



# TRANSFORMING INFRASTRUCTURE

THE STREET VIEW

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# WELCOME



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# TRANSFORMING INFRASTRUCTURE



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LISTEN TO PODCAST

**Infrastructure is increasingly essential to the world's economy. Whether it is ensuring a constant supply of clean energy wherever it is needed, enabling greater inclusiveness through improved digital communications, or simply creating efficient transport networks, societies today cannot function without high-quality, sustainable infrastructure. The COVID-19 pandemic has only served to throw an even greater spotlight on how reliant we all are on the infrastructure assets that keep the world moving.**

For investors, the fact that infrastructure is now so essential to everyday life means it is an ever more appealing prospect. But the vital role it plays is just one of the reasons we believe it should be on their radar. Other aspects of infrastructure investing also make it a compelling proposition.

## FOR INVESTORS, THE FACT THAT INFRASTRUCTURE IS NOW SO ESSENTIAL TO EVERYDAY LIFE MEANS IT IS AN EVER MORE APPEALING PROSPECT

Firstly, the sector's business model makes it an important component of a portfolio. Many projects have long-term contracts: purchase agreements from assets such as power stations can provide predictable, inflation-protected cashflows for many decades, making them ideal for institutional investors.

Secondly, the investment potential for the future is enormous. According to BloombergNEF's *New Energy Outlook 2021*, achieving net-zero carbon emissions by 2050 will require as much as \$173 trillion in

investments in the energy transition. There is therefore a huge need for capital to be mobilised and invested in the asset class.

Thirdly, and perhaps most significantly, there are the positive sustainability impacts. Infrastructure can help realise a low carbon future, and deliver a Just Transition by supporting economic development and equitable and inclusive growth. Whether it is investing in clean energy to power reliable grids, or in data centres to ensure more people have access to more information, infrastructure has a key role to play in ensuring a fairer, more equitable, more inclusive society.

Finally, many investors who have bought into infrastructure have struggled to source deals or execute with competence. We know it isn't enough to identify a need as asset managers we have to be able to execute effectively. Operational excellence can involve bringing many skill sets together – civil engineering, financial skills, energy management, real estate experience for instance combine together in the fast growing digital infrastructure space, a growing business space for us.

### What does all this mean for Actis?

One of the main sectors we are focusing on is the energy transition – investing in renewables, high-growth utility distribution businesses, offshore wind and, where appropriate, gas, which we believe is a fuel that has a role in the transition towards Net Zero. We are also investing in the digital transformation, where we are focusing on data centres, fibre-optic cables and towers.

We are a global investor in sustainable infrastructure and we unlock value wherever it is found. But we do not believe the level of opportunity is the same everywhere. We focus our efforts where 85% of the world's population lives and

where 70% of the world's investment needs in the future will be required. There are good reasons for this focus: we have decades of experience and a proven track-record across Africa, Latin America and Asia, and we are able to generate high, risk-adjusted returns that are double the levels you might typically see in a developed market.

Sustainability sits at the core of our investment philosophy. Some of the biggest positive impacts we create are by providing reliable, affordable, clean energy that helps support economic development where it is most needed. Meanwhile when it comes to the digital transformation, our ambition is to create an environment where businesses can reach more customers, support a greater level of e-commerce transactions, facilitate mobile banking and improve education, leading to more inclusive economic development.

We also believe that making investments that are sustainable isn't just good for society's wellbeing: it means better investment performance and greater value creation. Our stakeholders – be they customers, communities, governments, suppliers or lenders – are an integral part of this strategy. We aim to create sustainability leaders by ensuring that the businesses we invest in are among the best managed in the world, and employ best global practices to create value linked to corporate governance, health and safety, environmental and social performance. This in turn makes these businesses more valuable to buyers which is what we call values drive value.

This first edition of *The Street View* in 2022 looks more closely at Actis' role in transforming infrastructure for a better tomorrow. It examines the current infrastructure gap, the role of private capital in closing it, the challenges in investing in the sector, and how to resolve them.

Ewen Cameron Watt, Editor-in-Chief, and Joonas Taras, Actis, begin by examining how the infrastructure investment opportunity can be unlocked and Olivia White, from our Sustainability team, highlights the imperative to build infrastructure that drives truly sustainable and inclusive economic growth. We then take a regional focus, first looking at Central and Eastern Europe where Neil Brown, Partner and Head of the Investor Development Group interviews Lucyna Stanczak-Wuczynska, Chair at BNP Paribas Polska and Strategic Advisor at Actis to discuss the opportunities and unique features of investing in infrastructure in this region. As we publish this edition, recent world events have led to a humanitarian crisis unfolding in Ukraine. This will have devastating effects in the region short term and our hearts are with those affected. We do believe that our long term investment themes will stand the test of time and hence we have taken the decision to still publish this piece.

This is followed by Latin America, where Alberto Estefan, Marcelo Guerra and Mauricio Carvajal in the Energy Infrastructure team give an overview of Latin America's infrastructure and the role of governments across three sectors – towers, toll roads and power generation. This is followed by interview case studies from three of our portfolio companies in the region who give on the ground insights, a section that we've called Company Voices, – Atlas Renewable Energy, Babilônia and Pelicano.

Simon Ogus, CEO, DSG Asia Ltd and Rahul Agrawal, from the Energy Infrastructure team at Actis, provide commentary on infrastructure and growth in Asia, and Sowmya Narasimham, from the Energy Infrastructure team provides an investment thesis on infrastructure in India. This is followed by Company Voices interview case studies from An Phat Holdings and Sprng Energy. And finally, Lisa Pinsley, Energy Infrastructure, and Funke Okubadejo, Real Estate, compare and contrast the Middle East and Africa, looking at the challenges and opportunities of infrastructure investment, and highlighting the power

of partnerships in these regions. This is followed by a Company Voices interview of our portfolio company, Lekela.

Taken together, I hope you'll agree that the stories in this edition of The Street View give an insight into the unique role Actis is playing in transforming infrastructure for a better tomorrow. At COP 26, the world talked about its 'decade of action' – but at Actis we are already embarking on our third, bringing together operational experience and sustainable investing to deliver positive development. Our deep sector knowledge – many of us have decades of experience in the industry – means we have a significant level of understanding about the most effective paths to value creation. Infrastructure benefits from investors who know their business. The fact that we have teams on the ground in our markets gives us insights into local environments which are so critical to a successful investment. And we have clear leadership in many of the countries we operate in, which means we are able to generate compelling performance for our investors.

**AT COP 26, THE WORLD TALKED ABOUT ITS 'DECADE OF ACTION' – BUT AT ACTIS WE ARE ALREADY EMBARKING ON OUR THIRD, BRINGING TOGETHER OPERATIONAL EXPERIENCE AND SUSTAINABLE INVESTING TO DELIVER POSITIVE DEVELOPMENT**

**Building better infrastructure is critical if the world is to meet its economic, environmental, inclusiveness and sustainability goals. By focusing on the countries which we believe have the greatest needs – and hence present the greatest opportunities – Actis is determined to be at the forefront of mobilising global capital so it can have the most effective outcomes – for investors and societies alike.**

**US\$3.7 trillion**

global demand for infrastructure investment annually<sup>1</sup>

**US\$15 trillion**

infrastructure financing gap by 2040<sup>2</sup>

**\$173 trillion**

investments in the energy transition to achieve net-zero carbon emissions by 2050<sup>3</sup>

**US\$3.2 trillion**

of public investment in infrastructure stimulus announced by G20 governments between February 2020 and August 2021<sup>4</sup>

The private investment gap between low and high-income countries persists - only **25%** of private investment in infrastructure projects occurs in middle and low-income countries<sup>5</sup>

- 1 World Economic Forum Strategic Infrastructure, 2014
- 2 [Global Infrastructure Hub's Infrastructure Outlook](#)
- 3 BloombergNEF, [New Energy Outlook 2021](#)
- 4 [Global Infrastructure Hub's InfraTracker](#)
- 5 [Global Infrastructure Hub's Infrastructure Monitor 2021](#)



# UNLOCKING THE OPPORTUNITY



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 LISTEN TO PODCAST

**The pandemic has left many governments with a significant clean-up bill and stretched balance sheets. Total global debt increased to 263% of GDP in 2020 and 90% of all countries saw their borrowing increase (see Exhibit 1). Debt sustainability has become an important challenge to long term recovery in many global economies. In borrowing from the future-which is what debt does-having a plan to enhance future growth becomes ever more essential.**

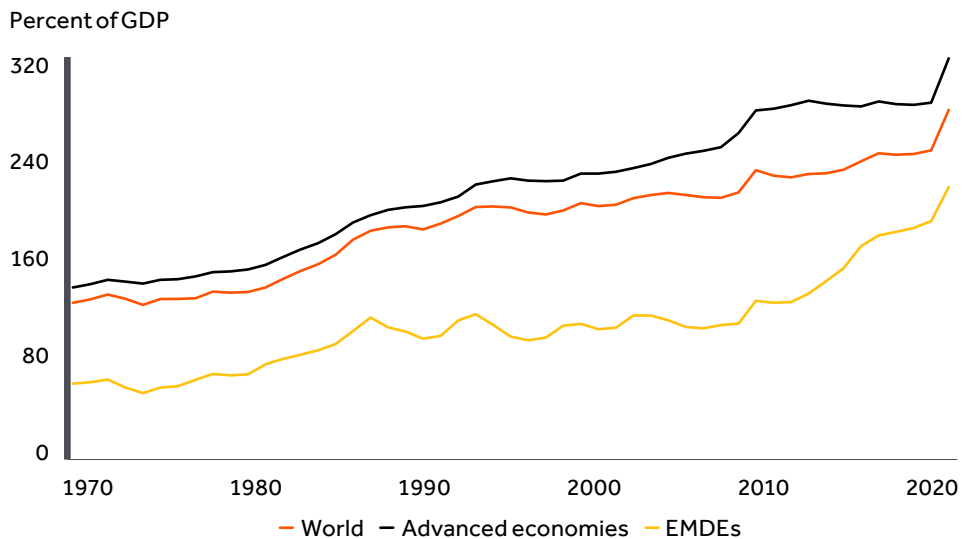
Moving into the third year of the pandemic investors must increasingly confront some of the harder questions around debt sustainability. Could this movie have a happy ending? Yes, it can. And infrastructure investment properly organised and executed plays an important role both for borrowers (countries) and investors seeking long duration assets.

Case histories suggest fiscal solutions fall into two buckets: Conventional/Constructive on one hand and Unconventional/Destructive on the other (see Exhibit 2).

Infrastructure is a key enabler of the first three conventional solutions, whilst also aligning macro priorities with investor returns. Pack a wet towel on your head as you read on.

Neoclassical economic theory holds that investment and productivity are clearly linked. Theorists argue that increases in the quality of inputs have a multiplier impact on outputs (GDP growth). According to the World Bank study 'Lifelines: The Resilient Infrastructure Opportunity' (Hallegatte et al 2019) investing in foundational infrastructure - both physical and digital - is critical to stimulate innovation, which in turn is the basis for productivity gains and long-run growth. As one of the study points out: "From serving our most basic needs

**EXHIBIT 1: TOTAL DEBT DEVELOPMENTS DURING COVID-19**



Note: Data are available for up to 192 countries.  
Source: Kose, Ayhan et al. (Nov 2021) [What Has Been the Impact of Covid-19 on Debt working paper WPS 9871: World Bank Group](#)

**EXHIBIT 2: CONVENTIONAL AND UNCONVENTIONAL FISCAL SOLUTIONS**

Conventional	Unconventional
Higher Growth	Debt Default
Fiscal Consolidation	Debt Restructuring
Privatisation	Inflation
Wealth Tax	Financial Repression

Source: Kose, Ayhan et al. (Sept 2021) [The Aftermath of Debt Surges Policy Research working paper WPS 9771: World Bank Group](#)

to enabling our most ambitious ventures in trade or technology, infrastructure services support our well-being and development [...] Access to basic infrastructure services is also a central factor in the productivity of firms and thus of entire economies, making it a key enabler of economic development".

Fiscal revenues are linked to growth as spending is more highly taxed than saving. The link from higher productivity to stronger revenue is clear.

As long ago as 1994 the late Edward Gramlich a former governor of the Federal Reserve and Professor of Economics at the University of Michigan proposed that the return to infrastructure investment was lower in advanced than developing economies. His proposition was that this arose because the main infrastructure categories were saturated in the former leaving a bias to repair and maintenance. In 2019, the International Monetary Fund (IMF) estimated economic multipliers from infrastructure investment for emerging markets (EM) of 1.6x that of developed markets (DM). In this case they calculated that there were clear implications that public investment multipliers—the bang for the buck—were inversely correlated to the level of initial capital stock. The lower the latter the higher the former. Furthermore, they suggested there was considerable spill over from public investment into the private sector who responded to these improvements with increased expenditure. Hallegatte et al show in their 2019 report that the return in EM was \$4 for every \$1 invested in infrastructure. But these returns can even be close to zero in some DM.

Whilst the development case for infrastructure investment is clear-cut, funding this is less straightforward. In The World Economic Forum's study 'Strategic Infrastructure' it was estimated that the infrastructure funding deficit stands at US\$1tn per annum. This is the difference between what is needed and actual spend.

## WHILST THE DEVELOPMENT CASE FOR INFRASTRUCTURE INVESTMENT IS CLEAR-CUT, FUNDING THIS IS LESS STRAIGHTFORWARD

The infrastructure funding gap is particularly acute in EM and developing economies (EMDEs). In a 2020 study the World Bank estimates that EMDEs must invest on average 4.5% of their GDP per annum to achieve infrastructure-related United Nations Sustainable Development Goals. Most of these countries are not even near this spend rate.

The inability of infrastructure supply to keep up with the demand reflects severe public budget constraints, especially in the developing world. Given post-pandemic fiscal pressures, most governments simply cannot afford to act as principal financiers of infrastructure projects. Higher private sector participation is essential, particularly in the developing world.

Such participation-rich country savers funding poorer country borrowers-only meets demand if returns exceed those in the home market of investors. To borrow from legendary investor Charlie Munger, 'show me the incentives and I will show you the outcome'.

Such incentives exist and are being enhanced. Governments are likely to increasingly collaborate with private sector or offer outright concessions to bridge their infrastructure funding needs. This will increase the infrastructure investment opportunity space, including contract terms on offer. Currently around 20% of infrastructure projects in EMDEs are financed purely by private investors, and this share is likely to increase through to 2030. Private investment and partnerships allow governments to transfer life-cycle costs of infrastructure projects away from public budgets by creating investable assets and viable opportunities for the private sector. And private sector involvement will serve to buttress improvements in valuation transparency and standardisation of concession terms.

Infrastructure investments for institutional investors - which collectively sit on top of more than US\$100tn of assets under management - and others is no charity. Much needs to be done in regulatory, financial, and societal space to attract this much needed investment. The case studies in this edition of Street View demonstrate that the dual outcomes of enhancing public efficiency and generating attractive private returns are possible. And, as past returns suggest, there are wide ranges of outcomes to investors by sector, geography, and asset manager.



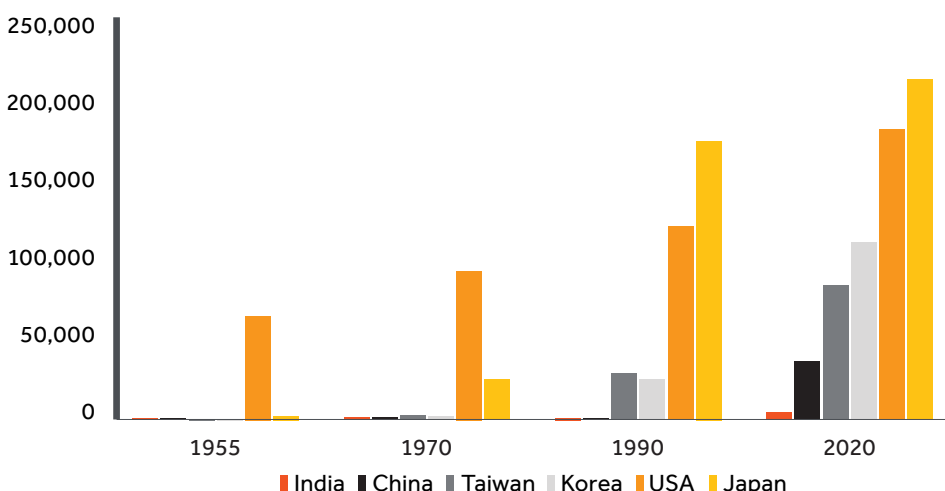
**THE CASE STUDIES IN THIS EDITION DEMONSTRATE THAT THE DUAL OUTCOMES OF ENHANCING PUBLIC EFFICIENCY AND GENERATING ATTRACTIVE PRIVATE RETURNS ARE POSSIBLE**

Marshalling this opportunity requires considerable change in practices. For starters, the discipline (and the framework) of capital allocation has to improve to avoid unproductive outcomes. The outcomes for inefficient power producers such as Eskom in South Africa, long drawn-out political disputes, and populist policy mixes (Brazil, Mexico and Nigeria provide examples) and muddled incentives (China and India) are examples of failures. Exhibit 3 shows that decades of a capital expenditure-led boom has still left China with higher debt and lower fixed capital stock per capita than Japan or Korea had at similar income levels.

The supply of bankable projects (and not just capital allocation) also has a material effect on productivity multipliers stemming from infrastructure. One example, according to G20 Infrastructure Hub, is the level of Project Preparation Facilities ('PPF's) which play a crucial role through technical and financial assistance in evaluating project identification, feasibility and structuring. PPF's are expensive (5-10% of project cost) and most frequently found in less developed countries - 44% of PPF's in 2020 were in Africa and only 4% in Western Europe.

Countries with poorer starting infrastructure potentially afford higher returns to investment than in DM, according to the IMF's 2019 Working Paper 19/289 entitled 'Is the Public Investment Multiplier Higher in Developing Countries?'. The example of Japan since 1980 shows 'pork barrel' politics with 'bridges-to-nowhere' has limited sustainable economic impact. And yet investors as opposed to citizens have certainly done better in the last decade in DM than EM infrastructure. The 2021 G20 Global Infrastructure Hub's Infrastructure

EXHIBIT 3: US\$ CAPITAL STOCK PER CAPITA, 2020 PRICES

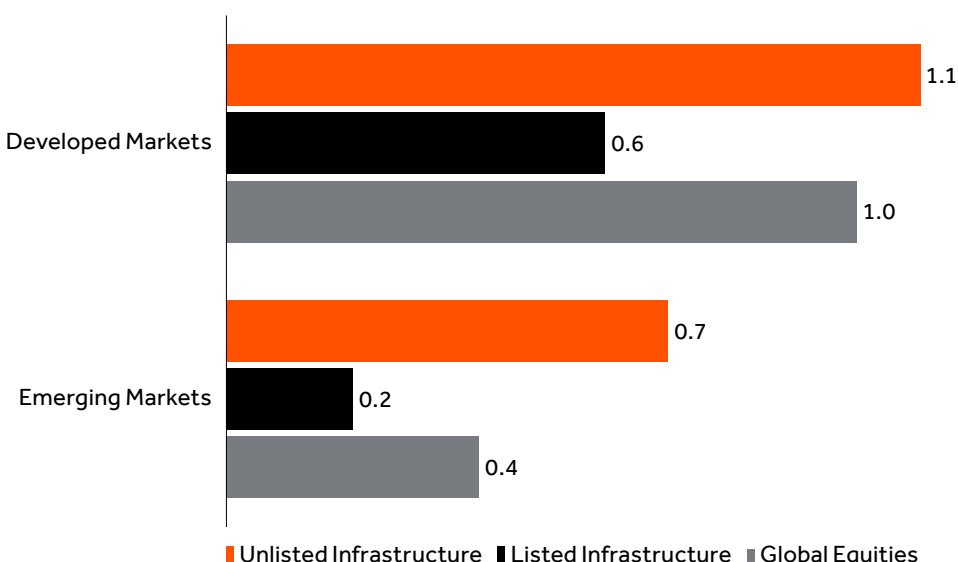


Source: DSG Asia Limited calculations based on Government and other supranational data

EXHIBIT 4: 10-YEAR RISK-ADJUSTED RETURNS BY TYPE OF EQUITY AND MARKET

**Sharpe ratio**

(<1=bad, >1=acceptable to good, >2=very good, >=3=excellent)



Note: Risk-adjusted return is measured by Sharpe ratio  
 Source: Global Infrastructure Hub's [Infrastructure Monitor 2021 \(Dec 2021\)](#) citing MSCI and EDHECinfra data (2021a), based on data sourced from Scientific Infra (indices.ScientificInfra.com)  
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Monitor shows that returns per unit of risk have been higher in DM than EM (Sharpe Ratio), see Exhibit 4.

Some of this difference arises from higher leverage in DM projects (about 60% of the excess according to the G20) and sector composition (in general renewables and utilities beat out transport and social infrastructure). Project size also matters as do financing costs. Telecoms until recently has been a poor risk in EM with 14% debt default rate over the 2010-20 period. By contrast Energy has been a standout with high returns and cumulative default rates of 6% over 20 years. The net effect has been that private sector investment has become increasingly concentrated in DM which now receive 75% of private flows yet are only 50% of the total stock of private infrastructure. And yet, the fundamental thesis that EM has the potential to deliver greater marginal infrastructure benefits remains intact. The key lies in project readiness and execution skill.

It requires an experienced infrastructure investment house with first-class planning and project management capabilities, as well as deep local networks, to deliver excess private capital returns. According to the 2017 Oliver Wyman study 'Breaching the Infrastructure Gap', poor planning and execution capacity, as well as limited acknowledgement of local culture, have been identified as critical reasons why private infrastructure investors have failed in the past to deliver expected returns.

Thus, execution matters, particularly in EM. We know from Actis' own experience across hundreds of infrastructure projects that this is critical. We focused in [The Street View](#) last year on the role of improving management of facilities in returns to power projects and believe there is another 50% to go in this area. We wrote recently on [digital infrastructure](#) emphasising that demand

was growing rapidly, but that execution skill sets (including the yield of a unit of data to a unit of power) determined outcomes.

At the end of the day though if economic returns are enhanced by infrastructure investment through productivity the path to fiscal sustainability is clear. Whilst fiscal constraints eat into development expenditure, the scope for privatisation and risk sharing increases. Productivity growth is central to this virtuous circle.

**The fiscal path ahead is uncertain for all, perilous for some. Fiscal health must become an increasing focus for investors. But spending your way out of trouble so long as there is not infrastructure oversupply is logical. Properly executed it can also represent a profitable way forward for both public and private investors.**



# INFRASTRUCTURE AND SUSTAINABLE GROWTH



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**Infrastructure provides the backbone to economic development. It keeps goods, people, services, electricity and data flowing. But beyond economic growth and job creation, infrastructure development also delivers societal impacts – increased access to education and health services, financial inclusion, women’s economic empowerment and improved quality of life.**

Without reliable electricity, clean water, efficient transport and access to communication networks, economic productivity is stifled, incomes remain low and poverty persists. There is a huge, untapped opportunity to provide underserved populations with all the benefits that modern infrastructure provides. But significant investment is

required to drive infrastructure growth and unlock its role in meeting the United Nations Sustainable Development Goals (UN SDGs). We look at this through the prism of two key investment arenas for Actis - energy transition and digital infrastructure.

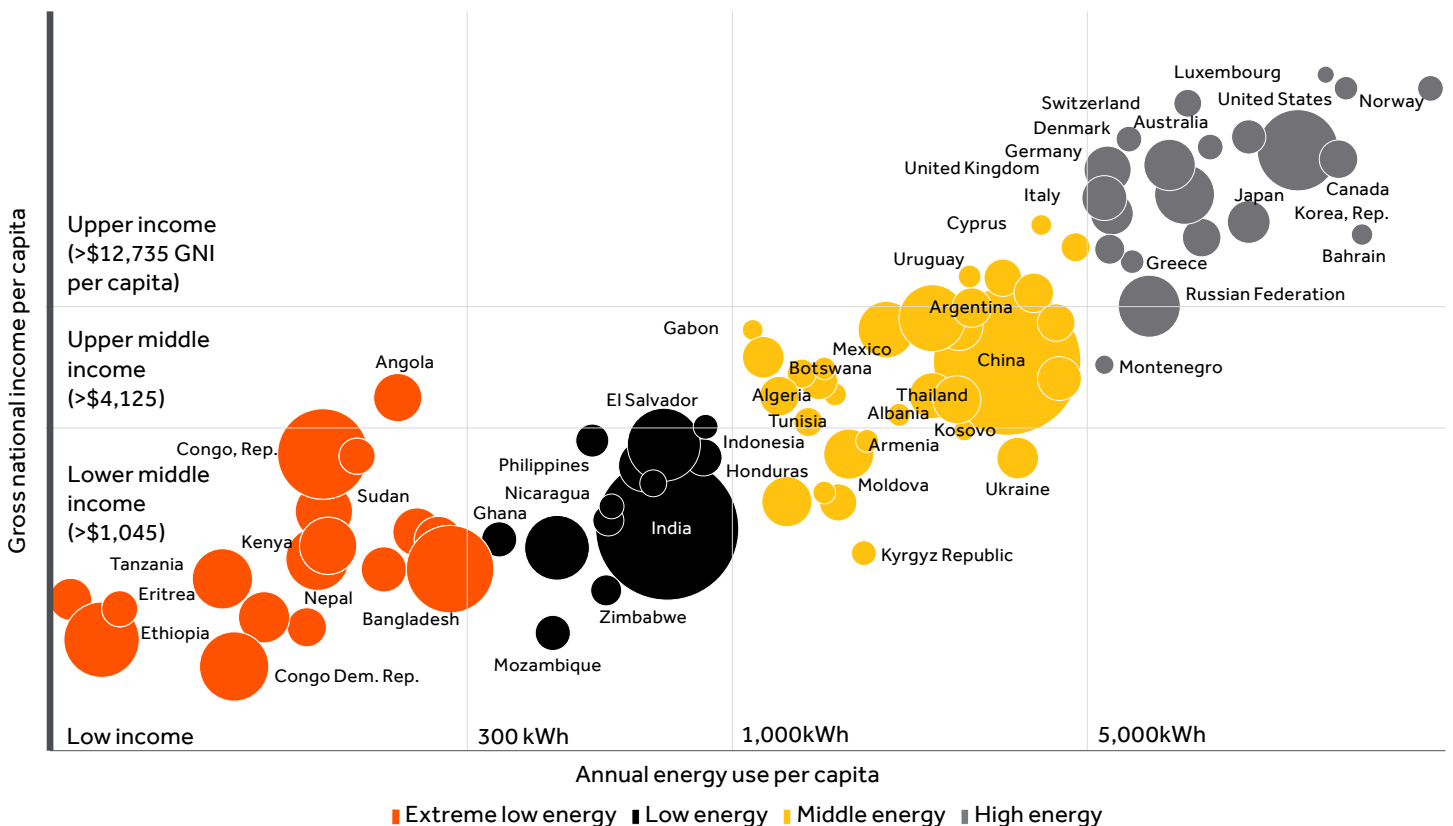
**Electricity infrastructure is paramount to economic and social well-being**

Access to modern energy services remain crucial to human well-being and economic development, according to the International Energy Association (IEA). The electrification of these services is critical for tackling climate change and helping deliver a just and equitable transition. Electricity infrastructure, however, remains a major development challenge as noted

by the IEA, with over 768 million people lacking electricity access globally, mostly in sub-Saharan Africa. On a macroeconomic level, energy shortages are a significant drag on economic growth and job creation. For example 76% of firms in Nigeria cite lack of electricity as the biggest constraint on their operations according to the Center for Global Development.

In addition to a direct correlation of energy access with income levels (see Exhibit 1), electrification boosts other indices of wellbeing and equality. Research by CDC on the development impact from electricity highlights the following benefits with the strongest evidence (Exhibit 2).




EXHIBIT 1: ENERGY USE IS HIGHLY CORRELATED WITH A COUNTRY’S INCOME CATEGORY



Note: Size represents population

Source: Center for Global Development, [Income Categories and Proposed Energy Categories \(2016\)](#), World Bank, World Development Indicators (2013)

## EXHIBIT 2: POSITIVE IMPACTS OF POWER INFRASTRUCTURE DEVELOPMENT

 <b>Macroeconomic indicators</b>	<ul style="list-style-type: none"> <li>• Creation of jobs directly, indirectly or by induction through economic growth</li> <li>• Increase of business productivity, competitiveness and entrepreneurship</li> </ul>
 <b>Microeconomic impact</b>	<ul style="list-style-type: none"> <li>• Increase of incomes and expenditure</li> <li>• Time saving for new activities (e.g. income generation, leisure, chores)</li> </ul>
 <b>Community and individual well-being</b>	<ul style="list-style-type: none"> <li>• Improving healthcare, reducing health problems, increasing awareness of health issues, reducing accidents</li> <li>• Reducing indoor air pollution and associated disease</li> <li>• Improving children's educational outcomes, increasing study hours and years of schooling</li> <li>• Improving women's equality and empowerment by enabling greater participation in non-household work, giving greater decision-making power, improving leisure time</li> <li>• Increase of perceived safety in the community and at home</li> <li>• Increasing access to entertainment and information through television</li> </ul>

Source: CDC, 2020 [What is the impact of investing in power?](#)

### As the fourth utility, digital infrastructure catalyses economic development and boosts societal impacts

Data centres, towers and fibre, which all enable internet access, have become amongst the most fundamental forms of infrastructure globally. Internet connectivity – enabled by vast networks of digital infrastructure – promotes social and economic inclusiveness, efficiency and innovation.

Digital infrastructure's link to GDP is clear - it is estimated that a 10% rise in mobile broadband provision can yield a 1.5% increase in GDP per capita (which increases to 2.5% in Africa), according to the International Telecommunication Union (ITU). Other indirect benefits for individuals and communities include:

- **Enables gender-inclusive enterprise** where an online platform connects women to customers, providing them with a marketplace to sell their goods from their own homes.
- **Provides education online** which has been critical during the COVID-19 lockdowns which forced schools online, meaning communities without reliable internet connection were unable to access education, further exacerbating inequalities in lower-income regions lacking internet access.

This is exemplified by reports from Actis' South African fibre-to-home company, Octotel, which observed pass rates in schools covered by its fibre of 89% during 2020, compared 79% in unconnected schools.

- **Facilitates access to healthcare** which is increasingly digitised, particularly since COVID-19.
- **Strengthens business resilience by enabling remote working** where 10% of the global workforce (supporting nearly 300 million jobs) worked from home during COVID-19 lockdowns according to the World Economic Forum.
- **Improves agricultural productivity** where digital solutions can make agricultural interventions more precise and connect farmers to other actors in the value chain.
- **Catalyses financial inclusion** by enabling electronic payment systems and e-banking.

Despite these benefits, poor digital literacy remains a barrier to unlocking the true impact of digital infrastructure, so it's vital that local people can develop digital skills. Actis portfolio company, Rack Centre (data centre) has launched a 'Skills to Employment Program' to develop the digital skills of up to 170 low-middle-income young people in Lagos.

**Infrastructure needs to be sustainable and resilient**

These investment needs are clear. But how do they align with a Net Zero world? How can we decouple economic growth and carbon emissions and avoid the poorest nations being locked into outdated carbon intensive infrastructure?

We recognise it is not sufficient to simply construct infrastructure at the lowest price point. We strive to build assets which are future-proofed, decarbonised, and inclusive which in turn strengthens livelihoods, tackles poverty and reduces inequality in a virtuous cycle for economic prosperity and development.

We leverage our extensive operational expertise to create “sustainability leaders” across our portfolio companies (Exhibit 3).

**IT IS NOT SUFFICIENT TO SIMPLY CONSTRUCT INFRASTRUCTURE AT THE LOWEST PRICE POINT. WE STRIVE TO BUILD ASSETS WHICH ARE FUTURE-PROOFED, DECARBONISED AND INCLUSIVE**

**EXHIBIT 3: CREATING “SUSTAINABILITY LEADERS” IN INFRASTRUCTURE**

 <p>Technologies</p>	<ul style="list-style-type: none"> <li>• Choosing technologies to achieve best-in-class operational efficiencies for energy, embodied-carbon, water and resources.</li> </ul>
 <p>Renewable energy</p>	<ul style="list-style-type: none"> <li>• Sourcing low-carbon or renewable energy to provide power and align assets with a Net Zero pathway.</li> </ul>
 <p>Resilience</p>	<ul style="list-style-type: none"> <li>• Improving the resilience of assets (and surrounding communities) to withstand acute and chronic weather risk. This involves working with nature-based solutions where possible.</li> </ul>
 <p>Communities</p>	<ul style="list-style-type: none"> <li>• Working collaboratively with local communities to bolster local skills and education and increase employment and entrepreneurial growth.</li> </ul>
 <p>Biodiversity</p>	<ul style="list-style-type: none"> <li>• Partnering with local stakeholders to restore biodiversity and the ecosystem services it underpins.</li> </ul>
 <p>Lifecycle</p>	<ul style="list-style-type: none"> <li>• Assessing human rights and lifecycle impacts of materials and supply chains to source as responsibly as possible (e.g. battery minerals, solar panels, e-waste)</li> </ul>

Source: Actis

**As we build, operate and transform infrastructure to support a low-carbon future, we must also continue to explore emerging technologies which support this transition. These include green hydrogen, electric vehicle charging networks,**

**decarbonised cement and green steel. By doing so, we can build infrastructure that drives truly sustainable and inclusive economic growth, and unleashes the sector’s enormous potential to achieve the UNSDGs.**



Spring Energy installed Automated Water Dispensers (“ATMs”) to provide local communities with access to clean and safe drinking water



Regional Focus:

# CENTRAL AND EASTERN EUROPE

# CENTRAL AND EASTERN EUROPE: TRANSFORMING INFRASTRUCTURE



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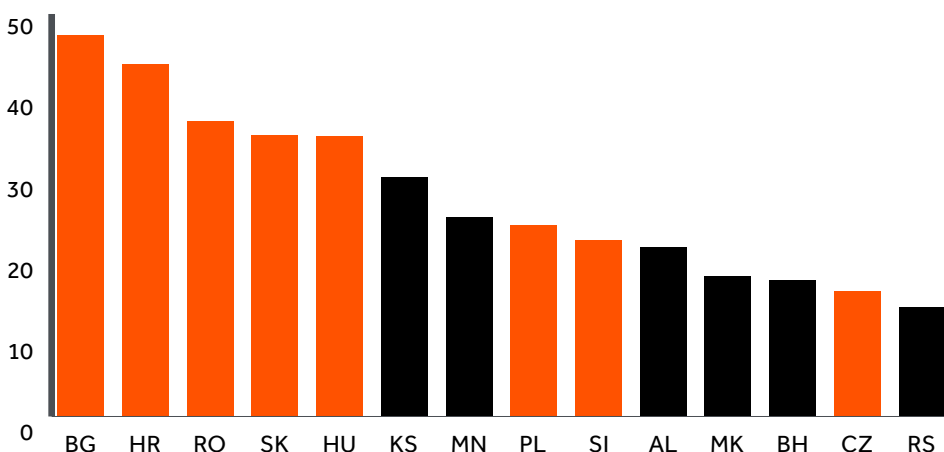
**Central and Eastern Europe is often seen as a major destination for investment activity thanks to its potential for economic growth and legacy underinvestment. But it has several unique features which can mean challenges for outside investors - particularly those in the infrastructure sector - who wish to deploy capital and take part in its transformation. Actis' Neil Brown spoke to Lucyna Stanczak-Wuczynska, one of the region's most respected bankers with close to 30 years' experience in banking and private equity and a Strategic Advisor at Actis, to discuss the opportunities that may be available.**

At the time of publishing, Central and Eastern Europe has been significantly affected by recent events unfolding in Ukraine. Short term, the crisis has both humanitarian and economic impacts; the humanitarian crisis is awful and real, and our hearts extend to those affected. Economically, in the short term we see raised risk premia for the region. This is not surprising – these types of crises often result in an immediate spike in volatility. The timeframe for this volatility is unclear at this point, though it is likely to persist for some time. Long term we believe the investment themes that we back – including the energy transition and the digitalisation of Central and Eastern Europe economies – will persist, and in fact may be accelerated by the tragic events that are unfolding. We recorded this interview before the events in Ukraine, but have decided to publish this piece given the global thematics are long term investment theses.

**EXHIBIT 1: OFFICIAL EXTERNAL FUNDING AVAILABLE FOR THE RECOVERY (% 2019 GDP)**

For EU: NGEU and MFF

For Western Balkans: Economic and Investment plan for the Western Balkans and estimate about World Bank, EIB and EBRD funding



Source: Mauro Giorgio Marrano, UniCredit Research, Not alone: Financial support of the Western Balkans (Jun 2021) SUERF Policy Note 247, based on EU data and UniCredit Research calculations



**Neil Brown: Are there infrastructure sectors in Central and Eastern Europe that are more attractive than others? What are the region's main infrastructure needs?**




**Lucyna Stanczak-Wuczynska:** The whole region has witnessed remarkable achievements in the last few decades: doubling its GDP per capita, attracting foreign investors and emerging more resilient from the Global Financial Crisis.

In respect to infrastructure, despite substantial investments, there still remains a great deal of inefficient heavy industry in the region, including ageing or even obsolete energy assets, with a very significant continuing dependence on fossil fuels (especially in Poland, Czech Republic, Serbia and Moldova). This means

low quality air for the population. There is less dense transport infrastructure than in the Western European Union but good – if still uneven – access to broadband. More structural reforms are needed, particularly when it comes to the efficiency and quality of governance at state-owned enterprises – around 70% of infrastructure assets are still state-owned.

I think the most important infrastructure need is better connectivity across borders – that's both within the region and across the rest of Europe. That includes better rail, road and digital infrastructure. The second area of need is the energy transition towards low carbon and energy efficient infrastructure – as the share of renewable energy is still quite low, generally between 10% and 20% in the majority of the countries (especially in South East Europe and Western Balkans) and the path


towards a Net Zero economy will require substantial efforts. And the third area is digital transformation, whether it is 5G, the 'Internet of Things', sustainable data centres, or access to flexible networks. Overall, I think the region is very open to transformation and has great prospects.


 **Neil: What should be the role of the public and private sectors? Should governments be providing regulatory and legal certainty, or are there other roles they can play?**

 **Lucyna:** The sheer scale of infrastructure investment that is needed won't be possible without the private sector. If we are to meet the requirements of the Paris Agreement, even with vast support from various European investment funds (in particular Next Generation EU and EU Multiannual Financial Framework funds, that may reach even up to 12% of GDP of some of the Central, Eastern and South Eastern Europe countries, such as Croatia or Bulgaria), (See Exhibit 1) there will still be a significant need for private sector involvement. But how this cooperation between private and public should work is not always simple. Projects in the region can face challenges in terms of lengthy procurement, structuring, design and preparation. There are frequent cost overruns and delays. The major challenge is to deliver robust and bankable projects, with effective risk sharing between private and public participants.

Encouragingly there are now new systems of support for the renewable sector, greater transparency, stable legal frameworks and a favourable climate to do business. There is also greater support coming from international and local development finance institutions. There are some landmark public-private partnership projects in the region, in particular in the motorways sector.


 **Neil: Thinking more about what you've just said, how do you think Central and Eastern Europe compares with the rest of the continent? Are there things that are unique to the region?**


 **Lucyna:** What really distinguishes the region is the pace and dynamic of economic growth. There is also huge capacity and appetite for research and development (R&D) and technology in Central and Eastern Europe, linked to the large, well-educated population in the region, particularly in fields like engineering. And finally, this is a large and important region at the crossroads between the West and the East.

 **Neil: What is the role of lenders and debt in the infrastructure ecosystem - is the availability of credit a constraint in Central and Eastern Europe?**

 **Lucyna:** Credit is available, the issue is usually mainly about how to make a project 'finance-ready' or bankable. I believe there is still a need to strengthen the financial system in the region. It is dominated by the banking sector: nearly 90% of the economy is financed by banks. And those banks are generally liquid and hungry for attractive transactions. When you add in multilateral institutions and other local development banks, it's clear there is no lack of available financing (at least in the near future). But this will change over time as infrastructure portfolios grow and tenors get longer, so this may come up as an issue at a later stage.

What is missing are well-developed and integrated local capital markets - institutional investors and local pension funds could have been far more present than they have been, particularly when it comes to long-term investments. There are a number of green bonds and sustainability-linked bonds out there, but this is all still really in its infancy and would benefit from greater depth.

 **Neil: How would you summarise the effect of infrastructure in the region?**

 **Lucyna:** Infrastructure is a great enabler of economic productivity, but it also has effects beyond that. Good examples are the clean air programmes in the region (with the support coming from the EU). If you look at them, you see that when there are improvements in specific infrastructure such as more sustainable district heating and greater electrification, you end up not just with a more productive economy but with longer life expectancy, better health outcomes and a number of other positive flow-on effects. Irena estimates that the economic value of avoided air pollution in the Central and South East Europe region is estimated at between EUR5bn and EUR20bn per year in 2030. Better infrastructure has broader social impacts leading to greater inclusion. The whole impact is multi-dimensional. Looking forward investing in clean and smart infrastructure will not only provide a boost to short-term growth, but bring longer-term resilience of societies.

**WHEN THERE ARE IMPROVEMENTS IN INFRASTRUCTURE, YOU END UP NOT JUST WITH A MORE PRODUCTIVE ECONOMY BUT WITH LONGER LIFE EXPECTANCY, BETTER HEALTH OUTCOMES AND OTHER POSITIVE FLOW ON EFFECTS**





Metro de Santiago, Santiago's underground railway system, which is powered by electricity produced by Pelicano, a renewable energy producer that owns a 110 MW solar plant in La Higuera, Chile.

Regional Focus:

LATIN AMERICA

# LATIN AMERICA: BOOSTING THE REGION



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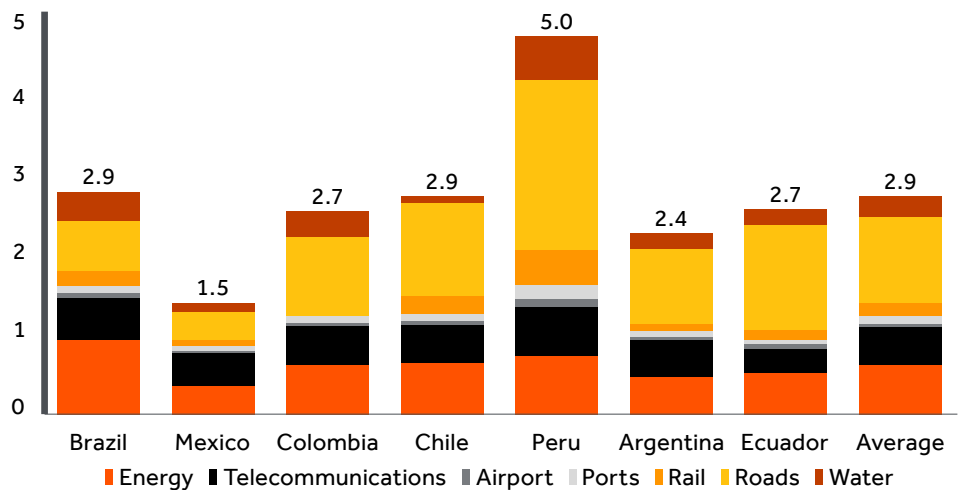
**Latin America's underdeveloped infrastructure hinders productivity, employment and growth. Strained fiscal balances post COVID-19 increase the role of the private sector in funding infrastructure investments. Whilst the role of the government varies across sectors, there are appropriate contractual and risk-allocation mechanisms that can foster investment from telecommunication towers to toll roads to wind farms.**

## The relevance of infrastructure investment in Latin America

The Inter-American Development Bank (IDB) estimates that in Latin America, a dollar of infrastructure investment has a 1.5x multiplier effect in terms of GDP over five years. They also estimate that investment in infrastructure generates, on average, 36,000 new jobs per US\$1 million invested. This type of job creation benefits low-income households and improves income distribution in one of the most unequal regions in the world.

Infrastructure investments also foster integration and international trade. Latin America has commercial costs almost 60% higher than in Asia, in part due to deficiencies in infrastructure. IDB studies suggest that a 1% decrease in logistical

EXHIBIT 1: AVERAGE INFRASTRUCTURE INVESTMENTS 2015 – 2019 (% OF GDP)



Source: Data from the Global Infrastructure Hub's [Infrastructure Outlook](#)

costs in Pacific Alliance countries (Mexico, Chile, Colombia and Peru) would increase exports by up to 4.5%.

Despite this, infrastructure investments in Latin America have nearly halved since the late 1980s from ~4% of GDP. Other than Peru at nearly 5% and Mexico's paltry 1.5% major countries in the region invest ~2.5% of GDP on infrastructure, mainly on roads, energy projects and digital infrastructure (see Exhibit 1).

Latin America lags when compared to other regions: according to the IDB: between 2008 and 2018, Latin American countries invested on average 2.8% of GDP in infrastructure while the figure was 5.7% in East Asia and the Pacific, 4.8% in the Middle East and North Africa and 4.3% in South Asia. Studies from the IDB argue that Latin America needs to invest about 5% of GDP in infrastructure a year to catch up with advanced economies. Uncertain politics, fragmented financing and sometimes dysfunctional concession regimes have hampered progress. Fortunately we do see progress.

### Who funds infrastructure spent?

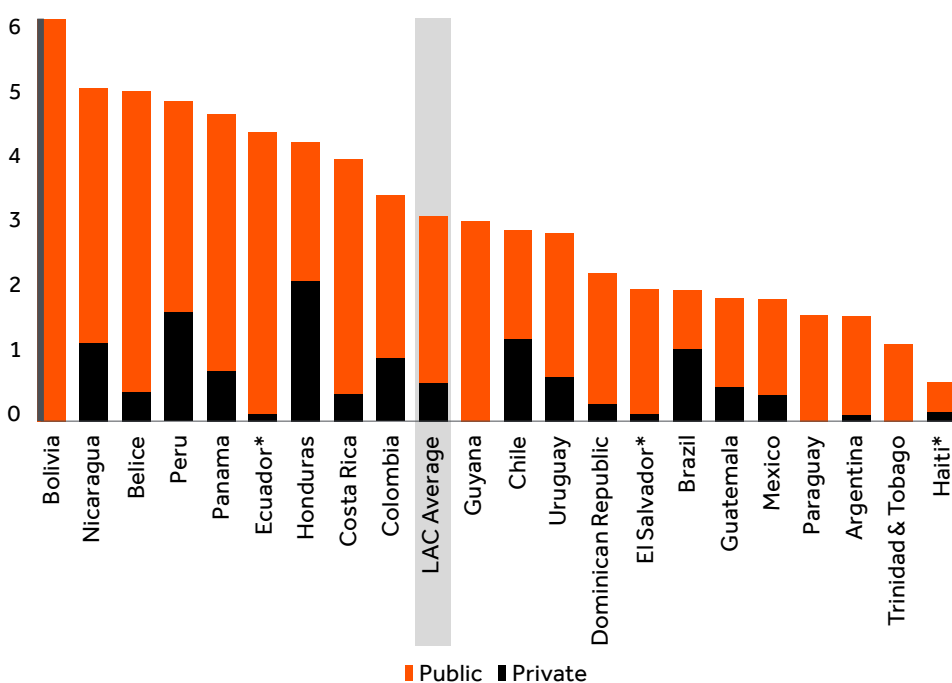
Most of infrastructure investment in Latin America is funded by the public sector, but the private sector has a key role. Across the region, approximately 20% of infrastructure spend is funded by the private sector (~0.5% of GDP). In the largest economies, private sector investments in infrastructure range from almost nil in Argentina to 0.25% of GDP in Mexico and over 1% of GDP in Chile or Brazil (see Exhibit 2). While the overall infrastructure investment is higher China, India or Russia, relative private sector investment in Latin America as a share of GDP is higher compared to these three countries.

Diversification of funding sources matters: public funding is sensitive to economic cycles (procyclical) and is usually short-term focused. Between 2000 and 2016, total primary government expenditure in Latin America increased by 5.2% of GDP, with only 12% of that figure allocated to longer term investments such as infrastructure.

COVID-19 has underscored the benefits of diversifying funding sources. Latin American countries have focused on mitigating the steep ~7% GDP contraction for 2020 with short-term tools such as money transfers to vulnerable populations and credits/guarantees for businesses. Longer-term spending, such as infrastructure investment, has resulted in large cutbacks in the region.

An additional challenge that governments face across the region are weaker fiscal positions. In 2008, the region's average fiscal balance was -0.4% of GDP whereas the IMF October 2021 Fiscal Monitor forecasts deficits above 3% out to 2025. Gross public debt rose from 40% of GDP in 2008 to 68% in 2019 and is forecasted by the IMF to be 74% at the end of 2025.

EXHIBIT 2: AVERAGE INVESTMENT IN INFRASTRUCTURE, 2008–2017 (% OF GDP)



Source: Average investment in infrastructure, 2008 - 2017 (% of GDP). Inter-American Development Bank, *Sustainable and Digital Infrastructure for the Post-Covid 19 Economic Recovery of Latin America and the Caribbean: A Roadmap to More Jobs, Integration and Growth* (2020)

### But what can governments do?

The role of the state varies by sector. In some, government acts as a contracting agent typically tendering for the construction and/or operation of specific assets and remunerates the private contractor under specific performance indicators. In others, the private sector leads on project development, commercial pathways and execution risk, such as the data centre space.

In this section, we discuss our on the ground view around the key mechanisms to attract private capital across sectors that have a natural tendency for varying levels of public sector participation. We revisit towers in the Digital Infrastructure sector, toll roads and power generation.

### Digital Infrastructure - Towers

Most Telcos and TowerCos in the region are privately owned. The Telcos landscape is dominated by five major private operators: Telefónica, América Móvil, Millicom International, AT&T (DirectTV), and Liberty Latin America. In the tower sector, American Tower is the leading player with ~50,000 towers and Telefonica as its anchor tenant; Sitios and Telesites (both affiliated with América Móvil) follow with ~36,000 and ~19,000 towers, respectively. Other relevant players include SBA Communications, Phoenix Tower International, IHS Towers and Digital Colony.

While the private sector focuses on providing services to economically viable cities, governments have focused on promoting investments to connect the unconnected and improve data access, especially in rural areas. The digital divide is particularly stark in Latin America where several countries have 50 to 80 subscriptions of mobile broadband per 100 inhabitants (vs ~95 in OECD countries) and just 30% to 70% households have internet access in most countries (see Exhibit 3).

Despite having a limited role as contracting or operational agents, governments in the region have set regulatory frameworks to attract private investments in the sector and let private players take the lead on execution and commercial efforts.

There are three key levers that governments have used to influence the industry: frequency auctions with coverage obligations, flexible policies for the promotion of neutral networks and tax incentives for uneconomical projects (i.e. rural areas).

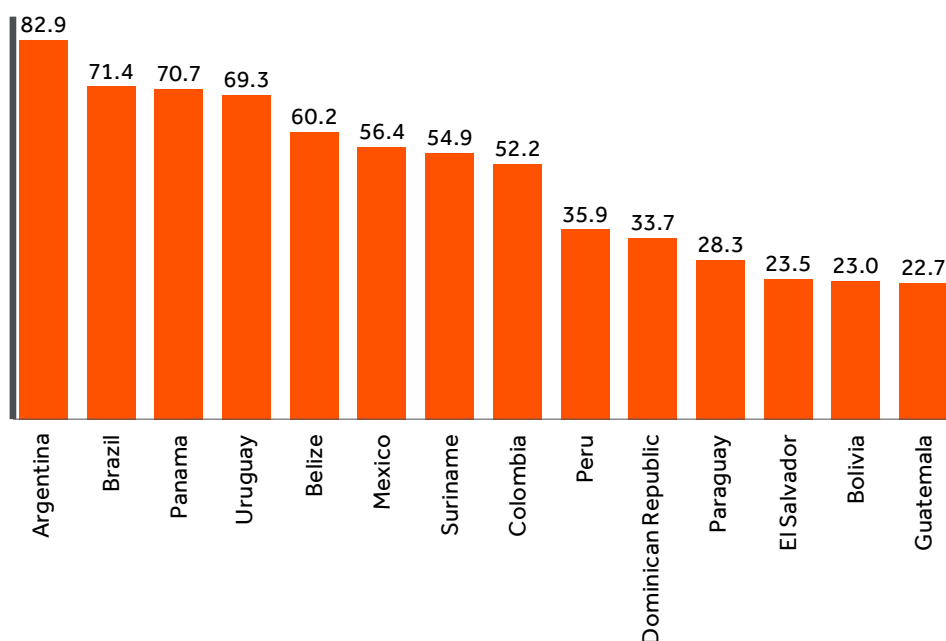
In Chile, for example, the Government held a 5G spectrum auction during 2021, raising US\$450m. The country expects US\$3.5bn of investments by 2023 to fulfil tender obligations and US\$5bn in 5G-related investments over the next five years. Similarly, Brazil auctioned 5G spectrum and raised ~US\$8.5bn while setting specific additional investment obligations for the winners.

### Infrastructure - Toll Roads

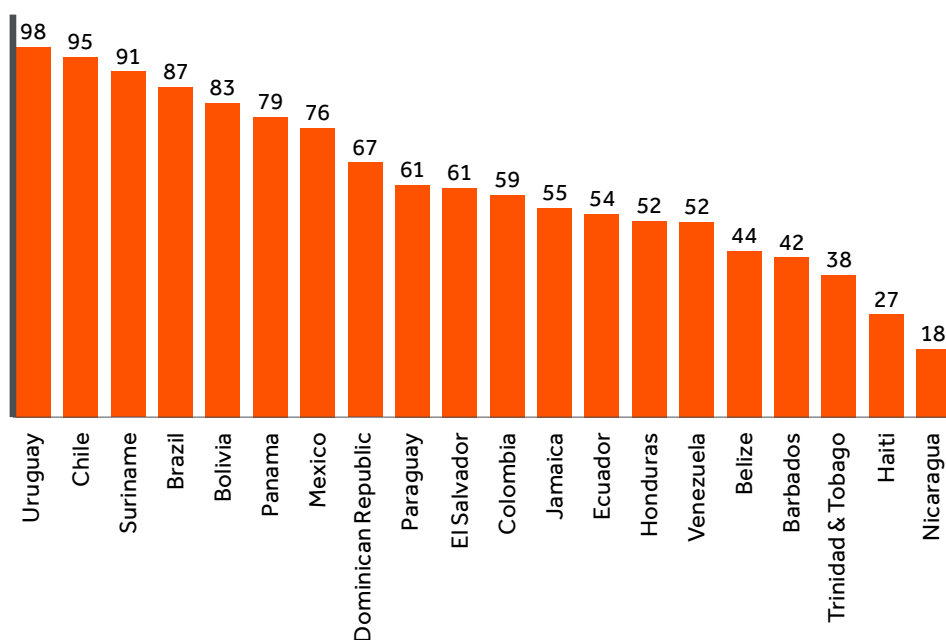
Toll roads is one sector where the role of the state is crucial, as it centralises planning and expansion of the road network and acts as contracting agent. Brazil, Mexico, Colombia, Chile and Peru have relied on public private partnership (PPP) schemes, which alleviate budget constraints and transfer responsibilities and risk to private investors.

Across the region, concessions have evolved from the monetisation of existing assets to mandating targets for delivery of growth and risk sharing on traffic outcomes. Chile was a first mover, where the Government began to rely on concessions in 1993 to build and improve

EXHIBIT 3: HOUSEHOLDS WITH INTERNET ACCESS (AS % OF TOTAL HOUSEHOLDS)



PENETRATION OF MOBILE BROADBAND (CONNECTIONS PER 100 INHABITANTS)



Source: International Telecommunication Union (ITU) (2019)

the road network. By 2020, the country had over 70 contracts in place with materialised investments of US\$18bn. Over 3,600km of roads are concessioned through PPPs (~17% of total paved roads). PPPs in Chile include a minimum guaranteed revenue for the concessionaire.

In Mexico, the Government provides two main types of PPPs: concessions where the operator takes traffic risk and Service Projects (PPS) with fixed availability payments that incorporate road maintenance and exclude tolls. Around 20% of the more than 50,000km of federal

highways are toll roads. Approximately half of toll roads are operated by the Government, with the balance by the private sector.

In Brazil, there are 23,230km roads under 20-50 year concession agreements. The km under private capital ownership is expected to increase by two-fold via a pipeline of 45 new concessions, which will transfer an additional 25,000km of roads to the private sector via privatisations.

### Energy – Power Generation

The power generation space is largely liberalised across the continent with unbundling of the value chain across generation, transmission, distribution and commercialisation. This was a model spearheaded by Chile in 1982 and replicated across the region: Peru, Colombia and Brazil in the 1990s and Mexico more recently in 2013.

In Brazil, once environmental license and technical requirements are met, projects can participate in an energy auction, where distribution companies (56 in total, of which 45+ are privately owned) place their desired contracted amount, and generators bid to secure a 15 to 30-year, inflation adjusted BRL denominated Power Purchase Agreement (PPA). Another mechanism available to generators is to sell under the "Reserve Auction", where the Government is the offtaker. More recently, as the sector continues to evolve, more consumers are allowed to secure direct PPAs with generators. This is projected to increase the Commercial & Industrial ("C&I") space from c.21GW in 2021 to 45GW by 2025, based on the contracted incremental generation capacity for the period 2021-2025.

In total, the private sector owns 80% of Brazil's installed capacity, which as of 2021 stands at 185 MW - according to the Government's 10Y expansion plan 2031, published by the EPE. Wind and solar generation, mostly privately owned,

have had a significant expansion that today corresponds to c. 30GW of installed capacity.

In Mexico, which was the latest of the large Latin American countries to liberalise its power sector, the Government still plays a key role with over 50% of the installed capacity via the national utility, CFE. Privately owned power plants have three routes to secure commercial viability: 1) state-sponsored PPA auctions; 2) state-sponsored Build Own Operate tenders; or 3) market solutions via C&I PPAs or merchant projects. Private assets are usually anchored on long-term (15yr+), USD-denominated PPAs with no or limited price and volume risk for the producer. The private investor takes the development and construction risk and also a view on uncontracted revenues. Given the contracted and dollarised nature of the cashflows, projects are financed by a deep and diverse pool of lenders: local development banks, international banks and capital markets.

### INFRASTRUCTURE INVESTMENTS ARE BENEFICIAL FOR LATIN AMERICA AS THEY INCREASE ECONOMIC GROWTH, REDUCE INEQUALITY AND FOSTER INTERNATIONAL TRADE. YET THE REGION IS NOT INVESTING ENOUGH

In Chile, the role of government is less pronounced as it mainly organises tender processes on behalf of distribution companies through the regulator (CNE). All generation technologies compete in the public tenders and contracts are standardised with 15 to 20-year terms and USD cash flows, which allows deep financing alternatives. Four companies concentrate ~65% of the installed capacity: Enel, Colbun, AES Gener, and Engie.

In Colombia, the market has been historically dominated by short and medium-term contracts not longer than five years and in local currency. However, as the Government seeks to introduce renewable energy into the generation matrix, it has promoted incentives such as long-term auctions providing PPAs with 15-year tenor. The private sector holds a ~75% market share with four dominant players: EMGESA, AES, Celsia, ISAGEN; while the state owned EPM holds the remaining 25%.

Latin America has a well-established track record of private funding of infrastructure across several sectors on the back of regulatory regimes that have sought to balance risk allocation between the state and investors. This has been achieved via models for sectors where the state has a smaller role, such as digital infrastructure, as well as for sectors where the role of government is crucial, such as toll roads. The successful experience of the power sector, largely liberalised across the region is telling: the region generally benefits from robust and cost efficient power systems that leverage on Latin America's natural resource endowments (wind, solar irradiation, natural gas and hydro capacity).

Infrastructure investments are beneficial for Latin America as they increase economic growth, reduce inequality and foster international trade. Yet the region is not investing enough. The private sector can play a role in making up for the investment deficit, particularly in a context where fiscal balances are strained due to the COVID-19 response.

**Liberalisation and enhanced private sector participation frees up government resources for social spending, healthcare and education. Unfortunately, the political tide has turned towards the populism across the region. There are risks that the incentivisation of private sector capital reverses thus widening the infrastructure gap.**



# COMPANY VOICES: ATLAS RENEWABLE ENERGY, PAN LATIN AMERICA



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Atlas Renewable Energy has grown into one of the most recognised renewable energy companies in the LATAM region. The company has over one GW of early-stage to fully operational projects across Latin America. Atlas Renewable Energy has uncompromisingly adhered to rigorous standards in development, construction and operation of large photovoltaic (PV) projects.



**Michael Harrington: Where do you see current and future demand for clean energy in LATAM?**



**Carlos Barrera:** Like many other jurisdictions globally, LATAM is embracing an energy transition agenda. Going forward, we see no new coal, and very little large hydro being built. The majority will be renewable energy and some gas. If you put that into specific metrics, 2021 saw about 16 GW of solar and wind being built. This year has forecasted about 18 GW. We see that trend continuing and likely increasing over the next few years. However, this is only serving today's level of demand and transition. Once you start seeing electric vehicles proliferate in the region, and industrial processes starting to transition to renewables, we're going to see demand for clean energy increase exponentially.

**WE'RE GOING TO SEE DEMAND FOR CLEAN ENERGY INCREASE EXPONENTIALLY**



**Michael: How has the pandemic had an impact on demand and operations for Atlas Renewable Energy?**



**Carlos:** The pandemic has seen challenges, losses and sacrifices across many countries for a lot of people. In the context of our industry, the sector has demonstrated itself to be quite resilient. Initially demand for electricity dropped, but returned to pre-pandemic levels relatively quickly. And during this period, what we actually saw was an increase in governments doubling down on an energy transition agenda. The short-term shock was short lived.

With regards to our operations, it was reasonably seamless for us to go remote, in part because we have a fairly decentralised footprint. We took early action to close offices to enable people to operate remotely on a full-time basis. We managed to reach financial closing for one of our projects very early on in the pandemic, and then for three additional projects throughout it. Now, lockdowns did cause disruption and there were unprecedented logistical dislocations. This latter point has resulted in industry wide impact. However, due to early planning, we were not affected nearly as much as many of our competitors.



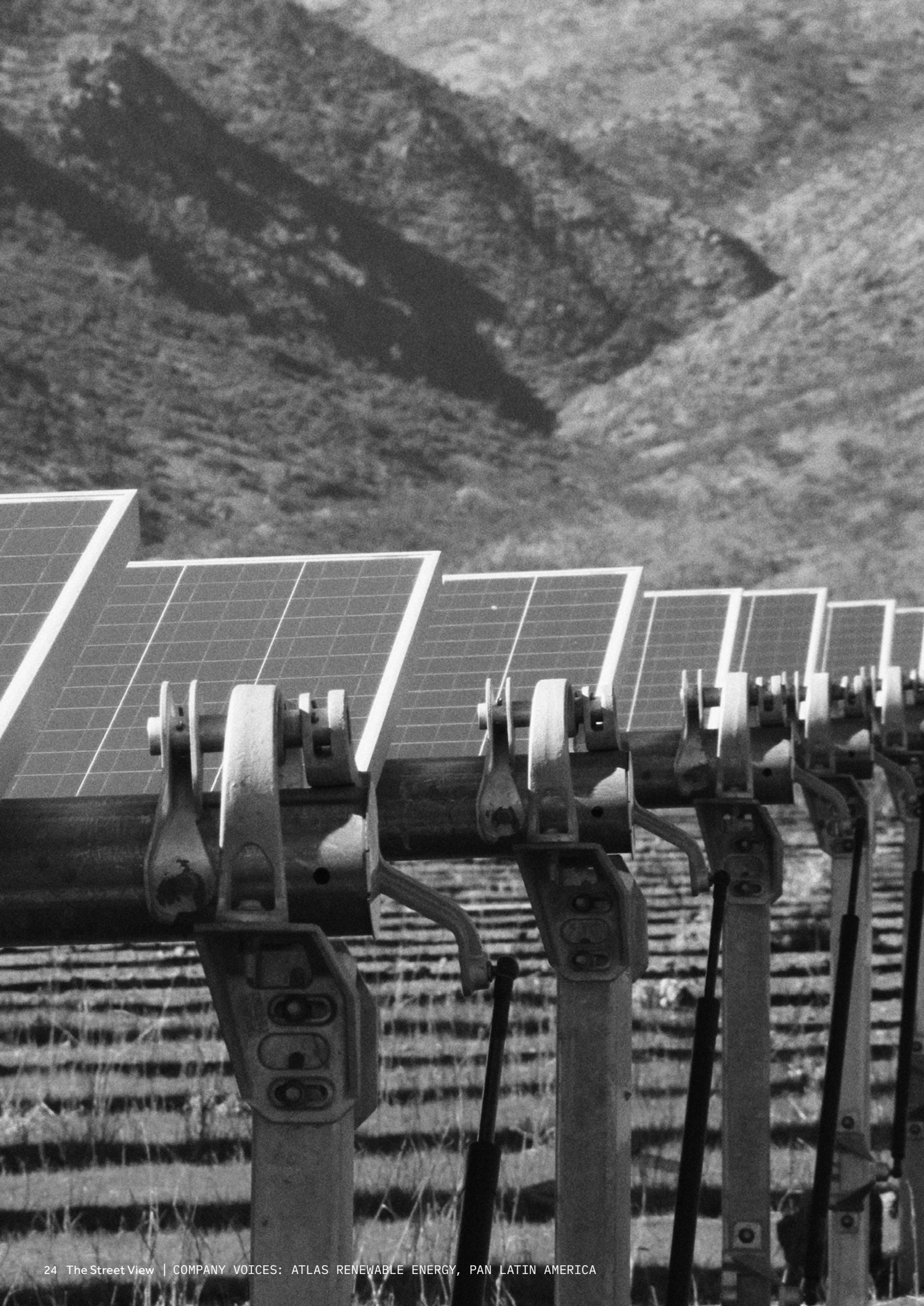
**Michael: What does it mean to be a sustainability leader and what benefits has this brought to Atlas Renewable Energy?**



**Carlos:** We are a business that is accelerating the energy transition. Every incremental investment that we make reduces the production of CO2 by tens of thousands of units. However, our focus on ESG goes beyond the reduction of CO2.

We're proud to be recognised as a leader in ESG. We are committed to it, due to the conviction that business and society are inseparable. We need to consider the wellbeing of a broader set of stakeholders in decisions that we make and if we don't, it doesn't work; decisions will lead to pursuits that are not sustainable.

What is interesting is to describe some of the social programs we've carried out. To date, we've positively impacted over 35 communities by improving education, 'building capacity' and promoting sustainable living. We have trained around 1000 women in the 'We Are All Part of the Same Energy' program, to take on high skilled jobs during the construction of renewable energy projects. This has increased the percentage of female participation on our sites from about 2% to over 15%. That's meaningful and generates real change in the way the industry is looking at gender diversity.





# COMPANY VOICES: EÓLICAS BABILÔNIA, BRAZIL



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CEO, Eólicas Babilônia



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**Eólicas Babilônia (Babilônia) is a 137 MW wind farm in North East of Brazil, a region which boasts some of the best wind resources in the world. Through a local team and its advanced operations centre in São Paulo, it monitors the wind turbines and substations with real-time data, thus ensuring extraordinary availability and energy generation efficiency.**



**Davi Carvalho Mota: What is the current and future demand for clean energy in Brazil?**



**Ruy Lima:** Brazil is well known for having a lot of green and renewable energy in its portfolio. Out of the 180 GW total electricity generation installed in Brazil, more than 80% is renewable. Most of it is coming from Hydroelectric facilities (110 GW) followed by Wind Energy (21 GW), Biomass (15 GW) and Solar which is currently a small portion of that (5 GW), but it has been developing quickly.

We expect that in the next three years there will be another 9-10 GW of new wind energy projects coming online in Brazil. That means we're going to be close to 30 GW of installed capacity of wind derived energy. As a worldwide comparison, China had the largest quantity of new wind projects installed in 2020 followed by United States and in third place there was Brazil. Since we have strong and consistent wind regimes, we expect that wind generation in Brazil will continue to be successful in the coming years.



**Davi: What impact did COVID-19 have on demand and your ability to operate the assets?**



**Ruy:** The pandemic taught us that we needed to act fast, look after our team members as well as our surrounding communities. To maintain continuous operation, we needed to make sure that our teams didn't get sick. Therefore, the first action was to keep all external visitors to a minimum and if necessary, they were tested before arriving to the site. In two years, we only had eight cases of COVID-19 and the team members had only minor symptoms allowing them to quickly return to work.

Energy generation is considered essential services, so lockdown didn't really affect us. There was a small reduction in energy demand in 2020, but with the V-shaped economic recovery in Brazil, we are back at the generation levels we were before the pandemic.



**Davi: What does it look like to be a sustainability leader? What benefit does it bring?**



**Ruy:** We must consider the best ways to meet our needs nowadays, without compromising future generations. Sustainability doesn't just mean generating energy in a greener way, it also means facilitating for the local communities to make improvements in their own lives for a better and sustainable future.

We engaged the community and incentivised them to participate in various training programs such as hairdressers, barbers, bakers and offered computer skills. We also provided agricultural support,



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selecting 33 families and providing them with training and resources to build hen houses for egg production. They were able to produce 60,000 eggs per month and are now able to sustain themselves independently.



**Davi: What are the key drivers to operational excellence?**



**Ruy:** We were considered, by our turbine operator/supplier (Siemens Gamesa), their best site in Latin America in terms of availability for two years in a row. It's certainly not easy to maintain this position but we believe that it was feasible due to the pro-active engagement of all team members and service providers. Utilisation of dedicated real-time software to track trends utilizing artificial intelligence and creating algorithms is also vital, as it can be used to predict and therefore avoid stoppages. Our motto is Act Fast and Act Smart.



**Davi: What have been the most valuable lessons you have learned to date?**



**Ruy:** The world has changed a lot in the last two years. Adapt quickly to the new environment protecting and supporting our teams, our local communities, and our assets. Train, train and retrain the teams, be alert to symptoms and test whenever necessary. Support local communities as much as possible, which will maintain their support in the future. We were able to provide masks, hand sanitiser and food packages when they were needed most. Actis always asks what we are doing to ensure ESG is covered for the local communities. We certainly share their ESG goals.



# COMPANY VOICES: PELICANO, CHILE



**HUGO VITS**  
CEO, Pelicano



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**El Pelicano Solar Company SpA (Pelicano) is a renewable energy producer that owns a 110 MW solar plant located in La Higuera, Chile. The plant delivers 300 GW hours per year of electricity to Metro de Santiago, Santiago's underground railway system, making it the first public large transportation system in the world to run on renewable energy.**



**Javier Areitio: What is the current and future demand for clean energy in Latin America, and in Chile in particular?**



**Hugo Vits:** The demand for renewable energy in Latin America is already significant. In Chile, around 27% of electricity demand today is met by wind and solar power, and if we add in the figure for hydroelectric power, renewables as a whole account for 47% of total power demand. Looking ahead, it should be possible for renewable energy to reach between 70% and 80% of demand by 2030, as a result of voluntary agreements to retire coal plants and mandates to decarbonise power generation.

The main driver of the switch to renewables has been lower costs. Renewable power purchase agreements (PPAs) are priced very competitively. Commercial and industrial customers such as large copper mines are demanding PPAs that are 100% renewable, cancelling their existing high-carbon PPAs and paying the break fees.

Latin America has a tremendous opportunity to become a global leader in energy sustainability. The region already has a very low carbon footprint compared to the rest of the world, so combined with good hydro, wind and solar resources, we should see a cost-effective, rapid switch to low carbon over the next 20 years. However, this will require substantial new investment

in energy infrastructure. To date, most investments have been focussed on power generation, but a substantial step up is needed in transmission, storage and distribution to capture the full benefit of renewable generation and provide operational flexibility.



**Javier: What impact has the global pandemic had on demand, and your ability to operate?**



**Hugo:** In 2020 the pandemic had a significant impact on the economy and thus on the electricity demand of most countries. That demand decrease did not impact Pelicano given that it has a long term contract through which it sells 100% of the electricity generated regardless of the demand evolution. Operationally, disruption to Pelicano was minimal given that our plant was already capable of operating remotely 24/7. As a result, we did not register any Covid infections across both 2020 and 2021.



**Javier: What is the key driver of operational excellence for you?**



**Hugo:** The key enabler is teamwork, with a relentless focus on continuous and safe operational improvements that have a bottom-line impact. We align the mindset of our teams through a 'challenge and assist' process to execute opportunities and mitigate risk. Best practices are shared across all Actis platforms, with the support of the Actis operational team.



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**Javier: What benefits does being a sustainability leader bring?**



**Hugo:** Sustainability is all about the triple bottom line; better economic, social, and environmental results. If you want to be a leader, you always need to look for new ways to do more and better.

In terms of specific benefits here, we provide clean and cost-effective solar energy to Metro, the underground rail network in Santiago. That means Metro today is the most significant clean electromobility option in a city which is well-known for its air pollution. So there are economic benefits from the cost effectiveness of our energy, but also health and environmental benefits from lower fossil fuel use, fewer emissions and better health.

We also strive to have an impact on the local community in which we operate. Around Pelicano there are herders who had traditionally used costly liquid fuels to generate electricity. Together with the local municipality, we now provide them with solar energy systems to minimise the use of these liquid fuels and bring the benefits of access to renewables to our neighbours.



**Javier: You have been part of the Actis family for five years. What are the most valuable lessons you have learned to date?**



**Hugo:** The main lesson has been the benefits of teamwork through the relationships with both our contractors and with Actis' sustainability and financial teams. We always need to be technologically aware and look at opportunities and risks, but the ability to create teams across multiple organisations has been fundamental.



Chayora data centre, China

Regional Focus:

ASIA

# ASIA: UNDERPINNING GROWTH



SIMON OGUS

CEO, DSG Asia Ltd, Hong Kong

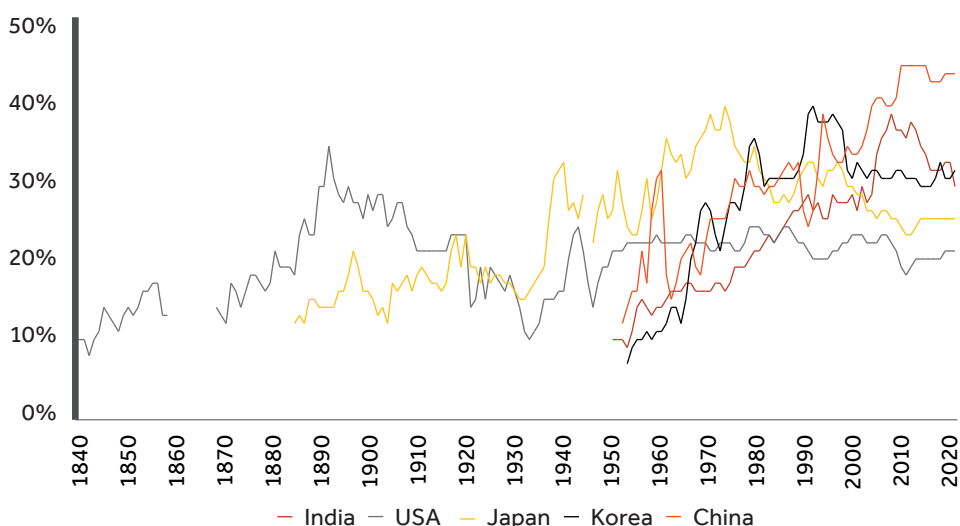
**Economic growth can be delivered by employing an increased quantum of different factors of production (land, labour and physical capital), improving the said factors' productivity, and finally (and arguably less sustainably) by employing leverage.**

No unique recipe has, as yet, been discovered that guarantees economic development. However, successful transitioners have generally provided sufficient macroeconomic and legal stability to mobilise savings, which in turn facilitates increased investments in human and physical capital. An openness to international trade and expertise has also invariably been part of the special sauce.

In previous articles for Actis, I have discussed the human capital part of the equation and shone a spotlight on the role of female education and empowerment in driving economic growth across Asia. In today's outing, I will focus more on the concomitant role that capital mobilisation, specifically investment in productive-potential enhancing physical assets such as plant and equipment and infrastructure, can play in developmental success.

A country's national wealth is broadly speaking the sum of the value of all its assets and its consumer durables. And the asset stock in turn can be divided into three broad categories – land and inherent resource endowments, financial assets, and physical fixed assets such as infrastructure, residential and commercial buildings, and productive plant and machinery.

EXHIBIT 1: FIXED INVESTMENT AS A % OF GDP



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

**ONCE A COUNTRY HAS ACCUMULATED A SIZEABLE STOCK OF FIXED ASSETS THE MARGINAL GAINS START TO DIMINISH**

In the earlier stages of economic development, it is fairly simple to generate catch-up growth by moving labour from the farm to the factory and deepening the capital stock. It is only once a country has accumulated a sizeable stock of fixed assets that the marginal gains from building more start to diminish. Although the richest Asian economies, such as Japan, Hong Kong and Singapore, have arguably already reached this stage, it is a lot harder to posit that other Asian countries, not even China, are truly capital stocked out.

As Exhibit 1 illustrates, countries that have witnessed economic take-off, such as post-Civil War America, post-World War II

Japan and Korea, and more recently China and India, have seen these associated with multi-decade rises in investment-GDP rates. Invariably, as such booms mature, they are accompanied by increased malinvestment as capital is either deployed at the wrong price or into projects that are never going to offer a positive payback to those who originally put up the money. However, irrespective of the financing aspects, a country's citizens can continue to enjoy the benefits of the physical investments for many decades to come.

**IRRESPECTIVE OF THE FINANCING ASPECTS, A COUNTRY'S CITIZENS CAN CONTINUE TO ENJOY THE BENEFITS OF THE PHYSICAL INVESTMENTS FOR MANY DECADES TO COME.**

China provides a salient, contemporary case in point. The People’s Republic of China (PRC) has sustained an inordinately high investment rate for multiple decades accompanied, by a huge increase in financial leverage. The authorities have, in recent years, been trying to rein in some of these excesses which will likely involve at least a modicum of pain. However, if we consider Exhibit 2, despite these cyclical challenges, it can be seen that China’s per capita capital stock has only reached the levels achieved by America in the 1940s, Japan in the early-1970s, and Korea and Taiwan thirty years ago. (India lags even farther behind.) From a purely macroeconomic perspective, the PRC still offers plenty of investment potential – both hard and soft.

It should be stressed that a lower per capita stock certainly does not negate against cyclical booms and busts which can be particularly painful if mismanaged particularly badly. However, a poorer country, with a still strongly positive nominal and real structural growth trajectory, can better absorb “wasted” kit over time than can a rich, slower growth equivalent.

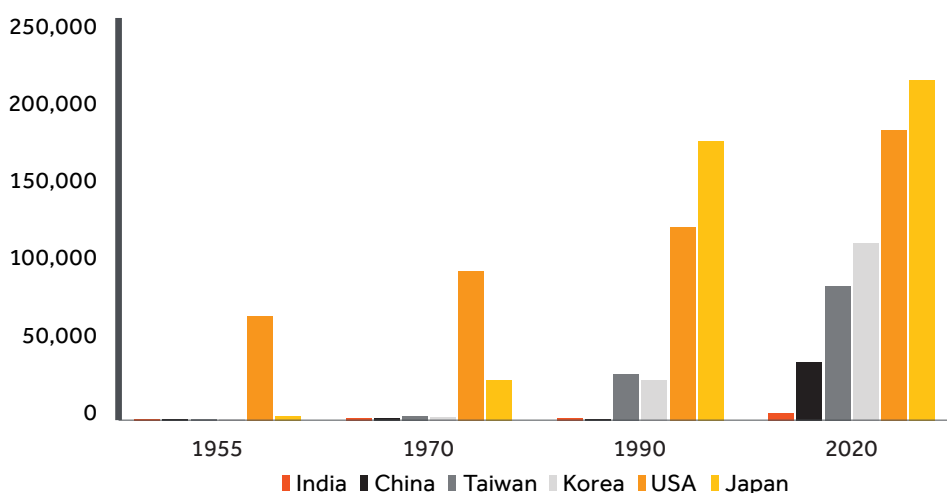
Think back to China in 1990. A decade after the introduction of Deng Xiaoping’s “Open Door” policies, the country’s per capita income and capital stock was still only on a par with the likes of India and Bangladesh. While the performance of the poorer Asian economies has been pretty impressive too over the past thirty years – especially in comparison to the majority of similar markets elsewhere – none, save an even poorer Vietnam, has succeeded in mobilising savings and investment to the extent achieved by Beijing. Indeed, today China compares favourably to middle income economies such as Malaysia and Thailand who were far ahead some three decades ago (Exhibit 3).

**The challenge for these economies is to mobilise savings, both domestic and foreign, and to hence improve absorptive capacity. This requires, amongst other factors, a welcoming and predictable investment climate, flexible labour markets and improved infrastructure – an Actis speciality – all of which can help to attract far stronger flows of inward foreign direct investment.**

## EXHIBIT 2: US\$ CAPITAL STOCK PER CAPITA, 2020 PRICES

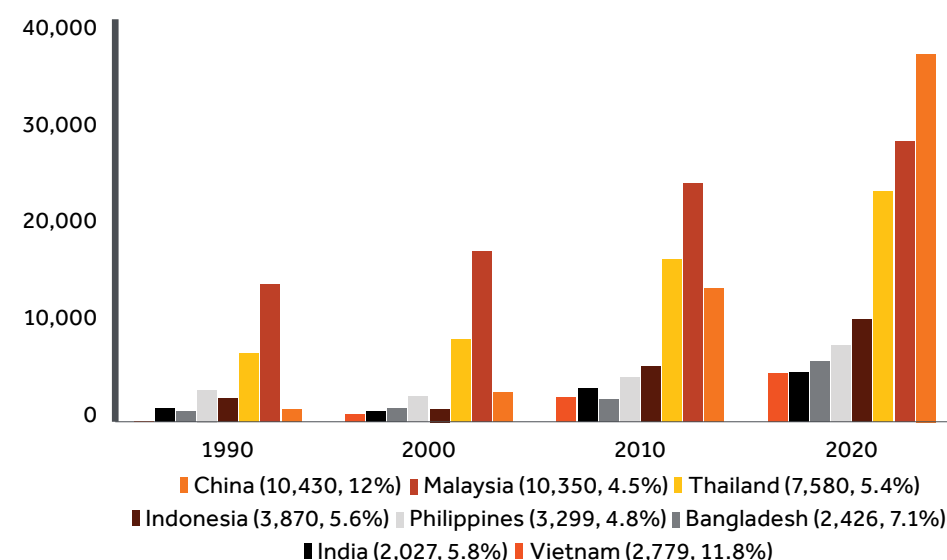
China’s current capital stock per capita equivalent in real terms to:

- USA 1943
- Japan 1971
- Taiwan 1993
- Korea 1993



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

## EXHIBIT 3: US\$ CAPITAL STOCK PER CAPITA, 2020 PRICES<sup>1</sup>



1. Country (GDP per capita USD 2020, 1990-2020 CAGR)

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

# ASIA: CATALYSING GROWTH



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**The case for developing Asia lagging far behind in terms of capital stock per capita is quite clear and the need for investment in these physical assets very immediate. Governments in the region realise the same and also believe that investment in infrastructure is the best way to get back to growth in a post-pandemic world.**

Evidence of the same can be seen from the fact that many Asian countries such as India, Bangladesh, Vietnam, Philippines, Indonesia etc have accelerated the push for investment in infrastructure, facilitated by ambitious national infrastructure plans, policy measures, and increased opportunities for private sector participation. These countries are strongly committed to developing and upgrading infrastructure facilities and to making infrastructure development a centre-stage effort to support sustainable post-pandemic recovery.

**MANY ASIAN COUNTRIES HAVE ACCELERATED THE PUSH FOR INVESTMENT IN INFRASTRUCTURE, FACILITATED BY AMBITIOUS NATIONAL INFRASTRUCTURE PLANS, POLICY MEASURES, AND INCREASED OPPORTUNITIES FOR PRIVATE SECTOR PARTICIPATION**

## India

India has come up with an Infrastructure Vision 2025 under which it has launched the National Infrastructure Pipeline (NIP) to invest US\$1.5tn across fiscal year 2020-25. The Government has also launched a 4-year

National Monetization Pipeline to raise US\$80bn private capital by transferring revenue rights of brownfield projects to the private sector. A clear framework, ready list of core assets, and new products like real estate investment trusts (REITs) and infrastructure investment trusts (InvITs) to boost private participation through tax optimised structures are the cornerstones for making this successful.

## South East Asia

Indonesia has plans to spend US\$429bn on infrastructure in 2020-2024, an increase of 20% from the US\$359bn spent in 2015-19 period. Some of the major projects that are being built include the US\$34bn Trans-Sumatra Toll Road, and the US\$6bn Jakarta-Bandung high speed rail link. The Philippines is promoting a “build, build, build” programme to upgrade the country’s infrastructure facilities and Thailand has earmarked US\$33bn for public-private partnerships (PPPs) during 2020-27, which consists of 92 projects of which 18 are high priority infrastructure plans.

The infrastructure investment need has been estimated at US\$24bn annually until 2040. The electricity sector in Vietnam aims to double its current capacity of 68GW to 135GW by 2030 spending around \$100bn mostly in renewable and gas projects. Transportation is getting a major push as well with major projects such as the c.US\$50bn in high-speed north-south rail link and US\$13bn in eight rail lines in Hanoi and Ho Chi Minh City.

## Sustainable infrastructure

A key catalyst that is leading to the need for new forms of infrastructure creation and sustainable infrastructure creation, is the opportunity and obligation that Asia has to move towards energy transition and



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a Net Zero future. India has already made rapid strides towards this as it is close to achieving its 175GW renewable energy target of 2022 and is now on the path to achieve 450GW by 2030.

In contrast, the Southeast Asia region has lagged behind in adoption of renewable power. However, there is renewed recognition of the untapped potential of Southeast Asia’s natural capital. Reshaping the current ecosystem from resource extraction to electrification is one of the largest challenges Asia-Pacific (APAC) has ever faced. Immediate opportunities lean toward driving energy efficiency and renewables, scaled by grid modernisation and electrification, and on the horizon, rethinking transport, emerging carbon capture technologies and hydrogen innovations.

## Digital infrastructure

Underpinned by the massive growth in data consumption, the pandemic is also accelerating investment in digital infrastructure. APAC is leading this growth in data consumption and is expected, according to PwC’s Strategy&, to record c. 21% growth per annum during 2020-24, resulting in the gap between APAC and Europe in terms of per capita data consumption to dwindle.

Within APAC digital infrastructure, data centres have garnered huge supply side infrastructure investments – c. US\$56bn+ in 2020 according to Strategy&, and higher than Europe. India’s government has laid emphasis on digital infrastructure with specific focus on data centres and fixed/mobile broadband networks. For the first time the major cloud providers are building their own greenfield locations in developing APAC locations and reducing the reliance on the top five to six metros of Singapore, Tokyo, Beijing, Shanghai, Sydney etc.

### Infrastructure investment

While the need for new and sustainable infrastructure investments is immediate, the pandemic has dealt a heavy blow to government budgets. As a result, governments around the region are focused on turning infrastructure projects into an asset class that can attract an increasingly diverse range of institutional investors.

## GOVERNMENTS ARE FOCUSED ON TURNING INFRASTRUCTURE PROJECTS INTO AN ASSET CLASS THAT CAN ATTRACT AN INCREASINGLY DIVERSE RANGE OF INVESTORS

Liquidity issues and fiscal pressures are leading the governments to realise value from the existing operational infrastructure assets with cashflow. While this asset recycling and monetisation would help governments to raise funds, which are expected to be ploughed back to pay for new infrastructure, the same is still not going to be enough for the additional infrastructure funding requirement for APAC (US\$1.7tn annually by 2030 as per Asian Development Bank), thus governments are focusing on opening or widening avenues for ever more private sector participation. This is resulting in increasing emergence of PPP opportunities across India and South East Asian Nation countries.

Evidence also suggests that, in general, the private sector can effectively and efficiently finance, construct, operate and maintain infrastructure assets. Therefore, in the post-COVID-19 world, private investment in infrastructure is expected to become even more relevant and useful.

**For their part, investors also remain extremely bullish over the long-term fundamentals of the APAC infrastructure sector with investors focusing on new financing routes, enhanced partnership models and changing risk mitigation strategies with sustainability at the core.**





# INDIA: ACHIEVING GROWTH



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**Investment in energy and infrastructure underpins India's ability to achieve its ambitious growth targets. India has proposed two critical reforms, the National Infrastructure Pipeline ('NIP'), which targets a total capital outlay of US\$1.5tn in greenfield infrastructure projects by 2025, and the 4-year National Monetisation Pipeline ('NMP'), which plans to raise US\$80bn through divestment/monetisation of brownfield/operating assets. Success of India's infrastructure plan is dependent on synergies achieved in implementing these reforms. This has been reiterated by the Finance Minister in February 2022's budget announcement, where there has been a significant focus to drive capex and augment infrastructure spend in the country.**

The National Infrastructure Pipeline was drafted with the vision of raising quality of life and ease of living in India to global standards. Creating new and upgrading existing infrastructure is critical in achieving this vision. The plan targets 12 infrastructure themes with energy and roads at the helm, contributing 42% of total investment.

Within Energy, investment in renewable energy accounts for a significant portion amounting to US\$12bn (Fiscal Year (FY) 2020-2025), with a target of tripling from to 450GW by FY 2030.

Private participation has played a significant role in achieving growth in renewable energy in India. It has been one of the preferred sub-sectors within infrastructure for foreign investors, primarily due to (1) a stable regulatory framework (2) shorter project timelines to commissioning (3) a robust payment security mechanism (4) long contracted concessions and (5) a strong alignment towards global sustainability thesis.

Developing a cohesive investment environment is critical to attract financing for India to achieve its Net Zero status by 2070. Further, growth in renewables should also be backed by development of

a strong energy storage system, including battery energy storage systems, pumped hydro energy storage system to integrate large volumes of renewables. The Central Electricity Authority (CEA) has already begun the process of creating a framework to enable participation of energy storage and demand response in ancillary services to balance the grid.

## PRIVATE PARTICIPATION HAS PLAYED A SIGNIFICANT ROLE IN ACHIEVING GROWTH IN RENEWABLE ENERGY IN INDIA

While India has the second largest road network globally, there is a need to improve connectivity and augment capacities of existing roads to support the country's growing economy. Roads account for a dominant share of modal transport and India scores only a moderate 76% on the World Economic Forum's Road Connectivity Index, that measures average speed and connectivity of major cities in the country.

Further, India has the highest percentage of deaths in road accidents, making it imperative to enhance infrastructure and strengthen road safety. To drive this, as a part of NIP, the Government has identified greenfield investments of up to c.US\$270bn towards enhancing road infrastructure in India. While bulk of financing under NIP is expected to come from a mix of state's budgetary support, financial institutions and external aid, c.10-15% is expected to be mobilised through monetisation of operating assets.

Next to renewable energy, roads has been the other sub-sector within infrastructure with evolved public-private partnership (PPP) models. While foreign investor participation in greenfield investments has been subdued, operating road assets have witnessed significant investor interest. Enhanced investor interest stems from (1)



strong sector fundamentals (2) a stable regulatory framework (3) long term concessions with predictable cashflows (4) a large opportunity size (5) the fit with a sustainability thesis of improving road safety.

To cash in on the investor interest in operating roads assets, the National Highways Authority of India (NHAI) has identified a pipeline of US\$21bn of operating road assets as part of NMP. The identified assets will be monetised by the NHAI either under the Toll Operate Transfer (ToT) model, where operating assets with significant tolling history are bid out, or through an InvIT. The ToT model has been a reasonable success for NHAI over the last three years, with significant participation from foreign investors, and has formed the basis of monetisation plan.

While the fundamental traits of infrastructure projects in India provide stability and make them extremely attractive for foreign investors, other key aspects which influence investor sentiments include the depth of the project finance market; and impact of inflation on returns.

## ROADS HAVE BEEN THE OTHER SUB-SECTOR WITHIN INFRASTRUCTURE WITH EVOLVED PUBLIC-PRIVATE PARTNERSHIP MODELS

The project finance market in infrastructure is dominated by banks. Government is establishing focussed Development Finance Institutions (DFIs) to drive further lending to the sector. DFIs are expected to commence lending in the April - June 2022 quarter with a total targeted disbursement of US\$13bn in FY2023. In parallel the corporate bond market is evolving with green and sustainable financing gaining prominence. In January 2022, Indian companies raised US\$6bn

by selling offshore bonds, showing high investor confidence in the country. It is also important that long-term resources from the pension and insurance sectors can fund the infrastructure bond market, thereby reducing currency risk. Over the next five years, significant financial reforms are expected to revitalise infrastructure lending and tap various financing avenues.

On inflation we expect that CPI will settle around the higher end of the Government's target range of 2-6%. The impact of higher inflation differs between operators and developers. Operators can benefit from inflation through higher rent/toll growth and utilisation levels as users seek efficiencies. In such cases, the risk of accelerated expense growth is primarily mitigated through contractual adjustments/expense pass-through and higher replacement costs. Developers though face increased costs due to inflation in commodities, energy and increases in interest rates. Thus, it becomes increasingly important to follow a disciplined approach in new project acquisitions with prudent assumptions regarding input prices and interest rates and to build contractual safeguards, wherever available, on both revenue and cost-side for hedging against inflation risk. Investors with deep operational and financing expertise will navigate these challenges better. In the medium to long-run, negative impact of inflation on developers may be cushioned by increase in pricing for new projects supported by strong demand and favourable demographics in the Indian economy.

**Actis with its on the ground presence and deep sector expertise is well-positioned to capture this growing opportunity. With the Energy fund focusing on tapping the growing opportunity in renewables, the Long-Life Infrastructure fund is well-positioned to take advantage of the growing pipeline of operating projects in both energy and broader infrastructure sectors. The investment thesis in India is further strengthened with the Indian economy providing an increasingly solid and stable macro environment with strong focus on growth.**



Ostro wind turbine

# COMPANY VOICES: AN PHAT HOLDINGS, VIETNAM



**DINH XUAN CUONG (HENRY DINH)**  
Vice Chairman, CEO, An Phat Holdings



**DAVID TRAN**  
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**An Phat Holdings is the Vietnamese leading company in the field of advanced technology and environment-friendly plastic production in Southeast Asia. Since 2018, An Phat Holdings has decided to expand its industrial real estate business and invested in An Phat High-tech industrial Park (An Phat Complex) in Hai Duong city. In 2021, An Phat 1 Industrial Park was the next project of An Phat Holdings and has also been expected to follow the success of An Phat Complex. Both projects are promoted as high-tech green industrial parks providing sustainable and multi-functional real estate as well as developing fully accompanying services to become the ideal destination of both domestic and foreign businesses.**



**David Tran: What are the key drivers of demand for industrial and logistics properties in Vietnam and how are they affected by the COVID-19 pandemic?**



**Henry Dinh:** Vietnam's real estate business along with the export growth trend has been attracting a large amount of foreign direct investment (FDI). In addition, the impact of changes in government policies (including attracting high-value industries with skilled labour in key economic regions) will bring many further opportunities.

There are also incentives such as the removal of trade barriers, the unification of customs procedures and trade remedies, and the EU-Vietnam Free Trade Agreement (EVFTA) which have opened more opportunities for foreign investors, promoting high-tech transfers and FDI flows. In fact, EVFTA encourages shifting production from China to Vietnam which boosts demand for factories and warehouses.



**Henry:** In the past two years, although the outbreak of COVID-19 has severely affected the economy and the market, industrial real estate prices have continued to rise significantly. And, Vietnam continues to successfully attract FDI thanks to attractive warehouse, factory and labour rental costs.



**David: What differentiates An Phat Holdings from other developers in the industrial and logistics property segment?**



**Henry:** The biggest difference in our strategy is that we do not define land leasing as the main growth target, but focus on developing accompanying services and solutions for businesses. An Phat Complex is oriented to focus on building and forming high-tech green industrial park complexes, developing outstanding advantages with one-stop-services accompanied by many facilities: price stability, support and provide financial solutions, human resources, administrative procedures, customs procedures, and logistics, etc. These comparative advantages have led An Phat Holdings to become the attractive choice for many foreign investors when setting up a factory in Vietnam.

With the goal of leading to sustainable development and creating a high-tech green ecosystem as the top priority, An Phat Complex is committed to implementing regulations on environmental protection, wastewater treatment as well as fire and explosion prevention according to the Vietnamese Regulations. Furthermore, we highly encourage investment promotion and find partners, enterprises who will participate in "clean" production activities, use resources efficiently as well as develop

the cooperation relationship to increase economic, environmental, and social efficiency.



**David: What does sustainable development mean to you in the context of An Phat 1 industrial park and what impacts on the local community will the project deliver?**



**Henry:** With the success of An Phat Complex industrial park, in 2021, An Phat Holdings and Actis signed a cooperation agreement in which Actis invested more than US\$20m in a new project named An Phat 1 Industrial Park in Hai Duong Province.

Taking sustainable development as a guideline, the An Phat 1 project is also promoted as a high-level model of technical & green industrial park, attracts investment in the fields of high technology, of manufacturing environmentally friendly and electronic products, computers and optical products, etc... An Phat 1 Industrial Park offers remarkable advantages for investors with one-stop-services, further expand accompanying services and develop multi-functions.

The high-tech industrial park is designed not only to benefit business activities but also distribute to the local community. An Phat 1 will create job opportunities for about 12,000 local employees. Moreover, An Phat 1 expects to plan the land fund for workers' housing in industrial zones. In addition, we also propose many incentives for investors in implementing social housing projects such as exemption of land use fees; exemption and reduction of VAT and CIT; preferential credit loans; and support to invest in the construction of technical infrastructure.



**David:** What do you see as the biggest opportunities and risks to growth in 2022? How do you manage these risks?



**Henry:** In 2022, I believe industrial real estate will continue to see strong demand as COVID-19 comes under control. The shift of production from China as well as a series of FTA create many opportunities to attract large companies and corporations from Europe, Japan, and Korea into Vietnam. This will drive the economy and the industrial real estate market, increase the need for industrial real estate, attract not only domestic demand but also foreign customers.

However, the biggest challenge is how to attract investment in modern, environmentally friendly projects, use resources effectively and develop multi-functional industrial zones. Therefore, An Phat Holdings intends to promote the development of projects into high-tech and green industrial infrastructure,

building a self-contained ecosystem, and strengthening linkages between localities, constantly developing services associated with many mechanisms and policies to create attractiveness for businesses and attract investors.



**David:** What are your most valuable “lessons learned” to-date and how will this inform your growth strategy going forward?



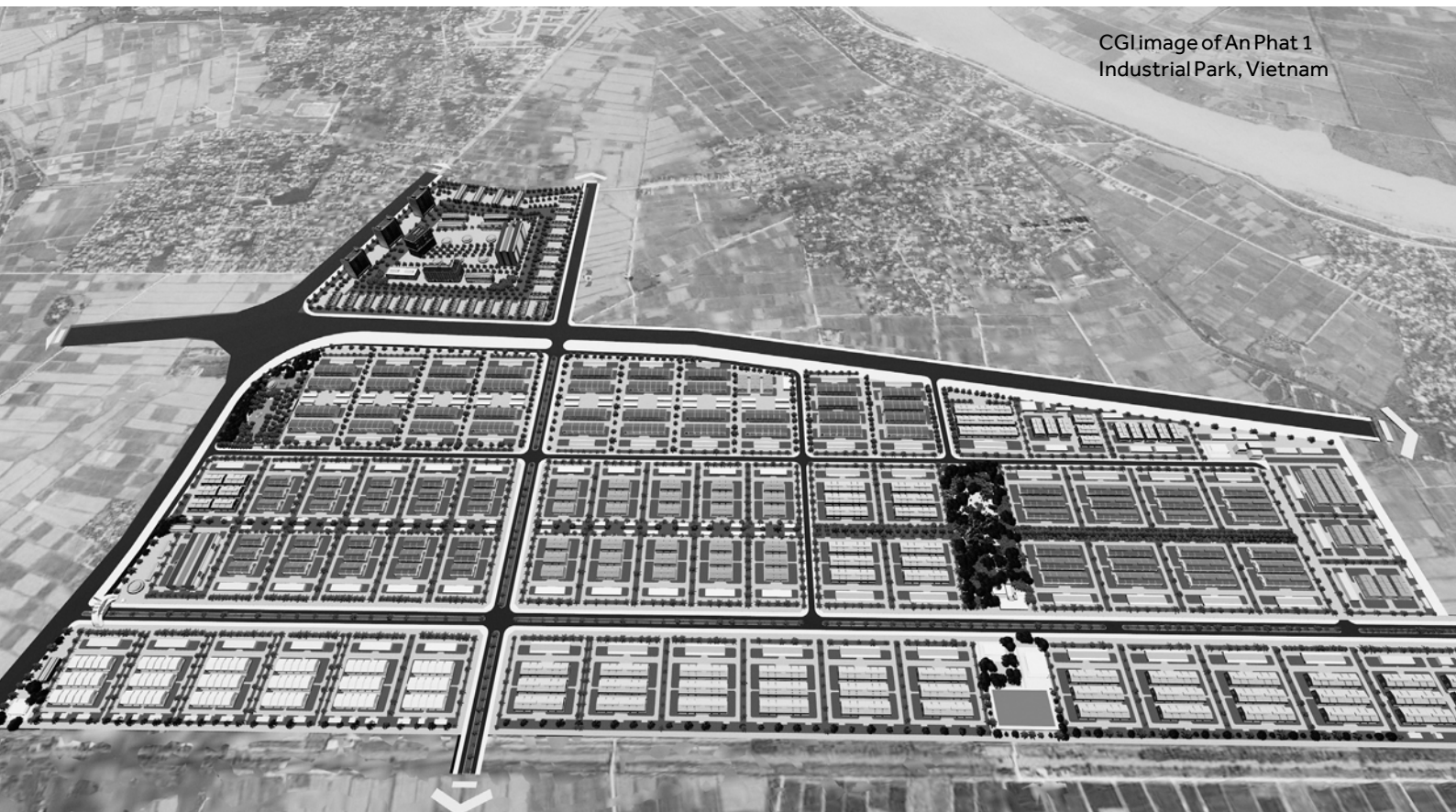
**Henry:** Firstly, focusing on attracting investment in infrastructure, developing and completing infrastructure to attract domestic and foreign investors. Therefore, our orientation is to own high-tech, green and multi-functional industrial parks, focusing on environmentally friendly fields.

Secondly, developing accompanying services and optimising logistics services. This will bring added value, enhance the position of industrial real estate, and attract prestigious customers and partners.

Thirdly, supporting investors through connecting supply partners in industrial zones, helping companies to reduce their dependence on importing raw materials from abroad and lower the risk of global supply chain disruptions.

Fourthly, in terms of human resources and recruitment, we will associate with vocational colleges to train high-quality skilled workers.

Finally, close cooperation with the locality continues to develop and improve policies to attract foreign trade investment and strengthen linkages with domestic and foreign enterprises.



CGI image of An Phat 1 Industrial Park, Vietnam

# COMPANY VOICES: SPRNG ENERGY, INDIA



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**Sprng Energy is a renewable energy platform in India. Its vision is to build a best-in-class clean energy platform, which delivers superior stakeholder value in a sustainable and ethical manner while simultaneously scaling new benchmarks of Environmental Governance.**



**Sanjiv Aggarwal: What are the factors that are driving the demand for clean energy in India and how is the transfer across to renewables going to be achieved?**



**Gaurav Sood:** The target being set by the government is 450 GW of renewable energy by 2030 and carbon neutral by 2070. It's very clear we have a strong political will as we are shifting from fossil fuels in a very significant manner. All the new infrastructure in the country is primarily renewable and the electrification of the transportation sector is also a big contributor. All these things together will move us towards the carbon neutral targets.



**Sanjiv: How has COVID-19 impacted power demand and what are the operational issues you have faced at Sprng Energy?**



**Gaurav:** When it came to our operations, lockdown impacted us in a major way. Labour, logistics and supply chains were not available. Projects were delayed but the government gave us extensions. In terms of operational projects, we faced challenges with module cleaning but we made significant changes over the second wave of COVID-19 and things have been going well since then.



**Sanjiv: What are the growth challenges you see for Sprng Energy in 2022?**



**Gaurav:** The government has made a very strong push on relying on domestic manufacturing. There will be a learning curve for both suppliers and power producers to start working together to build world class panels in India. As the power demand increases, it's vital that the projects move ahead on schedule and regulatory issues are addressed on time, so that the sector can move forward.



**Sanjiv: How do you ensure operational excellence at Sprng Energy?**



**Gaurav:** The most important factors that contribute are to build projects within budget and on time. We operate in a very integrated manner to ensure that everyone, across functions, contributes to deliver the best possible results. During the operational phase, there is a lot of focus on digitisation and analytics to ensure the highest efficiency and availability of our plants and to generate the maximum revenue we can.



**Sanjiv: What have been your key learnings and how are you applying these as you take Sprng Energy into the next phase of its growth?**



**Gaurav:** We have learnt that we must be patient. There are often regulatory uncertainties which take time to get sorted out. Also, as we build this infrastructure on sensitive land, we become part of the community. So having a very strong ESG focus is important for sustainable development. We are proud of the impact our developments have had across these communities.



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**HAVING A VERY STRONG ESG FOCUS IS IMPORTANT FOR OUR SUSTAINABLE DEVELOPMENT**



**Sanjiv: Which is your personal favourite of Sprng Energy's community engagement projects?**



**Gaurav:** For our Rewa project, a thorough needs assessment showed that women in the community were unable to be productively employed. We formed self-help groups and trained them with vocational skills, such as tailoring. This allowed them to set up their own enterprises and are now generating income for their families and revenue for their communities.



Spring Energy wind farm in Gujarat,  
India



Mbayenne marketplace, which was rebuilt as part of Lekela's community investment programme

Regional Focus:

# MIDDLE EAST AND AFRICA

# MIDDLE EAST AND AFRICA: THE POWER OF PARTNERSHIP



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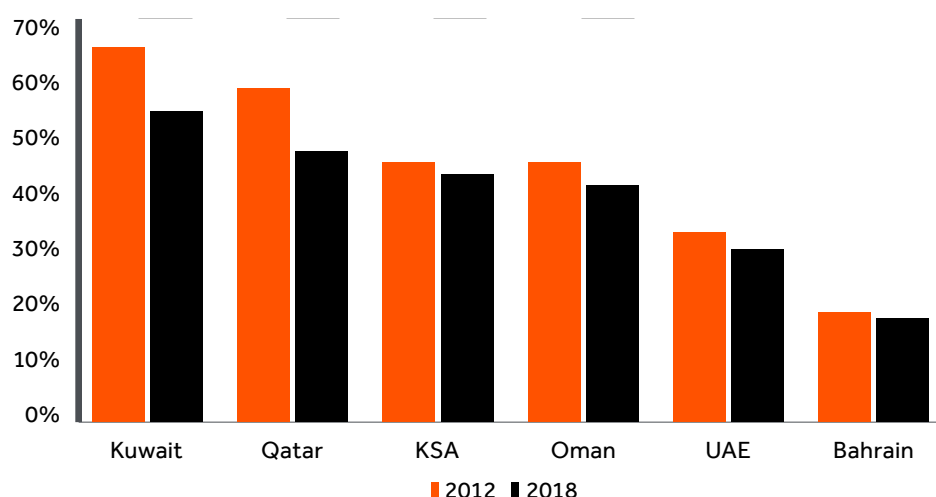
**In the Middle East, infrastructure investment is a race to diversify away from oil and gas-driven economies. In Africa, infrastructure investment is a contest to keep up with population growth and the widening infrastructure gap. In both, the state is the key determinant of success, setting the rules of the game, deciding who participates, refereeing along the way and championing the results. Understanding these race dynamics through deep local networks is critical in targeting profitable and resilient infrastructure investments.**

## Middle East: Diversification-driven Infrastructure

The Middle East economic diversification effort has a new tailwind: the energy transition may reduce global demand for hydrocarbons well before the region's resources are depleted.

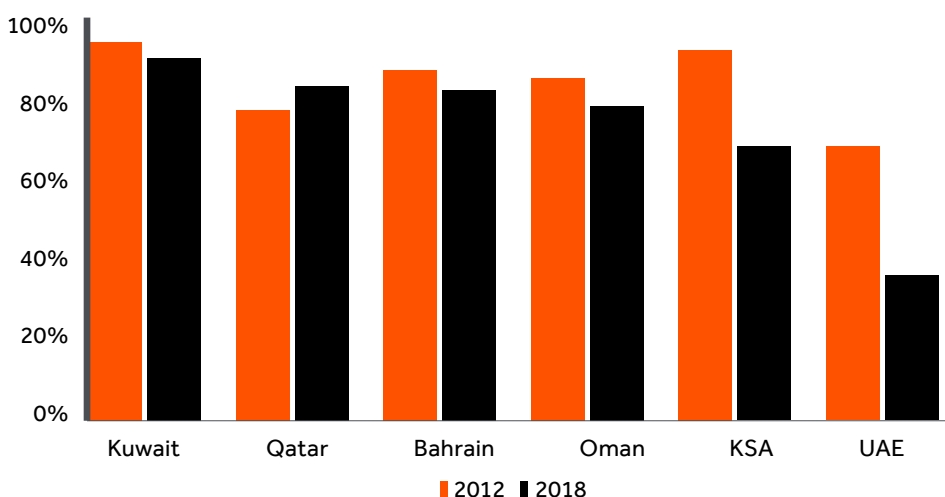
All GCC (Gulf Corporation Council) countries have long stated their focus on diversifying their economies away from natural resources, yet progress over the past decade has been modest. Oil and gas production still hovers around 40% of GDP for the region. This underestimates the economic impact of the percent of state revenues fuelled by oil and gas (70% for the region) that drive other sectors of the economy such as construction. Even countries with lower resource bases, such as UAE and Bahrain, still rely on oil and gas through transfers and spending from neighbours. UAE has made the most progress in diversification.

EXHIBIT 1: HYDROCARBON SECTOR (SHARE OF GDP)



Source: The Brookings Doha Center *Economic Diversification in the Gulf, Jan 2021*, citing World Bank Group "Economic Diversification for a Sustainable and Resilient GCC", Gulf Economic Update, Issue 5, December 2019

EXHIBIT 2: HYDROCARBON REVENUES (SHARE OF TOTAL REVENUES)



Source: The Brookings Doha Center *Economic Diversification in the Gulf, Jan 2021*, citing World Bank Group "Economic Diversification for a Sustainable and Resilient GCC", Gulf Economic Update, Issue 5, December 2019

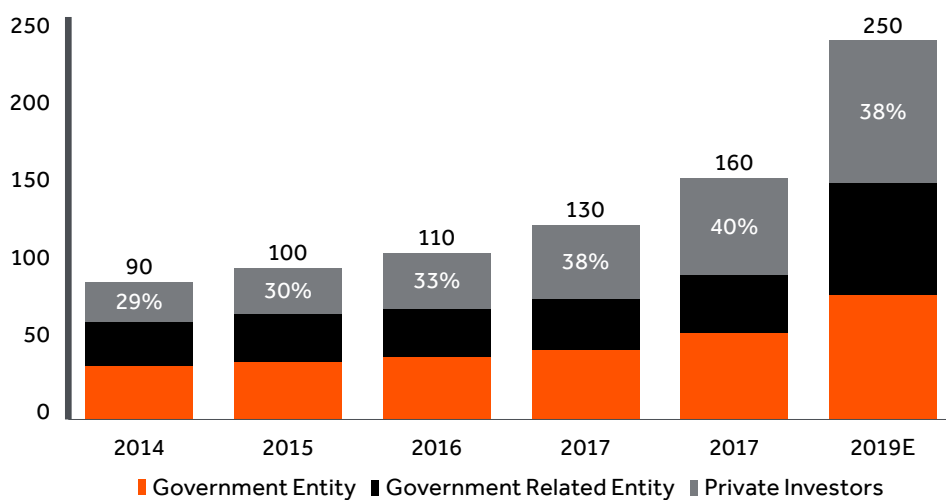


What is needed to achieve that true diversification is both policy change and infrastructure investment. This includes lifting lingering politically driven trade policies, and regulatory reform to allow more private sector participation into traditionally state-controlled sectors. In order to capture more of the cloud spending trend, a sector growing at 25% Compound Annual Growth Rate (CAGR) across the (GCC) countries, Qatar and Bahrain recently passed legislation to open up data traffic into and out of the country, allowing for data centre construction to service foreign markets. In the power sector we see some- and would like to see stronger-open access for private generators of power to be able to wheel power directly to end consumers and to offer commercial and industrial suppliers of power access to net metering, e.g. to sell excess power to the grid. Continued unbundling of the power sector could unlock significant flows of foreign direct investment (FDI) into the region into sectors that diversify the economies.

## ENGAGEMENT WITH THE PRIVATE SECTOR WILL UNLOCK THE CAPITAL, ESPECIALLY ENERGY AND TRANSPORT

True diversification also includes physical regional integration such as cross border road connections and transmission lines to export the Middle East's other natural resource, solar power, and new technologies including hydrogen. Transmission connecting countries in the region to each other, and then onwards to Europe, are in construction or planning stages, such as the 900km \$1.6bn Saudi to Egypt line. This market development will support the goal that Saudi Arabia announced at the end of 2021: to spend roughly \$100bn on renewable energy and \$115bn on transmission by 2030, in order to reach its stated goal of Net Zero by 2060, and provide significant investment opportunity across the value chain.

EXHIBIT 3: WHO IS EXPECTED TO INVEST HOW MUCH?  
Breakdown of infrastructure investment by type of investor (\$ Billion)



1. Government-related entities include sovereign wealth funds, development funds, and government-owned companies)
2. Private investor participation includes captive funding of infrastructure by corporates (e.g. utility operator funding the development of a power plant, private healthcare providers funding the development of a privately-owned clinic/ hospital etc.). Third party investment is also included as part of the contribution of private investors. However, this is currently marginal relative to contribution of captive private investors.

Source: Oliver Wyman Private Investment is Key to Unlocking Long-Term Capital for Gulf Infrastructure, 2019, MEED Projects as a March 2019 & Preqin. Copyright © 2019, Oliver Wyman

The region's infrastructure investment requirements to meet these demands will not be funded from government entities alone, and as per the chart below, the role of the private sector has been increasing and is expected to increase both in scale and percentage going forward.

### Enabling Africa

The impetus for sustainable economic development in Africa is heightening. Population is projected to almost double from 1.4 billion to 2.5 billion by 2050 and rapid urbanisation – African cities will account for 39% of the world's urban growth – are critical drivers. They put further pressure on the need to close the infrastructure gap, optimise growth potential, boost productivity and create jobs for its teeming population. Weak

infrastructure shows in high production costs whilst competitiveness issues are reflected in low power provision – about 40% of the population has access to power. A lack of effective transport infrastructure to support cost effective distribution of goods and services also hurts.

Pre-pandemic, Africa's 10-year average GDP growth of 3.9% was slightly higher than the global average of 3.7%. However, its per capita growth for the same period trailed significantly at 1.2% compared to 2.5% for the global average. Africa already accounts for 75% of the World's poor – living on below \$2 per day. This will grow if the infrastructure challenge is not addressed.

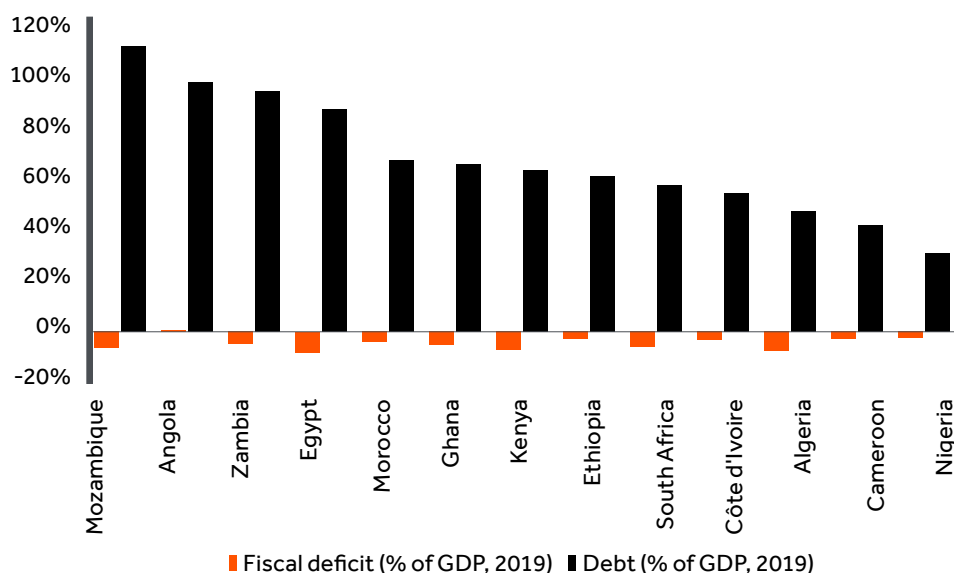
The COVID-19 pandemic has exacerbated the already strained capacity of African governments to fund key infrastructure, worsening their stressed fiscal positions with rising debt levels and widening deficits. Exhibit 4 indicates the position pre-pandemic of debt-to-GDP ratios (%) which was already quite tenuous with minimal borrowing capacity and fiscal deficit (%) already exceeding 3% by most countries. The debt-to-GDP ratio is estimated by UNECA to have increased by 10% post pandemic. State-owned enterprises have been similarly hit, most notably Eskom the integrated power utility in South Africa.

African governments remain the largest investors in its infrastructure; funding 39% on average between 2015 and 2018 in Exhibit 5. The other main investors are multilateral agencies at 24% and China at 22% the largest single bi-lateral investor to African infrastructure. Private sector funded only 7%. Chinese appetite for African investment is waning. Following the continent's debt strain and a number of defaults, President Xi announced in November 2021 that China will reduce its funding to Africa by 30% and move away from largescale infrastructure and into SMEs and other smaller scale investments. COVID-19 has also resulted in lower appetite of the private sector to invest in Africa due to the rising uncertainty arising from lower commodity prices - though this has abated, worsening fiscal deficits of the governments and the sustainability of the rising debt remains a concern. The chances of Africa reaching the annual need for \$150bn of infrastructure spend are receding barring material change in incentive structures.

## AFRICAN GOVERNMENTS NEED TO DEEPEN ENGAGEMENT WITH THE PRIVATE SECTOR TO PROVIDE AN ENABLING ENVIRONMENT TO INVEST

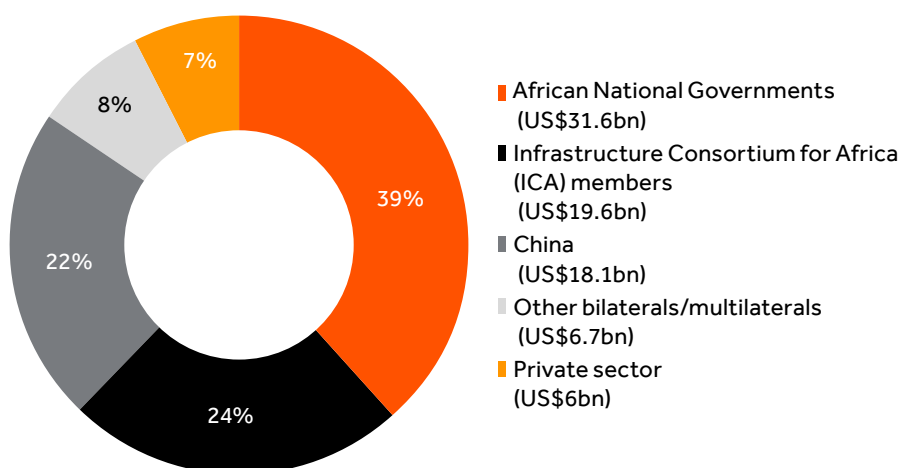
African governments need to deepen engagement with the private sector to provide an enabling environment to invest. Another major identified constraint to investment in African infrastructure has been the dearth of bankable projects – only

EXHIBIT 4: DEBT AND FISCAL DEFICIT AS A SHARE (%) OF GDP (2019) FOR SELECT AFRICAN COUNTRIES



Source: African Development Bank Group *Africa Economic Brief Infrastructure Investment and the COVID-19 pandemic in Sub-Saharan Africa – Volume 12, Issue 6, Sept 2021*, UNECA data (2020)

EXHIBIT 5: INFRASTRUCTURE FINANCING IN AFRICA, BY SOURCE, 2015-2018 AVERAGE (US\$BN)



Source: OECD, *Improving Public Finance, Boosting Infrastructure, 2021*, citing ICA, 2018 (23), *Infrastructure Finance Trends in Africa: 2018*

20% of projects move past prefeasibility and only 10% to financial close. Engagement with the private sector on the required risk mitigants and guarantees should help unlock capital for projects, especially in energy and transport sectors that are deemed commercially viable and could be funded exclusively by the private sector with appropriate political risk mitigants and revenue guarantees. This will allow governments to fund the infrastructure sectors, such as waste and

water, that are less commercially viable though just as critical to the overall wellbeing of its populace.

Political will and focus are key to driving infrastructure investment. In 2014 President Macky Sall of Senegal announced the Plan Emergent Senegal, a medium term \$20bn investment plan to stimulate growth. Ambitious investment conferences and headline-grabbing proclamations of stretch goals are quite common on the continent,

however President Sall's executive focus and systematic removal of roadblocks to infrastructure projects has been unique and critical for success of the program. The Plan and its progress is tabled regularly at Cabinet meetings for review. He set up an office to oversee the plan, with leaders who could pick up the phone to Ministers and discuss issues on strategic projects, including airports, trains, roads, ports and power plants, cutting through the inefficiencies that often lead to the slow demise of nascent infrastructure projects. When Actis portfolio company Lekela was finalising the development of the Taiba N'Diaye wind project, one of the power projects identified as a priority under the Plan, this office and the clear political focus on the Plan was instrumental and was an attractive reason the company invested in the first place.

Though a smaller economy, Rwanda has similarly taken bold steps to increase public investment in infrastructure, spending more than its East African neighbours at 13% of GDP on average the past five years. More is needed, but as Rwanda is finding, similar to many African nations, that it cannot finance further from public funds and hence needs to move beyond the slow-moving public-private partnership (PPP) model to a purely private sector model to facilitate greater FDI into infrastructure, specifically power and social housing. Rwanda is indicative of its region: while Eastern Africa has 36% of Africa's population, only 20% of the continent's infrastructure spend occurs here, and with sovereign, bilateral and multilateral investments unlikely to increase, the gap must be met by the private sector. It is the government's role to facilitate this.

**Across Middle East and African countries whilst scale, drivers, investors and policies range, the threads are the same: infrastructure needs are growing, and state balance sheets are stretched and hence private sector investment in infrastructure is sought. Governments and policy-makers will drive the direction and opportunities, and hence investors need local presence and intelligence to choose wisely and opportunistically.**



Heritage Place, Nigeria

# COMPANY VOICES: LEKELA, PAN AFRICA



**CHRIS ANTONOPOULOS**  
CEO, Lekela



**LUCY HEINTZ**  
Head of Energy Infrastructure, Actis, London  
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**Lekela is a renewable power regeneration company. It delivers utility-scale projects, which supply much-needed clean energy to communities across Africa and focuses on creating long-term value and a positive impact on the communities where it operates.**



**Lucy Heintz: What effect do you think the global pandemic has had on the demand in your region?**



**Chris Antonopoulos:** There was very little effect - it was more a switch from industrial to home usage. Our operating assets were not affected by any significant shut down demand.



**Lucy: What is the current and future demand for clean energy in your region?**



**Chris:** It is dramatically growing. In Africa, the mix of renewable energy is only a few percent. Most governments across the continent have targets within the next five years between 20% to 30% for renewable power. There is government will to increase renewable energy dramatically and the next five to 10 years will see a significant additional demand. The solar and wind resources in Africa are second to none. As countries in Africa are so well equipped with renewable resources, the costs are relatively low.



**Lucy: What are the key drivers for operational excellence at Lekela?**



**Chris:** There are a few drivers that I feel are very important. Control the construction period. It's important to remain actively engaged. In Africa, even tier one suppliers are there for the first time. They are dealing with local partners for the first time. Be there with the contractor to consult and help them during this period.

When it comes to commercial operation, technology progresses and you need to be on top of this to make improvements. Consult with your engineers to see how these can be implemented. Operational excellence also comes from performing risk management throughout the life of the project.

We are long-term operators and it is important to become partners with local communities. To be perceived as an integral part of that society in a trusted partnership really helps your business.

**IT'S IMPORTANT FOR ANYONE DOING BUSINESS IN AFRICA TO HELP THESE COMMUNITIES IN A SUSTAINABLE WAY, AS A TRUSTED PARTNER**



LISTEN TO PODCAST



**Lucy: What are the key benefits for Lekela being a sustainability leader?**



**Chris:** We are proactive in producing more than just clean energy. In Africa, power is important but it's not the most important thing. Water is critical in the African continent. We have replaced the existing diesel pumps with solar powered pumps, which are not only clean but free. These communities are forever thankful. We have helped with waste management, providing masks and food during the pandemic. It's important to show that you are listening to community needs and that you are proactive in helping to resolve their issues. It's important for anyone doing business in Africa to help these communities in a sustainable way, not just as a supplier but as a trusted partner. As a trusted partner at community, utility and government level, we are better equipped to manage risk, to address issues that come up constructively and to generate long term opportunities for Lekela as an incumbent with track record in the market.

# ACTIS IS A LEADING GLOBAL INVESTOR IN SUSTAINABLE INFRASTRUCTURE



- Actis office
- Countries in which Actis has invested since 1998
- Other Actis target markets since 1998

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