Ortec Finance's 2024 climate scenario update – Key highlights

Impacts of current El Niño anticipated to lower global GDP by 0.25% over the next two years and affect all asset classes

ROTTERDAM, 17 April 2024 – Ortec Finance, a leading global provider of technology and solutions for risk and return management for investors, announces the annual update of its in-house climate scenarios, developed in partnership with Cambridge Econometrics. The scenarios, now in their 10th edition, are designed to help investors translate the potential financial impact of climate change on investment portfolios. The 2024 update features the launch of an additional Delayed Net-Zero scenario and includes climate tipping points in its High Warming scenario.

This update incorporates all major factors that are likely to impact the transition to net-zero including the latest policy and regulatory changes across all major jurisdictions, the fuel and commodity price hikes of 2022-2023 – key outcomes of the war in Ukraine – as well as the continued worldwide uptake of solar and other renewable energies.

The update also factors in the effects of the current El Niño event, which is expected to lower global GDP by 0.25% over the next two years and affect all asset classes. The update anticipates that El Niño will cause an increased number of extreme weather events and a temperature spike of 1.5°C in 2024.

The Ortec Finance Climate Scenarios facilitate an increasingly realistic systematic examination of a range of plausible outcomes referenced against the currently deemed most likely trajectory that will see temperatures likely rise by 2°C to 3°C by 2100, known as the reference baseline. This enables investors to quantify key macroeconomic changes and assess impacts on asset class returns under different climate change futures.

The new Delayed Net-Zero scenario reflects the consequences of the scaling back of a highly ambitious set of low-carbon policies designed to drive the world to achieve net-zero emissions by 2050 under the Paris Agreement. This scenario would see EU's GDP decline by 2040 and experience further decline by 2060 relative to the reference baseline. To illustrate the comparison, under Ortec Finance's Net-Zero scenario in which the world reaches net-zero by 2050, the EU's GDP would likely see an increase, whereas under its High Warming Scenario, there would be a more significant drop.

The latest update to the Limited Action scenario, which is based on current policy action, highlights the implications on cumulative returns on standard equities until 2040, with a -18% impact for the EU relative to the reference baseline, compared to -31% for the US.

In Ortec Finance's Net-Zero Financial Crisis scenario, which analyses climate risks abruptly priced into the market in 2025, leading to market overreaction and subsequent shocks, Paris-aligned equities will see a -7% impact in that one year, relative to the reference baseline in comparison to standard equities, which will see a -15% impact.

The updated High Warming scenario also incorporates the implications of multiple climate tipping points materializing, including the collapse of the Greenland and West Antarctic ice sheets, the collapse of East Antarctic subglacial basins, loss of mountain glaciers, Amazon rainforest dieback, and boreal permafrost collapse, all of which could lead to a rapid increase in global temperatures. This scenario would see a profound impact on cumulative

returns on standard equities over the next 40 years (2024-2063) relative to the reference baseline across Europe (-54%), China (-59%), the US (-72%) and globally (-66%).

Sophie Heald, Senior Climate Specialist at Ortec Finance, commented: "With the inherent uncertainty that climate change brings, our latest release of climate scenarios better enables investors to understand potential material disruption to financial markets driven by short-term shocks – such as abrupt pricing-in and sentiment shocks driven by market overreaction and stranded assets – to help inform investment decision-making".

Bert Kramer, Head of Climate Research at Ortec Finance, added: "We are particularly proud of our initiatives over the past 12 months, as we continue to incorporate climate change into strategic risk management tools for our clients. In combination with the latest update of our economic scenarios, which can now be shown to be well in line with a broad range of publicly available climate scenarios, we are pleased to be able to offer a pragmatic solution that enables our clients to combine and integrate results from climate risk analysis and traditional investment risk analysis. We look forward to continuing to aid investors in adapting their investment portfolios to manage the potential impact of climate change on future returns".

The Ortec Finance Climate Scenarios are key to helping financial institutions quantify the potential impacts of climate change to support the strategic asset allocation process and enabling investors to undertake portfolio stress-testing to further explore the impacts arising from severe physical risks and market sentiment shocks. When translated across key financial and economic variables, such as GDP and inflation to asset return projections, these scenarios can quantify potential climate-related financial risks, as well as identify areas of opportunity. In unique combination with Ortec Finance's economic scenarios, this is one of the most comprehensive risk management tools available to institutional investors.

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Additional information about Ortec Finance's Climate Scenarios

Ortec Finance's proprietary suite of climate scenarios, developed in partnership with Cambridge Econometrics, can be utilized by investors to assess the potential financial and economic impacts of climate change. These deterministic scenarios are based on non-equilibrium modelling (E3ME) of the low-carbon transition through policy and technology innovation and utilizes a proprietary modeling tool (ClimatePREDICT) to assess acute (extreme weather) physical risk impacts. In combination with the Ortec Finance stochastic financial scenario set, it generates 600+ economic and financial variables for a wide range of asset classes, geographies, sectors and conventional and low-carbon benchmarks. These variables incorporate pricing-in dynamics and financial market sentiment shocks.

Net-Zero

In Ortec Finance's 'Net-Zero' climate scenario, global CO_2 emissions reach net-zero by 2050, and global average temperatures stabilize at 1.5°C above pre-industrial levels by 2100. A highly ambitious set of policies aimed at reducing emissions are introduced. These policies include global carbon pricing and energy taxation, a phase-out of coal and fossil fuel technologies, energy efficiency regulations, and subsidies for renewable energy, electric vehicles, afforestation and reforestation.

New power generation technologies, including hydrogen and carbon capture and storage (CCS) are assumed to be viable and there is significant adoption of afforestation and reforestation activities to offset hard-to-abate emissions.

The world experiences comparably low impacts from extreme weather events and gradual warming as the world adapts to the effects of climate change.

The financial market implications arising from transition and physical risks are not materially disruptive.

This scenario explores the risks and opportunities of an optimistic, ambitious but orderly transition to net-zero by 2050.

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There are disruptive effects in financial markets as climate risks are abruptly priced-in in 2025, triggered by the submission of new Nationally Determined Contributions (NDCs), leading to a confidence shock to the financial system that year. In 2025, investors who committed to net-zero targets by 2050 evaluate their decarbonization trajectory which results in the need for sudden portfolio adjustments. Divestments from assets related to carbon-intensive economic activities ('stranded assets') causes an abrupt revaluation and subsequent knock-on financial effects.

This scenario explores a disorderly and financially disruptive transition.

An additional stress version of this scenario explores the impact of a more severe sentiment shock triggered by the overreaction from financial markets in response to a low-carbon policy acceleration.

Delayed Net-Zero

In Ortec Finance's 'Delayed Net-Zero' climate scenario, a highly ambitious set of policies aimed at reducing emissions are introduced. These include global carbon pricing and energy taxation, a phase-out of coal and fossil fuel technologies, energy efficiency regulations, and subsidies for renewable energy and electric vehicles. These policies are not implemented on the scale that is required to reach net-zero emissions by 2050. This scenario results in emissions trending towards net-zero after 2050 and global average temperatures stabilizing at 2°C above pre-industrial levels by 2100.

This scenario reflects rapid power generation technology developments, with considerable progress in the development of carbon capture and storage (CCS) technologies.

The world is faced with moderate impacts from extreme weather events and temperature change. Financial market disruption arising from transition risks occur during the late 2020s.

This scenario explores increased policy action and technological developments, that drive a transition which reduces severe physical risk impacts.

Limited Action

In Ortec Finance's 'Limited Action' climate scenario, global average temperatures are 1.8°C warmer than pre-industrial levels by 2050 and 2.6°C warmer by 2100. Policymakers take moderate steps to address climate change but commitments and Nationally Determined Contributions (NDCs) made under the Paris Agreement are not fully met and adjusted for credibility. Only existing carbon markets continue, including the EU Emissions Trading System (ETS), with an assumed moderate increase in the carbon price. Regulation and taxation of fossil fuel-based technologies is limited.

There is progressive adoption of low-carbon technologies, such as electric vehicles, driven by factors including cost reduction and efficiency improvements.

This scenario reflects high risks from extreme weather events and high temperatures. These risks have material financial market implications in the 2020s and 2030s, due to lower expected performance.

This scenario explores a limited transition, with high exposure to physical risk.

High Warming

In Ortec Finance's 'High Warming' climate scenario, the global average temperature is around 2°C warmer than pre-industrial levels by 2050 and 3.7°C warmer by 2100. No new low-carbon policies are enacted and some existing ones are scaled back. Multiple climate tipping points are reached and many countries suffer from extreme drought and water shortages.

The higher average temperatures affect human health and damage crop yields, driving a reduction in labor and agricultural productivity. In addition, infrastructure damage from extreme weather events leads to direct losses and indirect effects to the economy via supply chain disruption.

The triggering of multiple climate tipping points drives an exponential increase in extreme weather events. The lost productivity and extreme weather events have large financial market implications in the 2020s and 2030s, due to lower expected performance.

This scenario explores the risks of a failed transition leading to very severe physical risks.

An additional stress version of this scenario explores a system collapse with extreme heat stress and climate tipping points driving a worst-case outcome, with complete collapse of the economy and society by 2100.

About Ortec Finance

Ortec Finance is a leading provider of technology and solutions for risk and return management. It is Ortec Finance's purpose to enable people to manage the complexity of investment decision making.

This is accomplished via the delivery of leading technologies and solutions for investment decision making to financial institutions around the world. Ortec Finance's strength lies in an effective combination of advanced models, innovative technology, and in-depth market knowledge. This combination of skills and expertise supports investment professionals in achieving a better risk-return ratio and thus better results.

Headquartered in Rotterdam, The Netherlands, Ortec Finance has offices in Amsterdam, London, Toronto, Zurich, Melbourne, New York and Singapore. Ortec Finance helps 600+ clients manage €14 trillion assets under management.

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