

HSBC BANK (UK) PENSION SCHEME TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (“TCFD”) REPORT 2021

This report has been prepared in line with the Department for Work and Pensions climate change governance and reporting requirements and guidance (June 2021).

This report details how the HSBC Bank (UK) Pension Scheme (“the Scheme”) has followed the recommendations and guidance as outlined in the most recent TCFD implementation guidance (October 2021) to the extent it was feasible to do so. It is expected that all of the updated TCFD guidance will be addressed in the future.

Table of Contents

Foreword	3
Executive Summary	4
Introduction	6
Approach to climate change	6
Governance	7
Climate governance structure	7
Trustee knowledge and understanding of climate change	11
Strategy	12
An overview of the DB funding and investment strategy	12
An overview of the DC assets	13
Time Horizons	14
Climate-related considerations in setting the Scheme's investment strategy	15
Scenario analysis	16
Risk Management	22
Identifying and assessing climate-related risks in an integrated way	22
Mitigating climate-related risks in an integrated way	24
Monitoring our climate-related risk exposure	27
Reporting on our management of climate-related risk	28
Metrics & Targets	28
Climate metrics for our DB assets as at 31 December 2021	30
Climate metrics for our DC assets as at 31 December 2021	31
Our climate-related targets	33
Looking ahead	34
Appendices	35

Foreword

Welcome to the 2021 edition of our annual TCFD report. As before, we outline our approach and document progress towards addressing climate-related risks and opportunities.

We recognise climate change as a systemic, long-term financial risk. We have therefore taken many key steps over the years to ensure that climate-related issues are embedded in our strategic decision-making. This year we have made further progress – most notably, we have set out a target to achieve net-zero greenhouse gas (“GHG”) emissions across our Defined Benefit (“DB”) and Defined Contribution (“DC”) assets by 2050 or sooner. We acknowledge that climate change is a complex problem and that we do not yet have all the answers. But we are sure that this is the right direction of travel for the benefit of our members.

In this report you will find a description of how we make decisions that reflect climate-related risks and opportunities, and how climate change might impact our ability to pay members’ benefits and deliver members’ retirement outcomes. We describe how we continue to respond to the risks associated with climate change, and how we identify appropriate investment opportunities. The first step in response to risks is to identify and assess them. We therefore measure and monitor climate metrics on your behalf, which allows us to identify where climate risk is most concentrated. Unfortunately, there remain significant gaps in the data, and in the ways that data is made comparable. Both limit our analysis. These are problems for all investors, and we are actively engaged with the various efforts underway to improve data quality. Over time, these will make calculations increasingly robust and more helpful for our decision-making. To help readers understand this report, we have also included a glossary of technical terms in an appendix.

In terms of next steps, over the next year we are building a net-zero investment strategy, which will include details of steps we are taking to achieve our targets and manage climate-related risks in a robust way. We continue to collaborate with our peers, the wider investment industry, and policymakers to drive positive change through investment. By doing so, we also continue to align ourselves with what we see as best practice across all areas, which continues to evolve.

Russell Picot, Chair of the HSBC Bank Pension Trust (UK) Limited

Executive Summary

Scheme overview

Our Scheme consists of three sections: the HSBC UK Bank plc (“HBUK”) Section, the HSBC Bank plc (“Bank plc”) Section and the HSBC Global Services (UK) Ltd (“HGSU”) Section. DB and DC benefits are provided by each section. Within the DC retirement provision, there is a range of investment funds available for members, including different default strategies and a number of self-select funds.

Our approach to climate change

As one of the UK’s largest pension schemes we recognise climate change as a systemic, long-term financial risk to members’ retirement outcomes. Over the years we have taken steps to ensure that climate-related considerations are embedded into our strategic decision-making.

We believe that disclosure and transparency is an important way to improve accountability to our members. We have been reporting on our approach to climate change in an annual TCFD¹ report since 2018. We have been supporters of the TCFD since it was established by the Financial Stability Board (“FSB”) in 2017. TCFD improves and increases the quantity and quality of climate-related information across the global economy. This is vital for the robust management of climate-related risks.

While to date we have published our TCFD reports on a voluntary basis, for the 2021 Scheme year new climate regulations require us to disclose how we identify, assess and manage climate-related risks and opportunities. As such, this report takes on a new format compared to previous years, and provides an update on the steps we have taken in 2021 to improve our approach to climate change risks and opportunities. It is broken down into four key areas, as prescribed by the TCFD recommendations, and the new regulations:

- ◆ **Governance:** We continue to operate a robust governance framework in relation to climate-related risks and opportunities. This enables us to have confidence that climate-related risks and opportunities are appropriately factored into our investment processes. While the Trustee Board is ultimately responsible for the oversight of the Scheme’s climate-related risks and opportunities, we are supported by subcommittees and a full-time management team.
- ◆ **Strategy:** We have assessed the impacts of potential future climate outcomes on the whole DB funding strategy, and the two main default investment strategies which together encompass more than 85% of DC members. The analysis found that there is a potential loss of value to our members’ investments under different climate change outcomes. Overall, the relative impact of climate-related risks on the DB part of the Scheme is estimated to be more subdued than that on the DC part of the Scheme. We have already taken several investment decisions to mitigate this risk, including investing the majority of the DC default investment strategies’ assets in a climate-tilted equity strategy. We are committed to continue to take steps to address and limit these potential impacts.
- ◆ **Risk Management:** We established a Climate Risk Management Framework in 2020, which ensures that climate-related risks are identified, assessed and managed appropriately. Our preferred approach to climate risk mitigation is:
 - Specific consideration of climate-related risks in investment manager and mandate selection
 - Integration of climate-related considerations in fund design, for example, our Global Equities Fund - Passive
 - Engagement with our investment managers, regulators, industry bodies and policymakers
 - Reducing our exposure to climate-related risks by investing in climate opportunities
- ◆ **Metrics and Targets:** We monitor a combination of climate-related metrics for the Scheme, which provide a balanced view of our current and future exposure to climate-related risks. Furthermore, in an effort to improve our management of the impacts of climate change on the Scheme’s investments and the consequent impact on the financial interests of our members, we have also set a number of climate-related targets. These include:

¹ The TCFD is a disclosure framework that helps organisations disclose their approach to climate change, including climate-related risks and opportunities. The TCFD is aimed at all financial actors, from companies to investors, as the goal is to provide consistent and transparent information to global markets.

- Achieve net-zero GHG emissions across the DB and DC assets by 2050 or sooner.
- Targeting a real economy emissions reduction interim target of 50% by 2030 or sooner for our equity and corporate bond mandates, in line with the findings of the most recent Intergovernmental Panel on Climate Change (“IPCC”) report.
- Having the ambition of ensuring that all of our corporate bond and equity investments are fully aligned to the goals of the Paris Agreement by 2030, across both DB and DC assets.
- Enhancing our engagement and stewardship efforts through our investment managers.

These targets are aligned to the goals of the Paris Agreement of limiting global temperature increases to well below 2 degrees Celsius (and ideally 1.5 degrees Celsius) this century.

What’s next?

Over the next year we are building our net-zero investment strategy, which will include details of the steps we are taking to achieve our targets and continue to manage climate-related risks in a robust way.

More information on our climate and other ESG activities can be found on the Future Focus website.

Introduction

Approach to climate change

We recognise climate change is a systemic, long-term material financial risk to the value of the Scheme's investments. Therefore, we believe we have a fiduciary duty to consider the risks arising from climate change when making investment decisions and we seek to manage these risks on behalf of the Scheme's members. This is especially the case for DC members, as the value of their pension pots is directly related to the underlying investments. Our focus on climate change risk mitigation plays an important role in how investments are managed across all asset classes, in both the DC and DB parts of the Scheme. At a policy level, we are supportive of initiatives that contribute towards mitigating climate change risk on our members' investments. Within this context, we are supportive of the Paris Agreement to minimise dangerous climate change by limiting global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C.

In line with these beliefs, and to ensure climate-related risks and opportunities are embedded in investment decision-making, we became supporters of the TCFD in 2017 and published our first TCFD report in 2018. Since then, we have been on a journey to incorporate the recommendations of the TCFD.

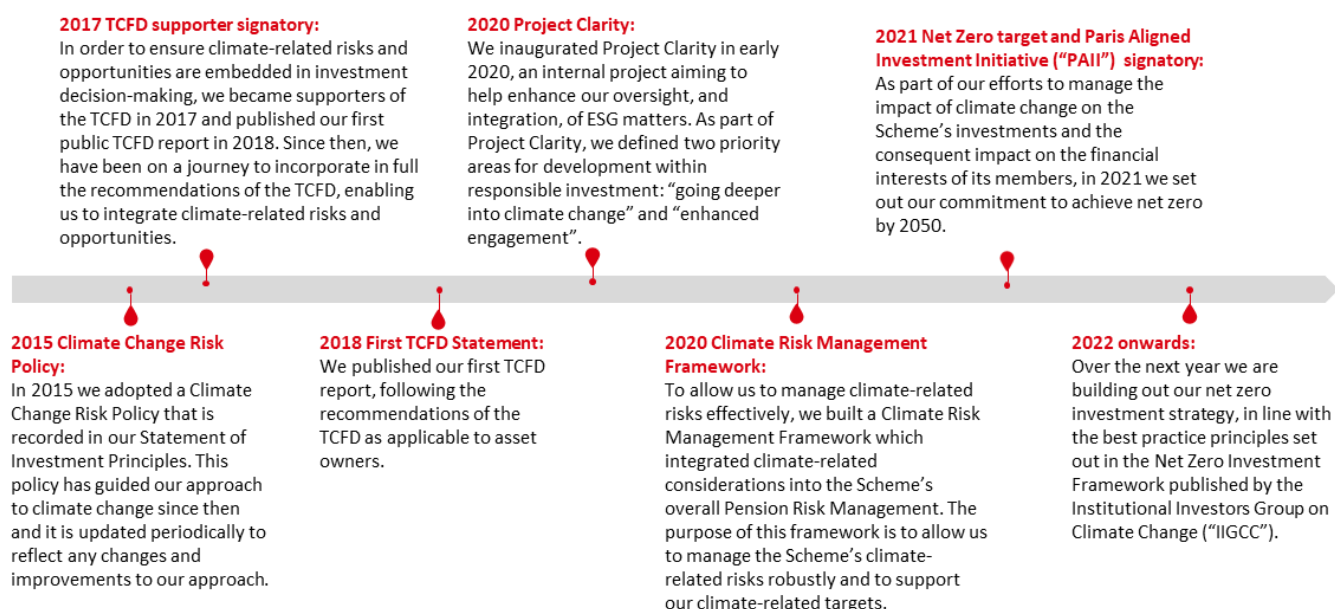
In 2021 the Department for Work and Pensions ("DWP") introduced "The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021" ("the regulations"), requiring large UK pension schemes to put in place appropriate governance processes for managing climate-related risks and opportunities and to report on actions taken annually. As such, while this is our fifth disclosure under the TCFD framework, it is our first report which has been prepared in accordance with the new regulatory requirements. This report provides a status update on how we are aligning with each of the four elements of the TCFD framework as set out in the regulations:

- ◆ **Governance:** The Scheme's governance around climate-related risks and opportunities.
- ◆ **Strategy:** The actual and potential impacts of climate-related risks and opportunities on the Scheme's investments and funding strategy and integration into investment decision-making.
- ◆ **Risk Management:** The processes used to identify, assess and manage climate-related risks and integration into overall risk management.
- ◆ **Metrics and Targets:** The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

The timeline below shows the evolution of the Scheme's TCFD disclosures and key decisions made in relation to climate change (including "going deeper into climate change" and "net zero ambition").

This report covers the period 1 January to 31 December 2021.

Timeline of key climate-related actions



Governance

Climate governance structure, including the role of persons undertaking governance activities and those advising the Trustee

Our investment strategy is built upon a set of investment beliefs. One of the beliefs is: ‘Environmental (including Climate Change risks), Social and Governance risks are all important factors in investment decision making.’ Our governance structure enables these beliefs to be deployed, ensuring the Scheme is run in the best interests of our members. While the Trustee Board is ultimately responsible for the oversight of the Scheme’s climate-related risks and opportunities, it is supported by its subcommittees and a full-time management team:

- The Asset & Liability Committee (“ALCo”);
- The Audit & Risk Committee (“A&R”);
- The Pension Scheme Executive (“PSE”); and
- The Climate Risk Working Group (“CRWG”), which was formed in 2021 and disbanded later that year once net zero target research had been concluded and its net zero proposals had been adopted by the Trustee Board. Since that time responsibility for implementing the CRWG’s recommendations sits with the ALCo.

The roles and responsibilities of the Trustee Board, its sub-committees, those undertaking scheme governance activities and those advising us in identifying, assessing, and managing climate-related risks and opportunities, is documented in our Climate Risk Management Framework. The Framework has been in place since 2020 and forms part of our Climate Change Risk Policy that is recorded in our Statement of Investment Principles (See Appendix A).

In 2021 we recognised that more resource was required to support our work on climate change and specifically around identifying appropriate, strategic climate-related targets. As such, during the year we established the CRWG to identify strategic targets in relation to climate-related risks and opportunities pertinent to the Scheme. The below case study describes the lifetime of the CRWG.

Case study: Establishing a temporary Climate Risk Working Group

Issue: In last year's TCFD report we stated our ambition to set a meaningful target in line with the Scheme's investment and climate objectives, including aligning the portfolio with achieving the goals of the Paris Agreement. In this context, in the beginning of 2021 we set ourselves a goal to define an appropriate target for the Scheme during the 2021 scheme year. We recognised that setting a meaningful climate-related target requires thorough thought and consideration and we felt we needed to dedicate appropriate time and resources to the task. As such, we set up a dedicated working group with an ambition to recommend a suitable climate objective to the Board before COP26 in November 2021.

Action: The CRWG consisted of four Trustee Directors, three PSE representatives and two advisors, with input from the Scheme's legal advisor and other subject matter experts as required. The CRWG was governed by a set of principles and a specific Terms of Reference that the Trustee had approved at the onset of the working group. The group met monthly between April and October 2021 and its work was overseen by the ALCo and the Trustee Board.

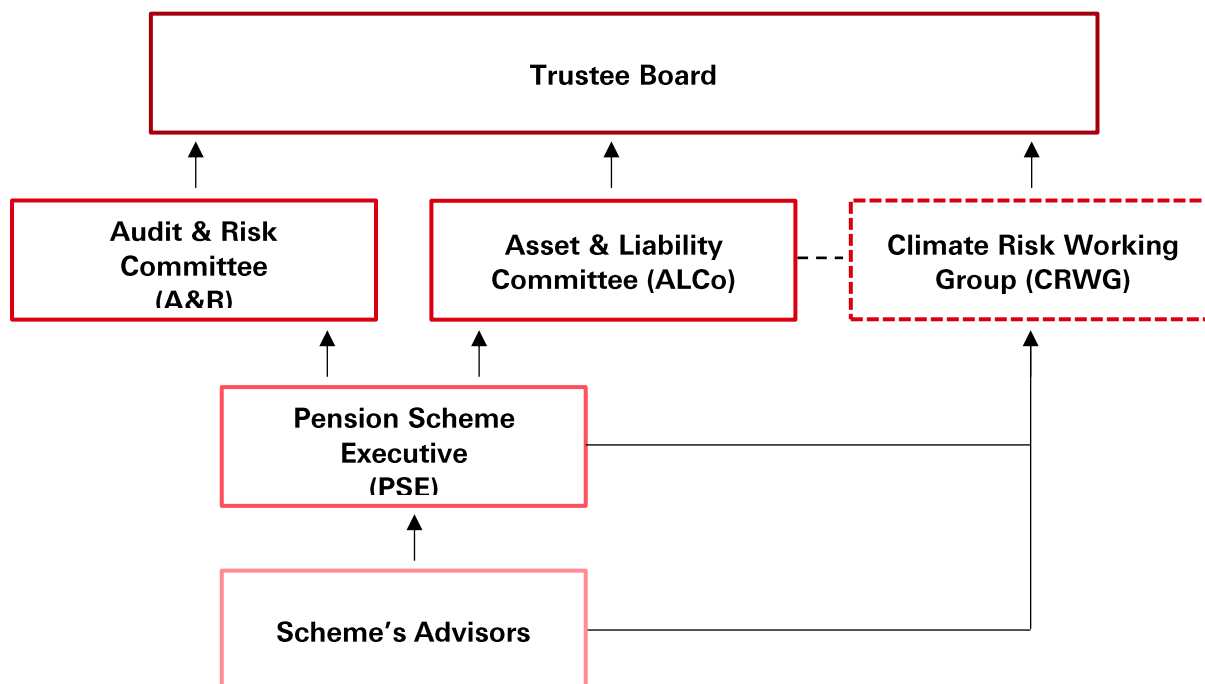
Discussions: Financial outcomes for members and the legal basis for putting a net-zero target in place were key starting points for the CRWG discussions. The group's debate was also informed by external presentations and engagement with some of the Scheme's investment managers on the topics of net zero and climate risk. Questions discussed ranged from high-level questions to very detailed ones, allowing the CRWG to make themselves comfortable with their final recommendation to the ALCo and the Trustee Board. Some of the key questions the CRWG debated included:

- Should the objective be to drive real economy emissions reduction or achieve a net zero portfolio decarbonisation?
- What is the relationship between climate risk and net-zero targets?
- What is in scope for the climate target in terms of asset classes and scopes of emissions?
- Should the targets be absolute or intensity-based? What are the different timeframes for the targets?
- What actions are the Trustee prepared to take? What mandate changes would the Trustee be prepared to make?
- How is the approach different for DB and DC, noting they have different asset class exposures and time horizons?
- What are the views of the Sponsor and how can we consider that in our decision-making?
- What might the emissions reduction journey plan look like? What pathway should be agreed for pace of GHG emissions reductions?
- How do carbon footprinting, risk mitigation and alignment interact?
- Should the Trustee follow the Net Zero Investment Framework by the Institutional Investors Group on Climate Change ("IIGCC") (a group which the Scheme is a member of) to set and implement its objective?

Outcome: The CRWG served as the main platform for discussion and challenge around setting a strategic climate-related objective for the Scheme. After 6 monthly meetings and discussions the CRWG made a recommendation to the Trustee Board for discussion and challenge, as appropriate. The Board approved the CRWG's recommendations to commit to achieving net-zero GHG emissions across the Scheme's DB and DC assets by 2050 or sooner. The Board then delegated to ALCo the responsibility to implement the recommendations of the CRWG. The long-term target is complemented by a set of shorter-term targets that will guide the net-zero strategy's implementation - details of the targets are described in the Metrics & Targets section. As the group met its objective it was disbanded in October 2021.

The chart below outlines our climate governance structure that was in place in 2021, including the temporary CRWG (as part of our wider scheme governance structure).

Our Climate Governance Structure in 2021



Responsibilities of the Trustee Board (“the Trustee”)

- The Trustee has ultimate responsibility for overseeing the Scheme’s climate-related risks and opportunities and actions taken to manage them. This includes determining both the strategic climate-related objectives and the detailed climate-related targets, as well as overseeing progress made against them.

Responsibilities of the ALCo

- As a sub-committee of the Trustee, ALCo is responsible for ensuring that the Climate Change Risk Policy, including the Climate Risk Management Framework, and the Trustee’s climate objectives are implemented into the Trustee’s investment policy.
- To achieve this remit, ALCo has been delegated responsibility from the Trustee to review climate scenario analysis on the Scheme’s funding and investment strategy and select climate-related metrics to monitor. These metrics are used as management information to monitor the Scheme’s progress versus the Trustee’s climate objectives.
- ALCo is also responsible for defining the engagement strategy to be used with the Scheme’s investment managers in a manner consistent with the objectives set by the Trustee. This process will be informed by monitoring steps taken by the PSE.
- In cases where the PSE believes there are grounds to carry out investment strategy or manager changes based on climate change, it will be ALCo’s responsibility to approve actions to address the PSE’s concerns, having taken formal advice from its professional legal and investment advisors with respect to recommended mitigating actions.
- ALCo reports to the Trustee on a quarterly basis, with the Chair of ALCo providing a report on the matters discussed and decided that is reviewed by the Trustee.

Responsibilities of the A&R

- The A&R Committee is responsible for ensuring that risks related to climate change are incorporated into the Trustee’s Risk Framework. Climate change risk is explicitly identified as a Scheme risk on the

Trustee's Risk Register, as overseen by the A&R Committee, and reported to the Trustee on a quarterly basis.

Responsibilities of the PSE

- To improve the efficiency of the Scheme's decision-making processes, the Trustee has a full-time executive to support the Trustee. The PSE looks after the day-to-day management of the Scheme, including climate-related matters, on behalf of the Trustee. The Chief Investment Officer and team have responsibility for ensuring climate-related risks and opportunities are appropriately considered in investment decision making.
- Specifically, the PSE is responsible for performing manager-specific and portfolio-level climate risk analysis of the Scheme's alignment versus the Trustee's objectives, as well as the implementation of the engagement strategy set by the ALCo. In circumstances where the PSE feels an investment manager has failed to operate in line with the Trustee's climate-related objectives, it will engage with the investment manager with the intention of providing feedback on agreed mitigating steps to the ALCo. Should persistent engagement attempts fail to correct an investment manager's misalignment with the Trustee's objectives as defined by the climate-related metrics set by the ALCo, the PSE, in consultation with the Scheme's advisors, will raise its concerns with respect to investment strategy and/or manager changes to the ALCo, which is responsible for the approval of strategic changes, having taken formal advice from its professional advisors. An example of such engagement was the engagement with an asset manager with respect to its ESG policies during the search for a Diversified Growth Fund mandate selection exercise.
- The Trustee is required by law, as referenced above, to seek expert advice from qualified professionals, such as a legal practitioner, an actuary, or an investment consultant, before it makes certain decisions. The PSE manages the relationship with the relevant advisors, as well as making sure that the Trustee has access to the right advice for the decision it is taking.

Role of the CRWG

- As described in the case study above, the CRWG was a specialist group, rather than a sub-committee of the Trustee.
- The CRWG's core purpose was to identify strategic targets and objectives relating to climate-related risks and opportunities pertinent to the Scheme. Once identified, these targets and objectives were discussed by ALCo, before being presented to the Trustee for approval.
- The CRWG made a recommendation for a specific net-zero target to the Trustee in September 2021. Details of the target are disclosed in the "Metrics & Targets" section of this report.

Responsibilities of our advisors

- Our investment advisors advise on, and provide objective assessments of, differing approaches to identifying, assessing, and managing climate-related risks and opportunities to help us meet our climate-related objectives for the Scheme. This includes informing the Trustee of climate-related risks and opportunities as relevant for the Scheme.
- The advisors are also required to support the PSE in its role of performing manager and portfolio-specific climate risk analysis and engagement. This includes the completion of climate change scenario analysis on the DB funding strategy and DC investment strategies, as well as the provision of climate-related metrics selected by the ALCo. These metrics feed into a Scheme-level dashboard and manager scorecards that the Trustee use to monitor the Scheme's performance against its climate objectives on an annual basis.

Trustee oversight of third parties

We operate an outsourced model for our investment activities, and we do not manage any investments in-house. Given this model, the approaches and actions taken by our advisors and investment managers on integrating climate-related risks and opportunities is key. As such, the Trustee's key responsibility is to maintain oversight of third parties in relation to climate change. This is done principally through setting and monitoring objectives for our advisors to integrate climate-related considerations and through holding our investment managers to account on climate-related risks and opportunities.

- **Oversight of our advisors:** Climate-related objectives are included in the advisors' annual objectives to ensure they are taking adequate steps to identify and assess climate-related risks and opportunities.

We annually assess the delivery of this advice using the Competition Market Authority's Investment Consultant Objective framework. Following its annual assessment, the PSE produce a report for the Trustee that provides its view on whether the advisors have met the requirements set out in their annual objectives. If the PSE deems the objectives have not been adequately met, they will provide suggested escalation steps for the Trustee to consider.

- **Oversight of investment managers:** We expect our investment managers to be cognisant of climate change risks and opportunities within their investment processes and manage climate-related risks on a discretionary basis as applied to the assets of the Scheme. Investment managers are required to report annually on how these risks and opportunities have been incorporated into the investment process, including descriptions of any engagement activity undertaken with companies in their portfolios and qualitative responses to the issues raised by the PSE's analysis, within applicable guidelines and restrictions. The PSE's monitoring of our investment managers is described in more detail in the Risk Management section of this report.
- **Oversight of PSE:** The PSE undertakes the day-to-day management of all investment activity on behalf of the Trustee in accordance with a principles-based table of delegations. The PSE reports to each quarterly ALCo meeting what decisions and activities it has undertaken within its delegated authority in order to update the Trustee and permit challenge to how its delegated authority has been exercised. The Trustee also keeps those delegations under review.

In keeping with this governance structure, this Report has been reviewed by the ALCo and A&R Committee and approved by the Trustee.

Trustee knowledge and understanding of climate change

In order to ensure the ongoing suitability of our approach to climate-related risks and opportunities, the PSE makes sure that the Trustee and members of its subcommittees receive regular training on climate-related topics. Climate change has been an area of focus, including at, investment away days and strategy days over the year. In addition, the transition to a more digital way of working allowed our advisors to deliver shorter and more targeted training sessions in the form of pre-recorded videos. This allowed the Trustee Directors to be better informed and to ask more meaningful questions during quarterly meetings when making decisions. Specifically, the Trustee received the following training in relation to climate change:

- Climate-related metrics in the context of investment decision-making;
- The science of net zero in an investment context;
- What "net zero" and "Paris alignment" mean for investment portfolios;
- Net zero with respect to Trustee fiduciary responsibility;
- Industry frameworks for setting and implementing net-zero targets;
- Stewardship and the different models asset owners can use to practice effective engagement;
- Key findings and implications of the 2021 IPCC report;
- Outcomes of the COP26 Climate Conference and implications on investors.

Recognising the pace of development in this space, ongoing training is essential to ensure that the Trustee and its subcommittees make informed decisions. We continue to assess skills gaps and undertake training accordingly.

Additionally, we are a member of several Responsible Investment organisations that help ensure the Trustee remains abreast of climate-related issues. We are associated with the following organisations:

- We are signatories to the UN-linked Principles for Responsible Investment ("PRI") and we adopt PRI's definition of Responsible Investment into our approach to Responsible Investment;
- We are members of the IIGCC and the related PAII. Membership of these initiatives allows us to adopt a robust approach to climate change and setting our net zero strategy.
- We are supporters of the Transition Pathway Initiative ("TPI") and we use TPI's scores as one of our primary climate-related metrics in assessing our investments on a more forward-looking basis in relation to climate change.

- We are a supporter of the Climate Action 100+ and we encourage our investment managers to engage with the initiative as well.
- We are members of the Cambridge Institute for Sustainability Leadership (“CISL”), which allows us to stay up-to-date with any recent developments in sustainability research.
- We are members of the Occupational Pensions Stewardship Council, where together with our peers we promote and facilitate high standards of stewardship of pensions assets.

Strategy

Climate-related factors are fully integrated into our strategic funding and investment decision making, sitting alongside traditional investment and risk factors. This is true of both the DB and DC parts of the Scheme. We recognise that financially material impacts from climate change are unlikely to manifest uniformly across time, and we therefore consider the potential impacts on the value of the Scheme’s investments over the short, medium and long terms.

The Scheme consists of three sections: the HBUK Section, the Bank plc Section and the HGSU Section. DB and DC benefits are provided by each section. The Scheme holds in assets:

- DB: £30.6bn as at 31 December 2021
- DC: £6.7bn as at 31 December 2021

To assess the climate-related impacts on our funding and investment strategy, we have completed scenario analysis on the DB and DC parts of the Scheme. In line with the regulations, this has considered the entire asset portfolio, current liabilities, and sponsor covenant for the DB part of the Scheme, and on the investment offerings within the DC part of the Scheme with significant assets under management (“popular arrangements”)². Details of the funding and investment strategies of the DB and DC parts of the Scheme are provided below.

An overview of the DB funding and investment strategy

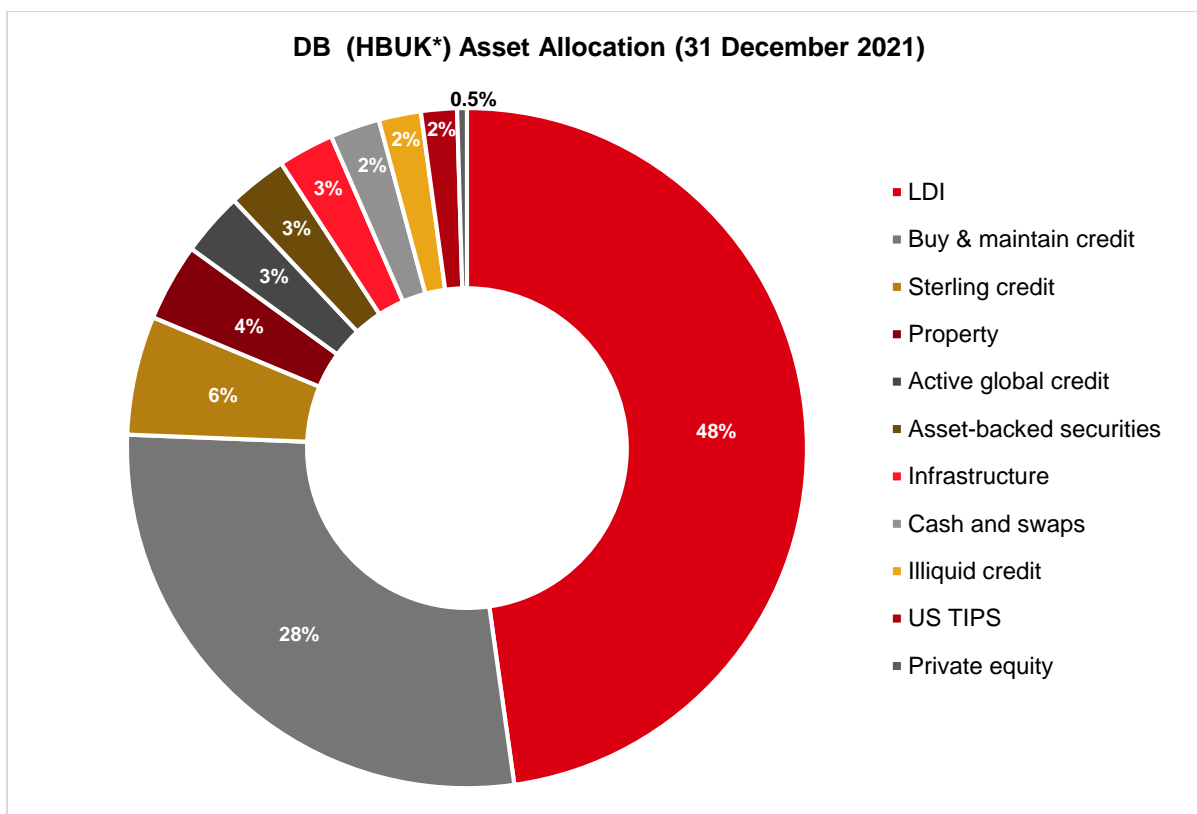
There are three DB investment strategies, one for the HBUK Section, one for the Bank plc Section, and one for the HGSU Section. The HBUK Section contains the majority of the DB assets, while the other two sections, referred collectively as the Top Up Sections, are considerably smaller in size of DB assets:

DB SECTIONS	Total Assets ³
HBUK SECTION	99.2%
Top Up Section: HGSU	0.6%
Top Up Section: BANK PLC	0.2%

We follow a Cashflow Driven Investment (“CDI”) approach in the DB HBUK part of the Scheme. Under the HBUK Section’s CDI approach, the asset class weights in the portfolio are expected to evolve over time as asset cashflows are released, reducing the value of the Scheme’s assets and impacting the relative proportions of remaining assets. In line with this approach, over 2021 we have continued the process of reducing risk within the HBUK Section’s assets. The assets now comprise government bonds, cash and hedging instruments, high quality corporate bonds, and low-risk illiquid matching assets, with residual allocations in private equity and property. This asset allocation helps achieve our overall risk-adjusted return objective for the DB assets to ensure we can pay members’ benefits as and when they fall due. The investment strategy for the Top Up sections follows a low-risk strategy comprised of matching assets and a Diversified Growth Fund which is intended to generate an expected investment return that marginally outperforms the return of the actuarial liability discount rate.

² A “popular arrangement” is considered to be one in which £100m or more of the Scheme’s assets are invested, or which accounts for 10% or more of the assets used to provide money purchase benefits.

³ Climate scenario analysis has been completed on the assets and technical provisions liabilities as at 31 March 2021 on each DB section independently, using the latest available data at the time the analysis was performed.



* Given the size of the other two sections, we have not included a breakdown of their assets.

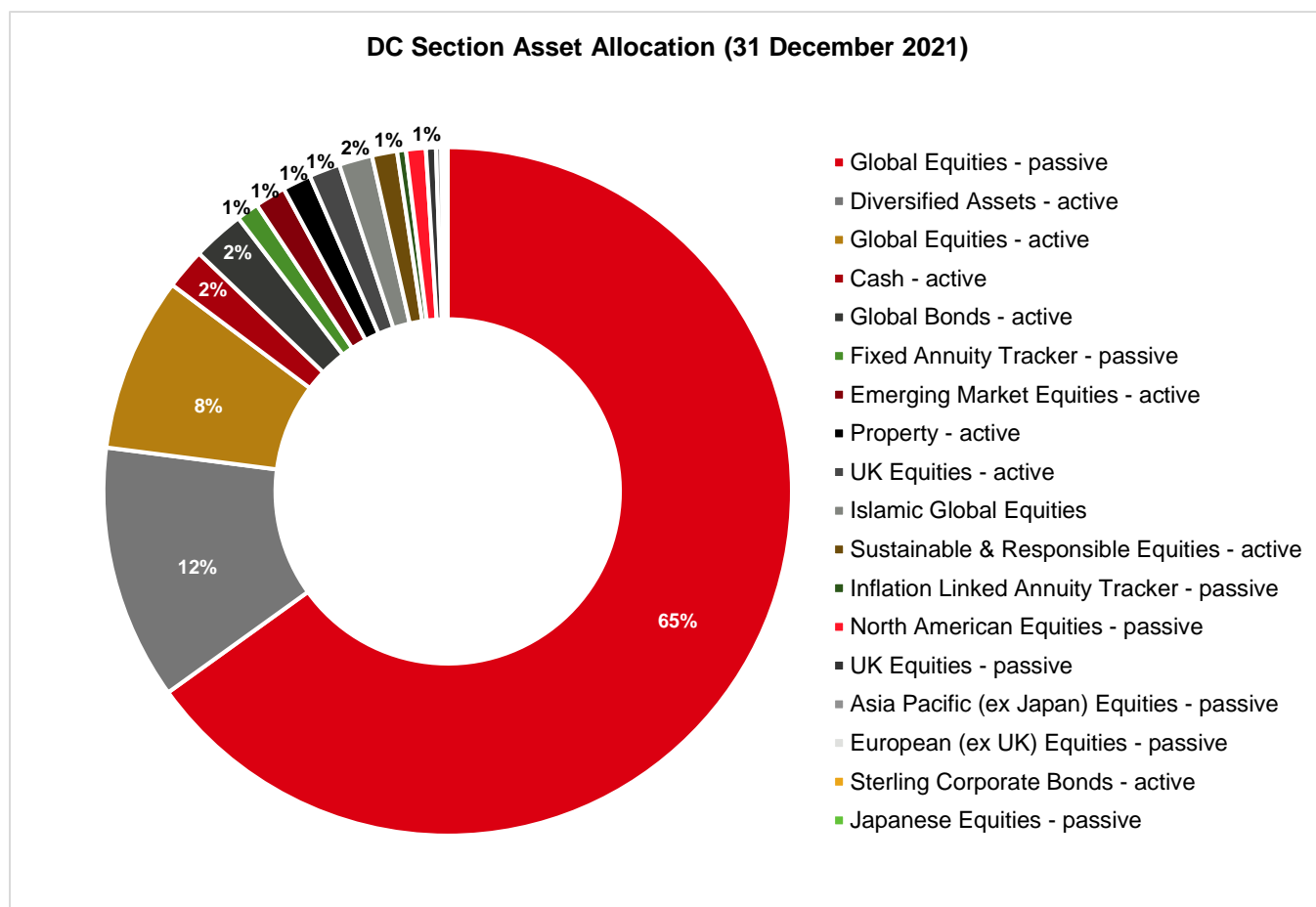
An overview of the DC assets

Within the DC assets, there is a range of investment funds available for members. The Scheme has different default strategies for members, depending on the type of benefits they have and the lifecycle a member is in (i.e., the time to retirement age). In line with the definition prescribed by the regulations, climate scenario analysis has been completed on two fund offerings within the DC part of the Scheme that meet the regulatory definition of a “popular arrangement”. These two funds cover over 85% of DC members. These are the Flexible Income Strategy, the main default option for DC-only members, and the Lump Sum Strategy, the main default option for hybrid members that have both DC and DB benefits. Additional detail on these two arrangements is provided below.

- Flexible Income Strategy:** For members with only DC benefits, the main default option targets flexible income drawdown at retirement. Therefore, the initial growth phase is invested to target a return significantly above inflation, and then it gradually switches into less risky assets as a member gets closer to retirement. The main default option makes up a significant proportion of the members’ total retirement pots, and so it is more suited to a drawdown approach than an annuities approach, reflecting the pension freedoms now available.
- Lump Sum Strategy:** For hybrid members that have both DC and DB benefits in the Scheme, the main default option targets a cash lump sum at retirement, however, the approach mirrors that of the DC-only members, where the initial growth phase is invested into higher return assets and then gradually switches into less risky assets.

The main investment fund used in the Scheme’s default investment strategy, the Global Equities - passive fund, has the Legal and General Investment Management (“LGIM”) Future World Fund as its underlying investment (75% GBP currency hedged). This is a climate-tilted multi-factor global equity fund that was developed by the Scheme, in conjunction with LGIM, FTSE Russell, and Redington, to help us meet our climate-related ambitions. There are also several alternative investment funds that self-select DC members can include within their personal investment portfolio if they do not wish to invest in the climate tilted multi-factor approach. In our last review of the DC strategy, we confirmed that the Scheme’s lifecycles are adequately and appropriately diversified between different asset classes and the self-select options provide a suitably diversified range of

funds for members to choose from. We review the investment arrangements for consistency with our beliefs, including those on ESG risk management, including climate change and stewardship, on a regular basis. We also monitor the relevant members' behaviour to check whether assumptions made about how members will access their benefits are borne out in practice. The Scheme's full DC asset allocation is shown below:



Time Horizons

Climate-related factors can have a material financial impact on the value of the Scheme's investments over the time horizon applicable to each benefit type, with the impact of time horizons likely to vary depending on the nature of the invested assets. We therefore believe that by taking such factors into account in the investment process, we will be better positioned to deliver on our investment objectives.

Time Horizon	Comment
Short-term	The short-term time horizon is a period of 3 years, up to 2024, for both the DB and DC parts of the Scheme. This relatively abrupt period will allow us to evaluate the short-term risks faced by the Scheme from sudden climate-related behavioural changes.
Medium-term	The medium-term time horizon is a period of 9 years, up to 2030, for both the DB and DC parts of the Scheme. This is aligned with our interim decarbonisation and alignment targets in support of the goals of the Paris Agreement.
Long-term	<u>DB</u> Due to the reliance of the CDI portfolio on long-term cash flows to make liability payments, we have adopted a multi-decade investment long-term time horizon in the region of 20 to 30 years. <u>DC</u>

The majority of the DC assets are invested in the default investment option, which is designed to generate returns sufficiently above inflation whilst members are some distance from retirement, but then to switch automatically and gradually to lower-risk investments as members approach their retirement date and take their DC pension pot. These assets therefore also have a multi-decade investment time horizon, in the region of 50 years. This represents an approximate average duration of current members' life span.
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Climate-related considerations in setting the Scheme's investment strategy

We are cognisant that the diversified nature of the DB and DC investment portfolios means that the source of climate-related risks is likely to be asymmetric and varied. For example, climate change risk could affect:

- The creditworthiness of the issuers of the fixed income assets;
- The rental values of the real estate assets;
- The dividend paying capability, and therefore the share prices, of companies in our listed equities portfolios.

The Scheme has material exposure to long-dated credit in the DB portfolio, and developed market equities in the DC portfolio, both of which pose differing climate risks across different time horizons. Given the differing timespans over which climate-related market impacts are likely to occur, the specific types of climate risks are unlikely to be constant. As a result, and to account for these differing sources, we have evaluated the impact of asset-related climate risks through two lenses:

Physical Risk

- Physical risks from climate change are those which arise from both gradual changes in climatic conditions and extreme weather events. They can be event-driven (acute) or longer-term shifts (chronic) in climate patterns and include risks such as a rise in sea levels, with impacts including flooding, and the destruction of biodiversity. These physical risks could have financial implications, such as direct damage to assets and indirect destabilising impacts from supply chain disruption. Other potential impacts of physical changes in the climate are wider economic and social disruption, including mass displacement, environmental-driven migration and social strife.

Transition Risk

- Transition risks occur in the process of moving to a low-carbon economy. This includes policy (e.g., abrupt imposition of carbon taxes or emission limits), reputational impacts, risk of stranded assets, as well as shifts in market preferences, norms and technology, that could arise from the adjustment towards a carbon-neutral economy – the severity of the impact will depend on whether the transition is orderly or disorderly.
- We adopted the TPI Management Quality ("MQ") Score as a forward-looking indicator of the Scheme's exposure to climate transition risk. Using these scores, in conjunction with analysis of the underlying investment funds' Weighted Average Carbon Intensity ("WACI"), total absolute emissions and carbon footprint, the Trustee hopes to achieve a balanced view of the Scheme's short- and medium-term exposure to climate transition risks.
- We have made further progress in our assessment of the transition risk faced by the Scheme via TPI MQ by assessing, where possible, the relative proportion of each fund's financed emissions attributable to low (i.e., greater transition risk) and high (i.e., lower transition risk) TPI MQ score companies. Encouragingly, the analysis showed that, where there was coverage of the underlying issuing companies, the group of companies that contributed the most to the Scheme's financed emissions are those taking steps to integrate climate-related factors into their operational decision

making, evidenced by a TPI MQ score of 3. The second largest contributing group was one with a TPI MQ score of 4, indicating that management is making strategic climate-related assessments.

- This exercise was completed to provide a picture of the source of the Scheme's transition risks by assessing whether the most carbon intensive portfolios are those mainly consisting of underlying companies with higher or lower transition risks. This will allow us to focus our engagement efforts on those portfolios where it can be most impactful. This is an ongoing exercise on which we hope to provide further detail in future TCFD reports.

Reputational Risk

- The TCFD considers reputational risk to be a sub-category of transition risk and defines it as a "risk tied to changing customer or community perceptions of an organization's contribution to or detraction from the transition to a lower-carbon economy".
- The reputational risk the Scheme is exposed to is mainly in relation to community perception - community being members, regulators, activist groups, or peers. The risk would materialise if the Scheme were failing to meet public expectations, for example if we, or our appointed investment managers, were found to be taking insufficient steps to manage climate risks, and/or changes to the legislative framework under which the Scheme operates occurred. In this context, we believe the reputational risk to the Scheme is less substantial than the reputational risk for a company that might be affected by a loss of customers as a result of reputational damage.
- Nonetheless, we acknowledge the importance of retaining the confidence of our members in our ability to effectively manage climate-related risks on their behalf, noting that a loss of confidence, and the adverse reputational implications that may ensue, could potentially be financially material.
- We therefore consider the potential implications for the Scheme's reputation as it pertains to climate-related factors within our decision-making frameworks.

On the liability profiles for the three DB sections of the Scheme, there are likely to be direct impacts to mortality to consider as well as indirect impacts from changes to lifestyles resulting from climate change. The mortality outcomes from climate change are impossible to predict accurately and will depend on complex interactions between various factors. In the UK, it is considered unlikely that the direct effects of climate change on weather patterns and global temperatures will have a significant impact on life expectancies. However, the disruption and impact of transition risks on economic activity could have a more significant effect.

Whilst we have already insured a majority of the retired members within the HBUK section, accounting for a meaningful part of the total pool of members within the DB part of the Scheme, against adverse climate-related mortality impacts, transition risk remains relevant for the Scheme and is therefore subject to ongoing assessment.

Scenario analysis

Our strategic advisors have completed climate scenario analysis on the DB and DC funding and investment strategies respectively, and we were comfortable accepting their respective scenarios and methodologies to complete the analysis. The advisors have used different scenarios that consider the potential impacts from climate change differently, however both have included at least two scenarios, one of which is consistent with the statutory guidance to assess a 1.5°C-2.0°C Paris-aligned temperature scenario. When the next round of modelling is undertaken the Trustee will consider aligning the scenarios across both investment advisors. Our climate-related ambitions pertain to the Paris-aligned scenario specifically.

The analysis completed on the DB and DC parts of the Scheme indicates that there is likely to be a material impact to members under a range of possible climate change outcomes. The magnitude of the impact is likely to differ across the DB and DC parts of the Scheme, reflecting the nature of the invested assets and age profile of the members.

We note that the scenario analysis is not free of limitations due to a reliance on assumptions which contain considerable levels of uncertainty, as well as a reliance on data which is recognised as lacking in coverage and

robustness. Given these limitations, the results are used as one of a number of inputs to help inform the decision making, rather than being presented as predictions of specific future outcomes for members to consider when reviewing their pension savings. Further detail on the scenarios used and estimated impacts are provided below and in Appendix B.

DB – Modelling and Assumptions

Scenario analysis has been completed by Willis Towers Watson (“WTW”), the Scheme’s DB Investment and Actuarial advisor. They have assessed the assets and technical provisions liabilities associated with the three sections of the DB part of the Scheme under two climate scenarios. These scenarios and their underlying assumptions are described below.

	Scenario 1: Least Common Denominator	Scenario 2: Global Coordinated Action
Description	A “business as usual” outcome where current policies continue with no further attempt to incentivise further emissions reduction. Emissions as well as social, socioeconomic and technological trends do not shift markedly from historical patterns.	Policy makers agree on and immediately implement policies to reduce emissions in a globally co-ordinated manner. Companies and consumers take the majority of actions available to capture opportunities to reduce emissions.
Temperature Rise	~3.5°C	~2.0°C
Renewable energy by 2050	30-40%	65-70%
Physical Risk Level	High	Low
Transition Risk Level	Low	High

Under both scenarios, we expect there to be a drag on asset returns. Under the Global Coordinated Action scenario immediate mitigation costs are expected to be significant, however the benefits of moving to a low carbon economy (in terms of lower economic losses compared with a Least Common Denominator scenario) are expected to emerge in the longer term.

We note that the scenarios assume the entire climate change impact will be capitalized on both the asset and liability side as an instantaneous shock. We also note the selected scenarios do not represent the full range of outcomes, nor do they necessarily capture the most adverse possible scenario, but we do believe the analysis provides a useful understanding of potential behaviour of the Scheme's portfolios under scenarios covering potential temperature pathways.

Mortality Assumptions

- WTW have considered the potential mortality outcomes which could arise under the two climate scenarios. Clearly these are impossible to predict accurately, being dependent upon complex interactions between various direct and indirect factors.
- However, WTW believe that:
 - those outcomes which increase UK life expectancy are more likely to prevail under the Global Coordinated Action scenario; and
 - those outcomes which reduce UK life expectancy are more likely under the Least Common Denominator scenario.
- To assess the potential impact to liabilities under these scenarios, WTW have assumed:
 - Global Coordinated Action: long-term rates of improvements in mortality trend to 2.5% pa
 - Least Common Denominator: long-term rates of improvements in mortality trend to 0% pa
- These long-term trend rates of future improvements in mortality compare to the assumption of 1.5% pa assumed in the 2019 valuations of the Scheme. Average trend rates of mortality improvement

experienced in the UK over the 2000 to 2011 period were around 2.5% pa whereas in more recent years mortality rate improvements have been closer to 0% pa (with a recent reversal over 2018 and early 2019).

DB – Scenario Analysis Results – HBUK Section

The table below shows the estimated impact on the asset value, technical provisions liabilities, and total funding level of the HBUK Section in one year under the two climate scenarios.⁴

Since the HBUK Section has entered into a longevity hedging arrangement covering 75% of the pensions in payment at 31 December 2018, the value of the liabilities in respect of these insured members, once the pay and receipt legs of the swap are also taken into account, will be unaffected by the impact of climate change on member mortality. The liability impact shown in each scenario is therefore the estimated change in the total liabilities of the HBUK Section arising solely from the uninsured population.

Scenario⁴	Change in Funding Level (%)	Asset Shock (£m)	Liability Impact (£m)	Net Change in Surplus (£m)
Scenario 1: Least Common Denominator	+3.4%	-299	- 1,030	+731
Scenario 2: Global Coordinated Action	-5.5%	-602	+770	-1,372

We estimate that under Scenario 1, the value of the Scheme’s assets and technical provisions liabilities are both likely to fall, by £299m and £1030m respectively. On the asset side, this reflects the realisation of a negative price impact owing to climate-related factors, while the liability impact reflects the deteriorating life under this scenario relative to current longevity assumptions. Given the magnitude of the two changes, the net impact is expected to be a c.3.4% increase in the funding level.

We estimate that under Scenario 2, the value of the HBUK assets is likely to fall by £602m following the instigation of more rapid economic reform to reduce emissions in a globally co-ordinated manner, with the impact particularly pronounced on the liquid credit assets within the portfolio. The technical provisions liabilities are likely to increase by c.3%, equivalent to £770m, which reflects the improving life expectancy of members under this scenario relative to current longevity assumptions. Given the magnitude of the two changes, the net impact is expected to be a c.5.5% decrease in the funding level. It is important to note, however, that given the current funding level surplus, the Scheme is expected to retain a net surplus in spite of the estimated adverse impact on the surplus under this scenario.

DB – Scenario Analysis Results – Top Up Sections (HGSU and Bank PLC)

We currently have a policy in place (jointly agreed by the Trustee and relevant Sponsors) to transfer back to the HBUK Section, the liabilities for members of Top-Up sections as they leave service or retire. Whilst this policy remains in place, the impact of climate change on the liabilities of the top-up sections might be expected to be small, with the liabilities being effectively settled before climate change is able to have a significant effect on members.

Those members may still be at risk from the long-term impact of climate change, but while the transfer back policy remains in place, the financial risks of this will be borne by the HBUK Section. This would only have an impact on the Top-Up section if amendments were made to the transfer back assumptions to allow for these climate change risks.

The table below shows the estimated impact on the asset value, technical provisions liabilities, and total funding level of the Top Up sections. The entire impact is modelled to materialise over the journey plan, with an assumption that no contributions and cashflows will be received, a liability basis of Gilts+70bps and an investment return of Gilts+80bps within the base case.

⁴ Using the latest available data (as at 31st March 2021) at the time the analysis was performed.

The scenario analysis indicates that the impact on the HGSU and Bank Plc sections differs under the two scenarios, with a positive funding level impact realised under Scenario 1 and a negative funding level impact realised under Scenario 2. Similar to the HBUK section, the magnitude of the impact on the impact on the Bank Plc section is not expected to be large enough to remove the current funding level surplus, however based on the funding level of the HGSU section at the analysis date, the deficit is expected to worsen.

HGSU Section

Scenario ⁴	Change in Funding Level (%)	Asset Shock (£m)	Liability Impact (£m)	Net Change in Surplus (£m)
Scenario 1: Least Common Denominator	+5.7%	-4	-16	+12
Scenario 2: Global Coordinated Action	-6.1%	-4	+11	-15

Bank Plc Section

Scenario ⁴	Change in Funding Level (%)	Asset Shock (£m)	Liability Impact (£m)	Net Change in Surplus (£m)
Scenario 1: Least Common Denominator	+6.8%	-1	-3	+2
Scenario 2: Global Coordinated Action	-7.3%	-1	+2	-3

Under the Least Common Denominator scenario, where no action is taken to achieve further emissions reductions, the funding level is expected to improve across each Section. Under the Global Coordinated Action scenario, the analysis forecasts a negative impact to the funding level. Our ambition to decarbonise and simultaneously align the Scheme to a lower carbon world, in accordance with the Global Coordinated Action scenario, thus appears to pose more risks based on this analysis.

However, it is important to note that in both instances, the estimated liability change is the predominant driver of the net funding level impact. As noted above, the UK-based mortality outcomes from climate change are impossible to predict accurately and will depend on complex interactions between various factors. This therefore introduces a meaningful degree of uncertainty with respect to the liability impacts. Nonetheless, since the estimated upside in the Least Common Denominator scenario arises from heightened mortality amongst our members, we are clear that this perceived financial advantage cannot be seen to accrue to their benefit.

Given the scenario analysis forecasts a loss of value under both scenarios, we believe it is prudent and in the best interests of our members to take steps to manage and reduce the climate risk exposure of the Scheme. It is for that reason that we have adopted a target to align the Scheme to a Paris-aligned trajectory consistent with the Global Coordinated Action scenario.

We also recognise that mitigating climate risk can offer attractive investment opportunities and believe that investing in such opportunities is consistent with our fiduciary responsibility. We have already identified and invested in a renewable energy investment opportunity that was both financially compelling and aligned with the Paris Agreement. We continue to explore further climate-related opportunities that are consistent with our climate objectives as well as our funding objectives and fiduciary responsibility.

As noted previously, the scenario analysis is not free from limitations due to a reliance on assumptions which contain considerable levels of uncertainty, as well as a reliance on data which is recognised as lacking in coverage and robustness. Given these limitations, the results are used as one of a number of inputs to help inform the decision making.

DC – Modelling and Assumptions

Scenario analysis has been completed by Lane Clark & Peacock (“LCP”), the Scheme’s DC Investment advisor, on two of the Scheme’s three current default arrangements. These are the Flexible Income Strategy, the main default option for DC-only members, and the Lump Sum Strategy, the main default option for hybrid members.

The scenarios cover projections to retirement for four straw person members: a 25-, 35-, 45- and 55-year-old, with characteristics taken from the average member of that age within the Scheme. Members will be impacted in different ways depending on their investments held, contribution rate, fund value and proximity to retirement. We have assumed the example members each have an expected retirement age of 65. By assessing members across different age cohorts, we are able to introduce a temporal element into the analysis, and this also allows us to assess climate risk across various timespans.

Whilst the Scheme has used the climate-tilted Future World Fund in the default since 2017, in order to show a meaningful comparison, we have modelled the projected pots for identical lifestyle strategies which do not use low carbon equities and shown the results alongside those of the Scheme’s lifecycles.

Three scenarios are considered, an orderly and disorderly transition to the Paris goals and a scenario of a failed transition. We have compared these climate scenarios with a baseline, “climate uninformed” scenario. This baseline climate scenario assumes no increase of physical risks due to climate change and does not make any explicit assumptions about the transition to a low carbon economy. Details on the three scenarios are provided below. Please see Appendix B for further details on the methodological assumptions and limitations associated with this analysis.

Policy Response and Physical Effects

Impact	Failed Transition	Paris Orderly Transition	Paris Disorderly Transition
Low carbon policies	Continuation of current low carbon policies and technology trends (e.g., significant falls in renewable energy prices).	Ambitious low carbon policies, high investment in low-carbon technologies and substitution away from fossil fuels to cleaner energy sources and biofuel.	
Paris Agreement outcome	Paris Agreement goals not met.	Paris Agreement goals met.	
Global warming	Average global warming is about 2°C by 2050 and 4°C by 2100, compared to pre-industrial levels.	Average global warming stabilises at 1.5°C above pre-industrial levels.	
Physical impacts	Severe physical impacts.	Moderate physical impacts.	
Impact on GDP	Global GDP is significantly lower than the baseline scenario without explicit allowance for climate impacts in 2100. For example, cumulative UK GDP growth to 2100 is c55% lower than estimated in the baseline scenario.	Global GDP is lower than the baseline scenario in 2100. For example, cumulative UK GDP growth to 2100 is c10% lower than in the baseline scenario	In the long term, Global GDP is slightly worse than in the Paris Orderly scenario due to sentiment shock.
Financial market impacts	Physical risks priced in over the period 2026-2030. A second repricing occurs in the period	Transition and physical risks priced in smoothly over	Abrupt repricing of assets and a sentiment shock

	2036-2040 as investors factor in the severe physical risks.	the period of 2021-2025.	to the financial system in 2025.
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Source: Ortec Finance Ltd (a financial modelling specialist that supports LCP to provide investment advice)

DC – Scenario Analysis Results

The tables below outline the results of the climate scenario analysis completed on the DC popular arrangements⁵. The figures represent the change in value of each members' pension pot at retirement relative to the baseline outcome based on the strategy holding low carbon equities.

The figures indicate that the impacts under each scenario are nonuniform across age cohorts, with the magnitude under each scenario less significant as member age increases. This reflects the fact that older members are expected to have less time as active members prior to their retirement, thereby reducing the length of time and therefore cumulative impact that each scenario can have on their pension pots at retirement.

The failed transition scenario is the worst outcome for most members in terms of expected pension pot at retirement, however a disorderly transition is the worst scenario for members over 55, as they are expected to suffer the brunt of the upfront cost and acute shocks of a disorderly transition to a lower carbon economy but retire before their pension pots have sufficient time to recover from any loss in value.

In any case, there are no climate scenarios in which members are expected to benefit, and it is therefore important that we take steps to limit the climate change risk of the Scheme. As discussed in further detail in the Risk Management section, we have made several important changes to the default and self-select fund range available to members that should, over time, reduce both the physical and transition risk exposure of the portfolios, with the intention of minimising the potential adverse impacts on members' pension pots at retirement. We continue to explore further climate-related opportunities, including areas for improvement in our current mandates that help to deliver both our climate objectives and our financial targets.

	Member aged 25		Member aged 35	
Starting pot and contributions	£5,700, 12% total contribution rate		£35,900, 18% total contribution rate	
	Flexible Income Strategy	Lump Sum Strategy	Flexible Income Strategy	Lump Sum Strategy
Baseline outcome	-	-	-	-
Paris Orderly outcome	-3.2%	-3.1%	-1.1%	-1.1%
Paris Disorderly outcome	-4.3%	-4.3%	-2.7%	-2.7%
Failed Transition outcome	-26.9%	-26.6%	-22.3%	-22%

	Member aged 45		Member aged 55	
Starting pot and contributions	£43,800, 22% total contribution rate		£45,600, 24% total contribution rate	
	Flexible Income Strategy	Lump Sum Strategy	Flexible Income Strategy	Lump Sum Strategy
Baseline outcome	-	-	-	-

Paris Orderly outcome	-0.1%	-0.1%	-0.3%	-0.2%
Paris Disorderly outcome	-1.9%	-1.9%	-2.2%	-1.5%
Failed Transition outcome	-10.6%	-10.3%	-1.4%	-1%

⁵Using the latest available data (as at 30th June 2021) at the time the analysis was performed.

Scenario Analysis Conclusions

The relative impact of climate-related physical and transition risks on the DB part of the Scheme is estimated to be more subdued than the DC part of the Scheme. This reflects the nature of the assets held across each part, with equity securities, which make up much of the DC portfolio, expected to suffer a larger loss in value than the sovereign bonds and investment grade credit that make up the majority of the DB portfolio.

How these climate-related risks will materialise across the Scheme’s assets and liabilities, and over what time horizons, remains uncertain. Nonetheless, irrespective of this uncertainty, the climate scenario analysis detailed above clearly highlights that these risks do exist, and we therefore believe that appropriate risk management steps should be taken to address and limit the potential impacts of these risks.

Sponsor covenant

We recognise that the Sponsor of the Scheme is likely to be affected by climate change which, in turn, may impact the resilience of the Scheme’s investment and funding strategy over the short-, medium-, and long-term. The PSE is therefore engaging with the Sponsor to better understand the climate-related risks and opportunities to which it is exposed and their impact on the covenant provided to the Scheme.

We are confident that the Sponsor recognises the risk that climate change may pose to its operations and wider business strategy. Importantly, the Sponsor has taken steps to incorporate climate-related factors into its wider governance and risk management practices, noting that in November 2020, the Sponsor formalised its overall approach to climate risk management and developed plans to integrate climate risk into the Group-wide risk management framework. To date, the Sponsor has undertaken exploratory and wide-ranging quantitative stress testing and scenario analysis in relation to climate-related risks, considering the impacts across short-, medium-, and long-term time horizons. Some of the output of these processes is reported in its most recent TCFD disclosure embedded in the Bank’s [2021 Annual Reports and Accounts](#). Climate change remains an area of focus for the Sponsor and further climate stress-testing and scenario analysis is expected to be completed over time.

These actions represent positive and meaningful first steps by the Sponsor to address climate-related risks, and the PSE will continue to engage with the Sponsor on this topic with the aim of deepening our understanding of the climate-related risks faced by the Sponsor. This will inform the Trustee’s ongoing assessment of the strength of the Sponsor’s covenant, and in turn, the Trustee will consider any impact this may have on the Scheme’s investment and funding strategy.

Risk Management

Identifying and assessing climate-related risks in an integrated way

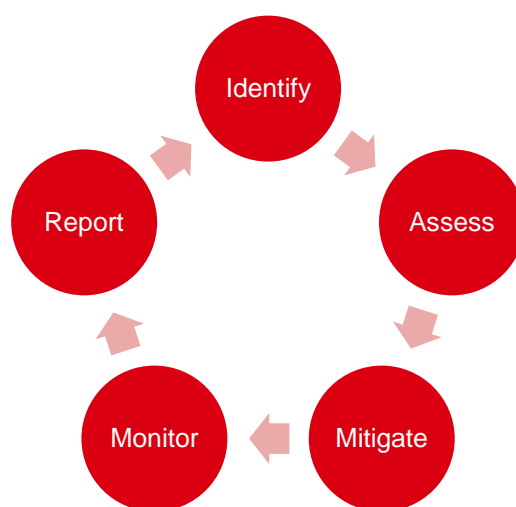
We consider climate change to be a systemic, long-term financial risk to the Scheme’s investment portfolio, though we acknowledge that it is difficult to measure with a single number, metric, or lens. To ensure climate-related risks are assessed in an integrated manner, we have explicitly identified “Climate Change Risk” as a Scheme risk on the Trustee Risk Register, as overseen by the A&R Committee, and reported to the Trustee on a quarterly basis. This ensures climate risk is given due consideration alongside the other investment risks we have identified for the Scheme.

As discussed in the Governance section of this report, the Climate Risk Management Framework we established in 2020 that is integrated within the Scheme’s existing Risk Management Framework, clarifies the

roles and responsibilities of the Trustee, its sub-committees, the PSE, and our advisors with regard to identifying, assessing and managing climate-related risks. Having this framework in place allows us to manage climate risk in a considered and effective manner by taking into account both top-down (Scheme-level) and bottom-up (mandate-level) perspectives. Our Risk Management Framework, illustrated in the diagram below, follows a circular approach that ensures identified risks are managed on an ongoing basis. At a more granular level:

- The Trustee delegates authority to its ALCo to approve metrics that identify, assess, and monitor the climate-related risks of its appointed investment managers’ portfolios.
- The PSE reviews the Scheme’s investments versus the ALCo-approved metrics and recommends mitigating actions to the ALCo for approval where necessary. The investment managers are required to provide descriptions of engagement activity undertaken with companies in their portfolios and qualitative responses to issues raised by the PSE’s climate-risk analysis.
- Where feasible, mitigation of climate-related risks is factored into the mandates the Trustee has with its appointed investment managers (see case studies below).
- For all appointed investment managers, evaluation of ESG risk management, which includes climate-related risks, is a part of all investment manager selection exercises, the investment manager on-boarding process, and continued due diligence or monitoring that the Trustee undertakes.

Our Risk Management Framework



Top-down risk identification and assessment process

At the Scheme level, scenario analysis is used to identify and assess climate-related risks and opportunities under different climate outcomes and circumstances. This includes consideration of the possible impacts that physical, transition, and reputational risks could have on the Scheme. The results of the scenario analysis are shared with ALCo who assess them in the context of the Trustee’s overall climate objectives.

Bottom-up identification and assessment process

To assess risk at the mandate-level, we make use of climate-related metrics to identify and assess risks pertinent to the Scheme’s portfolio of assets. We acknowledge that measuring climate-related risks and opportunities from an investment perspective is complex, requiring new data and analysis. We therefore use four metrics: Total Absolute Carbon Emissions; Carbon Footprint; WACI, all three of which are backward-looking carbon-based metrics; and the TPI MQ score, a forward-looking metric based on climate governance and commitments. These metrics seek to provide a balanced view of the Scheme’s current exposure to climate risk as well as an indication of the underlying holdings’ future trajectory. We recognise that climate-related metrics remain incomplete and have mixed levels of accuracy. We therefore do not rely on any individual metric data points to drive investment decisions. We also recognise the pace of change in the development of climate-related metrics, so we keep the metrics we monitor under active and ongoing review.

Following the calculation of the metrics as part of the Scheme's 2020 TCFD report, during 2021 the PSE and our advisors engaged with three managers on the basis that their mandates meaningfully contribute to the climate risk of the Scheme, due to the relatively carbon intensive nature of their portfolios and/or their relative size within the overall portfolio. The intention of this exercise was to identify the predominant climate risk sources in the portfolios, the forward-looking climate risk trajectory of the portfolios, and what steps the managers could take to better align the portfolios with our stated goal of alignment to the Paris agreement. There were two important outcomes from this engagement exercise. The first was that each manager identified practical steps that could be taken to reduce the climate risk within each portfolio, subject to certain trade-offs and constraints. The second was that we identified that the portfolios' emissions were typically concentrated in a small number of issuers, providing an indication of the materiality that can be achieved through removing and/or effectively engaging with a small number of issuers.

Recognising their specialist risk identification and management skillset, our appointed investment managers are also invited to share their own assessment of climate-related risks identified within the portfolios they manage. This forms part of the regular engagement that the PSE and our advisors perform with our investment managers, the results of which are incorporated into the PSE's reporting of climate risks to ALCo and the Trustee.

Mitigating climate-related risks in an integrated way

Once risks have been identified and assessed appropriately as described above, the next step following our Climate Risk Management Framework is to take appropriate and proportionate actions to mitigate these risks. Our preferred approaches to climate risk mitigation include:

- Engagement with investment managers and policymakers,
- Consideration of climate-related risks in investment manager and mandate selection,
- Integration of climate-related considerations in fund design, and
- Seeking to limit our exposure to climate-related risks by investing in climate opportunities.

Engagement with our investment managers to mitigate climate risk in our portfolio

To help protect the Scheme's investments, we require our appointed investment managers to be cognisant of climate-related risks and opportunities within their investment processes and manage climate-related risks on a discretionary basis as applied to the assets of the Scheme, considering both transition and physical risks. The investment managers are required to report annually on how these risks and opportunities have been incorporated into the investment process, including descriptions of any engagement activity undertaken with companies in their portfolios and qualitative responses to the issues raised by the PSE's climate risk analysis, within applicable guidelines and restrictions. We have also delegated voting rights to our investment managers and, where permissible, expect them to vote consistently with our climate-related objectives, in line with our fiduciary responsibility. Where this is not possible, for example within pooled fund structures, we have made our climate-related objectives clear to the Scheme's investment managers and will engage with them should monitoring of their voting activity highlight inconsistencies with our policies.

As described above, during 2021 we specifically engaged with three investment managers on their approach to mitigating climate risk in the mandates we hold. Each of the three managers were asked to evaluate the impact on the carbon emissions as well as the traditional investment characteristics of the portfolio under two hypothetical scenarios. Both scenarios required the managers to consider what level of emissions reduction they could achieve, either subject to their existing mandate guidelines or if those guidelines were relaxed. We asked the managers to estimate the impact on both traditional and climate-related factors in line with our policy to integrate climate factors into the overall risk management process. The analysis highlighted that we could achieve a material reduction in the emissions of two of the portfolios without considerably impacting their traditional investment characteristics, all while not significantly changing the existing mandate guidelines.

As noted previously, although we may pursue portfolio decarbonisation in order to mitigate climate-related risks to our investments, from a strategic perspective we prefer to target real economy decarbonisation as a means of reducing the Scheme's exposure to climate transition risk and improving the overall alignment of the portfolio. As a result, no investment decisions were taken directly because of this analysis, however we

continue to engage with the investment managers to understand what steps they are taking to manage and mitigate the companies' respective climate risks.

In addition to this, we engaged with a further three of the Scheme's investment managers to make specific climate-related enhancements to the portfolios they manage during 2021. This activity is described further below.

Engagement to mitigate systemic climate risk with policy advocacy

Noting that active participation in industry initiatives and public policy consultations can provide valuable insight as to current best practice regarding climate risk management processes and help to achieve our objectives, we completed three climate-related public engagements during 2021. These are described in the table below.

Engagement	Purpose	Response
TCFD Consultation	<p>The aim of this consultation was to gather feedback from market participants on the proposed updates to the TCFD's recommendations. Specifically in relation to metrics, targets, transition plans and important for the Scheme; portfolio alignment tools.</p>	<p>Overall, we were supportive of the additional guidance put forward by the TCFD, however they emphasised that these proposals are currently aspirational rather than something that can be readily implemented now.</p> <p>We provided details on how the Scheme integrates climate-related risks and opportunities into its decision-making processes and the Trustee's experience adapting the existing recommendations of the TCFD.</p> <p>We commented on the TCFD's new proposals from the point of view of a large, diversified UK pension scheme as the guidance was drafted for adoption by organisations in different sectors. Specifically, the Scheme's response expressed concern about the ability of asset owners to identify the proportion of geographically diversified multi-asset portfolios that are exposed to physical and transition risks and to quantify the impact of climate risk on portfolio investment performance to the level of detail suggested.</p> <p>We also commented on the TCFD's proposed cross-industry, climate-related metrics, with the exception of scope 3 emissions, noting that it was not clear to us what benefits calculating and disclosing the proposed metrics, on top of the sector-specific metrics, will bring to us or our stakeholders. We were particularly concerned about the practicality of asset owners managing large and diversified multi-asset class portfolios being able to disclose the metrics given the lack of readily available underlying data that can be efficiently aggregated to "total portfolio level" metrics.</p>
The Pension Regulator ("tPR") Consultation	<p>tPR published a guide helping trustees align with the new climate-related regulatory requirements in relation to incorporating the recommendations of the TCFD. The guidance also set out tPR's approach to imposing penalties.</p> <p>The consultation sought to solicit feedback from UK pension schemes on the guidance.</p>	<p>We responded to the consultation questions, outlining the extent to which we believe tPR's guidance to be useful for Trustees.</p> <p>We also gave examples of how the Trustee have implemented the recommendations of the TCFD.</p> <p>We suggested further areas where additional guidance would be useful from tPR to help Trustees implement the relevant climate-related governance requirements.</p>

<p>DWP Consultation</p>	<p>The aim of this consultation was to gather views on a proposal to mandate large pension schemes to measure and report on the extent to which their investments are aligned with the Paris Agreement.</p>	<p>Overall, we were supportive of the UK Government's commitment to require pension schemes to take action on climate change – we saw the proposals in this consultation as a necessary next step.</p> <p>We are supportive of portfolio alignment metrics as they clarify the forward-looking trajectory of investments, they have a key role to play in net-zero investment strategies, and they can also help inform engagement strategies.</p>
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Mitigating Climate-related Risks via Investment Manager and Mandate Selection

We have sought to integrate climate change considerations into our investment approach for DC members. This has included partnering with LGIM, FTSE Russell and Redington to develop the Future World Fund in 2016, which is a climate-tilted passively managed multi-factor global equity fund.

As noted above, the Future World Fund forms part of the growth phase for our lifecycle default investment options for DC members. The principal aim of the fund is to provide investors with exposure to a well-diversified global equity investment portfolio which uses climate tilts and four investment factors (quality, value, size & low volatility) to determine the benchmark weights of the underlying companies in which to invest.

The Future World Fund also benefits from LGIM's Climate Impact Pledge which has the strong support of the Trustee. Firstly, LGIM identified the 15 climate-critical sectors that are responsible for more than half of GHG emissions from listed companies. LGIM focuses on over 1,000 companies, requesting engagement with them on the plans they are developing for a sustainable future. If, after a year of engagement, the companies are not implementing viable plans to transition to a sustainable future, LGIM pledged to vote against the re-election of the companies' Chairs at the next annual general meeting using all the voting interests from their assets under management. The result of their efforts can be seen in the overall number of companies within LGIM's invested universe setting net-zero targets, which has almost doubled since October 2020. Secondly, the Future World Fund will divest from companies which do not meet LGIM's minimum climate-change standards, even though they remain part of the benchmark index. As of 2021, LGIM excluded 13 companies from the Scheme's Global Equity exposure as an outcome of the manager's Climate Impact Pledge, as shown in Appendix C.. Further details can be found in the LGIM Climate Impact Pledge at <https://www.lgim.com/landg-assets/lgim/document-library/responsible-investing/climate-impact-pledge-brochure-uk-eu-2021.pdf>

Over the past 12 months, we have sought to improve the positive climate characteristics of the Future World Fund given that the fund's value factor investment benchmark characteristics were conflicting, at times, with the fund's climate factor tilts. Consequently, with support from LCP, our DC investment advisor, we began engaging directly with LGIM to understand the investment issues and to encourage the investment manager to review its processes. We also sought to improve the positive climate characteristics of the underlying benchmark index with FTSE Russell, the benchmark provider.

LGIM responded well and made a number of investment changes which were incorporated in two steps in March and September 2021. The principal changes to the fund included: modernising the existing tilting process to target more stable factor exposure across the desired factors, adding: new minimum weighted average carbon emissions intensity reductions of 30%; a 100% increase in green revenues; a 50% reduction in weighted carbon reserves intensity relative to the unadjusted market cap weighted benchmark index; and explicit exclusion of thermal coal from the parent index. In addition, LGIM incorporated the FTSE TPI scores on both management quality and carbon performance, adding a new forward-looking dimension to security selection.

The outcome from this work has been to ensure the Future World Fund keeps pace with developing climate thinking and more effectively mitigates climate risk in the portfolio construction process.

Mitigating Climate-related Risks via Fund Design

Over the past 12 months, we have been working closely with Schroders, an investment manager within the Scheme's DC pension fund arrangements, and LCP our DC investment advisor, in order to improve member long-term pension outcomes. Specifically, we sought to develop a new bespoke diversified growth pooled fund with enhanced ESG (including climate change) risk management characteristics.

Initially, following a period of poor investment performance, we had begun looking for a new DGF solution that forms a significant proportion of our default lifecycle investment strategies, and which would also be available within the self-select fund range. At the beginning of the review process, we looked to identify possible "off the shelf" solutions readily available within the market. However, it became clear that the solutions did not sufficiently align with our wider climate and ESG aspirations. As a result, we decided to try to partner with a manager to create a new bespoke solution.

Schroders was selected as this investment manager due to its ability to provide an enhanced investment solution and for its strength, relative to peers, in a number of essential DC areas, including climate risk management and having the appropriate operational resources to develop an investable pooled fund. The manager's approach uses proprietary modelling and data analysis to deliver the financial outcomes needed for members.

Along with Schroders, we identified several fund ambitions including: carbon emission reductions over time; minimal impact on long-term expected returns; the ability to invest in more "illiquid" investments than would normally be the case for DC members, and maintaining a diversified exposure to asset classes to ensure the solution remained appropriate within the wider default investment strategies.

Through this iterative process, Schroders was able to develop a bespoke sustainable solution with a lower carbon footprint, which integrated ESG factors into the portfolio construction process, whilst permitting other assets such as derivatives to be used for tactical asset allocation or risk reduction, or for cost management purposes.

Mitigating climate-related risks by capturing climate opportunities

As well as adopting climate risk mitigating actions as part of our investment strategy, we also strive to capture opportunities that will contribute to limiting the adverse impacts of climate change while also contributing to enhanced member outcomes. Within the DC portfolio, the funds that we designed with LGIM and Schroders, as described above, have a dual objective of managing climate risks and capturing climate opportunities where feasible. We also have a sustainable equities allocation where the investment manager focuses on investing in climate solutions and assets aiding the low-carbon transition. In addition, in our DB portfolio we maintain an investment in a diversified mandate of renewable onshore wind and solar infrastructure assets managed by Greencoat Capital. These assets generally help to limit the overall carbon footprint and climate risk exposure of the Scheme while also contributing to improvements in the low-carbon transition of the real economy. They also provide a steady stream of cash flows that are used to meet member benefit payments. In June 2021 we completed a review of the mandate's performance to date and standing within the wider context of the Scheme's objectives and market. Following this review, we maintain our conviction in the mandate's ability to help us achieve our climate-related objectives.

Monitoring our climate-related risk exposure

The top-down and bottom-up climate analysis described above was used in 2021 by the PSE to establish a preliminary version of a climate dashboard at the DB and DC level. The dashboard is built upon manager scorecards that rate each managers' integration of climate risk factors into their overall investment and risk management process. The format and contents of the scorecard remain under consideration, however in the longer-term, the intention of the scorecards is to be used to monitor the climate-related risk exposure of the Scheme and to identify mandates where changes could be made to keep them in line with our objectives.

The climate metrics set out in this report are key tenets of the dashboard and scorecards, with additional metrics that combine the quantitative and qualitative assessments of each manager, supplementing our assessment of mandates and managers' practices. We recognise, however, that data and methodology gaps remain, and we therefore continue to explore ways in which new forms of risk analysis will assist with the monitoring of climate-related risks across different asset classes. Our advisors also perform specialist monitoring of the Scheme's managers on an ongoing basis, considering climate-related risk and opportunities at the mandate-level, but also taking an overarching Scheme-level view.

In 2021, we requested that all managers complete an annual survey that asked them to provide specific details relating to their engagement on climate change issues, their climate risk management practices at the firm and HSBC-mandate levels, and the year-on-year development of key climate-related risk factors that they have identified. The results of the questionnaires were collated and assessed by the PSE, with relevant follow-up questions posed to the managers. The purpose of this annual exercise is to identify whether the Scheme’s managers have deviated from our climate-related objectives. If any deviation is observed, ALCo will be informed, and if necessary, the PSE will recommend corrective steps. There were no recommendations to remove a manager based on climate-related factors alone during 2021.

Reporting on our management of climate-related risk

On a quarterly basis, the PSE reports to ALCo with a summary of their manager monitoring activity and will provide, if necessary, recommended mitigating actions they believe ALCo should approve in respect of the Scheme’s managers. If the mitigating action is strategic in nature, a recommendation will be submitted to the Trustee for approval. The PSE’s reporting is supplemented by reporting provided by our advisors to ALCo on a quarterly basis that summarises the takeaways from their manager monitoring and assessment. These include clear calls to action should the advisors feel a manager is not meeting the required standard set by the Trustee. The A&R Committee also provide a report on the Trustee’s Risk Register on a quarterly basis. This includes an assessment of climate-related factors.

In addition to regular internal monitoring, we also report on our climate risk management practices and the steps we have taken to address climate-related risks in annual publicly disclosed reports. We published our first annual TCFD report in 2018, and our first Implementation Statement in 2021.

Metrics & Targets

We assess and monitor a suite of climate metrics in relation to our investments

Currently, we use four metrics to assess the exposure to climate-related risks of the DB and DC parts of the Scheme. We believe these metrics are appropriate as they offer a balanced assessment of the Scheme’s current and forward-looking exposure to climate-related risk. Details of the metrics and their calculation methodologies are provided in the table below:

Metric Type	Metric	Description and methodology
Absolute Emissions	Total Carbon Emissions (tCO ₂ e)	Measures the absolute emissions associated with a portfolio, expressed in tons CO ₂ e. It is a metric based on ownership, where ownership is determined based on the Enterprise Value Including Cash (“EVIC”) of the underlying corporate issuer, in line with the guidance from the Partnership for Carbon Accounting Financials (“PCAF”).
Emissions Intensity	Carbon Footprint (tCO ₂ e / £m invested)	Measures the total emissions normalised by total portfolio value. It is a metric based on ownership, where ownership is determined based on the EVIC of the underlying corporate issuer, in line with the guidance from the PCAF.
	Weighted Average Carbon Intensity “WACI” (tCO ₂ e / £m revenue)	Measures a portfolio’s exposure to carbon-intensive companies. It is a metric based on exposure, rather than ownership. The metric covers corporate assets as well as sovereign assets, where the corporates’ emissions

		intensity is defined as the emissions in tons CO2e per company revenue and countries' emissions intensity is defined as a country's emissions in tons CO2e on a production basis per Gross Domestic Product ("GDP").
Non-Emissions-Based Metric	TPI Management Quality Score "TPI MQ score"	Measures companies' management and governance of GHG emissions and the risks associated with the low-carbon transition on a forward-looking basis. The metric ranges from a score of 0, where a business is unaware of (or not acknowledging) climate change as a business issue, to 4, where a business has completed a strategic assessment of climate-related risks.

This year we have changed our climate data provider and we updated the emissions-based metrics' calculation methodologies to better align with evolving best practice and regulatory guidelines. As part of changing data provider, we undertook a market-wide review of data providers, which enabled us to assess the quality and coverage of the data and metrics available on the market. As a result of the updated methodologies, the metrics reported this year are not easily comparable to those reported in previous years' reports. We will recalculate our emissions for an appropriate baseline date using this new methodology and report against these rebased emissions going forward on an annual basis. These changes have resulted in improved coverage of our emissions-based metrics overall, allowing us to report on a higher proportion of our assets than previously.

To calculate the absolute emissions and emissions intensity metrics, we have used individual portfolio holdings data provided by the investment managers as input data. This includes most of the listed and publicly traded assets across the DB and DC portfolios. In certain instances, individual portfolio holdings data was unavailable due to the complex or illiquid nature of the assets within the portfolio. In these cases, where possible, we have used figures calculated and provided by the Scheme's investment managers. Details of the data sources and calculation methodologies can be found in Appendix D.

There are however some remaining assets (Asset and Mortgage-Backed Securities, Private Equity assets and some Property assets) for which it was not possible to obtain emissions-based and non-emissions-based data. This is reflective of the broader coverage issues associated with these asset classes. Recognising the importance of assessing and disclosing data on as much of the Scheme's portfolio as possible, we are currently exploring the viability of using proxy figures for the Scheme's illiquid and more complex asset classes. We intend to provide further updates on the progress of this work in future disclosures.

The Scheme's own operational emissions, which are scope 1 and scope 2 emissions directly relating to its business operations, are likely to be immaterial. The analysis for the emissions-based metrics therefore encompasses the Scheme's most material scope 3 emissions: financed emissions. In line with the statutory guidance, we have reported on the Scheme's scope 1 and scope 2 financed emissions only for this year. We are aware of the importance of analysing and reporting scope 3 emissions data given its relatively large contribution to total global emissions, however due to concerns surrounding the quality and robustness of this data we have decided against including it in this year's TCFD report to avoid misleading the reader. Prior to the inclusion of additional data in future reports, further Trustee training will be undertaken over the coming year on the different sources and methods underpinning scope 3 emissions data and calculations.

For our non-emissions-based metric, we adopted the TPI MQ score in 2020, which we continue to monitor. This is an alignment metric providing a forward-looking indicator of the Scheme's exposure to climate transition risk. To calculate the TPI MQ scores, our investment managers made use of the TPI's publicly available dataset to estimate the proportion of assets invested that correspond to each TPI MQ score. We note that coverage for this metric is lower than the absolute emissions and emissions intensity metrics due to the relative size of the TPI dataset, which covers only 478 companies at the time of data gathering. We expect coverage of this metric to increase meaningfully over time.

In previous TCFD reports we provided a timeseries comparison of the Scheme's total emissions, carbon footprint, and TPI MQ score. We have decided against including the same comparison in this year's report due to changes in the underlying emissions-based metric calculation methodologies, the chosen underlying emissions data source and the TPI MQ datasets. We are in the process of recalculating the emissions-based

metrics used in our previous TCFD report, and once complete, we intend to include the 2020 and 2021 data points as a timeseries going forward in future disclosures.

Climate metrics for our DB assets as at 31 December 2021

Absolute Emissions and Emissions Intensity metrics

The table below provides the results for the first three climate metrics at an asset class level, alongside the coverage of total DB assets and the coverage of emissions data. The figures are provided at an asset class level, rather than a total portfolio level as aggregating would have meant adding sovereign emissions to corporate emissions, resulting in a certain degree of double counting. Additionally, as the current methodology for the attribution of emissions from sovereign bonds differs from that for other asset classes, we believe it is appropriate these figures are reported separately. Details on the calculation methodologies for different asset classes are provided in Appendix D.

Asset Class	Absolute Carbon Emissions – scope 1&2 (tCO2e)	Carbon Footprint – scope 1&2 (tCO2e / £m invested)	WACI - scope 1&2 (tCO2e / £m revenue)
LDI**	2,112,374	145.3	192.0
Global Bonds	387,996	57.5	273.8
Infrastructure Debt**	167,410	341.0	N/A***
US Treasuries**	156,608	300.1	336.4
Sterling Bonds*	143,170	61.3	196.1
US Dollar Bonds	75,269	66.7	729.9
Diversified Fund	7,179	105.6	407.1
Property**	3,965	10.7	N/A***
Renewable Infrastructure**	31	0.1	N/A***

*One of the Scheme's Sterling Bond funds has been excluded from the calculations due to the lack of EVIC data available for issuers (largely supranational).

** Data provided by the Scheme's respective investment managers (two of the Scheme's Property funds have been excluded from the calculations due to the lack of data availability).

*** Due to the nature of the fund and the calculation methodology used for WACI, this data was not available.

Overall, the emissions in the table above cover 89% of the total DB assets (excluding cash). This includes the listed and publicly traded assets covered with line-by-line analysis from the MSCI data feed as well as illiquid assets and gilts where the emissions figures were provided by our managers. The 11% of non-cash assets that could not be covered by the analysis is made up of Property, Private Equity and Asset and Mortgage-Backed Securities assets, as described in the previous section. Emissions coverage of the listed and publicly traded assets was better for some funds than others. On average, 42% of the assets within the funds covered with line-by-line analysis had available emissions and EVIC figures, inputs necessary to calculate the ownership-based emissions metrics.

Coverage statistics	
DB assets covered as a percentage of total (excluding cash)	89%
Average data coverage where line-by-line emissions data was available	42%

Absolute Carbon Emissions

The mandate with the largest absolute emissions is the Liability Driven Investments (“LDI”), which has been included in the analysis for the first time this year. This mandate primarily consists of UK government gilts and cash assets and is used for liability interest rate and inflation hedging purposes.

This is as a result of the combination of amount invested, c.£14.5bn, and the intensity of the emissions of the mandate (as can be seen by the carbon footprint figures in the table). The next asset class with high absolute emissions are the Global Bonds. This is again a function of the amount of assets invested.

Carbon Footprint

The newly included Infrastructure Debt, US Treasuries and LDI mandates are the three most emissions intensive within the Scheme’s DB portfolio, with carbon footprints of 341 tCO₂e/£m invested, 300 tCO₂e/£m invested and 145 tCO₂e/£m invested, respectively. These figures were provided by the Scheme’s respective investment managers. The higher footprint of the US government bonds as compared to UK government gilts is reflective of the two countries’ carbon intensities.

When considering the remaining asset classes, the Diversified Fund has a relatively high carbon footprint as compared to the Global, Sterling or US Dollar Bond assets. This is largely the due to the diversified nature of the fund, both across geographies and asset classes. Similar to the sovereign bonds in the LDI and US TIPS funds, we can see that US Dollar Bonds have a slightly higher carbon footprint than that of Sterling bonds, pointing to the difference in intensities of US- and UK-domiciled assets. Unsurprisingly, the Renewable Infrastructure and the Property assets that have been included have the lowest relative scope 1 & 2 carbon footprints – these metrics were also provided by the Scheme’s respective investment managers.

Weighted Average Carbon Intensity

WACI measures the Scheme’s exposure to carbon intensive investments. This metric does not account for ownership, so it does not use EVIC. It is purely an exposure-based measure. From the table above we can see that the US Dollar Bonds have the highest exposure to carbon-intensive assets with a WACI of 730 tCO₂e / £m revenue. This is unsurprising as it is reflective of the industries in which the issuers of US corporate bonds within the mandates operate, which tend to be heavier emitters. Comparing the US Dollar Bonds to the Sterling Bonds as well as the US Treasuries to the LDI mandate, our US investments have greater exposure to carbon intensive activities.

Aggregate TPI Management Quality Scores

To balance our view of our mandates’ exposure to carbon emissions and climate risk, we use the TPI MQ score as a forward-looking indicator of the Scheme’s exposure to climate transition risk. These metrics cover the listed and publicly traded assets of the DB portfolios, where this data was available.

Metric	Result
TPI Management Quality Scores	Aggregate TPI MQ across all mandates where data available: 2.9
	Highest TPI MQ of all mandates where data available: 4.0
	Lowest TPI MQ of all mandates where data available: 1.4

The mandates with a greater concentration in UK (and to a lesser extent US) companies perform better under the TPI’s MQ metric. Sterling bonds particularly tend to have score closer to 4, which is the highest TPI MQ score indicating issuers’ strategic assessment of climate change. This likely reflects better developed climate governance practices in these geographical regions.

Climate metrics for our DC assets as at 31 December 2021

Absolute Emissions and Emissions Intensity metrics

The below table provides the results for the first three climate metrics at an asset class level, alongside the coverage of total DC assets and the coverage of emissions data. Following the approach described in the DB

section, we decided to report the figures at an asset class level, rather than aggregated to a total portfolio level, as we believe it allows for increased transparency and clarity in our results.

Asset Class	Absolute Carbon Emissions – scope 1&2 (tCO2e)	Carbon Footprint – scope 1&2 (tCO2e / £m invested)	WACI - scope 1&2 (tCO2e / £m revenue)
Global Equities - climate-tilted	230,277	52.9	141.6
Global Equities	23,842	51.5	143.0
Diversified Fund*	20,692	25.9	308.1
Global Bonds	14,720	89.9	218.9
EM Equities	10,039	55.0	174.2
Annuity Tracker**	7,746	79.1	165.0
UK equities***	6,595	51.1	116.9
North America Equities	2,769	44.8	179.2
Islamic Global Equities	2,534	24.2	84.3
Sustainable Equities	2,379	30.1	119.6
Asia Pacific ex Japan Developed Equities	1,980	120.7	283.0
Europe Equities (ex UK)	925	90.3	157.7
Japan Equities	671	121.0	283.9
Sterling Corporate Bonds	215	52.5	144.0
REITS	62	10.2	132.3

* The Diversified Fund did not have coverage for ownership-based metrics given the lack of EVIC data available for issuers (largely supranational). However, the investment manager was able to provide the metric using Market Value to apportion ownership.

** Includes both the fixed and index-linked annuity tracker funds.

*** Includes active and passive mandates

Overall, the emissions in the table above cover 98.7% of the total DC assets (excluding cash). We were able to cover our listed and publicly traded assets using line-by-line emissions analysis from the MSCI data feed, with the exception of the Diversified Fund, where we received emissions data from our manager. The remaining assets that could not be covered by the analysis are the Property funds DC members are invested in. Overall, emissions coverage of the listed and publicly traded assets was better for the DC funds due to better data availability on equity assets generally. On average, 90% of the assets within the funds covered with line-by-line analysis had available emissions and EVIC figures, inputs necessary to calculate the ownership-based emissions metrics.

Coverage statistics	
DC assets covered as a percentage of total (excluding cash)	98.7%
Average data coverage where line-by-line emissions data was available	90%

Absolute Emissions

The fund with the largest absolute emissions is the Global Equities - Passive (Climate-Tilted) Fund. As this is the main DC default investment strategies investment, this result is a function of the size of the investment rather than the intensity of the fund (see carbon footprint and WACI figures in the above table). The next largest funds also have high absolute emissions, that is the Global Equities Fund – Active and the Diversified Fund - Active.

Emissions Intensity

Equities from the Asia Pacific region and Japan were the most carbon intensive assets within the DC portfolio, 30% more carbon intensive than the next highest, European Equities (ex UK). As previously referenced, the largest contributors to the overall absolute emissions, Global Equities – Passive (Climate-Tilted) and Global Equities - Active, have carbon footprints that are close to the average when compared to the rest of the portfolio. This in effect is driving the relatively low aggregate carbon footprint of the DC assets, given that a large majority are held within the main default fund. The carbon footprint of Emerging Market Equities is slightly higher than emissions of UK and North America Equities funds.

Weighted Average Carbon Intensity

The funds with the highest WACI were the Diversified Fund (308 tCO₂e / £m revenue), the Japanese Equities (284 tCO₂e / £m revenue), and Asia Equities excluding Japan (283 tCO₂e / £m revenue). These results were somewhat expected given the high carbon footprint of these funds. The WACI of the Diversified Fund is based on a much lower coverage as compared to other funds and so we continue to monitor how this metric evolves as coverage improves.

Aggregate TPI Management Quality Scores

To balance our view of our fund's exposure to carbon emissions and climate risk, we use the TPI MQ score as a forward-looking indicator of the Scheme's exposure to climate transition risk. These metrics cover the listed and publicly traded assets of the DC portfolios, where this data was available.

Metric	Result
TPI Management Quality Scores	Aggregate TPI MQ across all mandates where data available: 3.6
	Highest TPI MQ of all mandates where data available: 4.0
	Lowest TPI MQ of all mandates where data available: 1.3

For the DC portfolio, the weighted aggregate TPI score of 3.6 is an improvement from 2020, however, this is alongside a reduced coverage of the TPI universe as compared to last year. Our divestment from one of the worst performing funds has contributed to this increase. Encouragingly, the TPI score of the main default investment option has increased from last year.

Climate Metrics Conclusion

As well as using the metrics to provide insights on the Scheme's risk exposure, during 2021 we also used the metrics to start to build out a "climate dashboard", which we use as a monitoring tool to track our climate-related objectives. The dashboards are maintained separately for our DB and DC assets, providing a holistic view of each portfolio. Underlying the dashboards are fund-level climate scorecards, which we use to monitor our investment managers' performance and to inform our engagement activities. The scorecards combine the metrics' quantitative assessments with qualitative considerations gathered via discussions with the investment managers. We review the selection of climate metrics in both the dashboard and the scorecards from time to time as appropriate to ensure we continue to make use of best practice techniques that offer effective insight to the Scheme's climate-related risk exposure. We anticipate that we will add a Climate Value-at-Risk ("Climate VaR") metric to the dashboard in the coming year for both the DB and DC portfolio. This will support our understanding of transition risk and also feed into our engagement with the underlying investment managers.

Note: All line-by-line emissions-based analysis is provided by the Scheme's Investment Advisor, Redington Ltd ("Redington"), and the data in the report is sourced from MSCI®. Certain information ©2022 MSCI ESG Research LLC. Reproduced by permission. Where the emissions-based analysis was sourced directly from investment managers, the relevant approaches are outlined in Appendix D.

Our climate-related targets

In previous TCFD reports we have indicated our support for the goals of the Paris Agreement; however, we did not previously set out a specific climate-related target. As mentioned in previous sections of this report, the establishment of the CRWG during 2021 allowed us to articulate our climate-related objectives and as a result, during the year we set out a target to achieve net zero emissions by 2050, or sooner.

We believe this target is appropriate as it was set as part of our efforts to manage the risk of climate change on the Scheme's investments and the consequent impact on the financial interests of members. The high-level 2050 target is supported by shorter-term interim targets, which include:

- targeting a real economy emissions reduction interim target of 50% by 2030 or sooner for our equity and corporate bond mandates, in line with the findings of the most recent IPCC report. As noted above, we will measure performance against this target by recalculating our emissions for an appropriate baseline date using the new methodology referred to in this report and then report against these rebased emissions going forward on an annual basis.
- having the ambition of achieving all of our corporate bond and equity investments being fully aligned to the goals of the Paris Agreement by 2030 across both DB and DC assets
- enhancing our engagement and stewardship efforts through the Scheme's asset managers

Looking ahead

As described in the beginning of this section, this year we focused on improving our data sources and calculation methodologies regarding the climate metrics we report on, in order to ensure we keep pace with the industry developments. As a result, we were able to cover more asset classes and a higher proportion of our overall assets than in previous years, both within the DB and the DC portfolios. However, the change in approach has meant that providing year-on-year comparisons is challenging this year. As such, a next step for us is to recalculate our climate metrics as at the end of 2020, which will allow us to provide more meaningful timeseries analysis in future reporting.

Overall, what we can observe is that the large allocation to long-dated corporate credit and sovereign debt in the DB portfolio means it is on aggregate more carbon intensive than the DC portfolio (primarily made up of equity assets). Also contributing to the lower aggregate carbon intensity of the DC portfolio is the fact that the main DC default investment strategies fund is a climate-tilted multi-factor global equity fund. However, within DC we observe an interesting split in emissions intensities based on regional allocations, which we will take into account in our monitoring of these assets as well as the overall DC investment strategy. In particular, the output from this climate metrics analysis will allow us to prioritise engagement with managers whose mandates display a higher exposure to climate risk.

The metrics we report on will also feed into our net zero investment strategy, which we are building out over the next year in line with the best practice principles set out in the Net Zero Investment Framework published by the IIGCC's PAII. This will include our 2020 baseline metrics and details of steps we are taking to achieve our targets.

Appendices

Appendix A: Climate Change Risk Policy

The Trustee recognises climate change as a systematic, long-term material financial risk to the value of the Scheme's investments. Therefore, the Trustee has a fiduciary duty to consider climate change risk when making investment decisions. Within the context of its fiduciary responsibility, the Trustee is supportive of the Paris Agreement to avoid dangerous climate change by limiting global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C. The Trustee considers climate-related factors within its separately-documented scheme-wide ESG risk management framework, and is ultimately responsible for setting the climate-related objectives of the scheme including how the investment portfolios are aligned with achieving the goals of the Paris Agreement. In summary, the Trustee:

- Integrates climate-related decisions into its scheme-wide risk management framework as the Trustee is ultimately responsible for setting the climate-related objectives of the scheme including how the investment portfolios are aligned with achieving the goals of the Paris Agreement.
- Has made ALCo responsible for ensuring that the Trustee's climate objectives are implemented into the Scheme's investment policy. This includes selecting the appropriate analysis and metrics to measure climate-related risks and opportunities;
- Requires its investment advisors to advise on, and provide objective assessments of, differing approaches to responsible investment to help the Trustee decide appropriate responsible investment objectives for the Scheme. This includes informing the Trustee of new responsible investment opportunities or emerging risks and assisting with the implementation of the climate-related strategy of the Trustee;
- Has included specific climate-related objectives in the advisors' annual objectives to ensure its advisors are taking adequate steps to identify and assess climate-related risks and opportunities. The Trustee annually assesses the delivery of this advice using the Competition Market Authority's Investment Consultant Objectives framework;
- Requires its appointed investment managers to be cognisant of climate change risks and opportunities within their investment processes as applied to the assets of the Scheme. Investment managers are further required to report annually on how these risks and opportunities have been incorporated into the investment process within applicable guidelines and restrictions;
- Has a preference for 'Engagement' rather than 'Exclusion' as a method of incorporating climate change risks into an effective fiduciary framework. However, the Trustee expects investment managers to consider independently whether exclusion or engagement is more appropriate within their investment process;
- Encourages the further development of asset classes that are supportive of obtaining the well below 2°C target provided they are all based within the primary fiduciary framework;
- Supports the TCFD and aims to incorporate its recommendations into the Scheme's reporting, subject to availability of data;
- Supports the further development of effective climate change risk metrics to enhance the ability of all stakeholders in the investment chain to assess and minimise such risks;
- Supports the TPI and uses the analysis it provides to review material exposures to the world's largest emitters and inform impactful engagement strategies through its asset managers, in line with the Trustee's investment beliefs;
- Recognises that 'Climate Change' will be subject to much further analysis and subsequent policy changes in the coming years. The Trustee is supportive of adopting an evolving policy in order to ensure all relevant developments are captured; and
- Is supportive of policy initiatives that, in its opinion, contribute towards achieving the well-below 2°C target.

Appendix B: Climate Scenario Analysis Limitations

The climate scenario analysis modelling for the Scheme's DB and DC assets has been undertaken by WTW and LCP respectively. The following explains the general limitations of both financial and climate modelling which are pertinent to this analysis and give greater detail from WTW and LCP about the limitations of elements of their respective processes used.

General limitations of modelling

- Models are relatively simplistic approximations of real-world behaviour that are not able to capture every possible real-life permutation. The use of any model of future economic and investment experience is subject to risks arising from the underlying uncertainties inherent in predicting the future.
- Risk models are only models, even if complex and/or powerful.
- The random variation in future inflation and investment returns over a short or medium period of time may result in experience that is significantly different to the expected long-term average experience over much longer time periods. In short, circumstances that are (reasonably) assumed by a model to be very unlikely to occur may, nevertheless, occur.
- The conclusions of the modelling process will depend on the structure of the underlying model (particularly the relationships between different economic and investment indicators) and on the detailed parameterisation of the model.
- The results of the modelling depend crucially on the methodology and assumptions used. Using different models or using different assumptions in the same model can give rise to very different results.
- The results of modelling should be regarded as illustrative. Limited weight should be put on the probabilities of different outcomes emerging calculated by the model.
- The model is best used to compare potential outcomes between scenarios.
- The modelling does not capture all dynamic changes to circumstances.
- Material uncertainties in climate modelling are inevitable due to the inherent uncertainty in modelling climate change. For example, there is uncertainty about the physical changes in the climate that will emerge as a result of GHGs that have already been emitted (i.e. the locked-in effects of climate inertia) and how the climate will respond to future rises in GHG concentrations. There is also huge uncertainty about the future trajectory of GHG, the actions that will give rise to that trajectory, and the economic effects of those actions.
- The climate modelling scenarios are intended to be plausible, not "worst case", hence, they do not capture the potential seriousness of tail risks. In the absence of a climate transition, temperatures are expected to increase exponentially without the risk of non-linear tipping points being reached (e.g. melting ice sheets) that would amplify the economic impact even further compared to the exponential change.

WTW – DB Analysis Limitations

- WTW has taken reasonable steps to satisfy itself that the data provided by third parties is of adequate quality for the purposes of the modelling, including carrying out basic tests to detect obvious inconsistencies. These checks have given WTW no reason to doubt the correctness of the information supplied.
- The climate modelling scenarios span the range of plausible outcomes for physical and transition risks and the trade-off between the two. The costs of each at an index level have been based upon figures sourced from MSCI with judgment being applied by WTW as to current market pricing, the extension of these base figures to all asset classes and their attribution over time.
- The climate scenarios have been derived on the basis of all other things being equal, which is unlikely to be the case in practice. Second order effects and feedback loops are hard to estimate with certainty and represent the reason why the climate scenarios cannot be a substitute for using traditional investment risk management tools.

- Although the scenarios illustrate the potential variability in future mortality rates due to climate change, they are subjective, and arguments could be made for different outcomes.
- Detailed analysis of the drivers of mortality indicates very little impact on the future path of UK longevity, with these impacts much more concentrated on other populations. However, the indirect effects of climate change and the transitional risks on economic, social and health factors would appear to be of sufficient consequence to have similar impact on improvements or deterioration in longevity to that seen in the past, supporting the belief that climate change represents a demographic risk to be managed by pension schemes and their sponsors.

LCP – DC Analysis Limitations

- LCP uses median values from Ortec Finance’s stochastic modelling outputs. In aggregate, it is quite likely that Ortec Finance’s modelling, which has been used to support this work, is biased to underestimate the potential impacts of climate-related risks, especially for the Failed Transition scenario. This is typical of climate-economic modelling and is not specific to Ortec Finance’s modelling.
- Ortec Finance considers three scenarios out of infinitely many that are possible. Alternatives include different long-term temperature outcomes, different combinations of policy/technological/behavioural actions to achieve similar long-term temperature outcomes to those that are being modelled, and different financial market reactions to the same policy/technological/behavioural actions that are being modelled.
- No allowance is made for knock-on effects, such as climate change related migration and conflicts.
- Ortec Finance models climate impacts on financial markets using the GDP impacts from Cambridge Econometrics’ macro econometric modelling and assumed relationships between GDP and the financial parameters. GDP is the only translation mechanism from the macro econometric model to the stochastic financial scenario model except that, following the June 2020 model updates, Ortec Finance uses Cambridge Econometrics’ inflation estimates instead for the two Paris scenarios. Other potential translation mechanisms (such as carbon-price impact on interest rates) are not modelled.
- There is a great deal of uncertainty in the timing of market responses to climate change. Ortec Finance’s model assumes the biggest market movements under the Failed Transition scenario occur after 2030, which could mean that younger DC members may be impacted more than older DC members. However, the market movements could occur a lot earlier.
- Financial market volatility might increase as the physical and transition impacts of climate change unfold, particularly if this happens in an unpredictable manner. The modelling does not make any allowance for this, except in the Paris Disorderly Transition scenario during 2025 while pricing-in of climate-related risks takes place.

Appendix C: Climate Impact Pledge exclusions and engagement

. As reported in the main document, the Future World Fund, which is managed by LGIM, will divest from companies which do not meet LGIM’s minimum climate-change standards, even though they remain part of the benchmark index. The list of companies excluded for investment in 2021 and the reason for their exclusion is reported below:

- China Construction Bank Corporation - no thermal coal policy in place and disclosure of Scope 3 emissions associated with investments.
- Japan Post Holdings Co. Ltd. - no thermal coal policy in place and disclosure of Scope 3 emissions associated with investments.
- Loblaw Companies Ltd.- the company’s deforestation policy does not cover key commodities such as beef and soy. It has not yet disclosed Scope 3 emissions for own-brand products and does not evidence regenerative agriculture policies.
- Rosneft Oil Company - reporting Scope 3 emissions and has operational targets out to 2035, but these fall short in terms of ambition.

- Sysco Corporation - the company does not have comprehensive deforestation policy in place and its emissions reduction targets fall short in terms of ambition.
- Exxon Mobil Corporation - reporting Scope 3 emissions, but operational emissions reduction target remains unambitious and misaligned with Paris.
- Hormel Foods Corporation - the company has made improvements with regards to its deforestation policy and disclosure. However, it does not have a regenerative agriculture policy, is not disclosing agricultural Scope 3 emissions, and has not yet set a target for these types of emissions.
- MetLife, Inc. - some restrictions on thermal coal have been introduced, but not yet disclosing Scope 3 emissions associated with investments.
- Korea Electric Power Corporation (KEPCO) - some restrictions on thermal coal have been introduced, but not yet disclosing Scope 3 emissions associated with investments.
- Industrial and Commercial Bank of China (ICBC) - no thermal coal policy in place and disclosure of Scope 3 emissions associated with investments.
- American International Group Inc. - no thermal coal policy in place and disclosure of Scope 3 emissions associated with investments.
- PPL Corporation - no timebound target to phase out coal power generation.
- China Mengniu Dairy - the company does not have a zero-deforestation policy, is not disclosing agricultural Scope 3 emissions, and has no targets in place for these emissions.

This is an ongoing process and LGIM has recently updated its list of sanctioned companies (including excluded companies) in its Climate Impact Pledge 2022 report. The 2022 list of excluded companies will be included in next year's 2022 TCFD Statement. These companies could be repurchased if their approach to climate change improves sufficiently. Conversely, other companies could be divested if the reverse is true.

Source: LGIM, <https://www.lgim.com/landg-assets/lgim/document-library/responsible-investing/climate-impact-pledge-brochure-uk-eu-2021.pdf>

Appendix D: Climate Metrics Analysis

Data sources:

- The absolute emissions and emissions intensity metrics have been calculated using line-by-line holdings data for the Scheme's Corporate Bonds, Equities, Diversified Funds and REITS Funds. The emissions data for these funds is from MSCI. Please see MSCI data disclosure below:
 - *This disclosure was developed using information from MSCI ESG Research LLC or its affiliates or information providers. Although HSBC Bank (UK) Pension Scheme's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the "ESG Parties"), obtain information (the "Information") from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose. The Information may only be used for your internal use, may not be reproduced or disseminated in any form and may not be used as a basis for, or a component of, any financial instruments or products or indices. Further, none of the Information can in and of itself be used to determine which securities to buy or sell or when to buy or sell them. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein, or any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.*
- The emissions data for the Scheme's LDI, US TIPS, Property, Renewable Infrastructure and Infrastructure Debt assets were calculated and provided by the Scheme's respective investment managers.

Redington's calculation methodology using MSCI input data:

- Emissions metrics are calculated in line with the GHG Protocol Methodology, the global standard for companies and organisations to measure and manage their GHG emissions. The GHG Protocol provides accounting and reporting standards, sector guidance and calculation tools. It has created a comprehensive, global, standardised framework for measuring and managing emissions from private

and public sector operations, value chains, products, cities, and policies to enable greenhouse gas reductions across the board.

- The ownership-based metrics have also been calculated using the guidance from the PCAF, which apportions emissions using ownership as determined by EVIC, rather than Market Value.

LDI and US Treasuries (“TIPS”) calculation methodology:

- We used Insight Investment Management’s methodology and estimated figures for the UK LDI and US TIPS mandates. To calculate the emissions attributable to Gilts and US TIPS, Insight have used the latest annual Scope 1 and Scope 2 CO₂e emissions data produced by the Department for Business, Energy & Industrial Strategy (“BEIS”) and US Environmental Protection Agency (“US EPA”), respectively, and apportioned these figures to the total market value of Gilts and US Treasuries in issuance as at 31 December 2021. Please see below for further details on the sources, assumptions, and approach used by Insight for the LDI and US TIPS funds and to estimate the three emissions-based metrics:

- **LDI**

- Latest annual data for emissions produced in the UK (Scope 1 and 2) as at 31 December 2020, published by the UK government, of 405.5m tonnes of CO₂e. Scope 3 emissions are not included.
- Figures cannot sensibly be aggregated with emissions data for non-gilt assets due to risk of double counting as UK emissions include corporate and household emissions.
- Total market value of gilts in issuance at 31 December 2021, published by the DMO of £2,790,108m (including green gilts). UK GDP for 2020, published by the IMF of £2,112,040m.
- Scheme’s asset position at 31 December 2021.
- Gilts posted out as collateral by the Scheme are included in the gilt valuations and gilts received as collateral are excluded. Interest rate swaps, inflation swaps, futures, cash and money market fund holdings have all been excluded.

- **US TIPS**

- Latest annual data for emissions produced in the US (Scope 1 and 2) as at 31 December 2020, published by the US Environmental Protection Agency, of 5,215.6m tonnes of CO₂e. Scope 3 emissions are not included.
- Figures cannot sensibly be aggregated with emissions data for non-sovereign assets due to risk of double counting as US emissions figure includes corporate and household emissions.
- Total market value of US Treasuries in issuance at 31 December 2021, published by the Dallas Fed of \$23,424,000m. US GDP for 2020, published by the IMF of \$20,894,000m.
- Scheme’s asset position at 31 December 2021.
- FX conversion rate of 1GBP=0.7420USD at 31 December 2021 (Source: Bank of England) used for converting GDP and total market value of US Treasuries to GBP.

- **Total absolute emissions:** Total emissions associated with the issuing country’s economy on a production basis, attributed based on an investor’s ownership of the total government debt.

- **Carbon footprint:** Total absolute emissions associated with the issuing country’s economy, normalised by total government debt.

- **WACI:** Total emissions associated with the issuing country’s economy, normalised by GDP.

Infrastructure Debt

- We used Vantage Infrastructure’s methodology and estimated figures for the Infrastructure Debt mandate. This uses emissions reporting data taken directly from borrow reporting as at 31st December 2020 and the Scheme’s investment amounts as at 31st December 2021. Vantage has not estimated Scope 3 emissions given the complexity and variability between companies.

Property

- We used Alpha Real Capital’s methodology and estimated figures for the Property fund. This uses emissions estimations provided under the MSCI Climate VaR methodology.
- Please note that we also hold two investments in UK Property funds managed by LaSalle Investment Management. They have not been included in the calculations for the aggregate Property fund metrics due to unavailable data.

Renewable Infrastructure

- We used Greencoat Capital’s methodology and estimated figures for the Renewable Infrastructure mandate. The 2021 emissions are estimated using a GHG Protocol approved methodology developed for wind energy assets in Greencoat’s portfolio. Greencoat Solar II LP also completed a carbon footprint exercise in line with GHG protocol to calculate its scope emissions.
- Emissions factor may change over time as methodologies evolve, therefore Greencoat will continue to review and refine its emissions calculation methodology to provide more accurate and detailed information going forward.

Appendix E: Glossary of technical terms

- **Carbon footprint:** Measures the total emissions normalised by total portfolio value. It is a metric based on ownership.
- **Decarbonisation:** The process of removing or reducing the carbon dioxide output of an activity or industry.
- **ESG:** Environmental, social and governance issues that are identified or assessed in responsible investment processes. Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems. Social factors are issues relating to the rights, well-being and interests of people and communities. Governance factors are issues relating to the governance of companies and other investee entities.
- **EVIC:** Enterprise Value Including Cash
- **Greenhouse Gas emissions:** Emissions of the seven gases mandated under the Kyoto Protocol and to be included in national inventories under the United Nations Framework Convention on Climate Change (“UNFCCC”) - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, and nitrogen trifluoride.
- **IIGCC:** Institutional Investor Group on Climate Change
- **Net zero:** When total greenhouse gas emissions would be equal to or less than the emissions removed from the environment. This can be achieved by a combination of emission reduction and emission removal.
- **PAII:** Paris Aligned Investment Initiative
- **Paris Agreement:** To tackle climate change and its negative impacts, 197 countries adopted the Paris Agreement at the COP21 in Paris in December 2015. It aims to substantially reduce global GHG emissions and to limit the global temperature increase in this century to 2 degrees Celsius while pursuing means to limit the increase even further to 1.5 degrees.
- **Physical risk:** Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations’ financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations’ premises, operations, supply chain, transport needs, and employee safety.
- **PRI:** UN Principles for Responsible Investment
- **Scope 1, 2 and 3 emissions:**
 - **Scope 1:** Direct emissions that occur from sources owned or controlled by the reporting company, i.e. emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.

- **Scope 2:** Indirect emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company. Scope 2 emissions physically occur at the facility where the electricity, steam, heating, or cooling is generated.
 - **Scope 3:** All other indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company. Scope 3 can be broken down into upstream emissions that occur in the supply chain (for example, from production or extraction of purchased materials) and downstream emissions that occur as a consequence of using the organisation's products or services.
- **TCFD:** Task force on Climate-related Financial Disclosures
 - **Total carbon emissions:** Measures the absolute emissions associated with a portfolio, expressed in tons CO₂e. It is a metric based on ownership.
 - **TPI:** The Transition Pathway Initiative is a global, asset-owner led initiative which assesses companies' preparedness for the transition to a low carbon economy.
 - **TPI MQ:** The TPI Management Quality score measures companies' management and governance of GHG emissions and the risks associated with the low-carbon transition on a forward-looking basis.
 - **Transition risk:** Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations.
 - **WACI:** The weighted average carbon intensity measures a portfolio's exposure to carbon-intensive companies. It is a metric based on exposure, rather than ownership.