



# Your Workplace Pension Report on Climate-Related Financial Disclosures October 2022



PART OF



GROUP PLC

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# Member Summary

As the Trustee of the Options Workplace Pension Trust (“Options”) best practice and good governance is at the heart of all we do. In line with our climate beliefs, we recognise that climate change will impact investments, but moreover, the social and broader environmental impact of the money invested on behalf of our members must be considered. Whilst the growth of investments and savings under our stewardship is key, taking action to execute our climate roadmap our commitment to reducing the risks associated with climate change.

PURPOSE OF THE TCFD REPORT	OUR ACTIONS	OUR CLIMATE ROADMAP
<p>The Taskforce for Climate-Related Financial Disclosures (“TCFD”) is an international body promoting more effective climate-related disclosures to enable a better understanding of the financial system’s exposures to climate-related risks.</p>	<p>Investments in companies often come with the right to vote on how a company is run. It is important that our climate beliefs are reflected in the way Investment Managers use this power. We enforce this by sharing our climate beliefs with our Managers and reviewing their voting decisions.</p>	<p><b>2019</b></p> <p>Scheme-wide WACI measure of 141.74 tonnes of CO2 equivalent per \$1m of sales generated.</p>
<p>Being a UK Master Trust, Options falls within guidelines to publish a TCFD report for the scheme end on March 31, 2022. That is the purpose of this TCFD report. However, we furthered our commitment by publishing an initial TCFD report earlier in June 2022.</p>	<p>The Trustee has identified climate as a top 5 risk and embedded climate risks and opportunities into our processes. We now include climate risks in the risk register and is a dedicated agenda item at both board and committee meetings.</p>	<p><b>2022</b></p> <p>A 29% reduction in Scheme-wide WACI to 100.45 tonnes of CO2 equivalent per \$1m of sales generated and at least 25% equities invested in companies with SBTi commitments</p>
<p>As Option’s Trustee, we want to continue to show the extent to which we have incorporated climate risks and opportunities into our governance structures, our processes, and our investment strategy.</p>	<p>Climate metrics are being utilised to measure the climate impact of our default funds. We use three metrics: WACI (Weighted Average Carbon Intensity), the percentage of companies with SBTi (Science Based Targets Initiative) goals, and Absolute Carbon Emissions (CO2e tonnes). These metrics are essential in ensuring we are progressing toward our goals and in understanding what impact we are having on the environment.</p>	<p><b>2025</b></p> <p>Achieve a target of 50% of equity investments in companies with net zero targets (SBTi or other).</p>
<p>We are required to model the impact of two climate scenarios to test our investment strategies and assess the impact of different climate scenarios on the expected returns and risk of our default investments. This will help us to further understand how climate change may impact our Members.</p>	<p>Since the base year of 2019 we have seen good progress to date with a reduction in the intensity of carbon emissions even though total absolute emissions for the scheme have increased due to an increase in the size of our total assets.</p>	<p><b>2030</b></p> <p>Target a 50% reduction in emissions, being a WACI of 70.87 tonnes of CO2 equivalent per \$1m of sales generated.</p>
	<p>The Trustee has set a target for Options to be net zero by 2050.</p>	<p><b>2050</b></p> <p>Target to be net zero</p>

# 1. Introduction

*"We are the first generation to feel the effect of climate change and the last generation who can do something about it." — Barack Obama*

From 1 October 2021, the Occupational Pension Schemes Regulations introduced new requirements relating to reporting in line with the Taskforce for Climate Related Financial Disclosures (TCFD) recommendations, to improve the quality of governance and the level of action by trustees in identifying, assessing and managing climate risk.

The Options Workplace Pension Trust (known hereafter as Options) falls within these guidelines and is required to publish the first report for the scheme year ending 31 March 2022 by the end of October 2022. As the Trustee, to show our commitment to the challenges posed by climate change we decided to publish an earlier non-regulatory report, broadly following the guidelines and using data available at the time of writing. We make references to the "earlier TCFD report" ([available here](#)) in this document, being our first regulatory required report..

As required by the Department for Work and Pensions ("DWP"), analysis of climate related risks and opportunities needs to cover each of Options popular arrangements, which account for 10% or more of the Scheme's assets. This includes the following as at 31 March 2022:

Default Fund	Investment Manager	Size of Fund
Target Date Fund (TDF)	Alliance Bernstein ("AB")	£72,661,662
Quilter Carey Lifestyle	Quilter Cheviot ("Quilter")	£43,261,705
Lifepath	Blackrock	£171,333,735
Balanced Fund	TAM Asset Management ("TAM")	£100,070,883

The earlier TCFD report gave the Trustee an opportunity to start embedding climate risk into the fabric of the governance and best practices throughout the Scheme as well as to set metrics and begin measuring the emissions and climate metrics of our default strategies. We have been able to further our analysis and make a reasonable assessment of the impact our first two chosen scenarios may have on the risks and opportunities of the four applicable default strategies.

The Trustee set a target of achieving net zero by 2050, with a 50% reduction in GHG emissions by 2030 across the Scheme's investments. In this follow up report we have measured progress towards these targets and while there have been challenges with inconsistent data across Investment Managers, we believe that from the data available the targets set are realistic and that progress has been made towards achieving them.

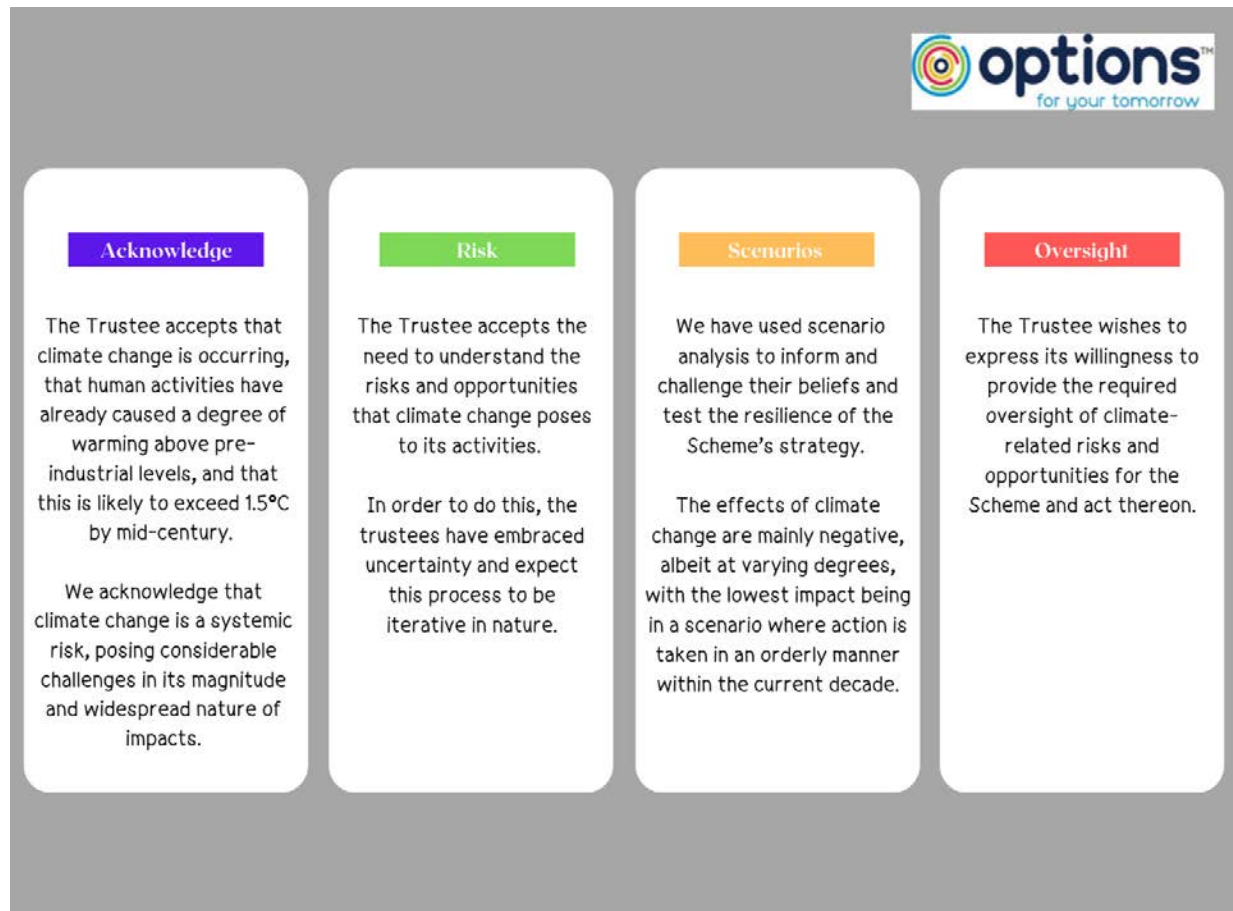
## 2. Governance

As a Trustee, best practice and good governance are at the heart of all we do. As a result, we have approached the issue of climate change and the way we oversee and manage climate risks and opportunities with 100% commitment. This means climate change must become an embedded part of our Scheme-wide beliefs, processes and actions.

### 2.1 Climate beliefs

In conjunction with our Investment Consultant, the Trustee has formulated a set of climate-related beliefs which have been incorporated into the Statement of Investment Principles (SIP).

**Figure 1: Options Climate Beliefs**

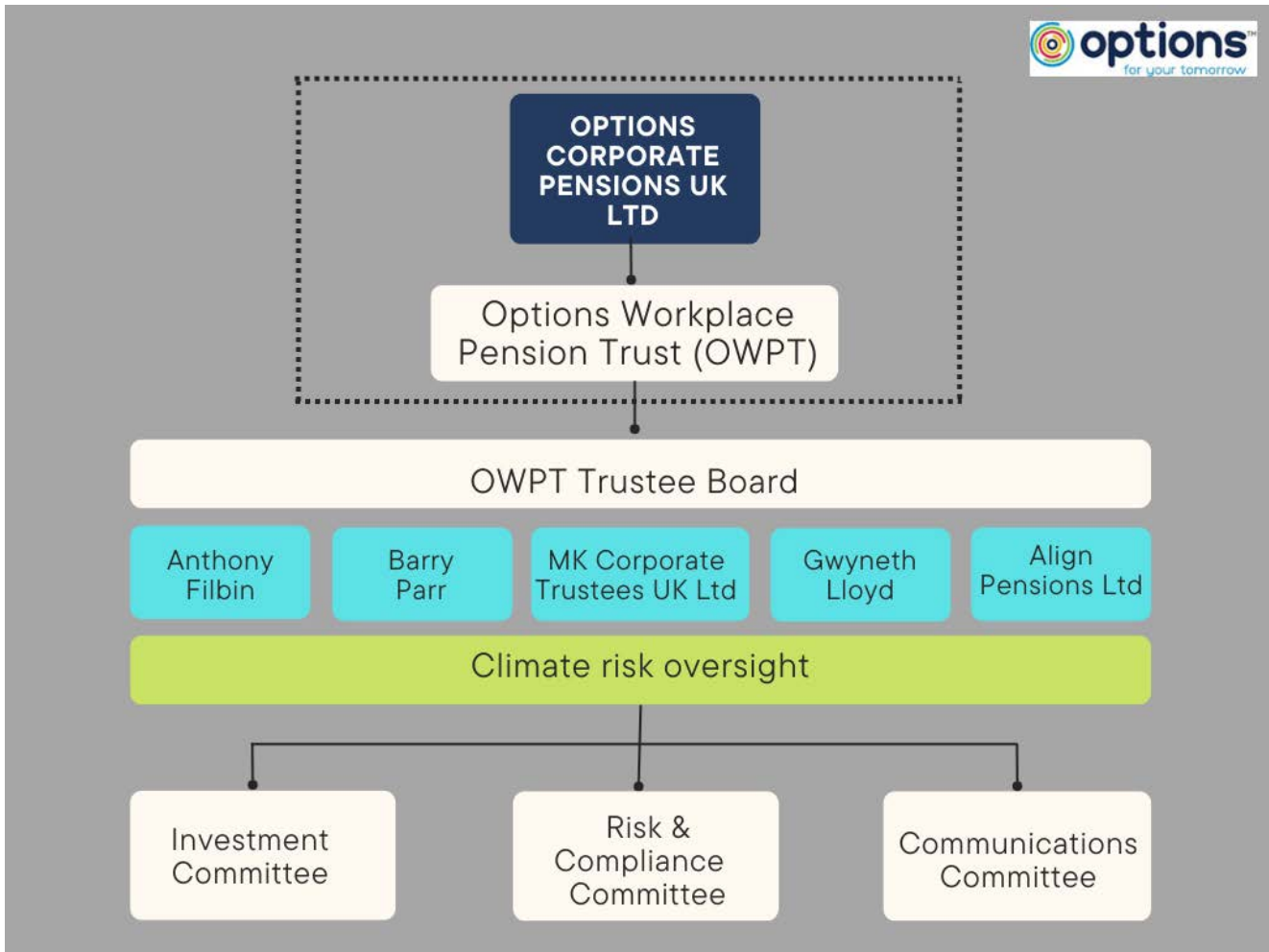


### 2.2 Climate oversight and processes

Options’ Governance structure comprises a Trustee Board represented by Options Trustee Company Limited and an executive sponsor fulfilled by Options Corporate Pensions Limited. Reporting to the Trustee are two Committees with governance responsibilities for the communications and investment elements of the overall Scheme and a newly formed Risk and Compliance Committee.

The Trustee has oversight and responsibility for all matters including climate related risks and opportunities for the Scheme. The following chart sets out the organisational structure with climate-related managerial responsibilities divided between Committees:

Figure 2: Options Organisational Chart



On the **Trustee Board**, MK Corporate Trustees UK Ltd are represented by Paul Webster and Align Pensions Ltd are represented by Bhavna Kumar.

The composition of **Investment Committee** is being finalised at the next meeting scheduled for 3 October 2022, with its objective to facilitate the investment requirements of our members and review the performance of Options investment strategies on a regular basis.

The **Risk & Compliance Committee** is made up of three members, with its main objective to maintain and improve Options risk and compliance processes and policies.

The **Communications Committee** is made up of five members and an additional two from OWPT, with its focus on communications and member engagement.

Figure 3: Log of climate related responsibilities and activity

Governance	Roles & Responsibilities	Activity in 2021 - 22
Options Corporate Pensions UK Ltd (“OCPUK”)	OCPUK are the main funders of the Scheme and have the authority to appoint the OWPT Trustee Board. OCPUK is owned by STM Group Plc, a multi-jurisdictional financial services group listed on the Alternative Investment Market of the London Stock Exchange. STM are the secondary funder.	Activity undertaken in 2021-2022 by OCPUK: <ul style="list-style-type: none"> <li>Initiated board training sessions on the TCFD principles.</li> </ul>
Trustee Board	<p>The Master Trust Trustee Board is responsible for overseeing the governance, regulatory requirements and investment performance of funds held within the Master Trust, and to act in the best interest of all members to determine good member outcomes with regard to retirement benefits.</p> <p>The Trustee Board has ultimate responsibility for ensuring effective governance of climate-related risks and opportunities at the Scheme. The Board meets every quarter and has included climate-related training, best practice, risks and opportunities as a dedicated item at board meetings. Scenario Analysis is expected to be undertaken at least every 3 years with continuing reviews of reports conducted by Investment Managers and Consultants.</p> <p>Any new trustees appointed will be required to complete training on an initial and an ongoing basis.</p>	Activity undertaken in 2021-2022 by the Trustee Board: <ul style="list-style-type: none"> <li>Undertook an earlier, non-regulatory TCFD report which was published in June 2022 to establish and embed climate considerations into governance procedures and to provide a platform for this first regulatory report.</li> <li>Reviewed and approved Option’s climate beliefs.</li> <li>Adopted a target to be net zero on or before 2050 and to halve emissions by 2030.</li> <li>Agreed to a further target of 50% of equity investments in companies with externally-verified net zero targets (with the SBTi or other external verifier).</li> <li>All Trustees received climate training and completed the Governance module of the TCFD Knowledge Hub, as detailed in the <a href="#">Appendix 1</a>.</li> <li>Reviewed and approved changes to the risk register to include specific climate risks</li> <li>Mandated that climate-related issues will be discussed at all Trustee meetings as a top 5 risk.</li> <li><b>Reviewed an updated version of the scenario analysis across the four applicable defaults.</b></li> <li>Assessment made of ESG factors within our investments, particularly climate change, use of resources and risks related to the depreciation of assets through regulatory change.</li> </ul>
Investment Committee	<p>The purpose of the Investment sub-committee is to facilitate the investment requirements of the members and regularly review the performance of the Scheme’s chosen default and self-select funds.</p> <p>The objectives are to:</p> <ul style="list-style-type: none"> <li>Ensure the main Scheme default fund remains the appropriate default for the Scheme’s members;</li> <li>Ensure that the section default funds remain the appropriate default for the Section’s members</li> <li>Set out the aims and objectives in relation to the investments held in both the default strategy for the main Scheme and its sections and also any available self-select funds;</li> <li>Ensure the Statement of Investment Principles is up-to-date and relevant with all details of current investments;</li> <li>Perform a quarterly review of fund performance reports to ensure continual suitability of the default strategies and self-select funds; and</li> <li>Undertake an annual review of all investment options</li> </ul>	Activity undertaken in 2021 – 2022 by the Investment Committee: <ul style="list-style-type: none"> <li>Drafted scheme SIP amendments to include climate risks and opportunities.</li> <li>Provided input into the setting of climate metrics and targets for the scheme.</li> <li>Reviewed the earlier TCFD report.</li> <li>Reviewed investment strategy and resilience in the light of broadened and extended scenario analysis.</li> <li>Analysed and accepted modelled impacts on Options for both risks and returns of two different climate scenarios across the four applicable defaults.</li> <li>Agreed to request further research into real estate investments by investment managers.</li> <li>Requested further information from Investment Managers to ascertain and update proportion invested in companies</li> </ul>

	<p>and the Statement of Investment Principles. Ensure that the ESG and Climate principles and policies of the Board are embedded into Investment Management actions and activities.</p>	<p>with SBTi targets or similar.</p> <ul style="list-style-type: none"> <li>Reviewed Investment Manager arrangements regarding asset rebalancing given potential for increased volatility and believe current arrangements are satisfactory without a formal policy required but needs to be kept under review.</li> <li>Began monitoring exposure to asset classes per default particularly emerging debt – currently with TAM and Blackrock. Falls within standard monitoring and must be kept under review.</li> <li>Considered collecting additional data to measure % invested in Green Revenues .</li> </ul>
<p>Communications Committee</p>	<p>The purpose of the Communications sub-committee is to oversee the development of the communications roadmap.</p> <p>The objectives are to:</p> <ul style="list-style-type: none"> <li>Build and maintain the communication plan and roadmap; and</li> <li>Ensure that all communication and engagement activities are delivered in line with the communication plan.</li> </ul>	<p>Activity undertaken by the Communication Committee in 2021-2022:</p> <ul style="list-style-type: none"> <li><b><i>Delivered the publication to members of the earlier and final TCFD report.</i></b></li> <li>Ensure a member friendly summary of the final TCFD report.</li> <li>Sent a request and reviewed responses for information from service providers on their climate risk disclosures and steps being taken to reduce emissions.</li> </ul>
<p>Risk &amp; Compliance Committee</p>	<p>The purpose of the Risk &amp; Compliance sub-committee is to ensure that risks are updated and made aware with recommendations to the appropriate party, whilst maintaining compliance with regulations.</p> <p>The objectives are to:</p> <ul style="list-style-type: none"> <li>To consider any aspect of the Trustee’s Risk Management Policy, and at least annually review the Risk Register making recommendations to the Trustee Board as appropriate.</li> <li>To commission, receive and consider reports on any key financial, operational and other risk issues</li> <li>To review any points of substance on the adequacy of internal controls raised by the auditors or other professional advisers and make recommendations to the Trustee Board as appropriate</li> <li>Monitor complaints and trends and report findings to the Trustee Board</li> <li>Review all Trustee policies at least annually and make recommendations to the Trustee Board</li> <li>To review and ensure, on behalf of the Trustees, compliance with current data protection legislation</li> <li>To keep a record of and review annually the various policies and processes operated by the Trustees in relation to current data protection legislation, to recommend to the Trustees any necessary changes, and to report on the outcome of the annual reviews to the Trustees</li> <li>To notify the Trustees in the event of any data protection breach, to facilitate as necessary the issue of relevant notices to the Information Commissioners Office and / or members</li> </ul>	<ul style="list-style-type: none"> <li><b><i>Climate related actions to be defined for this committee.</i></b></li> <li><b><i>Make amendments to the risk register to include any new or amended climate related risks, as identified in this TCFD report.</i></b></li> </ul>

Note: actions in bold italics are to be included as agenda items at the next meeting of the relevant governing body.



### 2.3 Role of the Investment Consultant

In recognition of its importance to climate-related issues, Dean Wetton Advisory UK Limited, our Investment Consultant, has been given the following additional climate objectives:

1. Assist or advise the Trustee with its oversight responsibilities relating to climate change risks and opportunities.
2. Deliver training on climate responsibilities, risks and opportunities and assist with any relevant skills gap analysis, where required.
3. Support the Trustee with its strategic and fiduciary responsibility.
4. Assess and monitor the climate competency of Investment Managers as part of their review and selection process.
5. Collaborate with Investment Managers to ensure delivery of Options' targets where relevant.
6. Provide scenario analysis for Options and its default strategies.
7. Provide support in the production of Options TCFD disclosures report.

The integration of climate risks into the Investment Consultant's risk-modelling approach, informed by scenario analysis, is present in the revised Fairway Models.

The Investment Consultant is a signatory to the Principles for Responsible Investment (PRI) and has signed up to the Financial Reporting Council's (FRC) Stewardship Code and has submitted their 2022 report for assessment.

### 2.4 Training

The Trustee and Investment Committee have received training on climate-related issues from their Investment Consultant, DWA, and their partners, Sustain Value as well as other third party climate related training. The Board has completed additional training on the TCFD Knowledge Hub, with the majority of Trustee Directors completing the Governance self-assessment module.

To further show their commitment, the Trustee encourages climate related training and has implemented a logbook to record relevant climate-related content on an ongoing basis. This can be found in Appendix 1. Furthermore an assessment of any skills gap that may exist across the Trustee Board and committees will be considered during the coming year.

### 2.5 Data and information

The Trustee is working with the Scheme's Investment Consultant and Investment Managers to reach a position where they are able to provide reports detailing:

- Quarterly Scope 1 and 2 emission metrics<sup>1</sup> for the portfolio, with previous period change (Scope 3 emissions from year 2 where possible);
- Quarterly carbon intensity metrics for the portfolio, with previous period change;
- A stewardship report produced at least annually detailing the Investment Manager's record for voting and engagement within the portfolio, including information on significant votes made on each equity fund which will include issues such as climate;
- Annual report detailing the portfolio's performance against agreed targets.

The current and expected ability to provide this information varies between Investment Manager. When reviewing and retaining Investment Managers the Trustee considers their ability to support their disclosures as being a significant factor.

### 2.6 Commitments to wider initiatives

Together with our Investment Consultant, the Trustee receives regular updates from the Pensions Climate Risk Industry Group (PCRIG) and is willing to participate in any research and consultations with them or the DWP directly.

With our Investment Consultant, we are engaging with our default Investment Managers on climate reporting and best practice. Blackrock and AB are members of Climate Action 100+. Blackrock and AB are also signatories of the Net Zero Asset Managers Initiative.

<sup>1</sup> A definition of Scope 1, 2, 3 emissions and other terms are available in the [Glossary](#)

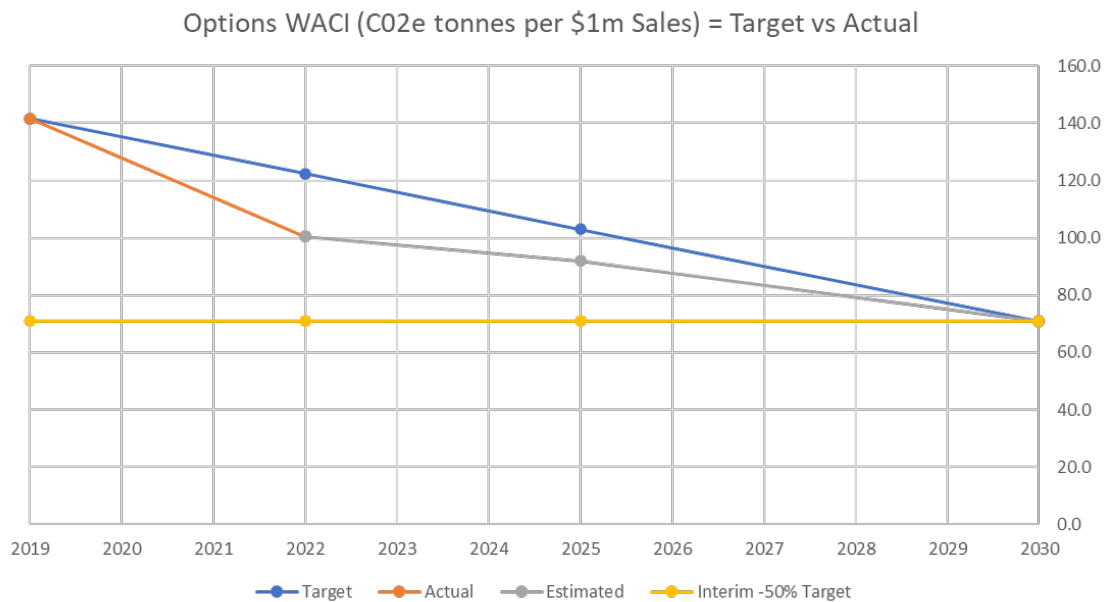
### 3. Strategy

#### 3.1 Introduction

The Trustee will continue to maintain a close relationship with the Investment Managers to monitor that its wishes are being accurately reflected. The Trustee will request updates from Investment Managers to see how the position has improved over time. The Trustee’s early action in reporting in line with the TCFD is a strong indicator of our appetite to understand the climate-related risks and opportunities affecting the investments and to act to embed their potential effects into the Scheme’s investment strategy.

The Trustee believes that the transition to a low carbon economy is vital, and this should be reflected in both its investments and practices. The Trustee is therefore aiming for its investment portfolio be net zero by 2050, with a halving of GHG emissions an interim target by 2030. Good progress has been made towards this target from the scheme’s base year starting end December 2019, with an estimated 29% fall in GHG emissions intensity across the scheme as measured by Weighted Average Carbon Intensity (WACI). We believe that all four considered default Investment Managers have reduced the carbon intensity in terms of investments.

**Figure 4: Progress towards Options net zero target**



The figures used to calculate both the current and historic positions include a number of estimations and assumptions which are covered later in this report. We believe the final figure presents a fair approximation of both the position and direction of travel of the Scheme, although we will update these numbers in future reports as data improves.

#### 3.2 Suitability of current strategy

The Scheme has four defaults strategies that are covered by the requirements of the regulations, which are those that form over 10% of the total assets within the regulatory period. The figures below show the percentage in each of those defaults as at 31st March 2022. Each is well diversified, with a range of both active and passive strategies, and a broad spectrum of asset classes and geographies.

Both the AB TDFs and the Blackrock Lifepath are diversified solution products where members are invested in a single “Target Date Fund” which targets their retirement year. The fund a member is invested in has its asset allocation adjusted as a member approaches retirement age. Both these strategies have ESG integration within the strategy. Blackrock directly controls all the underlying assets, engages directly with companies it holds and has gradually been increasing ESG, and by extension climate integration. AB use a mix of Investment Manager controlled funds where they control voting rights as well as using passive funds from other providers who can offer this service cost effectively. AB consider stewardship an important factor when selecting underlying Investment Managers and are committed to tackling climate change.

Quilter uses active stock selection to build their Lifestyle fund. This is a more bottom up process, giving the Investment Manager significantly greater control over the stocks invested in and allowing for more significant changes in the portfolio to achieve climate goals. Quilter have already begun to produce their own TCFD reporting.

TAM is a fund of funds structure, they consider stewardship as one of their factors in selecting Investment Managers though their mandate does not specifically select funds based on ESG or climate change factors except where it is expected to add value.

When choosing Investment Managers, Options’ Investment Consultants (DWA) use a process that involves assessment of ESG indicators during monitoring and appointment of Investment Managers. DWA has developed their own ESG rating system, looking at the extent to which the Investment Manager considers and integrates ESG and climate factors. The scoring system was set out in the [earlier TCFD report](#) and were integral to the modelling results seen in Sections 5.3 and 6.2. DWA is working actively with fund managers, understanding that this is a new area for the industry and that all businesses are required to make changes.





Asset growth has been significant in recent years, with Scheme assets more than doubling since 2019. When setting targets it is important to consider them from an intensity perspective, as absolute carbon footprint for the scheme is likely to grow as the scheme gets larger simply because they have more assets.

To support this report the Investment Consultant has conducted scenario analysis on each default to assess the likely impact of two climate change scenarios on each of the default funds. As part of their impact analysis they considered both the current asset class composition as well as their expectations for how this may change over time.

We have collated emissions data available from Investment Managers and supplemented this with data from asset class indices where data was unavailable. This has allowed us to estimate both the current scheme position and compare it to the likely metrics of the scheme at the base measurement time of December 2019.

All Investment Managers have made progress towards emission intensity reductions within the defaults and have taken action or announced targets to reduce their own impact as businesses. The table below summarises the progress each Investment Manager is making:

**Figure 5: Suitability of Investment Managers**

Default Name - Investment Manager	Default % of overall scheme at Q1/2022 (based on AUM)	TCFD report published	Net Zero Asset Manager Initiative/ Global Investor Statement on Climate Crisis	Institutional Engagement - Climate Action 100+ member?	Net Zero Target as a Firm?	Climate Transition Plan for Fund range?	GHG Emission Default Reductions Since end Dec 2019 (WACI)	GHG Emissions Trend	Recent progress
TDF Fund Range - Alliance Bernstein	17%	Yes	Yes	Yes	Net Zero Target by 2050	Yes - with details of TDF route to net zero	31%		Recent signatory of Net Zero Asset Managers Initiative plus 2010 and 2021 signatory of Global Investor Statement
Life Path - Black Rock	41%	Yes	Yes	Yes	Net Zero Target by 2050 or sooner	Pledge for 75% of all equity/bond investments to be in SBTi companies by 2030	22%		Public hub with climate research. Recent pledge to align with SBTi
Quilter Carey Lifestyle - Quilter Cheviot	10%	Yes	No	No	Net Zero Target plus reduce GHG emissions by 80% by 2030	Climate Action Plan for investments in development	11%		In dialogue with SBTi to set externally verified targets by 2023
TAM Focused Balanced - TAM	24%	No	No	No	Carbon neutral status announced in May 2022 post indep audit	Not as yet though members can purchase verified carbon offset credits via TAM	40%		Recent client statement issued outlining priorities for compliance with TCFD

### 3.3 Identifying climate-related risks and opportunities

The Trustee has oversight and responsibility for all matters, including climate related risks and opportunities for Options and as such, has taken the following measures:

1. Commissioned its Investment Consultant to conduct scenario analysis in order to identify investment risks and opportunities, and to assess their potential impact on the Scheme.
2. Ensured that all Trustee Directors receive regular training on climate change and TCFD requirements, with the relevant training logs kept updated.
3. Worked to co-ordinate and disseminate climate information and best practice throughout Options.

In sourcing information on climate-related risks and opportunities, the Trustee has used carefully chosen, well respected sources to influence its thinking accepted uncertainty and is expecting this process to be iterative in nature and considered alternative future scenarios to formulate strategy and drawn upon Investment Consultant to inform and direct its understanding.

The Trustee acknowledge that climate change is a systemic risk, posing considerable challenges in its magnitude and widespread nature of impacts. These will consist of both physical and transition risks, with the ones identified as having the potential to have a significant impact on the scheme detailed in the Risk Register.

In order to focus the research, two lists of risks and opportunities were produced during scenario analysis per scenario, using the TCFD template of transition risks divided into the following categories: policy and legal, market and technology, and reputational; with physical risks divided into chronic and acute. This included, for example, an analysis of how a modest carbon tax in a Below 2° C scenario might affect the Scheme. Given the requirements of the TCFD report, Scope 1 and 2 emissions were the focus, but scrutiny of supply chain issues was included in broad terms.

A materiality assessment was then made, with risks graded as unlikely, possible, likely or very likely, and then adjusting for default exposures in asset classes, sectors, and broad geographies, leading to graded results per scenario, with impact scores from 1-3. Two full lists per scenario are available within this report, and the earlier TCFD report with a more limited scope, contains initial lists. The results of what were considered to be material factors were amalgamated and summarised, with their estimated effect and mitigatory policy action. These top six risks and opportunities identified can be seen in Figure 6 below, with all risks and opportunities included within Option's Risk Register, which is reviewed at each committee meeting and Trustee meeting.

In terms of time periods assessed, significant divergence between the length of financial projections and climatic trends can be seen. While climate science provides temperature ranges until 2100 and beyond, the financial predictions of it tend to end in 2050. This is still considerably more forward-looking than is typical for macro-forecasting; traditional economic modelling would tend to describe the next five years as "long term". With this disparity in mind, the approach taken has been to focus the assessment on the period up until 2050 given the importance of reaching net zero by that date, and by which time the majority of funds in the scheme will be required by members. This report has assumed that 0-5 years is short term (2020-2025), and years 5-15 considered medium term. Post 2035 to 2050 (and beyond) is considered to be long term.

### 3.4 Top 6 risks identified

The top six material risks and opportunities have been identified through [scenario analysis section](#) and are listed here, together with our policy response:

Figure 6: The top 6 climate-related investment risks and opportunities

Risk Type	Description	Possible Effect	Short Term Impact	Medium Term Impact	Long Term Impact	Management/Policy Action
Transition opportunity	Companies with stakeholder and staff commitment to net zero should improve corporate productivity and be more attractive investments	Reduces risks of disruptive transition and supports a trend towards Paris aligned companies, as well as improving employee retention and a positive culture, and will be most important in the medium term.	2	3	2	Encourage SBTi progression in equities and corporate bonds – 50% target set by 2025 measurable currently in equities but over time across the Scheme. The Scheme has also set its overall decarbonisation targets to reach net zero by 2050 which will reduce exposure to high carbon investments.
Transition opportunity	Increase in low-carbon energy supplies providing investment opportunities, new markets and energy diversification.	The well capitalised Industrials equity sector, around 10% of MSCI World Index, contains companies focused on delivering technological changes that could deliver strong growth. All defaults have equity as their largest asset class and can therefore benefit. In addition all companies should benefit from diversifying their energy supply, thereby reducing risks and costs over time.	3	3	3	The Trustee is encouraging an increase in exposure to decarbonisation solutions/ green revenues across the Scheme by starting to request this data from Investment Managers.
Transition/physical risk	Increased Emerging Debt risk from dual possibility of increased cumulative climate hazard damage in economies more dependent on physical assets than in G7, as well as countries (China, South Africa, Mexico, Brazil and India) with high fossil fuel reliance under pressure to decarbonise and thus be censured by investors if progress is not made.	Increased risk potentially contained within the Lifepath (BR) and TAM defaults that have current exposure to emerging debt. The medium term time period could potentially suffer from both issues at the same time.	2	3	2	Monitor exposure to all asset classes per default, and particularly emerging debt where used – currently with TAM and Black Rock.
Transition/physical Risk	Lower GDP forecasts from mega trends identified e.g. lower consumption patterns and adaptation requirements	Combination of climate factors could reduce equity returns across all defaults as an overall depressant to economic activity which may become more negative over time.	1	2	3	Lower levels of GDP have been factored into Scheme modelling assumptions, particularly in the long term, though with the understanding that adaptation progress is accelerating that may drive growth and limit negative effects
Physical Risk	Damage to property and infrastructure, particularly in locations of chronic risks e.g. Heat stress or sea-level rise within the Scheme’s investments	The TDF, Lifepath and QC have direct property investments ranging from 3% to 8%. Loss of value, market illiquidity, asset obsolescence are increased risks that are likely to increase over time.	1	2	3	Mapping of physical risks: Request a review of real estate assets by geography across Options

Physical Risk	Increased market volatility from acute extreme weather events in G7 e.g. A Superstorm in the US	Short-term market weakness from acute events causing interruptions in portfolio activity across all defaults and could happen more often over the medium to long term.	1	3	3	Higher levels of equity volatility have been incorporated into risk models for Options to assess the resilience of the scheme's strategy to climate risks
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Note: Impact Levels 1-3 where 3 is highest.

### 3.5 Materiality: impact and opportunities by asset class and on age cohorts

The process started by assessing the effects of the two scenarios provided. In each scenario, the magnitude of the transition and physical risks and potential opportunities were considered. From this, the total effect on the expected risk and returns of each asset class was explored.

The results of the scenario analysis on a systemic basis and for the principal asset classes within the Scheme can be seen in Sections 4.6 and 4.10. Risks and opportunities were given impact scores within different time periods. These results were then factored into existing asset class risk/return assumptions which also informed the potential effect on different age cohorts.

For the Below 2°C scenario, effects across the majority asset allocations of the Scheme, global equities and US Treasuries, were generally fairly modest on a systemic basis, though there are more impacts on a detailed level for equities, as seen in the scenario analysis sections of this report. Property and Infrastructure were also likely to experience some increase in sporadic damage from physical risk factors and ratchet mechanisms to ensure compliance. Emerging markets are likely to be more affected both in terms of risk and returns as the reduction in fossil-fuel demand would hit exporters and physical risks are more concentrated in those areas. Cash remained largely unaffected in this scenario.

For the Current Policies scenario, the magnitude of physical effects is generally greater, particularly in the long term. Property and infrastructure are likely to be the hardest hit as extreme weather events, notably superstorms and extreme heat, put strain on these assets. These will affect asset classes across the board and risk of default and loss of assets or return may mean that developed equity, emerging markets and corporate bonds could all see a significant increase in risk and a drop in returns potential. Government bonds may also see some effects as a flight to safety occurs to US Treasuries and individual country responses become more relevant, with inflation-eroding returns, where supply disruptions from weather and lower productivity, causes scarcity.

These results were then factored into existing asset class risk/return assumptions which also informed the potential effect on different age cohorts. A model constructed by our Investment Consultant that looks across the glide path of the four defaults was used. A detailed analysis of the impact on the different age cohorts in the four defaults is provided in Section 4.7 and Section 4.11.

## 4. Scenario Analysis

### 4.1 Introduction and objective

The purpose of the exercise was to explore what risks and opportunities may be of relevance to the scheme within its current investment activities. The output was a list of risks and opportunities per scenario, together with an examination of how these may affect both risk and returns outcomes for defaults. The results should improve the resilience of the scheme.

### 4.2 Scoping scenario analysis and process

The Options portfolios are well diversified, investing on a global basis in a spread of asset classes, geographies and sectors, where global equities are typically the largest asset class across the Scheme, particularly for younger members. Equity is generally one of the most volatile asset classes, and so as members get older many of the default portfolios reduce the equity content of the portfolios so as to better reflect the reducing risk appetite of members, as members closer to retirement will be less able to wait out any short-term spikes in volatility. This process is known as de-risking.

The scope of the scenario analysis was extended from the early TCFD report and updated to include all asset classes used by the largest defaults in the scheme. Wherever possible, consideration was given to transition and physical factors that could be material to the risk/ return characteristic of asset classes. It is important to note the methods used were exploratory and reliant on emerging data provision and rapidly evolving and regularly revised sources. While the principle of a holistic global view is being followed, it is recognised that Option's key area of exposure from climatic risks on a geographic basis is the US, where the sizable equity exposure, the high and growing level of emissions, together with the considerable physical risks for much of the US combines to be influential. The vast majority of direct investments of the Scheme are contained to within the G7.

A study of risks and opportunities was made during scenario analysis of two scenarios, using the TCFD template of transition risks divided into the following categories: policy and legal, market and technology, and reputational; with physical risks divided into chronic and acute. This included, for example, an analysis of how a modest carbon tax in a Below 2° C scenario might affect the Scheme. Given the requirements of the TCFD report, Scope 1 and 2 emissions were the focus, but scrutiny of supply chain issues was included in broad terms. A materiality assessment was then made, with risks graded by qualitative probability, and then adjusted for default exposures in asset classes, sectors, and broad geographies, leading to results per scenario. The full results lists per scenario can be seen below, together with the possible impact on risks and returns per default.

In terms of time periods assessed, significant divergence between the length of financial projections and climatic trends can be seen. While climate science provides temperature ranges until 2100 and beyond, the financial predictions of it tend to end in 2050. This is still considerably more forward-looking than is typical for macro-forecasting; traditional economic modelling would tend to describe the next five years as "long term". With this disparity in mind, the approach taken has been to focus the assessment on the period up until 2050 given the importance of reaching net zero by that date, and by which time the majority of funds in the scheme will be required by members. This report has assumed that 0-5 years is short term (2020-2025), and years 5-15 considered medium term. Post 2035 to 2050 (and beyond) is considered to be long term.

### 4.3 Scenario selection

A range of scenario sources were assessed and it was concluded that drawing upon The Network for Greening the Financial System's (NGFS) scenario categorisations and details are appropriate, given NGFS's endorsement by the Bank of England, the TCFD, and the DWP: "The Bank [of England] is leading work within the Network for Greening the Financial System (NGFS), a group of international central banks and regulators to develop an analytical framework for assessing climate-related risks. This work will support the development of scenarios that can be used by central banks and regulators who want to size the impact of climate change on their economies. It will look at the different possible outcomes for climate change and the policies to mitigate it, assessing the financial impact and determining the timeframes during which risks could materialise. The Bank will use the NGFS reference scenarios as the basis for those that firms are asked to model in the 2021 climate BES." (Bank of England).

Two contrasting scenarios were used: the 'Below 2°C' scenario from the 'Orderly' category, and the 'Current Policies' scenario from the 'Hot House World' category. All NGFS scenarios use the shared socio-economic pathway of SSP2, described as "middle of the road", which assumes society evolves broadly in line with past trends and global population peaks around 2070. The scenarios that have been used sit on top of this shared socio-economic pathway, the details of which are below.

Under SSP2, the world follows a path in which social, economic and technological trends do not shift markedly from historical patterns. Development and income growth proceeds unevenly, with some countries making relatively good progress while others fall short of expectations. Global and national institutions work towards,

but make slow progress in achieving, sustainable development goals. Environmental systems experience degradation, although there are some improvements and, overall, the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain. Further details of both of the scenarios can be found in the scheme’s [early TCFD report](#).

Several reputable sources were used to update the analysis since the first TCFD report. The State of the Climate 2021, issued by the World Meteorological Organisation, describes the very real changes to the current state of the climate, where climate change is already affecting weather patterns and having damaging effects in several geographic areas, and is incorporated already in the scenarios we have used here. The theme of the most recent publication in 2022 by the IPCC (Working Group II, 2022) is of adaptation, and this and other recent documents provide details on adaptation and resilience that have been considered. In addition, access to resilience related credit is now a feature in the US which accounts for the vast majority of green bond issuance, and in a mature economy with strong cash flows and balance sheets, investing in adaptation and resilience factors is far easier than in many less affluent nations.

Finally, the newest Bank of England Climate Biennial Exploratory Scenario, published at the end of May 2022 has been incorporated, with valuable insights into progress in climate risk analysis within the financial sector, and the readiness of the UK financial system.

The effect of understanding newer sources was more significant for the Below 2° scenario. A new transition risk of key raw material scarcity providing a delay for transport related products in particular was added, and other details were adjusted, with the potential reduction of credit to fossil fuel firms. It was also apparent that lower demand from high income countries is a key part of a Below 2° transition, in the form of reduced consumption driven by reductions in food waste and in consumption of meat products, which may have a modest depressing effect on GDP. However, these should be balanced against more opportunities through adaptation emerging. In any transition scenario, opportunities for new products should continue to evolve, as has been the case to meet new challenges within the dynamic global economy over many decades.

**Figure 7: Summary of the two scenarios selected by Options**

Below 2°C Scenario Summary	Current Policies Scenario Summary
<p>Governments gradually increase the stringency of climate policies, giving a 67% chance of limiting global warming to Below 2°C.</p> <p>This scenario assumes climate policies are introduced immediately and become gradually more stringent though not as tough as in Net-zero 2050. Carbon dioxide removal (CDR) measures are relatively low. Net-zero CO<sub>2</sub> emissions are achieved after 2070. Physical and transition risks are both relatively low.</p>	<p>While many countries have started to introduce climate policies, they are not yet sufficient to achieve official commitments and targets. If no further measures are introduced, 2.7 to 3°C or more of warming could occur by 2100. This would likely result in deteriorating living conditions in many parts of the world and lead to some irreversible impacts like sea-level rise. Physical risks to the economy could result from disruption to ecosystems, health, infrastructure and supply chains.</p>

**4.4 Scenario 1: Below 2°C - Summary**

The key feature of Below 2°C scenarios is a global transition away from fossil fuels and towards less carbon-intensive forms of energy. Transition pathways have been generated by the NGFS from a variety of impact assessment sources. Changes in energy, land use and policy are modelled and their significance for the wider economy have been assessed.

All scenarios achieve mitigation primarily via iterative adjustment of a uniform carbon price across sectors and regions that rises with time. It is logical that carbon prices have been adopted as a proxy for this stringent policy intensity, despite a lack of carbon credits trading in significant volumes currently. Carbon prices are applied to all greenhouse gases. In all models under a Net Zero or Below 2°C scenario, carbon prices range from \$100-200 per tonne by 2030, with prices rising to over \$500 per tonne by 2050 in the most aggressive Net Zero scenarios. However, a milder, Just Below 2°C scenario that we are investigating, could potentially only involve carbon taxes rising from around \$60 initially to \$200 by 2050. More details of this scenario can be found in the [early TCFD report](#).

The spill over effects into the real economy from high carbon prices and other decarbonisation factors could be significant. There are expectations of increased volatility in commodity prices (though little in the way of consensus about price direction), and significant investment flows towards green electricity and storage. In terms of carbon dioxide removal, NGFS is cautious in overall contributions from both increased forest cover and soil sequestration and/or growing crops for bioenergy with carbon capture and storage, noting the



former's timing lag in effectiveness and the latter's technological challenges, though some positive effects are seen towards 2050 in the more ambitious net zero analysis. However, all models used by NGFS expect a sizeable reduction in emissions from agriculture from its current 20% of global GHG emissions, by reversing deforestation, reducing emissions intensity and decreasing overall land used, despite the increase in population during the first half of the century. In terms of industrial sectors, those with higher energy/heat needs would face a more complex risk environment, including potentially more limited corporate credit lines, higher direct and indirect emissions costs, changes in revenue, and required low-carbon investment.

In terms of physical effects, the cumulative warming effects of previous human activity has "locked-in" a certain level of warming, at least for the next fifteen years: In the IPCC report published in August 2021 (IPCC Working group I, August 2021), "Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since the last IPCC update." This would be expected to continue/worsen in the first fifteen years of the scenario.

It is assumed that if emissions targets are met by 2050, and average temperatures are kept beneath 2°, that this scenario might avoid some of the worst climatic effects described in the Current Policies scenario in the long term.

#### 4.5 Below 2°: Full list of risks and opportunities

Lists of risks and opportunities were produced during scenario analysis, using the TCFD template of transition risks divided into the following categories: policy and legal, market and technology, and reputational; with physical risks divided into chronic and acute. This included, for example, an analysis of how a modest carbon tax in a Below 2° C scenario might affect the Scheme. Given the requirements of the TCFD report, Scope 1 and 2 emissions were the focus, but scrutiny of supply chain issues was included in broad terms.

A materiality assessment was then made, with risks graded as unlikely, possible, likely or very likely, and then adjusting for default exposures in asset classes, sectors, and broad geographies, leading to results per scenario. Relevant risks and opportunities identified are summarised, together with an assessment of their estimated effect following scenario analysis, and, where necessary, potential mitigatory policy action.

Figure 8: Below 2° Results - List of Risks and Opportunities

Risk Type	Risks & Opps Identified by Below 2°C Scenario Analysis	Likelihood	Scope of Risk Considered	Estimated Effect on Investment Strategy	Impact Level ST	Impact Level MT	Impact Level LT	Management / Policy Action
Policy & Legal	R: Assessing the link between GDP and equity market returns where transition modestly reduces GDP	Possible	All Asset classes	Limited historic relationship and only modest GDP effects expected, potentially offset by other economic factors	1	1	1	Not required
	R: Higher energy prices: Examining the effect of higher energy prices as a proxy for future carbon prices	Likely	Equities	Potentially a positive effect on returns long term basis given historic relationship with equities, though some inflation may result, with some volatility caused by recession fears. Default exposure in high emitting sectors is less than 10% and expected to fall as the halving of emissions targets progresses.	2	2	1	Higher energy prices may mean that the energy sector, including fossil fuels, may outperform other sectors – Trustee to be aware and discuss with Investment Managers
	R: Countries with a heavy reliance on oil exports will see revenue declines	Likely	Equities	These economies are likely to suffer, but the effect is low as portfolio exposure to all three countries - Saudi Arabia, Russia and UAE combined is less than 1% in MSCI ACWI and not present in the MSCI World Index.	1	1	1	Very small weighting, no action required.

	R: Countries in G20 e.g. South Africa, with high levels of fossil fuel consumption under pressure to decarbonise	Possible	Emerging sovereign debt	As could be seen in first report with CAT source, some G20 countries often classed as emerging debt face significant investment to decarbonise, with a current heavy reliance on coal. COP26 showed a degree of support for India and South Africa from developed countries, but far more is required. In this scenario, some disruption to these economies may be possible should a lack of progress be censured.	2	3	2	Monitor exposure to emerging sovereign debt where used – currently in defaults managed by TAM and Black Rock
	R: Assessing the effect of decarbonisation regulations on equity markets and sectors as a systemic risk	Likely	Developed Equities	Largely neutral on a systemic basis as energy/ utilities weightings are not dominant within global indices though portfolio exposure to high-impact sectors could be negative	1	1	1	No action required
	R: Litigation for past emissions	Possible	Asset class	Some potentially meaningful ongoing climate-related litigation cases, though none expected to have a material financial impact in the short term. If hallmark legal cases against large corporates are successful, particularly those seeking to attribute responsibility for climate-related damages to past emissions, settlements could have a material financial impact on	1	1	2	Low result score, Will be mitigated by good progress towards reducing emissions

				those with long histories of emitting greenhouse gases.				
<b>Market &amp; Technology Shifts</b>	R: Disinvestment in high impact sectors as a portfolio risk	Possible	Equities	Many of the companies within key emissions sectors of energy, materials and utilities comprising approx. 13% of equity World Index and 15% of Bond Index and 13% MSCI emerging markets would be making significant changes to business models in this scenario but it is likely to depress margins and increase internal investment requirements. Paradoxically, investors may support the best in class but there are likely to be some losers in these areas.	2	2	1	Good diversification within equities found. Mitigation taken through scheme emissions reductions target. Monitor exposure to key sectors at next scenario analysis: utilities, materials and energy (note overlap with high impact sectors)
	R: Financial sector: Increased regulation and disclosure of investment activities	Very likely	Asset class and equities	TCFD is well publicised, and larger G7 institutions are making good progress to be compliant, and more recent advances here with SEC adopting TCFD in 2022 reducing risks and continued reassurance with Bank of England report published in May 2022	1	1	1	Increasing confidence that this transition would present lower risks to a global portfolio as G7 financial institutions are actively engaging – no action required
	O: Stakeholder and staff commitment to net zero therefore, improving corporate productivity	Likely	Asset class and equities	Reduces risks of transition and supports a trend towards Paris aligned companies	2	3	2	Encourage SBTi progression in equities and corporate bonds

	R: Whether a modest transition increases G7 sovereign default risk	Unlikely	Debt assets	Defined as low by the Bank of England	1	1	1	Retain majority of sovereign/corporate debt investment horizons within G7, monitor exposure outside
	O: Increase in low - carbon energy supplies	Likely	Equities	Capital goods/industrials sectors for solutions are good sized weightings in equities (circa 10%)	3	3	3	Start collecting data to establish % Scheme in climate solutions
	R: Transition could affect utility and energy access to credit	Possible	Equities and corporate debt	A slower transition could affect some stocks. Utility and energy sectors approx. 11% in global corporate debt index and 8% in MSCI World	3	2	1	Monitor exposures to key sectors particularly in corporate debt positions
	R: Scarcity of transition materials	Likely	All Asset classes esp. equities	Could present a delay, particularly to transport related transition	1	2	2	Monitor the developments via Investment Managers
	O: New market trends in food production	Likely	Asset class and equities	Small sectors currently	1	1	1	No action required
	O: Market shifts to support household efficiency	Likely	Asset class and equities	Transition within products may not have a growth effect	1	2	1	Dialogue with Investment Managers
	O: Land and GHG removals as an investment opportunity	Likely	Asset class and equities	Agriculture 0.3% of MSCI index, negligible at present but may become investable	1	1	2	Low priority: could monitor size of market opportunity annually via Inv Manager meetings
<b>Physical Risks</b>	R: Acute risk events	Possible	Asset class and equities	Due to locked in nature of cumulative warming, disruptive climatic events are likely, but not on a systemic scale, and the rate of	1	2	1	Diversification with emphasis on G7



				deterioration should slow				
	R: Acute risk events	Likely	Equities	Some companies and locations will be exposed, regardless of resilience/adaptation measures	1	2	2	Diversification a good current mitigant. Bottom-up scenario analysis would establish portfolio exposures when available, potentially in next round
	R: Chronic physical risks	Possible	Equities	While some areas of the world experience harmful effects, the G7 is not likely to be systemically affected on a significant basis	1	1	1	Diversification with emphasis on G7
	R: Chronic physical risks	Likely	Equities	ESG/climate-ready companies are likely to work to reduce exposure to vulnerable locations and processes	1	2	2	Ongoing increase in ESG orientation of funds/ investments
<b>Reputation</b>	O: Managing a positive net zero transition as an opportunity	Likely	Developed Equities	Investing in companies managing positive transitions should help to avoid regulatory/litigation risk. More important in the earlier years as will be industry-standard in the second period.	2	2	1	SBTi target set for equities as 50% by 2025
	R: Companies that are acting on climate are under scrutiny as to the merit and ambition of their actions	Possible	Equities	Climate-related controversies can have a significant impact on shareholder confidence. As they often involve some of the largest companies, their impacts can be felt even at a global equity portfolio level.	1	1	2	Target set for SBTi of 50% by 2025 to use this form of external verification as a means of reducing the "greenwashing" risk

*Note: Risk Level: 1-3 where 1 is lowest, R = Risk, O = Opportunity; ST = Short Term, MT = Medium Terms, LT = Long Term*

## 4.6 Below 2° Scenario - Results

The full list of risks above provided factors with which to grade risks and opportunities and their effect on risks and returns per asset class on a short, medium and long term basis. The analysis considers individual asset classes in the light of scenario results, and how our Investment Consultant believes each will be affected in a Below 2° scenario and a Current Policies scenario. Risks and opportunities were graded within three time periods, short (2020-2025), medium (2025-2035) and long term (2035-2050 and beyond). The impact on each default was then assessed taking these scores into consideration, together with the asset allocation of the default, with the current position as well as the figures forecast for 2035 adjusted for age profiles per default as inputs. The written summary of the results is seen in Figure 9 below.

Figure 9: Summary of Default Results for Below 2°

 <p><b>Target Date Fund (TDF)</b></p> <p>Scores were fairly modest across the board, with no maximum grade awarded for any category or time period. In terms of allocation effects global equities and US Treasuries were generally fairly modest on a systemic basis, though there are more impacts on a detailed level for equities. Risks and impacts on return scores are higher in the short and medium term as transition policies and voluntary action gather momentum, but moderate in the longer term as decarbonisation must be well on its way by 2035 to have any prospect of reaching a Below 2° outcome. The higher scores for developed equity, the biggest and increasing asset class, in the short/medium term are the product of both risks and opportunities, where there is likely to be a disparity between companies faring well in the transition, and those who are behind. Property is also likely to experience some increase in sporadic damage from physical risk factors and ratchet mechanisms in this transition scenario to ensure compliance. Corporate bonds have a high weighting initially in this default and risks are higher initially during the peak transition period, but the weighting and the risks moderate as the default age profile decline. As access to credit is vital to companies and therefore high up the chain of priorities for corporates, repayment within developed markets is not seen as a broad asset class risk. The TDF does not use emerging debt as an asset class, but emerging equity is currently 5%, with similar transition exposure to developed equities (see Lifepath default for further detail) and likely to increase by 2035. Impact scores are muted given the relatively low allocations to this area when combined with a starter developed equity (56% v broad average of others of 65%), lower than is typical for Options default equity weightings overall.</p>	<p><b>Lifepath</b> <span style="float: right;"><b>BlackRock</b></span></p> <p>Like the TDF, a Below 2° scenario is relatively benign. Lifepath has a higher overall equity figure of around 75%, which is not anticipated to diverge significantly over time given current age profile forecasts. Within this figure, the largest equity allocation is to a fund that closely tracks the performance of the MSCI World ESG Focus Low Carbon Screened Index, reducing the score attributed to equity risk in the short/medium term which may partially insulate members from the disparity between companies faring well in the transition, and those who are behind. Lifepath has 8.5% in emerging equities. Emerging equity sector exposure to key emissions generating sectors of energy, materials and utilities is at 13% in summer 2022, which is close to developed equity levels. However, emerging sovereign risk is predicted to be higher, as current NDC's will have to be ratcheted up to meet a Below 2° target, with resistance to this potentially causing reluctance to invest, but Lifepath exposure is minimal. Property is also likely to experience some increase in sporadic damage from physical risk and ratchet mechanisms in this transition scenario to ensure compliance, but is a fairly low weight. Emerging market equities, scores consistently across the impact scores, as climate transition and physical risks may feature. For UK gilts, transition risks have been monitored by the Bank of England where it is concluded that systemic risks are relatively low, and are reflected in low scores.</p>
 <p><b>Quilter Carey</b></p> <p>While the 65% portion in developed equities seems similar to the Lifepath and TAM, within this there is a considerably higher than average weighting in UK equities. The top 3 default contributors, according to QC calculated portfolio emissions, namely Anglo American, Shell and BP are all UK listed and make up 50% of total emissions. This largely explains the higher equity WACI as the UK index contains a higher proportion in key emitting sectors of materials, energy and utilities than global equities indices, with potentially higher transition risks attached, but is likely to moderate soon as the fund manager moves to a global strategy in equities for Options. Significant changes in age profile of members are forecast for this default with the average age predicted to rise, and this is likely to lead to increases in cash and bonds via reductions in equity weightings by 2035. In this scenario Treasuries and Gilts are not highly influenced by climate factors, so risks in these areas do not score highly for this default, though the fairly high property allocation of 7%, as well as a small allocation to infrastructure assets will likely prove to contain more climate risks in all time periods than historically. Both of these asset classes are less flexible than some, and are likely to experience some increase in sporadic damage from physical risk factors and ratchet mechanisms to ensure compliance</p>	<p><b>Balanced Managed</b> <span style="float: right;"><b>tam</b> ASSET MANAGEMENT</span></p> <p>The largest equity holding is in the Nomura Global High Conviction fund which is classed as low carbon. At 20% of the default, this brings down equity risk score within this transition scenario. Corporate bonds are predicted to have a high weighting across all time periods, but as access to credit is vital to companies and therefore high up the chain of priorities for corporates, repayment within developed markets is not seen as a broad asset class risk. However, there is a reasonable sized allocation to emerging debt, an asset class not well used for Options. The analysis found a number of physical and transition risks within both scenarios for this asset class. For transition risks, sovereign emerging debt issuers could be affected as their high fossil fuel dependence and risk of delay in decarbonisation may cause disinvestment risks and difficulty in access to credit. This could include South Africa, Mexico and Brazil and currently featuring in the JPM Global Opportunities fund held by TAM for Options. Moreover, in both scenarios, physical risks are a feature of the long term and heightened physical risks in emerging economies more dependent on physical assets, together with lower wealth available for adaptation, means higher risks potentially spilling over into lower returns. These issues explain the high long term risk and return scores seen above despite a low 5% exposure.</p>



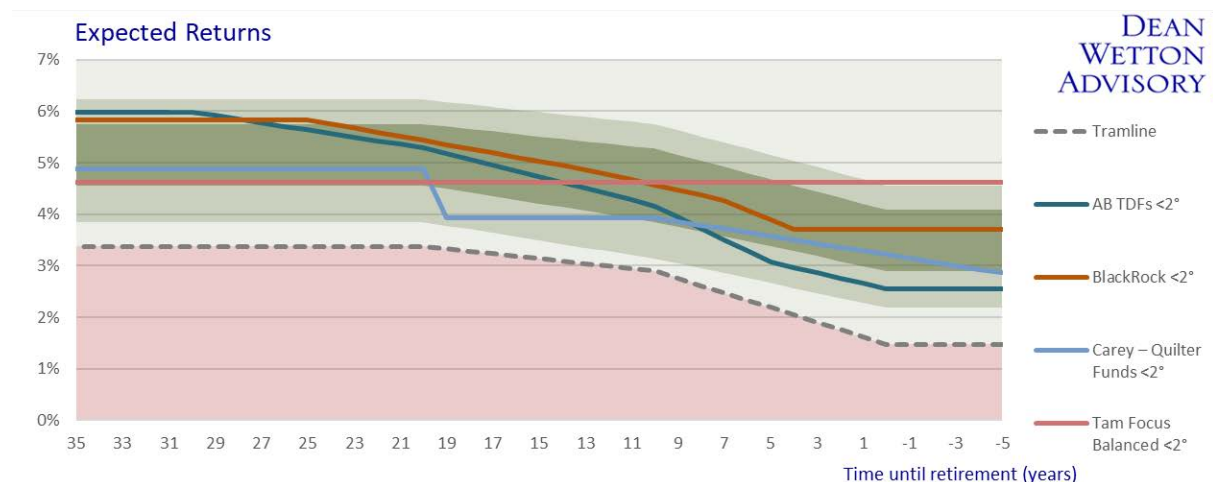
4.7 Below 2°: Expected returns results

For the purposes of considering a changing economic environment in different climate scenarios, adjustments were then made to expected investment returns and expected risk models. Expected return adjustments are based on expected changes in GDP under different scenarios. Base line risk is adjusted, as expected, on a proportionate basis.

Various strategies are considered in terms of the defaults used and the respective underlying asset allocations. Asset classes are adjusted as ages change in the strategy, if expected. Expected investment returns are considered for each asset class and aggregated into an expected return for each year over the life stages of members. Historic investment returns are used to consider the historic risk of the strategy at each point in time. Standard deviation, which indicates volatility, is used as a measure of risk. Historic standard deviation is considered a fair proxy for risk going forward.

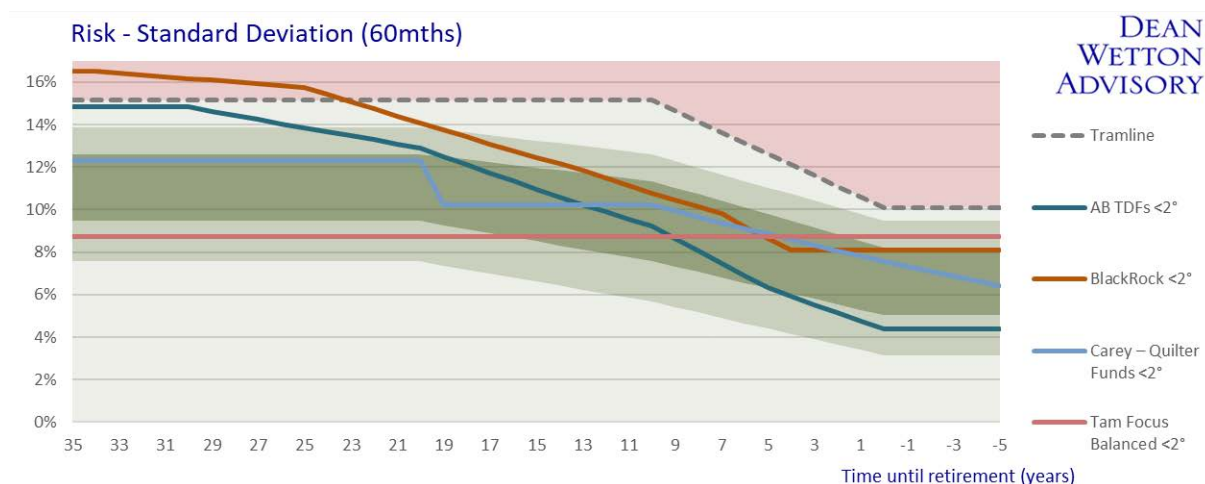
The Fairway charts below look at these metrics across all stages of a default strategy with the X axis showing how far a member is from retirement age and the y axis quantifying the measure at that stage. This allows us to see how older and younger members will be relatively affected.

Figure 10: Below 2° Expected Returns Impact



The Below 2° scenario sees a relatively minor reduction in expected returns across the board over the long term. It is possible in the short to medium time periods that returns may be slightly weaker than what we are used to in a Below 2°C scenario. Significant steps will be required soon to limit temperature rises and these will likely have a negative effect on investment returns, as the increased costs and risks involved in adapting businesses to a low carbon economy will likely result in lower profits and increased business failure. Once these initial transition steps are taken however, we expect a recovery period as businesses adapt and are able to find climate related opportunities. This is expected to be followed by a return to levels more in line with historic averages. Figure 10 only shows the average impact over the 30 year period however this includes the initial transition period, the recovery period and the return to "more normal" market conditions.

Figure 11: Below 2° Risk Impact



In the Below 2°C scenario, we see a relatively benign increase in risk as measured by standard deviation across the board, though this remains within an acceptable range. The standard deviation for the Blackrock funds far from retirement has been pushed into the red area of the fairway chart. This shows that volatility is likely to reach levels that would have been concerning historically. In practice there is little that members will be able to do to avoid these risks as they may be necessary to take on in order to pursue sufficient returns. We will monitor these risks going forwards.

These charts together note younger members are more likely to be significantly affected by climate factors than older members, particularly as it is likely equity markets will bear the brunt of any market impacts resulting from climate change. They further emphasise there is a possibility of increased volatility in the value of the portfolio which can only be partially mitigated by diversification.

#### 4.8 Scenario 2: Current Policies Summary

A significant and unwelcome development in thinking in the last year between NGFS outputs is the realisation that current policies are not sufficient to limit changes in the climate and are now expected to lead to more than 2.5 °C of warming by 2100, and potentially closer to 3 °C. This adjustment is further supported by a recent update of Climate Action Tracker’s research (Climate Action Tracker, May and November 2021). The Climate Action Tracker produces independent scientific analysis that tracks government climate action and measures it against the globally agreed Paris Agreement aim of "holding warming well Below 2°C, and pursuing efforts to limit warming to 1.5°C." A collaboration of two organisations, Climate Analytics and New Climate Institute, the CAT has been providing this independent analysis to policymakers since 2009. CAT quantifies and evaluates climate change mitigation targets, policies and action, and when it shows its country specific assessments, no country’s policies or commitments are classed as sufficient in terms of meeting the 1.5 °C climate goal, with the largest countries in the world being termed ‘insufficient’ or ‘highly insufficient’. Indeed, all of the G7 apart from UK (which is almost sufficient) is said to be in these categories.

In this scenario group of Current Policies/Nationally Determined Contributions (NDCs), NGFS envisages a high level of physical hazards directly attributable to the human induced warming of the planet. While the consortium notes some uncertainty in the temperature response – temperatures are increasing unevenly across the world with land warming faster than oceans and high latitudes experiencing higher warming - the temperature changes will lead to chronic changes in living conditions affecting health, labour productivity, agriculture, ecosystems and sea-level rise, and should be expected. Warming is also changing the frequency and severity of severe weather events such as heatwaves, droughts, wildfires, tropical cyclones and flooding.

NGFS turns to other sources to account for acute risks. In work published in Earth’s Future in 2020, Lange and others projected exposure to extreme climate impact events across six event categories and three spatial scales. They concluded that climate change of 1.2°C has already more than doubled both the global land area and the global population annually exposed to river flood, crop failure, tropical cyclones, wildfire, drought and heatwaves, and is further supported by the recent IPCC update in August 2021. Their work involved estimating the change in population exposed to extreme events depending on the increase in temperature. In a 3 °C scenario, there is an increase of over 15x in the population that may be exposed to acute climate hazards in North America. Furthermore, the exposure of the USA to cyclones is also estimated using the tool CLIMADA, with an increase of 50% compared to today’s monetary damage from storms, and a lesser but still significant 20% increase in Japan. A large fraction of the total damages is caused by very severe events (i.e. those defined as occurring with a likelihood of 1-in-100 years). Further research is being conducted on river flooding

and is yet to be published by NGFS, but 427, the physical climate risk firm, now an affiliate of Moody's Investor Service, has used floods data from Fathom, a flood analytics firm, to estimate exposure in an above 3°C scenario in their Sovereign Risk measurement paper called, "Measuring What Matters: A New Approach to Sovereign Risk", published on their website in December 2020, concluding that, "today, over one-quarter of the world's population, about 2.2 billion people, live in locations that are estimated to experience some level of inundation during a 1-in-100-year flood event. 427 finds that by 2040, the number of people living in areas susceptible to damaging floods could rise to 3.6 billion people or 41% of the global population". This is as a result of fluvial or pluvial flooding (from river or extreme rainfall, not sea level rise).

#### 4.9 Current Policies Scenario: List of Risks and Opportunities

Lists of risks and opportunities were produced during scenario analysis, using the TCFD template of transition risks divided into the following categories: policy and legal, market and technology, and reputational; with physical risks divided into chronic and acute. This included, for example, an analysis of how a modest carbon tax in a Below 2° C scenario might affect the Scheme. Given the requirements of the TCFD report, Scope 1 and 2 emissions were the focus, but scrutiny of supply chain issues was included in broad terms.

A materiality assessment was then made, with risks graded as unlikely, possible, likely or very likely, and then adjusting for default exposures in asset classes, sectors, and broad geographies, leading to results per scenario. Relevant risks and opportunities identified are summarised, together with an assessment of their estimated effect following scenario analysis, and, where necessary, potential mitigatory policy action.

**Figure 12: Full List of Current Policies Risk Impacts on the Scheme**

Risk Type	Risks raised by Current Policies Scenario Analysis	Likelihood	Scope of Risk Considered	Estimated Effect on Investment Strategy	Impact Level ST	Impact Level MT	Impact Level LT	Management/Policy Action
Physical Risks	R: Sustained and longer-term reductions in GDP	Very likely	All Asset Classes	Lower equity returns	1	2	3	Reduced return expectations modelled and incorporated into strategy expectations
	R: Inflation	Likely	All Asset Classes	More challenging business conditions reducing base level returns	1	1	2	Reduced return expectations incorporated into strategy expectations
	R: Increasing business costs from both acute and severe events – inventories, supply chain disruption, shortages, lower productivity	Likely	All Asset Classes, esp. Equities	Lower corporate margins reducing base level returns, potentially within large infrastructure assets eg. Retailers, banks and telecoms/power networks may be affected by acute or chronic risks	1	1	3	Reduced return expectations incorporated into strategy expectations

The Options Workplace Pension Trust  
TCFD Report - Integrating Climate Risk

	R: Sectors within corporate bonds and equities reliant on physical assets that would be directly affected by physical risks	Likely	Equities and bonds	Equity and bond indices have surprisingly low exposure to these sectors reliant on physical assets than typical land use (eg agriculture is 0.03% of the global equity index versus 75% of UK land). TCFD defined sectors reliant on physical assets including tourism, mining, infrastructure, timber, agriculture and tourism comprised 15% of the World Equity Index where energy was a significant component, already a target of reductions through the scheme emissions reduction target	1	1	2	Scenario analysis conducted every three years should assess exposure to these sectors at an index level within asset class assessment.
	R: Damage to property, particularly in location of severe rainfall or sea-level rise	Very likely	Real Estate and Equities	Loss of value, market illiquidity, asset obsolescence	1	2	3	Request mapping of physical risks with focus on extreme rainfall, heat stress and sea-level rise. Review of real estate assets by geography across Scheme, particularly US investments
	R: Increased volatility	Very likely	Equities	If a forced seller, could be detrimental to outcomes	1	2	3	Model increased volatility in equities
	R: Superstorms in G7 causing systemic damage	Possible	Equities	Short term volatility	1	2	2	Volatility forecasts adjusted
	R: Increased credit risk for emerging sovereigns from cumulative climate hazard damage	Very likely	Emerging Debt	Two defaults (BR, TAM) use this asset class, with one up to 5% - material loss possible if exposure sustained	1	2	3	Ongoing monitoring of Inv Manager inclusion of this asset class
<b>Policy &amp; Legal Risks</b>	R: Rising Geopolitical tensions as divergence of climate impacts becomes clearer and current policy positions are exposed as insufficient	Possible	All asset classes	Market volatility	1	2	2	Volatility forecasts adjusted

# The Options Workplace Pension Trust

## TCFD Report - Integrating Climate Risk

	R: Legal challenges to unsatisfactory governmental action that don't meet net zero	Likely	Government debt	Recent successful case in UK had no effect on yields	1	1	2	No action required
	R: Litigation against fossil fuel companies for their part in climate change	Possible	Fossil fuel companies	Action unlikely to cause a systemic problem, as previous successful litigation on environment pollution has not	0	1	1	Ongoing reduction in GHG emissions intensity of scheme reduces exposure to high emitters
<b>Market &amp; Technology Shifts - Opportunities</b>	O: Professional services increasing with climate resilience a vital business function	Likely	Equities	Commercial and professional are currently approx. 2% of MSCI Index, therefore investable	1	1	1	Explore ideas with Investment Managers but low priority
	O: Adaptation Products growth - property flood resilience, heat amelioration, reduced water use technologies	Likely	Equities	Mixed sectoral positions but likely to be in capital goods (6% of index)	1	2	2	Explore idea with Investment Managers
	R: Reduction in reliance on natural gas	Possible	Equities	Mature renewable energy technologies benefit. However, investment in individual stocks needs to be weighed against failed investments – companies are likely to have both within their operations. Risk/opp covered in low energy supplies	1	2	2	Dialogue with Investment Managers
	O: Increase in services nature of economy	Likely	Equities	Eco shifts in travel and leisure spend	1	2	2	Low priority – could find new ways of monitoring services/manufacturing balance in funds
<b>Market &amp; Technology Shifts - Risks</b>	R: Failure of immature technologies like green hydrogen	Possible	Equities	Potential losses but typically small firms that aren't currently in Indices/within large conglomerates	1	1	1	No action required
	R: New markets failure – natural GHG captures, new low carbon	Possible	Equities	Negligible exposure to land use type changes e.g. agriculture 0.03% of index	1	1	1	No action required
<b>Reputation - risks</b>	R: TCFD compliance as a risk to investors?	Unlikely	Asset class/Equities	No impact if investments are compliant	1	1	1	Support TCFD process

# The Options Workplace Pension Trust

## TCFD Report - Integrating Climate Risk

	R: Risk of loss of trust in management for slow transition as even in this scenario, consumers will care	Likely	Equities	General productivity declines	1	1	2	Difficult to mitigate against as a potential global trend, though further transition to higher ESG funds proportion may offset.
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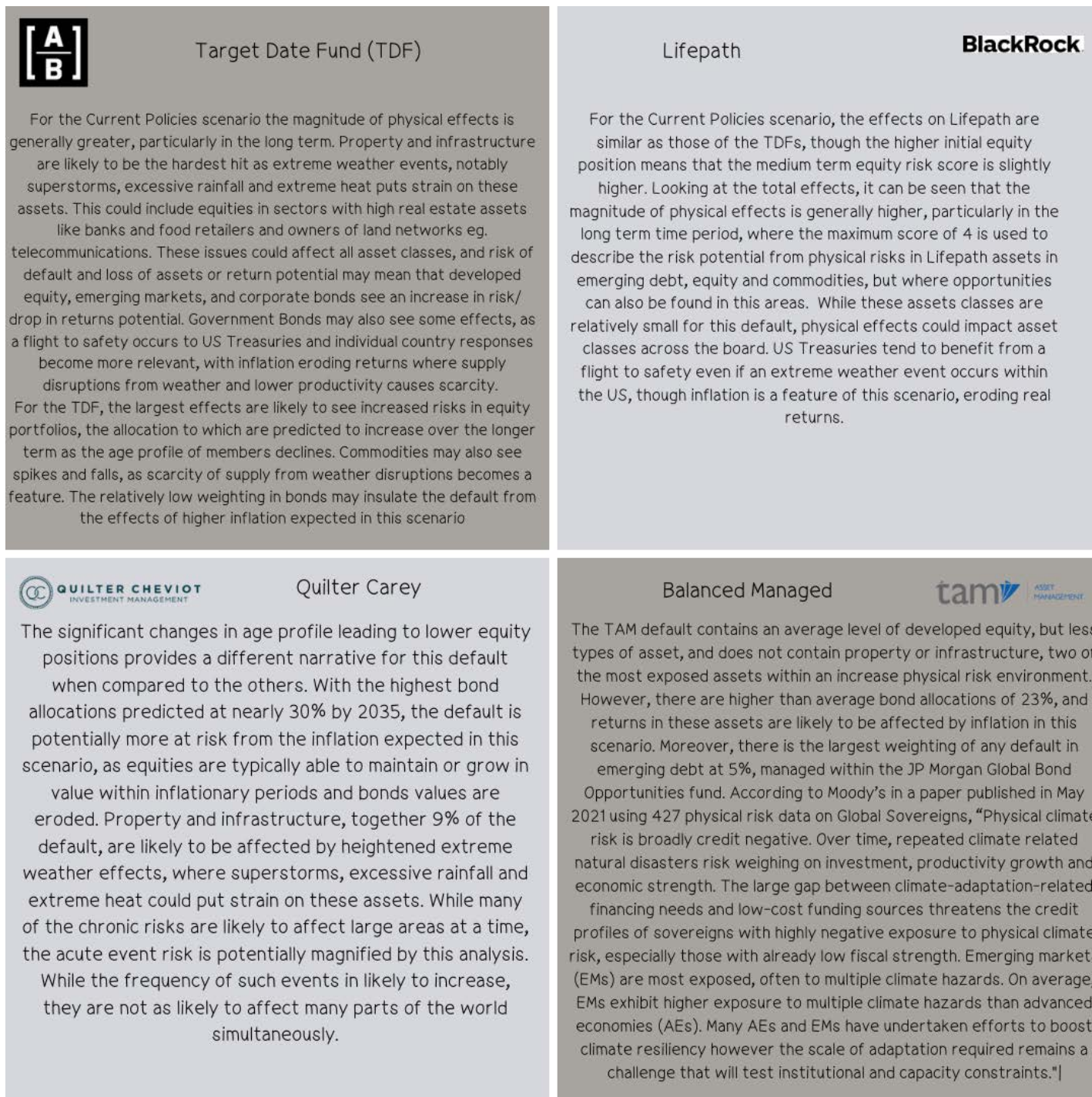
Note: Impact Levels 1-3 where 3 is highest. R = Risk, O = Opportunity; ST = Short Term, MT = Medium Terms, LT = Long Term

### 4.10 Current Policies: Scenario Results

The full list of risks provided factors with which to grade risks and opportunities and then their effect on risks and returns per asset class on a short, medium and long term basis. This was then assessed against the asset allocations weightings of each default that was greater than 10% of the assets of the total scheme as at end March 2022, in accordance with DWP stipulations, the results of which are seen below per default.

The process started by considering individual asset classes in the light of scenario results, and how our investment advisor believes each will be affected in a Below 2° scenario and the Current Policies scenario. Risks and opportunities were graded within three time periods, short (2020-2025), medium (2025-2035) and long term (2035-2050 and beyond). The impact on each default was then assessed taking these scores into consideration, together with the asset allocation of the default, with the current position as well as the figures forecast for 2035 adjusted for age profiles per default as inputs. The written summary of the results is seen below:

Figure 13: Summary of Default Results for Current Policies

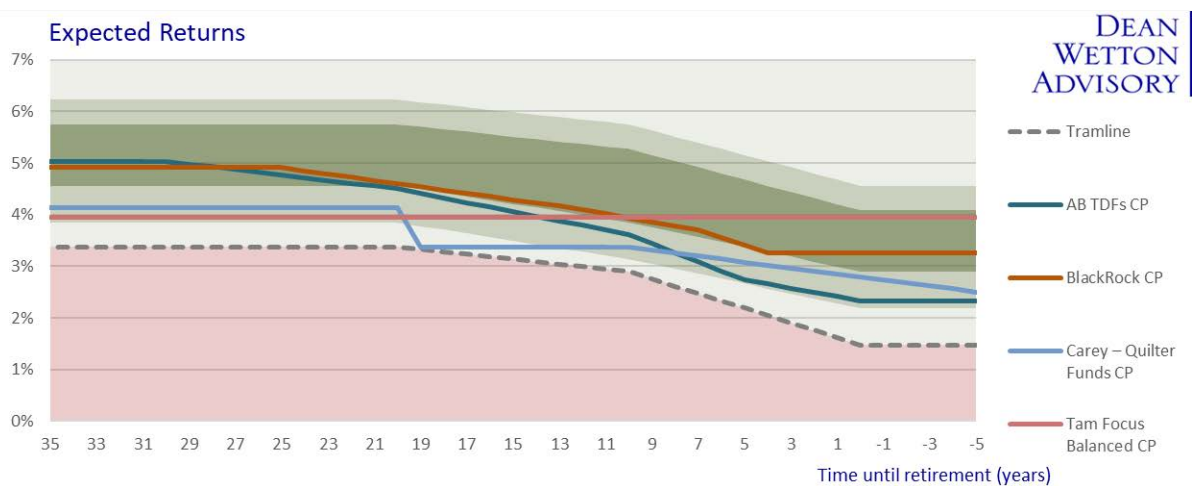


4.11 Current Policies: Expected Returns results

For the purposes of considering a changing economic environment in different climate scenarios, adjustments were then made to expected investment returns and expected risk models. Expected return adjustments are based on expected changes in GDP under different scenarios. Base line risk is adjusted, as expected, on a proportionate basis.

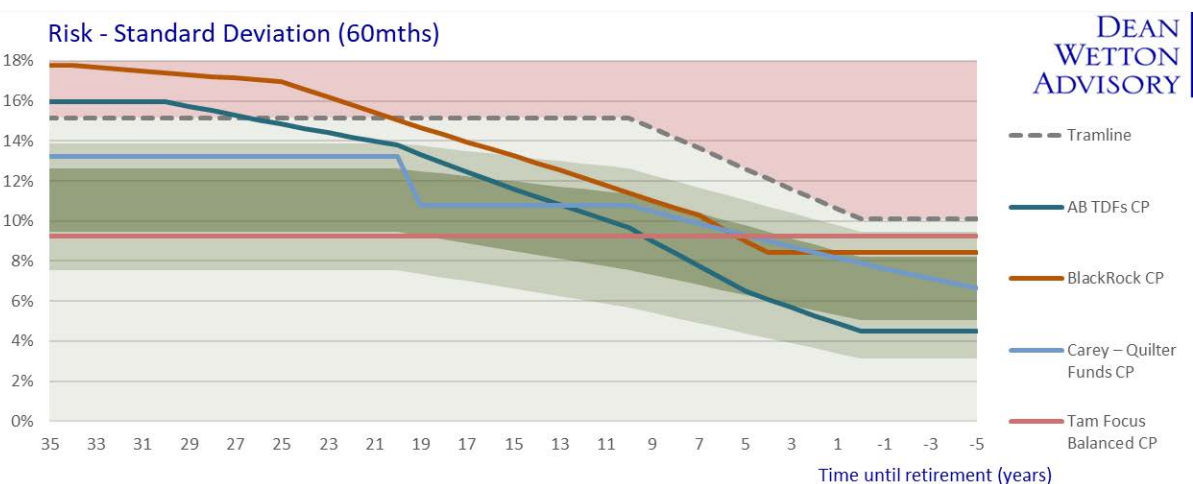
Various strategies are considered in terms of the defaults used and the respective underlying asset allocations. Asset classes are adjusted as ages change in the strategy, if expected. Expected investment returns are considered for each asset class and aggregated into an expected return for each year over the life stages of members. Historic investment returns are used to consider the historic risk of the strategy at each point in time. Standard deviation, which indicates volatility, is used as a measure of risk. Historic standard deviation is considered a fair proxy for risk going forward.

Figure 14: Current Policies Expected Returns Impact



In the Current Policies scenario we expect returns to continue at normal levels in the short to medium term. The increased damage done by climate change as a result of no significant action being taken against climate change will negatively affect growth potential over the long term and beyond. This will have a greater overall negative effect compared to the Below 2°C scenario over the 30-year period considered. Figure 7 shows the average impact over the 30 years, including the initial benign period with worsening conditions as the impact becomes more extreme, though we expect some adaptation.

Figure 15: Current Policies Risk Impact



These charts together note younger members are more likely to be significantly affected by climate factors than older members, particularly as it is likely equity markets will bear the brunt of any market impacts resulting from climate change. They further emphasise there is a risk of large drops in the value of the portfolio which can only be partially mitigated by diversification.



There is a more significant increase in risk, particularly where equity content is highest in the Current Policies scenario. Younger cohorts will have longer investment horizons, so may be able to withstand more short-term decreases in value, but the increased risk potential could be significant, as it notably strays into the red area for two of the defaults. As portfolios are already well diversified and members will still require returns and can little afford to sacrifice this far from retirement.

### 4.12 Implications of Scenario Analysis on Scheme Resilience

Further to the scenario analysis undertaken, and risks and opportunities identified by that process, the Trustee has assessed the current strategy for climate resilience:

- Diversification by asset class and sector is valuable in a climate context, and the scheme is well diversified, using four Investment Managers (with more managing underlying funds) and a spread of assets across geographies and sectors.
- The defaults reviewed by scenario analysis have low exposures to the more vulnerable asset classes to physical risks, emerging debt and infrastructure, at just 1.3% of the scheme in those areas. The Trustee will continue to monitor asset class exposure on an ongoing basis.
- The Trustee has decided to request further details of real estate exposure, seen as the least adaptable area for physical risks, but is a relatively small part of the total, at 3.2% (though 7% in the Quilter Carey default).
- The majority investment area is in the G7 where the US is predicted to be significantly affected by physical risks. The TCFD framework being implemented across the G7 provides a level of understanding, readiness and adaptation measures already underway. In terms of mitigation, the US has a huge land physical mass and vast human resources and wealth to assist in transition efforts.
- Rapid increases in SBTi target adoption are occurring in listed companies across sectors, now approximately a third of the market capitalisation of the MSCI Index. These voluntary commitments are driving change and reducing emissions on a global basis. The Trustee is also starting to collect data on the proportion of investment in climate/green solutions in order to assist in accelerating broader change.
- The risk/return models run by the Investment consultant were conducted on a per scenario basis for each default, the details of which are contained in the scenario results sections. These initial efforts to quantify the effects of climate change have assisted in the strategic review of the scheme in the light of scenario analysis. Findings suggest that asset allocation is a more significant factor in investment performance than climate risks and opportunities although there are more significant effects in the Current Policies scenario.
- Setting an interim scheme target for halving emissions should also work to reduce transition risks across all defaults. Since our base year our current estimate of Scheme emissions intensity is a decline of 29% and the strategic review suggests we are on course to halve emissions intensity by 2030.

### 4.13 Limitations and data gaps

The application of climate scenario analysis to a series of investment portfolios is a new practice and, as a result, there will be data gaps throughout the process. As discussed elsewhere we were not able to collect full climate metrics for all Investment Managers, with TAM in particular unable to provide high coverage. In addition, we do not have clear foresight as to how they strategies are likely to change and adapt over time. There is therefore a fair degree of estimation within all of these predictions before we even consider limitations of the model. Please see the [appendix](#) on metrics and targets for more detailed information of data gaps.

The extent of physical risk impacts on economic indicators and geographical mapping of physical risks is not well understood and may be exaggerated in the Current Policies scenario. NGFS is gradually increasing its coverage of acute and chronic risks so it should be expected GDP assumptions will change as these assessments make the scenarios more specific. It should also be possible to map physical risks on a bottom-up equity basis throughout portfolios in the future, but data across the scheme was not available for this report.

Another scenario could be included in future scenario analyses, though it was thought to add too much complexity at this early stage of such reporting.

## 5. Risk Management

This section explains the process and policy response of the Scheme for managing and mitigating climate-related risks, and the integration of climate into the Scheme's existing risk management approach.

### 5.1 Climate Risk Processes

The Trustee commissioned its Investment Consultants (DWA) to conduct scenario analysis in order to identify investment risks and opportunities, and to assess their potential impact on the Scheme, which involved collaboration with its Investment Managers. In addition, DWA was assisted by Sustain Value, a sustainability consultancy with experience of assessing environmental factors including climate change related risks and opportunities. A systemic assessment was made of transition and physical risks in relation to the Scheme, using the TCFD template of transition risks divided into the following categories: policy and legal, market and technology, and reputational; with physical risks divided into chronic and acute. This included, for example, an analysis of how a modest carbon tax in a Below 2° C scenario might affect the Scheme. Given the requirements of the TCFD report, Scope 1 and 2 emissions were the focus, but scrutiny of supply chain issues was included in broad terms. A materiality assessment was then made, with risks graded as possible, likely or very likely, and then adjusting for default exposures in asset classes, sectors, and broad geographies, leading to results per scenario. Two results lists per scenario can be seen in this report, containing all relevant risks and opportunities. The top 6 most significant risks and opportunities were amalgamated and the mitigating action taken is listed in the strategy section of the report, and also features in the risk register below.

This report has extended and updated the scenario analysis, with scenario analysis reviews taking place every three years thereafter, in line with the new TCFD requirements for pension funds. In addition to the scenario analysis which focused on investment-related risks and opportunities, climate-related risks and opportunities extending beyond the investment level have been considered and assigned management responsibilities as part of the TCFD process. This table has been updated since the first TCFD report in the light of the broader findings.

Where required actions and targets have been set, progress will be monitored via the appointed committee and overseen by the Trustee Board. A full risk review is conducted annually and scenario analysis will be done every three years, in line with DWP guidance.

### 5.2 Managing Climate Risks

Figure 16 below sets out how the Trustee intends to manage Climate Risks and Opportunities that have been identified, updated following extended scenario analysis and for management action following the first report. While management responsibilities have been assigned, it is important to note that ultimate responsibility remains with the Trustee. Risks have been scored in accordance with existing risk management framework used by the Trustee, which is shown after the risk table:

Figure 16: Climate related risk factors in the Options Risk Register

Trust	Ref	Risk Category	Gross Risk Score				Current Status Risk Score			Additional Mitigation Plans	Responsibility
			Risk	Probability	Impact	Gross Risk Score	Current Controls	Robustness Score	Residual Risk Score		
OWP T	46	Strategic	Impact on investments from an ESG factor	3	3	9	Assessment made of ESG factors within our investments and particularly climate change, use of resources and risks related to the depreciation of assets through regulatory change (e.g stranded assets). Investment portfolio adjusted accordingly.	2	7	Member views also to be considered	Trustee / Investment Manager
OWP T	49	Regulatory	Increased regulation and disclosure of investment activities	2	3	6	Early adoption of TCFD for Scheme, regular commissioning of scenario analysis and clear communications planned	4	2	Progress reviewed at all board and ISC meetings	Communications Committee/ Investment Committee
OWP T	52	Operational	Risk of loss of trust and confidence in Scheme if net zero not addressed	3	2	6	Net zero Scheme targets set – see <a href="#">metrics &amp; targets section</a>	4	2	Monitor progress towards targets	Investment Committee
OWP T	53	Financial	Ensure-transition and physical risks affecting Scheme	3	3	9	The TCFD process aims to ensure that transition and physical risks are embedded into the processes of the Trustee, consultants and investment managers	4	5	Ongoing monitoring of process by managers and consultants to	Investment Committee

Trust	Ref	Risk Category	Gross Risk Score			Current Status Risk Score			Additional Mitigation Plans	Responsibility	
			Risk	Probability	Impact	Gross Risk Score	Current Controls	Robustness Score			Residual Risk Score
			investments are managed				Specific transition and physical risks added in their own right to the risk register, as seen in this table The Scheme SIP amended to include climate risks			utilise information about climate risk	
OWP T	54	Financial	Increased volatility from extreme events in G7	3	3	9	Higher drawdown risk: scheme models incorporated higher risk profiles of assets from scenario analysis	3	6	Continue to review modelling outputs as risks are updated and enhanced	Investment Committee
OWP T	55	Financial	Lower GDP forecasts reducing overall scheme returns	3	3	9	Little mitigation possible; acceptance of risk, though recent sources on adaption provide more reassurance of effects within the G7 leading to increase in robustness score	2	7	Continue to monitor and manage risks and opportunities from climate change	Investment Committee

Trust	Ref	Risk Category	Gross Risk Score				Current Status Risk Score			Additional Mitigation Plans	Responsibility
			Risk	Probability	Impact	Gross Risk Score	Current Controls	Robustness Score	Residual Risk Score		
OWP T	56	Financial	Damage to property or infrastructure assets invested within portfolio, leading to loss of value, market illiquidity, asset obsolescence	3	3	9	Portfolio diversification	4	5	Mitigation action: request mapping/ review of real estate investments	Investment Committee
OWP T	57	Financial	Exposure to asset classes with transition and physical risks	2	3	6	Monitoring exposures to asset classes highlighted in scenario analysis (data not available to monitor at sector level across all defaults) this is less effective so robustness score reduced	2	4	Regular reviews expected, diversification by manager, geography, and asset class key ongoing mitigation	Investment Committee
OWP T	58	Financial Opportunity	Further opportunity to invest in low carbon energy supplies	3	3	9	Start to collect Green Revenue data	4	5	Consider additional targets once data has been collected, particularly in equities	Investment Committee

Trust	Ref	Risk Category	Gross Risk Score				Current Status Risk Score			Additional Mitigation Plans	Responsibility
			Risk	Probability	Impact	Gross Risk Score	Current Controls	Robustness Score	Residual Risk Score		
OWP T	60	Strategic Opportunity	Increase Investment in companies working towards net zero which should attract and retain employees and improve workforce productivity	3	3	9	Information request sent to fund managers to ascertain proportion invested in companies with SBTi targets or similar	4	5	Continue to monitor progress towards 50% by 2025 target	Investment Committee
OWP T	61	Operational	Ensuring resilience to severe weather on an operational level including sponsor	2	2	4	As the Trustee is a virtual entity the risks are diversified, but pension administrator office remains a risk	2	2	Request BCP plan from Administrator	Communications Committee/ Administrator (Operations)
OWP T	62	Operational	Improving transition resilience in supply chain	2	2	4	Options has already requested climate related information from all of its fund managers so is contributing to improving climate awareness in this area	2	2	Options will request information about their steps to reduce emissions from all professional advisors	Communications Committee

**Notes to the Risk Register:**

The impact and probability of a risk materialising is first assessed on a gross basis (i.e. without consideration of the controls in place within the business) using the criteria outlined below:

**Weightings for Probability**

There is either a low or no likelihood of the risk materialising.

There is a likelihood that within the next 5 years the risk will materialise

There is a likelihood that within the next 2 years this risk will materialise

There is a likelihood that within the next 12 months this risk will materialise

Exposure to this risk has already been seen.

**Weightings for Impact**

If this event happened there is no significant risk to the business.

This event happening would be unwelcome but not business threatening

This event happening would impact the business and would likely cause either a loss of a client and/or impact profitability

This event happening would significantly impact the business and possibly threaten the ongoing ability for the business to continue trading

This event happening would lead to the business having to stop operations and possibly lead to closure. These two scores are multiplied together to provide a **gross risk score**.

The next step is to take into consideration the robustness of the management controls that have been established by the firm using the criteria noted below:

**Robustness Score**

No controls in place

Limited controls in place, the effectiveness of which have never been tested or reviewed. Number of weaknesses/issues already identified.

Some controls in place, the effectiveness of which have never been tested or reviewed. Limited number of weaknesses/issues identified.

Controls in place, the effectiveness of which were tested over a year ago and no or minimal improvements identified. Limited number of weaknesses/issues identified.

Strong controls in place which have been tested within the last 12 months and no or minimal improvements identified. No weaknesses/issues identified.

The robustness score is then subtracted from the gross risk score to provide a residual risk score. This score helps to identify any weaknesses in the firm's management controls and drives any further action or monitoring requirements.

**Risk Rating Key**



0 – 6



7 – 12



13 – 25

### 5.3 Integration with Other Investment Risks

The Fairway Model is used to consider risk over a member's journey and results of this can be found in the [scenario section](#). This is a valuable means of integrating climate risks into the existing risk management processes of the Scheme.

Analysis was conducted in the [earlier TCFD Report](#) to include details on asset allocation and mandates as well as Investment Manager selection, review and monitoring.



## 6. Engagement

The Trustee has undertaken to engage with Investment Managers, predominantly through our Investment Consultant, to encourage better disclosure and practices related to climate-related risks and opportunities. The Trustee recognises engagement is often far more effective than divestment when dealing with issuers with poor climate practices. As such, while limited in their ability to take direct action with issuers, the Trustee selects and retains Investment Managers who value engagement and stewardship.

### 6.1 Current engagement processes

The Trustee has made its beliefs on climate issues clear by updating the SIP to include specific climate-related disclosures. Working with our Investment Consultant, these are communicated to all default Investment Managers.

All investments are held through pooled funds where the Trustee does not have direct control over their voting rights and similarly does not have any direct engagement with issuers. In order to ensure the Trustee's views (including those linked to climate risk and opportunities) are reflected accurately in the investments, the Trustee considers the stewardship practices of its Investment Managers as part of the selection and retention process.

The Trustee reviews all default Investment Managers' stewardship policies with the Scheme's Investment Consultant on at least an annual basis. This includes collecting information on voting behaviour including a list of significant votes. The Trustee reviews these to confirm voting is broadly in line with its own beliefs.

The Trustee also periodically invites Investment Managers to give presentations. This provides the Trustee with an opportunity to challenge their managing of climate related risks and engagement processes. One recent example is that, following analysis of the potentially excessive risk exposure to carbon-based revenue within the TDF, AB has implemented a tilt of the strategy away from stocks that are directly and indirectly carbon centric. This reduction is achieved with the use of a low-carbon index strategy. AB believes the market may be under-pricing the risk associated with high-intensity carbon companies and has chosen to implement the carbon intensity reduction slowly to avoid the high risk of tactically timing what is a long-term market structural change. The Trustee has engaged with all of Investment Managers on reporting requirements, and is working with them to close data gaps.

### 6.2 Voting activity

As part of the Implementation Statement, the Trustee collects information on the voting behaviour of the Investment Managers, including a list of most significant votes taken. This gives the Trustee a means to confirm whether their beliefs are being followed in practice. The details of the Implementation Statement can be found at [Workplace Pension Master Trust - Trustees | Options Pensions](#).

A number of examples of how the Options Investment Managers have engaged and voted on climate related issues is provided below:

**Figure 17: Climate engagement examples**

AB Engagement Examples*	Black Rock Engagement Examples
<p>Engagement with: <b>ESKOM</b></p> <p>AB joined the CA100+ engagement as co-lead of the investor cohort. This enabled AB to address concerns regarding the company's climate strategy. An ongoing dialogue has been established, yielding several positive results such as the retiring of 30% of coal plants by 2031 and launching a net-zero commitment. This engagement will continue as Eskom continues its transition.</p> <p>Engagement with: <b>SASOL</b></p> <p>AB and other CA100+ investors remained concerned about the company's decarbonisation</p>	<p>Engagement with: <b>ABB</b></p> <p>A resolution to re-elect the Board Chairman was voted against for not meeting expectations of having adequate climate risk disclosures against all 4 pillars of TCFD guidance.</p> <p>Engagement with: <b>Airbus SE</b></p> <p>A resolution to re-elect the Non-Executive Director was voted against. The company did not meet expectations of having adequate sustainability disclosures using SASB-aligned reporting and also did not meet expectations of having adequate</p>

plans, escalating the discussion to Sasol's Board. Later that month, the company released robust plans outlining its net-zero 2050 commitment and other climate related objectives and plans. A nonbinding climate transition plan resolution was then approved by 96% of shareholders.

climate risk disclosures against all 4 pillars of TCFD guidance.

Engagement with: **General Electric**

A proposal to report on meeting the criteria of the net-zero indicator was voted for. The company's efforts to date were recognised and supporting this proposal may accelerate the company's progress on climate risk management and/or oversight.

**TAM Engagement Examples\***

Engagement with: **Barclays**

A shareholder resolution was proposed, requesting the company to set short, medium, and long-term targets to phase out the provision of financial services to fossil fuel projects and companies, following a timeline aligned with the Paris Agreement. This was voted against as it was too prescriptive. Barclays has already announced its approach to addressing climate change, including a net-zero target of 2050. Additionally, there is a commitment to align its entire financing portfolio to the goals of the Paris Agreement.

Engagement with: **Royal Dutch Shell**

The Board of Shell filed a management proposal on climate to seek shareholder approval for its energy transition strategy. This was voted for to acknowledge Shell's commitment to transparency and accountability on climate issues.

Engagement with: **Rio Tinto**

A resolution to re-elect the sustainability committee chair was up for review. This was voted against, due to accountability on the Board and prior events which led to scrutiny of the governance practices of the Board.

Note: \*TAM is a fund of externally managed funds and AB uses a mix of externally managed and internally managed funds. As such where these externally managed funds are used the voting and engagement is performed by the underlying Investment Manager. Both Investment Managers consider stewardship as part of their hiring and selection process.

## 7. Metrics and Targets

To align the Scheme's investment strategy and beliefs with the Trustee's objectives to manage climate risk, the Trustee has set a number of metrics that measures, monitors, and manages our climate commitments to net zero.

### 7.1 Metrics and targets related to our investments

We use the same metrics to set and measure our targets and have chosen the end of Q4 2019 as our base year for measurement.

As detailed in Figure 19 the Trustee is required to report three metrics for this regulatory year. However, further regulations are expected, the first of which is to include a fourth metric later in 2022, which has been assimilated in this report.

The Trustee set a target of net zero by 2050 with an interim target of halving GHG emissions by 2030. Progress towards this target is being measured using Weighted Average Carbon Intensity (WACI).

**Figure 18: Snapshot of Options metrics broken down per default**

Default Name	Base year - Q4 2019			Current year - Q1 2022			
	% of Total Scheme Assets	WACI (CO2e tonnes per \$1m Sales)	Absolute Carbon Emissions (CO2e tonnes)	% of Total Scheme Assets	WACI (CO2e tonnes per \$1m Sales)	Absolute Carbon Emissions (CO2e tonnes)	% of Equity with SBTI Goals
<b>AB Target Date Fund</b>	21.3%	166.29	5,344.92	17.6%	114.27	3,935.36	27.7%
<b>Quilter</b>	15.7%	243.41	2,195.73	10.5%	216.60	2,638.23	30.0%
<b>Lifepath</b>	50.2%	122.83	5,686.88	41.5%	94.84	7,701.72	25.6%
<b>TAM</b>	5.0%	125.84	610.82	24.3%	75.13	4,417.66	-
<b>Scheme Total</b>	<b>92.3%</b>	<b>141.74</b>	<b>14,992.51</b>	<b>93.9%</b>	<b>100.45</b>	<b>19,909.97*</b>	-

\* The continuous change in the size of our Assets Under Management (AUM) assets may increase the total emissions of the portfolio (Absolute Carbon Emissions) despite a reduction in the intensity of carbon emissions across the portfolio. However in this case the AUM have increased significantly since 2019, resulting in an increase in emissions for the entire Scheme. Whether this represents an overall net decline in carbon emissions depends on the carbon emissions profile of the previous investment or source of funds. For example, if invested in funds with a higher WACI, then in theory it actually represents a decline in absolute carbon emissions.

Our Investment Managers have provided the metrics for their respective funds however there are a number of caveats attached to the metrics provided. The metrics in future reports are likely to change as metrics become more standardised across the financial services industry. However, the metrics in this report represent our best estimate of the situation at this time.

Furthermore the 2019 data could only be provided by AB and Blackrock. For March 2022 TAM was only able to provide data for some sub funds and Quilter was only able to provide data for the Balanced Fund. Where data was missing completely we have used data from indices of the underlying asset classes to get an approximation of values. Where investments have a higher active share this will likely result in larger variations from the true number. For Quilter we have scaled the Balanced Fund asset class weightings are similar to the overall asset class weightings of the full Quilter investment so we have considered these representative. We have then taken the proportional difference between the 2022 numbers and the index numbers and applied this to the index position in Q4 2019 to get a comparative value. Quilter has a high active share and is liable to change significantly as individual stocks change. Blackrock was only able to provide WACI for their all equity fund, however they were able to provide Emissions in terms of Carbon Footprint for 2022, as were AB.

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We therefore took the proportion between these two numbers and applied this to AB's figure to get an approximation for Blackrock. This was then multiplied by the proportional change in WACI for the all equity fund provided by Blackrock to get an estimation for the Q4 2019 figure. While this will not fully capture the changes experienced by different asset classes we believe it provides a reasonable approximation.

There were some issues with the Carbon Footprint metric in the case of Sovereign Debt where emissions data was not available prior to March 2022 for AB who have excluded Sovereigns from their data and scaled the rest of the numbers accordingly.

The assets covered by this report constitute 92.3% of the total assets as at Q4 2019 and 93.9% of assets as at Q2 2022. The remaining assets are spread amongst the other smaller defaults and a small self-select range. We believe that as this report covers the majority of assets and on an increasing basis, that this should be broadly representative of the full scheme impact.

The metrics in future reports are likely to change as data becomes more standardised across the financial services industry. However, the metrics in this report represent our best estimate of the situation at this time. SBTi numbers were not available for TAM.

**Figure 19: Metrics and targets with progress to date**

Metric	Metric Explained	Our Target	Target Progress as at end-Q1 2022
<b>Primary Metric – Weighted Average Carbon Intensity (WACI)</b>	A climate metric that measures the amount of carbon emitted per unit of measure. In the case of this report, Carbon Intensity is measured by calculating the carbon intensity (Scope 1 + 2 Emissions / \$1M Sales) for each portfolio company. WACI will be used as the primary metric to measure and track Options' progress towards achieving its net zero target.	The carbon intensity metric will complement the measurement of the Scheme's overall emission target of net zero by 2050 and a 50% reduction by 2030	The Portfolio-Weighted Average Carbon Intensity (WACI) measured in tonnes of CO <sub>2</sub> e/\$1m of revenues is estimated to be 141.74 as of 31st December 2019 and has reduced to 100.45 as of 31st March 2022. This represents a 29% reduction since 2019.
<b>Primary Metric - Absolute Carbon Emissions</b>	We measure Scope 1 and 2 emission metrics for the default strategies measured in tonnes of CO <sub>2</sub> e. Scope 1 is all direct emissions from the activities under an organisation's control, and Scope 2 is indirect emissions from electricity or energy used by an organisation. Trustees are required to obtain Scope 3 emissions data for next year's report.	While it is a regulatory requirement to provide the Absolute Carbon Emission metric for each default as well as the overall Scheme, it will not be used to measure against our targets. This is because of the continuous change in the size of our Assets Under Management (AUM), for example an increase in assets may increase the total emissions of the portfolio despite a reduction in the intensity of carbon emissions across the portfolio.	Options total GHG emissions for our investments in our base year of 31st December 2019 was an estimated 14,992 metric tonnes; this absolute figure has increased to an estimated 19,909 metric tonnes which is a direct result of changes the AUM increasing from £174.1m to £412.5m for the Scheme.
<b>Other (Binary) Metric - SBTi</b>	The Science Based Targets initiative drives ambitious climate action in the private sector by enabling companies to set science-based emissions reduction targets.	We aim for 50% of equity investments in companies with externally verified net zero targets (with the SBTi or other external verifier) by 2025.	As of 2022, the equity portion of scheme wide investments in companies with SBTi progression is: Blackrock – 25% AB – 27% Quilter – 30%

# The Options Workplace Pension Trust

## TCFD Report - Integrating Climate Risk

Metric	Metric Explained	Our Target	Target Progress as at end-Q1 2022
<b>Other Metric – Green Revenues</b>	Expressed as a percentage, this metric measures the green revenue exposure of a company's revenue aggregated for the portfolio. The measure is based on a comprehensive taxonomy for green products and services.	As the default Investment Managers improve their coverage of Green revenue reporting the Trustee will consider including this metric in Options overall targets.	
<b>Future Primary Metric – Carbon Footprint</b>	A portfolio's carbon footprint is the sum of a proportional amount of each portfolio company's Scope 1 and 2 emissions (proportional to the amount of stock held in the portfolio) in tonnes CO2e per \$1m invested based on Enterprise Value Including Cash (EVIC).	Although WACI is being used to measure our target towards net zero, we believe Carbon Footprint would be a better metric to use at some time in the future as the data improves.	Options average Carbon Footprint for our investments using our base year as at Q4 2019 was an estimated 79.49 CO2e/\$1m of EVIC, by 31st March 2022, this had reduced to an estimated 45.99 CO2e/\$1m. We are awaiting further details from the Investment Managers on methodology used and coverage and so at present these numbers are provisional and indicative.

### 7.2 Steps to manage pension Scheme's own operational impact

The Trustee has begun a number of initiatives to assess and reduce the Scheme's operational impact and ensure climate resilience within operations:

- The Trustee is satisfied with the responses received from our suppliers on operational reduction information and risk assessment data. Future engagement will be planned for additional information.
- Currently all of Options' Trustee and Committee meetings are held virtually and we are in the process of formulating a travel policy whereby the Trustee will meet physically at least once per annum, while the remainder of meetings will be held using Microsoft Teams.
- Beside documents required as part of the Trustee duties, the Options Trustee Board operates in a paperless environment.
- The Trustee has committed to include climate-related factors into any review of our Business Continuity Plan.

## SIGNATURE OF CHAIR

This report was approved by the Trustee on

Day  
12

Month  
10

Year  
2022

and signed on its behalf by:

Chairperson:



Represented by: Anthony Filbin

## Appendices

## Appendix 1: Climate-Related Content Logbook

Christine Hallett		
Date of training	Training undertaken	Provider
23/07/2019	The climate for change breakfast seminar	Financial Times
Paul Webster		
Date of training	Training undertaken	Provider
06/10/2020	ESG Climate Change and Stewardship update	Sackers
26/11/2020	ESG Webinar	Professional Pensions
03/03/2021	Climate Change & Investment Academy - Mod 1 Intro to Climate Science	AB / Columbia Uni
10/03/2021	Modules 2 & 3 - Role of China in Climate Change and Litigation & Liability	AB / Columbia Uni
30/03/2021	Module 4 Climate Change	AB / Columbia Uni
30/09/2021	TCFD	DWA
Barry Parr		
Date of training	Training undertaken	Provider
04/05/2017	ESG	BNP Paribas / PRI
11/06/2019	Responsible Investing Europe	Responsible Investor
20/06/2019	Sustainability for Master Trusts	J P Morgan
24/10/2019	EU (Sustainable Finance) Low carbon benchmarks	Responsible Investor
31/10/2019	Responsible Investments and Increased Responsibilities for Trustees	AMNT
18/03/2020	Climate Change in Fixed Income	FT Russell / Brightstar
09/06/2020	ESG in DC	Corporate Adviser / PRI
10/06/2020	Impact Investing: Invest in the world you want to live in	RI / Wellington
15-19/6/20	Responsible Investor Digital Festival - various sessions & replays:	Various
30/06/2020	Investors as Catalysts of the Climate Transition	PRI/LSE
30/06/2020	Make My Money Matter launch	FT hosted
30/06/2020	Future Proofing Investment Portfolios - A new ESG Framework for a new World	FT
27/07/2020	ESG (Responsibilities Update)	PMI / Sackers
09/09/2020	Institutional ESG Investment Summit	Clearpath
10/09/2020	Institutional ESG Investment Summit	Clearpath
06/10/2020	ESG, Stewardship & Climate Change - an Update	Sackers
27/10/2020	MSCI Climate Change Indexes	IPE/MSCI
03/11/2020	Investing for Good Europe - Mainstreaming ESG	FT Live
12/11/2020	ESG Conference	PP
03/12/2020	ESG & Impact Investing for Pension Funds	SPS
27/01/2021	ESG Regulation Developments, Practical Implications & Trade Issues	PIA
11/02/2021	Capturing the Carbon Opportunity - Forrestry	IPE/Gresham House/PPF/PRI
25/02/2021	Understanding Climate Risk in Portfolios from Animal Related Food Companies	RI / FAIRR / Calpers
03/03/2021	Climate Change & Investment Academy - Mod 1 Intro to Climate Science	AB / Columbia Uni
09/03/2021	Understanding Net Zero - How Asset Owners can address Climate Change	HR
09/03/2021	Developing Net Zero Commitments & Tools	RI / Wellington



# The Options Workplace Pension Trust

## TCFD Report - Integrating Climate Risk

10/03/2021	Modules 2 & 3 - Role of China in Climate Change and Litigation & Liability	AB / Columbia Uni
11/03/2021	COP26 Investor Action - What does net zero mean for investors	PRI / others
16/05/2022	The Carbon Credits Market	Pensions for Purpose
28/06/2022	Investing in Forestry & Illiquids	Schroders

Barry Parr (Continued)		
Date of training	Training undertaken	Provider
16/03/2021	Climate Change & Investment Academy - Mod 4	AB / Columbia Uni
17/03/2021	Sustainability Investment Summit	Pensions Age
18/03/2021	CA ESG Forum	Corporate Adviser
29/03/2021	Climate Change Governance & reporting	Sackers
07/04/2021	Carbon Tech Innovations - AB Programme	AB/Colombia Uni
15/04/2021	TCFD Training	Isio
20/04/2021	Fossil Fuels - Divestment	IPE
21/04/2021	ESG - Global Forum - Focus on Climate Change	IPE
11/05/2021	ESG & Impact Investment Strategies for Pension Funds Conference	SPS
19/05/2021	How to Decarbonise a Portfolio	IPE / Finreon
19/05/2021	Net Zero Investment Framework	RI
20/05/2021	Forestry Carbon & Climate Change - Investing for the Future	IPE / Craigmore
27/05/2021	Climate Change Masterclass - The Path to Carbon Net Zero	SG Pensions Enterprise
14/06/2021	Paris Alignment	Pensions for Purpose
27/07/2021	TCFD for MTs	Hymans Robertson
31/08/2021	Solactive Climate Index	Solactive
30/09/2021	TCFD	Options
02/03/2022	Climate Change Analysis & Mitigation	Wellington
Anthony Filbin		
Date of training	Training undertaken	Provider
10/03/2021	Modules 2 & 3 - Role of China in Climate Change and Litigation & Liability	AB / Columbia Uni
10/03/2021	Modules 2 & 3 - Role of China in Climate Change and Litigation & Liability	AB / Columbia Uni
30/03/2021	Module 4 Climate Change	AB / Columbia Uni
30/09/2021	TCFD	DWA
Dave Hatch		
Date of training	Training undertaken	Provider
30/09/2021	TCFD	DWA

## Appendix 2: Metrics and Targets

The Trustee set a target of net zero by 2050 with an important interim target of halving GHG emissions by 2030. Progress towards this target is being measured using Weighted Average Carbon Intensity (WACI). The base year for Scope 1 and 2 emissions in all asset classes and funds across the four defaults which represents 93.9% of Options.

The data provided has been assessed and combined by the Investment Consultant. Scope 1 and 2 emissions have been reported together as at present managers are largely unable to provide separate figures.

The Trustee has worked closely with the Investment Consultant and the Investment Managers to provide a set of metrics that measures, monitors, and manages Options' climate commitments to net zero. We use the same metrics to set and measure our targets against. We have chosen the end of Q4 2019 as our base year for measurement. Our Investment Managers have provided the metrics for their respective funds. As the assets in the defaults cover the vast majority of Options' total assets, we have assumed that the total assets will have a comparable carbon intensity to the default strategies analysed and have scaled up the total to be proportional to the defaults.

In this section we share samples of the supporting information provided to us by our managers. Our Investment Managers have provided the metrics for their respective funds however there are a number of caveats attached to the metrics provided. The metrics in future reports are likely to change as metrics become more standardised across the financial services industry. However, the metrics in this report represent our best estimate of the situation at this time.

Furthermore the 2019 data could only be provided by AB and Blackrock. For March 2022 TAM was only able to provide data for some sub funds and Quilter was only able to provide data for the Balanced Fund. Where data was missing completely we have used data from indices of the underlying asset classes to get an approximation of values. Where investments have a higher active share this will likely result in larger variations from the true number. For Quilter we have scaled the Balanced Fund asset class weightings are similar to the overall asset class weightings of the full Quilter investment so we have considered these representative. We have then taken the proportional difference between the 2022 numbers and the index numbers and applied this to the index position in Q4 2019 to get a comparative value. Quilter has a high active share and is liable to change significantly as individual stocks change. Blackrock was only able to provide WACI for their all Equity fund, however they were able to provide Emissions in terms of EVIC (carbon footprint) for 2022, as were AB. We therefore took the proportion between these two numbers and applied this to AB's figure to get an approximation for Blackrock. This was then multiplied by the proportional change in WACI for the all equity fund provided by Blackrock to get an estimation for the Q4 2019 figure. While this will not fully capture the changes experienced by different asset classes we believe it provides a reasonable approximation.

There were some issues with the Carbon Footprint metric in the case of Sovereign Debt where emissions data was not available prior to March 2022 for AB who have excluded Sovereigns from their data and scaled the rest of the numbers accordingly.

The assets covered by this report constitute 92.3% of the total assets as at Q4 2019 and 93.9% of assets as at Q2 2022. The remaining assets are spread amongst the other smaller defaults and a small self-select range. We believe that as this report covers the majority of assets and on an increasing basis, that this should be broadly representative of the full scheme impact.

The metrics in future reports are likely to change as data becomes more standardised across the financial services industry. However, the metrics in this report represent our best estimate of the situation at this time. SBTi numbers were not available for TAM.

*Details of Carbon Footprint provided for the AB TDF Default as at Q1 2022*

Grouping: GICS Sector	Inst. Type	Asset ID	Weight (%)	Overall ESG Score	Environment Score	Social Score	Governance Score	Carbon Emissions - Scope 1 and 2 Intensity in t/USD million sales	Carbon Emissions - Scope 1 and 2 in metric tons	Carbon Emissions - Scope 1 and 2 Intensity t/USD million EVIC	CO2 emissions per capita	CO2 intensity t/USD million GDP nominal	GHG emissions per capita tons of CO2 eq	GICS Sector
by: distinct	N/A	6495	100.00%	6.42	5.91	5.07	6.05	114.27	54.16	40.77	13.68	216.62	17.22	N/A
Information Technology	N/A	762	19.10%	7.34	5.65	5.84	6.07	30.09	6.60	5.74	N/A	N/A	N/A	Information Technology
Financials	N/A	846	14.07%	6.75	6.66	4.71	6.33	13.19	5.04	4.32	N/A	N/A	N/A	Financials
Health Care	N/A	764	11.42%	5.76	7.05	5.04	6.21	23.54	5.79	4.51	N/A	N/A	N/A	Health Care
Consumer Discretionary	N/A	839	11.31%	6.19	6.43	4.34	5.90	47.38	19.80	12.52	N/A	N/A	N/A	Consumer Discretionary
Real Estate	N/A	537	9.39%	5.51	5.83	4.89	6.07	88.77	11.38	7.12	N/A	N/A	N/A	Real Estate
Industrials	Equity Security	1113	9.23%	6.63	5.83	4.88	6.22	129.29	62.46	42.60	N/A	N/A	N/A	Industrials
Communication Services	N/A	319	6.93%	5.23	8.00	5.09	4.91	17.32	8.79	5.26	N/A	N/A	N/A	Communication Services
Consumer Staples	Equity Security	379	6.08%	6.95	5.70	5.00	6.19	61.01	42.82	35.26	N/A	N/A	N/A	Consumer Staples
Materials	N/A	501	4.57%	6.43	4.92	4.80	6.35	739.73	463.99	340.75	N/A	N/A	N/A	Materials
Energy	N/A	225	3.67%	5.76	4.61	6.00	5.90	645.70	314.21	290.23	N/A	N/A	N/A	Energy
N/A	N/A	69	2.46%	7.34	7.92	4.93	7.59	0.94	2.07	0.19	13.68	216.62	17.22	N/A
Utilities	N/A	141	1.77%	7.33	7.54	6.11	6.31	739.34	292.85	158.49	N/A	N/A	N/A	Utilities

N/A includes the US Treasuries within the Commodities fund and other Non-UK government bonds.

*Details of Carbon Footprint provided for the Lifepath Default*

Portfolio Name	Absolute Carbon Emissions Scope 1 +2 (CO2 in metric tonnes)			Carbon Emissions Intensity by EVIC			Alternative Energy	% SBTI approved
	31 Dec 2019	31 March 2020	31 March 2022	31 Dec 2019	31 March 2020	31 March 2022	31 March 2022	31 March 2022
BlackRock LifePath Flexi Early Days Fund	5,499,750	5,006,172	3,805,779	NA	63.80	45.83	0.64%	28.80%
BlackRock LifePath Flexi 2031-33 Fund	5,921,598	5,461,621	3,670,218	NA	67.45	42.92	0.66%	19.30%
BlackRock LifePath Flexi Retirement Fund	6,366,582	5,773,625	3,739,309	NA	67.84	41.82	0.71%	13.80%

**TAM**

TAM was only able to provide the asset allocations of the funds and some sample figures from some of the underlying funds.

*Details of Carbon Footprint provided for Nomura Global High Conviction*

Disclosure Number/Weight	Emission Exposure tCO <sub>2</sub> e		Relative Emission Exposure			Climate Performance	
	Share of Disclosing Holdings	Scope 1 & 2	Incl. Scope 3	tCO <sub>2</sub> e/Invested	tCO <sub>2</sub> e/Revenue	Weighted Avg	
				Relative Carbon Footprint	Carbon Intensity	Weighted Avg Carbon Intensity	Carbon Risk Rating <sup>1</sup>
<b>Portfolio</b>	95.2% / 96.5%	520	22,616	5.53	22.13	26.28	64
<b>Benchmark</b>	68.5% / 88.9%	4,545	34,644	48.33	174.94	166.14	56
<b>Net Performance</b>	26.8 p.p. / 7.6 p.p.	88.6%	34.7%	88.6%	87.4%	84.2%	—

*Details of Carbon Footprint provided for Wellington US Dynamic Equity Fund*

**Overall Fund CO<sub>2</sub> Emissions and Intensity as of 31 March 2022**

Carbon Footprint	Carbon Emissions	Total Carbon Emissions	Carbon Intensity	Weighted Average Carbon Intensity	Data Availability (Carbon Intensity)
Fund	1	60	11	7	92.7
Benchmark	36	2,093	145	146	99.9
	T CO <sub>2</sub> e/\$M Invested	T CO <sub>2</sub> e		T CO <sub>2</sub> e/\$M Sales	% Market Value

Source: MSCI | Benchmark: S&P 500

### Quilter

Quilter were only able to provide data for the Balanced Fund, however the overall asset allocation of the total Quilter funds is not dissimilar to the balanced fund so it is likely to be representative of the full portfolio. We have then taken the proportional difference between the 2022 numbers and the index numbers and applied this to the index position in Q4 2019 to get a comparative value. Quilter has a high active share and is liable to change significantly as individual stocks change.

#### *Details of Carbon Footprint provided for Quilter Balanced Fund*

Disclosure Number/Weight	Emission Exposure tCO <sub>2</sub> e		Relative Emission Exposure			Climate Performance	
	Scope 1 & 2	Incl. Scope 3	tCO <sub>2</sub> e/Invested	tCO <sub>2</sub> e/Revenue	Weighted Avg	Weighted Avg	
Share of Disclosing Holdings	Scope 1 & 2	Incl. Scope 3	Relative Carbon Footprint	Carbon Intensity	Weighted Avg Carbon Intensity	Carbon Risk Rating <sup>1</sup>	
<b>Portfolio</b>	97.5% / 97.8%	538	6,025	67.45	247.16	216.60	56
<b>Benchmark</b>	69.7% / 94.6%	628	6,910	78.71	212.31	203.54	56

## Acknowledgements

The Options Trust TCFD Report has been prepared by Dean Wetton Advisory UK Limited.



The report has been prepared in collaboration with Sustain Value:



Cooperation and input has been received from:

- Administration service providers of Options
- Alliance Bernstein, Black Rock, Quilter Cheviot and TAM

## Glossary of terms

Glossary	Explanation
BCP	Business continuity planning (BCP) is the process involved in creating a system of prevention and recovery from potential threats to a company.
BES	Describes the Bank of England's Climate Biennial Exploratory Scenario that stress tests the resilience of the current business models of the largest banks and insurers in the UK.
Capital goods	This is a sector which includes buildings, machinery, equipment, vehicles, and tools. Capital goods are not finished goods, instead, they are used to make finished goods.
Carbon footprint	Is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by human actions.
Climate-related opportunity	Refers to the positive impacts related to climate change on an organization. Efforts to mitigate and adapt to climate change can produce opportunities for organisations, such as the development of new technology, products and saving of resources.
Climate-related risk	Refers to the potential negative impacts of climate change on an organisation, being physical and transition risk factors.
CVaR – Climate Value at Risk	CVaR from MSCI is designed to provide a forward-looking and return-based valuation assessment to measure climate related risks and opportunities in an investment portfolio. The fully quantitative model offers deep insights into how climate change could affect company valuations.
Decarbonisation	Refers to all measures through which a business sector, or an entity – a government, an organisation – reduces its carbon footprint, primarily its greenhouse gas emissions, carbon dioxide (CO <sub>2</sub> ) and methane (CH <sub>4</sub> ), in order to reduce its impact on the climate.
DWA Fairway Model	A model created by our investment consultant which measures various risk and return metrics compared to a members distance from retirement. The model also includes red and green boundaries to give a general idea of what values would be appropriate for a DC pension scheme. The model allows us to assess the appropriateness of an investment strategy across the members whole journey and identify areas of concerns an overview of the long term expected returns of an investment strategy.
Emission Intensity	A climate metric that measures the amount of carbon emitted per unit of measure. In the case of this report, Carbon Intensity is measured by calculating the carbon intensity (Scope 1 + 2 Emissions / \$M Sales) for each portfolio company.
Energy sector	Refers to the generation of power from oil, gas, nuclear, and renewable resources such as wind and solar.
Equities	These are typically investment made into companies whose shares are traded on a stock exchange.
ESG	Refers to Environmental, Social, and Governance. Investors are increasingly applying these non-financial factors as part of their analysis process to identify material risks and growth opportunities.
Financial Stability Board	The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. It was established after the G20 London summit in April 2009. The FSB includes all G20 major economies, FSF members, and the European Commission.
G20	The G20 or Group of Twenty is an intergovernmental forum comprising 19 countries and the European Union (EU). It works to address major issues related to the global economy, such as international financial stability, climate change mitigation, and sustainable development.
GDP	Gross domestic product or GDP is a measure of the size and health of a country's economy over a period of time (usually one quarter or one year). It is also used to compare the size of different economies at a different point in time.
GHG	There are six types of Greenhouse Gases - listed in the Kyoto Protocol: carbon dioxide (CO <sub>2</sub> ); methane (CH <sub>4</sub> ); nitrous oxide (N <sub>2</sub> O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF <sub>6</sub> )
GHG – Greenhouse Gas Emissions	GHG is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect and leading to global warming. GHG emissions are often measured in carbon dioxide (CO <sub>2</sub> ) equivalent.
Gilt	Gilts are government issued bonds.
Greenhouse gas emissions	Relates to the total quantity of greenhouse gases being emitted



Glossary	Explanation
Impact assessment tools	Describes methods used to measure the impact an organisation has on different sectors and economies.
IPCC	The Intergovernmental Panel on Climate Change is a body of the United Nations.
Materials sector	Includes companies engaged in the discovery, development, and processing of raw materials, which are used across a broad range of sectors and industries
Maximum drawdown (and its use in measuring downside risk related to climate?)	Refers to the maximum observed loss from a peak to a trough of a portfolio, before a new peak is attained. Maximum drawdown is an indicator of downside risk over a specified time period. It helps us quantify how much loss in value an unfortunate investor may see the value of their portfolio.
MSCI	Morgan Stanley Capital International is an investment research firm.
MSCI ACWI	The MSCI ACWI Index, MSCI's flagship global equity index, is designed to represent performance of the full opportunity set of large- and mid-cap stocks across 23 developed and 25 emerging markets.
NDC commitments	Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of its long-term goals. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change.
Net Zero	Refers to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. There are two different routes to achieving net zero, which work in tandem: reducing existing emissions and actively removing greenhouse gases.
NGFS	The Network for Greening the Financial System (NGFS) is a group of international central banks and regulators to develop an analytical framework for assessing climate-related risks.
PAII	The Paris Aligned Investment Initiative (PAII) was established in May 2019 by the Institutional Investors Group on Climate Change (IIGCC) at the request of asset owner members, it now involves over 110 investors representing \$33 trillion in assets.
PCRIG	The Pensions Climate Risk Industry Group has produced guidance for pension trustees on improving their schemes approach to climate issues.
Physical risk	Refer to the risks coming from climate change that can be event-driven such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, and fires). They can also relate to longer-term shifts in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise).
Real estate sector	An industry grouping including all types of property.
SBTi	The Science Based Targets initiative drives ambitious climate action in the private sector by enabling companies to set science-based emissions reduction targets.
Scenario analysis	Refers to the process used to identify and assess potential range outcomes of future events under conditions of uncertainty. In the case of climate change, scenarios allow an organisation to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and investments over time.
Scope 1, 2 and 3 emissions.	Scope 1 – all direct emissions from the activities under an organisation's control. Scope 2 – indirect emissions from electricity used by an organisation. Scope 3 – other indirect emissions from sources not directly controlled, including supply chain operations and end-product usage by customers.
Sovereign bonds	Refers to a debt security issued by a national government to raise money for financing government programs.

Glossary	Explanation
SSPs - Shared Socio-Economic Pathways	SSPs are projections of <a href="#">socioeconomic</a> global changes up to 2100. They are used to derive <a href="#">greenhouse gas emissions</a> scenarios with different <a href="#">climate policies</a> . The projections are: SSP1: Sustainability (Taking the Green Road) SSP2: Middle of the Road SSP3: Regional Rivalry (A Rocky Road) SSP4: Inequality (A Road divided) SSP5: Fossil-fuelled Development (Taking the Highway)
Standard deviation	A standard deviation is a measure of how dispersed the data is in relation to the mean. Low standard deviation means data are clustered around the mean, and high standard deviation indicates data are more spread out.
Stewardship	Refers to the responsible oversight of capital that scheme trustees and Investment Managers allocate on behalf of their clients, in order to generate sustainable benefits for the economy, the environment and society.
Transition risk	Refers to risks associated with the transition to a lower-carbon global economy, the most common of which are policy and legal actions, technology changes, market responses, and reputational factors.
Utilities sector	Refers to a category of companies that provide basic amenities, such as water, sewage services, electricity, dams, and natural gas.
Voting rights	These are rights attached to shares at the general meetings of a company.



PART OF  GROUP PLC

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