2022 END OF YEAR REFLECTION

THE STREET VIEW

DECEMBER 2022

SUSTAINABILITY

THE BIG INVESTMENT THEMES OF 2022 – AND LOOKING AHEAD TO 2023 AND BEYOND

Mikael Karlsson, Partner, Chief Investment Officer, Actis, Luxembourg

December 13, 2022 | 4 min read

The last 12 months have been turbulent ones, both for the world economy and the global investment climate. The war in Ukraine has sent energy and commodity prices significantly higher, aggravated the post COVID-19 supply-side shock, further disrupted supply chains, and helped lead to a surge in inflation. Central banks' efforts to combat the rise in prices by raising interest rates are already contributing to slowdowns in growth, with recession a prospect in some of the world's most important countries and regions. For investors, this has lead to falls in both equity and bond markets, representing the most challenging investment environment for decades.

AT ACTIS, WE ARE NOT IMMUNE FROM THESE HEADWINDS

However, we have also witnessed trends that continue to impact more positively the sectors in which we are active. Indeed, alongside what are troubling geopolitical and global economic events, other, longer-term momentum drivers in these sectors have been reinforced since the start of the year.

The Energy Transition for example has continued to be a theme, driven by growing concerns around climate change and the need for increased energy security in the wake of the Ukraine war. This has been given added impetus by the fact that renewable energy is now by far the cheapest way of producing power, particularly in the markets in which Actis is active. And the scale of the sums required to ensure a Whole Economy transition means private capital will need to play a significant role in the future. In 2021, Bloomberg NEF calculated that achieving net-zero carbon emissions by 2050 would require as much as $173 trillion in investments in the energy transition. Taken together, these facts have led to an acceleration both in the Energy Transition and in the investment needed to ensure it happens quickly enough.

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IN 2021, BLOOMBERG NEF CALCULATED THAT ACHIEVING NET-ZERO CARBON EMISSIONS BY 2050 WOULD REQUIRE AS MUCH AS $173 TRILLION IN INVESTMENTS IN THE ENERGY TRANSITION.

Meanwhile the transformation to a more digitalised economy – previously given impetus by the pandemic – continues to speed up. This transformation is expected to continue in the years to come, as more parts of the world migrate to 5G mobile phone technology and with the growing use of the Cloud. Alongside this, the inexorable rise of e-commerce has led to increased demand for what Actis calls 'New economy' real estate. These are the real estate assets that support the digital economy, including digital assets themselves, but also the wider ecosystem such as specialised logistics. The digital economy and the rise of e-commerce trends will further increase the need for investment in data centres, fibre cables and communications towers, logistics and warehouses.

In this edition of the Street View, we explore trends over the last 12 months – as well as the outlook for the future – and we look back at highlights from the year.

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THE ENERGY TRANSITION IS THE ‘POSTER-CHILD’ OF SUSTAINABLE INFRASTRUCTURE.

The growth in inflation has, in many ways, made the argument to invest in some of these sectors more compelling. Sustainable infrastructure often has inflation-adjusted revenue streams built into contracts, generating predictable cashflows with compelling risk-adjusted returns. This has added to the sector’s existing attractive attributes, such as the nature of infrastructure as an essential service, defensive sector business models, capital intensity driving deployment of material new capital and strong growth prospects.

The Energy Transition is the ‘poster-child’ of Sustainable infrastructure. Institutional investors remain attracted to the Energy Transition because it is a fast growing investment opportunity thanks to its compelling risk adjusted returns and an investment proposition that is robust in all economic climates. It is indeed an investment opportunity for all seasons.

These trends are reflected in some of the investment decisions we have taken in recent months, as well as in those we continue to take. In energy, we are building a new renewables business in Central and Eastern Europe, which supports both the Energy Transition – it will reduce the region’s dependence on dirty, polluting fossil fuel power plants – and energy security. We are also establishing a business in Japan that will reduce the country’s exposure to imported fuels and make up for the decline in energy output from its nuclear power plants. And we have recently invested in a new market – Dubai – and in a new form of infrastructure – district cooling – that saves 50% of the energy used compared with traditional decentralised air conditioning units. Meanwhile we continue to increase our investment in data centres and new economy real estate, not just in areas like logistics, but in life sciences too, thanks to a new platform in India.

> WE ARE ALSO ESTABLISHING A BUSINESS IN JAPAN THAT WILL REDUCE THE COUNTRY'S EXPOSURE TO IMPORTED FUELS AND MAKE UP FOR THE DECLINE IN ENERGY OUTPUT FROM ITS NUCLEAR POWER PLANTS. AND WE HAVE RECENTLY INVESTED IN A NEW MARKET – DUBAI – AND IN A NEW FORM OF INFRASTRUCTURE – DISTRICT COOLING

Looking ahead, geopolitics will continue to be a concern, not just because of the war in Ukraine but also due to the tension between China and the United States. However, when we shift from thinking about the next year, to instead thinking about the next decade or more, the impetus behind investing in our core themes will only intensify. The Energy Transition will accelerate as we approach the deadline to reach net zero; it is the biggest investment opportunity in our lifetimes. And digital transformation is equally fundamental to the decades beyond. Growing population, the rise of Artificial Intelligence, and the apparently insatiable rise in demand for data will continue to support digital investment trends. Furthermore, these mega-trends coupled with supply chain transformation drive the demand for investments in new economy real estate assets.

Although the international political outlook remains challenging and the investment landscape is uncertain, the themes that we outline above – the Energy Transition, Digitalisation, the large scale adoption of e-commerce with its real assets implications – are only likely to grow. Harnessing private capital to meet the challenges will continue to be vital if the world is to meet its goals.

AUTHORS:

Mikael Karlsson

Partner, Chief Investment Officer, Actis, Luxembourg

SUSTAINABILITY

THE MACRO VIEW

Ewen Cameron Watt, Editor-In-Chief, Macro Forum, Actis, London
Joonas Taras, Investment Principal, Macro, Actis, London

December 13, 2022 | 5 min read

2022 has proved to be a trying year for portfolio investors. Falling stock and bond markets, rising inflation and interest rates and a deteriorating global economic outlook have proven to be gale force headwinds. In US fixed income, we have seen the worst year since 1788, the worst drawdown in real terms since 1931 for a 60-40 US dollar bond equity portfolio, and near $30 trillion of wealth destruction overall. No wonder pessimism and uncertainty abound. And that's before you get to geopolitics.

Inflation and growth prospects and associated policy decisions will dominate the outlook again into 2023.

World growth forecasts continue to fall. The October IMF World Economic Outlook saw 2023 growth reduced to 2.7% from 2.9%. As ever the decimal points don't matter, rather it is the direction of travel. High frequency indicators such as shipping rates, business confidence surveys and commodity prices all point in the same negative direction. Inflation has been particularly stubborn in 2022, necessitating and advancing a tighter policy mix from Central Banks which, in turn, has impacted economic growth and financial market returns.

The Russian invasion of Ukraine was the proximate event that let the inflation genie out of the bag. The supply side shock for energy and commodity markets magnified price pressures that were already running high even before the invasion. Given that energy and food are non-discretionary expenditure items, the impact on Europe has been profound. Even more worryingly the pressure on poorer nations in Africa, South Asia and Latin America has sown the seeds of humanitarian as well as economic tragedy.

These issues have been magnified by the strong US dollar. The US dollar index (DXY) rose by more than 13% through October 2022 year to date hovering around levels last seen in 2002.

Financial policies to curb inflation added to the woes. Cross Border Capital, a London research boutique with whom we partner for FX advice, estimates that as of November 2022, there was no Central Bank easing policy – anywhere. This is unprecedented in this millennium. Cross Border's widely followed Global Liquidity Index hovers around levels only seen half a dozen times in the last 50 years (Exhibit 1). And liquidity matters to markets – a fact that the heavy declines on Wall Street confirm.

$755 billion

invested in the energy transition in 2021

$366 billion

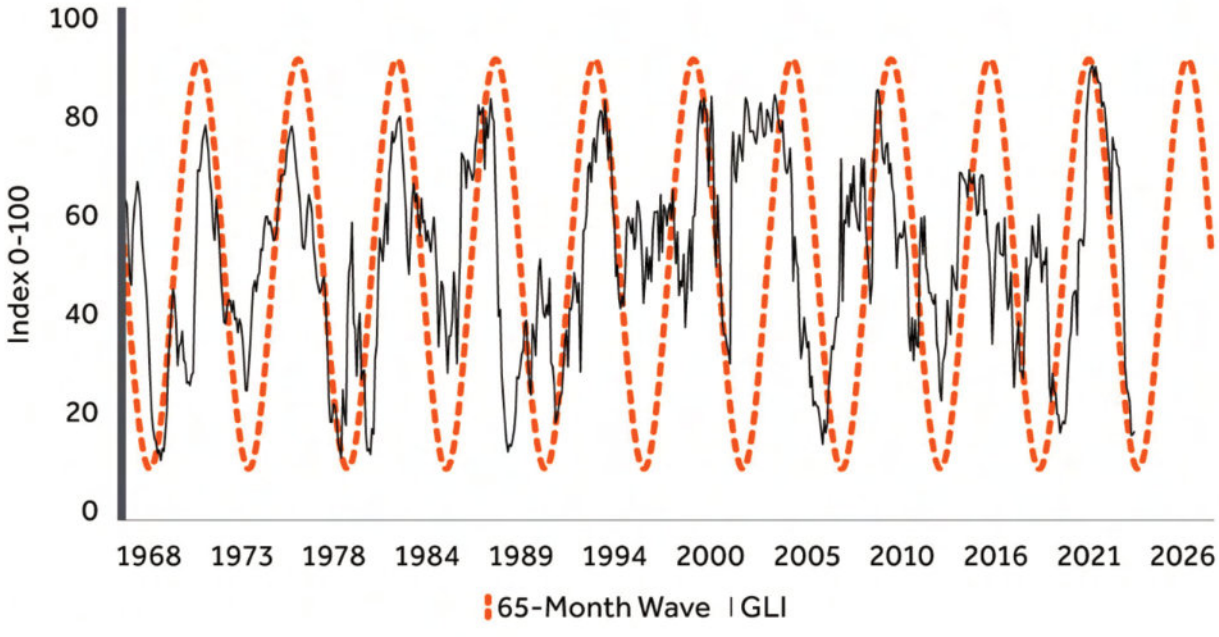
of which was renewables

3.7%

emerging market growth rate

EXHIBIT 1: GLOBAL LIQUIDITY INDEX (GLI), 1968-2022

Monthly, normalised range 0-10



Source: Cross Border Capital, November 2022.

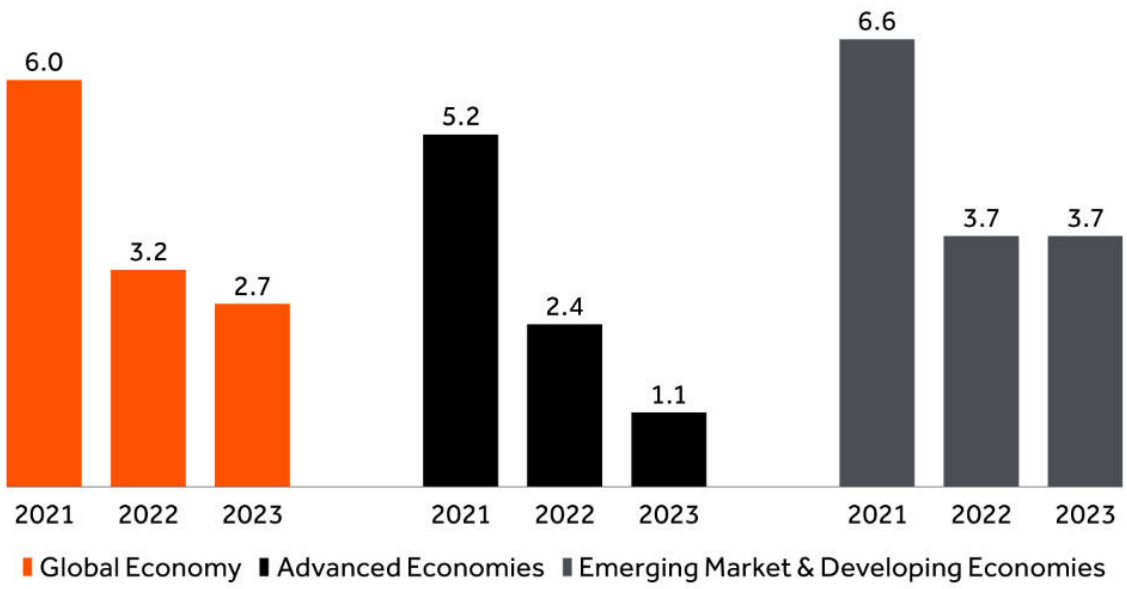
IT IS NOT ALL DOOM-&-GLOOM THOUGH

There is some better news as we turn the page on the calendar and enter 2023. Energy and food prices have come down materially from peaks of June. Slowing growth has brought the oil price back to pre-invasion levels. The World Bank calculates that the same is true for food prices. The Bloomberg Commodity Index -tracking 23 energy, metal and crop future contracts -has declined by 20% from June peaks, albeit it is still up 15% for the year. US monetary growth – running at 25% a year ago – is now around zero. One widely-held expectation looking into 2023, is that inflation may be close to peaking. The dollar- crudely the global price of liquidity given its dominance as the reserve currency – seems to be losing steam as well. Recessions tend to reduce cross border flows into dollars, and Cross Border's projected 20% decline in 2023 US corporate earnings would seem to support the likelihood of lower portfolio flows. Easing prices for commodities and dollar denominated services such as shipping, ease the pressure on non-dollar countries and agents to purchase the greenback for transactional purposes.

Larger Emerging Markets have weathered the 2022 storm rather better than in the past. We are seeing projections of higher 2023 EM growth rates in contrast to Advanced economies, led in part by some post Covid recovery in China. The IMF October forecast for this group has risen to 3.7%, more than two points higher than for Advanced Economies (Exhibit 2). If achieved, the Emerging Markets group would experience its highest growth advantage over advanced economies since 2016. The residual impact of rising oil prices has also helped oil producers in the Gulf. Inflation too appears to be more benign for large Emerging Markets than Advanced Economies, the first time we have seen this phenomenon since 2008. And amidst the carnage for the Euro and Yen precipitated by

a strong dollar, the Brazilian real and Mexican peso have strengthened this year as policy makers early moves got ahead of the curve, in stark contrast to Advanced Economies central banks.

EXHIBIT 2: IMF GLOBAL GROWTH PROJECTIONS



Source: IMF World Economic Outlook, October 2022.

CHINA IS WORTH SOME FOCUS AS WE HEAD INTO 2023

Zero Covid and the real estate crisis have together combined to limit growth this year. Of late, the Chinese authorities have begun to respond on a more co-ordinated and determined basis. The PBOC liquidity injections have effectively eased monetary policy. The property crisis is now being addressed by Central Government rather than cash strapped local authorities, whose revenues depend on land sales. And tellingly, the offshore RMB has drifted down, below policy levels observed consistently since 2015. Whilst we continue to think that Covid restrictions will remain in place until the end of the winter, there seem to be tentative moves to ease policy planned for the next few months. A weaker RMB is mildly deflationary for the world economy adding to the drift down of inflation concerns.

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NEXT YEAR REMAINS EXTREMELY CHALLENGING ON MANY FRONTS BUT WE REMAIN CONFIDENT THAT LONG TERM INFLATION PROTECTED CASH FLOWS, ENERGY TRANSITION AND ENERGY SECURITY AND INFRASTRUCTURE CONTRACTED ON A WIDELY DIVERSIFIED GLOBAL BASE REMAIN ATTRACTIVE.

2023 may bring with it some likely and some more unlikely outcomes. Driven by slowing economies and peaking inflation momentum, looser policy – or more correctly less tight policy- is central to investor outcomes. It is clear in the Developed Markets world that tolerance for unfunded fiscal expansion is waning. Equally it is clear that absent further Quantitative Tightening, ongoing deficits will continue to see supply of long duration government bonds rise. But if the peak in inflation is already factored into the positive 2022 bond-equity correlation, this has the potential to reverse in 2023. Lower geopolitical tensions could help battered investment sentiment. A global recession means that stable cash flows such as those generated by infrastructure investment will remain in demand – this is foreshadowed by the relative outperformance in liquid markets of defensive stocks with low cash flow volatility relative to cyclicals. The Ukraine War means that energy transition and energy security will remain front of mind and funding (a feature we see in our discussions with banks over funding). This is a real development – the IEA's latest World Energy Outlook report from October highlights that targeted renewables adoption, on aggregate, has accelerated because of Ukraine war. And the relative stability of large Emerging Market countries is also attracting attention.

No one will be unhappy to turn their backs on 2022 – a year dominated by headlines on geopolitics and inflation (Exhibit 3). Next year remains extremely challenging on many fronts but we remain confident that long term inflation protected cash flows, energy transition and energy security and infrastructure contracted on a widely diversified global base remain attractive.

EXHIBIT 3: YEAR 2022 – GEOPOLITICS AND INFLATION DOMINATED HEADLINES

Q1

$755bn invested in the energy transition in 2021[1]
$366bn of which was in renewables[1]

COVID WITH SUPPLY DISRUPTIONS
Delta variant spreads globally and China imposes strict lockdowns. Impact on supply chains lingers on even after cases recede

INFLATION BUILDING UP
Fed falling behind the hiking curve on the back of "transitory CPI" thesis

UKRAINE INVASION
Another leg up on inflation via commodity prices and global risk-off

ENERGY SUPPLY AND PRICE SHOCK
Many commodity prices reach new peaks amid worries over Russian supply (eg natural gas)

US HIKING CYCLE STARTS
Fed raised rates for the first time since 2018, taking benchmark rate to 0.5%

Q2

COMMODITY CURRENCIES PEAK
Brazil real, Chilean peso, South African rand peak appreciation

PERSISTENCY IN INFLATION
CPI proving stickier, particularly in Europe and US, and rate expectations jump

Q3

GLOBAL RISK OFF
Stock and bond market rout accelerates, with 60/40 portfolio suffering in particular
EM bond and equity fund outflows reach new highs

EXTREME CLIMATE EVENTS
Extreme heatwaves in Europe, wildfires in the North America, and floods in Asia

TAIWAN TENSIONS
On the back of Speaker Pelosi's visit Beijing launches military exercises around the island

Q4

USD STRENGTH
USD Index (DXY) reaches its highest level since 2002, up +19% YTD

XI REAPPOINTMENT
Xi gets reappointed in China and fills top positions with his loyalists. Results in a material sell off in Chinese equities

S&P 500 LOWS
S&P 500 reaches new lows this year, down ca 20% YTD and led by a tech sell-off

BRAZILIAN ELECTIONS
Lula wins presidential elections but with a narrower margin than expected. Market reaction mildly benign

US ELECTIONS
The widely expected 'red wave' does not materialize; Democrats' hold on to Senate

US SIXTH CONSECUTIVE RATE HIKE
Funding costs reach a new high since 2008

8 BILLIONTH PERSON
New population milestone for humanity

NO END IN SIGHT FOR UKRAINE WAR

1 Source: BloombergNEF, Energy Transition Investment Trends 2022, January 2022

AUTHORS:

Ewen Cameron Watt

Editor-in-Chief, Macro Forum, Actis, London

Joonas Taras

Investment Principal, Macro, Actis, London

EUROPEAN ENERGY TRILEMMA

Archer Kilpartick, Energy Infrastructure, Actis, London

September 19, 2022 | 6 min read

The crisis in Ukraine has added a new complication to Central and Eastern Europe's existing energy trilemma, one that is shared by many other countries. Their issue is how to enhance energy security, protect the interest of consumers, and meet sustainability goals, all at the same time. Historically, these three policy objectives were in conflict. The abundance of cheap domestic and imported hydrocarbons, coupled with a transmission grid designed with fossil fuels in mind, meant customers' bills were kept low. The need for energy security was therefore often an afterthought. Meanwhile the relatively low capacity of renewables – with the exception of offshore wind – meant making progress towards the region's environmental goals required market interventions. Indeed in order to achieve the environmental sustainability objective of the trilemma, fiscal resources needed to be spent on subsidising renewables – which in turn fed back to consumers through higher costs.

In order to reduce their dependence on coal and other dirtier fossil fuels, much of Europe, has prioritised gas generation. In Germany this was given added weight by the policy stance of Ostpolitik, which sought to build trade ties with Russia and other former countries in the USSR, leading to an exceptionally high reliance on Russian gas.

Yet even before the crisis, the balance between the three policy objectives was shifting. With the dramatic fall in the costs of renewables, the relationship between consumer affordability and environmental sustainability had altered, meaning they were no longer in conflict. Now, the geopolitical developments of the past year have brought further changes.

The war in Ukraine has increased the importance in Central and Eastern Europe of the other arm of the trilemma: energy security. A previous overreliance on natural oil and gas supply from Russia, coupled with the surge in the price of fossil fuels, has brought the problems caused by the lassitude of governments to enable a greater share of renewables in the generation mix into stark relief. While Europe is scrambling to build new Liquified Natural Gas terminals, open up new routes to the Caucuses and improve gas transmission corridors, an electricity system based on a natural gas backbone looks a shakier proposition than it did just one year ago. Indeed, ironically, the hunt for greater diversity of energy supply is pushing some governments to reopen some of their most polluting coal-fired power stations, in clear violation of climate-based investment principles.

"THE WAR IN UKRAINE HAS INCREASED THE IMPORTANCE IN CENTRAL AND EASTERN EUROPE OF THE OTHER ARM OF THE TRILEMMA:ENERGY SECURITY."

NOT EVERY COUNTRY IN EUROPE FACES THE SAME LANDSCAPE

The Baltic countries for example have generally been more dependent on Russian gas than countries further afield, such as Spain and France, which are less reliant upon it. Across Central and Eastern Europe, the picture is also troubling. The EU's internal gas transmission mechanism is not perfect, meaning supply problems will be distributed unevenly. Bulgaria, which has been heavily dependent on Russian gas, had its supplies cut in April, and is likely to be severely impacted. Even Romania, which has its own production capabilities, is likely to be significantly affected, as are countries such as the Czech Republic. It is arguably in countries like these that governments' past failures to diversify sources of fuel supply and underprovide for sufficient energy security has most significantly enhanced the already strong case for renewables.

Across the whole of Europe, governments are accelerating their rollout of Contracts For Difference (CFDs), market price stabilisation tools which are intended to reduce the costs of capital to finance new generation projects. Meanwhile, with consumers facing rapidly rising costs of energy and the continent's electricity market being remarkably short-term in nature – very few firms buy power more than one year ahead – more and more commercial and industrial consumers are looking to contract with renewable energy generators directly, disintermediating utilities.

The fact that there is now a greater imperative for energy security, and that the price of renewables has fallen enough to make them an attractive investment proposition without subsidy, represents a huge opportunity for banks and investors. Many countries are planning to double or treble their renewable investment by 2030. Invdeed the targets are even greater across much of central, eastern and southern Europe, where the levels of coal generation are particularly high.

In 2021 we developed a proprietary Transition Tool to support decision-making in the investment process on alignment with the climate transition The tool, which was developed in collaboration with consultants SYSTEMIQ is used to systematically evaluate Actis' investments and consider how they align to a Net Zero economy.

The tool enables Actis to direct capital to assets that enable and accelerate the low-carbon transition and can be aligned to a net-zero economy. The tool identifies assets as "green" (Paris/NZ-aligned), isaligned (where we will not invest) or somewhere in between which is "olive" (has a role in the transition). Actis will only invest in "olive" assets if there is a clear path to decarbonisation and/or it can be shown that there is no viable alternative. The tool also helps Actis identify what can be done during our ownership to decarbonise olive assets to become "smart olive" and helps to design pathways to transition assets to Net Zero. The Tool is used on every deal and is presented during Investment Committee to ensure a systematic and robust assessment of climate transition risk.

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“THE BUSINESS WILL USE ACTIS’ TRANSITION TOOL TO HELP SELECT INVESTMENTS THAT WILL HAVE THE BIGGEST IMPACT ON THEIR COUNTRIES’ MOVES TOWARDS NET ZERO.”

Actis has recently launched **Rezolv Energy**, an independent clean energy power producer to build a new era of sustainable power in Central and South-Eastern Europe. It aims to build a multi-gigawatt portfolio of wind, solar and energy storage which will help companies and countries across the region meet their energy needs in response to the energy security challenges and the need to embrace climate policies. The business will use Actis' Transition Tool to help select investments that will have the biggest impact on their countries' moves towards net zero.

Looking to the future, both private institutions and governments are likely to focus on diversity of supply to increase energy security and accelerate their moves towards maximising the role of renewables in the generation mix. Governments in the region are showing a significant appetite to make changes to grids and power infrastructure in order to equip them to be ready for a greater share of renewable energy. Europe's electrification and decarbonisation programmes are also aimed at making fossil fuels less attractive, through carbon pricing and altering regulations around permits.

REZOLV
ENERGY

Gas – although maybe not as much from Russia – will continue to play a role as an enabler of the transition thanks to its lower carbon intensity, however dispatch rates will be uncertain, so governments may need to follow the UK's example and introduce capacity auctions. New nuclear power may need the same, or a CFD structure similar to that seen with the UK's Hinkley Point project.

When it comes to renewables, generators are likely to have options to contract through government-backed CFD tenders, contract with long-term Power Purchase Agreements with commercial offtakers, or sell directly to the market. Battery storage will become increasingly important as operators seek to manage inter-hour intermittency. In addition, the green hydrogen market may well develop at pace, offering the market the opportunity to decarbonise hard-to-abate sectors and manage seasonal renewable intermittency.

"GAS – ALTHOUGH MAYBE NOT AS MUCH FROM RUSSIA – WILL CONTINUE TO PLAY A ROLE AS AN ENABLER OF THE TRANSITION THANKS TO ITS LOWER CARBON INTENSITY."

The crisis in Ukraine has highlighted much of Central and Eastern Europe's energy dependency on Russia. But it has also placed an added impetus on the region's need to accelerate the pace of renewable infrastructure development. Countries including the Czech Republic, Bulgaria and Romania are likely therefore to need to accelerate their commitment to renewable energy. The war has proved the need for a new emphasis on clean power, one which can help the continent in reaching its own goals of greater energy security.

AUTHORS:

Archer Kilpartick

Energy Infrastructure, Actis, London

MEASURING TRANSITION – THE ACTIS TOOL

Marina Johnson, Associate, Sustainability, Actis, London

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The global need to reduce our dependence on the most polluting fossil fuels is becoming increasingly evident. The dual priorities of net zero and energy security dictate an ever greater requirement to shift away from coal and oil. Whilst much emphasis has rightly been placed on the role of renewables to address this as part of a greener economy, gas is increasingly seen as a vital transition fuel for many countries to help them meet their climate goals.

80%

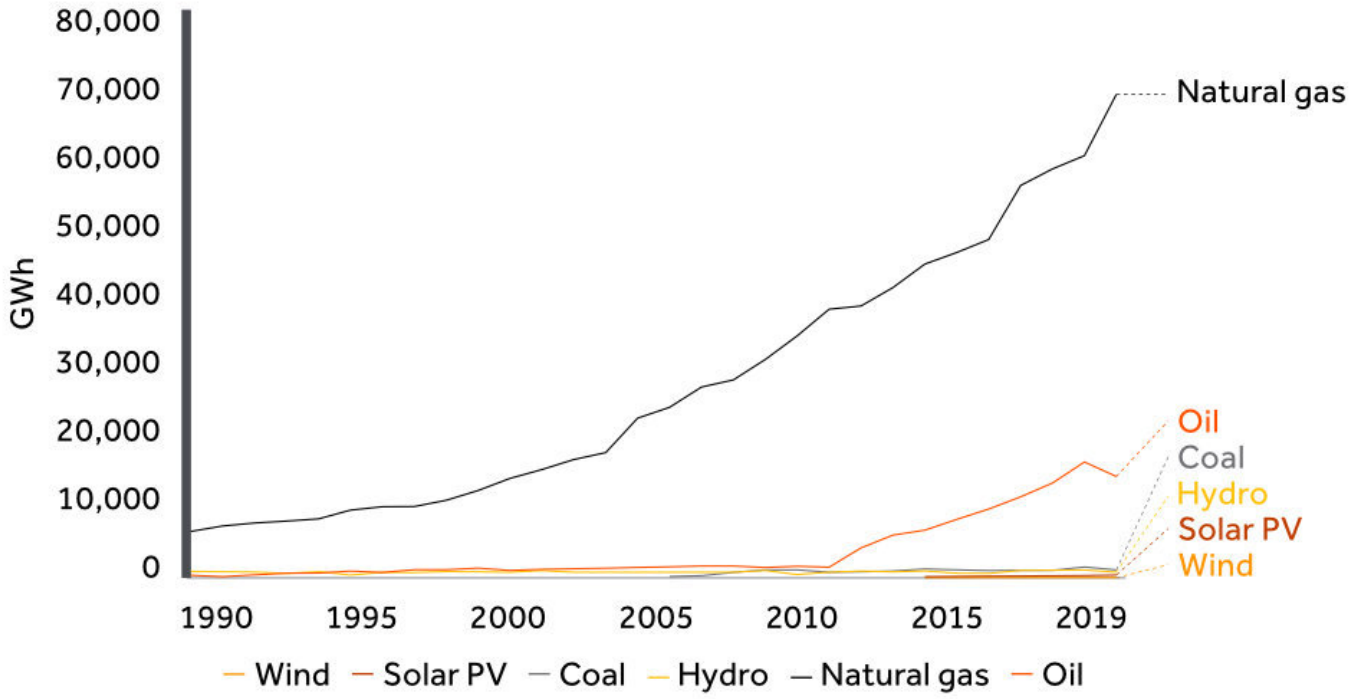
of the world's new coal generating capacity is expected in Southeast Asia

This is particularly relevant in coal-dependent regions of the world, such as Southeast Asia (SEA) where 80% of the world's new coal generating capacity is expected. For many countries in this region, it is not feasible to roll out renewables at the pace required to meet demand and reduce carbon emissions quickly, whilst maintaining grid stability. As a less carbon intensive source of energy to coal, gas can therefore play a significant role.

We recently announced the launch of Bridgin Power, a power generation platform that will pursue gas-fired assets and focus on delivering the energy transition across SEA. Nimbus, its first transaction was the acquisition of a 220MW operational gas-fired power project in Barishal, southern Bangladesh, which uses reserves from a local gas field just 7km from the site. An expansion plan for another co-located 220MW is also planned.

The acquisition highlights the important role that gas can play in the transition While Southeast Asia is expected to shift to renewables in the long term, and huge investment flows are anticipated to help the region increase its generation from renewable sources, the immediate baseload demand can only be fulfilled by thermal energy (Exhibit 1). As a far cleaner alternative to coal – which often has to be imported – harnessing a country's indigenous gas reserves therefore provides an obvious short and medium-term solution to supporting its energy strategy, while contributing to climate goals. Natural gas is 50% cleaner than coal on a CO2 basis, but more than 1,000 times cleaner on an air quality and pollution basis, so there are also considerable environmental and health benefits. Domestic production also provides immediate relief from global energy insecurity which many countries are likely to continue facing over the coming years.

EXHIBIT 1: ELECTRICITY GENERATION BY SOURCE, BANGLADESH 1990-2019



Source: IEA, Electricity Information. All rights reserved. https://www.iea.org/countries/Bangladesh

Natural Gas

50%

Cleaner than coal

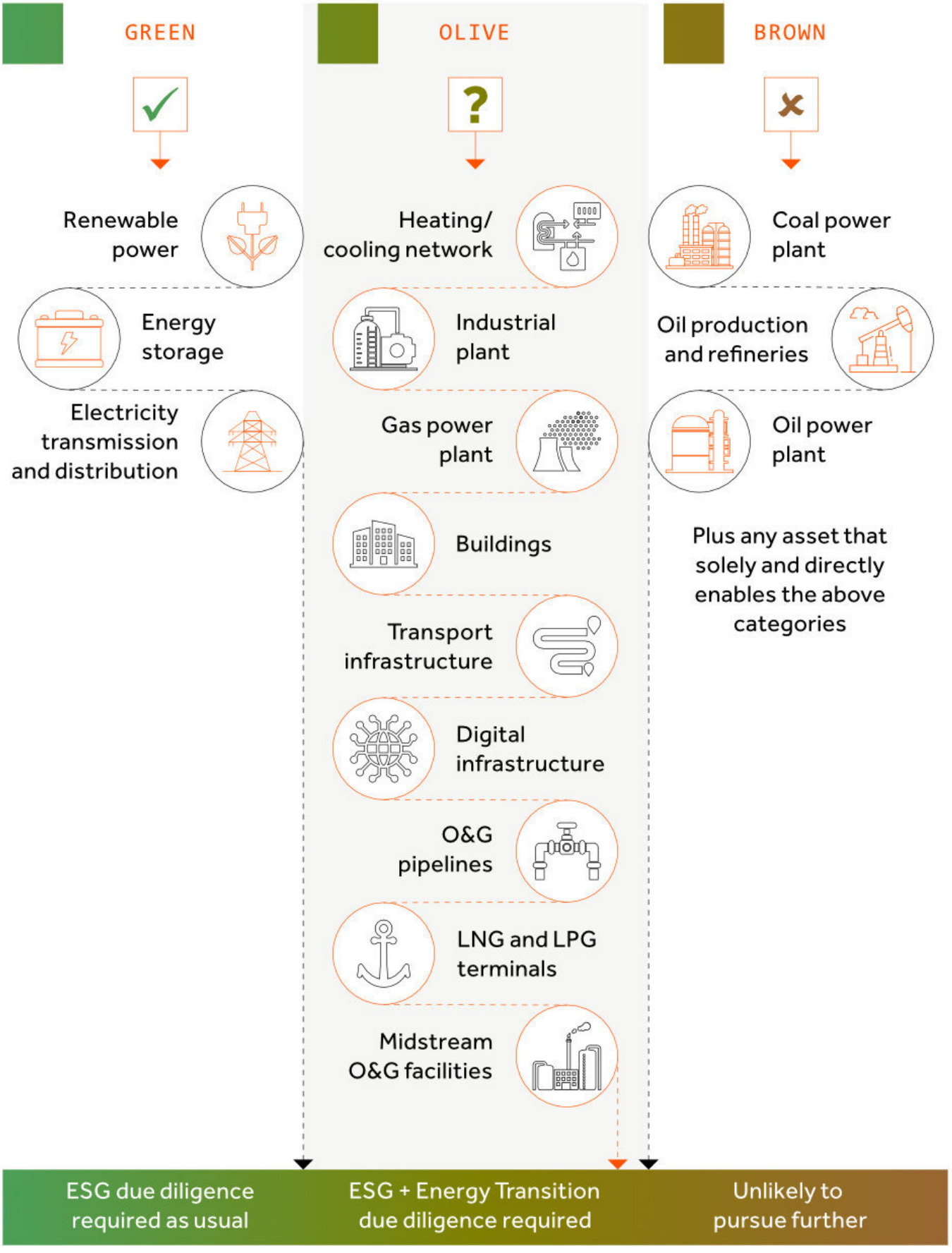
1000X

Cleaner on air quality and pollution

As in other markets where energy poverty is high and access and affordability are low, investing in enabling power technologies such as gas plants therefore supports the transition away from fossil fuels as well as delivers socioeconomic benefits. The recent inclusion of gas in the European Union's green taxonomy supports this position of gas having a pivotal role as a sustainable fuel source in the energy transition.

How do we ensure such investments have positive outcomes? We have developed an in-house Transition Tool with consultants SYSTEMIQ, that is run as part of our due diligence process (Exhibit 2). It assesses climate transition risk by analysing the role of an individual asset in the local market in relation to national climate transition and decarbonisation plans. It identifies assets as "green" (Paris/net zero aligned), "misaligned" (where Actis will not invest) or somewhere in between which we call "Olive".

EXHIBIT 2: TRANSITION TOOL OUTCOME FOR NIMBUS



Source: Actis

> “THE ACTIS TRANSITION TOOL ASSESSES CLIMATE TRANSITION RISK BY ANALYSING THE ROLE OF AN INDIVIDUAL ASSET IN THE LOCAL MARKET IN RELATION TO NATIONAL CLIMATE TRANSITION AND DECARBONISATION PLANS.”

Bridgin Power uses the Transition Tool to inform future investments into such ‘Olive’ assets where the asset plays a clear role in a transition and decarbonisation pathway, and where there is no viable alternative. The tool also helps Actis identify what can be done during the hold period to future proof and decarbonise such Olive assets to become “Smart Olive” – that is measures to protect us from stranded asset risk, and make operations more efficient and resilient.

Analysing the Nimbus asset through the prism of our Transition Tool enabled us to demonstrate that Bangladesh’s renewable options are limited and that no lower carbon solutions could be implemented. Wind resources are relatively low, there is insufficient suitable land for solar development, and much of the country is susceptible to flooding or other natural disasters.

In this instance, investing in gas is delivering immediate economic benefits in terms of energy production, helping the country meet its baseload need. Bangladesh has set a target of generating 4.1 GW of electricity from renewable energy sources by 2030. The investment therefore supports the switch away from coal, as a more carbon intensive fuel source, and the plant has the flexibility to operate at mid-merit or peaking power ahead of greater renewables generation in the future.

Investments such as Nimbus highlight the important role that responsible investment into gas can play in supporting countries in their transition to a lower carbon economy.

Marina Johnson is a member of Actis' sustainability team

"IN THIS INSTANCE, INVESTING IN GAS IS DELIVERING IMMEDIATE ECONOMIC BENEFITS IN TERMS OF ENERGY PRODUCTION, HELPING THE COUNTRY MEET ITS BASELOAD NEED."

AUTHORS:

Marina Johnson

Associate, Sustainability, Actis, London

A NEW AGENDA FOR RENEWABLE ENERGY

Guest Author, Ben Backwell, CEO, The Global Wind Energy Council

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The global energy crisis is revealing the continued risks of fossil fuel dependency. Countries around the world are coming to see how relying on oil, coal and other fossil fuels leaves them exposed to supply interruptions and price volatility that can have a devastating impact on lives, as well as on the economy as a whole. Meanwhile recent heatwaves have laid bare the consequences of not getting a sufficient grip on our climate challenges.

The current energy crisis began long before the invasion of Ukraine. Asia for example had already seen a rapid increase in the price of coal and Liquified Natural Gas thanks to the economic revival in the wake of Covid-19. China has suffered from industry shutdowns thanks to the high price of coal. Issues such as these were already creating problems even before the war in Ukraine highlighted just how fossil fuels can be used as a geopolitical weapon. The energy security challenge is indeed a global one.

That we are in such a crisis should not be a surprise. It is a direct result of what has so far been a delayed and disorderly energy transition to cleaner fuels. The transition has been carried out in a piecemeal way; some countries are moving relatively quickly, while in others, progress has been glacial. But wherever we look, progress has not been fast enough. If the world had acted more quickly, and in a more concerted, systematic way, to increase renewables' role in energy markets, we would not be vulnerable to fossil fuel volatility to the extent we are today.

The way to fix this problem is by making a more concerted push to reduce our dependency on fossil fuels, quickly scaling cost efficient, already existing technologies like wind and solar PV and making a concerted push to build out critical infrastructure such as grid. Renewables can be deployed quickly, and many utility scale renewables projects are shovel-ready to start construction. Yet they are not being installed quickly enough.

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“RENEWABLES CAN BE DEPLOYED QUICKLY, AND MANY UTILITY SCALE RENEWABLES PROJECTS ARE SHOVEL-READY TO START CONSTRUCTION.”

The Global Wind Energy Council therefore recently launched a five-point plan to provide a framework that would accelerate renewable energy plan to provide a framework that would accelerate renewable energy generation that in turn would achieve greater energy security, while also ensuring affordability for all and creating the greatest impacts to help solve
the world’s climate problems. The plan involves:

Streamlining the often-bureaucratic system of permitting to secure a huge
increase in both offshore and onshore wind capacity

- Implementing an action plan around access to grids to ensureconnectivity
- Introducing simplified mechanisms of procuring and pricing clean power projects to unlock investments
- Avoiding committing to large-scale fossil fuel projects
- Committing to firm energy transition plans to give the renewables sector confidence to plan and invest in a robust supply chain

GOVERNMENTS HAVE A KEY ROLE TO PLAY IN HELPING DRIVE THIS AGENDA

They need to build out grids, and ensure projects can be pushed through quickly. They also need to provide planning systems that are fit for purpose, and ensure that the right regulatory system is in place so that projects can be built at speed. And they need to create the right market signals so that capital is allocated efficiently. Renewables are now generally cheaper than fossil fuels, yet investment in the sector is not growing nearly as quickly as the world needs it to.

We will also need to build a far bigger, more robust supply chain – at least ten-times bigger than today. Many in the supply chain, notably turbine manufacturers, are not currently making enough money to be able to make the massive investments needed for us to scale up deployment and reach Net Zero. There has been a race to the bottom as energy companies fight for limited opportunities in auctions and squeeze manufacturers. At the same time, those manufacturers are seeing their own margins squeezed by inflation: the cost of steel, copper, aluminium, rare earths and logistics have all soared. There needs to be a better market framework – such as a more consistent, sizeable programme of auctions, or price floors – that better balances the relationship between buyers and sellers.

There are, however, a number of bright spots. One of the hopeful signs is the way private capital has scaled up and adapted over the last ten years. There are now a huge number of firms financing renewables. What used to be a relatively niche investment class is now mainstream: pension funds and sovereign wealth funds are queuing up to get into the sector. It has become a clear, attractive investment destination, one which demonstrates that if the right market signals are there, the private sector will quickly respond.

And there are a number of success stories around the world too. The rise in ambition that governments are showing is encouraging. Countries with economies as diverse as China and the United States are deploying huge amounts of wind and solar successfully. In Latin America, countries like Chile and Brazil are proving to be joined up in their thinking when it comes to renewables, and are building momentum. Meanwhile Vietnam has recently switched from having a coal-heavy power development plan to one that has its main focus on renewables.

In spite of these successes however, at a global level there is still a need for a more concerted, collaborative approach to the energy transition. It is only by setting clear guidelines, and ensuring a favourable environment for renewable energy investment, that wind, solar and others can fully play their part in carrying out the energy transition and creating greater energy security around the world.

Ben Backwell is chief executive of the Global Wind Energy Council. For more details on their five point plan, please visit GWEC's website

AUTHORS:

Guest Author, Ben Backwell

CEO, The Global Wind Energy Council

TRANSFORMING INFRASTRUCTURE

2022 STREET VIEW HIGHLIGHTS

MIKAEL KARLSSON
CIO, Actis, London
mkarlsson@act.is

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[1]

US$15 trillion

infrastructure financing gap by 2040[2]

$173 trillion

investments in the energy transition to achieve net-zero carbon emissions by 2050[3]

US$3.2 trillion

of public investment in infrastructure stimulus announced by G20 governments between February 2020 and August 2021[4]

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[5]

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

2022 STREET VIEW HIGHLIGHTS

EWEN CAMERON WATT
Editor-in-Chief, Actis, London

JOONAS TARAS
Macro, Actis, London
jtaras@act.is

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).

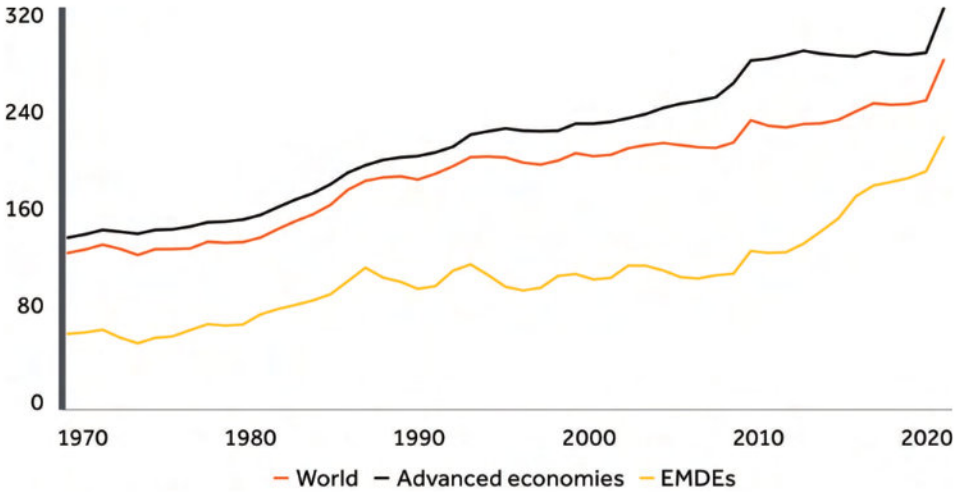
Infrastructure is a key enabler of the first three conventional solutions, whilst also aligning macro priorities with investor returns. Pack a wet towel on your head as you read on.

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 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.

EXHIBIT 1: TOTAL DEBT DEVELOPMENTS DURING COVID-19

Percent of GDP



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

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.

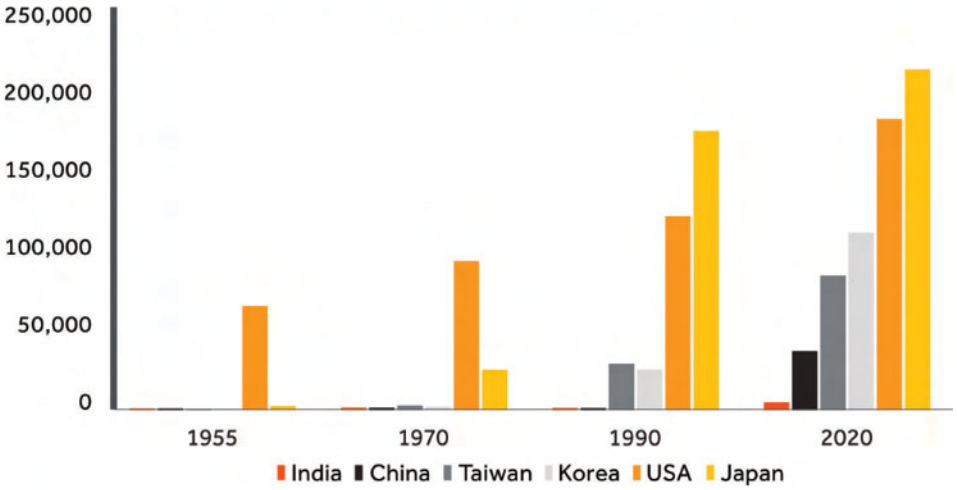
THE CASE STUDIES IN THIS EDITION DEMONSTRATE THAT THE DUAL OUTCOMES OF ENHANCING PUBLIC EFFICIENCY AND GENERATING ATTRACTIVE PRIVATE RETURNS ARE POSSIBLE

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 Monitor shows that returns per unit of risk have been higher in DM than EM (Sharpe Ratio), see Exhibit 4.

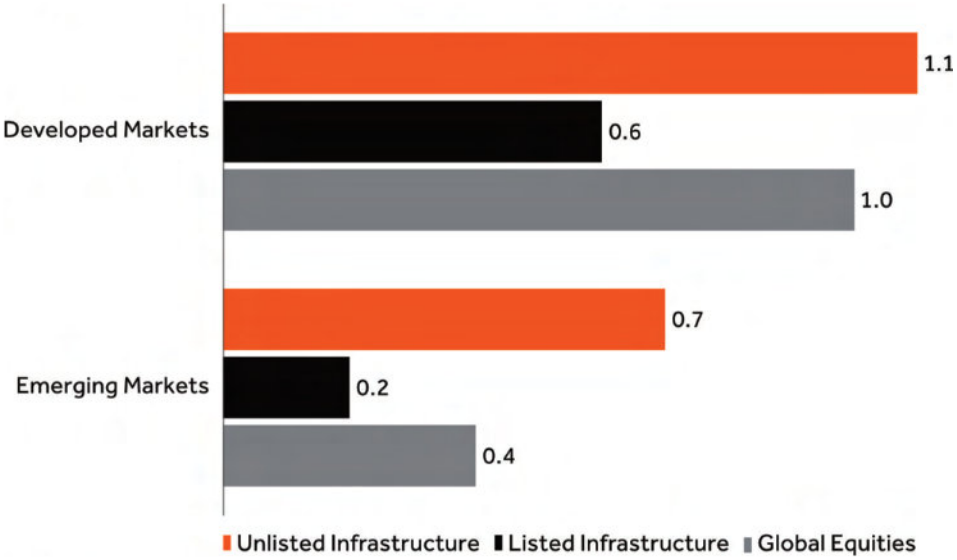
EXHIBIT 3: US$ CAPITAL STOCK PER CAPITA, 2020 PRICES



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 EDHEC infradata (2021a), based on data sourced from Scientific Infra (indices.Scientific Infra.com)

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

2022 STREET VIEW HIGHLIGHTS

OLIVIA WHITE
Sustainability, Actis, London
owhite@act.is

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.

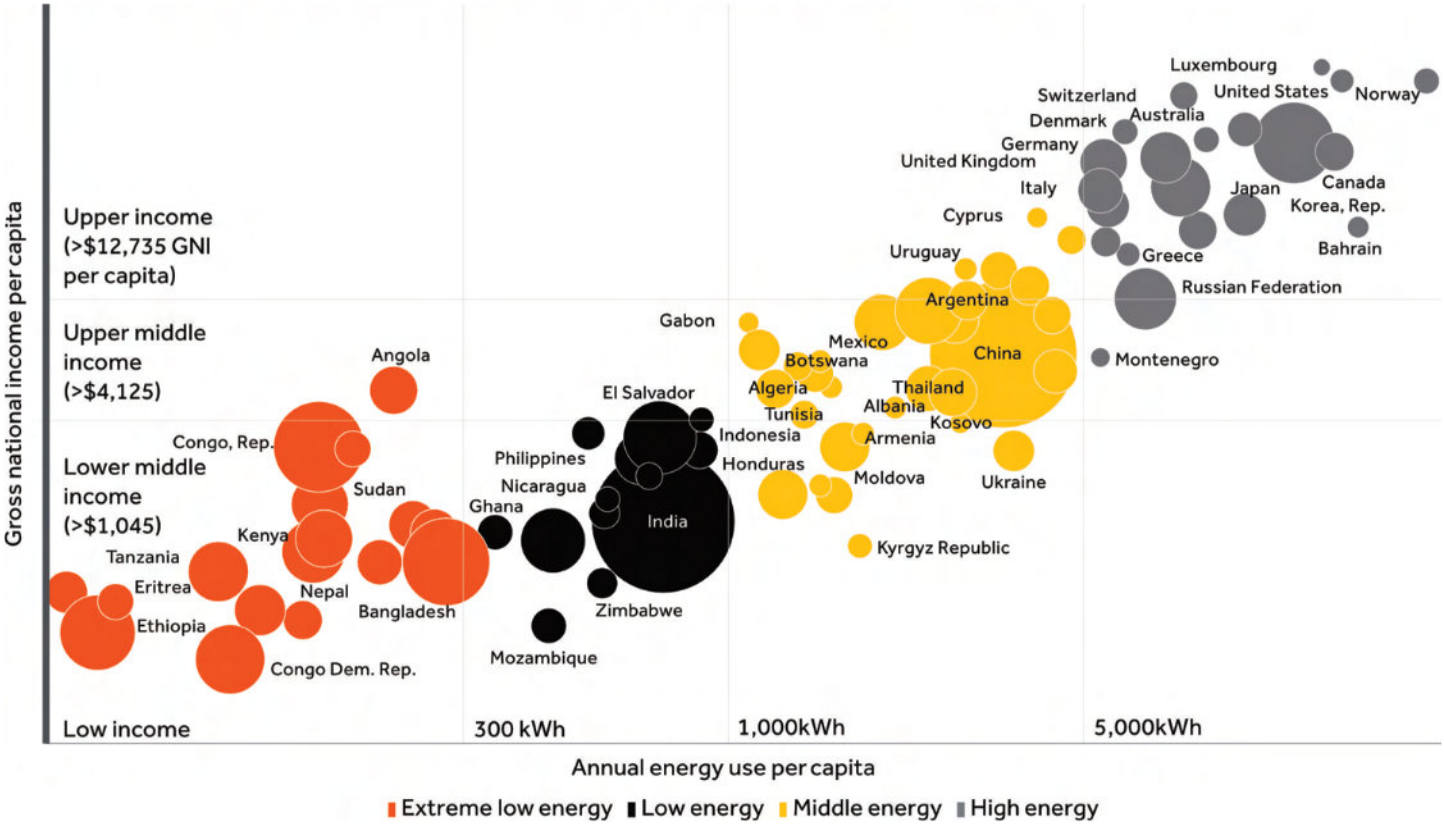
Without reliable electricity, clean water, efficient transport and access to communication networks, economic productivity is stifled, incomes remain low and poverty persists. There is a huge, untapped opportunity to provide underserved populations with all the benefits that modern infrastructure provides.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

Macroeconomic indicators	• Creation of jobs directly, indirectly or by induction through economic growth • Increase of business productivity, competitiveness and entrepreneurship
Microeconomic impact	• Increase of incomes and expenditure • Time saving for new activities (e.g. income generation, leisure, chores)
Community and individual well-being	• Improving healthcare, reducing health problems, increasing awareness of health issues, reducing accidents • Reducing indoor air pollution and associated disease • Improving children's educational outcomes, increasing study hours and years of schooling • Improving women's equality and empowerment by enabling greater participation in non-household work, giving greater decision-making power, improving leisure time • Increase of perceived safety in the community and at home • Increasing access to entertainment and information through television

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

Technologies	• Choosing technologies to achieve best-in-class operational efficiencies for energy, embodied-carbon, water and resources.
Renewable energy	• Sourcing low-carbon or renewable energy to provide power and align assets with a Net Zero pathway.
Resilience	• Improving the resilience of assets (and surrounding communities) to withstand acute and chronic weather risk. This involves working with nature-based solutions where possible.
Communities	• Working collaboratively with local communities to bolster local skills and education and increase employment and entrepreneurial growth.
Biodiversity	• Partnering with local stakeholders to restore biodiversity and the ecosystem services it underpins.
Lifecycle	• 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)

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 UN SDGs.

COMPANY VOICES: ATLAS RENEWABLE ENERGY, PAN LATIN AMERICA

2022 STREET VIEW HIGHLIGHTS

CARLOS BARRERA
CEO, Atlas Renewable Energy

MICHAEL HARRINGTON
Energy Infrastructure, Actis, New York
mharrington@act.is

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 CO_2 by tens of thousands of units. However, our focus on ESG goes beyond the reduction of CO_2.

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.