Climate change scenario analysis

How might climate-related risks affect your pension scheme?

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LCP offers real-time modelling of climate-related financial risks to your pension scheme, in partnership with Ortec Finance

This makes climate change risk more tangible to help you factor it into your governance, strategic decisions and integrated risk management. This also enables compliance with the requirements under the Pension Schemes Act 2021.

Increasing focus on climate-related risks

Pension scheme trustees are placing more and more focus on risks related to climate change. This reflects a range of factors including:

- growing concern that climate-related risks may be very material for pension scheme finances;
- increased engagement from members who want assets invested on their behalf to be managed responsibly; and
- significant regulation and guidance flowing from the Pensions Schemes Act 2021 to factor climate risks into governance and reporting.

How scenario analysis can make climate-related risks more tangible

Climate change scenario analysis helps you explore how material climate change could be for your scheme and identify actions to prioritise in response.

Scenario analysis can support trustee decision-making in a number of ways by providing:

- an in-depth look at potential climate pathways, and what global changes in policies and technologies would be needed for them to materialise;
- detailed modelling of how those global changes could affect financial markets and therefore impact your investment and (for defined benefit schemes) funding plans;
- modelling that illustrates how climate-related impacts might vary between defined contribution members of different ages, pot sizes and contribution rates;
- analysis that helps you identify and assess climate-related risks and opportunities for your investment and funding strategies including ways in which climate risk could affect the choice of target end state for defined benefit schemes;
- insights on how climate factors could exacerbate other risks such as your specific covenant risk; and
- the ability to explore how different journey plans or investment strategies could lead to different outcomes for your scheme under different climate scenarios.

Modelling available at a glance

- Can be applied to both defined benefit and defined contribution schemes;
- Top-down model that translates economy-wide impacts into financial market impacts, enabling the effects to be explored for all asset classes;
- Economy-wide approach allows us to model defined benefit assets and liabilities consistently, including full projected yield curves to value long-dated pension scheme cash flows at future dates;
- 40 year time horizon; year by year impacts;
- Encompasses 70 countries (including all major world economies), 44 different industry sectors and considers gradual physical climate risks, extreme weather risks, risks associated with the transition to a low carbon economy and market sentiment adjustments;
- Underlying model updated annually, with analysis available at each quarter-end.

1. Climate-informed INPUT data/assumptions

2. Macro-economic model

3. Stochastic financial model

4. Systemic climate risk-aware scenarios

5. Applied directly to your scheme in LCP Visualise or LCP Horizon Pro

Our top-down modelling illustrates the big picture, showing the potential impacts at a high level for each asset class in your portfolio. It is designed to complement bottom-up analysis such as climate-related metrics for each mandate, as well as due diligence into your investment managers' integration of climate-related factors into their investment process.

The model output is accompanied by in-depth narratives that bring the scenarios to life and build your understanding of climate-related risks and opportunities. The narratives enable you to extend the scenarios to covenant risk, enabling defined benefit schemes to take an integrated risk management approach. The quantitative modelling includes real-world metrics such as oil prices and carbon prices, which can supplement the narratives when considering how the sponsoring employer might be affected in each scenario.

The model also enables users to explore the impact of climate risk on mortality for their scheme. Analysis has been done to estimate how each scenario would impact life expectancies in the UK. Further investigation can be done to look into the impact on specific scheme populations.

Many scheme sponsors are looking more carefully at climate-related risks to their business and will want to consider this for their pension scheme. They may want to include climate-related risks to the pension scheme in communications with employees and other stakeholders. Our climate scenarios can be extended and adapted to align with scenarios the scheme sponsor may be considering.

Introducing our modelling partners

We have developed this service in conjunction with climate risk experts Ortec Finance, incorporating their modelling of climate-related impacts on financial markets which in turn builds on a sophisticated model of the global economy from Cambridge Econometrics. We have coupled their expertise with LCP's deep knowledge of pensions, our passion for communicating clearly and our capability for real-time modelling.

- Ortec Finance are expert providers of investment decision technology and solutions. They are a global firm, headquartered in Rotterdam, with many large and sophisticated institutional investor clients including pension schemes, insurance companies, central banks and sovereign wealth funds, covering over 600 clients representing over €14tn assets.

ORTEC FINANCE

- Cambridge Econometrics are a UK-based firm that specialise in modelling global economies and advise clients such as the European Commission. They were founded in 1978 as a commercial spin-off from the University of Cambridge.

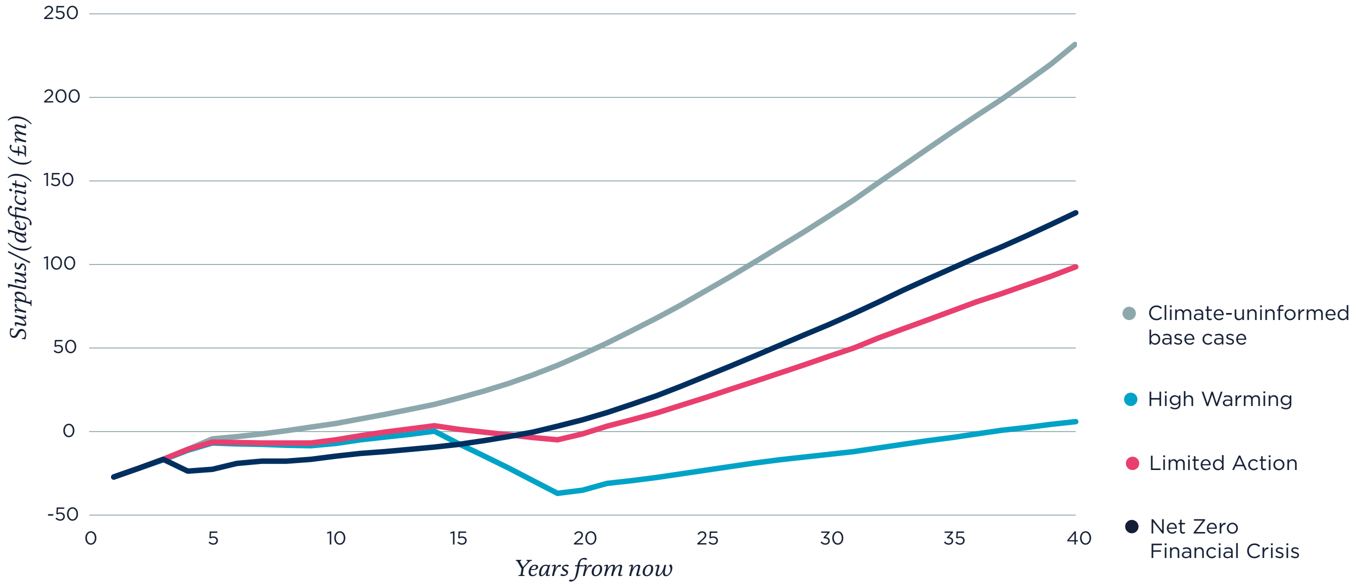
cambridge econometrics
clarity from complexity

In partnership together, they have developed a model called ClimateMAPS. This was the first tool of its kind to integrate the climate risks and opportunities associated with different global warming pathways into traditional multi-horizon real-world financial market scenarios. It uses the E3ME macroeconomic model which integrates a range of social and environmental processes, including carbon emissions and the energy transition. E3ME is one of the most comprehensive empirical models of the global economy and is widely used for policy assessment, forecasting and research purposes.

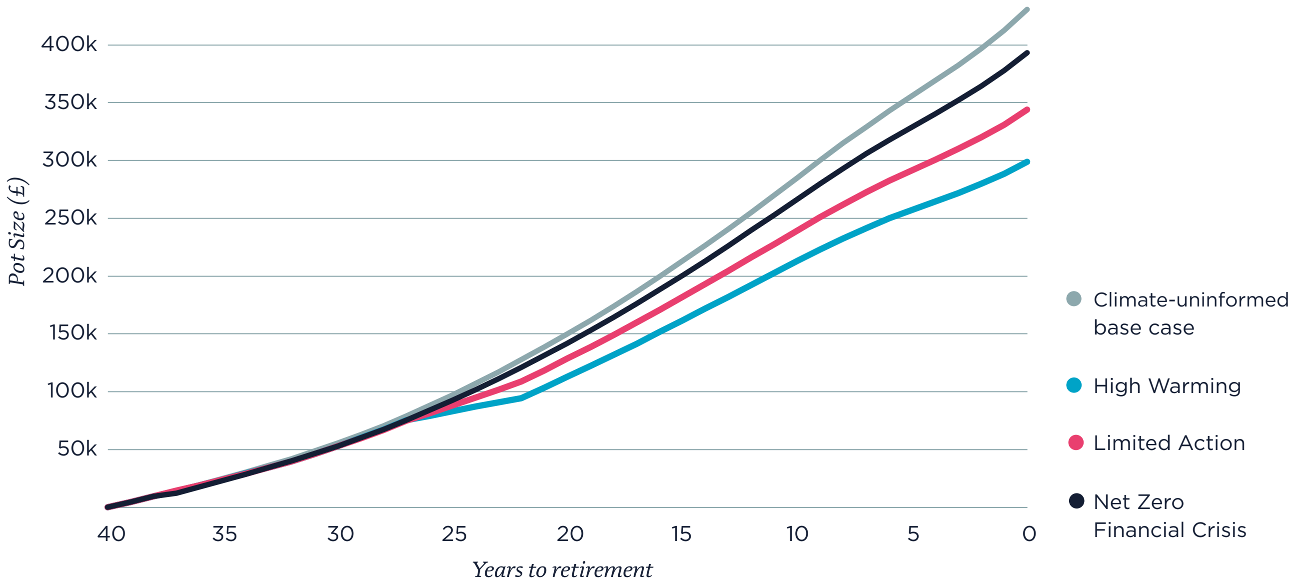
After extensive market research, we formed the view that Ortec Finance's financial model follows a robust and well-documented methodology which is on par with, or more advanced than, similar methodologies of other providers in the market.

We have integrated ClimateMAPS with LCP's leading pension software, LCP Visualise and LCP Horizon Pro, enabling us to apply each scenario to a scheme's assets and liabilities and demonstrate the results to you in real time.

Illustrative impact of three climate scenarios on a DB scheme's funding position



Illustrative impact of three climate scenarios on a DC default lifestyle strategy



Our current core climate scenarios

ClimateMAPS models the effects of possible climate paths the world could follow. Our three core scenarios feature plausible elements that help illustrate the different ways climate change might impact your scheme. There is scope for additional bespoke scenarios to be explored as desired.

We compare these climate scenarios with a climate-uninformed scenario. This climate-uninformed scenario assumes that physical climate risks won't increase and does not make any explicit assumptions about the transition to a low carbon economy.

High warming

Only pre-2020 climate policies are implemented. The resulting high warming leads to severe physical impacts.

Global temperatures rise over 4°C by 2100.

Limited action

Policymakers implement limited new climate policies. Significant physical impact, but less severe than High Warming.

Global temperatures rise by around 3°C by 2100.

Net zero financial crisis

Global net zero CO^2 emissions achieved by 2050. However, financial markets are slow to react, and then react abruptly.

Global temperature rise limited to 1.5°C.

What does the Pensions Schemes Act 2021 require?

The Pension Schemes Act 2021 includes requirements for larger schemes to carry out climate scenario analysis, as part of a wider suite of regulations to manage and report on climate-related risks and opportunities. It implements the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) for these schemes.

The requirements have been mandatory for schemes with relevant assets over £5bn since 1 October 2021, and was extended to schemes with relevant assets over £1bn from 1 October 2022. Nonetheless, smaller schemes are also expected to manage climate-related risks and opportunities given their financially material nature. The Pensions Climate Risk Industry Group (PCRIG) has provided detailed guidance, also based on the TCFD recommendations, on how this can be done.

LCP's climate change scenarios and the supporting advice are designed to meet the Pension Schemes Act 2021 requirements and PCRIG guidance in relation to scenario analysis.

We provide detailed outputs that will allow you to report confidently on the output of the scenario tests as part of your scheme's climate change disclosures. Our modelling is also an ideal way of identifying and assessing climate-related risks and opportunities for your scheme, so that you can make climate-informed decisions about your investment and funding strategy.

Supporting you to take proportionate and effective action

Climate change scenario analysis can help you to:

- Quantify the potential impact of climate change on your scheme's finances;
- Explore the effect in each scenario of alternative investment strategies and journey plans;
- Build climate change risks into your integrated risk management processes, including sponsor covenant risks for defined benefit schemes;
- Comply with the PCRIG guidance and legislative requirements in the Pension Schemes Act 2021; and
- Communicate effectively how you are managing climate change risk to stakeholders including members and the scheme sponsor.

Want to find out more?

If you would like further information, please contact your usual LCP adviser or one of the people below.

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At LCP, our experts help to power possibility by navigating you through complexity to make decisions that matter to your business and to our wider society. We are powered by our desire to solve important problems to create a brighter future. We have market leading capabilities across pensions and financial services, energy, health and analytics.