# Climate change: Inaction is not an option

## Seeking to deliver an active approach to engagement **and** investing

This paper is jointly authored by LGIM's Climate Solutions team and AP7. The views and approach expressed within this paper relate specifically to their mutual investment strategy.

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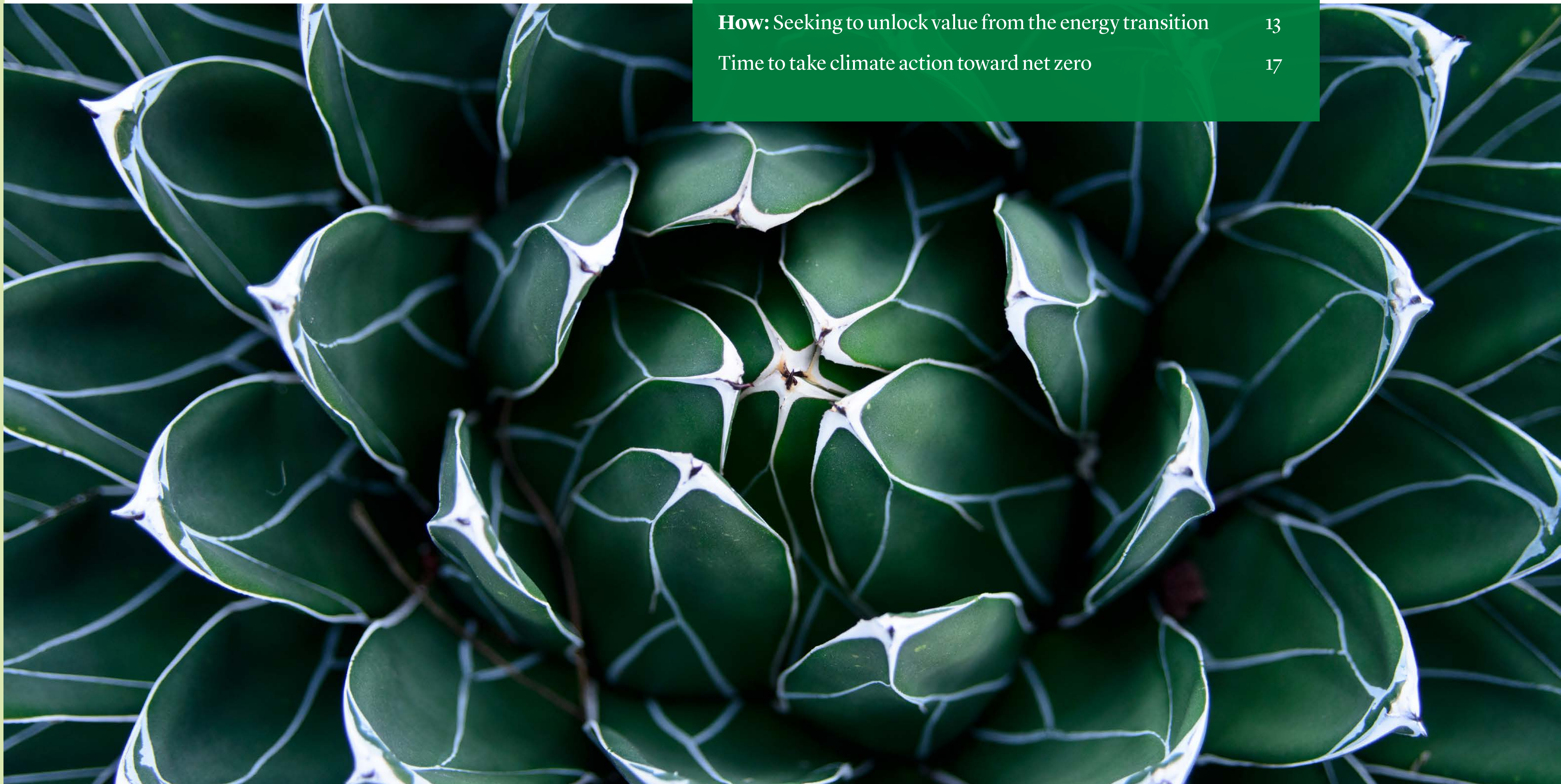

# Foreword:

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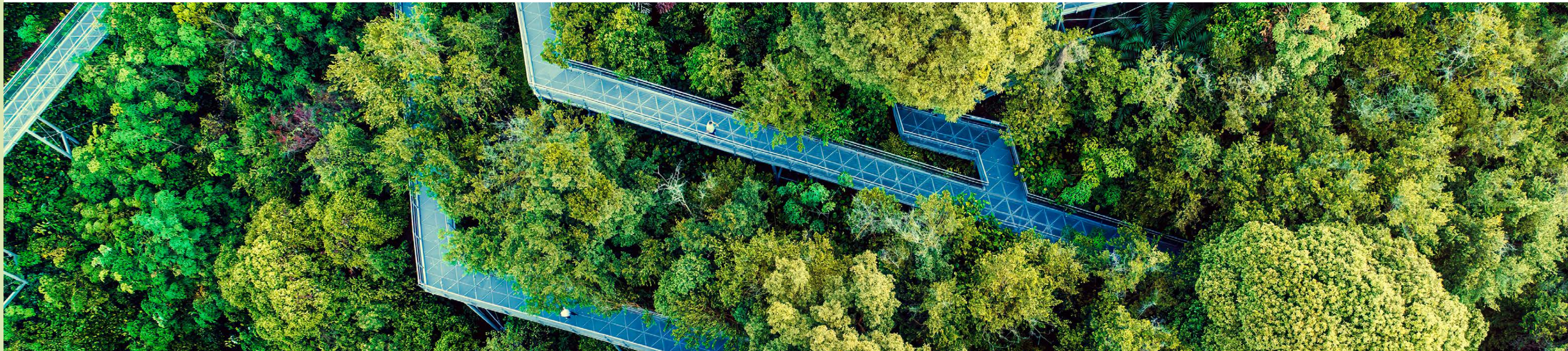
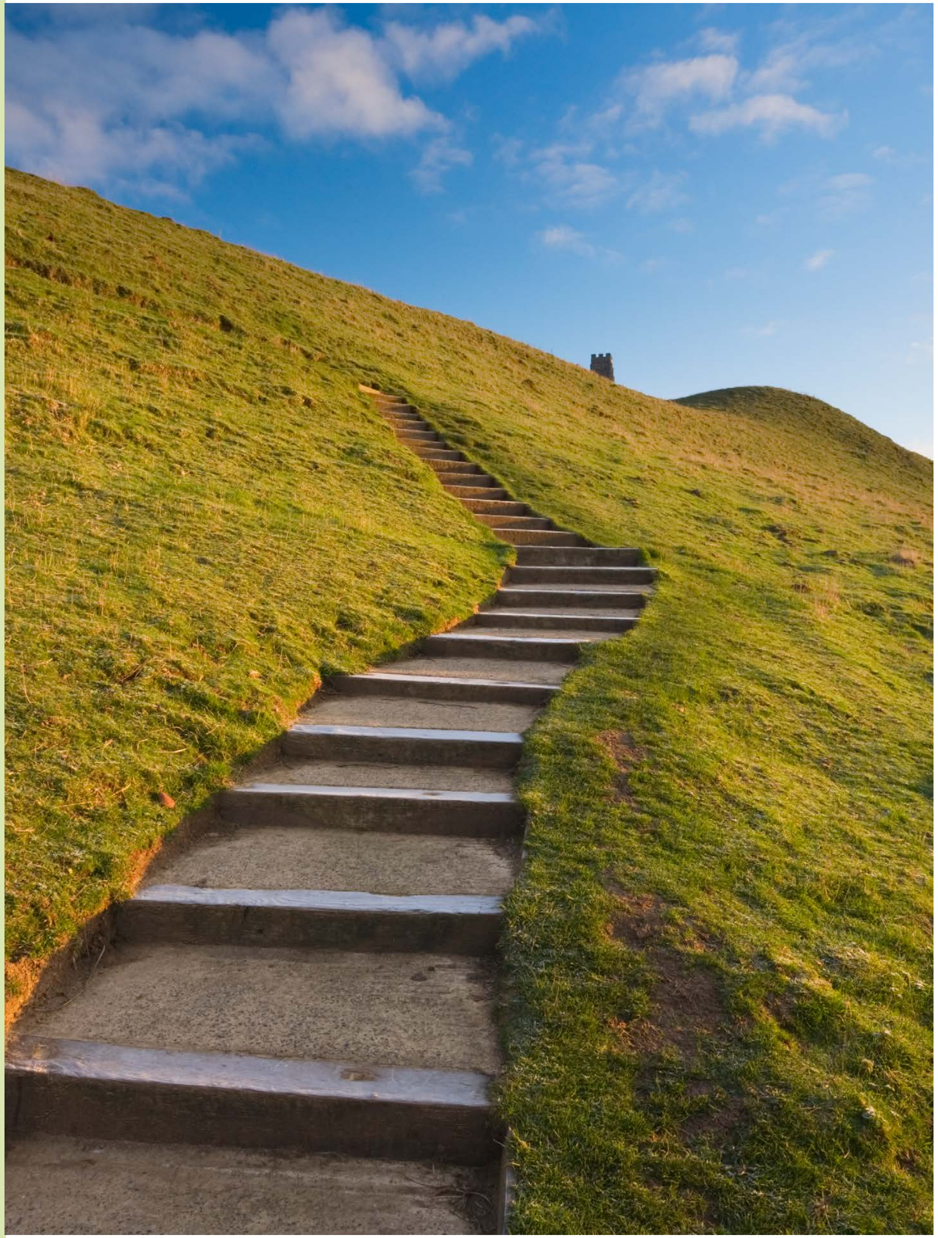
This paper makes the case that the greatest climate impact – and potentially also some of the greatest returns – can be sought by investing in those companies with high emissions or whose products have the greatest impact on other companies' emissions. Central to this approach is pro-active and profound company engagement; we believe in encouraging the companies to pull the levers necessary to target improved aggregate climate outcomes. The goal is to allocate more capital to drive the business opportunities the transition creates, while simultaneously driving down emissions over time.

"We believe the **negative** framing of the **climate question** and the slow transition progress of many companies have created a **significant opportunity** for investors."





# Reframing the climate question

"How should an investor balance a focus on reducing their climate impact with a desire for financial returns? And how does a company management team accommodate what can often be seen as competing demands, particularly when the going gets tough?"

This negative framing of the climate question is evident in many investors, who see balancing carbon and returns as an increasing challenge. Yet it's often even more apparent in companies, for whom addressing carbon emissions can be a clear priority in times of plenty, but as soon as either company specific or broader economic headwinds emerge, the issue can quickly become a 'tug of war' between sustainability and finance teams – with a CEO and board stuck in the middle.

However, it is our firm belief that instead of framing the challenges and opportunities of the energy transition in these terms, investors and companies could be asking a different, more positive question: how can these opportunities and risks be addressed **simultaneously**?

In fact, we believe that addressing the opportunities and risks created by the energy transition to help target a positive impact on climate outcomes **can be closely aligned** with a focus on long-term returns. However, far from maximising the potential value created by the transition, many companies are still failing to transition at an optimal pace.

It's the combination of the false framing of the climate question and the slow transition progress of many companies that, in our view, create such a significant opportunity for active investors to have both a positive impact on climate outcomes and also target returns. On the one hand, many still misunderstand the fundamentally **economic** nature of decarbonisation – leading to the possibility of material mispricing for investors to take advantage of as they seek to reduce their climate impact; on the other hand there is a window of opportunity for investors to engage with and positively influence those companies who continue to underperform their real climate potential.

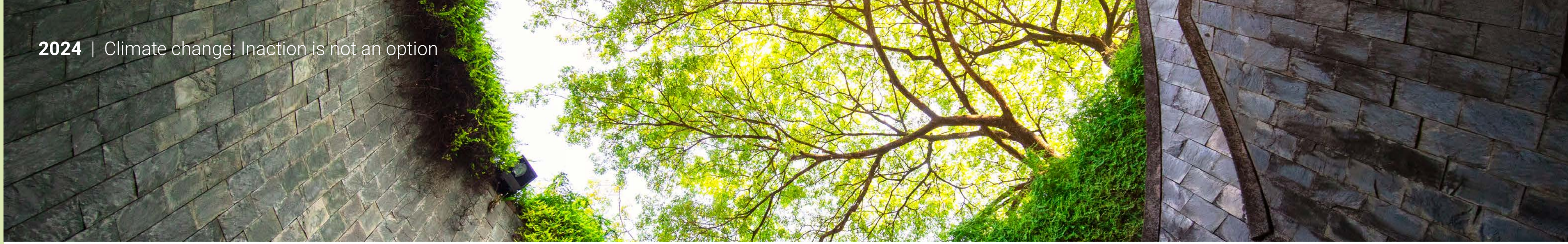
Excitingly, we also believe that a focus on seeking the greatest positive societal impact through lower emissions can be extremely well-aligned with targeting increased shareholder value. That's because those companies with the highest carbon emissions, or whose products can have the greatest impact on others' emissions – exactly the sorts of companies upon whom we will focus our efforts – in our view are also likely to be the type of companies for whom successful engagement can have the greatest potential impact on real-world emissions.

Harnessing this opportunity requires close partnership between asset owners and asset managers, as well as between active ownership and active investors, as we believe value creation is likely to come from a **combination** of effective engagement and stock selection. It's not enough just to buy the stocks with the greatest potential for positive change. Pro-active and profound engagement with those companies is crucial to help ensure that that potential is realised.

To achieve this, LGIM and AP7 have collaborated closely to design and develop an innovative approach from scratch that aims to **accelerate** the transition to a net-zero world, while also seeking to unlock shareholder value.

LGIM's partnership with AP7 underpins our conviction behind this approach – a hypothesis which challenges much of the conventional wisdom around climate investing. The traditional ESG approach of investing in companies that are already aligning with the Paris goals, or simply in those who by the nature of their business model inherently have a very low carbon footprint, does not necessarily – in isolation – provide the best opportunities for investors.

In fact, we believe that an investor can potentially target the greatest climate impact – and also potentially the greatest returns – by investing in those companies that have **high emissions**, and then engaging effectively to drive them down over time, as well as by driving greater capital allocation to the opportunities that the transition could create for their business.



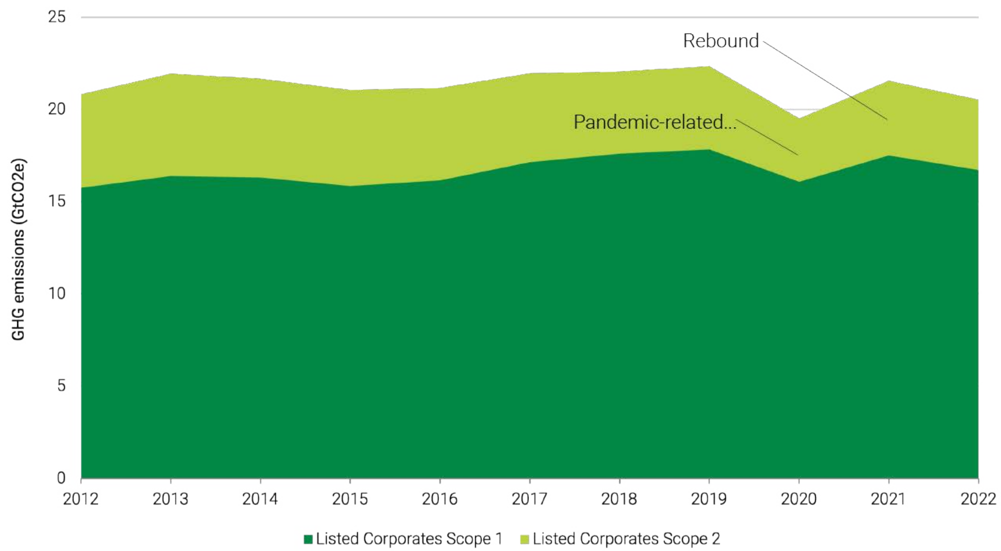
# Why:

# The speed of transition – listed companies could be leaving billions on the table

Depending on how it is calculated, listed companies make up between 40% and 50% of the global emissions stack[1]. What listed companies do with their own emissions has the potential to materially affect the climate outcome the world realises.

While also difficult to calculate, particularly given the need to strip out double-counting effects, integrating Scope 3 emissions into this calculation would significantly increase their share. This means that in aggregate it is highly likely that listed companies have a significant influence in well over half of all emissions globally. Unfortunately, when we look at these emissions over time, we can see that listed companies in aggregate have not been decarbonising, once we adjust for the effects of COVID (Figure 1).

**Figure 1: Historical listed corporate emissions**




Source: $CO_2$ emissions – Our World in Data and LGIM analysis, as at August 2023. Scope 2 emissions have been adjusted to avoid double-counting. **Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.**

An objective analysis of listed companies' climate targets would also suggest that future expectations for listed emissions should be little different – with around 80% of the emissions from listed companies coming from those that are not aligned (according to LGIM's proprietary models) with 'below 2 degree' climate outcomes. Unless listed companies significantly accelerate both their ambition and their actions, their lack of action risks significantly impairing the world's climate goals.

**"LGIM's** analysis suggests that delaying **climate action** by **10 years** might put as much as an incremental **8% of global GDP** at risk between now and **2050**."

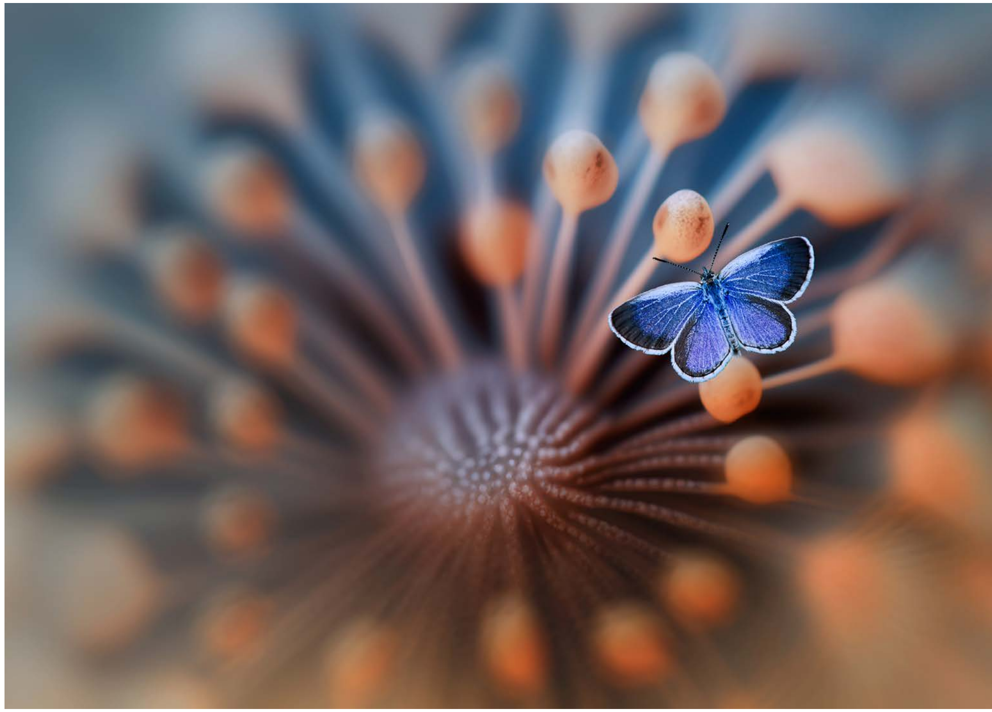
In our view, inertia also risks a significant misallocation of capital, with potentially significant financial consequences for investors. The emissions that are not aligned with 'below 2 degree' climate outcomes are also likely to sit towards the bottom end of the global abatement cost curve – and which should be decarbonising at least as fast, if not faster, than the pace associated with net-zero-2050-consistent scenarios.

According to our analysis[2], the direct financial costs of this lack of ambition for companies in MSCI ACWI alone could be around $290b USD cumulatively between now and 2030. The longer-term financial implications are – from a systemic perspective – just as serious. LGIM's analysis also suggests that delaying climate action by 10 years might put as much as an incremental 8% of global GDP at risk between now and 2050.

Unlike corporate emissions, there is no 'unit of measurement' that investors can use to measure capital allocation towards opportunities (beyond tracking the dollars themselves on a case-by-case basis), which necessitates demonstrating this under-allocation by anecdote rather than systematically.

In this vein, we believe two anecdotes are useful. First, the allocation of capital towards the renewable industry – where we estimate that capital allocation is currently running at approximately one third the level required for a net-zero world. Second, the development of new critical mineral resources is still in its early stages. For instance, the IEA estimates that achieving net-zero globally by 2050 would require **six times** more mineral inputs in 2040 than today.[3]

So not only are companies not decarbonising their own balance sheets sufficiently quickly, we see little evidence that they are allocating enough capital towards the opportunities that the energy transition is likely to create. Both of these failures could carry significant costs for investors. Yet we believe they offer potentially significant opportunities if they can be addressed.



Source: [2]LGIM. Desitnation@risk. [3]IEA (2021) The Role of Critical Minerals in Clean Energy Transitions
**Assumptions disclaimer - Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.**

# What:
# Focusing on **high** not low-carbon stocks via active ownership and investment

Many climate-conscious investors have historically focused on selling high-carbon stocks while potentially allocating capital to those companies that either already are, or are perceived to be, well positioned as future winners. Working in partnership, LGIM and AP7 are aiming to take a different approach.

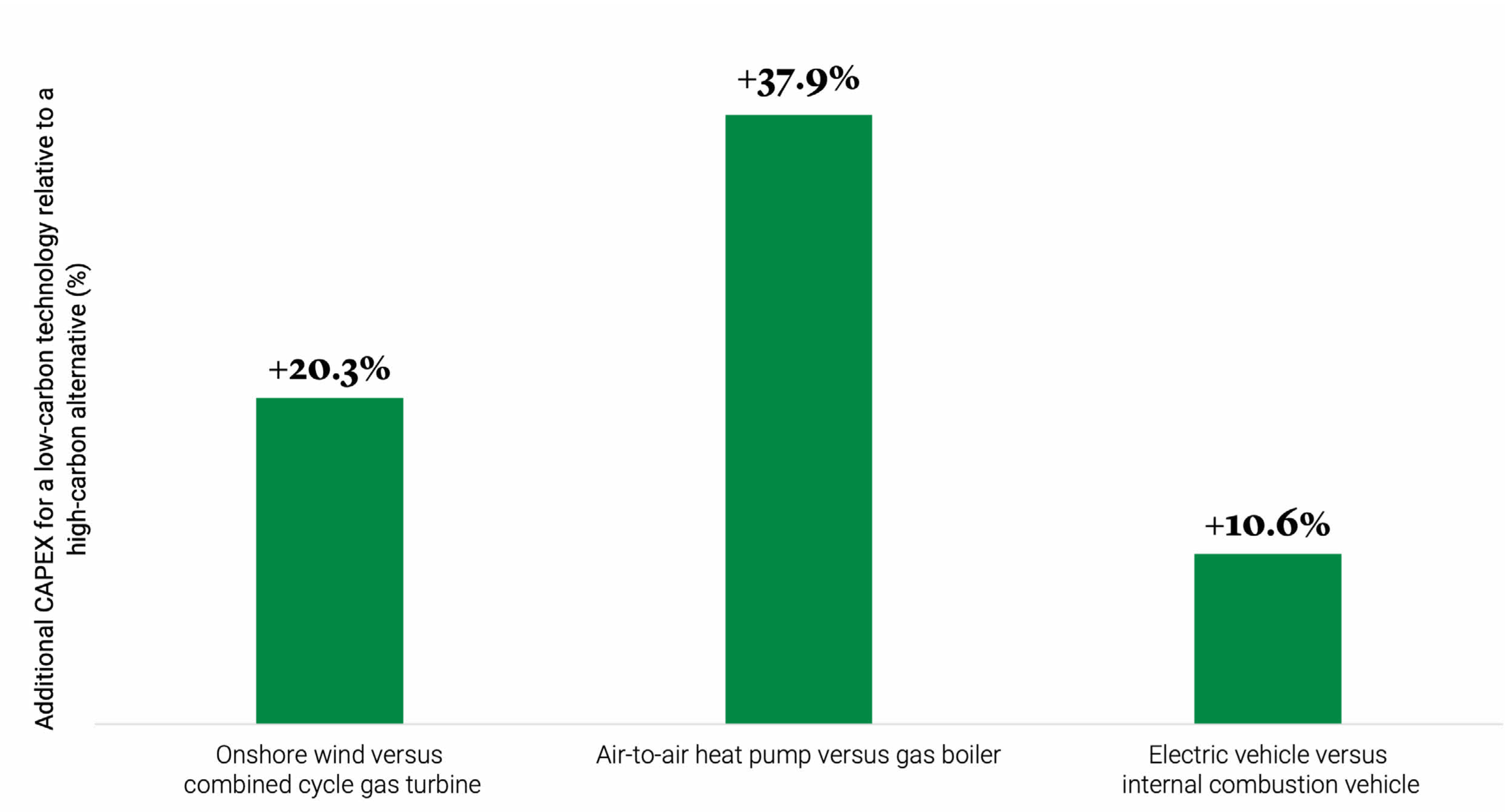
Our estimates suggest that the overwhelming majority of companies where investors can have a significant positive impact on future decarbonisation are not in those stocks that are already low carbon – but in those that are high carbon today, but with the potential to decarbonise in future. This is where our new approach focuses. Furthermore, aside from the potentially positive effect on financial metrics[4], almost all decarbonisation is likely to be capital-intensive. Whether it is replacing a petrol-powered car with an electric vehicle (where the upfront cost is higher, but ongoing running costs are lower) or building a wind farm (where capital costs are higher upfront and variable operating costs far lower), building a low-carbon future looks set to require huge injections of capital (Figure 2).

Estimates vary, but LGIM's research suggests an incremental $10+ trillion[4] of net new capital will be required to be invested into our energy system over the next 30 years to drive this real-world decarbonisation.

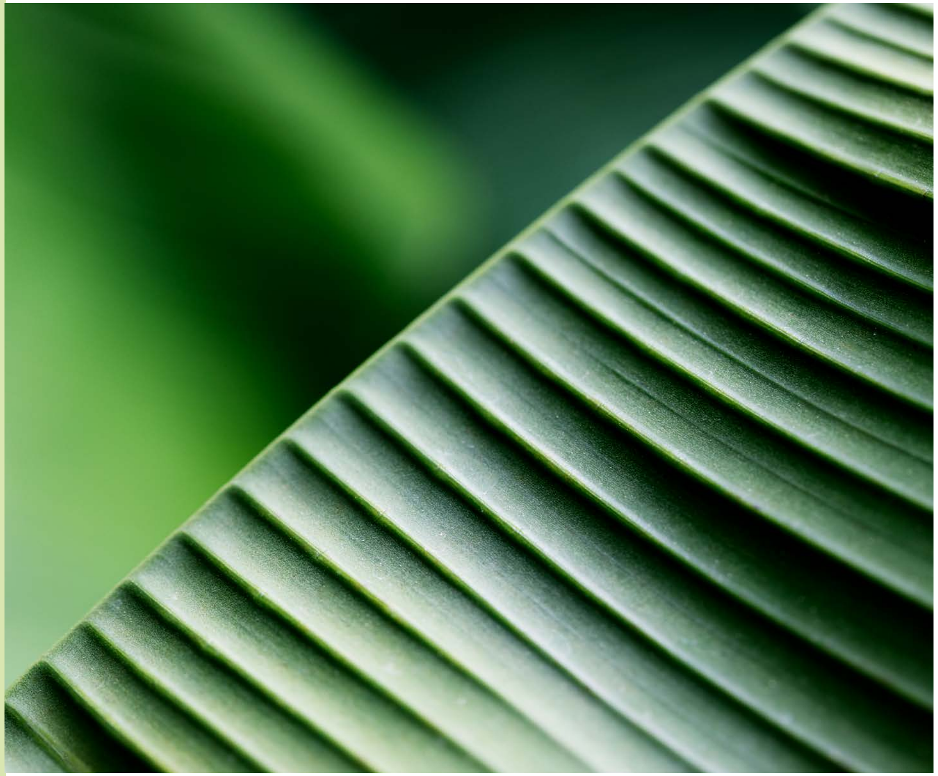
"Our estimates suggest the **overwhelming majority** of companies where investors can have a **significant positive impact** on future decarbonisation are **high carbon today.**"

[4]. Source: LGIM analysis based on NREL, IEA, Kelley BlueBook, as at April 2024. CAPEX compared per unit of capacity installed and per vehicle. Such as share prices in the event that investors perceive accelerated decarbonisation to be a net positive. **Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.**

**Figure 2: Examples of potential increase in capex required for low-carbon technologies relative to high-carbon alternatives**




Source: LGIM analysis based on NREL, IEA, Kelley Blue Book, as at April 2024. CAPEX compared per unit of capacity installed and per vehicle. **Assumptions, opinions and estimates are provided for illustrative purposes only.**



LGIM firmly believes in harnessing the combined power of active engagement and active investment to seek to deliver benefits for investors, whether they choose to invest in an active way, or via more traditional index strategies. While they differ in their approaches, in many ways our research suggests that they have the potential to be complementary.

For instance, if companies respond well to positive engagement, deliver effective change, and are rewarded for it, then that could not only potentially deliver significant shareholder value for those investors with focused exposure to those companies, it could also create a virtuous circle that incentivises other companies to follow, be that in the same markets or elsewhere in the value chain, both upstream and downstream of the targeted company.

Cumulatively, this potentially virtuous circle implies that pro-active and profound engagement could deliver value for all investors – whether they be a universal index owner or an active climate-solution focused investor – as well as accelerate global decarbonisation as companies improve their focus on lowering emissions.

# How:
# Seeking to unlock value from the energy transition

We believe there are five primary levers for companies to pull as they aim to unlock shareholder value by accelerating their transition to net zero. Not all of these levers apply to any given company, but we believe at least one applies to the overwhelming majority. It is important to note that these levers are dependent upon the world implementing the policy steps needed to bring the world into line with a Paris-consistent climate outcome. Furthermore, these levers can typically be quantified.

Importantly, therefore, we believe that for most of the companies we look at, there is a clear financial case that accelerating their alignment to net zero could lead to better long-term financial outcomes for shareholders. Let's consider each of these levers in turn:

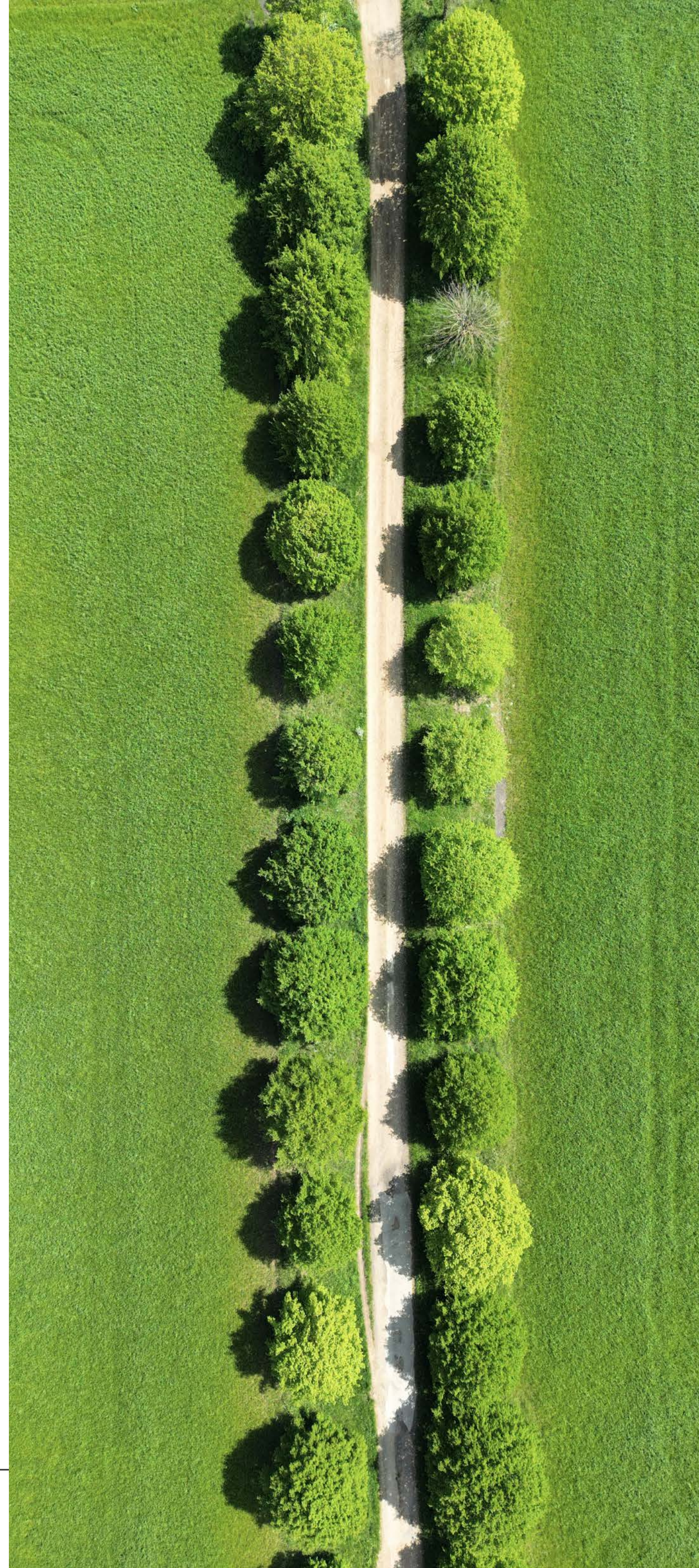
## Risk avoidance

In our view, failure to adapt to a decarbonising world exposes companies to risks, as carbon pricing impacts their margin and falling demand for their products thwarts growth potential. By decarbonising early, therefore, companies can look to avoid both demand and margin destruction. This lever is especially relevant for highly emissions-intensive companies. From the perspective of a universal owner, avoiding downside risks is critical to limit the portfolio impact of the energy transition. Yet for active equity owners, avoiding downside risk is not enough on its own to crystallise additional value relative to the wider market, so we consider risk avoidance to be a minimum condition for the companies we engage with.

## Faster growth

The second lever companies could look to target is faster revenue growth. We believe the large reallocation of capital needed to enable the energy transition is highly likely to lead to significant differences in market growth rates between those sectors that enable the transition and those that do not. For instance, whether we compare the likely demand growth for copper to that of coal, or the likely growth for electric vehicles to that of internal combustion engines, it is clear that wide discrepancies could be set to open up between companies depending on how exposed they are to the fast-growing areas of the energy transition. We also think the same bifurcation may occur intra-industry – where those companies that invest today to build a sustainable advantage in lowering their carbon intensity may position themselves to access a faster rate of demand growth for their products than their peers.

> "The **large** reallocation of capital needed to enable the **energy transition** is highly likely to lead to **significant** differences in **market growth** rates."



## Margin expansion

The third lever companies could look to target is margin expansion. This lever is closely related to the prevalence of carbon pricing or other regulatory mechanisms that impose a price on emissions. We believe carbon prices need to increase significantly to incentivise the potential emissions reductions associated with any ambitious decarbonisation scenario. In our view, companies that decarbonise early stand to solidify a margin advantage over their slower-to-decarbonise competitors, by investing in decarbonisation technologies that cost less than the expected carbon price. The timing of investment in decarbonisation is therefore critical.

## Tapping the green premium

Companies that provide low-carbon products and services can potentially capture a green premium. In other words, they can seek to charge a higher price for their products and services because they are lower-carbon than the prevailing alternative. Green premia are driven by companies across value chains reducing the Scope 3 emissions associated with their suppliers, known as 'upstream' Scope 3 emissions. This reduction could be delivered either by demand from end customers for low-carbon products, or by commitments and regulatory obligations to reduce Scope 3 emissions.

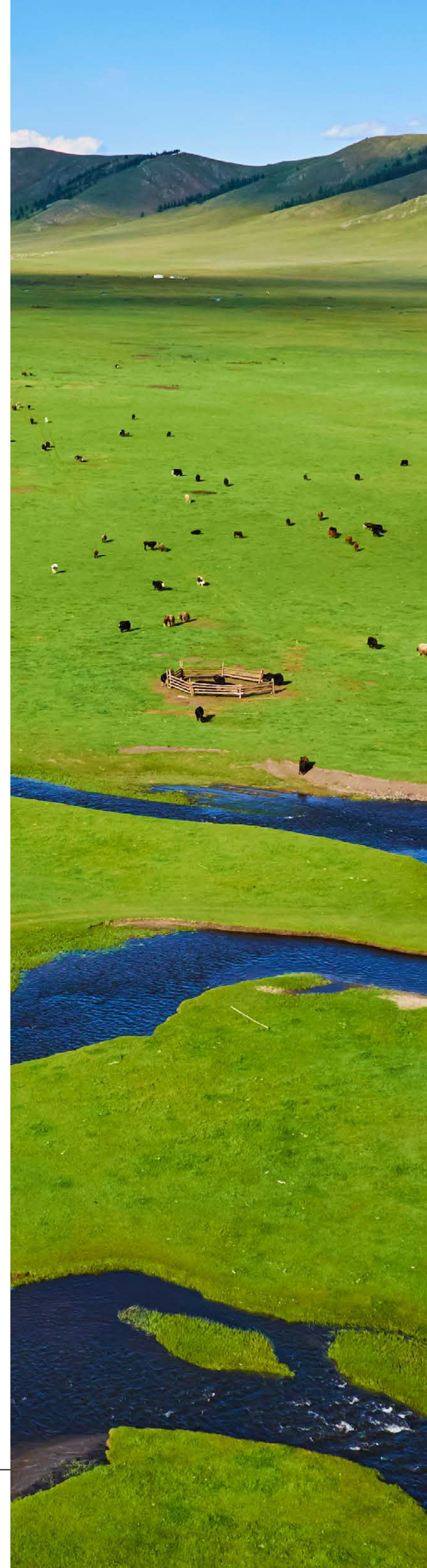
In the early stages of the transition, we believe only market-leading companies will be able to command a green premium. Such premia are already being observed in the market for low-carbon steel, with high-end automotive manufacturers paying 25% over the prevailing market price for automotive-grade steel to source very-low-carbon steel.[5] End customers' willingness to pay a premium for 'zero-carbon' vehicles and the scarcity of truly low-carbon steel are driving this premium.

As the transition progresses, we expect that the green premium per unit will be diluted down as the market for low-carbon products expands beyond premium market segments. The lower bound for the green premium should be set by the price of voluntary carbon credits, which is an alternative way for companies to reduce their Scope 3 emissions. Additionally, the availability of green premia throughout the transition should reinforce the third lever of margin expansion that companies investing in low-carbon products can seek to capture. We see the likely declining trajectory of the green premium as another argument for companies to transition early.

## Reducing cost of capital

We believe companies that are pro-active and well-aligned with ambitious decarbonisation scenarios will experience lower volatility of earnings relative to their peers, especially in sectors that are highly exposed to the energy transition. Furthermore, we expect lower earnings volatility to be rewarded with a lower cost of capital. High performers on ESG metrics already benefit from a lower weighted average cost of capital (WACC) by about 40 basis points,[6] and we expect that the divergence in WACC is only likely to increase as investors become better at pricing climate-related risks and evaluating the implications of companies' transition strategies on earnings volatility.

Source: [5]. Bloomberg, June 2023 [6]. MSCI, February 2020

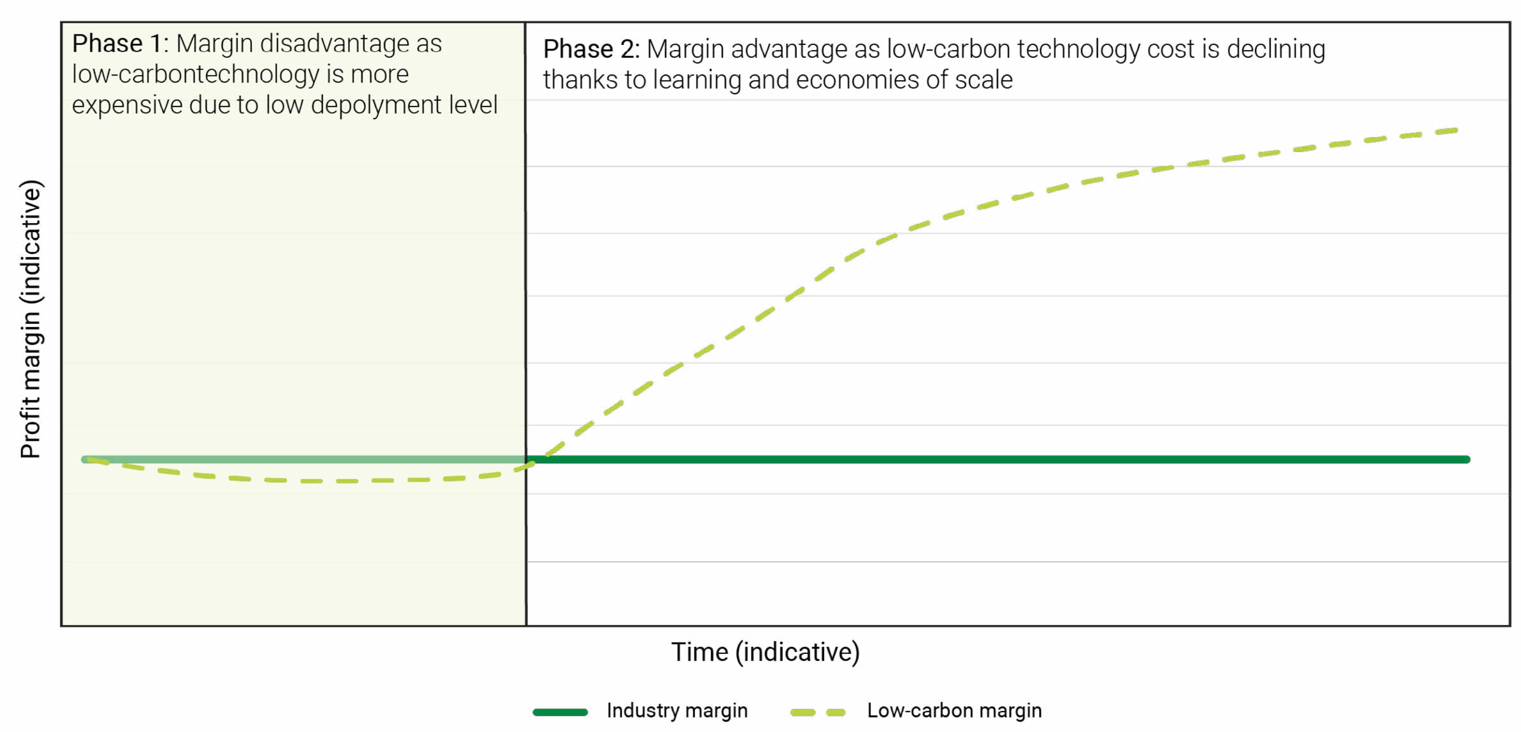


While we are positive about the potential impact pulling one or more of the above levers could have on progress towards net zero and also in terms of unlocking shareholder value, we do have two principal caveats:

1. In most cases these levers are likely to require a trade-off between short-term profitability and seeking to maximise long-term value creation. In some cases, they will require capital investment into new or additional production capacity. This constitutes a short-term reduction in free cash flow to equity yield, but will enable long-term enhanced profit if it unlocks one of the levers. In other cases, they may require the adoption of relatively early-stage technologies, which have higher costs currently than alternatives. However, by adopting early, we believe companies can secure learning benefits and economies of scale in advance of their competitors, and thus consolidate a long-term relative margin advantage (Figure 3).

2. As discussed above, the potential for higher long-term returns is dependent upon the world implementing the policy steps needed to bring the world into line with a Paris-consistent climate outcome.

**Figure 3: Company case study of potential trade-off between short- and long-term outcomes (indicative)**




Source: LGIM analysis, as at April 2024. **Assumptions, opinions and estimates are provided for illustrative purposes only.**

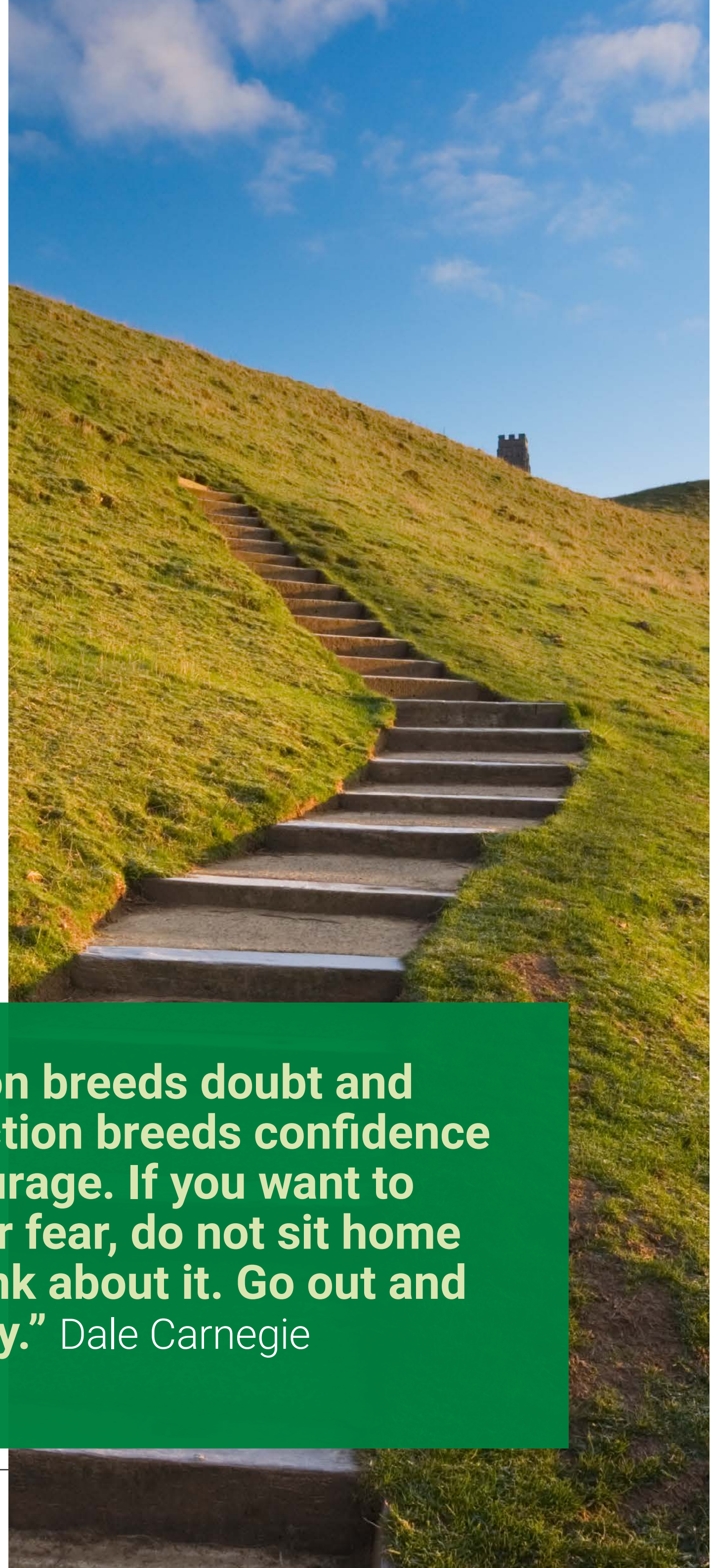
# Time to take climate action towards net zero

As the renowned 20th century writer and lecturer Dale Carnegie once said: **"Inaction breeds doubt and fear. Action breeds confidence and courage. If you want to conquer fear, do not sit home and think about it. Go out and get busy."** So if we want to avoid the potentially disastrous consequences of continued climate change, we need to face up to our fears and take action.

Importantly, we believe investors and business owners alike are much more likely to take action if they reframe the climate question in terms of seeing the potential to address the climate challenge and deliver outsized returns simultaneously, rather than as competing demands.

To do this, we believe investors should take an enhanced approach to engagement. That approach is to use influence to engage directly with many of the companies with the highest emissions, and therefore the greatest potential to stop the world from meeting climate goals and to cause significant negative financial consequences should they fail to correct their course. However, if these companies respond to engagement and focus on pulling the levers necessary to effect positive change, we believe that could herald a unique opportunity for investors – particularly those action-oriented investors engaging directly – to have a positive impact on climate outcomes, while also seeking to unlock shareholder value. To this end, LGIM and AP7 have formed an important partnership.

Ultimately, as the scope of their role allows, investors do need to take the actions necessary for the world by choosing to place an effective price on emissions and driving the significant decarbonisation required to realise an acceptable global climate outcome. Given the significant negative financial (and potentially existential) consequences of the alternative, we think it is a reasonable a priori assumption for investors to make to conclude that while the timing around decarbonisation is uncertain – the ultimate destination of net zero is inarguable.



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