

CIO autumn update:

Countdown to COP26



All the photography featured in this document was taken on site in Greenland and Iceland by the Lewis Pugh Foundation. For more information, please visit lgim.com/lewis

Photography credit: Olle Nordell



Foreword:

Inaction is not an option

We are focusing this autumn update on what the climate crisis means for our clients.

We now know that the world risks a grim future even if the global economy is decarbonised rapidly, according to a landmark [report](#) on climate change. The assessment makes clear: inaction is simply not an option for policymakers, companies and investors.

But the paper from the Intergovernmental Panel on Climate Change, whose investment implications we discuss throughout this document, not only emphasises risks such as devastating weather events. It also points towards huge opportunities for those willing to act today to have a positive impact for decades – and generations – to come.

As the global economy continues to recover from the pandemic, albeit haltingly, and world leaders prepare to gather at the COP26 summit in Glasgow, we are focusing this CIO autumn update on what the challenge posed by the climate crisis means for our clients. And how just as there is much to fear, there is also cause for hope and even excitement.

In the update, we outline climate scenarios facing the world and how investors can help to avert the worst outcomes, in addition to providing our regular macro and market analysis. Other topics include:

- The underwhelming nature of ‘green’ fiscal stimulus
- How asset allocators can generate sustainable returns while fighting climate change
- Investing in green tech as the key to decarbonisation

We also discuss ways to address pressing environmental, social and governance (ESG) challenges while meeting long-term cashflow needs, and how China’s macroprudential measures could help create room to meet climate targets.

Inflection point

Taken together, the contributions from teams across LGIM indicate that markets are at an ESG inflection point.

With the pricing of ESG factors still patchy, partly due to the availability and quality of data, there are clear advantages for investors with the capabilities to take forward-looking, strategic views of companies, sectors and markets. At the same time, accelerating long-term trends continue to present potent investment opportunities, from climate solutions to data as an asset and digitisation.

Indeed, is it any wonder that more and more end-investors are demanding that analysis of criteria like climate risk become part-and-parcel of the investment process?

The experience of COVID-19 has intensified such demands, as the pandemic has reminded us all of the value of early, meaningful action to head off looming threats. In less than two months, world leaders will have a chance to demonstrate that they have learnt this lesson with regard to the era-defining challenge of climate change.

At LGIM, to highlight the urgent need for climate action in the run-up to COP26, we have launched a global partnership with [Lewis Pugh](#), the endurance swimmer and environmental campaigner, in addition to taking the steps about which you will read over the coming pages.

We are united with Lewis in our aim to tackle the climate crisis – as well as associated dangers, such as the threat to biodiversity. This mission is critical to our purpose: creating a better future through responsible investing.



Sonja Laud
Chief Investment Officer



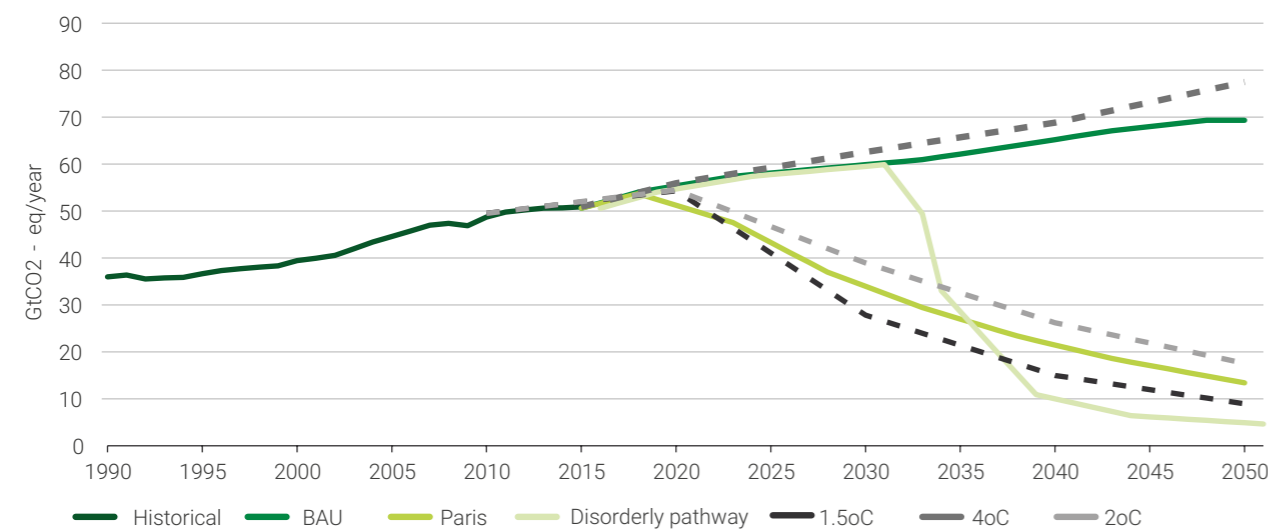
Climate solutions: How to avert the worst climate outcomes

The longer climate action by governments, companies and investors is delayed, the more disruptive the costs.

The UN's climate panel recently published its most comprehensive assessment yet, as Sonja notes, with a clear warning: unprecedented and irreversible climate change is here – and it is only going to get worse. To minimise the impact, emissions must reach net zero around mid-century.

We believe policymakers and companies cannot wait for changes in the climate to become so severe that they are forced to act. According to our research, if global emissions do not start falling until 2030, the cost of the transition will increase by five times.

Climate scenarios



Source: LGIM as at 27 May 2021. There is no guarantee that any forecasts, which are made for illustrative purposes only, will come to pass.



Three pathways

At LGIM, we use three central climate scenarios in our analysis:

1. The world takes no policy action, in a 'business as usual' pathway, consistent with global warming of around 3.5 degrees by 2100. This scenario would be associated with significant physical risks in the second half of the century, potentially resulting in widespread macroeconomic disruption and geopolitical stress.
2. The world takes organised, logical policy steps to reduce global emissions at a rate fast enough for an outcome consistent with the Paris accord and well below two degrees (although not to net-zero emissions). This scenario has far smaller physical-risk consequences, but is associated with moderately significant transitional risks as carbon costs rise from near zero today to around \$400 a tonne by 2050, according to our research.
3. The world does little to address climate change until the end of the decade, thereafter attempting to reduce cumulative emissions by the amount necessary under the second scenario. This 'disorderly' scenario results in material macroeconomic disruption, creates a material risk of stranded assets, and pushes carbon prices to \$1,000 a tonne.

In addition to the consequences outlined above, each scenario would clearly hurt risk assets, with the first and third causing the most damage to markets like equities.

The physical risks from climate change – and potential policy risks from mitigation actions – will also have other profound repercussions for a broad array of assets that are unlikely to be priced in today.

Concrete steps

This is why we believe investors and their advisers must start taking concrete steps to ensure they are integrating climate analysis into their strategic frameworks. As fund managers, we can conduct this analysis and design products that channel financial resources towards mitigation and adaptation.

But the challenge goes beyond changes we can make at the fund level – climate change poses such a significant threat that we believe it needs to be considered as an issue of strategic importance by asset allocators worldwide.

In our view, active engagement could also help ensure the worst outcomes are not realised. Hence our work with companies under LGIM's [Climate Impact Pledge](#), to encourage them to increase the quality of disclosure, set credible targets and adapt business models – with the threat of sanctions should they fall short of our expectations.

The science underpinning the UN report could not be clearer: governments, companies and investors must take action. We cannot wait until more and more extreme climate events force our hand.



Nick Stansbury
Head of Climate Solutions



Economics: Global growth and green stimulus

COVID-19 concerns make a synchronised global boom into year-end unlikely, while funds aimed at tackling climate change remain underwhelming.

The vaccine rollout has proceeded relatively smoothly, with the US and Europe leading the charge and enjoying a strong rebound in services activity in recent months. The rest of the world is expected to catch up over the next year. The main disappointment is that herd immunity is proving elusive.

Virus cases remain stubbornly widespread, even in some countries with relatively high vaccination rates. The good news is that most of the vaccines are proving successful against serious illness and hospitalisation; the bad news is the dominant and more infectious Delta variant spreads rapidly, especially among the unvaccinated. There are also a number of uncertainties around how effective the vaccines are against transmission and whether efficacy wanes over time. This is leading to some countries to consider deploying a booster shot.

For now, we are left with several countries imposing fresh restrictions and no visibility on when international travel and tourism will normalise. With continued COVID-19 concerns, this removes the upside risk of a synchronised global boom into year-end.

Taming inflation

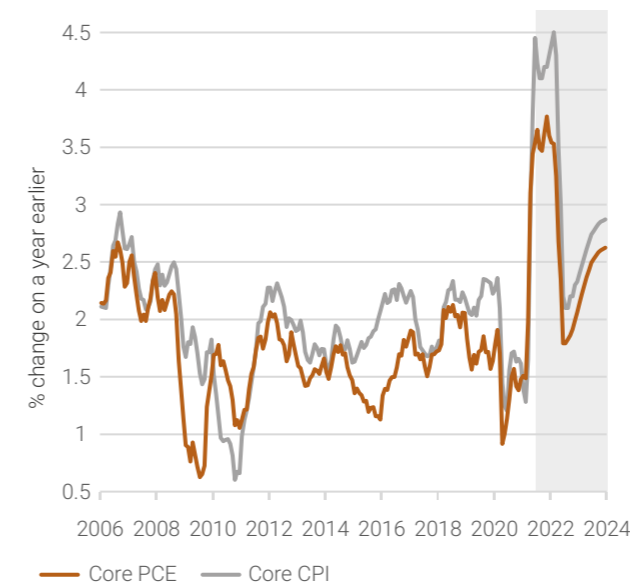
The biggest downgrade to our growth outlook has come from China, which continues to deploy a zero-tolerance approach to the pandemic. Targeted restrictions have been necessary to keep recent outbreaks at bay; this is likely to weigh on growth through the rest of the year.

US growth, while still decent, is not looking as spectacular as hoped, with COVID-19 delaying a return to many offices and some evidence that consumer behaviour is becoming more cautious, especially in states with relatively high rates of hospitalisation.

US core inflation has been even **stronger** than we flagged in the **spring update**, but the increase has been narrowly focused among a few components impacted by reopening or supply disruptions.

While there is more uncertainty around inflation than usual, it still seems likely to return to target next year as these effects unwind. Labour shortages should ease as enhanced unemployment benefits expire, but the risk remains that underlying price pressures build as loose policy and excess saving fuels robust growth through 2022. The Fed seems on course for tapering by the end of the year, provided the pandemic does not undermine the labour market recovery.

US core inflation and LGIM forecast



Source: Macrobond, LGIM as at 26 August, 2021. There is no guarantee that any forecasts made will come to pass.

No 'Green New Deal'

The US Congress is considering the next round of fiscal stimulus, which is split into two parts. The first is a bipartisan infrastructure bill (\$550 billion of new spending)¹, which contains some green elements such as low carbon technologies in new port and airport infrastructure. There is also around \$15 billion for electric buses and a nationwide network of plug-in vehicles, with plans for an expansion of renewable energy as part of \$60 billion to rebuild the electric grid. Around \$21 billion is for cleaning up mines and brownfield sites.

The second part (up to a maximum of \$3.5 trillion spending and \$1.75 trillion of deficit funding over 10 years) will require unanimous consent among Democrats in the Senate to pass. This yet-to-be-negotiated spending could contain some green stimulus, but is likely to fall way short of the 'Green New Deal' advocated by Bernie Sanders on the campaign trail.

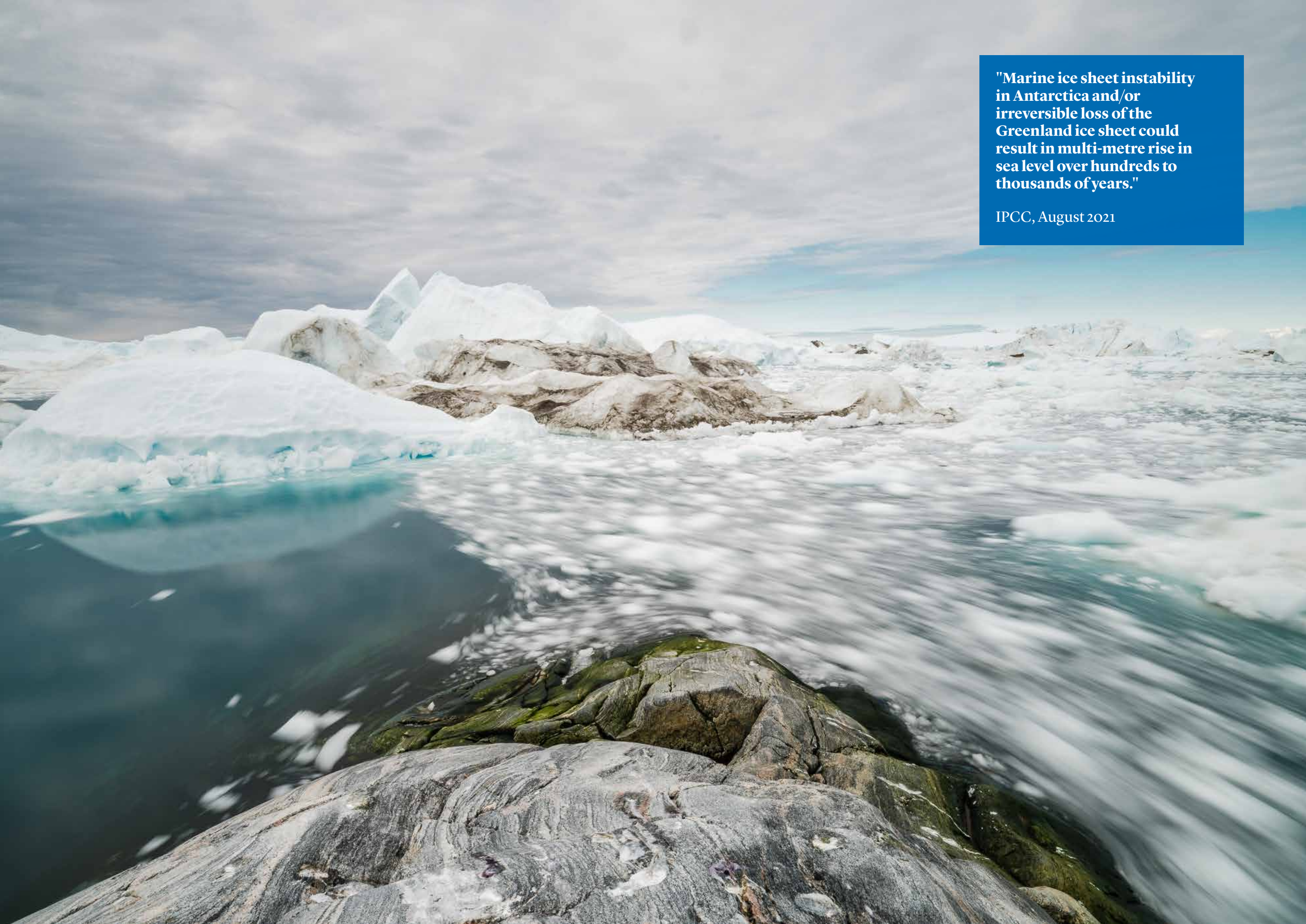
These new proposals are likely to collide with the need for Congress to increase the debt ceiling and approve regular government spending as the US heads for a potential political showdown towards the end of September.

In addition, they compare unfavourably with the sums the EU has recently made available for the green transition, in the form of grants and loans to member countries: more than a third of its 750 billion euro recovery fund and a 17.5 billion euro **Just Transition Fund**.² That said, these initiatives are also unlikely to be **enough** to combat the climate crisis in time, meaning that much of the heavy lifting will need to be carried out by the private sector.



Tim Drayson
Head of Economics

1. Source: Bloomberg - <https://www.bloomberg.com/news/articles/2021-07-28/what-s-in-the-550-billion-bipartisan-infrastructure-deal>
2. Source: Reuters - <https://www.reuters.com/article/uk-climate-change-eu-justtransition-idUKKCN2AV2HA>



"Marine ice sheet instability in Antarctica and/or irreversible loss of the Greenland ice sheet could result in multi-metre rise in sea level over hundreds to thousands of years."

IPCC, August 2021

Asset allocation: The multi-asset battle against climate change

We are positioning our portfolios to help curb a climate catastrophe and generate sustainable returns for our clients.

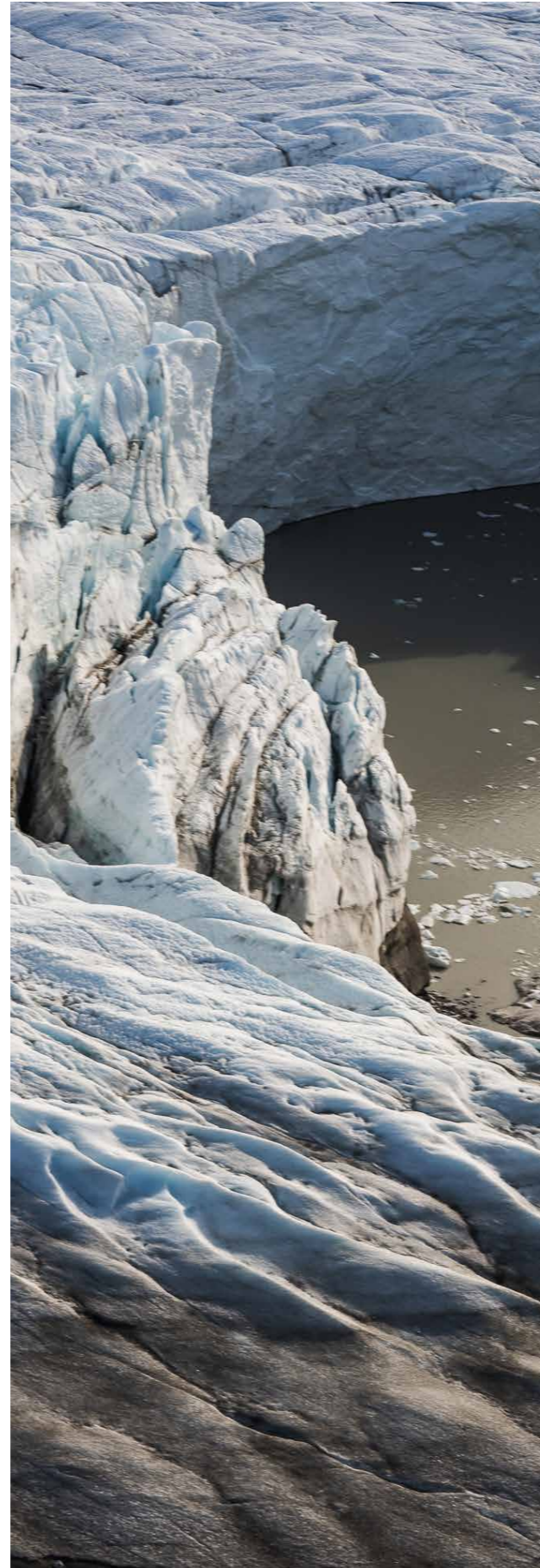
Within the Asset Allocation team, we believe that climate change presents both urgent challenges, as outlined elsewhere in this document, and appealing investment opportunities – some of which are unique to our multi-asset capability and particularly relevant to the current macro environment.

As a result, we have adopted investment themes that, in our view, are likely to benefit from and hasten the global energy transition, deploying our portfolios in the fight to avert a climate catastrophe. We have also continued to future-proof those portfolios against broader ESG risks.

A longer cycle

Our medium-term view on risk assets remains bullish, because the global economy is in mid cycle, consumers have excess savings to spend, investor positioning is quite neutral and central bank support is still plentiful. Although the momentum of economic growth is fading, our research [suggests](#) this does not necessarily mean lower equity markets.

At the same time, earnings momentum remains favourable, allowing valuations to drift lower while markets grind higher. Finally, recent recession [indicators](#) also point towards a slightly longer cycle than previously anticipated.



Still, markets have had an extraordinary run since the lows of March 2020, meaning it is more important than ever for us to identify new investment themes and strategies to generate sustainable, long-term returns for our clients. Below are two examples.



Decarbonisation: We have built a [basket](#) of 25-30 stocks that, in our view, should benefit from the increased focus on decarbonisation and more explicit and realistic pricing of carbon emission costs, from clean energy generation to storage batteries. We aim to capitalise on this multi-trillion-dollar opportunity, which we see as a massive growth theme for the medium term, especially against a backdrop where economic output remains tepid.



Forestry: By this, [we mean](#) timberland companies that own forests and the associated lands as their main assets. Trees are a renewable resource that offer a sustainable solution to many products that the world demands. Moreover, responsible management of forests does not just protect the trees, but also the wildlife and ecosystems that depend on them.

Forestry also exhibits low correlation and betas to equities and our other listed alternatives, which means its addition to our portfolios can improve [overall diversification](#). We also see some positive, long term inflation-linked returns offered by the asset class in an investment landscape dominated by negative real yields.

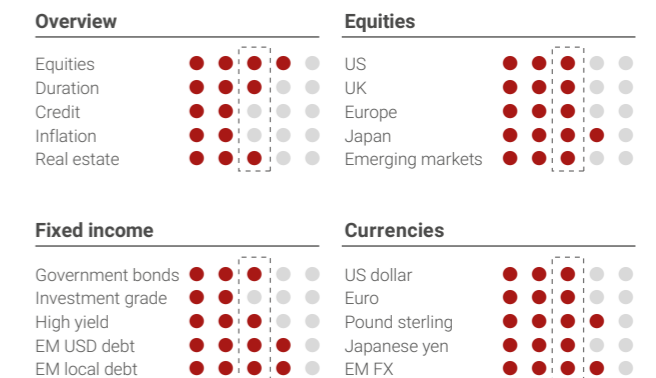
Stress tests

More broadly, we continue to bake ESG considerations into portfolio construction, which includes establishing medium-term, decarbonisation glide paths. In addition, we stress test our portfolios using LGIM's proprietary climate-scenario analysis, to reveal which assets are most at risk or offer the most potential upside.

We are also moving the equity exposures in most of our funds from standard market cap-weighted indices to ESG-integrated indices – a shift of assets in excess of £10 billion – in addition to launching multi-asset strategies with explicit ESG objectives.

In our view, strategic thinking about ESG factors should focus on two elements: Capitalising on opportunities provided by the paradigm shift in markets; and risk management by anticipating changes in how the market will price ESG risks in the future. We believe the actions listed above demonstrate this thinking in practice and show our commitment to responsible investing as a way of effecting positive change across a range of ESG topics, not least the challenge of climate change, and delivering sustainable returns to our clients.

Asset class views



[Dashed box] = Strategic allocation

This schematic summarises the combined medium-term and tactical views of LGIM's Asset Allocation team as of 16 August 2021.

The midpoint of each row is consistent with a purely strategic allocation to the asset/currency in question. The strength of conviction in our medium-term and tactical views is reflected in the size of the deviation from that mid-point.

The above information does not constitute a recommendation to buy or sell any security



Emiel van den Heiligenberg
Head of Asset Allocation

Macro strategy: China's give and take

Policymakers appear happy to accept greater market volatility as they pursue macroprudential measures, which may also create room to meet climate targets

While much of the world is benefiting from ultra-supportive fiscal and monetary policy in 2021, the same cannot be said for China. Having splurged during the COVID-19 crisis in 2020 – when non-financial sector debt rose by a staggering 26.6% of GDP, according to the BIS – authorities have now decided to tighten their belts.

They are doing so in two ways: broad guidance to slow investment spending and bank lending; and sector-specific rules to reduce credit growth, notably among property developers.

On top of this, Chinese policymakers have been actively intervening across several sectors, from closer regulation of tech giant Ant Group*, to concern about data loss at ride-hailing firm Didi Chuxing*, to the entire private education sector and even the social impact of video gaming. The breadth and impact of such intervention appears to be a systemic policy to address perceived threats and weaknesses.

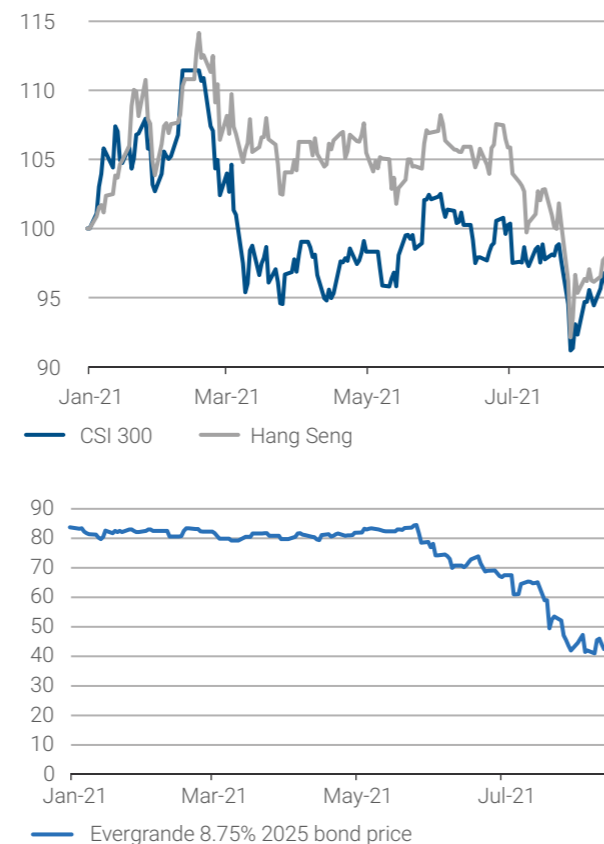
Debt brake

The combined impact has been a significant underperformance of Chinese assets in 2021 – both equity markets, as well as high-profile corporate bonds, such as those issued by the massive Chinese property developer Evergrande*. In addition, economic data have shown the impact, with July activity particularly disappointing.

Indeed, it was probably this weakness, combined with the economic restrictions associated with the spread of the Delta variant, that encouraged policymakers to ease their foot off the debt brake with a reserve rate requirement cut for banks in July.



Chinese assets stumble in 2021



Source: Eikon, as at 16 August 2021. Rebased to 100 at the beginning of the year.

But they do not appear to want to reverse course entirely. The pace of debt growth was clearly unsustainable in 2020; much of this liquidity eventually finds its way into assets like the property market, sending prices too high for the average buyer. There also seems to be a focus on commodity prices, which have historically risen in line with Chinese debt growth. This time around, China is pushing back against such escalating input costs.

Emissions targets

In addition, policymakers will be keen to create room for much-needed investment in the coming years related to their climate target of reaching peak emissions before 2030, and carbon neutrality before 2060. It is far from clear how this policy will impact the country's long-term growth outlook, but we believe focusing on more productive debt and containing asset bubbles is clearly a sensible policy in the meantime.

Indeed, in our view, it is probable that current policy interventions will allow the world's second-largest economy to grow faster and more sustainably than would otherwise be the case over the longer term. But looking at the next few months, it is even clearer that policymakers are happy to accept volatile and potentially weaker markets as a near-term price to pay for this ultimate gain.



Ben Bennett
Head of Investment Strategy
and Research

*For illustrative purposes only. The above information does not constitute a recommendation to buy or sell any security.



"Increasing warming amplifies the exposure of small islands, low-lying coastal areas and deltas to the risks associated with sea level rise for many human and ecological systems."

IPCC, August 2021



Solutions: Making liability- matching part of our ESG mission

We outline practical steps to help our clients tackle pressing ESG challenges and meet their cashflow needs.

For long-term investors with liability payments to meet, the focus over the coming decade is likely to be investing in assets that deliver stable, long-term cashflows. But, as Nick highlights, this period will also be pivotal to directing capital to address the challenges posed by climate change.

We believe both objectives are inextricably linked. In this piece, we will outline how LGIM's Solutions team strives to meet them within liability-matching portfolios.

Proactive stance

Liability-matching strategies comprise assets that generate so-called contractual cashflows to increase the certainty of returns, reduce volatility and generate the funds needed to meet liability payments. At the core of such strategies are long-dated corporate bonds managed on a 'Buy and Maintain' basis.

Given the clear financial materiality of ESG factors – and their impact on the creditworthiness of issuers – integrating these factors has been a core component of our credit research and portfolio management for many years.

Growing numbers of investors are looking to take a more proactive stance on ESG themes within these portfolios, which make up an increasingly significant proportion of their overall assets, just as we are intensifying our efforts on issues like climate change. This means leveraging our proprietary toolkit to incorporate specific ESG objectives into Buy and Maintain credit mandates.

As shown below, examples include targeting net-zero carbon emissions by 2050 and improving portfolio alignment with the UN's Sustainable Development Goals ('SDGs').



ESG integrated within all portfolios

Integration of ESG risks into credit research process at **sector** and **issuer** level

Combined with **active engagement** to drive change



Net Zero and Paris-alignment

Managing mandates to **net zero / other climate objectives**

Leveraging our proprietary **LGIM Destination@Risk** climate toolkit



UN Sustainable Development Goals

Managing mandates to reflect beliefs on **sustainability** and **impact**

Leveraging our proprietary **SDG assessment** framework

Turning theory into reality

To support investors in designing mandates that both incorporate their specific objectives and provide the flexibility to respond to the rapidly changing world, we look to adopt a consistent approach with three key principles:

1. A clear ESG objective
2. A mechanism for improving the ESG profile of the portfolio over time
3. Engagement with companies and policymakers to drive real change

Our climate-aligned portfolios are aimed at demonstrating these principles in action, illustrated by the example below.



Net zero target: Target net zero by 2050 with a 'pathway to net zero' clearly established by 2030



Decarbonisation mechanism: Manage the portfolio to improve the temperature alignment at the outset and over time to target a temperature alignment for the portfolio of 1.5°C by 2030



Engagement with companies and policymakers: Incorporate LGIM's Climate Impact Pledge

In order to construct and manage portfolios, we use our proprietary LGIM Destination@Risk climate toolkit. Our approach enables us to build portfolios that move towards a net zero target while achieving similar investment characteristics to a standard portfolio, with only a small decrease in diversification.

We have seen strong interest in this approach, as investors make clearer commitments to net zero, and now have over £1bn of assets under management implementing such strategies.

Targeting SDGs

Climate risk is only one – albeit critically important – ESG factor of many. In addition to incorporating other ESG criteria in our investment process, we also use our proprietary SDG assessment framework to construct and manage portfolios that show improved alignment with the goals versus standard portfolios or benchmarks.

The framework evaluates to what extent companies are aligned to SDGs as a result of revenues from products or business practices that contribute to, or detract from, the goals. We classify each issuer into one of five categories: exclude, borderline negative, neutral, borderline positive and positive alignment. These feed into both portfolio construction and engagement activities, as we look to improve SDG alignment over time within the portfolio and across the wider investment universe.

Within the Solutions team, we also partner with our clients to help meet their needs and tackle pressing ESG challenges in other areas, not least [Liability-Driven Investment](#) and derivatives.



Anne-Marie Morris
Head of DB Solutions Strategy



Thematic investing:
**Investing in
 green tech –
 the keys to
 decarbonisation**

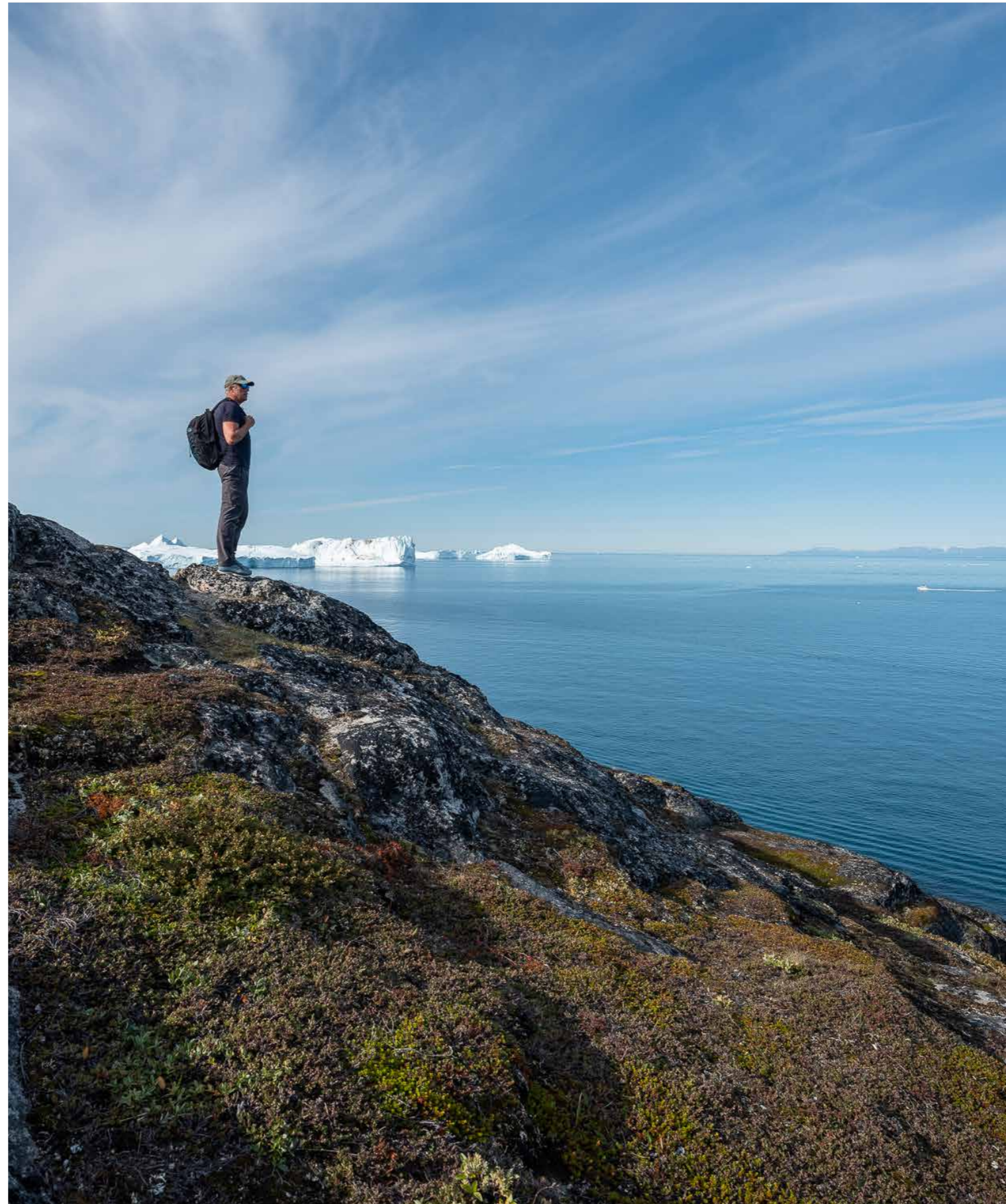
Three technology value-chains are essential to unlocking the promise of a net-zero economy.

The need to transition to a lower-carbon economy has never been clearer. The evidence, from recent tragic extreme weather events to August's landmark IPCC report, is compelling. We are proud that LGIM will not only be a leading voice on the necessity of action at COP26, but also has a longstanding record of successful engagement on climate issues.

The importance of reshaping the existing economy is only part of the story, though; it is just as crucial to consider the new, greener economy we can create.

About \$130 trillion of investment is needed to achieve global net-zero emissions (including \$20 trillion by 2025)³ – an essential investment in our future world, but also an investment opportunity in itself. For investors, the path to net zero is thus more than a social imperative; it is also an opportunity to align portfolios with climate objectives and invest in a long-term growth market focused on effecting positive change.

Supported both by net-zero targets becoming increasingly enshrined in law, and by scientific advances and scale effects making their adoption more economic, three technology value chains should in combination facilitate the transition to a decarbonised world and benefit from the waves of investment into climate and environmental solutions.



Clean energy: This market, related to the production of clean energy, spans equipment manufacturers, technology suppliers, and utilities and power producers, each of which will be vital in helping the world address the climate emergency. In our view, the market for clean energy is poised for sustained growth through a virtuous cycle of investment, technological advancement, and increased adoption.

Battery technology: Without better and more extensive battery storage, the potential of clean energy will be limited. Improved energy storage can help overcome the short-term intermittency – due to daylight hours or fluctuating weather – of renewable sources. Without an upgraded storage infrastructure, much of the electricity that could potentially be generated by renewables will be lost, and coal and gas-fired power stations will remain necessary to cover supply shortfalls. Battery technology is also integral to the process of replacing internal combustion engine vehicles with electric alternatives.

Hydrogen economy: The combination of clean energy and batteries can, however, only take the world some of the way to net zero. Many areas of the economy – such as heavy-goods vehicles, shipping, and some aspects of heavy industry and home heating – will be hard to decarbonise with just the aforementioned technologies. Hydrogen power and fuel cells are becoming a viable alternative in these spaces.

Together, these three themes can offer portfolios exposure to long-term secular growth markets, diversification potential relative to a market-cap benchmark, and a tangible ESG impact and alignment to the UN's Sustainable Development Goals.



Howie Li
 Head of ETFs

3. Source: Legal & General, 2021 (https://www.legalandgeneralgroup.com/media/18405/lg-ar-2020_web-final.pdf)

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