JOHN LEWIS PARTNERSHIP PENSIONS TRUST

Climate change report in line with the Taskforce on Climate-Related Disclosure (TCFD) recommendations for the year ended 31 March 2022

1. Executive Summary

The Trustee presents its first climate disclosure report for the John Lewis Partnership Pensions Trust (the Scheme). The report has been prepared in accordance with the Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021, which are based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

The regulations require the Trustee to do the following:

1) To maintain a system of governance around climate related risks and opportunities.
2) To identify and assess the impact of climate related risks and opportunities on the investment and funding strategy.
3) To have risk management processes in place to identify, assess and manage climate-related risks.
4) To select and report on climate metrics used to assess and manage relevant climate-related risks and opportunities on an on-going basis.
5) To set a target against one of those metrics and to report progress against it.

This report shows the work done to date to meet these objectives and the on-going work that will be done in future years. It covers the period to 31 March 2022 (the most recent Scheme year-end). Following the year-end, there has been significant market volatility that has impacted pension schemes in a variety of ways. The Trustee will comment on the impact that has had on the Scheme's strategy for climate-related risks in next year's report.

The Trustee has given appointed investment managers full discretion to evaluate climate change issues in exercising voting rights and meeting the Trustee's stewardship obligations in accordance with their own corporate governance policies and current best practice including the UK Stewardship Code. These stewardship activities, including specific manager activities, are described in more detail in the Implementation Statements for the DB and DC sections which can be found in the link shown below.

Further stewardship activities are described in the various other legal documents that the Trustee has to prepare and make available for the DB and the DC sections of the Scheme: the Statements of Investment Beliefs and the Statements of Investment Principles and the Implementation Statements. The current versions of these are available on the John Lewis corporate website https://www.johnlewispartnership.co.uk/meta/jlp-trust-for-pensions.html or by request from Pension Operations at:

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Westminster
London
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The report is divided into the following sections:

2. Climate Change

2.1 What is Climate Change?

The United Nations defines climate change as follows:

"Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas.

Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat, and raising temperatures.

Examples of greenhouse gas emissions that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and forests can also release carbon dioxide. Landfills for garbage are a major source of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main emitters."[1]

2.2 The "Paris Agreement"

The United Nations is seeking to tackle these problems through encouraging governments to set goals to reduce greenhouse gas emissions. This is done through their Climate Change Conferences – the COP meetings. In November 2016, they have put in place a legally binding international treaty, the "Paris Agreement" which has 192 countries and the European Union as signatories. This makes the following commitments:

- to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius while pursuing efforts to limit the increase even further to 1.5 degrees;
- to review countries' commitments every five years; and
- to provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts.

Individual countries must set their own targets and put them into their own laws.

2.3 What is the UK doing?

The UK government has made a commitment to reduce greenhouse gas emissions to net zero by 2050. It sets "carbon budgets" every 5 years and has put in a range of monitoring mechanisms. Amongst these measures are new obligations for companies and other organisations to report on their climate policies, their greenhouse gas emissions, and their strategies to reduce those emissions.

As substantial investors in these companies, UK pension schemes are also expected to do their bit and from this year have similar reporting obligations to report on how they manage climate-related issues as an investor.

2.4 What must the Pension Trustee do?

Pension scheme trustees are always required to invest the scheme's assets for the primary purpose of paying members pensions, taking appropriate account of likely risks and returns. Climate-related

[1] https://www.un.org/en/climatechange/what-is-climate-change

issues are considered in this context and as part of the Trustee's integrated approach to environmental, social and governance ("ESG") issues.

The Pension Schemes Act 2021 introduces new requirements on pension scheme trustees to manage and report on climate-related issues specifically in the areas of Scheme Governance, Strategy, Risk Management and Metrics and Targets. This report shows the Trustee's progress in the first year of these regulations being in place.

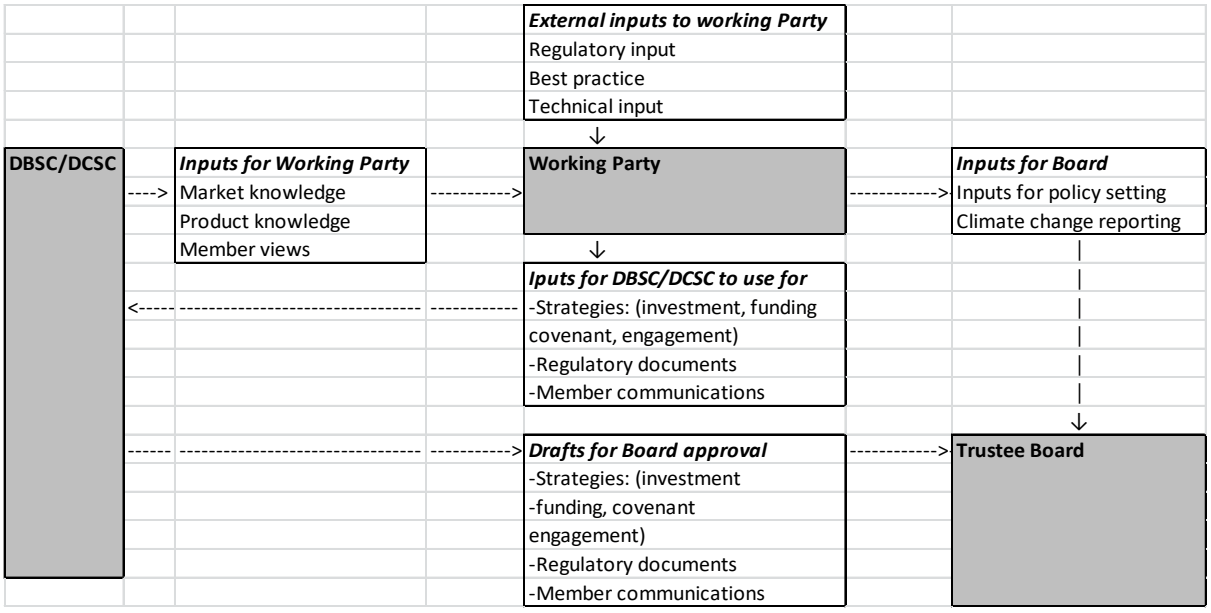
3. Governance

3.1 The overall structure

The Trustee Board manages climate related risks and opportunities and uses sub-committees which have appropriate skills to input to that work. The Trustee is very mindful of the DWP requirements and retains overall control over the management of climate-related issues.

The Trustee has formally approved a detailed plan to achieve compliance with the legal requirements and will maintain oversight. It will review the governance model on an annual basis including the asset metrics and targets on an annual basis and the covenant and liabilities will be reviewed at least every 3 years to align with the actuarial valuation along with the progress against target. The Board will consider getting formal third-party assurance of its data and processes in due course.

Legal Disclosure required: **How the Trustees maintain oversight of climate related risks and opportunities relevant to the scheme (Para. 27 (a))**



Defined Benefit Sub-Committee (DBSC): The main objective of this Sub-Committee includes managing the Defined Benefit assets, funding, covenant, and administration. Their role in respect of climate-related issues is as follows:

- To monitor climate-related metrics alongside the integrated risk management. This includes the following:
    - Climate metrics of assets within the investment portfolio alongside the scheme investment performance risk. This includes looking at the potential impacts upon long term market factors such as investment returns (in aggregate and by sector), inflation and interest rates.
    - The impact of climate risk on the Partnership covenant including changes in turnover and profits and the market values of the Partnership assets. This includes transition risks and longer-term changes. It also includes the assets that are subject to the Waitrose Limited and John Lewis Properties plc Guarantees and the assets within the Scottish Limited Partnership.
    - The potential impact on the scheme liabilities including changes in longevity, working patterns and retirement ages.
- To advise the Trustee and to implement targets in respect of climate-related metrics.
- To monitor progress against those targets and provide analysis of that progress.
- To monitor opportunities that will arise from the transition including renewable technology.
- To provide challenge to advisers and providers on their work in this area.

Defined Contribution Sub-Committee (DCSC): The main objective of this Sub-Committee is to manage the Defined Contributions assets, administration, and communication. Its role in respect of climate-related issues is similar to the DBSC but with a different emphasis because of the different nature of the benefits provided.

Legal Disclosure required: **The role of any person who otherwise than as a trustee undertakes scheme governance activities, in identifying, assessing and managing any climate-related risks and opportunities which are relevant to those governance activities and the process by which the trustees satisfy themselves that the person is taking adequate steps to identify, assess and manage the climate-related risks and opportunities (Para. 27 (b))**

3.3 The roles of advisers and providers

The Trustee has the following external advisers and in-house resources as shown below acting in the capacities described.

Legal Disclosure required: **The role of any person who, otherwise than as a legal adviser of the trustees, advises or assists the trustees with respect to scheme governance activities and the process by which the trustees satisfy themselves that the person is taking adequate steps to identify and assess any climate-related risks and opportunities which are relevant to the matters in respect of which they are advising or assisting (Para. 27 (c))**

JP Morgan

Provide an ESG screening service which includes climate "metrics".

Mercer

- **Investment**:
    - Provide input on the investment risks and opportunities both in the portfolio and in the capital markets.
    - Provide analysis of the various climate-related metrics that are provided.
    - Provide input on the investment strategy including the impact of climate-related issues.
- **Actuarial**:
    - Provide analysis of the potential impact of climate-related issues on the scheme liabilities.

Cardano

- Provide analysis of the impact of climate-related issues on the strength of the covenant of the employer.

Trustee Services (the in-house team)

- Provide the first draft of the climate disclosure report and manage the production of the document including obtaining and reviewing the input from advisers.

The work of each of these providers is monitored by the Climate Change Working Group and there is also an Adviser Review policy in place which provides an additional level of scrutiny.

Legal Disclosure required: **The role of any person who, otherwise than as a legal adviser of the trustees, advises or assists the trustees with respect to scheme governance activities and the process by which the trustees satisfy themselves that the person is taking adequate steps to identify and assess any climate-related risks and opportunities which are relevant to the matters in respect of which they are advising or assisting (Para. 27 (c))**

The Trustee has developed its governance model with the assistance of the legal adviser, the investment adviser, the Scheme Actuary, and the Covenant adviser as shown above. Each has formal terms around how they input into the process which in broad outline are as follows:

3.4 Trustee Knowledge and Understanding

Embedding the consideration of climate-related risks and opportunities into investment decisions is a complex and developing area for pension schemes. It also affects virtually every aspect of the Scheme's activities.

The Trustee has put the following structures in place to support decision-making, strategy setting and implementation around climate change activity.

To ensure that the decision making and strategy setting processes gives a good outcome,

- **Formal training:** This has covered both legal requirements and practical training on the climate change and the various metrics used to measure it.
- **On-going reviews of published material on legal and best practice requirements:** There is a very large body of information which the Trustee Services team has reviewed and prepared a working summary that is available to the Trustee.
- **On-going reviews of climate change issues:** Whilst the Trustee does not have the necessary skills or technical background to be able to form a view as to the scientific facts underlying climate change, it does receive updates on developments such as break throughs in technology, significant news about climate events and academic research.
- **Specific technical and practical guidance for all decisions:** All papers submitted to the Climate Change Working Group and to the Trustee are accompanied by extracts from the appropriate legislation and DWP guidance plus any other relevant material from published material that is available.

To ensure that tasks are carried out on a timely basis and that knowledge and decisions from previous tasks are incorporated into future decision making and activities.
A project plan has been developed with covers the following activities:

- The production of this and future climate change reports.
- The inclusion of climate risk in the actuarial valuation negations that are currently underway.
- The inclusion of these risks into the review of DB investment strategy which will be produced when the actuarial valuation is concluded.
- The inclusion of these risks into a review of the DC investment strategy.
- The revision of due diligence processes on investment managers and other providers.
- The revision of reporting of financial and risk information included the integrated risk management processes.
- Researching how the Trustee might be able to develop a net-zero target that is consistent with its legal obligations and its investment requirements

The resourcing and costs of these have been incorporated into the Scheme budget and planning processes.

4. Strategy

Legal Disclosure required: **The climate-related risks and opportunities which the trustees have identified in accordance with paragraph 3 (Para. 27 (d))**

4.1 Short, medium and long term time periods

Legal Disclosure required: **the time periods which the trustees have determined should comprise the short term, medium term and long term in accordance with paragraph 4 (Para. 27 (e))**

The Trustee is required to consider how the various climate-related risks and opportunities will develop over time. To do this, the Board has determined that the following timescales are appropriate for the Scheme.

	Defined Benefit	Defined Contribution
Short	5	3
Medium	10	8
Long	28	28

4.2 The risks and opportunities that the Trustee has identified

The DWP guidance specifically refers to the Task Force on Climate-related Financial Disclosures and the Trustee has based its risk methodology on their analysis with additional input from advisers. The table below is reproduced from their publications listed below.

- Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017)
- Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (October 2021)

The categories of risks and opportunities that are shown in those reports are summarised below. More detail is included in Appendix A.

Transition Risks - *those associated with a transition to a lower-carbon economy*		
1	Policy and Legal Risks	Use of legislation to change activity, either positively or negatively. Also risk of litigation.
2	Technology Risk	"Creative Destruction" as new technologies replace old technologies.
3	Market Risk	Shifts in supply and demand for certain commodities, products, and services.
4	Reputation Risk	Changing customer and community perceptions.

Physical Risks – *damage to supply chains and food/water/other necessities*		
1	Acute Risk	Extreme weather; cyclones, hurricanes, acute floods, wildfires, etc.
2	Chronic Risk	Longer term; increased temperature extremes, rising sea levels, chronic flooding, etc.

Opportunities – *these arise from commercial activities to mitigate climate change.*		
1	Resource Efficiency	Operating costs of companies can be reduced by reducing carbon consumption by reducing power consumption and overall waste
2	Energy Source	Moving to low emission energy sources will reduce operating costs.
3	Products and Services	Companies can improve their competitive position by capturing shifting consumer and producer preferences and emphasising it in their brands.
4	Markets	Companies can seek opportunities in new markets or assets and participate in "finance greening" across a wide range of activities.
5	Resilience	Some companies will respond better to change and will take advantage of opportunities and be able to respond well to transition and physical risks.

The Trustee was mindful of the guidance from the DWP and TPR in setting these time periods.

4.3 Factors to consider for DB

DWP Guidance: **In a DB scheme or a DB section of a scheme: the likely time horizon over which current members' benefits will be paid. This may be the longest time horizon they will need to consider. (para 44)**

The Trustee has a long term "flight path" to move the funding of the Scheme to a low dependency basis by 2044. Low dependency means that the liabilities of the Scheme will be measured using a Gilt Rate that is appropriate to their duration with a small premium for investment returns. This will make the Scheme less dependent on investment returns and less vulnerable to downturns in investment markets. More details are shown in the Statement of Investment Principles dated September 2020.

The current projected "end-state" asset allocation of the portfolio consists of a high proportion of public and private credit with some real assets such as property. The intention is also that the Scheme will be fully hedged against interest rate and inflation movements. The move away from the ownership of equities to credit and government bonds should reduce the green-house gas emissions of the Scheme over the period of the flight-path.

4.3.1 Short – 5 years i.e. March 2027

The reasons for the timeframes chosen are shown below:

Covenant	The Partnership will have completed its 5-year plan so the Trustee will have visibility of the outcome and also of the next Partnership Plan.
Data	The complexity of the investment portfolio and the number of managers means that obtaining and processing emissions data is difficult.
Assets	The Scheme will be more derisked with an allocation to return seeking assets of 56.4% compared to 68% now.
Liabilities	Whilst the Scheme is closed, the fact that it was only closed recently, and the long profile of the liabilities mean it can be regarded as immature. This suggested date will align with the 2025 actuarial valuation.
Funding requirements and required investment return	There will be a need to achieve short and medium term investment returns in order to meet the return assumptions of the derisking flight path. Currently this involves a sizeable allocation to emerging market equity and credit which have higher projected returns. The current PRI projections show that OECD nations have committed emissions reductions that are far more rapid then in non-OECD nations.
Expected policy changes	The UN PRI is predicting an "inevitable policy response[2]", that is an acceleration of global policy as the probability of achieving the net carbon zero target by 2050 diminishes. This may further disrupt markets and asset pricing. These changes can be monitored in advance to some extent by keeping a watching brief on the UN PRI reporting.
Technology	There is a range of technological solutions that may help reduce emissions from long term carbon emissions capture storage, meat alternatives, methane and other sources. McKinsey have estimated that 60% of the technology required to stabilise the climate by 2050 are already available, whilst 25%-30% are in non-mature technologies and 10-15% are still at the R&D stage[3]. This technology would then need to be deployed. We can assume no material progress in this period.

4.3.2 Medium –10 years i.e. 2032

The reasons for the timeframes chosen are shown below:

[2] https://www.unpri.org/inevitable-policy-response/the-inevitable-policy-response-2021-policy-forecasts/7344.article#:~:text=In%202019%2C%20the%20PRI%20commissioned,the%201.5%20degrees%20Paris%20ambition.&text=IPR%202021%20forecasts%20a%20response,so%20delayed%20across%20the%20world

[3] https://www.mckinsey.com/business-functions/sustainability/our-insights/innovating-to-net-zero-an-executives-guide-to-climate-technology

Covenant	It is very difficult to have any visibility at this point as future success is as much to do with the type and speed of climate change, its social and economic impact and how the Partnership is able to respond to this. We need to be prudent as to the covenant in the actuarial valuation if we have any longer-term cash commitments or reliance.
Data	Emission data should be readily available and no longer an issue. However, there may be other areas of focus such as biodiversity and social targets which require reporting. This depends on the progress that is made against the initial climate change objectives.
Assets	The allocation to return seeking assets will be 51.5%. The Trustee will have a clearer view as to the progress of the derisking program.
Liabilities	The liabilities on a low-dependency ("LD") basis are projected to be around 80% of the current value. The Scheme will begin to become very cash negative so this will be driver for the investment asset allocation.
Funding requirements and required investment return	The scheme will still rely on investment returns in excess of inflation for the next 22 years. The projected return required in excess of gilts at 2032 is 2.3%. Cash generation will also become more important as the annual cash outflows. This will mean that there may still be constraints on any proposed asset allocation to achieve a balance between return, cash flow and meeting emission reduction targets. The level of return seeking assets falls over the period up to 2044 with them being replaced by Government Bonds and derivatives.
Expected policy changes	The global policy framework should be more advanced at this point. It is also possible at this point that the rate of change will have been too low and we are having to become accustomed to their having been irreversible damage with the planet surviving on an impaired basis with all the associated economic and social problems that will come with that. The United Nations "Intergovernmental Panel on Climate Change" has expressed the view that we may already be at the point of no return[4].
Technology	There are likely to be more material advancements in climate change technology which can be factored into the risk approach and also investment opportunities may be more accessible.

4.3.3 Long – Recommendation – 28 years i.e. 2050

The reasons for the timeframes chosen are shown below:

Covenant	The derisking program is targeted to have concluded and the reliance on the covenant should be low.
Data	The current target date for the planet to be carbon neutral as set in the Paris Agreement is 2050 so we should have visibility as to its success or failure as we reach this date.
Assets	The estimated assets will be around £4.5bn, around 60% of the current total.
Liabilities	The liabilities on an LD basis are targeted to be equal to the assets of the Scheme.
Funding requirements and required investment return	The current Scheme derisking strategy concludes in 2044 at which point the scheme is still planned to have a 50% allocation to non-equity return seeking assets. This is currently planned to include multi-asset credit, private debt, opportunistic credit, infrastructure and property. The extent to which such a portfolio can be constructed will depend on global progress against the carbon reduction targets and the extent to which it has changed capital markets.
Expected policy changes	It is impossible to predict the policy landscape at this point in time.
Technology	It is impossible to predict this but hopefully we will have reached a steady state where core technologies are sustainable, and the world is net zero on carbon.

4.4 Factors to consider for DC

DWP Guidance: **"In a DC scheme or a DC section of a scheme: the likely time horizon over which current members' monies will be invested to and through retirement. This may be the longest time horizon they will need to consider" (para 44)**

The DC section of the Scheme has the following characteristics:

- There is a spread of ages with more young members than older members
- Fund values are low with a few exceptions.

[4] See the IPCC Sixth Assessment Report https://www.ipcc.ch/report/ar6/wg2/

- The majority of current retirements are of members who have DB and DC benefits with the majority having a higher reliance on their DB benefits due to long service.
- The majority of members use the default investment option.

4.4.1 Short – 3 years i.e. March 2025

The reasons for the timeframes chosen are shown below:

Data	The current DC portfolio has less complexity than the DB portfolio so we should be able to obtain better data more quickly in order to be able to make quicker decisions and implementation of any changes to respond to risks and opportunities arising from climate change. The exception to this is the Prudential With-Profits policy but as set out in section 7.6 below, the Trustee has no direct influence on the asset allocation or stock selection within that policy.
Assets	Whilst we are unlikely to change the format in which we hold the majority of the assets (main index tracking funds held in assurance policy with a life company) this means that implementation may be easier and cheaper as we substitute the index we use for a more climate aware one. The Prudential policy is more problematic as we do not control the investment strategy, that it has some material change to the assets would most likely involve exiting this fund. We could also explore the range of climate change aware funds that our provider has for members to self-select.
Expected policy changes	The "Inevitable policy response" is unlikely to trigger in the very near future but we will keep a watching brief;
Technology	As for DB, the technology is very nascent.

4.4.2 Medium – 8 years i.e. March 2030

The reasons for the timeframes chosen are shown below:

Data	As for the short-term recommendation, the format in which the DC funds are held means that data should be readily available for the Trustee to be able to make decisions around any potential changes.
Assets	As for the short-term recommendation, the format in which the DC funds are held means that implementation of changes should be quicker and easier. We may find that we wish to have a watching brief and carry out periodic changes to the indices that we track and perhaps overweight/underweight or exclude stocks for climate change risk reasons. We also need to think through what opportunities the DC funds can participate in. The picture should be clearer by then.
Expected policy changes	As for the DB section, the global policy framework should be more advanced by then.
Technology	As for the DB section, there are likely to be material advancements in climate change technology.

4.4.3 Long – 28 years i.e. March 2050

The reasons for the timeframes chosen are shown below:

Data	The current target date for the planet to be carbon neutral as set in the Paris Agreement is 2050 so we should have visibility as to its success or failure as we reach this date.
Assets	There is likely to be considerable change in both types of capital market instruments and the legal form in which they are held so it is difficult to predict this.
Expected policy changes	It is impossible to predict the policy landscape at this point in time.
Technology	It is impossible to predict this but as with DB we would expect the planet to be net zero on carbon by then.

5. The impact of climate related opportunities and risks

Legal Disclosure required: **the impact of the climate-related risks and opportunities assessed in accordance with paragraph 5 on the scheme's investment strategy and, where the scheme has a funding strategy, the impact of those risks and opportunities on the funding strategy. (Para. 27 (f))**

The Trustee has considered the following:

5.1 For the DB Section

Area	Work done	Reference
Scheme assets	Scenario analysis conducted on range of 3 sets of assumptions.	7.1
	Review of Liability Driven Investments	7.2.1
	Review of Direct Property holdings	7.2.2
	Other work done	7.2.3
Scheme liabilities	Scenario analysis conducted on effect of potential changes in longevity on liabilities	7.3
Contributions payable	Review work carried out on impact of climate change on the trading, profitability and cash flow.	7.4
Employer covenant	Review work on the asset values of the Partnership and the coverage that they provide to meet the Scheme liabilities in the event of insolvency.	7.4

5.2 For the DC Section

Area	Work done	Reference
Scheme assets	Scenario analysis conducted on range of 3 scenarios	7.5
Prudential policies	Review of material provided by the Insurer	7.6

6. Scenario Analysis

Legal Disclosure required: **the most recent scenarios which the trustees have analysed in accordance with paragraphs 6 and 7 (Para 27 (g))**

6.1 Description of scenarios tested

The Trustee has only been able to obtain carbon data to carry out scenario analysis for listed equities and credit.

The Trustee has chosen to use the stress scenarios that have been published by the Bank of England and are shown below. This will ensure that the scenarios will be more likely to be comparable to those used by other UK investors and corporates. The commentary against each scenario shown below the table is provided by JPM who carry out the analysis. JPM analyse the total loss under each scenario, which is made up of losses due to physical climate change impacts plus losses owing to the transition to a low-carbon economy.

Scenario	A	B	C
Temperature rise	Below 2c	Below 2c	Above 4c by 2100
Type of transition	Sudden/disorderly	Long term/orderly	Policy failures

Bank of England Scenario Test A – a sudden transition leading to temperature rise being kept below 2c.

JPM Commentary: A sudden transition (a "Minsky" moment), ensuing from rapid global action and policies, and materialising over the medium-term business planning horizon that results in achieving a temperature increase being kept below 2°C (relative to pre-industrial levels) but only following a disorderly transition. In this scenario, transition risk is maximised.

Bank of England Scenario Test B – a long term orderly transition leading to temperature rise being kept below 2c.

JPM Commentary: A long-term orderly transition scenario that is broadly in line with the Paris Agreement. This involves a maximum temperature increase being kept well below 2°C (relative to pre-industrial levels) with the economy transitioning in the next three decades to achieve carbon neutrality by 2050 and greenhouse-gas neutrality in the decades thereafter.

Bank of England Scenario Test C – failed future improvements leading to temperature increase in excess of 4c by 2100.

JPM Commentary: A scenario with failed future improvements in climate policy, reaching a temperature increase in excess of 4°C (relative to pre-industrial levels) by 2100 assuming no transition and a continuation of current policy trends. Physical climate change is high under this scenario, with climate impacts for these emissions reflecting the riskier (high) end of current estimates.

6.2 DB assets – scenario analysis results

The scenario analysis shown below cover £1,745.6m being 25% of the total Scheme DB assets. The losses shown are over the time horizons specified by each scenario, which differ according to the Bank of England's model

Scenario	**A**		**B**		**C**	
Temperature rise	Below 2c		Below 2c		Above 4c by 2100	
Type of transition	Sudden/disorderly		Long term/orderly		Policy failures	
Analysis time horizon	3 years (i.e. to 2025)		28 years (i.e. to 2050)		78 years (i.e. to 2100)	
	%	£m	%	£m	%	£m
Total loss	2.61	45.7	3.76	65.7	4.61	80.7
Transition loss	*2.39*	*41.8*	*1.86*	*32.5*	*0*	*0*
Physical loss	*0.22*	*3.9*	*1.9*	*33.3*	*4.61*	*80.7*

The analysis by manager is as follows:

	NAV	Scenario A		Scenario B		Scenario C	
	£m	Loss (%)	Loss (£M)	Loss (%)	Loss (£M)	Loss (%)	Loss (£M)
Combined total	1,749.4						
Total loss		2.61%	45.7	3.76%	65.7	4.61%	80.7
Transition		2.39%	41.8	1.86%	32.5	0.00%	-
Physical		0.22%	3.9	1.90%	33.3	4.61%	80.7
SSGA-PAS EQUITIES	293.1						
Total loss		4.10%	11.9	6.19%	18.7	7.40%	22.3
Transition		3.94%	11.4	3.17%	9.6		
Physical		0.17%	0.5	3.02%	9.1	7.40%	22.3
MACQUARIE	74.2						
Total loss		6.23%	4.6	8.13%	6.1	9.85%	7.5
Transition		5.97%	4.4	3.82%	2.8		
Physical		0.26%	0.2	4.31%	3.3	9.85%	7.5
FISHER	70.9						
Total loss		4.62%	3.3	6.01%	4.3	6.21%	4.4
Transition		4.40%	3.1	3.60%	2.6		
Physical		0.22%	0.2	2.41%	1.7	6.21%	4.4
TOBAM	79.6						
Total loss		2.80%	2.2	3.96%	3.2	6.58%	5.2
Transition		2.63%	2.1	1.19%	0.9		
Physical		0.17%	0.1	2.78%	2.2	6.58%	5.2
VONTOBEL	75.4						
Total loss		1.49%	1.1	2.63%	2.0	4.06%	3.1
Transition		1.44%	1.1	1.03%	0.8		
Physical		0.05%	0.0	1.60%	1.2	4.06%	3.1
SSGA SB	312.5						
Total loss		4.85%	15.1	6.79%	21.3	7.21%	22.7
Transition		4.70%	14.7	3.75%	11.7		
Physical		0.15%	0.5	3.04%	9.6	7.21%	22.7
WEST 358321	843.7						
Total loss		0.80%	7.4	1.00%	10.2	1.31%	15.4
Transition		0.59%	5.0	0.48%	4.1		
Physical		0.20%	2.4	0.52%	6.1	1.31%	15.4
Total loss							
Maximum		5.97%		4.31%		9.85%	
Minimum		0.05%		0.48%		1.31%	

The following observations can be made:

- The bond portfolio at Western appears to be the most resilient with total losses of 0.80%, 1.00% and 1.31% under the 3 scenarios. At a stock level, those losses are very concentrated in the obvious sectors: automotive, power production and so on. By limiting or excluding some sectors, this risk could be further reduced.
- The small cap equity portfolio at Macquarie appears to be the least resilient in all cases with total losses of 6.23%, 8.13% and 9.85% under the 3 scenarios.
- At a stock level, the estimated risk if very concentrated in the sectors that are known to need to most change to achieve Paris alignment such as energy production.

6.3 DB liabilities

The following qualitative scenarios set out the potential impact of climate crisis scenarios on the actuarial value of the liabilities. Overall, the funding position is expected to remain resilient to changes in interest rates and inflation expectations, as a result of climate-related issues, due to the high level of liability hedging in place.

6.3.1 Impact of interest rates and inflation

The following qualitative scenarios set out the potential impact of climate crisis scenarios on the actuarial value of the liabilities. Overall, the funding position is expected to remain resilient to changes in interest rates and inflation expectations, as a result of climate-related issues, due to the high level of liability hedging in place.

Scenario A – Sudden / Disorderly Transition

- In the short-term, this scenario would be expected to include a shock to markets. The impact of this on government bond yields is hard to predict but the most likely outcome would be expectations of central banks providing economic support would reduce yields and additional costs associated with the transition would increase inflation. Both of these factors would work to increase the value placed on the liabilities and, unless these were fully hedged, this would cause deterioration in funding levels. If the increased inflation was in addition to the current inflationary factors, members could be impacted by a loss of purchasing power from their pension benefits as caps on pension increases bite.
- In the medium and long-term, this scenario is unlikely to have a material impact on the valuation of liabilities although the short-term impacts may persist.

Scenario B – Long term / Orderly Transition

- Over all three time periods, this scenario is unlikely to have material impact on gilt yields and therefore liability discount rates. Like in scenario A, transition costs could be inflationary, however the impacts would likely be smaller and more focussed on the medium term. This could marginally increase the benefits paid and therefore the value of the liabilities.

Scenario C – Policy Failure

- In the short-term and medium-term, this scenario would be expected to have little impact since it involves inaction at least from a policy point of view.
- In the long-term, this scenario is expected to be the worst in terms of the impact on economic growth. The impact this has on interest rates is difficult to predict, however the most likely outcome is a downward pressure that would increase liability values. The inflation dynamics would be driven by the balance of (a) slowing economic growth reducing inflation against (b) resource scarcity (for example due to agricultural pressures and water scarcity) causing increases in inflation. Overall, we do not expect a material change in inflation expectations.

6.3.2 Impact on Mortality

Looked through the narrow lens of temperature alone, warmer climates are likely to see more significant excess heat-related deaths, and colder climates may actually see overall reductions due to decreases in cold-related deaths. The UK represents neither of these extremes, meaning these effects are likely to be less impactful than elsewhere in the world, and would have opposite and partly offsetting effects on longevity.

Individual years in the UK will of course see variable temperatures. For example, we may have both a hot summer and a cold winter, leading to higher death rates from each. Whilst this has always been the case (particularly in the case of winters), climate change may be expected to make seasonal weather more variable, so leading to more annual variability going forwards.

Analysis has been undertaken to estimate the potential impact that climate change could have on the liabilities. Looking at the most extreme case, we could see mean temperature rises of around 2.6°C by 2046–2065 and 4.3°C by 2081-2100 (relative to those in 1850-1900). With rising temperatures potentially giving rise to positive *and* negative effects on human longevity, this extreme case has both the greatest potential to contribute to longevity improvements *and* the greatest potential to reduce them, depending on the balance of those positives and negatives.

A central estimate reflects a balanced view of climatic impacts, and in climates like the UK and across the likely term of most DB pension schemes, taking a narrow focus on the impact on heat and cold related deaths from climate change, the impact is most likely to be a very small reduction in general mortality rates. As such the estimated impact is expected to be close to neutral in the UK across the typical time horizon of DB pension schemes liabilities, with a decrease in cold-related mortality projected to broadly cancel out the projected increase in heat-related mortality.

However, there is some uncertainty over the degree of the positive and negative effects on the impact on heat and cold related deaths leading to the range of liability effects represented below:

Analysis on the Trust's liabilities indicates that climate related risks could impact the value of the liabilities due to mortality changes relatively modestly with a range of -0.29% to +0.24% over the lifetime of the Trust (analysis is indicative and not guaranteed).

Outside of direct impacts on temperature-related deaths, climate change is likely to affect numerous wider aspects of the world we live in, with potential effects on individuals' wealth, health and lifestyles (resulting from transition and physical risks).

Unlike temperature rises, many of these broader effects may not be gradual and long-term, particularly where the process of human intervention itself has transitional effects and macro-economic influences. It is impossible to accurately predict overall impacts on longevity from climate change due to the wide range of interacting and unpredictable factors, but there is potential for much more material influences on longevity (positive or negative) than we might see from temperature changes alone.

In decades to come if climate change started to have an effect on mortality outcomes leading to costs or savings this could be diluted to an extent by the impact of the Trust's Life Expectancy Adjustment Factor (LEAF).

6.4 Covenant

The Regulations require the Trustee to make a statement about the resilience of the investment and funding strategies. As part of this, the DWP guidance requires trustees to consider (per para 44):

- the contributions that will be paid by the sponsoring employer to meet the scheme funding requirements of Part 3 of the Pensions Act 2004 (and the likelihood of those contributions being paid);
- the strength of the covenant offered by the sponsoring employer and how the strength of the covenant is expected to develop over the expected lifetime of the scheme.

The Covenant Adviser, Cardano has conducted a high-level assessment of the potential exposure of the Partnership to the 3 climate scenarios set by the Trustee. Its description of these scenarios and some implications for its analysis is shown below.

Selected scenarios	Orderly Net Zero *1.5ºC scenario*	Disorderly Net Zero *2.0ºC scenario*	Failed Transition *3-4ºC scenario*
Scenario outline	Global decarbonisation **starts now,** so policies intensify gradually but immediately. Large transition changes will happen quickly	Temperature increase is kept below 2°C to achieve carbon neutrality by 2050, but with **delayed implementation** beginning after 2030	**No new transition policies above existing commitments** lead to continued increase in GHG emissions and rise in global temperatures
Physical risks	**Long-term physical risks are reduced** but deviations from the present climate are still expected	**Long-term physical risks are reduced** but deviations from present climate still expected	More **pronounced physical risks** – particularly over the longer-term
Transition risks	**Highest in the near-term** as policies are implemented immediately	**Highest in the medium-term** as policy implementation is delayed	**Limited transition risks** over above existing commitments and policies
Macro-economic impact	Overall longer-term **impact on GDP growth muted**, with assumed long-term benefit from green tech investment	Compressed nature of emission reductions **drives material short-term macroeconomic disruption** and a sharp fall in GDP	UK and global **GDP growth permanently lower** with that impact increasing over time. Macroeconomic uncertainty rises
Alignment with advisers	Broadly aligned to JPM's below 2c Orderly scenario (i.e. Scenario B)	Broadly aligned to JPM's below 2c Disorderly scenario (i.e. Scenario A)	Broadly aligned to JPM's above 4c policy failure scenario (i.e. Scenario C)

Their conclusions as to the potential impact to the covenant over the time periods and the scenarios set by the Trustee is shown below.

Assessed potential business risk over time

	Near-term *Up to 2027*	Mid-term *2027 to 2032*	Long-term *2032+*
Orderly	Medium risk	Medium risk	Medium risk
Disorderly	Lower risk	Higher risk	Medium risk
Failed	Lower risk	Medium risk	Higher risk

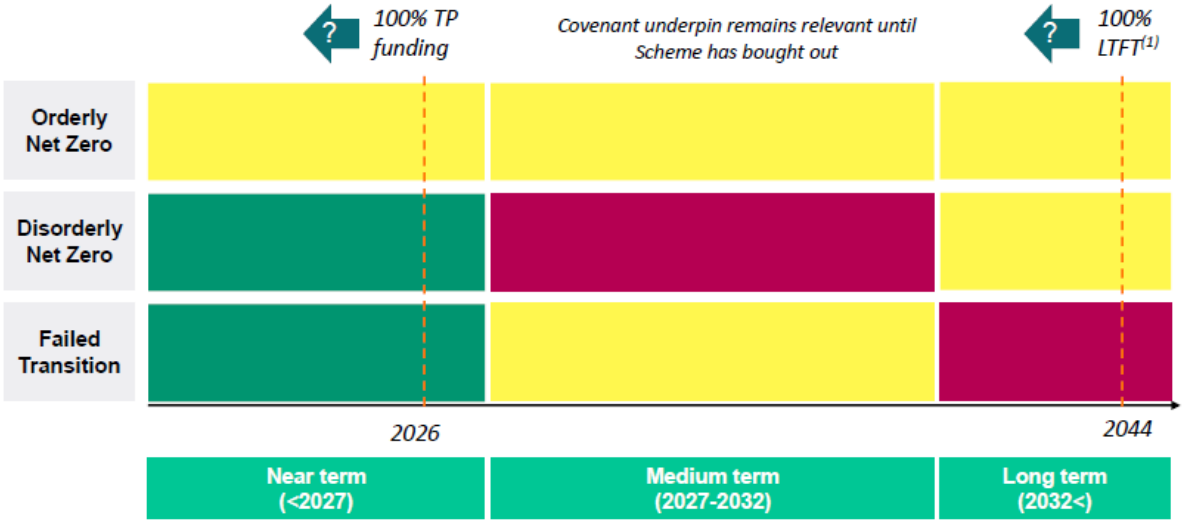
Transmission channel exposure in Failed Transition scenario

Climate risks to JLP appear to be moderate in the Orderly scenario in the near-term. The most prominent near-term transition risks relate to potential policy changes around GHG emissions (Scope 3 in particular) and building regulations

Transition risks increase over the medium-term, with higher expected carbon prices resulting in significant potential Scope 3 emission exposure in both lower-warming scenarios. Other transition risks occur more abruptly in the Disorderly scenario resulting in a greater relative risk exposure. Physical risks steadily increasing in all scenarios

Over the longer-term, exposure of operations to UK climate change is likely to represent a significant risk, whilst supply chain risk will continue to increase. These impacts are expected to be greater in the Failed Scenario, with higher physical risks

Its initial view of the impact of this on the covenant over the periods of the derisking journey plan is show below.



The analysis does not show any immediate or short-term material increase in risk but does provide a structure to monitor changes going forward.

6.5 DC assets

6.5.1 DC assets – the scenarios tested

The same methodology is applied as was used for DB in section 6.1.

6.5.2 DC assets – scenario analysis results

The analysis has been done at 2 levels as shown below:

- At Fund Level
- At Popular Arrangement Level

6.5.2.1 Fund Level

For all the assets measured - £949.4m being 69% of the total Scheme DC assets[5].

Scenario	**A**		**B**		**C**	
Temperature rise	Below 2c		Below 2c		Above 4c by 2100	
Type of transition	Sudden/disorderly		Long term/orderly		Policy failures	
Analysis time horizon	3 years (i.e. to 2025)		28 years (i.e. to 2050)		78 years (i.e. to 2100)	
	%	£m	%	£m	%	£m
Total loss	4.61%	43.8	6.40%	60.6	7.71%	72.8
Transition loss	*4.43%*	*42.1*	*3.39%*	*32.2*	*0*	*0*
Physical loss	*0.18%*	*1.7*	*3.01%*	*28.4*	*7.71%*	*72.8*

[5] This data and the analysis have been provided by JPM.

Both of these funds are managed largely on a passive basis and the manager is obliged to invest in line with the indices with some additional discretion for the DGF fund. The details of how these funds invest can be found in the DC Statement of Investment Principles[6]. The Trustee has a number of legal obligations to the members and the beneficiaries of the DC section of the Scheme toward the suitability of the investments and achieving "Value for Members". The Trustee is exploring how it can reduce the carbon footprint of the DC investments whilst in a way which is consistent with its other legal obligations.

6.5.2.2 Popular arrangement level

The majority of DC members are in the default arrangement which has an asset allocation which starts with a 100% in equities ("the Growth Phase") and reduces that over the 15-year period to retirement in the following way:

- "The Consolidation Phase" from year 15 to 7 before targeted retirement age (TRA), assets gradually switch from the JLP Global Equity fund (the Equity fund) to the JLP Diversified Growth Fund (the DGF). At 10 years prior to TRA, members will have 40% in the equity fund and 60% in the DGF.
- "The Pre-Retirement Phase" from 7 years to TRA. Assets are gradually switched over to the JLP Cash fund until it reaches 100%

Scenario	**A**		**B**		**C**	
Temperature rise	Below 2c		Below 2c		Above 4c by 2100	
Type of transition	Sudden/disorderly		Long term/orderly		Policy failures	
	%	£m	%	£m	%	£m
Growth phase						
Total loss	4.86	41	6.66	56	7.85	66
Transition loss	4.68	39	3.54	30	0.00	0
Physical loss	0.19	2	3.11	26	7.85	66
Consolidation phase						
Total loss	3.93	25	5.70	34	7.37	41
Transition loss	3.76	24	2.95	18	0.00	0
Physical loss	0.17	1	2.75	16	7.37	41
Pre-retirement phase						
Total loss	2.01	10	3.01	14	4.06	17
Transition loss	1.92	10	1.53	8	0.00	0
Physical loss	0.09	0	1.48	7	4.06	17

6.6 The Prudential With-Profits Policy

As stated previously, the Trustee has a With-Profits Assurance Policy with the Prudential Assurance Society. The asset allocation of that Fund is not within the control of the Trustee but rather is controlled by the life company who invest in M&G plc. The Trustee does not have the ability to change that allocation but it does review the material that is provided by the Prudential on climate change.

M&G has made the following commitments on climate change.

- To be carbon net zero in their own business operations by 2030 at the latest.

[6] https://www.johnlewispartnership.co.uk/content/dam/cws/pdfs/Juniper/DC-Section%20SIP-2020.pdf.

- To achieve carbon net zero portfolios by 2050, across total assets under management, to align with the Paris Agreement on Climate Change.

The Prudential Group's emission report is shown below.

		2020			2019		
		UK	Global (excluding UK)	Total	UK	Global (excluding UK)	Total
Scope 1 (tCO_2e)	Natural gas, oil (generators), vehicle fleet, refrigerants	**1,487**	**122**	**1,609**	1,936	191	2,127
Scope 2 (tCO_2e) Location based	Electricity, purchased heat and steam	**2,268**	**1,244**	**3,512**	4,213	1,636	5,849
Scope 2 (tCO_2e) Market based (supplier and residual mix)	Electricity, purchased heat and steam	**188**	**1,329**	**1,517**	105	1,775	1,880
Scope 1 and 2	Scope 1 and 2 (tCO_2e)[i]	**1,675**	**1,451**	**3,126**	2,041	1,966	4,007
	Energy use (MWh)	**16,191**	**2,527**	**18,718**	22,941	3,264	26,205
	tCO_2e per FTE			**0.56**			0.74

		2020	2019
Scope 3 (tCO_2e)	Air travel (booked through central travel booker)	**1,281**	8,946
	Land travel	**50**	127
	Water (global where available data)	**4**	11
	Waste (UK only)	**163**	365
	Total	**1,498**	9,449
	Global Scope 1, 2 and 3 (tCO_2e)[i]	**4,624**	13,456

Data Notes:	
Reporting Period:	1 January 2020 to 31 December 2020
Baseline year:	2019
Independent Assurance:	Deloitte LLP has provided limited assurance over selected environmental metrics in accordance with the International Auditing and Assurance Standards Board's (ISAE3000 (Revised)) international standard
Consolidation (boundary) approach:	Operational Control
Consistency with financial statements:	M&G plc owns and manages assets which are held on its balance sheet in the financial statements over which it does not have operational control due to fund governance structures. These are excluded from the scope of reporting under the operational control approach
Emission factor:	Scope 1 and 3 reporting uses the UK Defra 2020 GHG Conversion Factors. Scope 2 calculations use the IEA GHG 2020 Conversion Factors for location-based reporting. Market-based reporting uses supplier emission factors for our UK REGO-backed supply and RE-DISS factors where available
Accounting Methodology:	The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard
Materiality threshold:	5% of total emissions
Data Restatements:	2019 data has been re-stated to calendar year. Previously disclosed October 2018 to September 2019

7. Resilience of investment and funding strategies

Legal Disclosure required: **the resilience of the scheme's investment strategy and where the scheme has a funding strategy, the resilience of the funding strategy, in the most recent scenarios the trustees have analysed in accordance with paragraphs 6 and 7(Regulation 27 (i))**

The Trustee has an Integrated Risk Management ("IRM") system that uses a range of metrics to measure the strength of the Partnership covenant to support the Schemes funding and investment risks positions.

One of the measures used is an on-going estimate of the recovery available to the Trustee on insolvency. This is calculated as follows:

- The Trustee claim in the event of insolvency of the Partnership.
- The Scheme assets
- The value recoverable by the Trustee from the Partnership assets including the SLP and the Guarantees.

The sum of this gives a headroom which is the amount of value by which the value available to the Trustee in the event of the Partnership becoming insolvent. In that case, if there were a deficit in the Scheme's funding, the members may not receive the full level of benefits.

The Trustee is able to make adjustments to reflect allowances for the impact of additional risk factors such as climate change. The Trustee proposes to make prudent adjustment to reflect the adverse impacts that may arise on assets and liabilities from climate change. This can be adjusted to reflect changes in the values of the estimated impact.

As part of the preparation process for this report, the trustee has obtained reports from its advisers as set out below:

Mercer as investment adviser	for DB assets	Sections 7.1/7.2
Mercer as actuarial adviser	for the DB liabilities	Section 7.3
Cardano as covenant adviser	for the potential impact on the covenant	Section 7.4

Based on the work described above, the Trustee believes that the current levels of climate risk that it is aware of are not yet material to the resilience of its funding and investment strategies. However, this will be reviewed on a periodic basis as this report is prepared.

8. Future Scenario Analysis

Legal Disclosure required **in cases where paragraph 10 (of the Regulations) applies (see below) and the trustees have determined not to undertake new scenario analysis, the trustees' reasons for this determination (para. 27 (j))**

Paragraph 10 of the Regulations requires trustees to review their Scenario Analysis and consider if it is still appropriate.

This is the first year in which the Trustee has been legally obliged to produce and publish scenario analysis. As noted elsewhere in this report, the Trustee has struggled to obtain sufficient data in the appropriate formats to enable full analysis to be done. It is continuing to work with investment managers to rectify this. The Trustee is currently undergoing the actuarial valuation, after which it will review the DB investment strategy. The Trustee will incorporate information from its work on climate change into that process to ensure that it reflects the risks both the investments and the covenant. The Trustee will decide what future scenario analysis it will carry out during the course of the actuarial valuation and the review of the investment strategy.

The Trustee will also review the DC default and self-select options in the light of the scenario analysis and will consider any changes that it feels are appropriate to manage this risk (amongst others) on behalf of members.

9. Processes in place to identify, assess and manage risks that are relevant to the Scheme

Legal Disclosure required: **the processes which the trustees have established in accordance with paragraph 12 for identifying and assessing climate-related risks which are relevant to the Scheme (para. 27 (k))**

Paragraph 12 of the Regulations requires Trustees to establish and maintain processes to identify and assess climate related risks relevant to the Scheme

Legal Disclosure required: **the processes which the trustees have established in accordance with paragraph 13 for managing climate-related risks which are relevant to the scheme (para. 27 (l)).**

Paragraph 13 of the Regulations requires Trustees to establish and maintain processes to manage climate related risks relevant to the Scheme.

The Trustee has processes to identify and assess climate risks and incorporate them into decision making.
At a strategic level, the Trustee monitors the following:

- The escalating crises around green-house emissions.
- The development of global policy and UK legislation on climate change.
- The development of "Green Finance" within global economies.

Information about these is fed into the governance structure described in section 3 above. This information is in turn fed into decisions on investment, funding and covenant strategy.

At an operational level, climate-related risks are identified, assessed and managed by the combination of the following risk tools:

- Climate-related risks are included in the on-going due diligence for current managers and for new managers. This includes the annual manager questionnaires.
- The JPM data enables the Trustee to identify carbon metrics at individual holding, manager, sector and country level and incorporate this information into decision making around asset allocation, benchmark setting and on-going monitoring. The output from this system includes transition and physical risk.
- Other third-party information provided by managers or directly from other agencies such as PRI.
- The ongoing covenant is monitored by Cardano and they include climate change risks within their monitoring framework.

The information described above is used in the following ways:

- To provide more focused stewardship over investment managers. For example, if the questionnaire reveals a weakness in or failure to adhere to climate risk policies, the Trustee can ask for more work to be done by the manager to improve in these areas.
- To manage sector allocations to reduce exposure to climate risk. This could result in a change to overall asset allocation benchmarks or changes to Investment Manager Agreements depending on the level of transition or physical risk projected.

10. How Climate Change is integrated into the overall risk management

Legal Disclosure required: **how the processes required by paragraphs 12 and 13 are integrated into the trustees' overall risk management of the scheme; (para. 27 (m))**

Paragraph 12. Trustees must establish and maintain processes for the purpose of enabling them to identify and assess climate-related risks which are relevant to the scheme.
Paragraph 13. Trustees must establish and maintain processes for the purpose of enabling them to manage effectively climate-related risks which are relevant to the scheme.

The Trustee operates a full risk map which contains analysis of the likelihood and impact of risks and the controls and other mitigations in place to reduce the overall level of risk. Climate-related issues are a major risk that is recorded on that Register. That risk map is managed by the Audit and Risk Sub-Committee, but the Main Board retains overall responsibility for the climate-related risks given that they affect a broad range of the Scheme's activities.

11. The Metrics that the Trustee has calculated and the extent of coverage

Legal Disclosure required: **the metrics which the trustees have calculated in accordance with paragraphs 18 and 20 and, if the trustees have not been able to obtain data to calculate the metrics for all of the assets of the scheme, why this is the case; (para. 27 (n))**

Paragraph 18. Subject to paragraph 19, trustees must in each scheme year, as far as they are able—
(a) obtain the scope 1, scope 2 and scope 3 greenhouse gas emissions attributable to the scheme's assets;
(b) use the data obtained to calculate their selected absolute emissions metric and selected emissions intensity metric; and
(c) use the metrics they have calculated to identify and assess the climate-related risks and opportunities which are relevant to the scheme.

Paragraph 20. Trustees must in each scheme year, as far as they are able—
(a) obtain the data required to calculate their selected additional climate change metric;
(b) use the data obtained to calculate that metric in relation to the scheme's assets; and
(c) use the metric they have calculated to identify and assess the climate-related risks and opportunities which are relevant to the scheme.

11.1 Metrics chosen by the Trustee

The Trustee has collected the following metrics as set out below:

Total Carbon Emissions – absolute emissions based	Definition	Total greenhouse gas emissions associated with the portfolio expressed in tons of CO2e.
	How measured?	Total emissions are recorded for every stock line held and they are multiplied by the proportion of that entity that the Scheme owns. This stock level information can be combined to give a total emissions figure, or it can be reported on by sector or country.
	How is data sourced?	The data for each stock line is sourced at stock level from a third-party provider.
	Reason trustee has used this measure.	This can be used as a baseline and gives a clear message about how much carbon emissions the

		Scheme is financing, regardless of the market values of the underlying assets.
	Other uses for the measure.	This measure will be useful in setting overall targets for emission reductions in future investment strategies.

Carbon Footprint – intensity based	Definition	Total carbon emissions for the portfolio normalised by the market value of the portfolio expressed in tons of CO2e
	How measured?	The absolute emission metric as shown above and dividing it by the current value of the portfolio. As for Total Carbon Emissions. This can be reported on by sector or country.
	How is data sourced?	The data is sourced at stock level from a third-party provider.
	Reason trustee has used this measure.	This can be used for further analysis on emissions by sector or other forms of attribution.
	Other uses for the measure.	This measure will be useful in evaluating future asset allocation decisions in future investment strategies.

Data quantity and quality	Definition	**Quantity:** The proportion of the assets by market value within the portfolio that the Trustee can obtain adequate carbon emission and other data to be able to produce scenario analysis. **Quality:** The proportion of assets by market value and outstanding value or EVIC as per Appendix E of this report.
	How measured?	This is equal to the following:
	How is data sourced?	The data is sourced primarily using the JPM systems, the processes or which have been described elsewhere in this report.
	Reason trustee has used this measure.	The Trustee can only make robust decisions around the treatment of carbon emissions and their potential impact upon value of the underlying investments where it has adequate coverage by the following: • Market Value • Sector • Geography. This will enable the Trustee to observe its legal obligation to achieve diversification across the portfolio whilst still implementing an appropriate policy towards carbon emissions. This will avoid the risk of taking decisions around the inclusion, exclusion, limiting or increasing the allocation of capital to particular sectors, asset types and geographies based upon incomplete or inaccurate data.

	Other uses for the measure.	The data can also be used in relation to the following: • To help set targets around achieving a net zero carbon profile in the schemes • To ensure that the investment strategy of the Scheme is mindful of the climate risk profile of the covenant and avoids creating concentrations of risk in the portfolio where it already exists in the sponsor and it cannot be mitigated.

11.2 Extent of coverage - DB Assets

In common with many other pension schemes, the Trustee has not been able to obtain detailed carbon data for its entire portfolio. The availability of data has been a common issue in the industry and both the Government and the DWP have publicly acknowledged this. This is due to the legal requirements being new and the industry not having fully built reporting standards and processes to enable trustees to report fully on it in many cases. JPM has only been able to provide scenario analysis that covers 25% of the total assets of the Scheme – this being in relation to the equity and credit components. JPM have confirmed that the data that they have used is obtained either directly from Trustee data that they hold as custodian (reference data and holdings) or from IdealRatings who provide the climate information on individual stock holdings. IdealRatings use a combination of disclosed, estimated and proxy data.

The assumption that JPM have used in their scenario analysis that is likely to have the highest impact is the haircut by sector of the various scenarios, that is the estimate of how much the value of a stock might fall (or rise) as a result of climate change. JPM have confirmed to the Trustee that there are no limitations of the data or the modelling which would limit the comprehensiveness of the assessments that they have provided to the Trustee. In addition, the Trustee believes that the process that JPM operates on its behalf does not involve that use of data which may be of uncertain quality.

To compensate for not having obtained full coverage through the JPM process, the Trustee has taken a number of additional approaches to obtaining information on the various managers and assets. The DWP regulations permit trustees to take both and quantitative and qualitative approach to monitoring.

The approaches have been taken as set out below:

- **JPM data:** The Trustee has contracted with JPM to provide a full ESG screening service which includes a wide range of climate data analysis. They are able to provide this service in respect of listed equities and bonds. They obtain their data from a variety of market data services which vary according to the location and type of security. The Trustee believes that the quality of this data is appropriate for the use being made of it.
- **Manager data:** This has been used for liability matching assets and direct holdings in property. The managers who run the liability matching mandate and the direct holdings in property are not able to provide data that JPM can use. The Trustee has obtained this data directly from the managers.
- **Other methods:** These include the following:

    - Sending an annual questionnaire to every manager which includes Climate Change and engaging with the managers on the responses. A copy of that questionnaire is shown as Appendix A.
    - Tracking the managers' rating from the PRI and Mercer's ESG service.

The coverage of the DB assets is shown below:

By asset class	Coverage of carbon data			
	Total	JPM data	Manager data	Other methods
	£m	£m	£m	£m
Liability Matching	2,726.8	-	2,726.8	-
Listed equity	1,042.4	1,042.4	-	-
Long/short equity	1.3	-	-	1.3
Private equity	497.4	-	-	497.4
Credit	703.2	703.2	-	-
Private credit	455.5	-	-	455.5
Liquid alternatives	559.1	-	-	559.1
Real assets	812.3	-	419.9	392.4
Cash/Currency	119.5	-	-	119.5
SLP	-	-	-	-
Total	6,917.5	1,745.6	3,146.7	2,025.2
Percentage of total		25%	45%	29%

11.3 Extent of coverage - DC Assets

The majority of the DC assets of the Scheme are contained in the two policies; the first being a with-profits policy with the Prudential Assurance Society and the second being a unit linked policy with Legal and General Assurance Society.

The Trustee has no direct influence of the asset allocation of the With-Profits. It has not been able to obtain any data to perform scenario analysis. Given that it has no ability to influence, there would be less value in having obtained that information. It has however carried out some alternative work as set out elsewhere in this report.

The approach to DC assets has been the same as per the DB assets but with the exception that we have not used the questionnaire for the two managers.

The table below shows the DC assets and the work that has been undertaken in respect of each one:

	Coverage of Carbon Data			
	Value	**JPM Data**	**Manager Data**	**Other**
	£m	**£m**	**£m**	**£m**
Unit linked policies with Legal and General Assurance				
JLP Global Equity Fund	840.9	840.9		
JLP Diversified Growth Fund	107.4	107.4		
JLP Cautious Diversified Growth Fund	0.3			0.3
JLP Ethical Equity Fund	3.0			3.0
JLP Shariah Equity Fund	1.8			1.8
JLP Annuity Protection Fund	0.1			0.1
JLP Cash Fund	76.4			76.4
Total unit linked policies with Legal and General Assurance	**1,029.9**	**948.3**	**-**	**81.6**
With profits policies with Prudential	335.7		335.7	
Legacy AVC policies	0			-
Total	**1,365.6**	**948.3**	**335.7**	**81.6**
Percentage of total		**69%**	**25%**	**6%**

11.4 Other measures of climate impact

The Trustee is also able to measure the following:

Term	Meaning
Carbon Intensity	CO2e Tons per million dollar revenue. It captures company's actual implementation and provides quantitative pertinent E, S and G data. We utilize IdealRatings' metric data to analyse Company's air emission (both direct and indirect). It covers 7969 companies across the globe for carbon datasets. Portfolio carbon weight in percentage term is computed from subset of portfolio's position which are mapped to carbon datasets. This might differ from portfolio weight calculated for portfolio ESG score.
Weighted Average Carbon Intensity	Carbon Intensity values of all companies (expressed in tons CO2e/M$ revenue) are aggregated using portfolio weights to obtain the weighted average carbon intensity. Individual company is ranked on the basis of its contribution to total portfolio carbon intensity (Weighted Average Carbon Intensity).
Weighted Average Energy Intensity	Energy consumption values of all companies (expressed in GJ/M$ revenue) are aggregated using portfolio weights to obtain the weighted average energy intensity.
Securities Coverage	Percentage number of securities covered and rated by IdealRatings carbon metrics data.
Scope 1,2 and 3 Emissions	Scope 1 emissions account for the direct emissions from companies, and Scope 2 emissions, accounting for the indirect emissions from purchased electricity. Scope 3 emissions include all other indirect emissions that occur in a company's value chain.
Arabesque Temperature Scores	Arabesque's temperature Score translates publicly reported GHG emissions from each company to a Celsius degree temperature, based on sector-specific emissions pathways. The Temperature Score is comprised of two parts: the main score and three key indicators. Scores are calculated using sector-specific climate pathways based on the International Energy Agency (IEA) scenarios and OECD GDP forecasts. The tool compares a company's current emissions intensity to projected emissions intensities for 1.5C, 2C and 2.7C scenarios of global temperature rise. Each company is given a near-term (2030) and a long-term (2050) score. The `near-term' 2030 reference point reflects the temperature pathway that the company is currently on, while the 2050 reference point shows the potential long-term implications of the company's current emissions, assuming that it makes no reductions.
Temperature Trend	This gives the last 3 years carbon emissions intensity data for a company with each being given a score of 1.5c, 2.0c, 2.7c or greater than 2.7c. Companies who do not provide full disclosures are given a score of 3c.
SBTI	The Science Based Targets initiative (SBTi) is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). The organisation encourages and provides tools to enable companies to reduce greenhouse gases. The "targets" are defined below. "Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C".

See 6.1 and 6.2 for details of coverage of assets by the Trustee for DB and DC assets respectively.

12. The Target selected by the Trustee

Legal Disclosure required: **the target which the trustees have set in accordance with paragraph 22 or paragraph 24 and the performance of the scheme against that target as measured in accordance with paragraph 23(a) (Regulation 27 (o))**

Paragraph 22. Trustees must in the first scheme year in respect of which the requirements of this Part apply and, where applicable, in a first scheme year of re-application, set a target for the scheme in relation to one of the metrics which they have selected to calculate
Paragraph 24. Where trustees have determined in accordance with paragraph 23(b) that a target should be replaced, they must set a new target for the scheme in relation to one of the metrics which they have selected to calculate.

The Trustee is required to set at least one target for a chosen metric.

The first step in setting climate targets is to obtain comprehensive and reliable data. The Trustee was not able to obtain sufficient data to use to set a target for emissions metrics shown above in 12.1. and 12.2. They have therefore set an initial target of data quality and quantity.

Targets are set by reference to a base year against which progress is assessed, a timeline for achieving the target and the methodology by which performance against the target is assessed.

As a first step, the Trustee has agreed to set a target to reach full coverage (i.e., 100%) of the DB and DC sections by 2032. To assess this, the Trustee will compare the data availability year-on-year versus its starting point.

The base year for this target is 31 March 2022 and the table below summarises the likely format of future reporting. The Trustee will compare linear progress against the agreed 2032 target each year, and this will be reflected in this table.

	Base date 31 March 2022	Target for 31 March 2022	Actual at 31 March 2022	Actual vs Target
Total portfolio	33%	33%	33%	-
DB Assets	25%	25%	25%	-
DC Assets	69%	69%	69%	-

Appendix A – Climate Change Questions used for Asset Managers

The Trustee of the John Lewis Pension Scheme places particular emphasis on climate change. Please provide details on how climate change risk is managed within the investment portfolio.
(A) The risk committee or the equivalent function is formally responsible for identifying, assessing and managing climate risks.
If yes, please describe:
(B) Climate risks are incorporated into traditional risks (e.g. credit risk, market risk, liquidity risk or operational risk).
If yes, please describe:
(C) Climate risks are prioritised based on their relative materiality, as defined by our organisation's materiality analysis.
If yes, please describe:
(D) Executive remuneration is linked to climate-related KPIs.
If yes, please describe:
(E) Management remuneration is linked to climate-related KPIs.
If yes, please describe:
(F) Climate risks are included in the enterprise risk management system.
If yes, please describe:
(G) Other methods for incorporating climate risks into overall risk management.
If yes, please describe:
(H) Processes for identifying, assessing and managing climate-related risks are not integrated into our overall risk management.

Appendix B (1 of 2) – More detail on climate-related risks and financial impacts

Table 1

Examples of Climate-Related Risks and Potential Financial Impacts

Type	Climate-Related Risks[32]	Potential Financial Impacts
Transition Risks	**Policy and Legal**	
	– Increased pricing of GHG emissions – Enhanced emissions-reporting obligations – Mandates on and regulation of existing products and services – Exposure to litigation	– Increased operating costs (e.g., higher compliance costs, increased insurance premiums) – Write-offs, asset impairment, and early retirement of existing assets due to policy changes – Increased costs and/or reduced demand for products and services resulting from fines and judgments
	Technology	
	– Substitution of existing products and services with lower emissions options – Unsuccessful investment in new technologies – Costs to transition to lower emissions technology	– Write-offs and early retirement of existing assets – Reduced demand for products and services – Research and development (R&D) expenditures in new and alternative technologies – Capital investments in technology development – Costs to adopt/deploy new practices and processes
	Market	
	– Changing customer behavior – Uncertainty in market signals – Increased cost of raw materials	– Reduced demand for goods and services due to shift in consumer preferences – Increased production costs due to changing input prices (e.g., energy, water) and output requirements (e.g., waste treatment) – Abrupt and unexpected shifts in energy costs – Change in revenue mix and sources, resulting in decreased revenues – Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)
	Reputation	
	– Shifts in consumer preferences – Stigmatization of sector – Increased stakeholder concern or negative stakeholder feedback	– Reduced revenue from decreased demand for goods/services – Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions) – Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention) – Reduction in capital availability
Physical Risks	**Acute** – Increased severity of extreme weather events such as cyclones and floods **Chronic** – Changes in precipitation patterns and extreme variability in weather patterns – Rising mean temperatures – Rising sea levels	– Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) – Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism) – Write-offs and early retirement of existing assets (e.g., damage to property and assets in "high-risk" locations) – Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants) – Increased capital costs (e.g., damage to facilities) – Reduced revenues from lower sales/output – Increased insurance premiums and potential for reduced availability of insurance on assets in "high-risk" locations

Appendix B (2 of 2) – More detail on climate-related risks and financial impacts

Table 2

Examples of Climate-Related Opportunities and Potential Financial Impacts

Type	Climate-Related Opportunities[22]	Potential Financial Impacts
Resource Efficiency	– Use of more efficient modes of transport – Use of more efficient production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption	– Reduced operating costs (e.g., through efficiency gains and cost reductions) – Increased production capacity, resulting in increased revenues – Increased value of fixed assets (e.g., highly rated energy-efficient buildings) – Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction) resulting in lower costs
Energy Source	– Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market – Shift toward decentralized energy generation	– Reduced operational costs (e.g., through use of lowest cost abatement) – Reduced exposure to future fossil fuel price increases – Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon – Returns on investment in low-emission technology – Increased capital availability (e.g., as more investors favor lower-emissions producers) – Reputational benefits resulting in increased demand for goods/services
Products and Services	– Development and/or expansion of low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation – Ability to diversify business activities – Shift in consumer preferences	– Increased revenue through demand for lower emissions products and services – Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services) – Better competitive position to reflect shifting consumer preferences, resulting in increased revenues
Markets	– Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage	– Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks) – Increased diversification of financial assets (e.g., green bonds and infrastructure)
Resilience	– Participation in renewable energy programs and adoption of energy-efficiency measures – Resource substitutes/diversification	– Increased market valuation through resilience planning (e.g., infrastructure, land, buildings) – Increased reliability of supply chain and ability to operate under various conditions – Increased revenue through new products and services related to ensuring resiliency

Appendix C - DB Manager Reviews

This appendix follows on from section 6.2 and sets out the work done in addition to the scenario analysis performed by JPM.

Review of DB Liability Driven Investments

The liability matching assets are held in Government Bonds, repurchase agreements, swap contracts and cash. The DWP guidance states that they "do not expect trustees to be able to readily calculate emissions associated with the derivatives at the current time"[7].
We have not been able to obtain appropriate data on the Government Bonds for JPM to carry out their analysis. We have therefore obtained the following data from the manager:

Metric	Measure
Carbon Footprint	71.4 Tonnes per $1m of "Enterprise Value"
WACI	137.9 Tonnes per £1m of Revenue
Implied Temperature Alignment	1.9%

The UK government has provided the following commentary on its green-house gas emissions. "The public sector consists of emissions from combustion of fuel in public sector buildings, such as schools, hospitals and offices. It is estimated to have been responsible for around 2% of greenhouse gas emissions in the UK in 2020, with carbon dioxide making up almost all of these emissions. The main source of emissions from this sector is the use of natural gas for heating public buildings. It should be noted that these totals do not include emissions from the generation of electricity consumed by the public sector as these emissions are included in the energy supply sector, while emissions from public transport are included in the transport sector." [8]

The UK government is committed to improving its overall greenhouse gas emissions and has issued a series of "green bonds" from which the proceeds are earmarked for environmentally secure projects.[9] The Trustee monitors these developments through the "UK Government Green Financing Framework".[10]

Review of DB Direct Property Assets

Our property manager, CBRE has engaged with an external consultant GRESB who provide measurement and guidance on how ESG issues including climate change are incorporated into the property management. They have reviewed the governance function that they exercise on behalf of the Trustee over climate change activity.

They have also carried out some initial measurement and target setting which is summarised in the table below:

[7] Para 131 https://www.gov.uk/government/publications/governance-and-reporting-of-climate-change-risk-guidance-for-trustees-of-occupational-schemes/governance-and-reporting-of-climate-change-risk-guidance-for-trustees-of-occupational-schemes

[8] Page 23 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051408/2020-final-greenhouse-gas-emissions-statistical-release.pdf

[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002578/20210630_UK_Government_Green_Financing_Framework.pdf

[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002578/20210630_UK_Government_Green_Financing_Framework.pdf

Metric	Data Coverage	Value	Long Term Target	Long Term Target
Energy Consumption	24%	3,561 MWh plus 862 MWh of Renewable Energy.	Baseline 2017 End year 2027	20%
Greenhouse Gas Emissions	24%	635 tCO2 with no offsets.	Baseline 2017	20%
Water Consumption	8%	2,067m3 with no water reuse.	End year 2027	20%
Waste	10%	51 tonnes with 38 tonnes diverted	Baseline 2017	50%

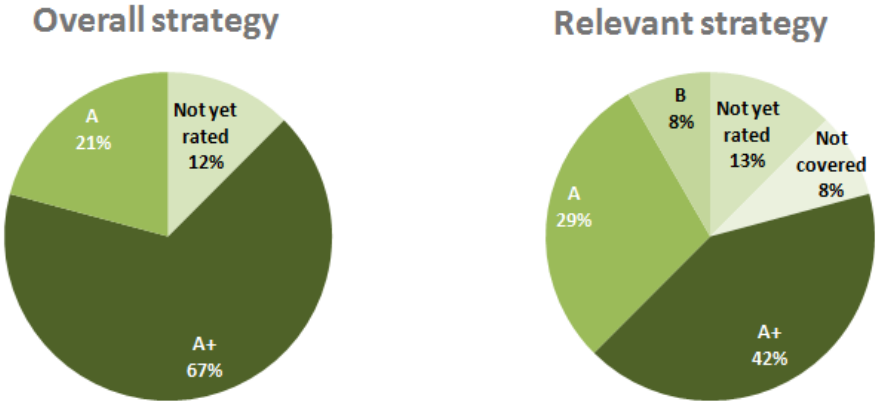
Other work done on DB assets

The Trustee is a member of "Principles for Responsible Investments" (PRI). This is a United Nations network of investors who seek to develop and promote a series of principles and practices around ESG in investing. It has 4,800 signatories globally. Climate change features very strongly amongst its objectives.

The PRI operates a scoring system for a manager which is based upon an evaluation of their integration of ESG into their investment processes.

Of the 29 managers on the DB section, 24 are members of the PRI. This represents 88% of the total portfolio. Of the, 5 that are not members; 1 is a private credit manager and 2 operate liquid alternative strategies and 2 are infrastructure managers.

The current ratings for the managers are as follows:



Appendix D - DC Manager Data

This follows on from section 6.5 and shows some top-level data in respect of the DC assets at Legal and General.

For all the assets measured - £949.4m being 69% of the total Scheme DC assets[11].

	NAV £m	Total Carbon Emissions	Carbon Footprint	WA Carbon Intensity	WA Energy Intensity	Coverage by value
	£m	Tonnes	Tonnes CoOe/ $m invested	Tonnes CoOe/ $m Revenue	Gigajoules/ $m Revenue	%
Total measured	927,249.4	275,879.16	853.72	750.47	36,235.07	76.74
JLP Global Equity	817,366.8	249,424.08	968.72	862.49	40,728.46	85.77
JLP Diversified Growth	109,912.6	26,455.08	405.6	313.93	18,724.76	41.52

[11] This data and the analysis have been provided by JPM.

Appendix E – Data Quality Score Table (1 of 3)

Table 5-3. General description of the data quality score table for listed equity and corporate bonds[61]

(score 1 = highest data quality; score 5 = lowest data quality)

Data Quality	Options to estimate the financed emissions		When to use each option
Score 1	**Option 1: Reported emissions**	**1a**	Outstanding amount in the company and EVIC are known. **Verified emissions** of the company are available.
Score 2		**1b**	Outstanding amount in the company and EVIC are known. **Unverified emissions** calculated by the company are available.
	Option 2: Physical activity-based emissions	**2a**[62]	Outstanding amount in the company and EVIC are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data of the **company's energy consumption** and emission factors[63] specific to that primary data. Relevant process emissions are added.
Score 3		**2b**	Outstanding amount in the company and EVIC are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data of the **company's production** and emission factors specific to that primary data.
Score 4	**Option 3: Economic activity-based emissions**	**3a**	Outstanding amount in the company, EVIC, and the **company's revenue**[64] are known. Emission factors for the sector per unit of revenue are known (e.g., tCO_2e per euro of revenue earned in a sector).
Score 5		**3b**	Outstanding amount in the company is known. Emission factors for the sector per unit of asset (e.g., tCO_2e per euro of asset in a sector) are known.
		3c	Outstanding amount in the company is known. Emission factors for the sector per unit of revenue (e.g., tCO_2e per euro of revenue earned in a sector) and **asset turnover ratios** for the sector are known.

Appendix E – Data Quality Score Table (2 of 3)

Table 5-5. General description of the data quality score table for business loans and unlisted equity[92]

(score 1 = highest data quality; score 5 = lowest data quality)

Data Quality	Options to estimate the financed emissions		When to use each option
Score 1	**Option 1: Reported emissions**	**1a**	Outstanding amount in the company and total company equity plus debt are known. **Verified emissions** of the company are available.
Score 2		**1b**	Outstanding amount in the company and total company equity plus debt are known. **Unverified emissions** calculated by the company are available.
	Option 2: Physical activity-based emissions	**2a[93]**	Outstanding amount in the company and total company equity plus debt are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data for the company's energy **consumption** and emission factors[94] specific to that primary data. Relevant process emissions are added.
Score 3		**2b**	Outstanding amount in the company and total company equity plus debt are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data for the company's **production** and emission factors specific to that primary data.
Score 4	**Option 3: Economic activity-based emissions**	**3a**	Outstanding amount in the company, total company equity plus debt, and the **company's revenue**[95] are known. Emission factors for the sector per unit of revenue are known (e.g., tCO_2e per euro of revenue earned in a sector).
Score 5		**3b**	Outstanding amount in the company is known. Emission factors for the sector per unit of asset (e.g., tCO_2e per euro of asset in a sector) are known.
		3c	Outstanding amount in the company is known. Emission factors for the sector per unit of revenue (e.g., tCO_2e per euro of revenue earned in a sector) and **asset turnover ratios** for the sector are known.

Appendix E – Data Quality Score Table (3 of 3)

Table 5-9. General description of the data quality score table for CRE

(score 1 = highest data quality; score 5 = lowest data quality)

Data Quality	Options to estimate the financed emissions		When to use each option
Score 1	Option 1: Actual building emissions	1a	Primary data on **actual building energy consumption** (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and **supplier-specific emission factors**[129] specific to the respective energy source.
Score 2		1b	Primary data on **actual building energy consumption** (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and **average emission factors** specific to the respective energy source.
Score 3	Option 2: Estimated building emissions based on floor area	2a	**Estimated building energy consumption per floor area based on official building energy labels AND the floor area** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.
Score 4		2b	**Estimated building energy consumption per floor area based on building type and location-specific statistical data AND the floor area** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.
Score 5	Option 3: Estimated building emissions based on number of buildings	3	**Estimated building energy consumption per building based on building type and location-specific statistical data AND the number of buildings** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.