

For professional and institutional investors only – not to be further  
circulated. In Switzerland for qualified investors only.  
In Australia for wholesale clients only.

# The transition to net-zero: Identifying credible transition leaders in APAC



# Contents

Key Takeaways	3
Assessing the credibility of corporate targets	4
Why does this matter for investors?	5
What are the global results telling us?	6
A deep dive into APAC	7
Taking a regional lens: How do APAC regions perform on credibility?	9
Taking a sector lens on credibility – Where are the leaders and laggards?	11
How can this help identify credible transition leaders?	13
Understanding the drivers – A deeper dive into the six factors	15
How do credibility scores and targets impact asset values?	19
Limitations	22

## Authors

**Alexandre Popa**  
Sustainability Analyst

**Anna Moss**  
Senior Sustainability Analyst

**Eva Cairns**  
Head of Sustainability Insights & Climate Strategy





## Key Takeaways



An increasing number of companies are setting net zero targets. **Net Zero Tracker** reports that 799 of the 2,000 largest publicly listed companies had made net zero pledges as of November 2022. However, **targets can't simply be taken at face value as their implementation depends on a number of factors.** The credibility gap reflects the gap between pledges and actions needed to deliver them.

**We have developed a framework to assess the credibility of targets set by 1,200 companies that is based on six pillars** reflecting company action (including emissions target design, decarbonisation track record, climate governance and green revenues), and two enabling factors: technology maturity and policy environment. It helps us understand how likely it is that companies will deliver on their pledges and ultimately to identify credible transition leaders within sectors and regions.

The Asia Pacific (APAC) region plays a central role in the transition to net zero as it accounts for more than half of global energy consumption and is expected to be the fastest growing region in the world. In this paper **we analyse the credibility of over 300 APAC companies' targets.** We look at the components of our credibility framework at regional, sector and company level, comparing APAC to non-APAC peers.

**We find that on average, APAC companies have a credibility score below their non-APAC peers, but are better positioned when it comes to the maturity of low carbon technologies they rely on.** A key driver is that our APAC universe of companies holds a greater proportion of sectors with decarbonisation technologies that are commercially viable. An important reason for the lower average scores is that many firms operate in a policy environment that provides weaker incentives to decarbonise than for example in European countries. Consequently, a lower proportion of APAC companies have reduced their emissions intensity over the last 2 years. But despite lower average credibility scores, many credible transition opportunities can be found in APAC by taking a deeper look at individual factors and comparison to peers.

**There is significant variation across countries and sectors, but the insight really stands out when looking at the dispersion of credibility scores within regions and sectors.** Firms in some of the most developed countries, such as Japan and South Korea, rank above the global average, whereas emerging Asian economies including India and Thailand score below. Saying that, many organisations that have demonstrated strong actions and/or operate in

industries with mature technologies are based in emerging markets. AC Energy is one example to illustrate this.

At the sector level, **Utilities achieve the strongest average credibility score globally but are below average in APAC. In contrast, many of the most credible companies in the Information Technology sector are located in the region** such as Taiwan Semiconductor. This indicates that APAC Information Technology businesses are among the leading firms that provide components to net-zero solutions. Some of the highest APAC ranked corporates include auto manufacturers, semiconductors and power producers.

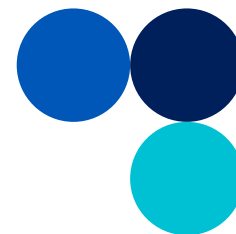
Credibility scores are also applied to obtain a more realistic view of the impact of companies' stated targets in our climate scenario analysis. As part of this analysis, we quantify the financial impact of climate risks and opportunities on asset values. We then enhance this by considering companies' climate targets. **Over half of APAC companies would experience a positive valuation uplift, many of them would undergo a substantial boost if their climate targets were fully implemented.**

Next, we apply our credibility framework to assess how much of the uplift would be affected by incorporating the credibility of companies' transition plans. **Many APAC companies lose a higher proportion of their uplift due to lower credibility scores. This emphasizes the importance of engaging with APAC companies that may be at an early stage of their journey to decarbonise so that they can seize the opportunities presented by the energy transition.**

**Investors can incorporate the insights from our credibility assessment and climate scenario tools in different ways to deliver superior outcomes for clients.** Firstly, to identify credible transition leaders within a sector that will drive the transition to net zero. Secondly, to address low credibility scores and disclosure gaps through corporate engagement and voting. Thirdly, to complement active stock level research and identify companies that could significantly gain from implementing their transition plans.

It is critical to highlight that there are limitations and data disclosure gaps which affect the scores. Some companies held in our Asian sustainable investing strategies such as AIA group don't score well in our framework, mainly because of data coverage gaps, but our active analysis suggests they are better positioned to support the transition to net zero than the data may indicate. This means that **the results of the credibility framework are only a starting point for deeper, more active analysis to identify transition leaders which can be found across all regions and sectors globally and in APAC.**

# Assessing the credibility of corporate targets



Supporting the transition to a net-zero world requires allocating capital to companies that are committed to decarbonise their businesses and take action to do so. However, in the same way that we cannot take government net-zero statements at face value, as most commitments aren't backed by concrete policies, we shouldn't assume firms' net zero strategies will be implemented as stated. Short-term decisions are sometimes in conflict with the longer-term actions needed.

The implementation of targets depends on three dimensions:

1. The actions a company can take that it has control over.
2. The policy environment it operates in.
3. The maturity of the technologies it relies on for decarbonisation.

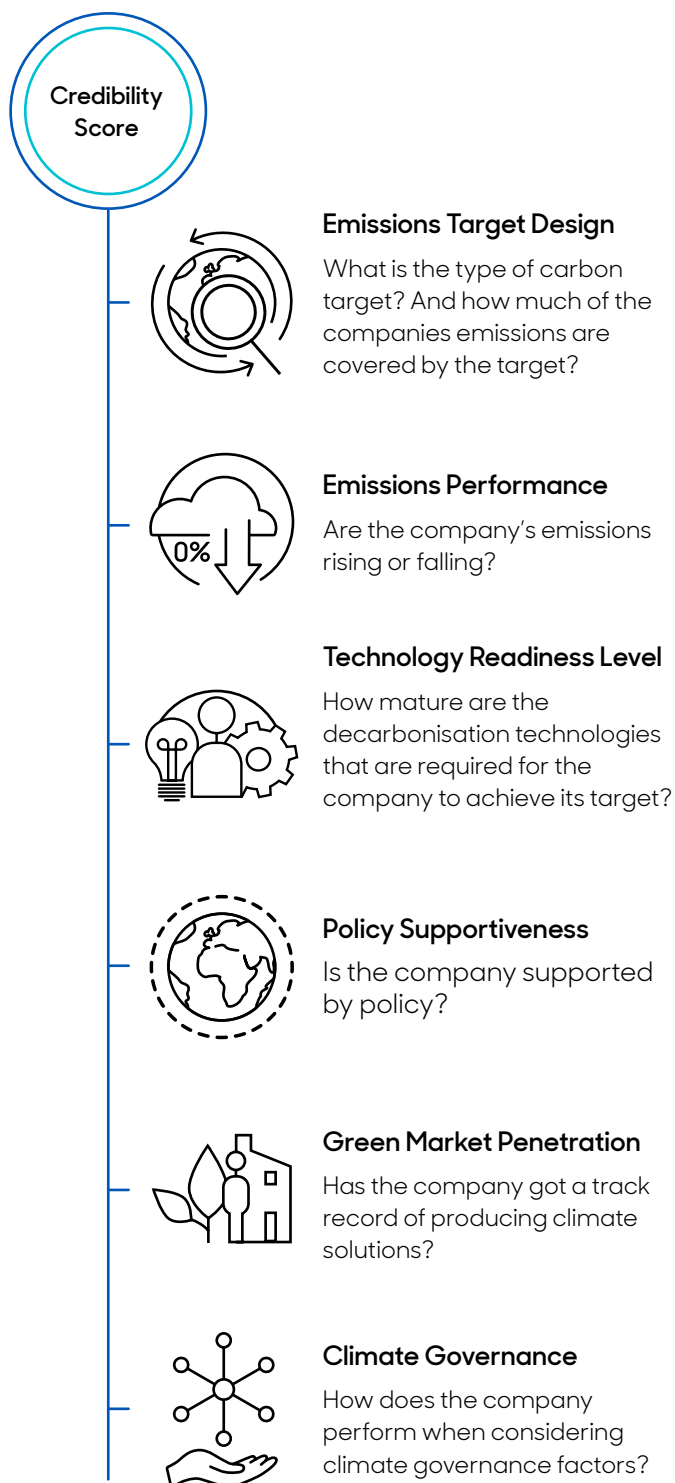
The last two are two important enabling factors that a firm has less control over, but are important to achieving the target.

Why does this matter for investors? Because it is important to take a forward-looking view on carbon to support the energy transition – what matters are not just a firm's carbon emissions today, but where we expect them to be in the future. Investing in credible transition leaders that innovate and take action to decarbonise is key, but how do we identify them?

As outlined in **previous research**, we have developed our own credibility framework (Figure 1) in order to assess companies' transition plans. Our framework is based on six credibility pillars that capture companies' actions, policy support and technology maturity. Our analysis covers 1,200 firms with a focus on large companies and the most carbon intensive sectors.

Each factor is normalised to allow for a fairer comparison within and across indicators. Corporate credibility scores are then derived as a weighted average of the individual factor scores. The result is a company transition credibility score within a range of 0% (lowest credibility) to 100% (fully credible alignment with the stated net-zero target). Our earlier research provides more detail on how each factor is assessed and turned into a score, it should therefore be read in conjunction with this paper.

Figure 1: abrdn's credibility score schematic

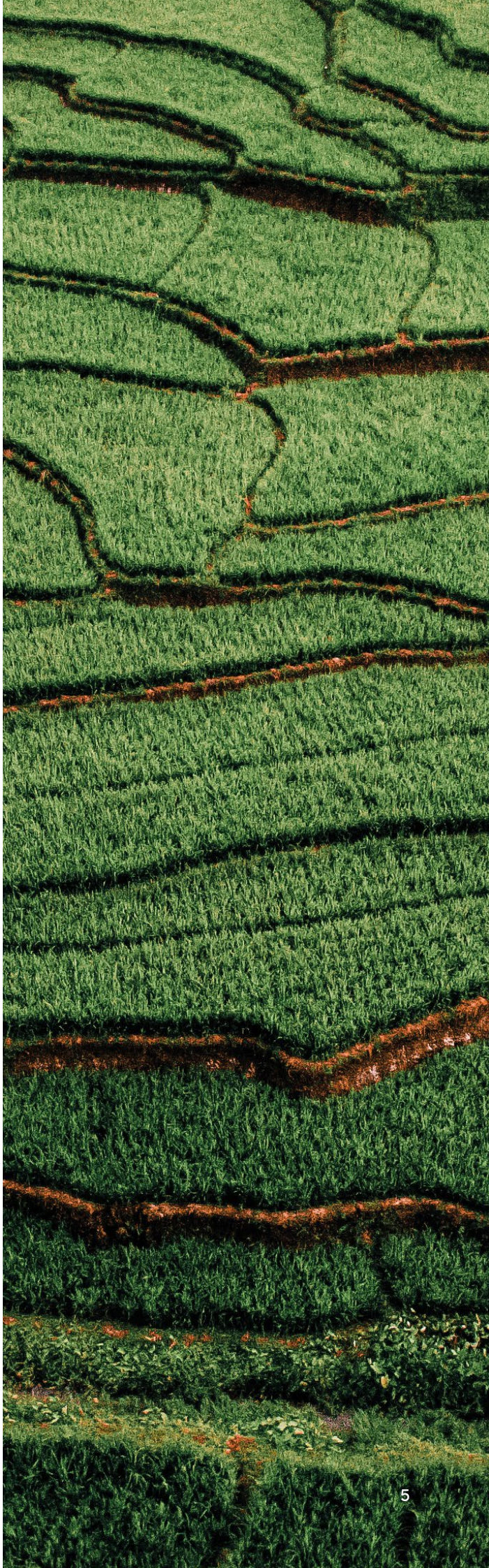


Source: abrdn, April 2023.

# Why does this matter for investors?

Incorporating our credibility assessment of companies' transition plans can enhance decision-making and benefit long-term investment returns. We highlight three ways in which the analysis can provide investment insights:

- 1. Identifying credible transition leaders:** Credible transition leaders are firms that set ambitious emissions reduction targets, proactively transform their businesses, and lead by example within their sector. Companies that score well are better positioned to mitigate climate risks and develop the solutions needed to decarbonise the economy. Investment teams can also use the framework to assess how companies rank against peers within a sector or region.
- 2. Engaging with climate laggards:** The outputs of our credibility assessment can inform discussions with companies where credibility scores or data disclosures are low. Examples include identifying transition plan weaknesses and set data driven milestones on the specific credibility factors that are lagging, tracking progress and examining how updates to business models could alter exposures to climate risks and opportunities.
- 3. Understanding the impacts on asset values:** Using our climate scenario analysis tool, we can quantify how transition plans could affect the value of 2,000 Equities and 22,000 bonds. By enhancing the outputs from our climate scenario analysis tool with stated corporate targets and our credibility framework, we can obtain a more accurate picture of the potential effect on asset values. We can also assess the extent to which companies would benefit from strengthening their targets. Some sectors are still likely to incur substantial financial impacts due to climate risks even if targets are implemented. On the other hand, sectors like Utilities could obtain large gains if they implement strong and credible business plans.



# What are the global results telling us?

Most companies' targets are far from being highly credible, with a global mean credibility score of 43%. No company is fully credible at 100%, the highest score being 78%. Figure 2 shows the credibility score across our six indicators, the distribution shape varies across our metrics: for example, a company can obtain any value between 0% and 100% on Green Market Penetration but can score only 5 different values on Emissions Performance - which explains the clustered shape.

We find significant variation across our six credibility metrics. Emissions Performance produces the greatest uplift to credibility scores which shows that most businesses are managing to reduce their emissions intensity. Conversely, Green Market Penetration is the smallest contributor to credibility scores with an average score of 10%. This indicates that it is still too early to see climate targets being reflected in an increase of green revenues. Disclosure of green revenues is also more nascent relative to emissions data, which may also be impacting the lower score.

We observe significant dispersion across regions and sectors too (Figure 3). The average credibility score is highest in the Utilities sector and for EU and UK companies, and lowest in Energy and in Developing Economies. Policy alignment and technology readiness heavily shape this distribution.

However, most of the variation occurs within our credibility indicators, regions and sectors. Some companies have considerably more robust and credible transition plans than their peers, which provides opportunities to identify credible transition leaders in different industries.

**Figure 2: Global credibility score across our six credibility indicators**

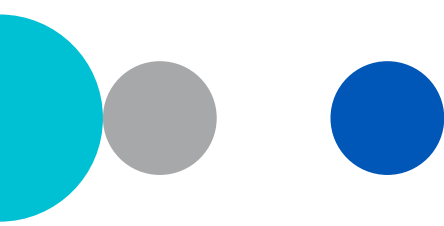


Source: abrdn, April 2023. Purple dots indicate the average.

**Figure 3: Global credibility score across regions and sectors**



Source: abrdn, April 2023. Purple dots indicate the average.



# A deep dive into APAC



The Asia-Pacific (APAC) region plays a central role in the race to net-zero. Five of the world's ten largest carbon emitting countries – China, India, Indonesia, Japan and South Korea – are in the region. APAC is developing at a fast pace. Changes in energy usage and emissions within the region will significantly affect climate change. We published a **paper** last year outlining the energy transition characteristics of the region, and examined how climate change would affect companies' valuation.

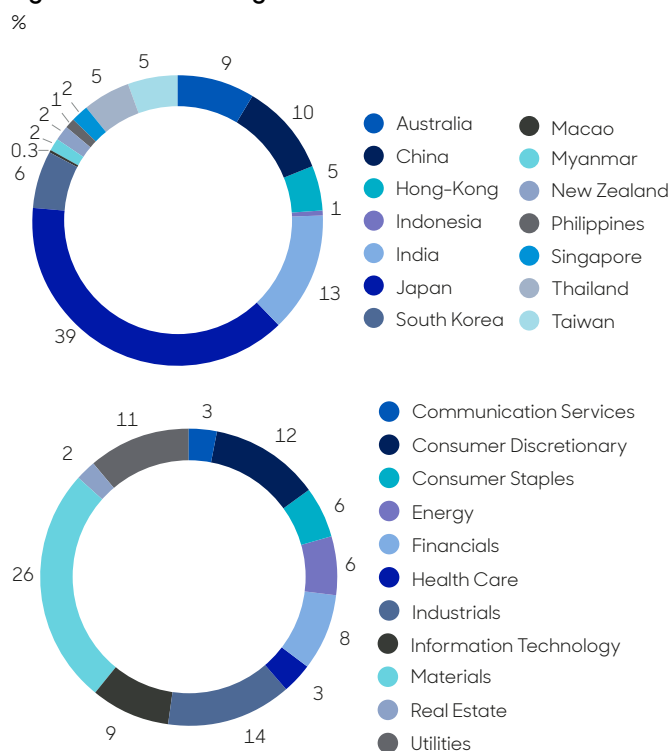
This paper complements that analysis by focusing on the credibility assessment of APAC companies' targets. We look at the credibility framework and its components at the regional, sector and company level, comparing APAC to non-APAC peers.

## Coverage

Our credibility framework is focused on global stocks with a large market capitalisation or those that are significantly exposed to the energy transition. 28% (333) of the 1,200 companies covered are located in APAC. Within the region, a large proportion of companies are located in Japan (39%), followed by India (13%), China (10%) and Australia (9%). Most companies covered are in emissions intensive sectors such as Materials, Industrials and Utilities (Figure 4).

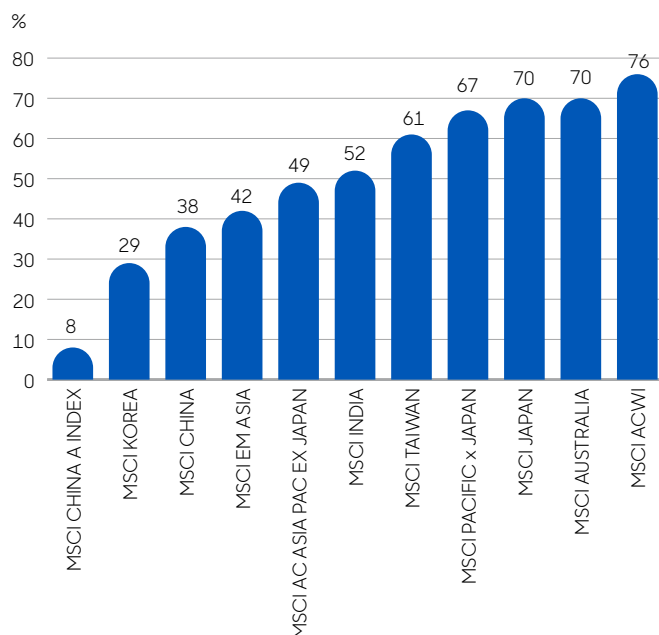
Some countries have significantly higher coverage than others (Figure 5). Our universe of companies with transition targets covers 70% of MSCI Australia and Japan by market capitalisation as shown in Figure 5. Conversely, it covers a limited share in South Korea (29%) and China (38%). Samsung isn't represented in the analysis, which significantly reduces the coverage in South Korea. As for China, transition plans are missing for many companies, and some of the most emitting companies are state owned<sup>1</sup>. Where coverage is low, results should be interpreted with care and not seen as representative for the whole region.

Figure 4: APAC coverage across economies and sectors %



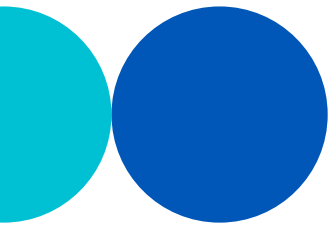
Source: abrdn, April 2023.

Figure 5: Coverage of companies in our credibility assessment across different indices %



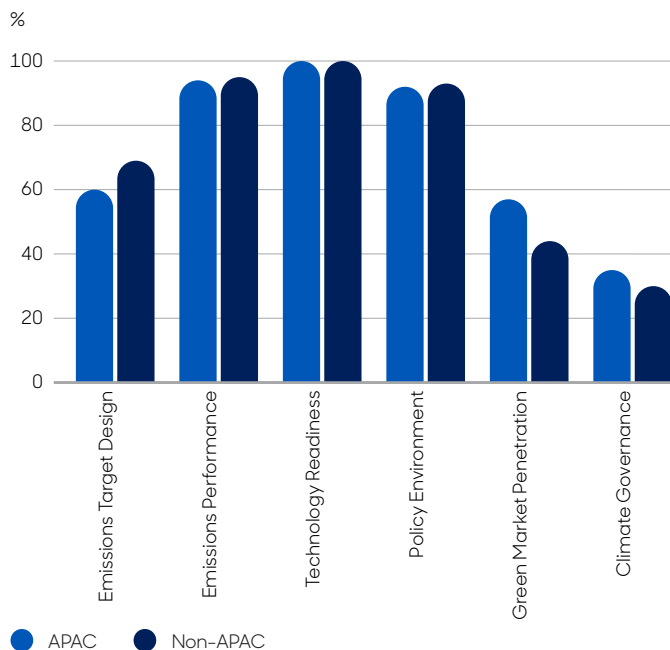
Source: abrdn, April 2023.

<sup>1</sup> These factors restricted the inclusion of Chinese firms in our company target approach to climate scenario analysis, which formed the basis for inclusion in the current credibility assessment.



One challenge is that low data coverage affects the results. We attribute a low score when data isn't reported, which particularly drives down the score of the Emissions Target Design, Green Market Penetration and Climate Governance metrics (Figure 6). Non-reported values can either come from companies not covered in the data sources, or an absence of targets or other relevant data. APAC is relatively disadvantaged in its Emissions Target Design metric relative to non-APAC due to its higher share of non-reported values. On the other hand, coverage is higher for Green Market Penetration and Climate Governance. The Climate Governance indicator provides valuable insights at the company level, but we avoid analysis at the aggregate level due to its low coverage. We also performed calculations that excluded non-reported values, which gave us more confidence in interpreting the results.

**Figure 6: Share of companies with reported values across our six indicators**



Source: MSCI, Trucost, IEA, Factset, FTSE Russell, Transition Pathway Initiative (TPI), abrdn. April 2023.

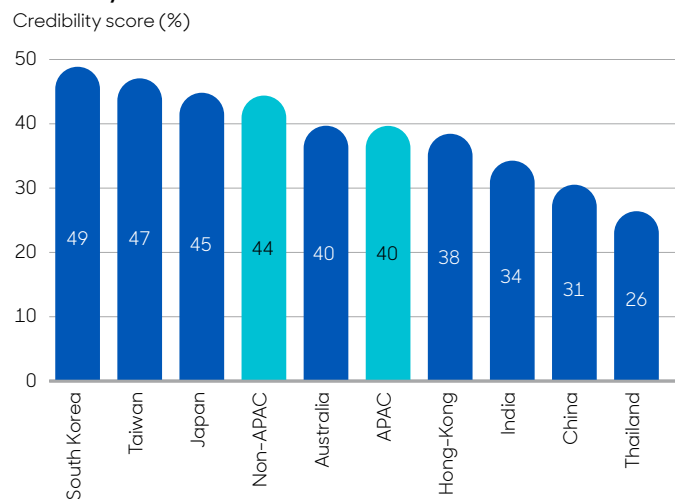




## Taking a regional lens: How do APAC regions perform on credibility?

The average credibility score for firms in APAC is slightly below the non-APAC average (Figure 7). Some of the most developed economies rank well above the APAC and global average, in our data sample, firms in South Korea lead, followed by Taiwan and Japan. In contrast, Asian emerging economies like India, China and Thailand obtain a score more that 10% below the global mean. Similar to the global picture, every country in APAC has significant scope to enhance its credibility score, with the mean below 50%.

**Figure 7: On average, APAC companies have a lower credibility score than non-APAC**



Source: abrdn, April 2023.

**When we look at the six indicators across the APAC region, we find that certain firms have distinct strengths and weaknesses. We illustrate this through our analysis of companies in the four countries in the region for which we have the largest data coverage (Japan, India, China and Australia- see Figure 2).**

**Japan** is above average on most indicators. It scores highly on the Emission Target Design metric. More than three-quarters of companies in our sample have set targets, and most of them are on track to meet them. It is also one of the top performers in Technology Readiness as some of the sectors where technologies are already viable such as railroads and automobile manufacturers include Japanese firms. However, its overall score is only slightly above the global average. The two main areas where Japanese firms score lower than non-APAC peers are its Emissions Performance where only 54% of businesses have reduced their emissions intensity, and Green Market Penetration.

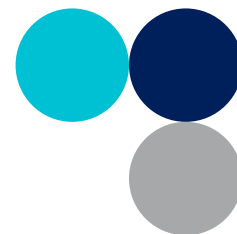
**Australian** companies are in line with the APAC average when it comes to credibility but underperform their developed peers globally. Emission-intensive industries such as Materials and Energy account for a large share of the economy. The country also exports significant energy resources to APAC countries that are developing quickly. Such factors make it more difficult for companies to decarbonise as reflected in the Emissions Target Design and Emissions Performance indicators. On the other hand, Australia has one of the best policy environments in the region, benefits from stable institutions, and from the legislation passed in 2022 to reduce emissions by 43% from 2005 levels by 2030, which provides stronger incentives for businesses to decarbonise.

**Indian** firms score below the region average on every indicator. There is significant room for progress when it comes to setting transition targets. While India has set a net zero goal by 2070 and has ambitious renewables targets, stronger policies are required to incentivise business decarbonisation. Besides, India's Nationally Determined Contribution is lacking ambition as **Climate Action Tracker** indicates that those targets will be easily achieved with current policies. Utilities occupy a larger share of the MSCI India (4.3%) than the MSCI ACWI (3%) and APAC (2%) indices. Considerable opportunities to decarbonise exist if the sector successfully switches to renewables sources. This could support the government target of 500GW from renewable energy by 2030, versus 163GW in 2022.

In **China**, many companies are playing a central role on the path to net-zero, but most businesses have weak net-zero targets. Companies in China also score low on Emissions Performance, operating in an environment where China's emissions continue to increase. More than three-quarters of Chinese companies are not covered in the Emissions Target Design indicator, likely reflecting that few companies have set net-zero targets. Multiple companies set up intensity rather than absolute targets, or targets that cover only some of their emissions. On the other side, China outpaces other economies on Green Market Penetration. China dominates many green markets including renewable technologies and mineral processing. Such segments have already viable technologies, which contributes to the high ranking of China on Technology Readiness. We found significant data gaps in China and therefore need to observe caution. We also note that various emission-intensive companies are state-owned, which could bias the Green Market Penetration score by overweighting low emissions-intensive companies operating in renewables and other green industries.



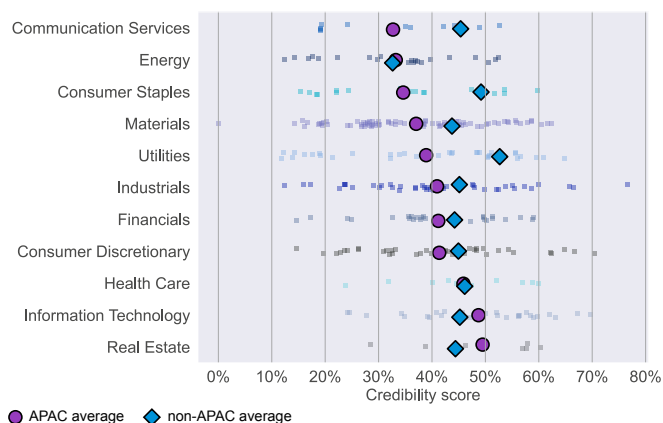
# Taking a sector lens on credibility – Where are the leaders and laggards?



All sectors in APAC have an average credibility score below 50%, they score under this threshold on Green Market Penetration, Climate Governance (because of data coverage), and Policy Environment (most countries score below 50%). However, some sectors perform substantially better than others (Figure 8). As with regions, transition leaders can be found within each sector by considering the dispersion of credibility scores.

**Energy** has some of the lowest credibility scores. Worryingly, only a third of businesses have lowered emissions intensity (Figure 9). It also has the lowest score regarding technology maturity. Notably, the average APAC score for Energy is in-line with the average non-APAC score. This is because the Energy sector as a whole faces very significant uphill credibility challenges. For example, many potential solutions to decarbonise the economy such as synthetic hydrocarbons or biodiesel related technologies are at a prototype stage. Unsurprisingly, it has a low share of green aligned revenues.

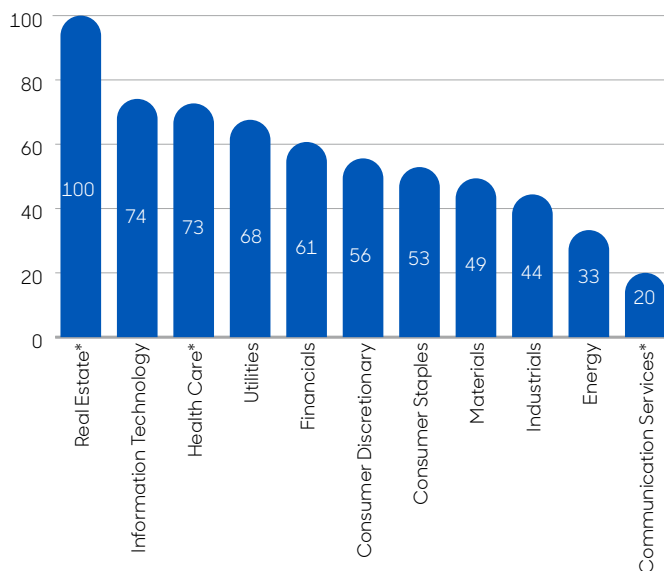
**Figure 8: Credibility scores are highly dispersed within and across sectors in APAC**



Source: abrdn, April 2023.

**Figure 9: Decarbonisation progress across sectors in APAC varies considerably**

Share of companies having reduced their emissions intensity (%)



Source: abrdn, Trucost, April 2023. Sectors denoted with \* have a data sample below 15 companies and are therefore not incorporated in the analysis.

In contrast, **Information Technology** is among the best scoring sectors. It contains numerous semiconductor companies with already mature technologies that can be deployed into net-zero solutions (related to both Technology Readiness and Green Market Penetration). Besides, most corporates in this sector have designed net-zero targets and have successfully reduced their emissions intensity. Looking at our sample, Information Technology is one of the sectors that is decarbonising fastest. Information Technology is also one of the only sectors where APAC firms outperform their non-APAC peers (Figure 8). Company targets more frequently cover scope 3 emissions, or a larger share of emissions. They have larger Green Revenues shares, too. This likely highlights that APAC Information Technology businesses are among the leading firms that provide components to net-zero technologies and are therefore well positioned to take advantage of climate opportunities. For instance, Taiwan Semiconductor is the highest scored Information Technology company and obtains a good score across most credibility indicators (Figure 10).

**Figure 10: Taiwan Semiconductor: Credibility assessment of a leading semiconductor company**

Category	Score	Comment
Emissions Target Design	88%	The firm set up net-zero and interim absolute targets that cover all emissions, as well as scope 3 emissions. The firm isn't on track with all its targets according to MSCI
Emissions Performance	100%	Emissions intensity reduced by 23% between 2019 and 2021
Technology Readiness	94%	Semiconductors is a mature technology and is already applied in various green solutions (e.g. renewables, battery storage)
Policy Environment	40%	The majority of its revenues come from the US and China
Green Market Penetration	65%	Most of its revenues are aligned, shows a significant penetration into green industries
Climate Governance	0%	Not covered by TPI Management Quality
<b>Final Score</b>	<b>70%</b>	

Source: abrdn, April 2023.

Comparing the mean score between APAC companies and their non-APAC peers can help us assess the sectors where progress could be more easily achieved (Figure 8).

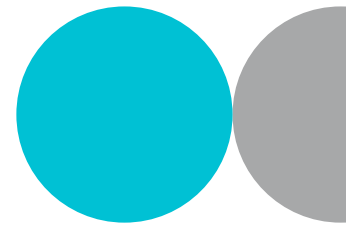
There is a substantial gap for **Utilities**. It is the best performing sector at the global level but is positioned in the lower half of the ranking for APAC. Our APAC Utilities sample is biased towards Emerging Economies, with over 35% of companies located in either India or Thailand where policy support is limited. Companies in those countries have lower incentives to set targets or reduce emissions intensity, as most energy is generated from fossil fuels, with only 19% of electricity coming from renewables in India and 15% in Thailand (versus 28% globally<sup>2</sup>). However, Utilities is one of the most important sectors driving the energy transition. Its high global credibility score shows there are significant opportunities to strengthen targets and transform businesses. Companies that switch to cleaner energy sources to generate electricity would rely on more mature technologies and would decarbonise more easily.

Similarly, most of the **Consumer Staples** sector is related to food production, a major contributor to global greenhouse gas emissions and biodiversity loss. The sector in APAC receives a lower credibility score than in non-APAC mainly because of the Emissions Target Design – in particular, a lower share of emissions is covered by targets, or includes Scope 3 emissions – and Emissions Performance. The mismatch between the APAC and non-APAC level shows possibilities to design and reinforce company targets in the region.



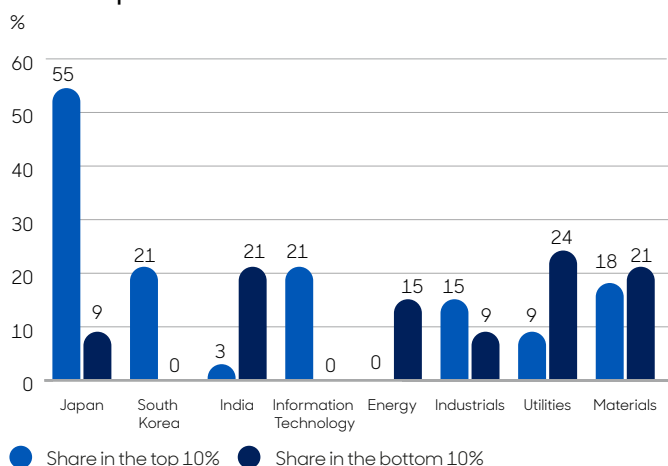
<sup>2</sup> Source: Our world in data, nuclear and traditional biomass not included.

# How can this help identify credible transition leaders?



When looking at the region, Japan and South Korea account for over three-quarters of the top 10% companies, while very few firms in these countries are located at the bottom of the ranking (see Figure 11). In contrast, less developed countries such as India have a considerable proportion of firms in the bottom 10%. That does not of course mean that credible transition leaders cannot be found in India, but the environment for Indian firms may be more challenging and data disclosure gaps may also require deeper, more active analysis. When looking at sectors with the highest credibility scores, many of the highest ranked corporates include auto manufacturers, semiconductors and power producers.

**Figure 11: The top and bottom APAC companies are tilted towards specific sectors and countries**



Source: abrdn, April 2023.

Figure 10 details the credibility score of Taiwan Semiconductor to illustrate what a potential credible transition leader looks like. The company benefits from strong target design that is supported by actual emissions reduction and operates in a segment where technologies are already mature. Two potential obstacles include the policy environment in the regions where the firm generates revenue, mainly the US and China, and the lack of data on Climate Governance. The latter aspect could be addressed by complementing the framework with analysts' views.

Utilities, Materials and Industrials companies are present both in the top and bottom sections of the ranking (Figure 11). The exposure to climate risks and opportunities varies significantly across companies, even within the same sector. Some firms can have strong credible targets and business plans while others lack a net-zero strategy. Figure 12 provides a case study between two Utilities companies: AC Energy, a renewable producer from the Philippines; and NTPC, the largest power company in India. AC Energy generates close to 100% of its revenues from renewables, which facilitates the implementation and achievement of ambitious decarbonisation targets. In contrast, NTPC still heavily relies on fossil fuels that undermine its decarbonisation commitments.

AC Energy enables us to illustrate several insights from our credibility assessment mechanism. Firstly, strong performers can be found in countries and sectors that underperform at the aggregate level (APAC Utilities score below non-APAC Utilities). Secondly, the actual credibility performance of AC Energy may be even higher than what is implied by the framework, as its score is driven down by missing coverage on Green Market Penetration and Climate Governance. Lastly, AC Energy has published (April 2023) its roadmap to reach net-zero by 2050 which is not yet reflected in the figures, which could strengthen its potential to exploit climate opportunities.

Figure 12: Credibility scores can substantially differ between peers.

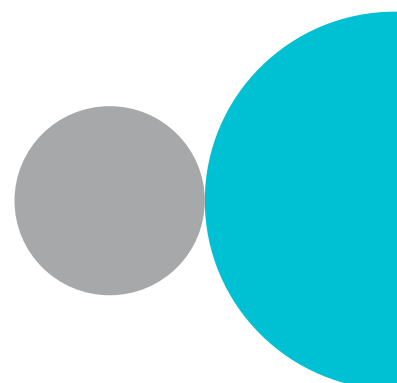
### AC Energy

Category	Score	Comment
Emissions Target Design	100%	The firm set up net zero and interim absolute targets that cover all emissions, as well as scope 3 emissions. The firm is on track with all its targets according to MSCI.
Emissions Performance	100%	Emissions intensity has strongly declined between 2019 and 2021. The company targets 100% of renewables generation by 2025.
Technology Readiness	47%	AC Energy is classified as an Independent Power Producer where some technologies (e.g. Solar, Wind) are more mature than others (e.g. CCUS, Ocean thermal)
Policy Environment	32%	Revenues generated in the Philippines where the policy environment is not supportive
Green Market Penetration	0%	The company is likely not covered by FTSE Russell, correcting from this fact could raise the aggregate credibility score
Climate Governance	0%	Not covered by TPI Management Quality
<b>Final Score</b>	<b>56%</b>	

### NTPC

Category	Score	Comment
Emissions Target Design	41%	The firm set up intensity rather than absolute targets, and that only cover scope 1 emissions.
Emissions Performance	50%	Emissions intensity has declined by 2% between 2019 and 2021.
Technology Readiness	47%	NTPC is classified as an Independent Power Producer where some technologies (e.g. Solar, Wind) are more mature than others (e.g. CCUS, Ocean thermal)
Policy Environment	23%	Revenues generated in India where the policy environment is not supportive
Green Market Penetration	6%	Most of its electricity is generated from coal plants
Climate Governance	60%	Climate change integrated into operational decision making. According to TPI, NTPC doesn't demonstrate support for mitigating climate change
<b>Final Score</b>	<b>39%</b>	

Credible transition leaders such as Taiwan Semiconductor and AC Energy are more likely to effectively manage climate risks and benefit from the energy transition. Solid target design and demonstrated emissions reduction help mitigate transition risks due to carbon costs. They have the opportunity to benefit from higher demand as they transform their business to generate green revenues.



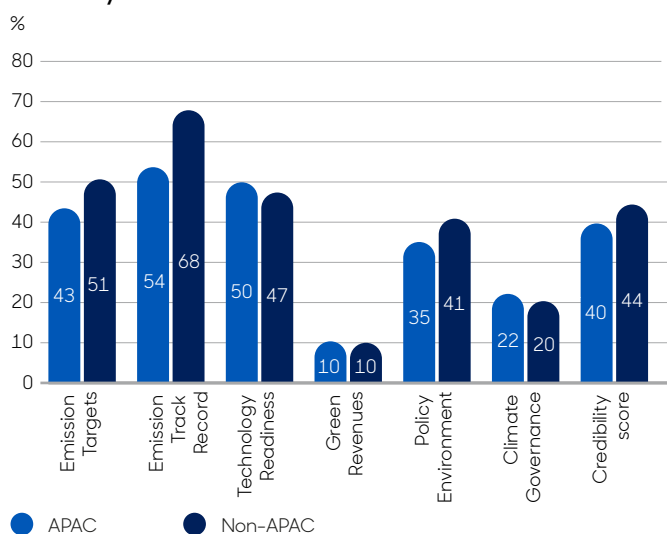
# Understanding the drivers – A deeper dive into the six factors

It is particularly important to understand how companies perform on the 4 factors that are within their controls and how supportive the enabling factors of technology maturity and policy environment are.

Comparing the average level for each of the six credibility framework factors helps us better understand the drivers, where APAC companies lead or lag compared to non-APAC peers and why. It is even more important to understand how firms perform on each of their indicators rather than to simply consider the aggregate score. In some instances, companies don't score well overall but stand out on particular factors that are crucial to successfully transform their businesses. In this instance, low factor scores can be explored further through engagement and active analysis. We illustrate each indicator with examples of companies that outperform their peers. Those companies are also hold in some of our Asian equity and credit sustainable investing strategies.

APAC firms underperform most on the Emissions Performance indicator relative to non-APAC firms, with a difference of over 10%. This is followed by the Emissions Target Design, and the Policy Environment score (Figure 13). By contrast, the region performs well on Technology Readiness.

**Figure 13: APAC and non-APAC firms' scores across our six credibility indicators**



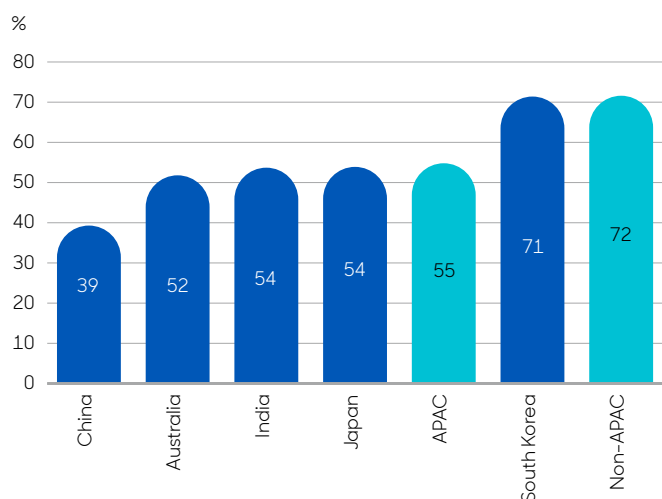
Source: abrdn, April 2023.

## 1. Emissions performance

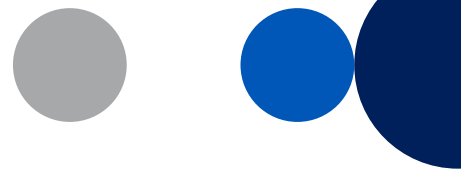
Emissions Performance measures the extent to which emissions intensity has changed over a 2-year period. Most companies in our dataset have reduced their emissions, but the trend is less noticeable in APAC (Figure 14). Different regions are at varying stages of the energy transition. Standards of living are rapidly developing in many Asian countries which translates into increased energy demand and emissions (CO<sub>2</sub> emissions in Asia increased by 22% between 2011 and 2021, versus 8% at the global level). More efforts and incentives are needed to decarbonise industries and reach net-zero, especially where the technologies needed to decarbonise are already available and cost competitive.

**Company leaders:** LG Chem and SK Hynix – both South Korean chemical semiconductor companies – have respectively reduced their emissions intensity by 37% and 28% between 2019 and 2021.

**Figure 14: Fewer companies reduced emissions intensity in APAC vs non-APAC**



Source: Trucost, abrdn, April 2023. Change in emissions intensity between 2019 and 2021. Doesn't include companies where data are not reported.

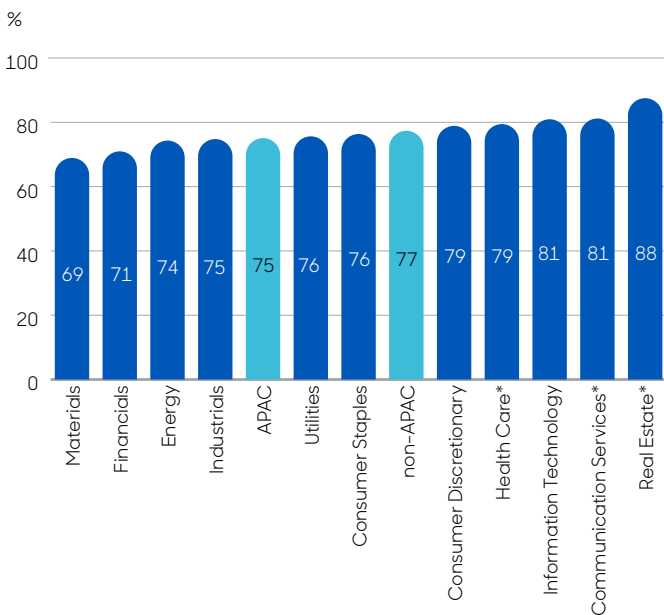


## 2. Emissions Target Design

This factor captures not only the fact that a firm has a target, but also how complete the target is, for example, absolute targets and those that include Scope 3 score higher. The share of companies without any data on their Emissions Target is higher in APAC (44%) than in non-APAC (37%). Even when we restrict our analysis to firms which do have company targets, we find that the region scores slightly below average, implying less ambitious targets (Figure 15). Emission intensive sectors rank at the bottom. For instance, Materials and Energy targets cover a lower share of their emissions and are less likely to be on track with their targets according to MSCI.

**Company leader:** Tencent, a Chinese multimedia firm, and AC Energy obtain the maximum score as they have absolute targets that cover all their emissions (Scope 1, 2 and 3) and are on track with all of their targets.

**Figure 15: Emissions Target Design score across APAC sectors**



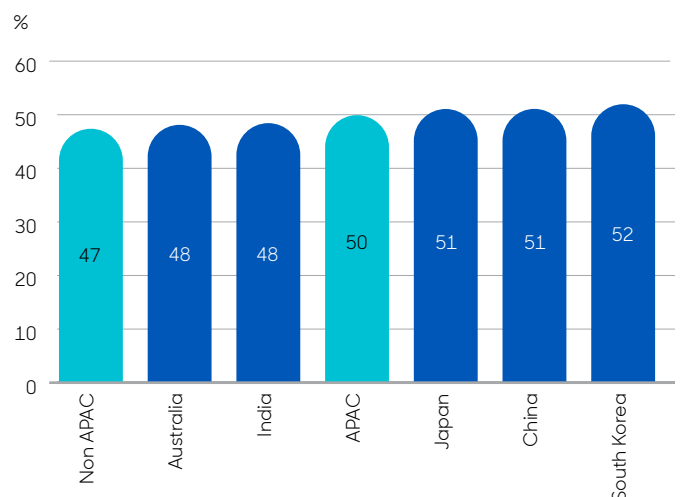
Source: abrdn, April 2023. Sectors denoted with \* have a data sample below 15 companies and are therefore not incorporated in the analysis.

## 3. Technology readiness

This is an enabling factor which captures the maturity of technologies required for the sector to decarbonise and therefore does not reflect individual company actions but is the same across each sector.

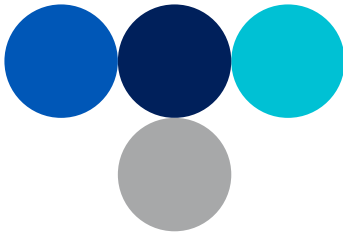
The region outperforms when it comes to Technology Readiness (Figure 16). Many sectors with mature transition technologies available are weighted more in the APAC than in the non-APAC sample and are likely to play an important role in achieving net-zero. APAC holds a higher proportion of Information Technology and Consumer Discretionary companies and a lower share of Energy sector firms. Information Technology includes semiconductors and semiconductor equipment like Taiwan Semiconductor, ASML and SK Hynix (score of 89%) with technologies already used in clean solutions - like renewable energy and battery storage. Auto manufacturers account for a significant share of the Consumer Discretionary sector, the auto industry will make a major contribution to decarbonise the transport sector by switching from traditional internal combustion engine technology to electric vehicles. The Energy sector comes bottom on our Technology Readiness metric. Many technologies related to the Energy sector like synthetic hydrocarbons, biofuels, and CO<sub>2</sub> storage are only at a prototype or demonstration stage and therefore obtain a low International Energy Agency (IEA) Technology Readiness Level score that is used in our analysis (Figure 17). This is also true within our full global dataset.

**Figure 16: APAC companies have a strong Technology Readiness score**



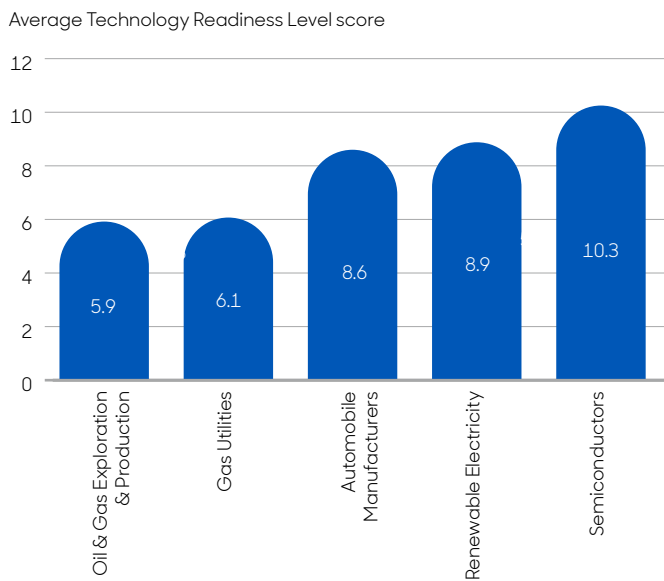
Source: abrdn, April 2023.





**Company leader:** Taiwan Semiconductor, ASML and SK Hynix

**Figure 17: IEA Technology Readiness Level scores for a selection of industries**



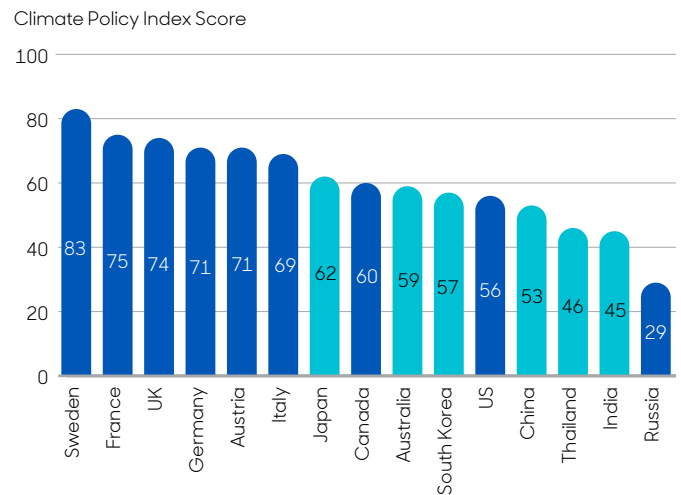
Source: IEA, September 2022.

## 4. Policy environment

Our proprietary **Climate Policy Index** helps us assess the relative net-zero alignment and credibility of countries' decarbonisation targets. The Index considers the concrete policy actions of a country as well as the political environment in which that policy is enacted. APAC countries score below European economies (Figure 18). Explanatory factors often include lack of transparency, corruption, weak carbon pricing and commitments that are not legally binding. Because of the policy environment, companies located in the region face lower incentives and potential barriers to decarbonise. Although European countries lead the way, many countries in the APAC region still have a stronger policy environment than the US.<sup>3</sup>

**Company leader:** The Chinese pharmaceutical firm WuXi Biologics ranks in the top 30% of global companies on the Policy Environment indicator as its revenues are mainly generated in North America and Europe.

**Figure 18: APAC countries tend to be ranked below Europe on climate policy, but some rank above the US**



Source: abrdn, October 2022.

## 5. Green Market Penetration

This factor reflects the green revenues generated by firms. APAC and non-APAC companies score similarly low at 10% (Figure 13). We expect this score to increase in the coming years as an increasing number of companies will report their share of green revenues and transition towards greener segments. The EU taxonomy will, for instance, help evaluate what can be classified as green revenues, and allow us to deepen the analysis at the aggregate level. Green Market Penetration provides valuable insights at the individual company level with firms that score well likely contributing to developing solutions to decarbonise economies.

**Company leader:** Sungrow Power Supply, headquartered in China, specialises in clean technologies related to energy storage. Its share of green revenues is close to 100%.

<sup>3</sup> The recent US Inflation Reduction Act will likely boost investment towards net-zero solutions. However, the policy environment is hindered by polarised climate politics on ESG topics, which raises significant barriers to large-scale, durable, and efficient action to address climate change.

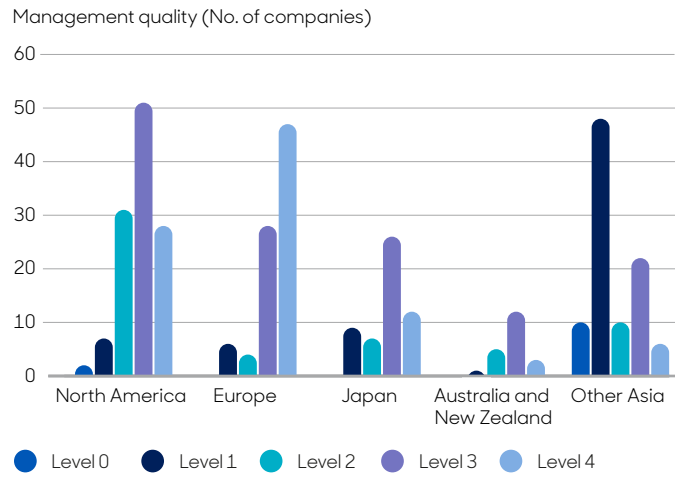
## 6. Climate governance

More than two-thirds of companies aren't covered by the TPI Management Quality set. As such it provides limited information at an aggregate level but is useful to evaluate the governance frameworks in place at the individual company level. The latest **2021 TPI State of Transition report** showed that most companies in Japan, Australia and New Zealand score relatively well, with a Management Quality Level of 3 (indicating climate change is integrated into operational decision-making) or 4 (climate change is integrated into strategic assessments) (Figure 19).

For instance, LG Chem (level 4, score of 80%) integrates climate change into its strategic assessment, has a nominated board member with explicit responsibility for oversight of the climate change policy, has verified data and demonstrates support for mitigating climate change through its memberships. In contrast, the scores for many firms in the rest of Asia were low, as many haven't yet set climate targets, or haven't formally recognised climate change as a relevant risk and/or opportunity for their business. Only a handful of firms obtain a perfect score in which every strategic assessment criterion is met.

Company leader: LG Chem

Figure 19: TPI Management Quality by geography



Source: TPI, April 2021.



# How do credibility scores and targets impact asset values?

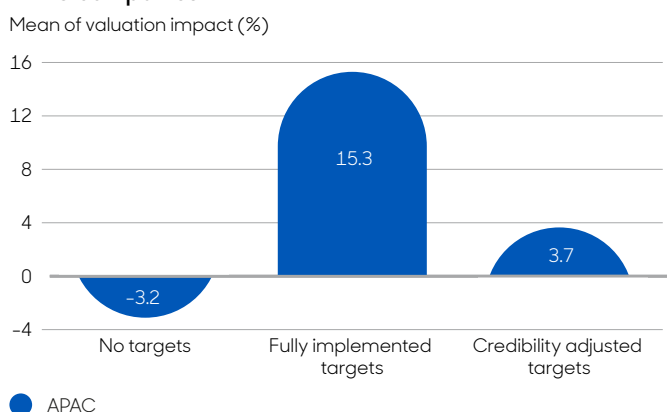
To understand the financial impact of climate risks and opportunities on asset values today, we undertake an extensive annual climate scenario analysis exercise. In this section, we focus primarily on the financial impacts in our probability weighted mean scenario, the most likely pathway we are currently on, reflecting an energy transition resulting in 2.3°C warming.

We are able to integrate corporates' transition plans into our scenario analysis to quantify the extent to which their valuations would be affected if they fully implemented their targets. In addition, we enhance this with our credibility assessment framework to better capture the likely impact of the energy transition on firms. This reflects our credibility-adjusted targets approach.

We find that transition targets significantly improve the valuation of companies as they help mitigate many financially material climate risks such as increasing carbon prices. Figure 20 shows the mean valuation impact across our different approaches for APAC companies. While the average corporate valuation impact is negative assuming current business models are maintained, it becomes positive if the company fully delivers on its targets. A company that successfully transitions would gain a strong competitive advantage relative to its peers as it would face lower carbon costs and be better positioned to benefit from increased demand in green segments.

However, most of this positive impact is lost once we account for the credibility of transition plans as it adjusts the expected decarbonisation trajectories. Many APAC companies will miss significant climate opportunities by not backing their transition plans with concrete actions.

**Figure 20: Transition targets have considerable effects on APAC companies**



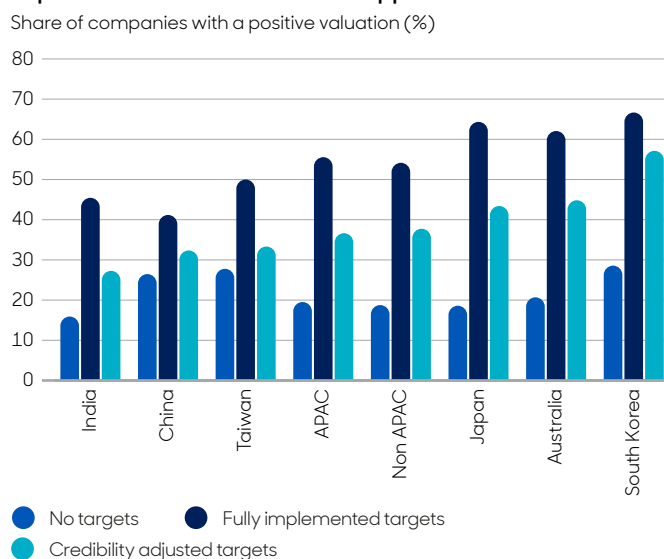
Source: abrdn, April 2023. Valuation impact under the probability-weighted mean scenario.

It should also be noted that the average valuation impact is skewed by a few companies with a significant valuation uplift (over 100%). More than half the firms are negatively impaired in the credibility adjusted target approach. This is because many businesses would be only modestly impacted by climate change, and their transition targets will have limited impact on their valuation.

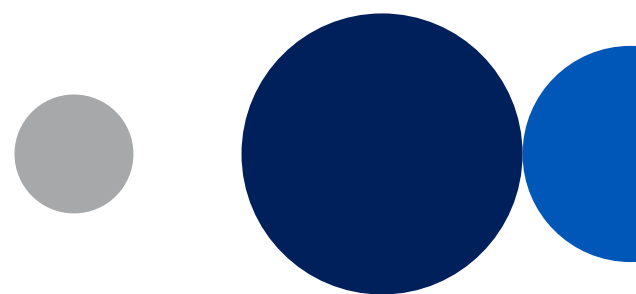
Most companies benefit if their targets are fully implemented, but there are large discrepancies within the region. The proportion for South Korea, Australia and Japan is above 60%, whereas most Indian and Chinese businesses are still negatively impaired (Figure 21). This is because a significant proportion of companies in emerging APAC economies have no, or weak, transition targets, which means they will continue to face climate risks.

The feature is further accentuated when we adjust the valuation uplift using our credibility score- more than 40% of companies in the most developed APAC countries potentially continue to benefit from the climate transition, compared to less than one-third in most emerging APAC economies.

**Figure 21: Share of companies with a positive valuation impairment across our different approaches**



Source: abrdn, April 2023. Valuation impact under the probability-weighted mean scenario.



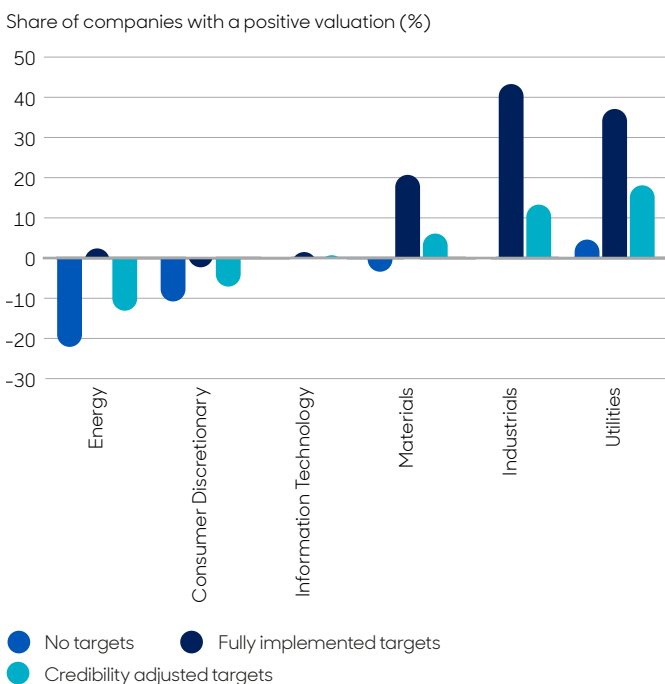
The effects of transition plans vary across sectors.

**Information Technology:** The impact is limited in sectors such as Information Technology that experience a modest aggregate financial impact in our mean climate scenario (Figure 22).

**Energy:** Energy is the most negatively impaired sector. The average Energy corporate valuation would be positively impacted if targets were fully implemented, as they would be better positioned than their peers by having a lower carbon intensity but would still be penalised as the world is moving away from fossil fuels. Most of the uplift would be erased as Energy firms have some of the weakest credibility scores.

**Materials and Industrials:** In contrast, Materials and emissions intensive Industrials such as Airlines would obtain some of the largest uplifts as implementing net-zero strategies translates into lower carbon costs, which in turn gives them a significant advantage relative to their peers. However, as with Energy companies, they lose most of their uplift because of low credibility scores, which will also be driven by the fact that technologies to decarbonise aviation are at an early maturity stage.

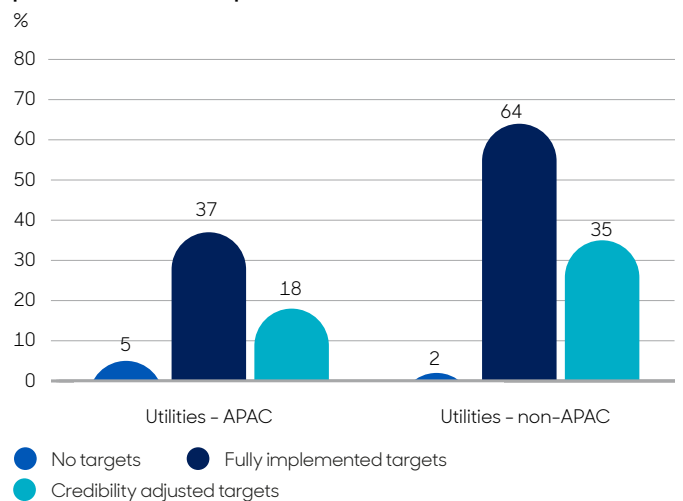
**Figure 22: The valuation impairment greatly differs across sectors in APAC**



Source: abrdn, April 2023. Valuation impact under the probability-weighted mean scenario. Valuation impairment for a subset of sectors.

**Utilities:** Utilities obtain some of the largest uplifts in APAC. It is also the sector that experiences the most positive valuation impact under our credibility-adjusted targets approach. However, the uplift is modest relative to non-APAC Utilities (Figure 23). In large part this is due to many APAC Utilities continuing to use emissions intensive energy sources rather than switching to renewables. APAC Utilities that implement ambitious and credible transition plans could obtain a notable advantage. For instance, the valuation impact of AC Energy in our mean scenario would go from -11% in our standard model to above 100% in the target-adjusted approach. The company would gain significant market shares by facing lower carbon costs than its peers if it were committed to its targets. Furthermore, as it scores well in our credibility framework, AC Energy maintains most of the uplift after adjusting for credibility.

**Figure 23: Ambitious targets could further increase the potential valuation uplift of APAC Utilities**

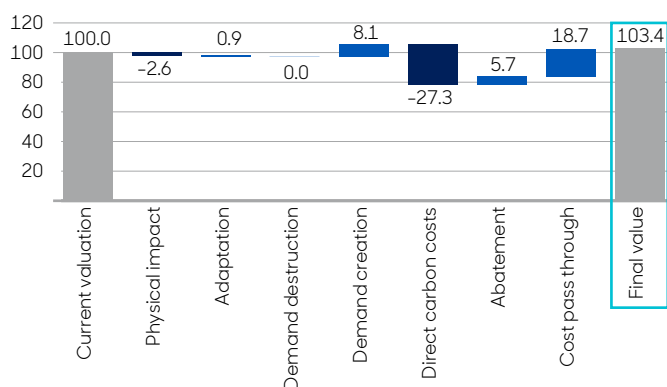


Source: abrdn, April 2023. Valuation impact under the probability-weighted mean scenario.

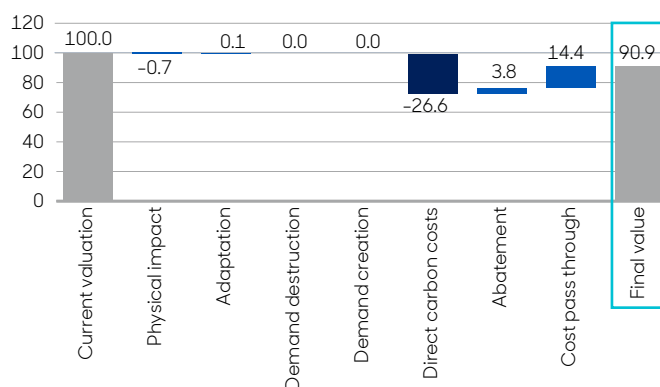
Lastly, our tools can be used to evaluate how individual corporates would gain from implementing their transition plans, and to compare results across firms. We illustrate the results by comparing how two Chemical companies - LG Chem from South Korea, and Westlake Chemical from the US - would be impacted under the seven impact channels of our climate scenario analysis<sup>3</sup> (Figure 24). While they face similar carbon costs in our standard approach, LG Chem has the potential to benefit if it achieves its net-zero targets as it will face lower carbon costs, which will also increase its market share and margins. It also scores well on the credibility framework, meaning that it maintains most of the uplift in the credibility-adjusted targets approach. In contrast, Westlake Chemical only sets a Scope 1 and 2 equivalent CO<sub>2</sub> emissions reduction per ton of production of 20% by 2030 from a 2016 baseline and has no net-zero targets. As a result, its transition plans won't significantly impact on value.

**Figure 24: Case study comparing two chemical producers**

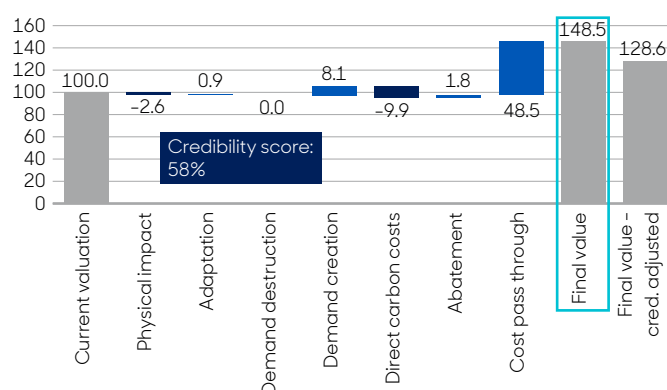
LG Chem valuation impact - no transition plans (%)



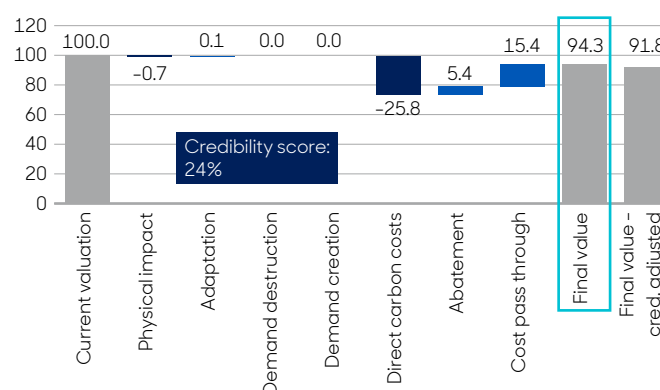
Westlake Chemical valuation impact - no transition plans (%)



LG Chem valuation impact - transition plans (%)



Westlake Chemical valuation impact - transition plans (%)



Source: abrdn, April 2023. Valuation impact under the probability-weighted mean scenario.

For more detail on our latest climate scenario analysis and company target approach see [here](#).

<sup>3</sup> Additional details can be found in our climate scenario [paper](#).

# Limitations

We caveat that our analysis and framework have some limitations.

- Data coverage gaps can be significant, particularly for China, which can result in low credibility scores and limits the analysis for some indicators. For instance, AIA Group scores weakly in our framework, in large part due to coverage gaps. The firm is considered as a strong leading firm based on our active analysis, it can make a valuable contribution by expanding access to insurance in emerging economies that face a significant gap. In addition, AIA has pledged to reach net-zero greenhouse gas emissions by 2050 and has completely divested from coal in their directly managed listed equity and fixed income exposure.
- Unlisted state-owned companies are not captured in the analysis either but play an important role in Asia.
- Our APAC dataset contains less than 350 companies, and certain countries or sectors rely on a limited sample. Some insights obtained from the dataset might not necessarily apply if we looked at a wider universe of APAC companies.
- Our scenario analysis modelling framework assumes that companies can achieve their targets at no additional cost or loss of efficiency. Targets are also analysed in isolation, and thus do not account for the way that one company's transition can affect another, or the effect on overall sector/region emissions profiles. As a consequence, our current approach represents an upper bound on the benefits companies can derive from dynamically transitioning.
- Lastly, some companies have updated their transition plans since the date of our climate scenario exercise modelling (September 2022) which is not yet reflected in the modelling results.

**It is therefore important to highlight that the results of the credibility framework are only a starting point and need to be complemented by deeper, more active analysis by investment analysts to identify transition leaders which can be found across all regions and sectors globally and in APAC.**

The climate scenario section of this report has been created by abrdrn drawing on selected data provided by Planetrics Ltd (which does not include investment advice). This section represents abrdrn's own selection of applicable scenarios. abrdrn is solely responsible for, and this report represents, such scenario selection, all assumptions underlying such selection, and all resulting findings, and conclusions and decisions. Planetrics Ltd. is not an investment adviser and has not provided any investment advice.



## Important Information

**For professional and institutional investors only – not to be further circulated. In Switzerland for qualified investors only. In Australia for wholesale clients only.**

Any data contained herein which is attributed to a third party ("Third Party Data") is the property of (a) third party supplier(s) (the "Owner") and is licensed for use by abrDN\*\*. Third Party Data may not be copied or distributed. Third Party Data is provided "as is" and is not warranted to be accurate, complete or timely. To the extent permitted by applicable law, none of the Owner, abrDN\*\* or any other third party (including any third party involved in providing and/or compiling Third Party Data) shall have any liability for Third Party Data or for any use made of Third Party Data. Neither the Owner nor any other third party sponsors, endorses or promotes any fund or product to which Third Party Data relates. \*\*abrDN means the relevant member of abrDN group, being abrDN plc together with its subsidiaries, subsidiary undertakings and associated companies (whether direct or indirect) from time to time.

The information contained herein is intended to be of general interest only and does not constitute legal or tax advice. abrDN does not warrant the accuracy, adequacy or completeness of the information and materials contained in this document and expressly disclaims liability for errors or omissions in such information and materials. abrDN reserves the right to make changes and corrections to its opinions expressed in this document at any time, without notice.

Some of the information in this document may contain projections or other forward-looking statements regarding future events or future financial performance of countries, markets or companies. These statements are only predictions and actual events or results may differ materially. The reader must make his/her own assessment of the relevance, accuracy and adequacy of the information contained in this document, and make such independent investigations as he/she may consider necessary or appropriate for the purpose of such assessment.

Any opinion or estimate contained in this document is made on a general basis and is not to be relied on by the reader as advice. Neither abrDN nor any of its agents have given any consideration to nor have they made any investigation of the investment objectives, financial situation or particular need of the reader, any specific person or group of persons. Accordingly, no warranty whatsoever is given and no liability whatsoever is accepted for any loss arising whether directly or indirectly as a result of the reader, any person or group of persons acting on any information, opinion or estimate contained in this document.

**This communication constitutes marketing, and is available in the following countries/regions and issued by the respective abrDN group members detailed below. abrDN group comprises abrDN plc and its subsidiaries:**

(entities as at 28 November 2022)

### United Kingdom (UK)

abrDN Investment Management Limited registered in Scotland (SC123321) at 1 George Street, Edinburgh EH2 2LL. Authorised and regulated in the UK by the Financial Conduct Authority.

### Europe<sup>1</sup>, Middle East and Africa

<sup>1</sup> In EU/EEA for Professional Investors, in Switzerland for Qualified Investors - not authorised for distribution to retail investors in these regions

**Belgium, Cyprus, Denmark, Finland, France, Gibraltar, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, and Sweden:** Produced by abrDN Investment Management Limited which is registered in Scotland (SC123321) at 1 George Street, Edinburgh EH2 2LL and authorised and regulated by the Financial Conduct Authority in the UK. Unless otherwise indicated, this content refers only to the market views, analysis and investment capabilities of the foregoing entity as at the date of publication. Issued by abrDN Investments Ireland Limited. Registered in Republic of Ireland (Company No.621721) at 2 -4 Merrion Row, Dublin D02 WP23. Regulated by the Central Bank of Ireland. **Austria, Germany:** abrDN Investment Management Limited registered in Scotland (SC123321) at 1 George Street, Edinburgh EH2 2LL. Authorised and regulated by the Financial Conduct Authority in the UK. **Switzerland:** abrDN Investments Switzerland AG. Registered in Switzerland (CHE-114.943.983) at Schweizergasse 14, 8001 Zürich. **Abu Dhabi Global Market ("ADGM"):** Aberdeen Asset Middle East Limited, 6th floor, Al Khatem Tower, Abu Dhabi Global Market Square, Al Maryah Island, P.O. Box 764605, Abu Dhabi, United Arab Emirates. Regulated by the ADGM Financial Services Regulatory Authority. For Professional Clients and Market Counterparties only. **South Africa:** abrDN Investments Limited ("abrDNIL"). Registered in Scotland (SC108419) at 10 Queen's Terrace, Aberdeen AB10 1XL. abrDNIL is not a registered Financial Service Provider and is exempt from the Financial Advisory And Intermediary Services Act, 2002. abrDNIL operates in South Africa under an exemption granted by the Financial Sector Conduct Authority (FSCA FAIS Notice 3 of 2022) and can render financial services to the classes of clients specified therein.

## Asia-Pacific

**Australia and New Zealand:** abrdn Australia Limited ABN 59 002 123 364, AFSL No. 240263. In New Zealand to wholesale investors only as defined in the Financial Markets Conduct Act 2013 (New Zealand). **Hong Kong:** abrdn Hong Kong Limited. This document has not been reviewed by the Securities and Futures Commission. **Malaysia:** abrdn Malaysia Sdn Bhd, Company Number: 200501013266 (690313 -D). This document has not been reviewed by the Securities Commission of Malaysia. **Thailand:** Aberdeen Asset Management (Thailand) Limited. **Singapore:** abrdn Asia Limited, Registration Number 199105448E.

For more information visit [abrdn.com](http://abrdn.com)

GB-060423-190580-1

**abrdn.com**

STA0423242368-001