

Stargazing? Or have the NGFS and the Bank of England missed an opportunity to drive the race to net zero?

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Climate & ESG Solutions





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‘We are all in the gutter, but some of us are looking at the stars’, wrote the Irish playwright Oscar Wilde. The oft-quoted phrase came to mind when reading the influential reports by the Network for Greening the Financial System (NGFS) – a group of 91 central banks and supervisors that came with its second iteration of climate scenarios - and the Bank of England’s (BoE) second iteration of its Climate Biennial Exploratory Scenarios (CBES), both published this month. The updated NGFS publication sets out six possible climate scenarios ranging from early, orderly and ambitious action to a current policies scenario leading to 3°C warming. The BoE is a member of the NGFS, and the CBES scenarios are therefore broadly aligned with the NGFS scenarios and explore an *Early Action*, a *Late Action* and a *No Additional Action* scenario.

We welcome the emergence of global standard setting scenarios by central bankers. It is a clear signal to the global financial market that climate related risks and opportunities should be fully integrated into investment decision making.

Nevertheless, **as independent climate scenario specialists** Ortec Finance, together with our strategic partner Cambridge Econometrics, are concerned about the implied messaging of two of the NGFS scenarios: the *Disorderly, Delayed Transition* and the *Hothouse World, Current Policies* and, by extension, the CBES *Late Action* scenario:

- Despite what we hear from leading scientists, both the *Disorderly, Delayed Transition* and the *Late Action* scenarios are highly optimistic on the time left before the world needs to transition as well as the speed and ‘orderliness’ of such a transition.
- The counter-factual scenario in case the world fails to transition does not represent a prudent ‘hot house world’ in that it does not fully capture the increase in physical risks (extreme weather in particular) and possible environmental tipping points that could lead to global warming well beyond 3°C.

Our view is that this risks reinforcing complacency in the minds of key decision makers in both the public and the private sector. They might reasonably conclude: “*we can wait until 2030 and still achieve a transition that successfully limits global warming to below 2°C... And if we fail – it’s not that bad. Ok let’s go back to focusing on the next quarter*”. This is potentially dangerous in such an important year for advancing climate change policy. More so, it misses an opportunity to show much needed leadership in the “race to net zero”.

To mitigate the risk of falling into the ‘model says it’s ok’ trap, investors must build a deep understanding of assumptions and limitations of these standard-setting scenarios and in turn develop a range of plausible scenarios, recognizing that one-size-fits-all regulatory scenarios may not capture complex non-linear dynamics of the transition on the one hand and physical risks associated with a warming world on the other hand.

In the remainder of this blog (7 minute read), we substantiate these key observations alongside some thoughts on what they may imply for investors



The NGFS states in its report that they ‘explore a range of plausible outcomes’. That is also what we do at Ortec Finance, and when we take a closer look at the scenarios modeled by the NGFS, we doubt if the scenarios by the NGFS adequately capture the full range of plausible outcomes. Of course, the world of central banks and regulators is full of nuances and many competing pressures, which reasonably may have resulted in less testing, less dramatic scenarios. This deepens the value of the services of independent scenario modelers like Ortec Finance.

What strikes us is the lack of urgency to speed up the transition and the optimism about the ‘orderliness’ of that transition. Perhaps that approach is related to the underestimation by the NGFS and BoE of the physical impacts of climate change if the transition fails.

The shared message of these climate scenario sets seems to be (to paraphrase):

“It is ok to delay the transition towards a net zero world and that the risks associated with a hothouse world are not that bad.”

It is this conclusion that would be a natural one to draw if you are a busy investor, which we feel is the missed opportunity to show leadership and stimulate further the “race to net-zero”.

The lack of urgency coming from these reports is not in line with what science, scenario-analysis best practice - and common sense for that matter - is telling us. Independent studies repeatedly find that the world needs an immediate, highly ambitious and orderly transition to safeguard both investment returns and our living planet.

We believe that – in addition to analyzing the published NGFS/CBES scenarios - investors will gain significant, valuable insights from exploring less optimistic – and potentially more realistic - assumption sets as well. We focus on shaping climate scenarios as *plausible* but *stretching* scenarios for use as prudent risk management and responsible stewardship tools. Our principle at Ortec Finance is similar to that of a structural engineer in an earthquake zone: we help our clients test for portfolio robustness in the face of the worst plausible “earthquake”. Then co-develop an action plan. As such, we deploy a carefully constructed range of scenarios to assess which scenario is most concerning for a particular client’s portfolio.





NGFS and CBES scenarios are highly optimistic on the time left to transition and ‘orderliness’ of such transition.

Both the NGFS’s *Disorderly, Delayed Transition* scenario, as well as the BoE’s *Late Action* scenario assume the transition will only start in earnest after 2030. Yet they still succeed in limiting global warming to below 2°C. This undermines a sense of urgency.

Also, the assumptions made are highly optimistic estimates of:

1. the time left before the world needs to transition
2. how fast the world *can* transition, and
3. the ‘orderliness’ (e.g. volatility and sentiment shocks in financial markets) of such a transition.

Elaborating on the first and second point, based on our work, we find this to be very optimistic because with a 10 year delay for further policy action, the ramp up of decarbonization has to be extremely steep and relies on assumptions that are beyond heroic. For such a transition to be successful, it would necessarily be extraordinarily disorderly, with ramifications potentially deeper and longer lasting than the 2008 Great Financial Crisis.

Let’s take a look, for comparison, at the climate scenarios by Ortec Finance and our strategic partner Cambridge Econometrics. Our scenario in which we assume that climate policy implementation will be delayed **until 2025** (not even 2030), the below 2°C target could only be achieved, with a much greater policy ambition than under an orderly transition scenario with immediate policy action.

- For example, larger subsidies and higher feed-in-tariffs (FiT) for low-carbon technologies are required in order to rapidly decarbonize the electricity sector. Our detailed econometric modelling shows that the FiTs have to be extended to biomass, biogas and Carbon Capture and Storage (CCS).
- Our modelling finds that a 2025 delayed scenario also requires three times higher investment levels in energy efficiency to achieve similar reductions in energy demand by 2050 as an orderly transition scenario with immediate transition efforts. Which means an additional US\$ 1,030 billion in cumulative investments.
- Higher investments in CCS technologies and more ambitious investment in nuclear power are also required.
- With the policy delay, carbon prices in the EU would also be higher than in our Paris Orderly Transition Pathway by an additional € 34 per ton in 2030 and by an extra € 103 in 2050, according to our data.

Thirdly, the assumptions made are highly optimistic estimates in terms of the ‘orderliness’ (e.g. volatility and sentiment shocks in financial markets) of such a transition. We struggle to identify a historic precedent for this level of financial, economic and social change in such a compressed timeframe. Therefore, we would question the plausibility of this scenario.

In short, a delayed transition is much more expensive and disruptive for governments and tax payers and reduces the scope for investors to benefit from transition-related investment opportunities. Hence, delaying the transition harms wealth & well-being for society and investors alike.

Finally, in our view, by effectively rubberstamping a delayed transition, the NGFS and BoE may push the transition beyond a time horizon that is relevant for investors. It discourages the early and ambitious action required to stay below 2°C and understates the plausible near-term transition risks and opportunities.



NGFS fails to explore a prudent ‘hot house world’ scenario.

The level of physical risk reflected remains poorly captured and communicated. The counter-factual *Hothouse World, Current Policies* scenario published as the only failed transition scenario by the NGFS is however, troubling. In our view this scenario does not represent a prudent ‘hot house world’ as it does not fully explore the increase in physical risks (e.g. extreme weather) and possible environmental tipping points that would lead to irreversible global warming well beyond 3°C.

By effectively not including a higher-warming and, according to our research, even likely hot house world scenario the central banking community risks understating the long-term impacts of failing to mitigate climate change. Given the high level of model risk inherent in physical climate modelling, surely fiduciary duty and best practice would lead us to err on the side of prudence.

On the other hand, we would like to express our appreciation of the Bank of England spending a significant effort on going beyond the NGFS in terms of capturing physical risk aspects: the CBES ‘No Policy Action’ scenario is considering the severe physical impacts of a 4°C world. This provides, in our view, a more appropriate representation of a plausible precautionary principle counter-factual scenario. Ortec Finance is proud to have been one of the expert stakeholders consulted in the BoE’s physical risk model development process.

Using Ortec Finance’s climate scenario modelling where we do capture both gradual physical risks, as well as risks from increased frequency and severity of extreme weather events, our *Failed Transition* scenario captures significantly more negative economic – and in turn – financial impacts compared to both NGFS *Hothouse World, Current Policies* and CBES *No Policy Action* scenarios.

Giving appropriate attention to the physical risk aspects of climate scenario analysis is important in order for investors to gain a financial risk exposure picture across the full spectrum of plausible climate futures: from immediate concerted action, to delayed disorderly transition, to failing to transition and facing the consequences of such a hotter world.



Recommendation: investors should develop a deep understanding of scenario assumptions and tailor climate scenario analysis to enable climate-informed investment decision-making.

To mitigate the risk of falling into the ‘model says it’s ok’ trap, investors must build a deep understanding of assumptions and limitations of these standard-setting scenarios. In turn, they need to develop a range of plausible scenarios, recognizing that one-size-fits-all regulatory scenarios may not capture complex non-linear dynamics of the transition on the one hand and physical risks associated with a warming world on the other hand.

Reasonably, the authors of the reports we mention here leave it up to the investors to read, analyze and interpret their reports and scenarios - with no clear direction for investment decisions or policies. Indeed, it is not in their remit to do so. *But what are investors and policy designers to do?*

As the American president Harry Truman once said that a pessimist is someone who makes difficulties of his opportunities and an optimist makes opportunities of his difficulties. Equally, Oscar Wilde would no doubt point out that everyone’s “stargazing gutter” is different. Without being overly optimistic Ortec Finance offers, together with its strategic partner [Cambridge Econometrics](#), state-of-the-art customizable [solutions for climate resilient investment decision-making](#).

One of our key strengths is to help our clients translate the economic impacts portrayed in climate scenarios, such as those published by the NGFS and CBES, to financial impacts relevant to their particular context. Furthermore, global investors may wish to explore less optimistic climate scenario narratives and assumptions, and crucially to expand the scope of these reference scenarios. We help our clients go beyond the current regional and sectoral scope of the NGFS/CBES. All this is key for making climate scenario analysis decision-relevant for investors.



About Climate & ESG Solutions

Climate & ESG Solutions was established within Ortec Finance in 2018 with a view to integrate sustainability into Ortec Finance's technology and solutions for risk and return management. We have developed [five tools to support you as an investor to navigate climate change](#).

These tools offer economic and financial insights into your investments' vulnerabilities and opportunities – and how to act on them. Insights are quantified and expressed in financial metrics for easy integration into your investment decision-making & reporting frameworks. Our tools can be integrated into software, implemented separately, or utilized in various combinations depending on your specific needs.

About Ortec Finance

Ortec Finance is a leading global provider of technology and solutions for risk and return management. It is our purpose to enable people to manage the complexity of investment decisions. We do this through delivering leading technologies and solutions for investment decision making to financial institutions around the world. Our 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 tradeoff and thus better results. Headquartered in Rotterdam, The Netherlands, we also have offices in Amsterdam, London, Toronto, Zurich and Melbourne.



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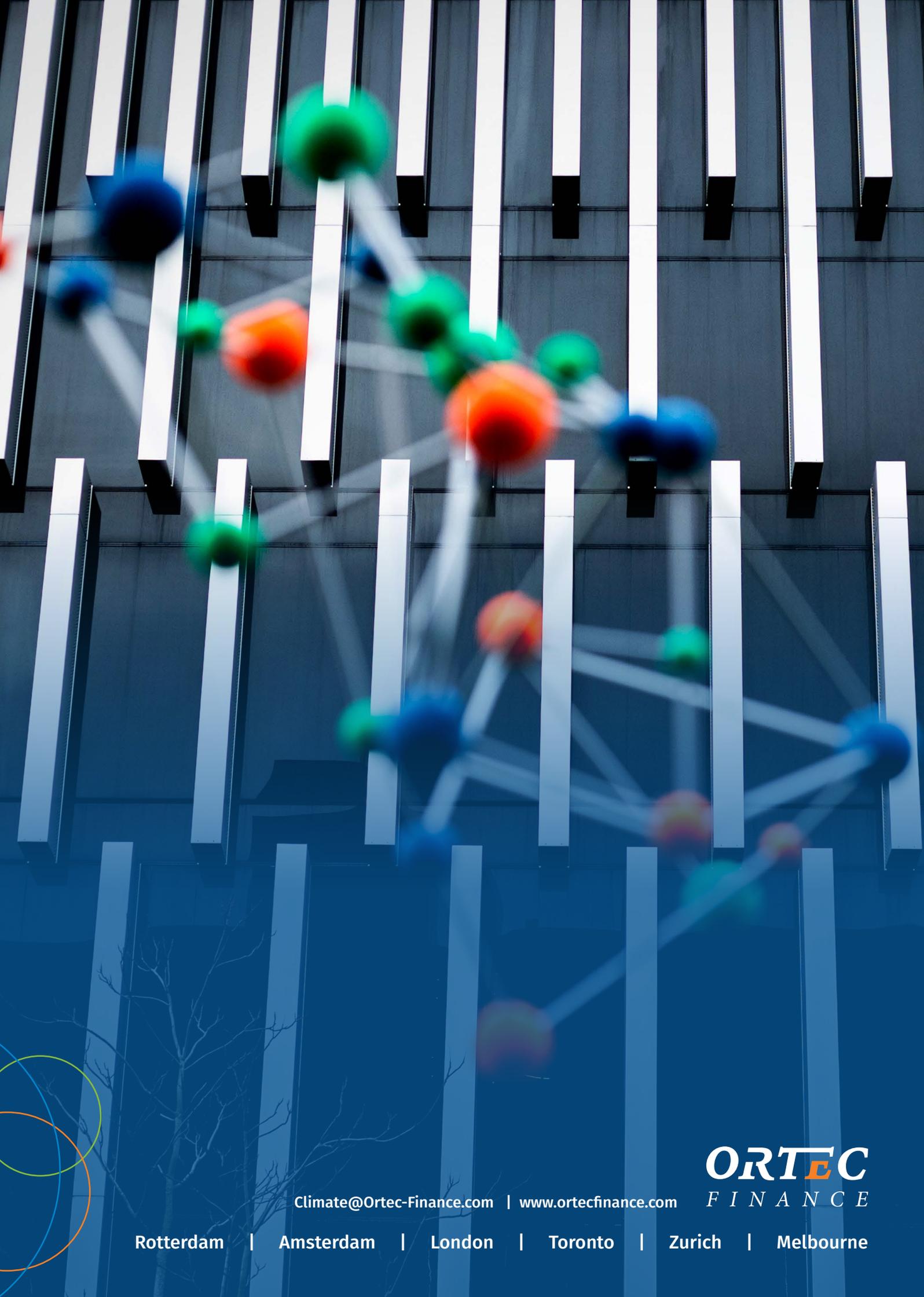


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