actis

SUSTAINING ASIA'S NEW ECONOMY

THE STREET VIEW

MARCH 2023

Wind turbines at Phan Rang, Ninh Thuan, Vietnam

CONTENTS

SUSTAINING THE NEW ECONOMY

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Welcome to The Street View. This is where we share with you the how and why of the investment opportunities we are prosecuting. Our long experience as builders and operators means we go beyond the macro headlines so beloved by Wall Street commentary. Our views are from a different, globally diverse 'street', as we seek to explore the myriad of opportunities in hard asset investing provided by energy transition and security, the fast digitalising world and industrial change.

Our focus in this issue is on Asia - the largest continent in geography, population and contribution to world growth. It is also the home to a wide range of opportunities for Actis. Whether it be building and developing Lifescience facilities in India, wind and solar in Vietnam, green buildings in Korea or applying new technologies to deliver decarbonisation outcomes across the region, all feature as current Actis projects. We have sharpened our focus on thematic investing rather than pursuing a purely geographic remit, recently committing over US$500 million into Japanese renewables over the next 2-3 years and committing to a similar investment quantum in Vietnam. We are long established in India and recently acquired US$800 million of solar assets in a recent transaction, with several hundred million dollars of further investment planned for logistics and Lifesciences real estate development projects. Our Long Life Infrastructural funds have recently struck interesting deals with the investment in district cooling assets in the Gulf, and acquisition of nearly US$400 million of operational toll roads last year.

In this edition the 'Big Opportunity in Numbers', captures some of this exciting opportunity. A US$275 trillion global climate transition spend - more than a third in Asia - to meet Net Zero by 2050. 80GW of new capacity will need to be created this decade, equivalent to the existing power fleet, costing over US$125 billion. A jump in Japan's renewable power generation target from 22% - 24% to 36% - 38% by 2030. India's Lifescience industry facility needs real estate as they seek to build on the 60% share of world vaccine production. These are big opportunities. Actis has delivered c. 31GW of generation capacity, developed 13 Green certified buildings to date, with more in the pipeline. We are investing heavily in innovative real estate solutions for logistics, data centres and Lifesciences facilities across Asia. Truly these are Big Numbers.

Asia has the financial depth to finance much of the development it needs through onshore savings. Currency volatility has been declining ever since the 1997-98 crisis, driven by a desire to reduce dependence on volatile short term portfolio flows. Whilst there have been inflationary risks in recent times, these are generally muted when compared to the rest of the world given Asia's productivity advantages and relatively flexible economies. In general, we see helpful regulatory and governmental frameworks in the region.

On the flip side, Asia remains home to many of the largest emitters of carbon in the world and both climate and political risks have clearly risen in recent times. Several locations have high domestic debt burdens and substantial fiscal deficits, which limit new investment growth. The region is particularly vulnerable to energy price spikes, as most countries are substantial net importers of energy.

This edition dives deep into the opportunity set. Simon Ogus, CEO of DSG Asia based in Hong Kong, draws on his 30 year-plus experience analysing Asia's economies. He concludes that productive investment, including material flows of foreign direct investment, is an important basis for longer term growth. Furthermore, he notes that the much discussed diversification of supply chains away from China will be a multi-year process benefitting the rest of the region.

Mikael Karlsson and Shami Nissan dive into the challenges of climate change in Asia and the widening range of solutions and investment opportunities for this issue - some US$90 trillion of capital spend alone is required for APAC between 2021 and 2050 to meet Net Zero. Much of this will be funded by private finance given that fiscal priorities lie elsewhere, but accommodating and supportive regulatory frameworks are vital.

Yukari Niwa Yamashita, Managing Director of Japan's Institute of Energy Economics, makes a welcome guest contribution outlining the technological solutions for addressing renewables investment in Asia. She predicts increased use of ammonia as an additive to reduce emissions from coal-fired and LNG generation plants, alongside development of hydrogen power and - in Japan's case - a restart of nuclear power. This is a must-read article reminding us of the role of technological development in delivering decarbonisation. The same theme is echoed by our own Marina Johnson and Liam Smith, who track technology solutions for tackling climate change and how we are addressing sustainability in our portfolios.

As previously mentioned, Actis has entered new geographies pursuing our core investment themes. Rahul Agrawal and Vinh-Thang Hoang in Singapore track energy transition in Vietnam and profile our plans to meet the opportunities and challenges in the country. Jun Ohashi and Tareq Sirhan from our newly established Japan office, look at the path of energy transition and an opportunity set in what is the fifth largest energy market in the world. Both articles acknowledge the importance of local factors in investment, alongside the benefits of deploying our deep long-term knowledge as builders and operators.

The same theme - bringing operational skills to bear in solving for changing needs in infrastructure - underpins Brian Chinappi's article examining our strategies and opportunities in Asian real estate. He defines the four D's - demographic shift, digital disruption, deficient and obsolescent stock and demand for yield. We are backing clearly identifiable themes in digitalisation, supply chain transformation and the growing importance of health and wellbeing. This means green buildings and logistics in China and Korea, data centres across the region, bespoke development of Lifesciences facilities in India and a combination of many of these themes

in Vietnam. No speculative office blocks here -rather developments with specific purpose and close attention to end user specification.

Ashish Singh from our Mumbai office examines the returns available in non-traditional real estate. Ashish does this through the lens of opportunities available in India's burgeoning Lifesciences sector. In 2022, as Ashish recounts, we put our capital behind this theme in an initial US$200 million buy-and-build portfolio with our new partners, RX Propellant. Non-core real estate seems to be less competitive and more attractive risk-return characteristics than some of the more 'old economy' sectors.

Actis derives great information and insights from the companies we invest in. Their on the ground experience and close partnerships are inspirational and informational. The Street View is no exception.

In this edition we hear from Sudhir Nunes, CEO of Levanta Renewables, a renewable power platform based in Vietnam. He is interviewed by Rahul Agrawal of our Energy Infrastructure team. Sudhir talks about ambitious expansion plans as Levanta Renewables gears up to a 1.5GW platform and shares his views on sustainability and energy transition.

Also from Vietnam, Duong Pham, Chairman of An Phat Holdings, dialogues with Brian Chinappi who leads our Real Estate practice. An Phat Holdings is partnering with Actis on developing industrial and logistics facilities with a strong emphasis on sustainability.

Finally, Gaurav Chaturvedi, Head of Corporate Strategy at Walter, a new toll road platform in India, talks with Adrian Mucalov, Head of our Long Life Infrastructure Fund. Actis has plans to own and operate toll roads with a particular focus on improving safety for users. This is an approach which resonates with users in a country with one of the worst road safety records in the world and a source of competitive advantage.

We are very grateful to these busy executives for sharing their time and insights with you.

Concluding this edition is an article from Adrian Mucalov who is based in Singapore. Adrian considers Asia to be at the heart of any global infrastructure investment strategy by virtue of size and breadth of opportunity and fundamental drivers of end user needs. There is no greater indicator of this faith than the fact he has relocated to Asia recently with his family! Adrian also touches on our experience of embedding a core focus on sustainability, essential both for societal needs and delivering the multi-decade cash flows his team seeks.

We believe that Asia's wealth of opportunity in productive infrastructure, new economy real estate and energy transition provides a wealth of potential for Actis. As you read these articles, crossing from Mumbai to Tokyo and Jakarta to Seoul, we hope you enjoy this investment journey.

Wind farm,
South East Asia

THE BIG OPPORTUNITY IN NUMBERS

GLOBAL OPPORTUNITY

US$275TN*
global climate transition market opportunity

Source: McKinsey & Company

(*global capital spending required on physical assets between 2021- 2050 to reach Net Zero)

64.2 ZETTABYTES
of data created in 2020

Source: United Nations, Big Data for Sustainable Development

Office buildings with sustainability certifications command a 6% rental premium

Source: CBRE

ACTIS IN NUMBERS

Committed to invest and manage portfolio in line with global Net Zero emissions by 2050

with ambitious 2030 interim targets to be announced in March

13 trailblazing Green buildings globally achieved green certification

17 renewable energy platforms

C.31GW of generation capacity

C.30M CO_2 TONNES AVOIDED

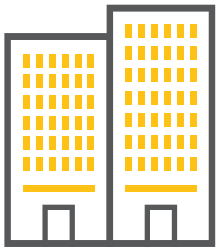
equates to GHG emissions avoided by

10,292,764 tonnes of waste recycled instead of landfilled

Source: Actis

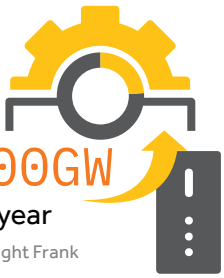
ASIAN OPPORTUNITY

Indian Lifesciences sector expected to grow at 13% CAGR to US$427BN by 2030

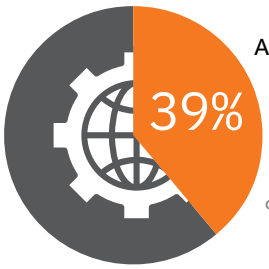


Source: Actis

APAC data centre market growth of 24% in 2021, exceeding EMEA, with an increase of ~1.500GW for the year

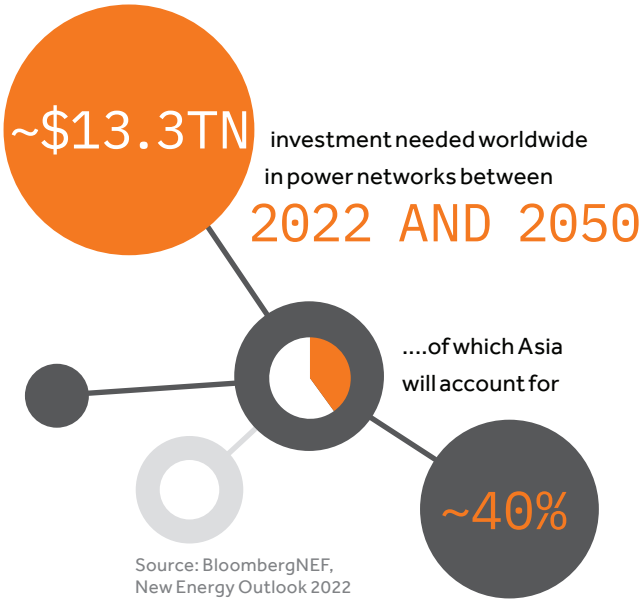


Source: Knight Frank



Asia contributed to world GDP growth in 2022

Source: DSG Asia Ltd calculations based on IMF WEO data (Oct 2022)



~$13.3TN investment needed worldwide in power networks between 2022 AND 2050

....of which Asia will account for ~40%

Source: BloombergNEF, New Energy Outlook 2022

Estimated US$128BN* of investment needed to meet Vietnam's energy goals

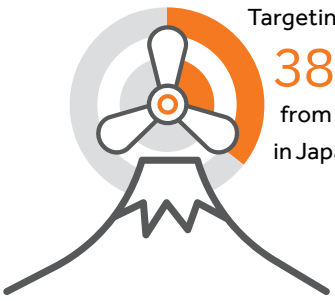
Source: Ministry of Industry and Trade (Vietnam)

(*over the next decade)

C.80GW of new capacity needed in Vietnam by 2030 (the equivalent of the entire power generation fleet it has today)

Source: Draft PDP8 as of Dec '22, Baker McKenzie

Targeting between 36% and 38% energy from renewables sources in Japan by 2030 (up from 22% to 24%)



Source: METI – Ministry of Economy, Trade and Industry (Japan)

Solar farm, Vietnam

HOW ECONOMIES GROW

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In previous Actis articles, I have discussed the role that both mobilising and then enhancing the productivity of human and physical capital plays in driving sustained economic development. Growing a poor economy with a rapidly growing population and a low initial capital stock is, in theory, relatively easy (though many countries, sadly and serially, fail). However, maintaining growth spurts beyond middle income status has historically been a rather harder endeavour requiring institutional changes conducive to sustainably boosting factor productivity.

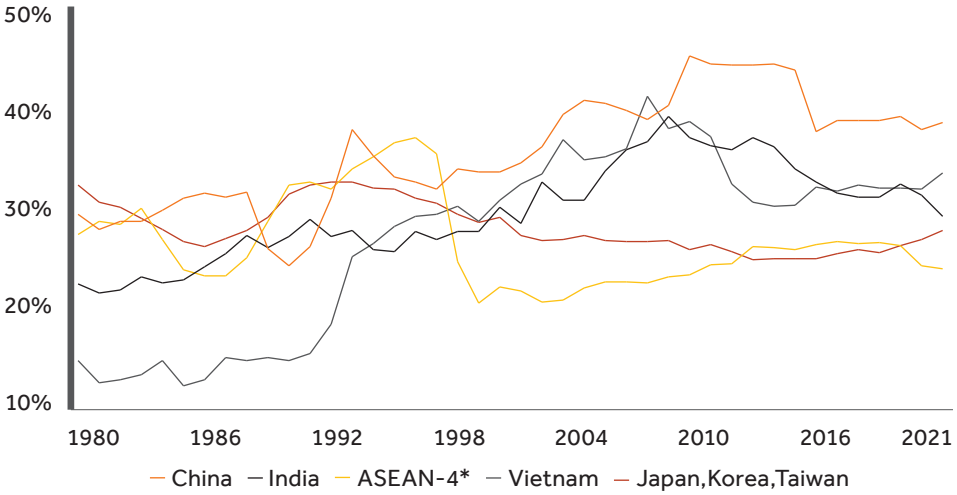
No unique recipe has to date been discovered that guarantees economic development. However, successful transitioners have generally provided sufficient macroeconomic and legal stability to mobilise both domestic and longer-term foreign savings, which in turn facilitates increased investments in human and physical capital. An openness to international expertise, trade and *more stable forms* of capital such as direct investments in the real economy has also invariably been part of the special sauce (Countries that become overly reliant on shorter-term foreign capital flows are more vulnerable to swings in risks appetites and sudden stops such as occurred during Asia's 1997 collapse or the 1994 Mexican Tequila Crisis).

"THE PLETHORA OF DOMESTIC SAVINGS AND FINANCIAL REPRESSION CREATES POOLS OF DOMESTIC FUNDED LONG TERM CAPITAL. THIS IS IDEAL FOR THE GREAT ASIAN INFRASTRUCTURE SPEND."

Asian economies east of the Indus River have accounted for a disproportionate amount of the successful transitioners. The process was led by post-WWII Japan, followed by the Newly Industrialised Country grouping of South Korea, Taiwan plus the city entrepots of Hong Kong and Singapore, and subsequently China and the original ASEAN Tigers of Malaysia, Thailand, Indonesia and the Philippines. More recently, other economies in the locale such as India, Bangladesh, Vietnam and Cambodia have also joined the party.

On various levels, the global backdrop appears increasingly unfriendly and unsupportive of further material gains. The developed world is grappling with post-inflationary indigestion while a land war is raging on the European continent.

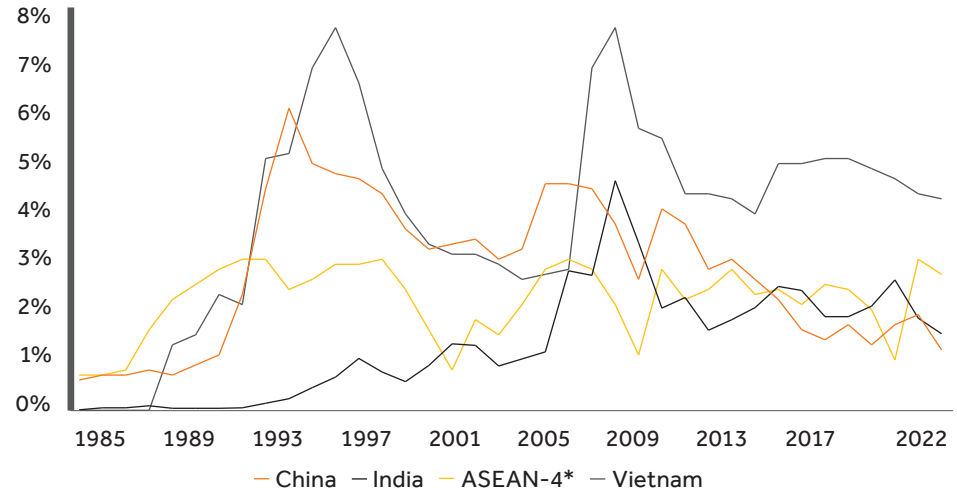
EXHIBIT 1: TOTAL FIXED CAPITAL FORMATION AS A % OF GDP



*Malaysia, Thailand, Indonesia and The Philippines

Source: DSG Asia Limited calculations based on Government and other supranational data

EXHIBIT 2: INWARD FOREIGN DIRECT INVESTMENT AS A % OF GDP



*Malaysia, Thailand, Indonesia and The Philippines

Source: DSG Asia Limited calculations based on Government and other supranational data

Meanwhile, US-China relations remain troubled and characterised by mutual mistrust and although the People's Republic of China (PRC) is likely to see a decent rebound over the coming quarters as it exits its pandemic-era isolation, it is struggling with a range of structural growth impediments.

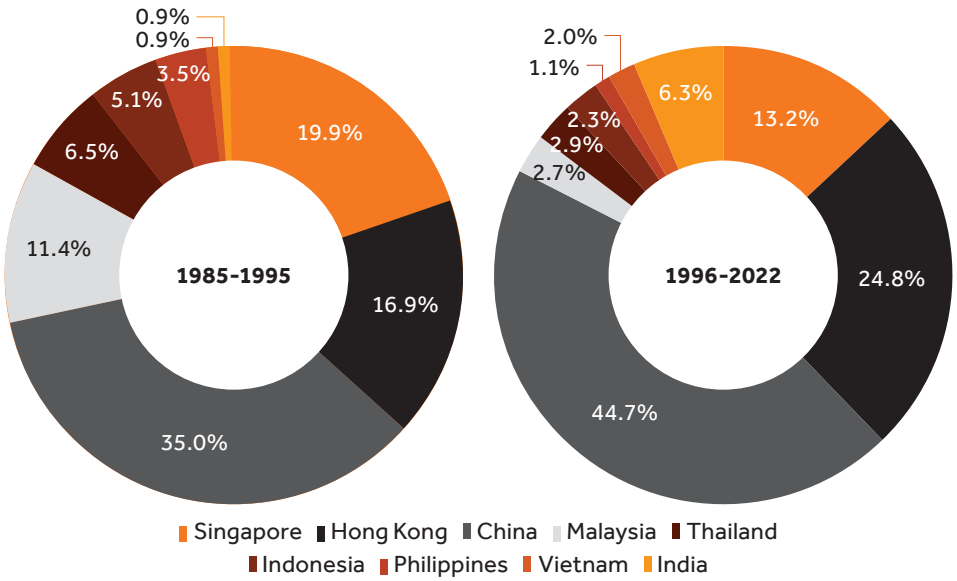
From adversity springs opportunity for the region though. The deterioration in Sino-US relations over the past decade has driven a push for supply chain recalibration, if not quite a full-blown decoupling. This may result – near-term at least – in less efficient and higher cost production, but the countries that can attract such re-locational capital stand to benefit.

As the world emerges from the pandemic, paused domestic capex plans can be resurrected and foreign investor due diligence exercises completed. Economies that are able to enhance their absorptive capacity capabilities, provide a welcoming and predictable investment climate, flexible labour markets and improved infrastructure should be well-placed to boost domestic investment and to also attract stronger flows of inward Foreign Direct Investment (FDI).

The Asian economies surveyed here are, arguably, particularly well-positioned. Savings rates have been consistently elevated over the decades accommodating a higher rate of investment than generally recorded in other parts of the globe (Exhibit 1). For sure, not all investments have been necessarily productive while booms have given way to periodic busts when capital allocation quality has deteriorated. Nevertheless, the region's longer-term productive capital accumulation has been far from poor overall.

This investment success has been based on both strong domestic and foreign capital mobilisation with annual FDI flows consistently in the 2-4% of GDP range (Exhibit 2). Indeed, the region has traditionally attracted a disproportionate share. Of the more than US$12 trillion stock of FDI UNCTAD records as being deployed to developing countries, developing Asia has accounted for around three-quarters, half of which has gone to China.

EXHIBIT 3: RECIPIENT FOREIGN DIRECT INVESTMENT SHARES



Source: DSG Asia Limited calculations based on Government and other supranational data

The ASEAN Tigers initially led the way in the 1980s accounting for a quarter of disbursements to the region (Exhibit 3). However, costs rose and excesses increasingly accumulated during the early-1990s at a time when China was accelerating its own reform and opening-up processes and could start to offer real scale. Hence the centre of FDI gravity shifted further north, albeit post the 1997 meltdown, ASEAN has once again started to receive sizeable foreign capital disbursements alongside Vietnam and more recently India.

It seems fair to assume that given the frigid state of great power international relations, the burgeoning trend of the past half-decade to recalibrate supply chains to make them less dependent on single suppliers will only continue. Physical resources can be somewhat more fungible with a (painful) lag but disentangling highly-complicated manufacturing supply chains is a costly and far-from immediate endeavour. Moreover, no other developing country can, at this juncture, match China's sophistication and scale (nor the attractions of its internal market).

Nevertheless, if even a tenth of the productive capacity of the PRC – a number consistent with various foreign chamber of commerce surveys – seeks to relocate over the next decade, this would represent a huge amount of capital for smaller economies to digest. Hence the need to concomitantly upgrade infrastructure, logistics and energy capacities that do not trash the planet. Needless to say, these are all areas of Actis expertise.

More immediate cyclical challenges remain. The PRC's re-engagement with the outside world should provide China's neighbours with a decent enough cyclical demand boost – trade, education, tourism and commodities – which can help to put a floor under an already contracting export growth profile.

Furthermore, although fiscal deficits, understandably, widened across the region in recent years, public debt metrics remain almost universally manageable, foreign borrowing ratios are well shy of their danger zones, and currencies are generally cheap. Finally, balance of payments stresses are largely absent too, albeit the rise in energy costs has been somewhat uncomfortable.

Taken together, Asia still has the potential to grow faster than the rest of the world even if growth differentials narrow as trade shares rise. Equally the plethora of domestic savings and financial repression creates pools of domestic funded long-term capital. This is ideal for the great Asian infrastructure spend provided that government allows the private sector to earn adequate returns and can absorb inflationary risks.

FUNDING CLIMATE

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WATCH VIDEO

The past few years have demonstrated that climate change is already upon us, as temperatures continue to break records, wildfires increase in intensity, coral bleaching events become more frequent and more regions endure flooding than ever before. It is a worldwide problem, but one that affects Asia disproportionately.

A report by McKinsey Global Institute found that between 600 million and 1 billion of Asia's population could be exposed to annual lethal heatwaves by 2050 – that's out of a global total of 700 million to 1.2 billion people affected. The report also states that 75% of the world's capital stock that could be damaged by rivers flooding is in Asia and that between US$2.8 trillion and US$4.7 trillion of the region's GDP is at risk annually as a result of lower labour productivity as extreme heat and humidity prevent work outside.

"TRANSITIONING ASIAN ECONOMIES TO NET ZERO IS VITAL IF THE WORLD IS TO ACHIEVE GLOBAL CLIMATE TARGETS."

The figures are stark, particularly when Asia is home to 55% of the world's population and accounted for approximately 40% of global GDP growth in 2022.

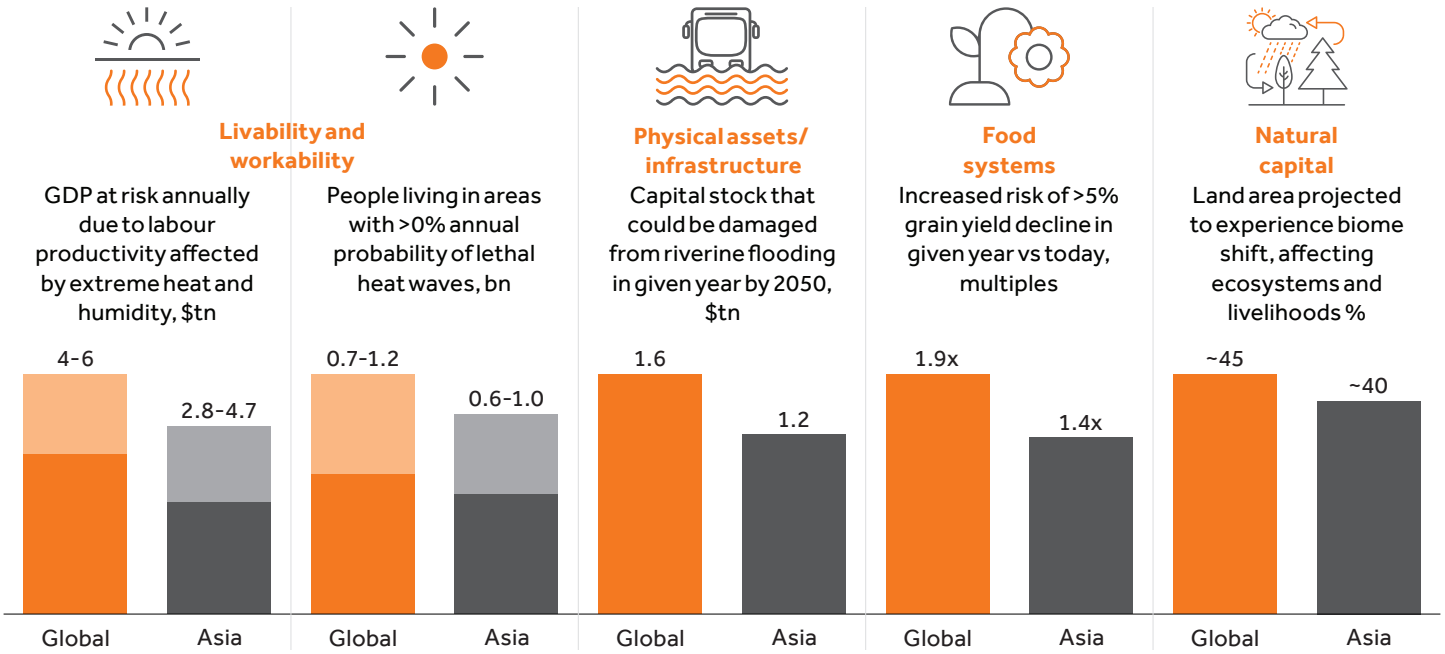
The scale of the issue means that Asia will need significant investment to mitigate and adapt to climate change. We believe that climate transition will represent the largest reallocation of capital in history, with estimates from McKinsey & Company of US$275 trillion of capital spending needed globally between 2021 and 2050 in the Net Zero scenario - of which an estimated US$90 trillion will need to flow to APAC countries. This represents an annual rise to about $3.1 trillion from approximately $2.1 trillion in 2020.

This investment is clearly in everyone's interest, particularly given that transitioning Asian economies to Net Zero is vital if the world is to achieve global climate targets. Deployment of this capital will need to be broad-based, directed at a range of areas that decarbonise, create climate resilience and ensure a just transition that protects and improves the lives of vulnerable communities.

EXHIBIT 1: ASIA'S CLIMATE CHANGE RISK

People, physical assets, and GDP impacted by rising heat and humidity may be more at risk from climate change in Asia than globally.

First-order impact only, by 2050 (based on RCP 8.5)



Source: McKinsey & Company, Climate risk and response in Asia

"CLIMATE TRANSITION WILL REPRESENT THE LARGEST REALLOCATION OF CAPITAL IN HISTORY, WITH ESTIMATES OF US$275 TRILLION OF CAPITAL SPEND NEEDED GLOBALLY BETWEEN 2021 AND 2050 UNDER THE NET ZERO 2050 SCENARIO."

The opportunity is here today

We are already starting to see private markets develop investment themes around climate transition in Asia, with some focusing on early-stage climate-related technologies, while others are following a strategy of buying coal-fired plants with a view to accelerating their closure.

At Actis, we see significant opportunity in a variety of areas related to climate transition in Asia, particularly with a focus on real assets. We have built 17 renewable energy platforms across our markets and have c. 31GW of energy generation capacity in our portfolio, equivalent to 28 million tonnes of CO_2 avoided. This experience, combined with a history of investing in Asia for over 70 years, makes us extremely well placed to identify and create climate transition solutions.

There is a lot to play for, starting with sustainable energy investments given that APAC countries are expected to build 1.6 TW of new renewable capacity in the next ten years. In addition to large-scale renewable power platform investments, we see potential in investing directly in renewable energy projects or developing businesses with strong growth profiles within this space. Energy storage that helps mitigate renewable intermittency is also a vital component of decarbonisation, while emerging fuel infrastructure, such as that required for hydrogen or ammonia can be part of the investment universe.

Energy efficiency solutions are a second key area for Asia's climate transition. Increasingly decentralised and intermittent power sources, along with increased electrification of transport and buildings, will put pressure on grids. This means about US$13.3 trillion in investment is required worldwide for upgrading, reinforcing and installing power networks between 2022 and 2050, of which Asia will account for roughly 40%, according to Bloomberg NEF's New Energy Outlook 2022. Smart meters, micro-grids and heating and cooling infrastructure will present additional opportunities. There are increasing moves to create district or centralised heating and cooling systems that are significantly more energy efficient than individual units.

The third main area we believe is attractive is sustainable transportation, as countries increasingly phase out internal combustion engine vehicles. Today, zero emission vehicles represent 6% of new passenger vehicle sales globally; by 2040, this is expected to rise to 75%. This will drive the need for new charging infrastructure, with more than 15 million charger connections expected in APAC in 2040. We see opportunities in fleet decarbonisation and charging, where there is strong potential for building economies of scale and generating secure revenues. Yet there is also need for investment to speed up emerging clean transport in areas such as aviation and shipping; new and alternative fuels will require production and supply infrastructure.

Investors want to put capital behind climate strategies

These real asset climate investments will benefit from infrastructure risk-return profiles, with long-term, contracted cash flows, inflation protection and attractive risk-adjusted returns. They are all areas that could have a significant impact on carbon emissions and contribute to addressing climate change.

We continue to see undimmed demand for investing into the themes of transition to Net Zero. As more investors set their own Net Zero targets and seek investments that contribute to decarbonisation, they are increasingly concerned that the funds they back meet not only their decarbonisation objectives, but also address broader social and environmental issues. The rise of regulation to combat greenwashing is helping to drive up standards across the investment community, with the European Union's Sustainable Finance Disclosure Regulation (SFDR) having a meaningful impact. We are seeing some investors view SFDR Article 9 funds as the 'gold standard'.

This is especially important for funds targeting regions such as Asia. The fact that Asia is likely to be so impacted by climate change means that any investments need to take a holistic approach to sustainability by ensuring that environmental issues are addressed at the same time as building economic and social resilience among local populations.

At Actis, our core philosophy that 'Values Drive Value' informs our approach to all our investments. This is why we have developed proprietary tools to measure and drive responsible investment practices across all aspects of ESG in our investments and in our firm. We believe this is essential to maintaining our licence to operate, but it is also fundamental to the way we generate returns. Our investment in pan-African renewable platform Lekela demonstrates this. Rated as the number 1 global utility company by Sustainalytics ESG Risk Rating assessments, Lekela's track record for sustainability made it a more valuable business during the sales process. Our work with Indian renewable business Sprng tells a similar story. With industry-leading ESG standards embedded in the company, the quality of the Sprng platform attracted significant buyer interest, including from non-traditional renewables buyers such as oil companies.

"THESE REAL ASSET CLIMATE INVESTMENTS WILL BENEFIT FROM INFRASTRUCTURE RISK-RETURN PROFILES, WITH LONG-TERM, CONTRACTED CASH FLOWS, INFLATION PROTECTION AND ATTRACTIVE RISK-ADJUSTED RETURNS."

We believe that Asia has the capacity to address and respond to climate change. With fast growing and dynamic economies, supportive policy frameworks, a strong pipeline of new projects and technologies – and with the right investors – Asia has the potential to emerge from the climate emergency stronger than ever before.

Actis former portfolio company,
Sprng Energy, Gujarat, India

ACTIS IN ACTION: SPRNG ENERGY, INDIA

Sprng Energy is an Indian renewable energy platform focused on solar and wind projects supplying power to electricity distribution companies across the country. Established by Actis in 2017 with an initial seed asset of 330MW, it grew to encompass more than 2.1GW of operational renewable energy assets, with a further 7.5GW in the pipeline. In 2022, Actis agreed to sell the company to Shell.

Context

Demand for electricity among residential and business users across India is on the rise thanks to the country's growth, while a lack of domestic oil and gas supplies coupled with concerns around the environmental impact of adding further coal-fired thermal plants to the energy mix has prompted the government to press for more renewable power.

The government's plans aim to capitalise on India's abundant sunshine and strong winds. Meanwhile renewable energy is also an increasingly affordable power source: it can now produce electricity at between 20% and 40% lower cost than a new thermal plant in India.

What we did

Drawing on our experience of successfully creating and building renewable energy businesses globally, we established a new platform. Our deep local networks enabled us to identify an experienced executive to join as CEO. This became the first building block in what was to be a rapid transformation from start-up to a fully-functioning and fast-growing business. By the end of the year, the company had grown to encompass 30 employees. The following year, we recruited a Chief Financial Officer, a new Head of Wind and a new Head of Operations and maintenance to complete the senior hires, as well as adding to other departments.

Sprng Energy, in common with all our portfolio companies, appointed a Head of ESG who was directly accountable to the board and who was responsible for identifying and managing any potential ESG issues, while also developing initiatives for community engagement.

With our guidance, the company put in place best-in-class and award winning health and safety governance across all sites (achieving over 6.5 million man safe hours during the lifetime of Actis' investment) – a move that helped raise benchmarks across the wider industry. Sprng Energy's employment terms were among the best for the industry in India, offering fair wages and market-leading working conditions in a market where these are often far from standard (e.g. Sprng developed IFC standards-aligned guidelines for workers' accommodation). Sprng's dedicated community investment strategy (which, for example, supported educational and clean water infrastructure) reached approximately 64,000 beneficiaries and generated annual community earnings of US$ 2,500 through community training and skills development.

"AT THE TIME OF SPRNG ENERGY'S ACQUISITION, SHELL PRAISED THE COMPANY'S ABILITY TO GENERATE CASH, ITS EXCELLENT TEAM, STRONG AND PROVEN DEVELOPMENT TRACK RECORD AND HEALTHY GROWTH PIPELINE. SHELL SAID IT WAS CONFIDENT SPRNG ENERGY WOULD BE ABLE TO HELP CREATE EVEN MORE OPPORTUNITIES FOR GROWTH. ACTIS MEANWHILE CONTINUES TO INVEST IN BUY-AND-BUILD RENEWABLE ENERGY ASSETS AROUND THE WORLD, ENSURING THE BENEFITS OF A JUST ENERGY TRANSITION ARE MADE AVAILABLE TO ALL."

SUSTAINING TECHNOLOGY

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WATCH VIDEO

Asia Challenge

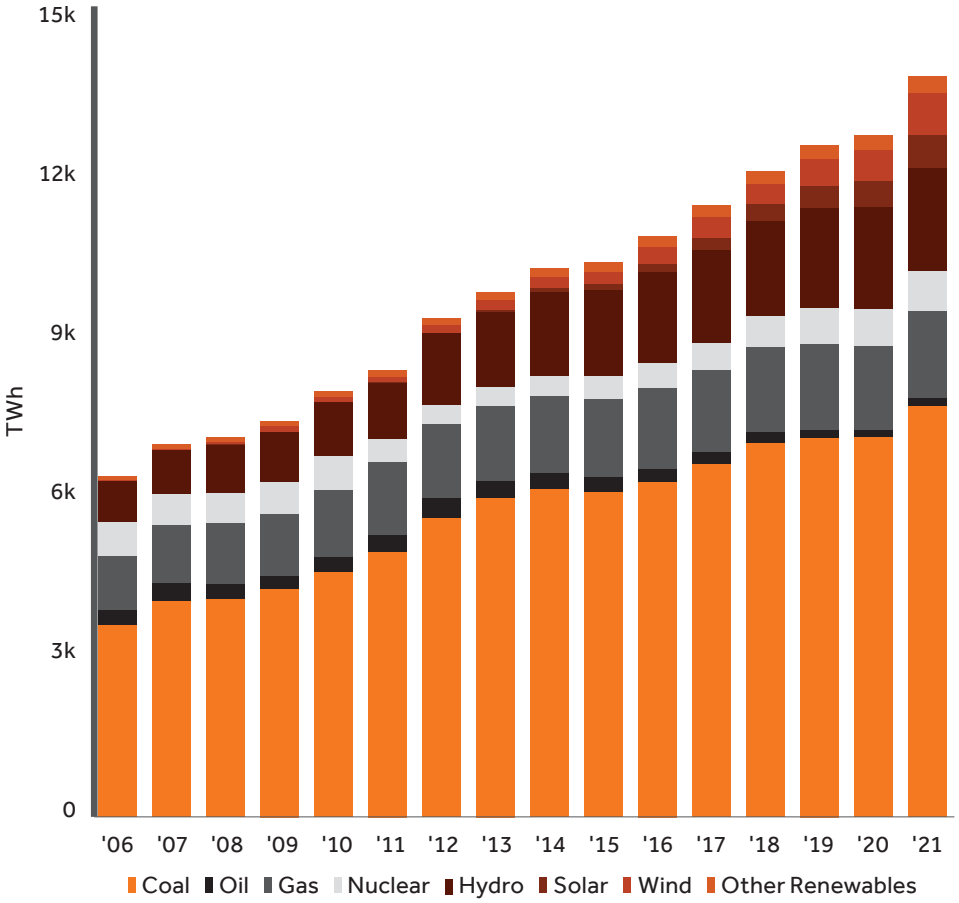
Asia is at the forefront of the climate change challenge. The region represents the majority of global population and economic growth to 2050, and is highly vulnerable to climatic impacts. At the same time it remains largely reliant on high carbon intensity industries and power generation technologies. According to McKinsey & Company (April 2022), approximately US$90 trillion is required to finance the energy transition to Net Zero in Asia to 2050, not to mention the human capital required. This represents an annual rise to about $3.1 trillion from approximately $2.1 trillion in 2020. While the energy transition value proposition is clear, especially in a region thirsting for energy security at a time when net fossil fuel imports are set to rise 200% by 2050 (IEA, October, 2022), challenges remain. For many countries however, rolling out renewables at the pace required to meet demand and reduce carbon emissions quickly, while maintaining grid stability, during a time of tightening liquidity, presents a challenge which looks insurmountable. New solutions are required to reduce the costs and barriers to decarbonisation.

Path to decarbonisation

Reducing the underlying coal component of the generation profile (Exhibit 1), while meeting the rapid growth in energy demand, is the key issue to resolve in Asia. Coal and gas pricing volatility make the commercial case for accelerated growth in new build renewables the obvious "low hanging fruit". However, keeping up with the growth rate and poor transmission infrastructure between load centres and windy / sunny areas has resulted in continued build out of the thermal fleet.

China and Vietnam have seen challenges delivering accelerated renewables programmes. For instance, transmission line build-out has lagged renewables development, resulting in the controlled reduction in output of renewables in order to balance energy supply and demand. While these challenges can largely be mitigated through better planning, regulation, and the use of private-public partnerships to harness more capital and human resources, it is unlikely to be sufficient.

EXHIBIT 1: APAC GENERATION BY TECHNOLOGY



Source: BloombergNEF, Capacity & Generation data

"GAS HAS HALF THE CARBON INTENSITY OF COAL, HAS A MORE FLEXIBLE DISPATCH, AND HAS A LOWER CAPITAL RECOVERY COMPONENT TO THE COST. THE RECENT INCLUSION OF GAS IN THE EUROPEAN UNION'S GREEN TAXONOMY SUPPORTS THIS POSITION OF GAS HAVING A PIVOTAL ROLE AS A SUSTAINABLE FUEL SOURCE IN THE ENERGY TRANSITION."

Pricing of carbon and clear regulatory approaches could certainly spark accelerated deployment of technologies to tackle these challenges.

While some of these solutions are not currently commercially viable, regulation to internalise the cost of carbon would rapidly change the paradigm. As with the renewables sector, these technologies would also subsequently benefit from economies of scale and learning curves. However, over the medium term, Actis doesn't see a world where regulatory change will be sufficient to cover the cost of carbon-free firm power (i.e. H2, ammonia and/or nuclear), which would require carbon pricing in excess of $100/tCO$_2$). As a result, to prevent new coal being added to the fuel mix, Actis believes that gas is the only credible stop-gap. Gas has half the carbon intensity of coal, has a more flexible dispatch, and has a lower capital recovery component to the cost. While gas pricing on the spot market was volatile across the 2022 on the back of Europe's pivot away from Russian gas, it has largely recovered towards longer term norms, and is unlikely to prevent longer term investment. The recent inclusion of gas in the European Union's green taxonomy supports this position of gas having a pivotal role as a sustainable fuel source in the energy transition.

Actis and the Energy Transition

How do we ensure investments into non-renewable power generation are well aligned with a Net Zero pathway? We have developed an in-house Transition Tool with consultants SYSTEMIQ, that is run as part of our due diligence process. It assesses climate transition risk by analysing the role of an individual asset in the local market in relation to national climate transition and decarbonisation plans. It identifies assets as "green" (Paris/Net Zero aligned), "misaligned" (where Actis will not invest) or somewhere in between which we call "Smart Olive".

Applying the Transition tool to the seed asset of our Bridgin Power platform in Bangladesh enabled an informed view prior to investment, and fed into the transition alignment strategy implemented during our ownership.

"HOW DO WE ENSURE INVESTMENTS INTO NON-RENEWABLE POWER GENERATION ARE WELL ALIGNED WITH A NET ZERO PATHWAY? WE HAVE DEVELOPED AN IN-HOUSE TRANSITION TOOL WITH CONSULTANTS SYSTEMIQ, THAT IS RUN AS PART OF OUR DUE DILIGENCE PROCESS."

"FOR MANY COUNTRIES, ROLLING OUT RENEWABLES AT THE PACE REQUIRED TO MEET DEMAND AND REDUCE CARBON EMISSIONS, WHILE MAINTAINING GRID STABILITY, AND AT A TIME OF TIGHTENING LIQUIDITY IS UNAFFORDABLE. NEW SOLUTIONS ARE REQUIRED TO REDUCE THE COSTS AND BARRIERS TO DECARBONISATION."

Actis also continues to leverage its deep industrial insight to ensure that capital allocation is efficiently targeted to defensive positions with intrinsic upside associated with operational improvements and/or regulatory changes. Actis' track record in delivering operational improvements with the likes of AI based predictive maintenance (EchoEnergia) and drone based equipment surveys (Atlas, Pelicano, Sprng & EchoEnergia) while also positioned to capture regulatory upside, with the likes of Sprng successfully marketing carbon credits, demonstrating the value that can be gained from such forward looking strategies. The true value however is likely to present itself moving forward, in the form of risk mitigation to an ever more volatile macro-economic and regulatory environment.

Accelerating renewables through technology

Challenge	Solution
TRANSMISSION BOTTLENECKS AND DAILY RENEWABLES INTERMITTENCY	**Demand Side Management / Energy as a Service:** The rise of big data, and an increasingly digitised consumption base provides the opportunity for efficiency improvements and demand shifting to better utilise transmission infrastructure. To date, this has been designed to deal with instantaneous, rather than periodic capacity peaks. Interesting advances in new business models with "energy as a service" provide a path to spread the peak over longer durations, in turn reducing the capacity needed.
	Batteries: Batteries are well known for providing load shifting services, but less advertised is the benefit that they can offer in terms of maximising the utilisation of transmission assets. They achieve this by "shaving the peaks" of generation, which come with the likes of solar. Transmission costs can therefore be amortised over more energy. Batteries are currently very competitive, however in most instances this is over a relatively short duration (i.e. <4hrs).
SEASONAL RENEWABLES INTERMITTENCY LARGE INCUMBENT COAL FLEET	**H2 and Ammonia:** The much-reported hydrogen story is firstly set to be one about displacement of 'grey' hydrogen (which uses carbon intensive production techniques), and use in hard-to-abate sectors (e.g. steel production, fertiliser). However, it offers an interesting potential in firing either gas or coal assets. Initial uses of excess or expansion capacity from hydrogen infrastructure could also be monetised directly in the thermal fleet, initially used as a "blend fuel" to reduce carbon intensity, but eventually as a total replacement, much as gas replaced coal in the US market (noting this is likely to be only for seasonal peaking considering high associated cost).
LACK OF LAND AVAILABILITY	Land availability for renewables development in Asia remains low, and in some areas has already slowed deployment. Various options associated with semi-transparent solar, high frame solar, and floating solar offer an option for **mixed land use**. This allows access to high energy yield areas whilst not displacing local land use, which can be costly both economically and socially. To this end, optimising the current asset base in terms of both carbon intensity and cost will also have an outsized payback. The increasing use of **drone based** equipment and surveys (for methane detection and wind turbine blade surveys), and the use of **AI analytics** offer compelling paths forward to optimise.

Source: Actis

Actis portfolio company,
Bridgin Power, South East Asia

GUEST VIEW: JAPAN UNLOCKS ASIAN TRANSITION

YUKARI NIWA YAMASHITA
Managing Director, Institute of Energy Economics, Japan

Japan is seeking a leading role in Asia's path to energy transition and in helping the region achieve more secure energy supplies. This involvement is important and based on the view that what happens in Asia will be critical to the success or otherwise of the global push towards carbon neutrality. The region is home to 55% of the world's population and its demographics and development path place many of its countries on track to become leading economic powerhouses.

Funded by government bodies, such as the Japanese Ministry of Economy Trade and Industry (METI), and by energy producing and consuming companies, the Institute of Energy Economics of Japan (IEEJ), is uniquely well placed to support the Japanese efforts to collaborate on energy policy and initiatives across Asia. As such, the Japanese leadership in creating the Asian Zero Emission Community (AZEC) is welcome. This initiative, launched by Japan's prime minister Fumio Kishida, promotes the objective of reducing greenhouse gas emissions in Asia while supporting sound economic growth for the region. We look forward to seeing the outcomes of discussions between Asian ministers at the AZEC meeting in early March 2023. Tokyo was also the location for the launch of the GX Week, an annual series of international conferences focused on green transformation led by METI. The latest set of conferences took place in October 2022. Importantly, Japan will use its G7 presidency this year to emphasise Asia' priorities in their transition efforts towards decarbonisation and ensuring energy security.

"JAPAN IS ONE OF THE MOST ADVANCED COUNTRIES IN THE DEVELOPMENT OF HYDROGEN POWER TECHNOLOGY, BEING ALMOST THE ONLY COUNTRY IN THE WORLD TO HAVE KEPT THIS OPTION OPEN FOR THE PAST THREE DECADES. AS A RESULT, HYDROGEN IS AN IMPORTANT PART OF ITS ENERGY TRANSITION PLANS."

Different transition paths

Many different transition paths are necessary because each country has unique national circumstances. For instance, there are often some misperceptions about the extent of Asia's commitments to decarbonise. The fact is that there are some significant differences in the availability of renewable energy between Europe (which is pushing for a faster transition) and Asia's potential to do so that is often not well understood.

The potential, for solar power, is more limited in Asia than in Europe because of higher rainfall. Unlike Europe, which can connect to the North African market, where solar irradiance is high, it is challenging to inter-connect Asian markets. This is a particular issue where populations are dense and limiting the available land space or where they are scattered across large areas, such as the thousands of islands that make up Indonesia. Wind potential is also insufficient or unstable in many parts of Asia, where weather patterns such as typhoons disrupt supply.

Furthermore, many of the existing coal-fired fleets have only recently been built, which makes the phase-out of these plants uneconomic. As there are no pipelines to transport natural gas as an alternative fuel to coal, Asia must import LNG. While we view LNG as a vital transitional energy resource, it presents energy security issues for Asia. These issues have increased as prices have risen over the past year. It's worth noting that because of recent decarbonisation movement in upstream developments, there may not be sufficient natural gas resources developed globally to replace all the coal capacity, even if Asia were to phase out or shelve planned coal plants.

The role of nuclear

All this means that we must consider all sources of energy and ways of decarbonising our economies to design each country's portfolio. This includes nuclear power. In Japan, the Fukushima accident in 2011 forced reactors to stop and their safety to be re-examined to meet a new safety standard before re-starting operations. Moreover, nuclear still face public opposition because of safety concerns. The government has recently announced plans to accelerate the restart of reactors, extend the life of existing plants and build new ones as it sets out to reach a 20%-22% target for nuclear power by 2030 then go forward to achieve carbon neutrality target by 2050. Technologies such as light water and high temperature reactors as well as small modular reactors are likely to be considered for new projects.

"CAPITAL WILL CLEARLY BE NEEDED TO SUPPORT A NEW AND UPGRADED TRANSMISSION INFRASTRUCTURE TO MEET AN INCREASING DEMAND WITH NEW RENEWABLE PROJECTS AND EXPANDED CAPACITY."

Hydrogen's potential

Japan is one of the most advanced countries in the development of hydrogen power technology, being almost the only country in the world to have kept this option open for the past three decades. As a result, hydrogen is an important part of its energy transition plans, with ambitions to establish an international hydrogen supply chain to cut production costs. This will require working with the Middle East, Australia and North America, where large quantities of hydrogen could be produced using fossil fuels and where the prospects for blue hydrogen seem promising because of the regions' carbon sequestration capabilities. While we are still awaiting clarity around what the threshold for "blue" classification will be and how well carbon can be sequestered, we see carbon capture as playing an important role in decarbonising the hydrogen production process. Efforts are also underway to find ideal carbon capture sites in Japan, while in Indonesia and Malaysia, projects to demonstrate the technology are already underway, with a new offshore project, off the Malaysian coastline, set to become operational in 2025.

"ASIAN COUNTRIES MUST RESPOND TO THE UNIQUE CONDITIONS THEY EACH FACE AND KEEP ALL OPTIONS OPEN TO MAINTAIN SECURITY OF SUPPLY AND MEET RISING DEMAND."

Building technological solutions

There are other mitigation options. Ammonia, while an expensive substance, may present a low-cost solution relative to coal fleet closures – it can be added to fuel at adapted coal-fired plants and reduce carbon dioxide levels to the same as those emitted by natural gas plants. The other benefits of ammonia are that we already have the know-how to control its toxicity and there is already a market for the substance as an ingredient for fertiliser, thus creating a market for fuel ammonia can be done based on such experiences.

"THE REGION IS HOME TO MORE THAN HALF OF THE WORLD'S POPULATION (55%) AND ITS DEMOGRAPHICS AND DEVELOPMENT PATH PLACE MANY OF ITS COUNTRIES ON TRACK TO BECOME LEADING ECONOMIC POWERHOUSES."

New technologies will also come online in the future. Japanese carmakers, for example, are investing in areas such as solid-state batteries that could achieve greater energy density than today's lithium-ion batteries and be faster to charge. These electric vehicles could serve as energy storage to be used by householders through vehicle-to-grid processes. Researchers at Tokyo University and a Japanese oil company are also making headway on developing artificial photosynthesis – this has the potential to be a highly efficient and cost-effective way of producing hydrogen.

Areas for investment

The need for energy decarbonisation and the rise in demand for power across Asia present significant investment opportunity. Capital will clearly be needed to support a new and upgraded transmission infrastructure to meet an increasing demand with new renewable projects and expanded capacity. Energy efficiency measures and optimising existing assets is another key area – for example by connecting small-scale solar projects to create virtual power plants and by reducing the carbon emissions of coal-fired and gas plants.

Deployed carefully, this investment can also ensure a just transition for Asian populations, particularly as many countries in the region are emerging economies that rely on development to solve social problems. Even in more developed economies, such as Japan, new energy systems can improve the lives of its people. An ancillary social benefit of creating closed energy systems in rural communities would be to bring back populations and economic activity. The pandemic has taught us that many people can work remotely, and this insight is allowing adult children to return to areas where their parents live to rebuild vibrant, rural communities.

As Asia's role in the global economy continues to strengthen, its energy needs will only grow. The region is making rapid progress in the move towards decarbonising its power sources, but the growing countries of the region also need to address the decarbonisation challenge in the non-power sectors, such as manufacturing and transport. Asian countries must respond to the unique conditions they each face and keep all options open to maintain security of supply and meet rising demand. We will continue to work with our Institute members to increase collaboration between nations and support ingenuity and innovation to help smooth the paths for Asia's energy transition journey.

For more information on IEEJ's thinking and research on global and Asian energy trends, please see https://eneken.ieej.or.jp/data/8122.pdf

LAND OF THE RISING WIND

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WATCH VIDEO

As the world's third largest economy and fifth largest energy market – three times larger than the UK and four times the size of Australia – Japan offers significant opportunities for experienced investors. That's true over the short, medium and long term as the country's stable government has set out an ambitious roadmap to tackle climate change while also helping to bolster energy security for the nation – in 2021 it was the world's second largest importer of LNG and third-largest importer of coal.

With a commitment to reduce greenhouse gas emissions by 46% from 2013 levels by 2030, and its Net Zero by 2050 pledge, Japan recently revised its target for energy from renewable sources in its power mix to between 36% and 38% by 2030 (up from 22% to 24%).

The energy mix

Renewable capacity is set to come from a variety of technologies, including rooftop, floating and utility-scale solar, where the target is for an additional 50GW of capacity by 2030, and onshore wind, where the target is for 19GW. A little further out, offshore wind (including the potential for floating offshore wind, given that the seas around Japan are deep) is also a promising area for investment, where the aim is to have between ~31GW and 45GW of capacity by 2040. It is generally viewed that these targets are a little ambitious but there is still room to expand quickly because of the fact that, by the end of 2021, Japan had installed 74GW of solar capacity, having made great strides over the past ten years.

Energy transition will require the construction of new gas-fired power plants as well as investments in energy efficiency. The country will need investment in the grid, which is a current constraint on new solar and wind projects, while the development of batteries and storage will help mitigate intermittency issues.

Japan also sees longer term potential in developing hydrogen, ammonia and carbon capture. Finally, it is aiming to increase nuclear production. There is much more focus on this given high fuel prices, although this will need to be carefully managed given public sensitivities following the 2011 Fukushima disaster.

The 4Ds

These shifts are driven by "4D". Under Deregulation, the power market has undergone far-reaching reforms, moving from a regulated integrated utilities model to embrace the unbundling of power generation and transmission and distribution, while Decentralisation is seeing a push for more power to be generated locally. Digitalisation, as elsewhere, is transforming business, connectivity and data usage, and Decarbonisation is driving the move to renewables and putting pressure on corporates to use clean energy sources for all activities, but especially for high energy manufacturing, such as auto production.

Recent changes to the pricing regime, which saw feed-in tariffs replaced by a new feed-in premium, are driving demand for corporate PPAs and we see significant opportunity for development here. These will lead to installations of rooftop solar in some instances, but we believe most will result in utility-scale projects. As experienced investors in other nascent PPA markets, we have the expertise and relationships needed to secure the right contracts and we believe we have a role to play in providing access for smaller renewable energy providers to larger corporates on attractive terms.

Our strategy in Japan reflects the way we work in other markets. In renewables, we are seeking to invest in smaller platforms with the aim of building scale through both targeted acquisitions and organic growth. High demand from corporates for green energy will be a particular focus for expansion, since supply is currently limited due to land and grid constraints, making large scale onshore renewables deployment in Japan difficult. We can apply our experience of structuring and building new projects to fill this gap and help shape the market as it develops.

Some of these opportunities may stem from optimising existing projects that would benefit from operating expertise and a capacity to improve efficiency, invest in upgrades, put in place appropriate funding, and build scale among smaller, fragmented players. The market also has a number of approved projects that have stalled and we can add significant value by investing to take these developments forward to completion and operation.

"WITH A COMMITMENT TO REDUCE GREENHOUSE GAS EMISSIONS BY 46% FROM 2013 LEVELS BY 2030, AND ITS NET ZERO BY 2050 PLEDGE, JAPAN RECENTLY REVISED ITS TARGET FOR ENERGY FROM RENEWABLE SOURCES IN ITS POWER MIX TO BETWEEN 36% AND 38% BY 2030."

Others will be new projects. Japan benefits from low-cost finance and high liquidity among the nation's large pension funds and insurance companies. However, much of this capital has a risk/return profile which is better suited to operational assets, with less willingness to take on development or construction risks. With many of the more straightforward projects having already been completed, and with tariffs reducing compared to the initial

years of feed-in tariffs, Japan will need experienced builders and operators able to meet more challenging briefs if it is to meet its decarbonisation goals. We can provide much needed capital, on the ground presence combined with global reach, and knowledge of different pricing models to build greenfield projects and create energy businesses that will be highly attractive to investors at exit.

"ACTIS PLANS TO INVEST US$500 MILLION IN JAPAN OVER THE COMING FEW YEARS, WITH AN INITIAL FOCUS ON ONSHORE WIND AND SOLAR."

We are excited about the investment potential in the Japanese energy market. Actis plans to invest US$500 million in Japan over the coming few years, with an initial focus on onshore wind and solar.

There is a significant re-rating opportunity available by de-risking projects through development and construction, and this combined with our ability to scale up businesses, acquire underperforming operational assets and portfolios and make operational improvements, and deliver value through our global procurement capability, will enable us to achieve attractive returns for our investors.

We are also keen to support government decarbonisation and energy transition policy through investment in offshore wind, new gas-fired plants, battery storage and grid stabilisation. A bright future beckons for renewable energy projects in Japan.

Wind and solar farm, Nojima-Tokiwa, Awaji, Hyogo, Japan

TRANSITIONING VIETNAM

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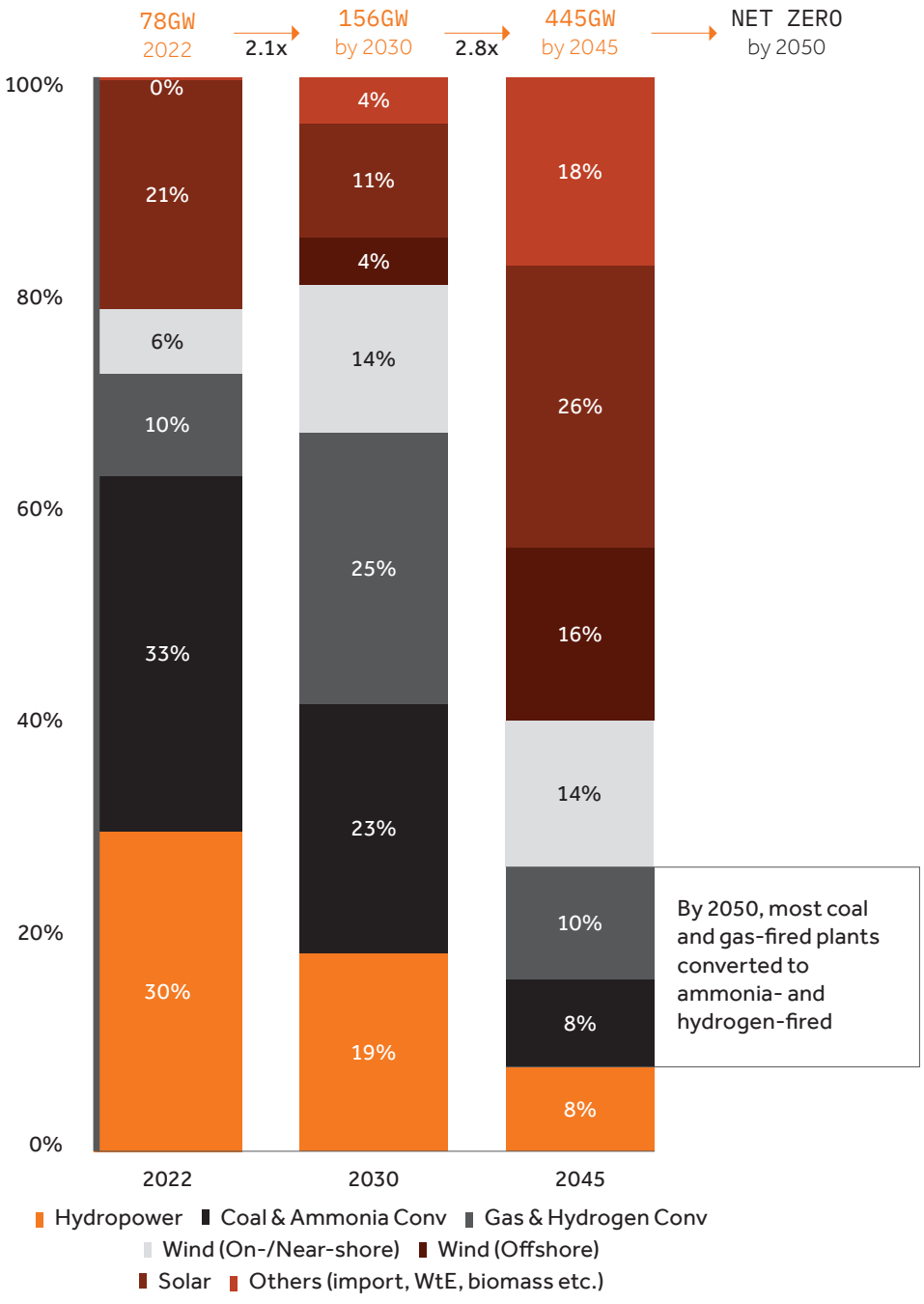
WATCH VIDEO

With a fast-expanding domestic market, favourable demographics and a growing reputation as an export-led manufacturing base, Vietnam has ambitions to become one of Asia's major economic powerhouses. GDP growth last year of 8% made it one of the world's fastest growing economies even against a backdrop of heightened geopolitical tensions and monetary policy tightening in many key markets.

Yet as the nation gears up for further growth, Vietnam faces massive requirements for new electricity. It is estimated that power demand grew by 6% in 2022, and the country will need to add between 70GW and 80GW of new capacity by 2030, meaning that in just eight years, Vietnam will need to build the equivalent of the entire power generation fleet it has today. The magnitude of this task is represented in Exhibit 1.

"WE ARE WORKING CLOSELY WITH OUR INVESTMENT TEAMS IN OTHER SECTORS, SUCH AS INDUSTRIAL REAL ESTATE, WHERE WE CAN NOT ONLY CREATE ADDITIONAL VALUE BUT ALSO HELP ACCELERATE VIETNAM'S CLEAN ENERGY TRANSITION. LEVANTA RENEWABLES, FOR INSTANCE, AIMS TO SUPPLY GREEN POWER TO ACTIS REAL ESTATE'S EXISTING INDUSTRIAL PARKS."

EXHIBIT 1: VIETNAM'S ENERGY TRANSITION



Source: Draft PDP8 as of Dec'22, as summarised by Baker McKenzie

Both government and the private sector bear a huge responsibility in developing and implementing a sustainable and cost-effective energy policy. Vietnam must strike a careful balance: achieve growth and energy security at the same time as decarbonising the entire energy system, given it has committed to Net Zero by 2050.

This will be challenging, but there are encouraging developments. Already ahead of its South East Asia neighbours in terms of installed renewable energy capacity, Vietnam's government is about to approve the country's most ambitious power development master plan to date, known as PDP 8. This includes the goal of generating about 60% of its energy from renewable sources by 2045, not including converting its existing fleet to hydrogen and ammonia. The plan exploits Vietnam's geographical advantages, such as its long coastline that is well suited to offshore wind power generation and its good solar resources.

Supporting ambitions

Vietnam's ambitious energy goals, which will require an estimated US$128 billion of investment this decade alone, present attractive opportunities that align with Actis' focus on sustainability and a just transition. We are investing in the development of Vietnam's power sector in line with government policy and based on the thesis that it needs a diversified generation mix that leverages the country's domestic energy resources. This includes significant potential for wind and solar power, while clean thermal energy through gas projects will also be essential to provide adequate base load generation and allow equitable energy access to power the country's fast-growing economy.

"VIETNAM WILL NEED TO ADD BETWEEN 70GW AND 80GW OF NEW CAPACITY BY 2030, MEANING THAT IN JUST EIGHT YEARS, VIETNAM WILL NEED TO BUILD THE EQUIVALENT OF THE ENTIRE POWER GENERATION FLEET IT HAS TODAY."

In Vietnam, we are focused on renewable energy sources, such as onshore/offshore wind and solar, as well as efficient LNG-fired plants that can be converted to use hydrogen at a later date. One of our flagship platforms in South East Asia, Levanta Renewables, is developing a strong wind project pipeline located in Vietnam, and is currently reviewing several M&A opportunities to acquire operating grid-connected assets in the country. Levanta Renewables is also working towards developing a portfolio of projects providing green power to commercial and industrial consumers in Vietnam. Another of Actis' platforms in South East Asia, Bridgin Power, is fully focused on gas power; and in Vietnam Bridgin Power is partnering with strategic investors to build large-scale base load gas power projects. In addition, we are evaluating investment opportunities in the high growth offshore wind sector in country too.

Full speed ahead

The scale and speed of transition and energy demand growth in Vietnam requires a joined-up approach. We are working closely with our investment teams in other sectors, such as industrial real estate, where we can not only create additional value but also help accelerate Vietnam's clean energy transition. Levanta Renewables, for instance, aims to supply green power to Actis Real Estate's existing industrial parks investments and to future projects, such as those planned in the power-hungry data centre segment.

With a global footprint and long experience of investing in other emerging markets' energy transition, we are committed to helping the Vietnamese government by sharing knowledge and lessons we have learned from other geographies. Having invested in markets such as India, Brazil, Mexico, Chile, Egypt and South Africa, we understand what it takes to smooth the energy transition journey and are holding workshops with a variety of stakeholders, including energy regulators and major banks.

This experience means we are well versed in the risks and barriers that can hold up the energy transition process. In Vietnam, these include a lack of capacity among local banking and capital markets to finance projects, the bankability of project structures and PPAs and the build-out of transmission infrastructure. Vietnam faces challenges in financing long-term growth, given the majority of its domestic deposits are of three months or less duration and it remains resistant to following the external portfolio finance route that has caused issues elsewhere since 1997. Other issues include the need to acquire land for projects, potential decision-making delays and the extent to which renewable and LNG power will be affordable.

Yet despite these potential barriers, Actis has "seen this movie before" in other markets and is well positioned to mitigate these challenges by supporting innovative financing tools such as Development Finance Institutions and Export Credit Agency (DFI / ECA) financings; commercial USD financing on the back of local bank guarantee structures and turnkey contracting structures. We also prioritise community engagement initiatives to mitigate development and construction risks and to share best practices from other markets with government stakeholders. Actis professionals, who hail from Vietnam itself, understand the local nuances and are able to support our respective portfolio companies.

All this provides us with a clear view of what the country will need to achieve its energy transition goals, where the opportunity lies for Actis and how we should continue to build on our licence to operate with all stakeholders including through job creation and community support initiatives. In conjunction, we believe our deep experience in the energy sector spanning more than 120 power projects, with a total installed capacity of c. 31GW and with the track record of opening several new markets and delivering pioneering and path breaking energy transition projects in these markets positions us well to help Vietnam in its energy transition journey.

Wind farm,
Vietnam

COMPANY VOICES: LEVANTA RENEWABLES, VIETNAM

SUDHIR NUNES
CEO, Levanta Renewables

RAHUL AGRAWAL
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Rahul: Can you briefly describe your business and your plans for the next few years?

Sudhir: Levanta Renewables is a utility-scale energy developer and independent power producer based in Da Nang, a coastal city in central Vietnam. Our founding team has over 30 years of wind industry experience with a successful track record of developing a pipeline of 2GW of renewable power in India. In partnership with Actis, we aim to play a critical role in energy transition by helping South East Asian countries move towards a more sustainable energy system and meet their Net Zero goals.

We currently have 300MW of onshore wind power projects in advanced development in Vietnam and our plan is to create a 1.5GW renewable power platform in the region. This will also include solar parks and contracts with commercial and industrial off-takers throughout South East Asia, tapping into growing demand for clean sources of energy from industrial and IT parks we see in Vietnam and beyond.

Rahul: What role can you play in energy transition and building energy security?

Sudhir: We play a vital role in helping countries develop their energy infrastructure in the face of rising demand. Alongside Actis, we plan to hold workshops with the Vietnamese government and are actively involved in industry bodies, sharing experience of developing energy systems in other markets and finding ways of unblocking potential challenges to implementing policies and building renewable energy markets. We are supplementing public resources with private capital to ensure that people have access to clean and affordable electricity.

The Ukraine conflict has also given our work a new purpose as we are helping countries tap into their indigenous sources of energy so their electricity supply remains in their hands rather than those of a foreign power.

Rahul: How are you integrating sustainability in your business?

Sudhir: Our core purpose is creating sustainable energy systems, and so we emphasise sustainability across all our activities. That includes detailed environmental and social impact assessments for all our prospective projects – we do not want to endanger valuable and biodiverse habitats or the lives or livelihoods of local communities. We are also seeking to develop skills among local communities to provide employment opportunities in what are often remote locations, while we are looking at partnering with local universities for training. Further, we are proud that our founding team consists of a diverse group of people from different countries and ethnicities and with a good gender balance, a mix that we will continue to foster through our recruitment practices.

Rahul: How is Actis supporting you?

Sudhir: Actis was a natural partner for us because we share the same values and beliefs. The firm has a strong conviction and track record of driving sustainable investments and taking action towards a carbon-free world. Actis has provided much more than financial support and we are tapping into the firm's deep expertise in developing, constructing and operating renewable energy projects, as well as into its networks, which are assisting us in originating and acquiring assets from others in the industry to create a business of scale.

DEVELOPING A SUSTAINABLE FUTURE

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WATCH VIDEO

Actis' approach to real estate investment centres on developing and repositioning assets that enable the new economy. For Actis, the "new economy" refers to segments of the economy where growth is driven by several global themes: digitalisation - innovation and the adoption of new technology, climate transition and the need to decarbonise the built environment, supply chain transformation driven by diversifying manufacturing locations and changing consumer preferences, and the increased importance of health and wellbeing arising from growing middle classes, ageing populations and longer life expectancy.

Thematic Opportunity

These global themes are well documented and are common to markets around the world, both developed and developing. However, what is unique about the markets where Actis is focused – notably in Asia – is that these themes are more strongly underpinned by a series of secular trends.

Actis has identified four secular trends in particular - which we refer to as "the four Ds":

DEMOGRAPHIC SHIFTS

Urbanisation, middle class growth and, more importantly, the densification of wealth in cities.

DIGITAL DISRUPTION

Both the positive and negative impacts of digitalisation on the use of and need for real estate.

DEFICIENT SUPPLY

Shortage of stock, obsolescence of stock and/or a mismatch between end users' needs and affordability.

DEMAND FOR YIELD

From institutional investors, increasingly domestic ones, who are seeking stable, long-term cash flows from real estate assets.

Collectively, these regional secular trends are accentuating the global themes in our markets. This provides investment opportunities within new economy real estate that are more robust, more resilient and more scalable in much of Asia.

The intersection of these global themes and regional secular trends directs our focus to four main property sectors: logistics and industrial, new generation offices (tailored towards affordability and the high sustainability criteria which are attractive to new economy tenants), Lifesciences, and data centres.

How this works in practice is best demonstrated through opportunities where we are currently investing. One example is data centres where, globally, demand is being driven by digitalisation, innovation and the adoption of new technology. In Asia, this demand is further enhanced by all four of the secular demand trends. Demographic shifts and digital disruption in the region are leading to a surge in mobile connectivity, with digital content and enterprises moving to the cloud. There is a significant shortage of supply - there are simply not enough data centres of the necessary scale, specification and sustainability requirements to meet this increased demand. As a result, the data centres we build are able to generate the resilient and long-term income desired by institutional investors.

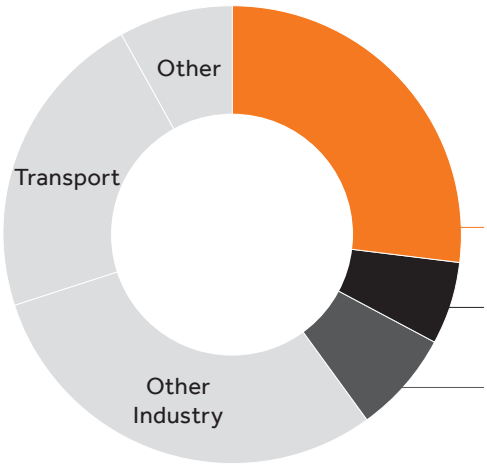
Another example is our Lifesciences platform in India which is supported by three of the global themes: digitalisation and the increased importance on health and wellbeing are driving the end user demand for facillities and supply chain transformation means India can harness offshoring and outsourcing of Lifescience operations from other countries. Several of the secular trends further enhance these themes – most significantly deficient supply and demand for yield. At present, there are insufficient facilities for Lifesciences operations to expand within India. The sector has traditionally been owner-occupied, but the growth prospects are now making this both inefficient and unviable. Once developed, the long-term income these facilities can generate is attractive to yield-seeking institutional investors.

Building Sustainably

Our commitment to sustainability is embedded in every investment we make – whether it be data centres in Korea, Lifesciences in India, or any of our new economy real estate investments

EXHIBIT 1: ANNUAL GLOBAL CO_2 EMISSIONS

The built environment generates 40% of annual global CO_2 emissions



Of those total emissions, building operations are responsible for 27% annually, while building and infrastructure materials and construction (typically referred to as embodied carbon) are responsible for an additional 13% annually

globally. At Actis, sustainability is not a check-the-box exercise, but is grounded in the fundamental belief that real estate must be sustainable to attract demand and generate income over the long term and thereby maximise and maintain its value. As our corporate strapline holds: 'Values Drive Value'.

At the outset of any investment opportunity, we conduct a comprehensive sustainability review to determine what initiatives are necessary to achieve market requirements, end-user requirements and Actis' own ambitions. This review considers both short and long term implications of each of the proposed initiatives, including the extent to which an initiative is permitted in a market and/or requires us to push new boundaries with local regulators and/or contractors. For example, in Korea, our experience has taught us that deploying more meaningful /renewable power, novel solar facades or the use of green concrete will require further education of both the building regulators and contractors. In India, we already have the ability to wheel power through the grid as the key to delivering clean energy to urban developments. This provides the opportunity to deliver Net Zero aligned developments and we anticipate that other regulators and utilities will follow suit across our markets. The variability in pace and approach to sustainability across our markets places a premium on deep local market expertise.

"THERE ARE SIMPLY NOT ENOUGH DATA CENTRES OF THE NECESSARY SCALE, SPECIFICATION AND SUSTAINABILITY REQUIREMENTS TO MEET INCREASED DEMAND. AS A RESULT, THE DATA CENTRES WE BUILD ON TIME AND WITHIN BUDGET- ARE ABLE TO GENERATE THE RESILIENT AND LONG-TERM INCOME DESIRED BY INSTITUTIONAL INVESTORS."

We target a green building rating for all our developments. We also look for ways to reduce, to the greatest extent we can, the embedded carbon in the building process. We closely examine the design of our projects, material selection, and material procurement, using local suppliers where possible. We also assess the extent to which each of our assets supports the global drive to Net Zero carbon emissions, through designing for the reduction of power usage, operating in accordance with such design, and, where possible, using renewable energy. Actis' Energy team's deep experience in renewable power development is a great benefit as in-house advisors to our Real Estate team. We take great care to examine the long-term resilience of a location and an asset; a building cannot be truly sustainable if it is not resilient over a long period of time. In addition, when building an operating platform we systemitise our sustainability initiatives, we establish international standards of practice around health and safety, we focus on inclusion, diversity and robust governance. As a way of giving back to the communities in which we operate, we also strive to implement skills training programmes related to either the construction or operation of our assets.

Development

A commitment to sustainability is vital to being considered a partner to Government and local communities in helping them achieve their own sustainability targets, particularly during the development process but also during ongoing operations.

Operations

Only sustainable buildings can provide viable corporate solutions. Most businesses have their own sustainability and/or Net Zero targets and require that any buildings they occupy meet rigorous sustainability standards.

Exit

A successful exit depends on a buyer knowing that they are acquiring a sustainable long-term, income-producing asset.

Risks and Rewards

As the old adage goes, investing is not without risk. Currently, the key risks we face are supply/demand mismatch for the products we build, protracted development timeframes, cost inflation and geopolitics. Interestingly, these risks have not changed materially pre/post COVID-19, although clearly there is greater influence of geopolitics and inflation is more prevalent.

"THE NEED FOR A MORE SUSTAINABLE BUILT ENVIRONMENT IS NOT GOING AWAY. ACHIEVING A NET ZERO WORLD IS IMPOSSIBLE WITHOUT POSITIVE CONTRIBUTIONS FROM REAL ESTATE, WHICH IS RESPONSIBLE FOR C.40% OF GLOBAL CARBON EMISSIONS."

For years, we have evaluated each investment opportunity through four lenses – market, product, operating partner/management team, and structure. Our experience has proven that the best way to manage risk through the cycle is a near pedantic prioritisation of the first three. Getting structure right is important but it will never compensate for a weak market, inappropriate product or misaligned operating partner - and Western markets are currently demonstrating the impact that an over-reliance on higher leverage can have on investment outcomes. More specifically, we manage the risk of supply/demand imbalance through a deep understanding of end user requirements, affordability and micro-market analysis. Development timeframes are best controlled through years of in-market experience and operating partner strength. Cost inflation is best managed through intense value engineering and a focus on local procurement. Finally, geopolitics – representing both a risk and an opportunity depending on the market, are best managed through targeting both local end user and exit demand.

"THE VARIABILITY IN PACE AND APPROACH TO SUSTAINABILITY ACROSS OUR MARKETS PLACES A PREMIUM ON DEEP LOCAL MARKET EXPERTISE."

Actis' focus on the fastest growing markets of the world and ability to manage the risks therein, coupled with our approach to sustainability as a value driver, is a key reason investors look to us to generate returns. The combination of our in-house expertise and the know-how of our local partnerships with strategic partners around the world is fundamental when it comes to driving returns. The ability to execute locally with best-in-class teams is key to being able to pursue a thematic and secular demand-based approach to investment on the ground. Our builder-operator mindset is a further differentiator as the world moves away from a real estate investment environment driven by the low cost of debt to one in which the fundamentals of an asset's value become the most critical driver of returns.

We believe our approach to investing in sustainable, new economy real estate is well-positioned to take advantage of future opportunities in our target markets. The global themes and regional secular demand trends that are at the core of our strategy are deep, broad and long term. The need for a more sustainable built environment is not going away. Achieving a Net Zero world is impossible without positive contributions from real estate, which from most estimates is responsible for c.40% of global carbon emissions.

The opportunity in our target markets, particularly Asia, remains robust. Many real estate markets in Asia have demonstrated their resilience during COVID-19 and we anticipate greater regional stabilisation as a result of China's recent decision to lift its COVID-19 restrictions and reopen its economy to the world. In comparison to more developed real estate markets currently experiencing significant structural disruptions, painful deleveraging and potential recession, Asia's major real estate markets are in markedly more favourable positions, poised for increased stability and the resumption of growth.

Actis portfolio company, Ditto data centre, Seoul, South Korea

COMPANY VOICES: AN PHAT HOLDINGS, SOUTH EAST ASIA

DUONG PHAM
Chairman, An Phat Holdings

BRIAN CHINAPPI
Partner, Head of Real Estate, Actis, Hong Kong
bchinappi@act.is

Brian: How has An Phat Holdings developed and which areas will be strategically important over the next five years?

Duong: Established in 2002 as a manufacturer of thin film, An Phat Holdings is now one of the leading high-tech and environmentally-friendly plastic manufacturing groups in South East Asia with operations in Vietnam, the US, Singapore and Korea and sales of over US$700 million in 2022.

We are a pioneer in sustainability. Our AnEco 100% biodegradable bags, for example, have achieved international certification and are recognised as a Vietnam national brand. Our plan is to further develop the group sustainably in plastic products and materials and in industrial real estate, where we see strong growth potential over the coming five years and beyond.

Brian: What opportunities do you see in the industrial and logistics property sector in Vietnam?

Duong: Industrial real estate is particularly attractive in Vietnam, where many large multinational companies are now establishing manufacturing bases to diversify their supply chains, take advantage of skilled labour at competitive rates, low land costs, free trade agreements, and a 6% of GDP spend on infrastructure improvements by the Vietnamese government. We also see significant opportunity in logistics real estate as the country experiences rapid economic growth, strong exports and an accelerated shift to e-commerce.

Brian: How are you integrating green initiatives in your real estate portfolio?

Duong: Sustainable development will continue to drive our growth. We entered real estate just five years ago and we have become one of the few Vietnamese companies to implement ESG initiatives in industrial parks. Our An Phat Complex, for example, benefits from solar power installation on many of its factories and a fully compliant wastewater drainage system, while we also encourage customers to adopt clean production and use clean energy. These, together with our one-stop shop for tenants that helps them obtain a variety of licences they need to operate, together with customs declarations for exports, means that we have achieved almost 100% occupancy rate. We have adopted similar approaches at our An Phat 1 industrial park project, where we have implemented solar energy and built a water-efficient waste water treatment plant.

Brian: How has Actis supported the development of the An Phat 1 industrial park?

Duong: Since Actis invested in our company nearly two years ago, the firm has supported our business in a number of ways. With our An Phat industrial park, Actis representatives have actively participated in introducing and selecting high-quality contractors, assisting the sales department in connecting with prospective customers and supporting the management team in improving corporate governance.

Brian: What do you see as the biggest opportunities and risks for the group in 2023?

Duong: This year is likely to be challenging, given the prospect of a slowdown in the global economy, high inflation and high finance costs. Despite these headwinds, Vietnam is well placed to benefit from supply chain diversification, in particular as the government has taken effective steps to stabilise inflation and exchange rates. We see strong momentum as industrial real estate demand will continue to grow and as industrial land and rental prices in the country's Northern Key Economic Zone (which encompasses seven cities and provinces, including Hanoi) rise in the face of land supply constraints, to complement the already relatively high prices in the Southern Key Economic Zone.

REINVENTING REAL ESTATE IN INDIA

ASHISH SINGH
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WATCH VIDEO

The Indian real estate sector has undergone a major transformation towards institutionalisation over the last decade. As a result, transaction activity has multiplied, adding exit depth for investors and reducing exit risk.

There is a growing recognition that India is set to overtake Germany and Japan and become the world's third largest economy, by 2030. Supportive and progressive policies are also helping to put India in the spotlight for global institutional real estate capital. We can see this in the number of global investors actively investing in the sector in India.

So far, the majority of global institutional capital has been invested in a limited set of property types – mainly office, residential and retail where there is a longer-term sector track record. Yet, as these mainstream property types have become more mature, underwriting has become tougher and potential returns lower.

A compelling opportunity exists outside the mainstream in alternative real estate property types. Some of these property types offer a promising early mover opportunity, akin to investing in the Indian office sector in the early years of its evolution, which went on to see significant value creation and create many winners.

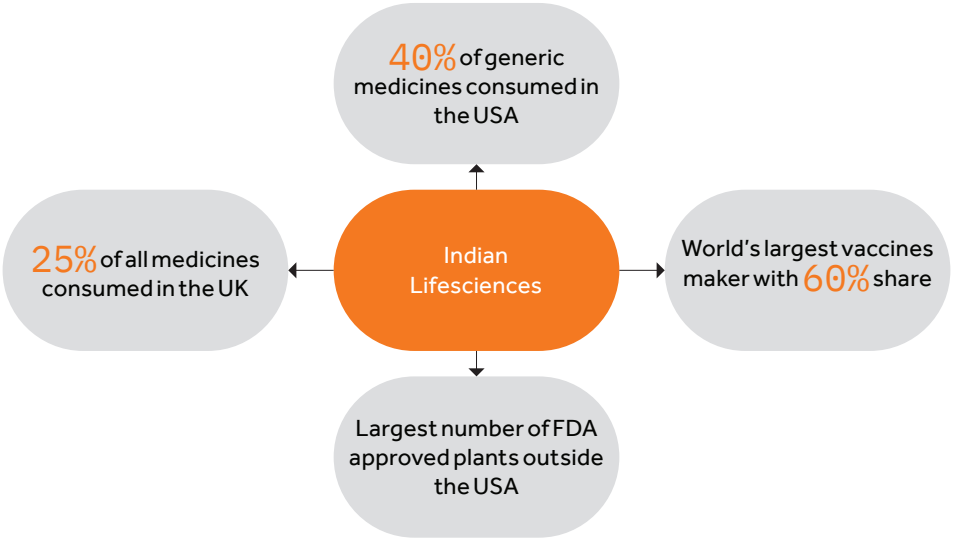
Lifesciences real estate stands out among these alternative property types.

The Indian Lifesciences sector is expected to grow at a CAGR of 13% to US$427 billion by 2030. The sector has a long track record and has global relevance (Exhibit 1) even though less well known. India accounts for 60% of global vaccines production, supplies nearly 40% of generic medicines consumed in the USA and around 25% of all medicines consumed in the UK. India has the largest number of FDA approved plants globally, outside the USA.

The sector is poised for growth acceleration (Exhibit 2). There are the local factors that will support this growth, for example, rising incomes, increasing insurance penetration / coverage, more focus on healthcare by the Government, and a new Government policy providing research linked incentives to the Lifesciences industry. Then, there are the global factors, including realignment of global supply chains in which India is a major beneficiary, an ongoing patent cliff that will unlock a market worth up to US$250 billion globally.

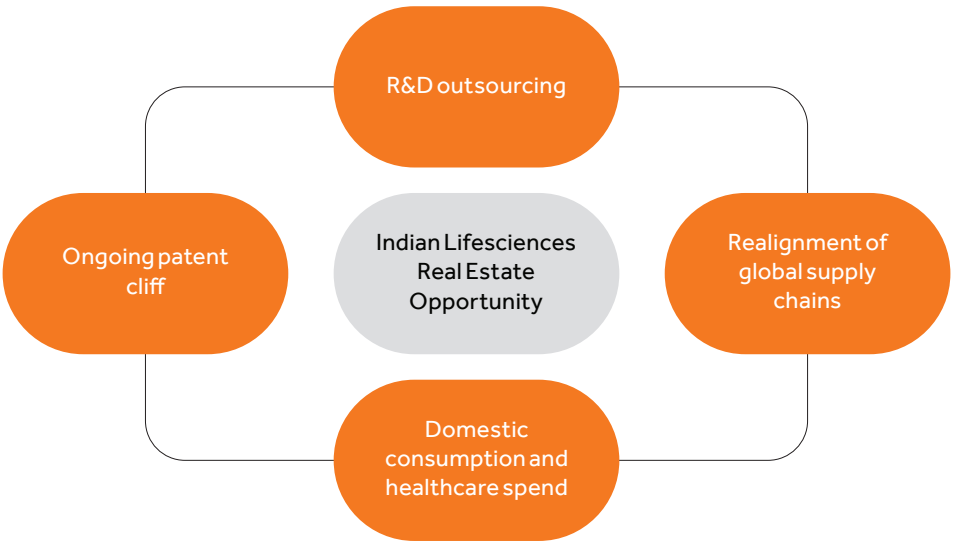
Last but not the least, India has one of the largest talent pools of chemistry, biology and biotechnology graduates available at very competitive cost. Research & development in India costs around one-third of that of USA and Europe, giving rise to a huge and growing potential for R&D outsourcing.

EXHIBIT 1: GLOBAL DEMAND



Source: Actis

EXHIBIT 2: LOCAL DRIVERS



Source: Actis

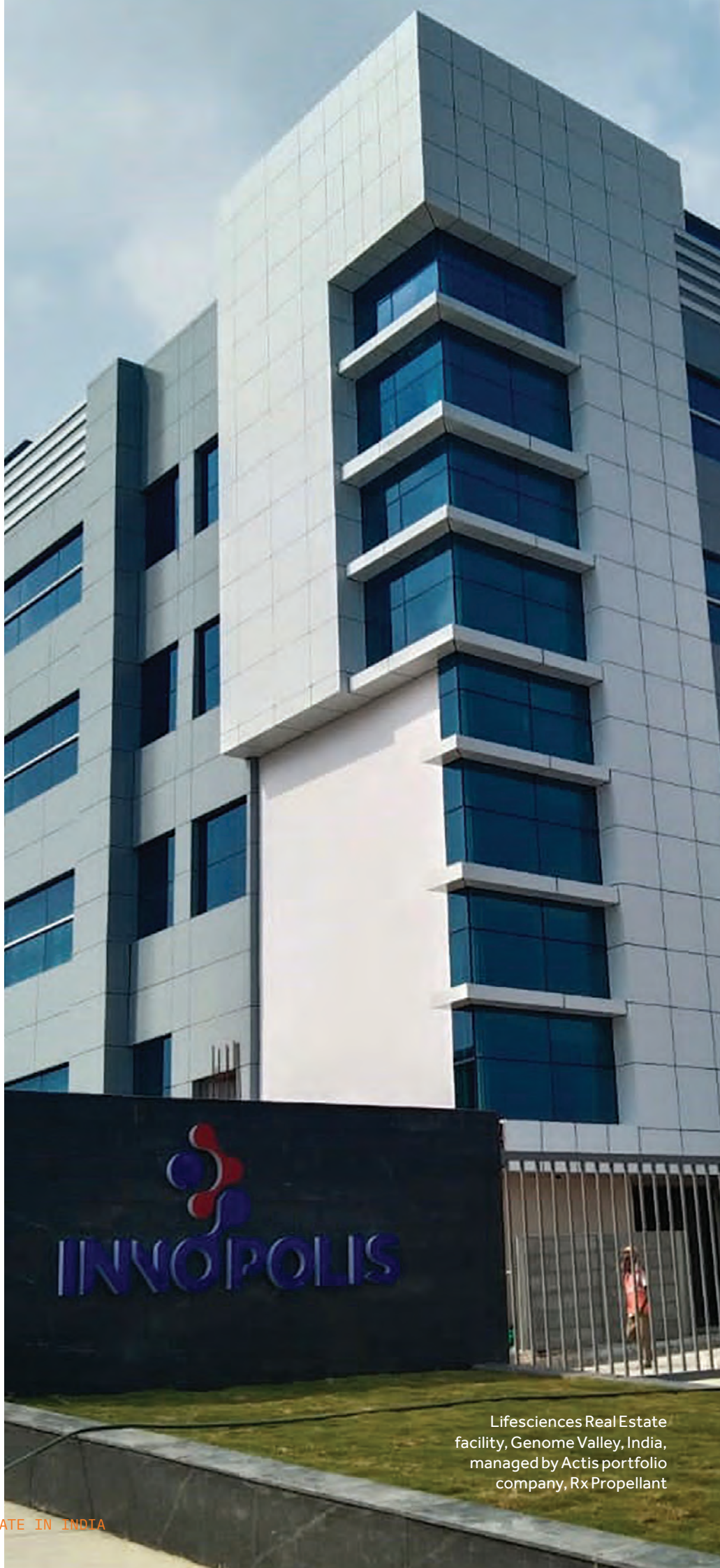
India's Lifesciences sector is poised for a decade of rapid growth, on the back of a rare confluence of these factors. Yet, no mainstream real estate developer is in the business of providing real estate solutions to Lifesciences tenants in India. Lifesciences corporations in India have largely had to self-build. In the process, they are forced to divert capital from their core business of Lifesciences into real estate development and management. Often, Lifesciences corporations are forced to operate from inappropriately-zoned buildings, or from facilities that lack the right support infrastructure and services to support their R&D or specialised manufacturing practice. Providing appropriate real estate solutions will clearly accelerate sector growth.

A total absence of mainstream developers in the sector means there is an opportunity to create a market leading builder-operator-owner of such real estate in India.

Lifesciences real estate was among the most resilient globally during COVID-19, and leases tend to be typically stickier in this sector in India, as tenants make meaningfully larger investment in their equipment and fit-outs compared to the building owners, and a heavily licensed regime discourages tenants from relocating.

Sector expertise is key to capturing the opportunity. Tenant requirements are unlike those in office, warehousing or industrial sectors, in both base building and services. It is both an art and a science to know the right balance between standardisation and customisation, the former being important in compressing go-live lead-times, and the latter being important to solve the clients' requirements.

Actis is building a market-leading builder-operator-owner of Lifesciences real estate in India, under the brand Rx Propellant. Team Rx Propellant has the unique distinction of being the only team with credible experience and track record in designing, creating and operating Lifesciences real estate in India. With real estate solution offerings in Mumbai, Hyderabad and Bangalore, Rx Propellant covers all the important Lifesciences clusters in India.



Lifesciences Real Estate facility, Genome Valley, India, managed by Actis portfolio company, Rx Propellant

INDIA'S FIRST OPERATIONAL HYBRID-ANNUITY MODEL ROAD, CREATED BY THE NATIONAL HIGHWAY AUTHORITY OF INDIA, IN PARTNERSHIP WITH ACTIS' PORTFOLIO COMPANY, WALTER. RECIPIENT OF THE "GOLD AWARD" FOR PROJECT MANAGEMENT FROM THE MINISTRY OF ROAD TRANSPORT AND HIGHWAYS IN 2022.

Delhi-Meerut Expressway, Delhi, India

LONG HORIZON INVESTING

ADRIAN MUCALOV
Partner, Head of Long Life Infrastructure, Actis, Singapore
amucalov@act.is

WATCH VIDEO

Janet wakes up in the thriving Asian metropolis she calls home. After a shower, provided by smart shower-heads - optimising water usage and dispensing desalinated water, powered by renewable energy – she makes herself a coffee and prepares for the workday ahead. She works from home most days, made possible by tremendous advances in digital tools and the world's highest quality fibre networks. In the late morning she uses the renewable energy-powered, efficient mass rapid transit system rather than her shared electric scooter (which is more expensive during peak hours) to reach today's meeting. The state-of-the-art office building hosting her meeting is primarily powered by rooftop solar panels and battery backup, whilst being kept cool by the latest district cooling technology. Janet's day ends early and she meets friends for a drink on a shady patio, as her co-bot finishes up some of her to-do list –made possible by the tremendous computing power of regional data centres.

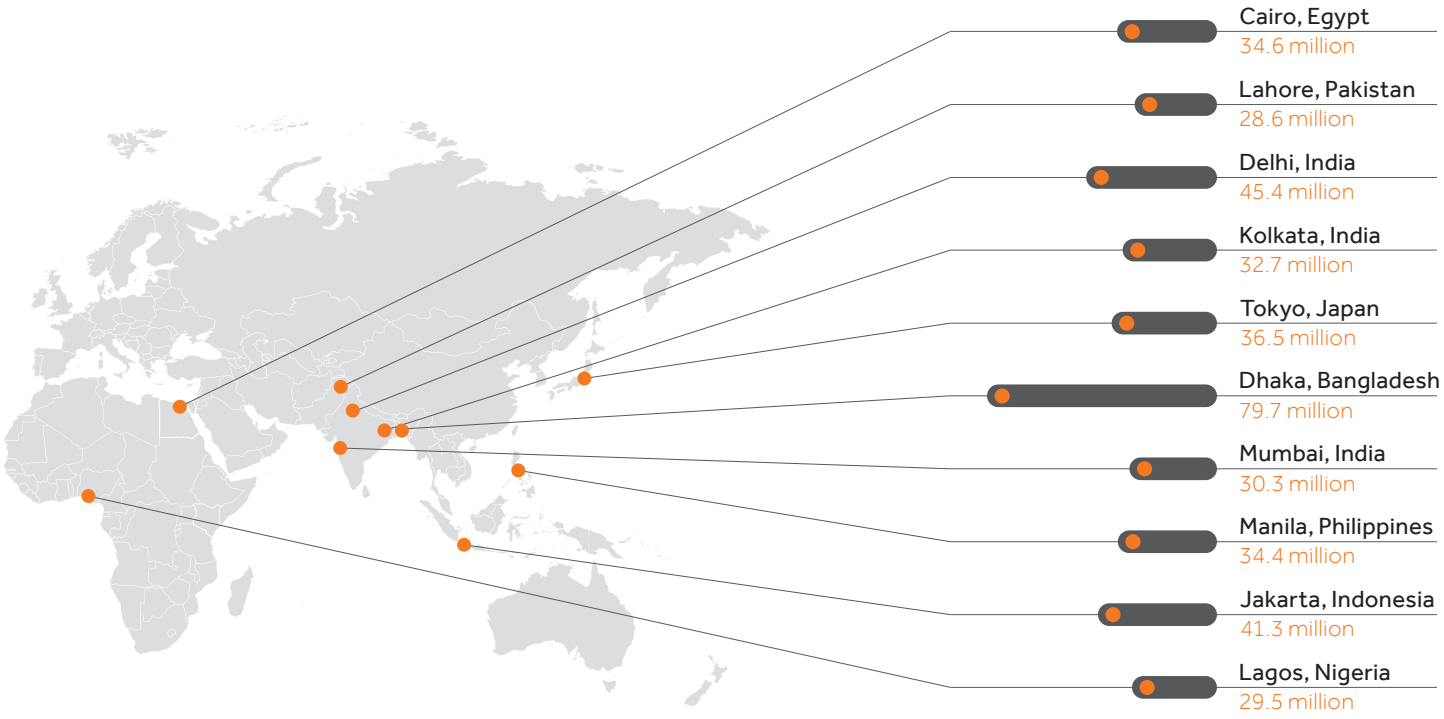
Janet lives in one of the major Asian meta-cities. According to the IMF, Asia accounted for a third of global GDP in 2021; this share could grow to over 50% by 2040, according to McKinsey Global Institute. ASEAN is expected to surpass the European Union and join the US, China and India as the four largest economic blocs by 2050. Urbanisation continues at a relentless pace: Oxford Economics estimates that by 2040, seven of the ten world's largest cities by population will be in Asia (Exhibit 1).

By 2030, two-thirds of the world's middle class will reside in Asia. This vast group demands clean power and water, efficient cooling, fast and green transport, and world class internet connectivity. The future is now: Asia is already leading the world in these fields.

- The largest share of all energy transition spending is already taking place in Asia, according to BloombergNEF.
- According to the ITU, in 2022, over 53% of internet users globally were in Asia.
- Asia and MENA are already leading the world in district cooling and water desalination, to manage lower freshwater conditions.

"ACTIS' BUILDERS-AND-OPERATORS MINDSET OF IMPLEMENTING LONG TERM OPERATIONAL EXCELLENCE IS A KEY DIFFERENTIATOR AND HELPS US TO BUILD TRUST IN RELATIVELY NEW SECTORS SUCH AS VIETNAMESE RENEWABLES OR INDONESIAN TOLL ROADS."

EXHIBIT 1: TOP 10 CITIES BY POPULATION, 2040



Source: Oxford Economics Global Cities, November 2022

Infrastructure investing mega-trend #1: the Great Catching-Up

This economic growth and consumer/industrial demand in Asia will require $3.1 trillion of annual capital spending on physical assets to 2050 to finance the energy transition to Net Zero, up from $2.1 trillion in 2020, according to McKinsey & Company. There is explosive infrastructure growth across all major Asian countries, as they converge to developed economies.

First and foremost, Asia is leading the way with respect to renewable energy. India alone will build 500GW of renewable energy capacity by 2030, which exceeds the entire installed capacity in the European Union today.

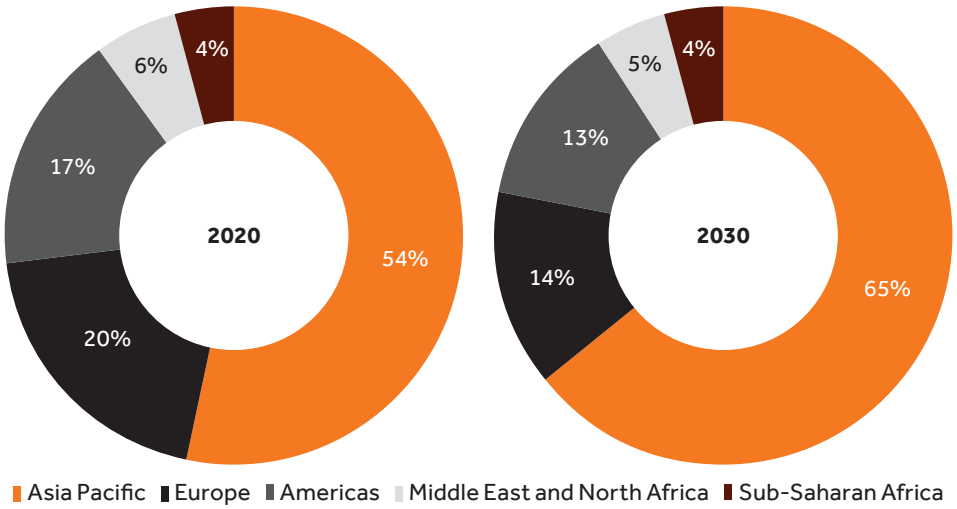
Modern transportation closely follows, accounting for one third of this infrastructure gap, with most of the balance in the digital and water sectors.

Governments cannot fund all of this infrastructure spending from their balance sheets, a constraint exacerbated by post-COVID-19 fiscal stress. Outside of China, many Asian economies will depend almost entirely on private sector funding. Besides the need for capital to build new infrastructure, governments are also planning to launch asset sales, privatisations and concessions in order to support their fiscal stresses. Domestic debt financing markets continue to deepen in large markets such as India and South East Asia with increasing availability of non-recourse financing, complementing lending from global banks and DFIs; "bankable" projects designed to attract both this debt capital as well as professional equity capital are proliferating.

Many Asian markets offer mature, tested, and transparent regulatory systems, based on international best practice, expressly designed to attract foreign capital. India has led the way, welcoming FDI for 20 years into the renewables and toll roads sector, and is attracting many of the world's largest institutional investors into its infrastructure programme. The Philippines recently amended its regulations to welcome foreign investors to take majority control stakes in most infrastructure sectors. Indonesia's sovereign wealth fund (INA) has been establishing partnerships with leading

EXHIBIT 2: THE RISE OF THE ASIAN MIDDLE CLASS

Share of the global middle class by region (%)



Middle class = household with incomes between $11-$110 per person/day (PPP) in 2011
Source: Brookings Institution (Homi Kharas) via Statista

foreign institutional investors to invest into its infrastructure, to serve its population of nearly 300 million. A significant influx of new sponsor capital will support the maturation of financing and governance frameworks.

Actis has been investing behind this movement for years, building two of the leading renewable energy companies of India, developing several leading data centres and logistics platforms across Asian markets, managing and operating toll roads in India, and leading the way in the smaller scale C&I power sector. Through Actis' longstanding presence across Asia and our trusted relationships with stakeholders, we have been able to establish recognised sustainability leaders which align with the Asian infrastructure transformation.

Infrastructure mega-trend #2: Innovation & Leapfrogging, Sustainably

Beyond the theme of convergence and catching up, Asia is at the forefront of technological and digital innovation. The growing Asian mega-cities are not burdened by the same degree of legacy infrastructure which poses such a barrier in the US and the European Union (think fixed-line telecommunications).

Asian countries have demonstrated a remarkable passion for technology and have long been at the forefront of technology and innovation leadership, from the robotics (45% global share), cars (Toyota #1 globally), and electronics of Japan; to semiconductors in Taiwan (66% global share); to the incredible economic transformations of South Korea, Singapore, and of course China, into tech powerhouses.

"ACTIS HAS BEEN INVESTING BEHIND ASIAN INFRASTRUCTURE FOR YEARS, BUILDING TWO OF THE LEADING RENEWABLE ENERGY COMPANIES OF INDIA, DEVELOPING SEVERAL LEADING DATA CENTRES AND LOGISTICS PLATFORMS ACROSS ASIAN MARKETS, MANAGING AND OPERATING TOLL ROADS IN INDIA, AND LEADING THE WAY IN THE SMALLER SCALE C&I POWER SECTOR."

Building on this heritage, Asian companies are leading the way in sectors including solar panel manufacturing, advanced recycling, water management, and 5G. Sustainability lies at the heart of Asian infrastructure innovation, especially considering the long legacy of coal-fired power across many of the largest markets.

Actis is well placed to capitalise on these trends. We invest across the risk spectrum (growth and yield), positioning us to both acquire assets from developers and large strategics as well as invest directly into the sustainable infrastructure construction boom.

Actis' builders-and-operators mindset of implementing long term operational excellence is a key differentiator against other financial investors, and helps us to build trust in relatively new sectors such as Vietnamese renewables or Indonesian toll roads.

Actis' experience in developing sustainability leaders such as Ostro Energy, Sprng Energy and Temple Stay is second to none. Our fundamental belief that 'Values Drive Value' underpins every investment thesis, regardless of sector or geography, and gives the firm a clear licence to operate across a transforming Asia.

Actis believes that Asia needs to be at the heart of any global infrastructure investment strategy. The fundamental long term trends of economic growth, the rise of the middle class, the absolute need for clean power, water and transportation, buttressed by Asian global technology leadership, all lead to a once in a generation opportunity to invest into the sustainable infrastructure required to deliver this fourth industrial revolution.

District Cooling, Dubai

COMPANY VOICES: WALTER, INDIA

GAURAV CHATURVEDI
Head of Corporate Finance and Strategy, Walter

ADRIAN MUCALOV
Partner, Head of Long Life Infrastructure, Actis, Singapore
amucalov@act.is

WATCH VIDEO

Adrian: Can you tell me about Walter and the broader toll road landscape in India?

Gaurav: Walter is a new platform born out of an acquisition of six operating toll road projects based in strategic locations across India, including in the prominent North-South highway corridor. Actis has been an active investor in Indian infrastructure for many years and has experience in the toll roads sector.

India's toll road market is both attractive and an important driver of GDP growth in the country. They represent more than 3.6% of India's GDP or about two-thirds of the entire transport- related contribution to GDP. The sector benefits from a supportive regulatory environment as the government has moved over time from a state-funded highways model to a public-private partnership. In particular, the road development model of hybrid annuity concession reduces the risk on operators since it pays a fixed sum, which is inflation adjusted, in return for road availability, with concessions running up to 15 years. This offers a good long-term opportunity for investors to maintain and operate India's toll roads.

These assets, in common with other infrastructure, have been the backbone of India's economic growth and will continue to be so as they help develop ecosystems and clusters of businesses. The focus has primarily been on developing national highways and expressways which constitute only about 2% of the length of all roads, but these national highways and expressways carry about 40% of the road traffic.

Adrian: What are Walter's plans for expansion?

Gaurav: The strategy is to acquire operational assets with limited construction risk that both the private and state sectors have developed over the past 20 years which includes securing contracts for new operating concessions. The government has ambitious plans to develop infrastructure, with roads a particular focus – (it has committed to 25,000 kilometres of new roads in 2022-23, for example). Further out as the market develops and matures, we also see opportunities in acquiring assets from similar platforms to expand the business.

Adrian: How is Walter integrating sustainability?

Gaurav: We see substantial opportunities in improving the sustainability profile of the toll roads we operate.

The government sponsored introduction of Fastags reduces CO_2 emissions due to shorter wait times at toll plazas. We plan to move towards renewable sources for our own energy requirements, given the high solar irradiance present in much of India. We expect to convert the head and satellite office energy sources to renewables and we are looking at ensuring the highway energy requirements are powered by renewable sources.

Safety is an important focus in a country which ranks third in the world for number of road accidents according to the International Road Federation. We are working to remove blind spots where possible and alert users through additional safety measures. We run regular training programmes for staff engaged in both operations and maintenance roles to equip them with means to keep users and themselves safe at all times. Moving towards a more digital way of operating, maintaining and monitoring would considerably reduce carbon footprint. Greater safety not only is an investment in our staff but leads to increases in road usage in an example of the Actis mantra 'Values Drive Value'.

Further, we want to have a positive social impact on local communities and so are seeking to implement safety campaigns for nearby villages, develop waste management programmes, offer wellness check-ups and access to clean water where necessary as well as potentially fund community centres or school repairs.

Adrian: How can Actis support the business?

Gaurav: As a global infrastructure investor with a socially and environmentally responsible investment philosophy, Actis can help us build something unique. We are looking forward to working together to implement global and cross-sector best practices and value drivers to the business to enable value accretion for all stakeholders.

EXHIBIT 1: GEOGRAPHIC SPREAD OF THE PORTFOLIO

	Asset name	Type	Length (kms)	# Lanes / Lane kms?
1	DME	HAM	8.7	14/122
2	CGRG	HAM	53.3	4/213
3	GSY	HAM	51.5	4/206
4	CT	HAM	62.7	4/251
5	AM2	HAM	352.2	2/704
6	MCP	Toll	71.4	8/571
	Total		**599.8**	**2,067**

Source: Actis

Production team

ELLEN DICKINSON

Knowledge, London

SARAH DOUGLAS

Communications, London

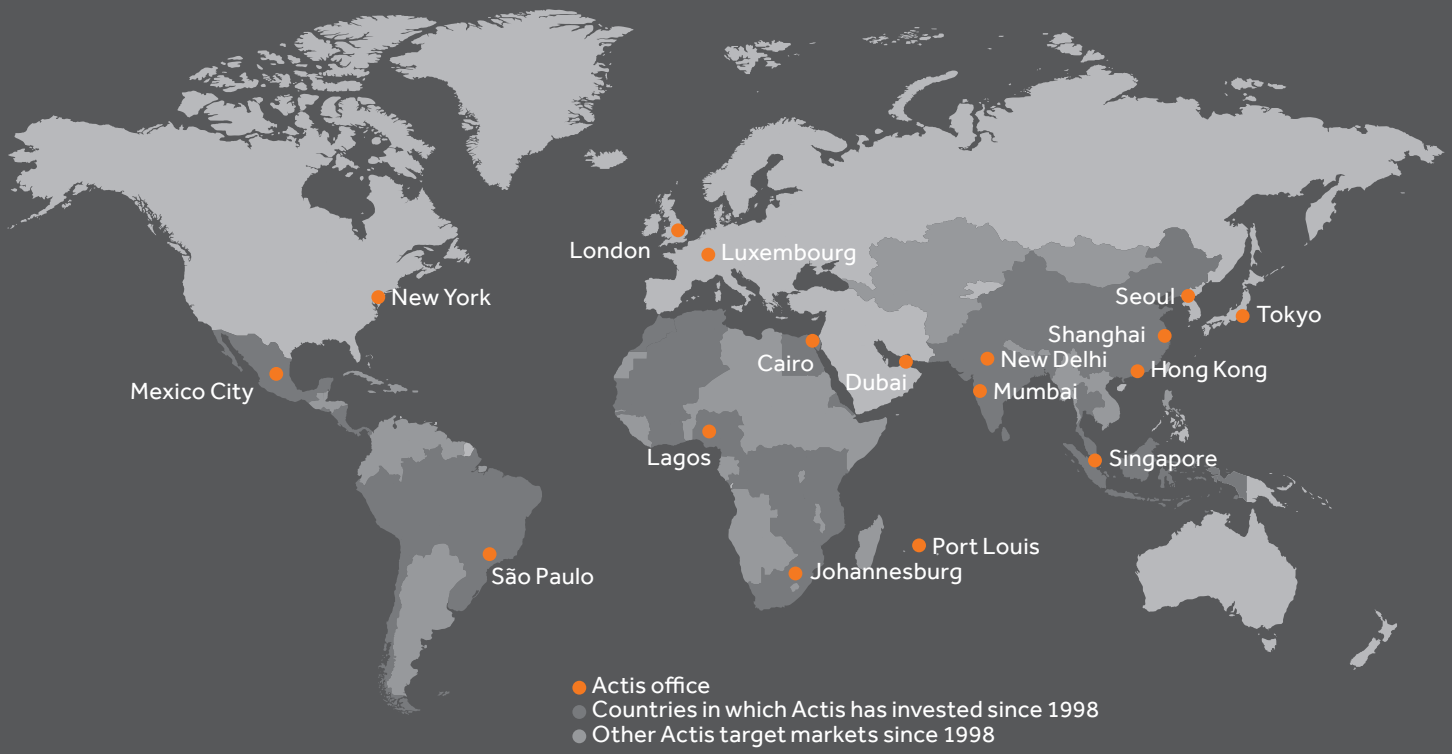
HELEN JOHNSON

Production, London

DEBBIE MINCHINGTON

Right Aligned, London

ACTIS IS A GLOBAL INVESTOR IN SUSTAINABLE INFRASTRUCTURE



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