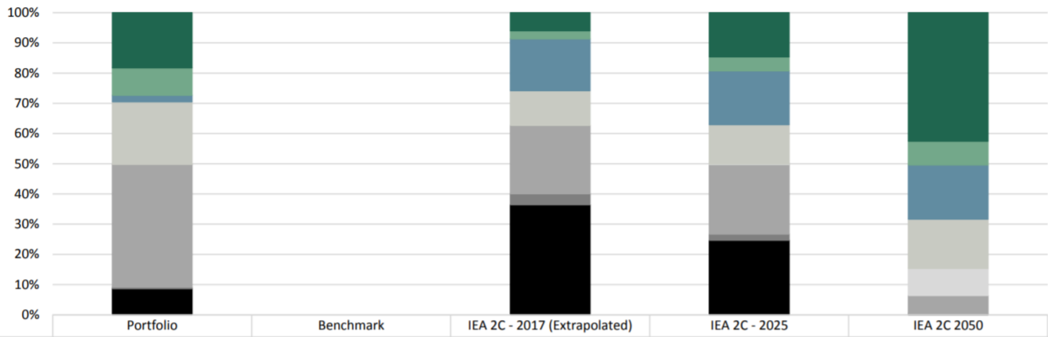


	Portfolio	IEA (World) 2016 2 Degree Scenario	IEA (World) 2025 2 Degree Scenario *	IEA (World) 2030 2 Degree Scenario *	IEA (World) 2050 2 Degree Scenario *
Other renewables	2.22%	6.39%	14.60%	22.31%	42.52%
Biomass	0.03%	2.63%	4.65%	5.92%	7.91%
Hydroelectric	12.65%	16.67%	17.84%	18.16%	17.91%
Other sources (incl. landfill gas)		0.05%			
Nuclear	68.56%	11.14%	12.97%	15.06%	16.29%
Fossil energy with CCS		0.04%	0.19%	1.62%	8.98%
Natural Gas	10.74%	21.94%	23.07%	21.04%	6.04%
Petroleum	0.99%	3.84%	2.00%	0.96%	0.27%
Coal	4.81%	37.31%	24.68%	14.94%	0.08%

13.7 A separate analysis has been carried out on the sovereign bond element of the bond portfolio. The metrics used for this analysis differ considerably from the equity and corporate bond analyses, given that the underlying holdings are in government rather than corporate entities. The analysis focuses on primarily on the carbon footprint of the portfolio, breaking the exposure down by region and considering which regions have the greatest intensity of exposure.

13.8 The analysis also considers energy mix and alignment with the IEA's 2 degrees scenario, which is set out in the chart below. The full analysis uses 2 different methods (apportioned and weighted average) which produce similar results - the apportioned method is shown here.

PORTFOLIO GENERATION MIX - APPORTIONED OUTPUT METHOD



	Portfolio	Benchmark	IEA 2C - 2017 (Extrapolated)	IEA 2C - 2025	IEA 2C 2050
Other sources (incl. landfill gas)	0%	0%	0%	0%	0%
Other renewables	18%	0%	6%	15%	43%
Biomass	9%	0%	3%	5%	8%
Hydroelectric	2%	0%	17%	18%	18%
Nuclear	21%	0%	12%	13%	16%
Fossil energy with CCS	0%	0%	0%	0%	9%
Natural Gas	41%	0%	23%	23%	6%
Petroleum	0%	0%	4%	2%	0%
Coal	9%	0%	36%	25%	0%

13.9 As shown in the chart, the portfolio is well aligned with the 2016 scenario, but would require a greater exposure to renewables within its energy mix to achieve alignment with the 2025 scenario (29% exposure vs 38% exposure).

14. NEXT STEPS

14.1 Climate aware investing is evolving rapidly, both as climate science advances and as investment markets' understanding of the subject deepens. Even since the Fund set its target 3 years ago, the backdrop has changed considerably.

14.2 Climate change and its implications are increasingly high on the agenda for policy makers and the general public, with the IPCC suggesting that avoided climate change impacts on sustainable development, eradication of poverty and reducing inequalities would be greater if global warming were limited to 1.5°C rather than 2°C. This would require rapid and far-reaching transitions in energy, land, infrastructure (including transport and buildings), and industrial systems.

14.3 Against this backdrop, we are looking to broaden our approach to climate aware investing. Our 50% reduction target helps to reduce transition risk for the Fund, by reducing the risk that it will be exposed to potentially stranded assets. However, we now also wish to make a positive contribution to reducing real-world emissions and assisting in the transition to a low carbon economy.

14.4 As part of developing our new investment strategy, we will consider how best to achieve this impact whilst achieving a competitive financial return. This is likely to involve investment in new asset classes, such as renewable infrastructure. As part of these changes, we expect our exposure to unlisted assets to increase, and this will also mean finding new ways to assess both our carbon exposure and impact on real-world emissions.

Ian Williams ¶
Group Director of Finance & Resources ¶

Report Originating Officer: Rachel Cowburn (020 8356 2630) ¶
Financial considerations: Ian Williams (020 8356 3003) ¶
Legal comments: Sean Eratt (020-8356 6012) ¶

Appendices¶

Appendix 1 - Hackney Portfolio Footprint 2019 - Equities - Key Findings Report