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Sustainable Investing

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Capital's green growth

How the climate crisis is driving investment strategy

PEI

New York
130 West 42nd Street
Suite 450
New York
NY 10036
T: +1 212 633 1919

London
100 Wood Street
London
EC2V 7AN
T: +44 20 7566 5444

Hong Kong
19F On Hing Building
1 On Hing Terrace Central
Hong Kong
T: +852 2153 3240

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Editor's letter

Collaboration is key to tackling climate crisis

Helen Lewer
helen.l@peimedia.com

For 12 days in November, world leaders, policymakers and scientists, among others, will descend upon Scotland's second city of Glasgow for the COP26 summit on climate change. The event will serve as a reminder to all – although, frankly, no one by now should need such a memory jolt – that the clock is ticking speedily towards climate catastrophe.

It is also being touted as a last-ditch attempt to reach a global consensus on actionable solutions to avert disaster. It is a heck of a challenge and many observers are, justifiably, pessimistic about its chances of success. But try the experts must. This is an emergency.

> **“Greening the world's vast infrastructure is a costly mission”**

The built environment is a significant contributor to carbon emissions. It must therefore be part of the solution. But greening the world's vast infrastructure is a costly mission – we're talking trillions of dollars to fund the development of new assets and to reposition existing ones. What's clear is that the public coffers are not deep enough to deliver this; and covid-19 has only put more pressure on already constrained budgets.

Happily, those operating in the infra space sense the urgency and are acknowledging their responsibility towards making this unique blue planet we all inhabit a cleaner, greener one. The asset class has stepped up to the ESG plate already in quite robust fashion. As cited within, while just $7.5 billion was raised for renewables strategies in 2015, according to *Infrastructure Investor* data, the figure for H1 of this year was $19 billion.

Those numbers will have to rise significantly in the years ahead. One clear message from this year's report is that governments worldwide must do more to court and collaborate with private capital to have any realistic chance of completing the net-zero mission by 2050. The ESG journey is a long and winding road. It is critical that the public and private sectors travel it together.

Helen Lewer

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Infrastructure
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How to contact us

Senior Editor
Bruno Alves
bruno.a@peimedia.com, +44 20 7167 2031

Editor
Kalliope Gourntis
kalliope.gourntis@peimedia.com,
+30 6937 230 121

Senior Special Projects Editor
Graeme Kerr
graeme.k@peimedia.com, +44 20 3862 7491

Special Projects Editor
Helen Lewer
helen.l@peimedia.com, +44 20 7566 5478

Assistant Special Projects Editor
Evie Rusman
evie.r@peimedia.com, +44 20 3830 7733

Senior Reporter
Zak Bentley
zak.b@peimedia.com, +44 20 3862 7497

Reporters
Tharshini Ashokan
tharshini.a@peimedia.com, +61 422 627 892
Daniel Kemp
daniel.k@peimedia.com, +61 452 300 346

Contributors
Amy Carroll, Claire Coe Smith, Ben Jackson, Simon Meade, Alastair O'Dell, Gill Wadsworth

Managing Editor, Production: **Mike Simlett**

Production Manager: **David Sharman**

Production Editors: **Daniel Blackburn, Adam Koppeser, Nicholas Manderson, Jeff Perlah**

Copy Editors: **Helen Burch, Eric Fish**

Art Director: **Mike Scorer**

Head of Design: **Miriam Vysna**

Art Director – Americas: **Allison Brown**

Senior Designer: **Lee Southey**

Designers: **Denise Berjak, Pio Blanco**

Marketing Solutions Manager
Hywel Grimmett
hywel.g@peimedia.com, +44 20 7566 5474

Subscriptions and Reprints
subscriptions@peimedia.com

Customer Services
customerservices@peimedia.com

Editorial Director, US: **Rich Melville**

Editorial Director: **Philip Borel**

Director, Product: **Amanda Janis**

Director of Research and Analytics: **Dan Gunner**

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Insight

The lowdown

ESG is infra's top agenda item, but there's a long road yet to travel on its sustainability journey

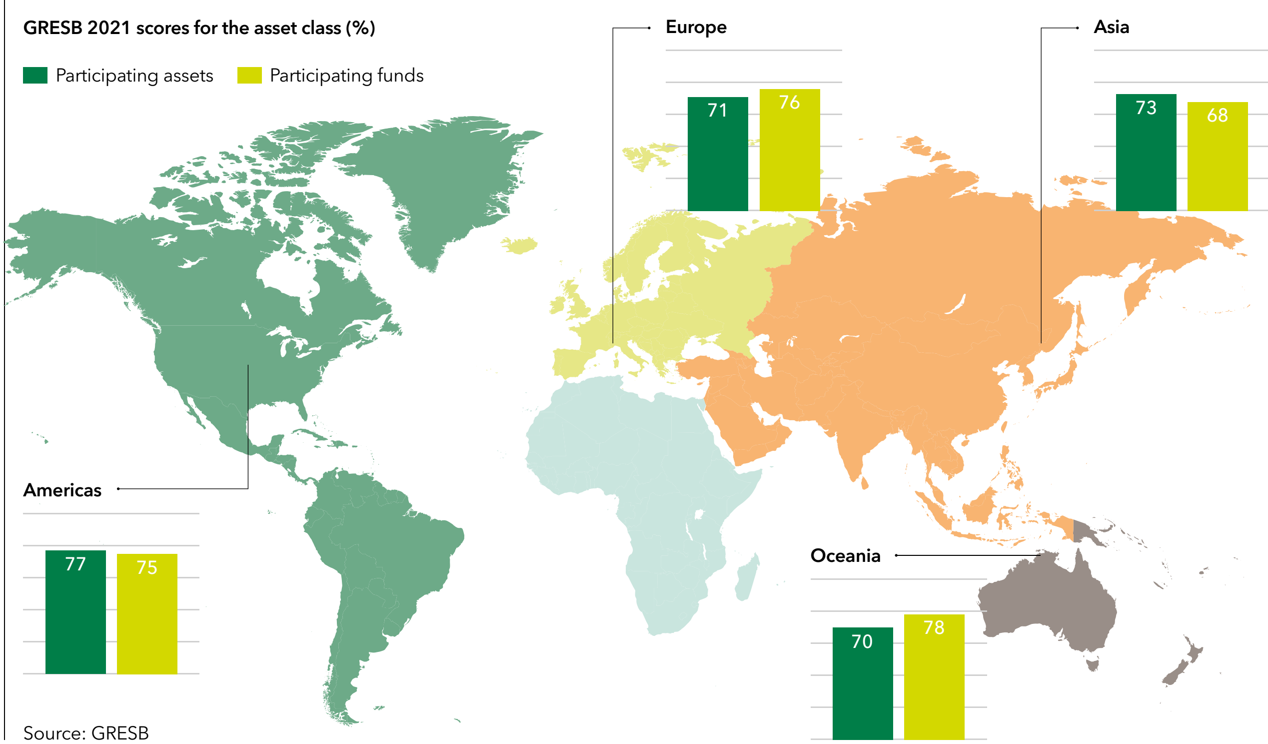
The expert insight in this report makes it crystal clear how top of mind ESG is for managers and investors in the infrastructure space. Improving sustainability performance is absolutely their priority, ***writes Helen Lewer***.

That is underlined by this year's GRESB scores, which indicate that the asset class has taken another big leap forward in the past year. The average GRESB scores for all assets and funds increased by 10 and 12 points respectively, while the average by sector increased by 18 percent. "Investors and funds know how to report on [ESG] and report well", says GRESB's chief of standards and innovation Rick Walters.

Race to net-zero

Carbon reduction is the world's single biggest ESG agenda item as the target date of 2050 creeps ever closer. But getting to the magic

GRESB 2021 scores for the asset class (%)



Source: GRESB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C.S. TRAINING
CAT
Over two decades of renewable energy investment experience, helping to drive a sustainable and accessible transition to Net Zero.
Specialist investor in renewables, storage and grid support infrastructure.
Awarded Investment Fund of the Year by ESG Investing Winner 2021, Best Sustainable & ESG Alternative Asset Fund and Best Sustainable & ESG Fund Management Group of the Year (AUM under £20bn) Finalist by Investment Week 2021.
3.3 TWh
of renewable energy generation in 2020
2.4 million
tonnes of CO2e estimated avoided emissions in 2020
PRI Principles for Responsible Investment
Achieved A+/A+ the highest possible ratings for modules submitted
$1.5 billion
in economic benefits to regional communities estimated over asset lives
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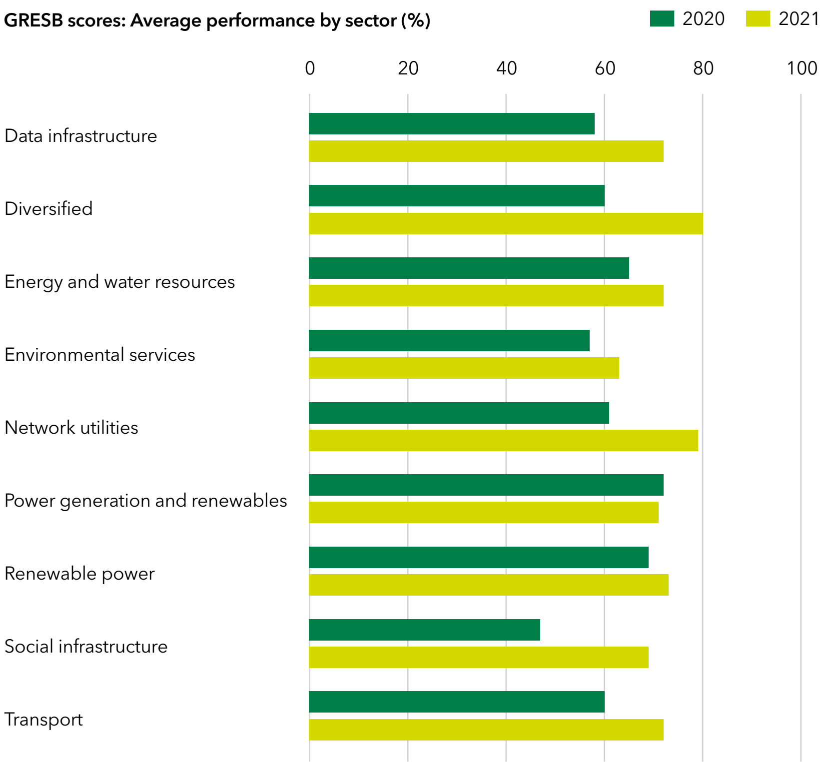
Quinbrook is not a paid subscriber to Investment Week or ESG Investing nor did it pay as a condition of eligibility. Awards are made based on nomination by market participants, including Quinbrook, and assessed by a panel of independent experience. Quinbrook was the only firm designated as Winner by ESG Investing and one of six Best Sustainable & ESG Alternative Assets Fund and one of eight Best Sustainable & ESG Fund Management Group of the Year (AUM under £20bn) finalists.

GRESB scores: Average performance by sector (%)



Source: GRESB

zero is also the biggest challenge. It is highlighted more than once in the report that governments cannot deliver net-zero through the public purse alone. The infrastructure overhaul needed to provide greener energy and transport, for example – and, let's face it, in a relatively short timeframe – is simply too big and too expensive an exercise.

Private capital therefore has an important role and governments must do more to court it through partnerships, more incentivisations to invest, subsidies and regulatory support. "Private capital will serve to leverage public funds," predicts Stéphanie Passet, investment director at BNP Paribas.

Community servants

Sustainability is, of course, multifaceted – it's not all about climate resilience. More and more investors and asset managers are acknowledging their duty to make a wider social impact.

That comes in many guises – from protecting natural habitats, supporting equality, diversity and inclusion at the firm level and across portfolio companies, and committing to job creation and training in local areas where assets are being developed, through to ensuring infrastructure assets operate in ways that protect labour and human rights.

Furthermore, there is growing recognition that the 'E', 'S' and 'G' are closely interwoven. For capitalising new, greener infrastructure should come with commitments to create stronger, healthier and wealthier local economies.

> "Now is the time to adopt a new mindset around compensation"
>
> Nicholas Sehmer
> Sheffield Haworth

Prove it

It is all well and good talking a good talk on ESG, but all managers across the private markets' spectrum are under ever-growing LP pressure to provide evidence that they are following through on those good intentions with meaningful actions and that their sustainability programmes are delivering performance. KPIs and metrics are mission-critical now. And getting to the data under the bonnet of assets is the key.

Happily, advances in technology are making it easier to track ESG performance and improve transparency. "Digital transformation enables managers to collect and process large volumes of data [to] optimise assets," says BNP Paribas' Passet.

Make it pay

Private fund managers wax lyrical about their collective commitment to sustainability and playing a part in reversing the looming climate catastrophe via the investments they make. But another route to demonstrating loyalty to the cause is by incentivising positive change through directly linking ESG performance to compensation.

The idea is gaining traction. And those brave enough to make the first move could well make themselves more attractive both to capital and to the best talent in the market.

"Now is the time to adopt a new mindset around compensation," says Nicholas Sehmer, director infrastructure at Sheffield Haworth. ■

Should sub lines be on the front line of 'doing good'?

ESG-linked facilities are generating a huge amount of interest, but are they the best way to incentivise change?

A few years ago, when subscription credit lines were first put under a spotlight, some managers reacted with barely disguised annoyance. These were humdrum, fund-level credit facilities, they said, used to efficiently manage LP capital calls. So what if they boosted IRR? That was a minor side effect, not their *raison d'être*. The media scrutiny, those GPs contended, was a storm in a teacup.

Sub lines came under the spotlight again in 2021. Humdrum no longer, they are now on the front line of 'doing good', tied to ESG or sustainability criteria to create a 'win-win-win' scenario: a win for funds and their LPs, which benefit from better pricing if they meet the agreed KPIs; a win for portfolio companies, which have one more incentive to be better; and a win for lenders, who get to boost their sustainable books in exchange for a few basis points (or maybe in addition to them, if GPs end up getting penalised).

Proponents of these instruments see them as a useful way for senior management to sharpen the minds of deal teams, or as evidence managers are walking the talk. But if financial incentives are the name of the game, are sub lines really the best way to create impact?

For example, wouldn't it be more impactful to first link portfolio companies' senior debt to a set of ESG KPIs? After all, a 10-20 percent discount/penalty to market margins on senior debt – the kind of range attached to ESG-linked sub lines, sources told affiliate title *Private Equity International* – would have a much more material effect, sharpening all stakeholders' minds. Tenor could also play a role, perhaps, with longer-term loans linked to hitting sustainability criteria – and the prospect of an early refinancing if targets fell by the wayside.

> *"Proponents of these instruments see them as a useful way for senior management to sharpen the minds of their deal teams"*

Target GP fees

On the equity side, manager fees would be the obvious place to target. For example, LPs could get a rebate if sustainability targets were not met. Or perhaps ESG KPIs could form a bigger part of performance compensation, more on a par with traditional financial metrics.

We know some of the above is happening, such as linking senior debt loans to ESG targets, although we are unaware of a fund having most of its assets' senior debt ESG-linked. We are also not suggesting GPs are presenting ESG-linked sub lines as the be-all and end-all of incentivisation. They are not, and most are clear these fit into wider ESG or sustainability frameworks.

In that sense, they are one of the tools at GPs' disposal. But as they garner more attention, we are not convinced they are the sharpest tool in the shed. ■

This article was first published by *Infrastructure Investor* in January

Texas meltdown highlights impact of climate change

February's crippling snowstorms froze wind turbines across the Lone Star State, crashed its power grid and blew up the swaps underpinning its renewables market

Swaps were a hitherto unremarkable component – some might call them a tax-equity requirement – of US renewables financings for projects with merchant exposure.

These work by fixing a price for an agreed amount of hourly electricity sold by a project to the bank providing the swap.

They broke spectacularly in Texas, and became a major liability, when a severe winter storm left projects unable to generate power. This left the projects' backers fully exposed to power bought on the open market, sometimes for days on end. Given the – how shall we put it? – 'idiosyncrasies' of Texas's deregulated power market, the purchase price was set as high as $9,000/MWh.

In a subsequent letter to the Texas regulator signed by leading renewables GPs – including Capital Dynamics, Copenhagen Infrastructure Partners and Fengate Asset Management – the consequences of this market failure were laid bare: "It appears that at least 46 mostly wind projects totalling 9GW would suffer severe financial losses as a result of the $9,000/MWh HCAP [real time settlement point price at the high offer cap] prices during the power market crisis."

Those potential losses were amply evident in the legal dispute between JPMorgan Chase and the Canadian Breaks wind farm, one of the Green Investment Group's first US projects, now owned by Northleaf Capital Partners.

The bank, which had contracted swaps with Canadian Breaks, said it was owed a total of $79 million because it was forced to buy power on the open market to offset client obligations for "$8,980.45/MWh more than JPMorgan would have paid if Canadian Breaks had performed". Canadian Breaks claimed it was unable to deliver because the storm paralysed its operations, a *force majeure* event. Its forecast revenue for this year amounts to $15 million.

Crippling

And so you have the whole crippling chain of events: extreme winter weather – made more common by climate change, scientists say – broke power projects, many of which were inadequately winterised, thus preventing them from generating and transmitting power. That, in turn, broke Texas's power grid, plunging millions into cold and darkness for days on end. It also broke Texas's power market, setting prices unimaginably high. And that, finally, broke the swaps underpinning the Lone Star State's renewables projects, threatening to bankrupt many of them.

But the events in Texas also raise the question of how aware managers and their LPs were that a seemingly unremarkable component of their financing arrangements potentially gave them a level of market exposure that could backfire so dramatically – because that might help break perceptions of how manageable merchant risk is, at least in certain markets.

When people talk about the systemic impact of global warming, this is exactly what they mean – even if they cannot pinpoint all of its unintended consequences.

Now ask yourselves this: how many ticking 'swapsgates' are out there across sectors and asset classes, waiting to be detonated by climate change? ■

This article was first published by *Infrastructure Investor* in April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EU's indecision on 'green gas' is benefiting nobody

In trying to deliver investor certainty and climate relief with its Sustainable Finance Taxonomy, Brussels has come up with a solution which may well do the opposite

It took 17 years from the time the then European Commission president Romano Prodi highlighted hydrogen as "the focal point in the energy revolution" in 2003 to the body developing an actual policy on the matter.

The EU's Sustainable Finance Taxonomy was an opportunity for a regulator to end industry debate and formally determine what is and is not a 'green investment'. In its own words, it was an opportunity for the EU to become a "leader in setting standards for sustainable finance".

However, as lobbying intensified from different member states on the positions of natural gas and nuclear in the framework, the EC kicked the can down the road, saying in April 2021 that it would rule later in the year whether natural gas is, indeed, a green investment.

The EU insists support will only be given to such projects provided they are consistent with being a transitional activity, helping countries move away from oil and coal. Now there's a policy more appropriate for 2003. Market economics such as the costs of gas and renewables means that coal has largely been displaced anyway. In fact, last year, coal accounted for just 16 percent of power generation in the EU (including the UK), according to the International Energy Agency.

Damaging

Regardless of the eventual outcome, the EU's decision was a damaging one for the energy sector, the energy transition and the climate crisis. Should it decide natural gas is indeed green, it would breathe new life into a sector that is already falling out of favour. But should natural gas be ruled out in the eventual decision, it would have been a delay that was of little benefit to anyone.

As Reynir Indahl, managing partner of Summa Equity, wrote for affiliate title *New Private Markets*, the EU has ambitious climate goals and "investors need clarity on where funding is most needed and be incentivised to provide it".

Proponents of the EU taxonomy argued the framework was needed because the market could not be relied upon to lead on the issue. Yet April's decision is only hurting those in the market trying to effect change and, arguably, increases stranded asset risk.

According to a report from the Global Energy Monitor, about €5 billion-worth of European gas projects were cancelled or shelved in 2020, while another €25 billion-worth of projects have been delayed as sponsors struggled to obtain funding from a climate-aware market. But this is not just affecting greenfield projects.

"If you find somebody who is ready to offer a good price for our gas plants in Spain, then we are ready to sell," José Ignacio Sánchez Galán, chief executive of Spain's Iberdrola, told Bloomberg in April. "We are not finding people."

If the EU's decision does burnish the green credentials of gas, Iberdrola might well find buyers in a confused world of green investment. For now, a framework designed to deliver investor certainty on climate solutions is threatening to do anything but. ■

This article was first published by *Infrastructure Investor* in April

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Time for multilaterals to turbocharge financing

BlackRock's Larry Fink calls on the World Bank and IMF to shift from lending to catalysing private capital investment in emerging markets

"There is private capital that can be mobilised for the emerging markets, but we need to rethink the way the international financial institutions can support low-carbon investments at scale," BlackRock's chairman and CEO Larry Fink told the International Conference on Climate in July. That is, multilaterals like the World Bank and the International Monetary Fund should focus less on direct lending and more on mitigating risk, to catalyse private capital investment into emerging markets clean energy.

"If we don't have international institutions providing that kind of first-loss position at a greater scale than they do today, properly overseeing these investments, and bringing down the cost of financing and the cost of equity, we're just not going to be able to attract the private capital necessary for the energy transition in the emerging markets," he said.

Fink's not the first to call for multilaterals to move away from balance-sheet lending. Former World Bank president Jim Yong Kim – now at Global Infrastructure Partners – was a proponent of the same idea, and tried to wean the Word Bank off balance-sheet lending. He had limited success.

Since Fink drew attention to the idea again, it's worth dwelling on its obvious merits. Put simply, emerging markets are not getting enough clean-energy investment – they need $1 trillion a year by 2030 but are getting about $150 million yearly, per the International Energy Agency. If these countries don't get the requisite investment, the world can forget about achieving its 2050 net-zero targets, with all the scary consequences of that outcome.

Obvious merits

As Fink rightly pointed out, there are hundreds of billions of dollars of private capital that could be channelled into these projects. There's also no doubt that there's healthy appetite for the energy transition as long as these assets are not in emerging markets. In that sense, a 'brute force', risk-mitigation solution that overcomes groupthink and a tendency to slap a homogeneous 'risky' label on a pool of disparate markets would be very welcome. Emerging markets climate investment needs scale and speed. Multilaterals fully committed to risk mitigation, with decades of experience in these markets, would be in a position to help deliver both.

$1trn

Annual clean energy investment required by emerging markets by 2030, according to the IEA

But even if multilaterals would wholeheartedly embrace their new role, it's worth dwelling on what price they and their backers would extract to, in Fink's words, take a "first loss" while "properly overseeing these investments". Or, if you're feeling uncharitable, to do the heavy lifting to correct a market failure.

At the very least, we envisage some apposite conversations about appropriate return levels and the fees attached to such investments. This in an environment where even those amenable to emerging markets and creating a positive impact can espouse a significant amount of 'cakeism'.

So, yes to 21st-century multilaterals that fully unleash the power of private capital and the conversations needed to make that happen – we're running out of time to fiddle while the world burns. ■

This article was first published by *Infrastructure Investor* in July

Do sustainable infra funds need the impact label?

It is time for clearer boundaries between the sustainable and impact labels

Brookfield's initial closing in July of its Global Transition Fund was not the most conventional of announcements. That much was acknowledged by Brookfield, which stressed the $7 billion raised was an initial closing and that "a traditional first and second close" would occur this year.

Other atypical elements included the fact the $7 billion raised at initial close was just $500 million short of the original target outlined by Brookfield earlier this year, with the firm noting it had set a hard-cap of $12.5 billion. Additionally, Brookfield's $2 billion commitment meant that it was the largest investor in the fund as of July, alongside Ontario Teachers' Pension Plan, Temasek, PSP Investments and IMCO.

Yet the most striking aspect of the Global Transition Fund was its status as the infrastructure juggernaut's "inaugural impact fund", as Brookfield joined the growing number of private market managers making their way into this space.

So, what goes into an impact fund of this size? According to Brookfield: "The fund will build on Brookfield's leadership in renewable power and deep operating capabilities to scale clean energy and invest capital to catalyse the transformation of carbon-intensive businesses to achieve Paris-alignment." The firm declined to comment further on what the split would be between renewable power and other investments.

Bruce Flatt, chief executive of Brookfield Asset Management, said last year that the Transition fund "could include some assets that might otherwise fit into our renewable energy programme".

Ziad Hindo, chief investment officer at OTPP, said the vehicle would "complement our own global infrastructure" investments.

To paraphrase a well-known saying: if it looks like infrastructure and quacks like infrastructure, is it simply infrastructure? This question has been considered by LPs such as the State of New Jersey Division of Investment, which has committed $200 million to TPG's Rise Climate Fund, raised by the manager's impact unit, which reached a $5 billion first close in July.

As reported by affiliate *New Private Markets*, Shoaib Khan, acting director and chief investment officer of the LP, said it committed to TPG because other "existing climate funds are mostly in the infrastructure or venture capital space".

Clear delineation needed

Khan's point underscored the need for a clear delineation between the 'sustainable' and 'impact' labels – in infrastructure and beyond – even if there is an unavoidable degree of overlap. In that sense, important conversations need to be had about intent, returns, measurement and additionality generated by impact funds.

The reality is that there are plenty of sustainable infrastructure funds already making a positive impact without necessarily calling themselves 'impact' funds. So, what is the difference?

Although there is more work to do, sectors such as clean energy, sustainable transport and water and waste treatment have become core aspects of the infrastructure investment landscape. It is incumbent on impact funds to demonstrate they are more than just infrastructure funds by another name. ■

This article was first published by *Infrastructure Investor* in July

LPs should ditch the climate poetry and allocate in prose

Investors should stress-test their portfolios against realistic internal carbon pricing and boost allocations to energy transition strategies

The world appears locked on a path to heating up by 1.5 degrees Celsius over the next two decades. That scenario already comes with a significant increase in extreme climate events, so the goal now is to stop the globe from getting even warmer.

World leaders need to seize the (last?) chance to make a difference at this month's COP26 conference, and reverse course. Climate change is not just a market failure to be fixed – it requires a complex societal and economic transition that can only be achieved through concerted global policy.

The problem is, even if climate change was just a pesky negative externality to be taxed away, we would not even be doing a good job on that front. A June blog by the IMF showed that "four-fifths of global emissions remain unpriced and the global average emissions price is only $3 per ton".

In a May report, the World Bank found only 3.76 percent of global emissions are covered by a carbon price at or above $40 per ton. To limit global warming to 1.5 degrees, carbon pricing would have to reach $160 per ton of CO2 by 2030 – but where such schemes exist, they averaged a price of $22 per ton at the end of 2020.

What to do?

Private markets investors should start by boosting allocations to strategies entirely dedicated to mitigating the effects of climate change.

Infrastructure offers plenty of those, and it is no coincidence that 33 percent of the $57 billion raised by unlisted, closed-end infrastructure funds in H1 came from dedicated renewables strategies, which was a veritable surge compared with 2020.

They should also consider following in the footsteps of Wellcome Trust chief investment officer Nick Moakes, who told affiliate title *New Private Markets* that the foundation would no longer invest in oil and gas private equity funds and was considering divesting from its existing hydrocarbons assets – that is, disengaging from the more carbon-intensive propositions.

Finally, LPs should take a good, hard look at the carbon footprint of their portfolios, especially more carbon-intensive investments, and price them correctly.

How? By setting and applying their own internal carbon pricing – with teeth – and assessing how returns fare in the aftermath.

The reality is that many investments which are not climate-aligned are only feasible (let alone attractive) because they are fundamentally mispriced. Just as governments, on behalf of their citizens, need to implement policies that spur societies into action, institutional investors, responsible for the pensions and insurance policies of millions of people, should take the lead in addressing this market failure.

That would end misguided talk of a fiduciary obligation to maximise often-mispriced returns and spur the investment community into action, boosting the supply of climate-aligned products, discouraging greenwashing and injecting rigour into net-zero pledges. ■

$160 per ton of CO2

Amount that carbon pricing would have to reach by 2030 to limit global warming to 1.5 degrees Celsius, according to Wood Mackenzie

This article was first published in *Infrastructure Investor* in August

KEYNOTE INTERVIEW

ESG is now fundamental

LPs, regulators, lenders and employees all consider sustainability to be infrastructure's top priority, says Aurélien Roelens, Cube Infrastructure Managers' investment director and ESG co-ordinator

Q How has the focus on ESG changed over the years?
Investing in infra today without demonstrating a serious approach to ESG is unthinkable. Pretending to care is no longer enough.

ESG is more and more driven by LPs. There's still some disparity, though. Some LPs analyse ESG in depth; others just ask questions and mainly rely on ratings and frameworks, such as the UN PRI. But the most sophisticated LPs are not only holding GPs accountable on ESG, but also encouraging them, engaging and sharing ideas.

We're clearly moving from a first phase, in which we explained our ESG approach, to a next phase, where we're asked to demonstrate the impact of our ESG programme.

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Q Is regulation playing a role in driving the focus on ESG?
Constantly changing regulation is certainly increasing the focus, and this will continue. Recent EU regulation – SFDR and the taxonomy – is still being developed. There are four more pillars of the environmental taxonomy to be adopted. There will also be the social taxonomy and potentially a 'brown' taxonomy to help with negative screening. Those regulations should have a strong impact on the market, in terms of transparency and reporting, and channeling investments.

Other regulations are unfolding, which are likely to affect portfolio companies. We need to consider and anticipate those changes in our ESG action plans.

We're also starting to see financial institutions asking for ESG KPIs, not only for green or sustainability-linked loans, but for traditional loans too.

So, the increased focus is coming from all directions. This is very positive. Prospective new talents are eager to learn about our ESG approach, and we've also seen vendors requiring commitments to health and safety from buyers.

Q Is it now accepted that a strong ESG approach positively impacts performance?

Our core strategy is to buy, control and grow operating companies over the long term. That means a strong and pragmatic ESG approach – anticipating the needs of communities as well as taking into consideration environmental trends – is a prerequisite to value creation. This value creation was primarily framed based on risk reduction a few years ago, but the market is now acknowledging other dimensions, including cost reduction and opportunity creation.

It's not as easy to measure these impacts. Within public transport, an EV programme and subsequent fuel consumption reduction IRR can be measured, as can the IRR of installing PV to provide electricity to a fibre-access point. The lower spread on a green financing is another obvious metric that positively impacts performance. However, such factors still fail to capture the additional increased resilience of the underlying asset, risk reduction and opportunity creation, which are all more difficult to evaluate and quantify.

The best proof is the value obtained at exit, even though commingled with other factors.

The electric bus revolution

Greening transport is a major priority within the energy transition and decarbonisation, and a significant focus is naturally falling on the public transport sector

According to Stefan Weis, managing director of Cube's public transport platform, "it's much easier and more efficient to shift a public transport fleet to non-combustion engines than it is to green every individual car".

This is creating investment opportunities across the ferry and train sectors, but Weis believes it is the electric bus sector that is most exciting. In Denmark, for example, where Cube is invested in the bus company Umove, two-thirds of new commuter transport buses are set to be electric.

"Electric bus fleets require higher capex than traditional diesel vehicles, but then energy and maintenance costs are lower," Weis explains. "At the same time, electric bus prices are declining and ranges are increasing, which means electric buses are on the way to becoming cost-competitive across the life cycle."

Growing demand for electrification is creating growth opportunities. "There are also opportunities to promote consolidation in the sector, because smaller players don't have the capital or expertise to establish these new fleets and the related charging infrastructure," says Weis.

Umove has now won tenders representing almost 100 electric buses and has become the number two public transport bus company in Denmark.

Q How has Cube fine-tuned its ESG approach to reflect these changes?

In 2016, we adopted our Environmental, Social, Management System – Responsible Investment policy. That ESMS-RI ensures that the results of the ESG due diligence carried out by third parties and complementary analysis conducted internally are systematically presented and discussed during the investment committees. Additionally, post-acquisition, a comprehensive ESG action plan is immediately set up with clear deadlines and KPIs. These action plans must be approved by the ESG co-ordinator and the board of each portfolio company.

Subsequently, we've created an ESG co-ordination team composed of investment team members, to better monitor, assist management and foster best-practice sharing. What's important is that the team in charge of the investment and the asset management is also responsible and accountable for the ESG programme, including encouraging new initiatives and monitoring action plans. We've also set up an ESG committee meeting several times a year to further strengthen our commitment.

We continue to push the integration of ESG and climate considerations further in our investment and risk management processes, including through the introduction of additional and enhanced metrics. We also consider ESG factors when making new hires and have found that it's important to bring scientific skillsets on board, rather than just having pure financial backgrounds.

Q How has investing behind the 'E' enhanced asset performance?

The environment has been the primary focus because it's an area where the asset class can have a significant impact. And there are two good examples from our first fund, where investing behind environmental themes, such as district heating, and focusing on enhancing the environmental credentials of our assets resulted in highly successful exits.

The first is Idex, a major French district heating player, which we owned from 2011 to 2018. While most of the traditional district heating networks were fossil-fuel based, we encouraged the management team to differentiate themselves by creating a toolbox of alternative and greener solutions including biomass, waste, geo-thermal and concentrated solar power.

We also focused on maximising the use of local resources – for example, using the River Seine for cooling or a data centre for heating. This positioned the company ahead of the curve on several tenders with greener and often cheaper solutions, resulting in growth.

Another example is Boreal, a Norwegian company, where we launched an electric bus project in 2012. We refined this project until we were ready to launch it on real lines in 2015, giving the company a competitive advantage for the first tenders incorporating electric buses in 2017.

These are positive experiences that we continue to leverage on and further develop across our current investments in district heating, public transport and in telecoms.

Q Is there a greater focus on the 'S' and 'G' too?

The social and governance dimensions have always been critical for us. We ensure the companies we back have fully adopted and integrated the appropriate policies and processes, including a code of ethics and whistleblower policies. We closely monitor social KPIs and implement different initiatives to improve diversity, reduce absences and encourage training programmes, among other things.

Moreover, the pandemic's put a greater spotlight on social and governance issues, and has raised a lot of questions. How do you ensure the integrity of processes and controls in a remote working environment? How do you continue delivering essential services while protecting employees and the population they may be in contact with? How do you maintain corporate culture and the motivation and mental health of employees working from home? We had to deploy strong measures to address these questions in each of our portfolio companies.

The pandemic also raised questions regarding our responsibility to wider society. Digital infra, for example, became more important than ever to avoid isolation. To address this systemic issue brought on by the pandemic, we took the step of offering free bandwidth upgrades during lockdowns, introducing social tariffs with our fiber business G.Network in London, and facilitating connectivity in hospitals and care homes with dst telecom in Portugal.

Q How has investing behind the 'S' enhanced asset performance?

Digital inequality is a clear risk for rural territories with a potential new exodus of businesses and residents. Our strong belief when investing in Covage in France, back in 2011, was that rural open-access fibre networks were a pertinent answer and a sound investment opportunity. And this has been well proven during the exit. We've since made several similar investments across Europe with both Cube Infrastructure Fund II and the Connecting Europe Broadband Fund.

Working on the 'S' is also key to creating value. For instance, in some sectors, there's a shortage of human resources, including bus drivers and fibre installation experts. Several of our portfolio companies, particularly in the telecom and public transport industries, have developed hiring and training programmes targeting refugees, immigrants and local underprivileged youth. Such initiatives have enabled our portfolio companies to address the resource shortage with motivated talents, while also creating positive corporate cultures and goodwill with local communities and authorities.

Q How do you expect ESG to evolve?

Addressing climate change is going to be critical, as it impacts other major themes such as biodiversity and social inequality. The full impact of today's emissions will only be felt in 10 to 20 years, and we don't know when the international effort will allow us to reach carbon neutrality.

In the five scenarios of the Intergovernmental Panel on Climate Change, two are at or above a 4 degrees Celsius increase. We're not in a linear system – effects can accumulate, a natural carbon sink can become less potent, and there are other unknowns, such as the recent news about the Gulf Stream weakening.

It's vital that investors participate in the transition while adapting their infrastructure to potential consequences and making it more resilient. The evaluation of infrastructure resilience against an increased frequency and intensity of extreme events will become more systematic in investment decisions and in adaptation plans during the holding period.

With climate change mitigation, there will be opportunities to deploy more capital to reduce GHG emissions, by greening vehicle fleets and repurposing plants with more renewable energy sources. There will also be opportunities to invest in sectors that are not yet mainstream. For example, we recently made our first investments in EV charging and in low-energy IoT infrastructure. We're also looking at opportunities such as green hydrogen distribution and production.

There are obviously many more investment opportunities, including energy storage, carbon capture, decarbonisation infrastructure and green ammonia production. But not all of these pathways can be achieved through our buy-and-grow brownfield platforms. This creates an opportunity for specialised greenfield funds targeting both impact and financial returns. This is something we're closely following. ■

Q&A

Infra has made great strides in its ESG journey. But there is a long way to go and transitioning to net-zero will require closer collaboration between investors and governments, says GRESB's chief of standards and innovation, Rick Walters

Q What progress is the infra asset class making on ESG?

A It's pleasing to see another big increase in GRESB scores this year and growth in the benchmarking participation rates. The sector is clearly on board with ESG and taking it ever more seriously. Investors and funds know how to report on it and report well.

Regionally, Europe and the Americas are still ahead on sustainability, which is consistent with where we see the most public and governmental focus on ESG issues. But the real story this year is that the GRESB score gap between the regions, both in terms of assets and funds reporting, has narrowed significantly. Sector scores are also converging. Those that were previously lagging have stepped up their game in the last year, driving up the overall average score for assets from 62 in 2020 to 72 in 2021.

Q To what extent has covid-19 influenced progress?

A In 2020, covid dragged progress a little bit, especially in the transport and social infrastructure space. That's settled down in 2021 and ultimately the pandemic has driven more urgency on ESG. It's heightened awareness of broader issues, beyond just climate change. For example, the pandemic's devastating impact, particularly on disadvantaged groups, has

raised the profile of social issues, emphasising to investors the importance of addressing the 'S' factors in their allocation decisions and in the assets they currently hold.

Q Is the asset class on track to meet net-zero by 2050?

A Several infra investors and fund managers have been vocal about their commitments on this issue over the last 18 months. And COP26 is contributing to this momentum. However, when you actually dig down into the data on greenhouse gas emissions reduction, the commitments are not yet reflected in real performance.

Of the assets reporting to GRESB, just 34 percent set targets for GHG emissions (and only 8 percent have a net-zero target). That's progress from 18 percent in 2019 and 29 percent in 2020, but it's still well behind real estate where over 70 percent have set targets. So it's imperative that infra accelerates on net-zero.

Q Do the private markets need more metrics/certifications on areas like diversity, equity and inclusion, and biodiversity protection?

A GRESB is watching initiatives on both areas closely. We're keen to see metrics developed that we can adopt into our assessment, so the sector can benchmark itself. For DE&I, there needs to be consensus on what targets make sense. Is it 50:50 for gender diversity, for example? Biodiversity is more complex to measure from an LP perspective; they tend to invest in brownfield assets, so it's difficult for them to influence biodiversity impact, such as the siting and construction of new assets. At the same time, improvements can be made to existing assets – solutions to prevent bird strikes on wind turbines, for example. So, the sector can't ignore its role in influencing the protection of biodiversity.

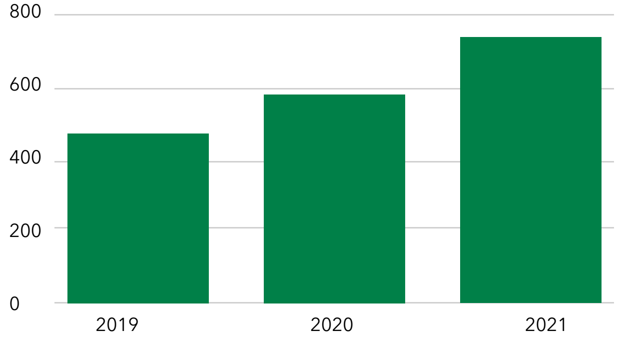
Q COP26 is almost upon us. What one message do you have for delegates?

A We need more collaboration between the investment community and policymakers. Governments don't have the money to deliver net-zero by themselves. So, they need to incentivise more private investors to come to the party. And investors need to ramp up the pressure on governments too. ■

ESG momentum marches on

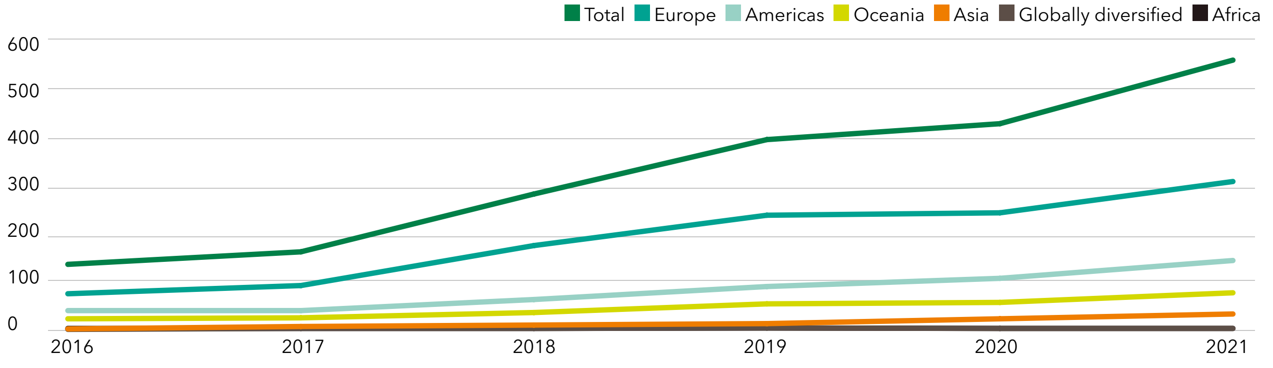
GRESB results for 2021 show that infrastructure's commitment to the sustainable agenda continues to grow

Total asset value of infra participating entities in GRESB 2021 benchmarking ($bn)

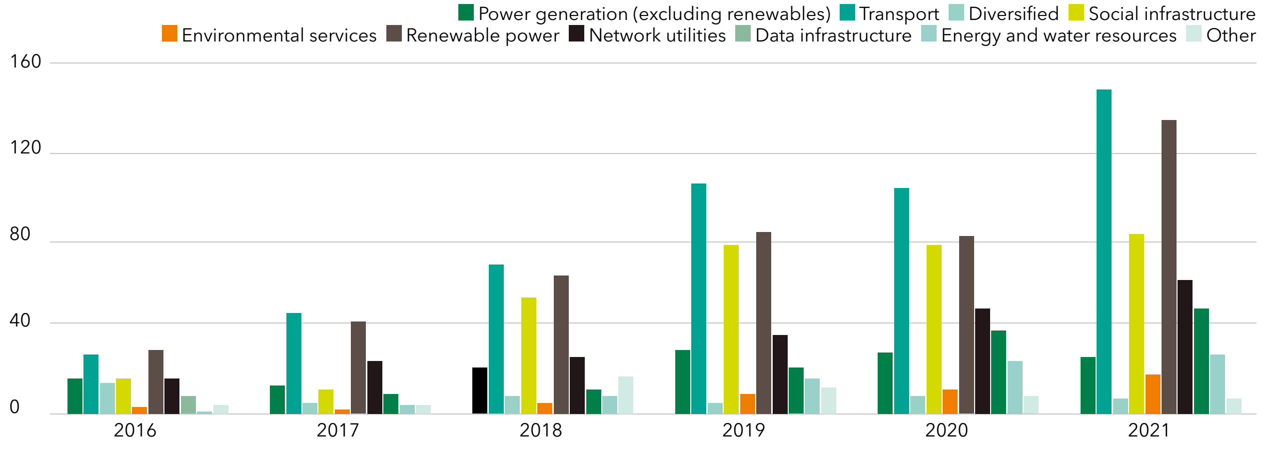


57% Increase in the total asset value of participating entities in the infrastructure space in the annual GRESB benchmarking survey since 2019

Asset participation in GRESB benchmarking by region (No. of assets)



Asset participation in GRESB benchmarking by sector (No. of assets)



Source for all data: GRESB

EXPERT COMMENTARY

Denham Capital's Sabine Chalopin, ESG director, and Jorge Camiña, partner and head of sustainable infrastructure credit, set out a six-step approach

How debt managers can better integrate ESG

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Over the last few years, ESG integration has gained traction, moving from a practice by a select group of forward-thinking private equity investors into the mainstream investment landscape. In part, this shift has been driven by LPs becoming more discerning – differentiating GPs that take ESG seriously versus those that may be greenwashing – but also by increased regulation, such as the recent EU Sustainable Finance Disclosure Regulation.

However, private debt managers are at an earlier stage of the ESG integration journey. From a market perspective, some of the challenges include the general market liquidity and competition from other lenders which may be behind in ESG integration. At an asset level, debt managers face barriers to ESG integration due to limited control over a portfolio company and lack of access to ESG data, which often is not covered by third-party data providers, particularly for mid-market private businesses.

Although ESG integration is more sophisticated in private equity compared with private debt, private debt plays a major role in sustainable infrastructure investing. As a capital-intensive industry, sustainable infrastructure requires substantial amounts of debt at competitive terms, with most projects having more than 75 percent of capex funded by debt. Debt managers can, therefore, have significant influence in driving capital into sustainable infrastructure.

For debt managers looking to invest in sustainable infrastructure, here are six key ESG lessons we have learned from our own experiences.

1 Use frameworks, such as the EU taxonomy, to determine sustainable sectors

How private debt, private equity and public capital markets compare on ESG integration

Investment activity	Primary contribution to ESG integration	Equity vs debt	Private equity	Private debt	Public debt or equity
Sourcing and screening	ESG impact	Private debt and equity and public investors are both in control of the screening and apply ESG screens	High	High	High; limited universe of listed company
Due diligence	ESG risk	Private equity owners are typically in a control position and can drive ESG due diligence to a high standard Lenders have some additional diligence room for ad hoc requests but will ultimately gravitate towards market practices	High; control stake	Medium; lending syndicate	Low; public disclosures
Use of proceeds	ESG impact	Sustainable investments tend to be asset-heavy and financed with a large percentage of debt	High	High	Low; usually secondary trades
ESG covenants	ESG risks	Private equity owners can drive ESG sustainability policies in their portfolios, while lenders will have debt covenants related to compliance with ESG regulations, which tend to set minimum thresholds rather than targets	High	Medium	Low
Reporting	ESG impact and ESG risk	Ability to increase ESG reporting	High	Medium	Low
Investment management	ESG impact and ESG risk	Engagement with management to execute new ESG initiatives	High	Low	Low
Liquidity to exit	ESG risk	Ability to exit an investment promptly upon an ESG risk event	Low	Low	High

Source: Denham Capital

Recent regulations such as the EU SFDR and the EU taxonomy are seeking to enhance transparency and ensure that capital is flowing into sustainable investments. The EU taxonomy differentiates between Article 6 funds, which do not integrate any kind of sustainability into their investment process; Article 8 funds, or 'light green funds', which promote environmental or social characteristics; and Article 9 funds, or 'dark green funds', which have sustainable investment as their core objective.

This differentiation not only drives transparency but is also helpful in determining whether an investment sector can be categorised as sustainable. While there are teething issues with the EU regulations, we believe that developing frameworks which capture these nuances can help GPs set their sustainable investment objectives.

2 Being sustainable means evolving with the times

Given the fast-moving pace of sustainable infrastructure and ESG, debt managers must be prepared to update existing responsible investment policies to reflect changing standards and regulations. At Denham, we rely on an agile approach, and fully expect that our Sustainable Infrastructure Responsible Investment policy will evolve over time to remain aligned with shifting definitions of sustainability and ensure implementation of ESG best practice.

> *"Debt managers can have significant influence in driving capital into sustainability"*

3 Bolster your internal ESG resources

To ensure credibility, ESG should be thoroughly embedded within an organisation, starting from the top. ESG should be overseen by a dedicated sustainability professional in a senior management role to guarantee ownership and influence of the organisation's ESG commitments.

At Denham, we have an internal sustainable infrastructure ESG committee, made up of senior management, our ESG director and an independent ESG consultant. The committee meets on a biannual basis with a remit to review current ESG work and push forward new initiatives.

4 The screening and due diligence processes are critical gate posts

Denham's sustainable infrastructure team has a number of years' experience screening investments, with a focus on power/renewable projects. We have recently expanded our screening tool to include three steps: first, assessment against our exclusion list; second, evaluation of EU taxonomy alignment; and finally, identification of material ESG factors. All potential investments are filtered through this screening tool before any further steps are considered.

The screening tool also helps to determine the ESG risk profile of an asset and to allocate appropriate resources for further assessment and due diligence. As the sponsor in equity investments, we often drive the due diligence process, engaging with third parties to conduct due diligence. This contrasts with our role in debt investments, where we may need to rely on due diligence completed by either the sponsor or other lenders.

Having the internal capacity to assess ESG issues offers better insights; the ability to direct knowledgeable query for follow-up, where appropriate; engagement with independent due diligence consultants; and ongoing, active dialogue with the borrower. These advantages allow for a better understanding of the ESG risk profile of an asset and the management team's capacity to manage ESG risks and opportunities.

5 Challenge current ESG covenants in legal documentation

The legal documentation stage is where ESG integration for equity and debt really start to diverge.

In equity investments, legal agreement can include quite detailed ESG requirements with respect to action items, monitoring and reporting. Conversely, legal documentation for debt investments tends to be less substantial, including high-level ESG requirements.

"At an asset level, debt managers face barriers to ESG integration due to limited control over a portfolio company and lack of access to ESG data"

Part of our mission at Denham is to work with other lenders and sponsors to move the market to a place where ESG monitoring and reporting, which meets our robust criteria, is the standard.

6 Encourage the use of GRESB reporting

For sustainable infrastructure equity investments, we have a structured monitoring and reporting process, which includes monthly ESG calls, quarterly reporting and – increasingly – making GRESB reporting compulsory for our assets.

The GRESB framework is an important tool to help both funds and assets compare themselves against peers and identify areas of both strength and weakness. The GRESB assessment is comprehensive and refined on an annual basis, pushing assets to continuously seek improvements in their ESG management and performance.

For sustainable infrastructure debt investments, that engagement is the most effective approach in terms of monitoring investments. For our newly launched debt platform, we will provide training where appropriate and will encourage GRESB reporting at the asset level. We will also contribute to the GRESB Infrastructure Debt Group to maximise the use of GRESB for debt managers.

ESG has moved from being considered a cost to a value driver, and both investees and borrowers are more open to improving ESG practice and participating in initiatives.

Looking forward

Private debt managers have made significant progress in recent years in screening assets, dramatically increasing capital allocation towards sustainable versus unsustainable investments. Now that capital is flowing into the right places, private debt managers must improve ESG engagement, monitoring and reporting. We anticipate that there will be an uptick in the way that debt managers integrate ESG throughout the investment process as markets, investors and regulators alike mandate more robust ESG commitments.

We encourage debt managers to work together towards using common frameworks and tools in the same way that equity investors have over the last 10 years. Now the question is, are equity owners willing to share and covenant to their lenders the same ESG standards and ESG reporting frameworks they already impose on their own investments? Since the bulk of ESG monitoring on assets is already being done by equity owners, we expect that there will be a natural convergence between private equity and private debt. The trend is our friend. ■

Number crunching

Gill Wadsworth explores how far infrastructure asset managers have come in providing the critical metrics LPs require to direct capital towards the most sustainable projects

The world's climate change decision-makers will descend on Glasgow this month in an urgent attempt to push for a more concerted effort to achieve the Paris Climate Agreement targets and meet the UN's Sustainable Development Goals.

The summit leaders have already made clear the prominent part that the infrastructure sector plays in achieving these aims. The preamble to the COP26 summit calls on stakeholders to "rise to the challenges of the climate crisis by working together".

Nicholas Stern, professor of economics and government at the London School of Economics and chairman of the Grantham Research Institute on Climate Change and the Environment, made the importance of this clear back in 2016 during the signing ceremony for the Paris agreement: "The infrastructure decisions we make in the next few years could cement our ability to meet the Paris goals, or condemn us to a future in which global temperatures rise well above two degrees Celcius. In the latter scenario, environmental conditions could be so hostile that development goes into reverse, leading to rising poverty and social conflict."

In response, there has been a flurry of activity from infrastructure managers, industry bodies and regulators to find more commonality in the sector's ESG impacts.

However, there remain significant gaps in suitable metrics to help investors to choose sustainable infrastructure projects. And even where tools and data do exist, there is a lack of standardisation.

A report by consultancy KPMG published in October 2020 stated that although many ESG standards and tools are already available for infrastructure investors, with more being developed each year, "few have been developed specifically for investor needs".

Fernando Faria, adviser to public and private sector clients on major infrastructure projects at KPMG, says: "What we have today are several metrics and different frameworks which do not address all the needs of investors, and they produce different results."

Harmonisation

Regulators, particularly in the EU, have been leading the charge in driving harmonised ESG reporting standards.

Last year, the EU announced its proposed taxonomy, promising a classification system that "would provide companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable".

The EU says the taxonomy will "create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed".

Infrastructure investors have widely welcomed the initiative.

Sabine Chalopin, ESG and impact director with Denham Capital's sustainable infrastructure team, says: "The EU recognises there is commitment to the Paris agreement and to get capital moving to the right places."

However, she adds that "all the players are slightly scrambling with it and trying to figure it out" and notes that while the EU is writing its taxonomy, policymakers in Canada are working on their own classifications, which could undermine efforts to converge at a global level.

In March, the Sustainable Finance Disclosure Regulations came into force. These require asset managers and advisers in the EU to provide "prescriptive and standardised disclosures" on how ESG factors are integrated at both an entity and product level.

Like the taxonomy, the SFDR is designed to eliminate greenwashing of financial products and financial advice by ensuring investors have the disclosures

providing a common framework for reporting sustainability metrics, and these will be mandatory for UK companies across the economy by 2025.

The TCFD says asset managers should provide the weighted average carbon intensity, where data is available or can be reasonably estimated, for each product or investment strategy. Furthermore, they should provide other metrics they believe are useful for decision making along with a description of the methodology used.

TCFD guidelines also set out requirements for infrastructure initiatives that do not include sustainability considerations to "consider why this has not been incorporated and review their mission and objectives accordingly".

Dixon says: "TCFD has become the dominant framework between asset owners, managers and the markets. This is very welcome because they provide client-side pressure to include commitment to sustainability in their mandates to managers. TCFD is finding its way into investment management agreements and requests for proposals, and that has never been there before."

He notes that one of the most important advances in sustainability reporting for infrastructure investors is the development of greenhouse gas emissions accounting standards. Devloped by the Partnership for Carbon Accounting Financials and published in September, the standards cover the accounting and reporting of the six greenhouse gases covered by the Kyoto protocol, including carbon dioxide, methane and nitrous oxide.

The standards, which feed into the TCFD's work, were designed to help companies prepare a greenhouse gas inventory that "represents a true and fair account of their emissions using standardised approaches and principles".

They are also critical in helping provide businesses with information that can be used to build an "effective strategy to manage and reduce GHG

they need to make investment choices in line with their sustainability goals.

The SFDR appears to tackle issues like under-reporting and fragmented information in traditional markets. However, Edward Dixon, head of ESG for Aviva Investors' real assets business, says the regulation is less well suited to infrastructure and other real assets.

"SFDR does tackle conventional private markets like real estate," he says. "But when it comes to the others, like infrastructure and venture capital, it's not quite where it needs to be.

"SFDR creates a level playing field in terms of product, but it does not provide the level of detail in private markets that we need to disclose the same set of metrics. The metrics in the legislation are good, but not detailed enough for large infrastructure investors to make common disclosures."

Dominant framework

On a more global level, the Taskforce for Climate-related Financial Disclosures has made notable progress in

> *"We now have a dominant methodology for carbon accounting in unlisted assets"*
>
> **EDWARD DIXON**
> **Aviva**

emissions, and increase consistency and transparency in GHG accounting and reporting".

On the launch of the standard, Mark Carney, finance adviser to the UK prime minister and UN special envoy for climate action and finance, said: "The PCAF's industry-led process demonstrates the sector's recognition that climate change and the transition to net-zero is a risk that needs to be managed as well as an enormous commercial opportunity to grasp. For this to happen, the sector requires robust, clear and harmonised disclosure of financed emissions; it needs to embed climate risk management into business decisions; and direct capital to economic activities that enable the transition to net-zero no later than 2050."

For Aviva's Dixon, the PCAF standard brings an end to any claim from infrastructure managers that it is too difficult to measure greenhouse gas emissions, or that the information does not exist: "We now have a dominant methodology for carbon accounting in unlisted assets. I still hear the industry say, 'Well if we only we had the data and methodology we could get on with it'. I say, 'We've got one. It has arrived'."

Aviva Investors this year joined the PCAF, which has provided the manager with the necessary metrics to support its clients in reducing greenhouse gas emissions from their directly owned and financed real asset investments by 2040. This extends to clients' assets across its total real assets platform, comprised of real estate, infrastructure and private debt.

Dixon says: "We have literally set to map the entire back book of commissions and integrate a close understanding of carbon accounting in our investment committee process for infrastructure debt and private debt asset classes."

He adds that achieving the 2040 target will only be possible if the company sets short-term goals, and Aviva has laid out a set of detailed targets with a 2025 deadline. These include investing £2.5 billion ($3.4 billion; €2.9 billion) in low-carbon and renewable energy infrastructure and buildings, delivering £1 billion of climate transition-focused loans, and reducing real estate carbon intensity by 30 percent and energy intensity by 10 percent by 2025.

> *"What about diversity, impact on communities and child labour? We need metrics for these important issues too"*
>
> **FERNANDO FARIA**
> **KPMG**

"Aviva's long-term goals mean nothing without short-term targets", says Dixon. "While it matters who is in control of the company in 2040, they are less relevant than the management of Aviva today. They are the ones that have to get us to the 2040 goal."

Other successful sustainability collaborations for infrastructure stakeholders include GRESB, which assesses and benchmarks the ESG performance of real assets, providing standardised and validated data to the capital markets. GRESB says the assessments are guided by "what investors and the industry consider to be material issues in the sustainability performance of real asset investments", and that they are aligned with international reporting frameworks including TCFD recommendations, the Paris Climate Agreement and the UN SDGs.

Denham's Chalopin is a big fan of GRESB as a reliable way to report the sustainability of the firm's infrastructure projects. For example, the Denham International Power Fund has been reporting against the GRESB Infrastructure Benchmark Assessment for the past three years. "We need to get asset owners and funds to report against material ESG risks and we need to standardise it without diluting it. GRESB provides a really strong framework for that."

Ongoing challenges

Although there is positive momentum in the sustainability reporting space, commentators remain keen to see further collaborations between key stakeholders.

Faria wants greater recognition of the particular circumstances of infrastructure projects in emerging markets and developing countries compared with those in the developed world: "While standards can be and should be applied properly and universally, the implication on investment needs to take into consideration the factors in the emerging markets where they may not have the same [renewable] alternatives as the developed countries."

He would also like to see more standards developed in relation to the social element of ESG: "The current focus is on carbon emissions, but what about diversity, impact on communities and child labour? We need metrics for these important issues too."

This year's COP26 summit could be a turning point for improving sustainability reporting for infrastructure projects, making life much easier for investors. But stakeholders will need to keep up the pressure on policymakers to ensure this opportunity is not lost. ■

KEYNOTE INTERVIEW

Time to step up

With governments cash-strapped as a result of the pandemic, private capital must play a pivotal role in creating a more sustainable future, says Stéphanie Passet, investment director at BNP Paribas Asset Management

Q How has the global focus on sustainability changed over the past 18 months and what has been driving that?
Sustainability and the energy transition have certainly remained at the forefront of government and public agendas, despite the pandemic. This is particularly true in Europe. It is also true that we're seeing an increasing emphasis on ESG from institutional investors.

In addition to a long-term trend that has seen investors ever more focused on driving sustainability, an evolving regulatory framework, particularly with the EU Sustainable Financial Disclosure Regulation and the EU taxonomy, has accelerated that journey over the past 18 months.

That regulation represents a new challenge for the industry because it impacts institutional investors in multiple ways, from the selection of assets through to reporting.

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Q Governments are unable to foot the ESG bill themselves. What does this mean in terms of how sustainability goals will be financed?
Public spending is primarily being targeted towards public health at the moment – coping with the pandemic and supporting the subsequent recovery. The government purse cannot be infinitely extended, so the private sector is having to take up the baton in the mission to create a more sustainable world.

An increasing proportion of infrastructure funds will need to be dedicated towards supporting ESG and sustainability goals and private markets will need to co-operate with government regimes if we are to meet 2050 targets.

Q The most explicit form of that co-operation we've seen, historically, involves PPPs, which have been in decline in many markets. Do you expect to see a resurgence in those structures?
No, I don't think so. The role of government will be to provide the necessary regulatory support or subsidies that will act as a catalyst for private

capital, which can then take over. So, private capital will serve to leverage public funds, rather than through PPPs.

Q What opportunities is this creating on the debt side, particularly in terms of investment in renewables?

Climate change awareness is certainly supporting the development of low-impact energy production based on renewable energy technologies, especially in Europe, where renewable energy accounted for around 34 percent of total generation in 2019. Meanwhile, although the US has lagged other countries in this transition, there are positive signs ahead with the Biden administration announcing a $2.25 billion infrastructure plan to focus on green energy and decarbonisation.

Therefore, the traditional renewables sector – solar and wind – is continuing to develop rapidly, with countries announcing ambitious targets in terms of additional renewable energy production. We expect to see a lot of new capacity come online by 2030.

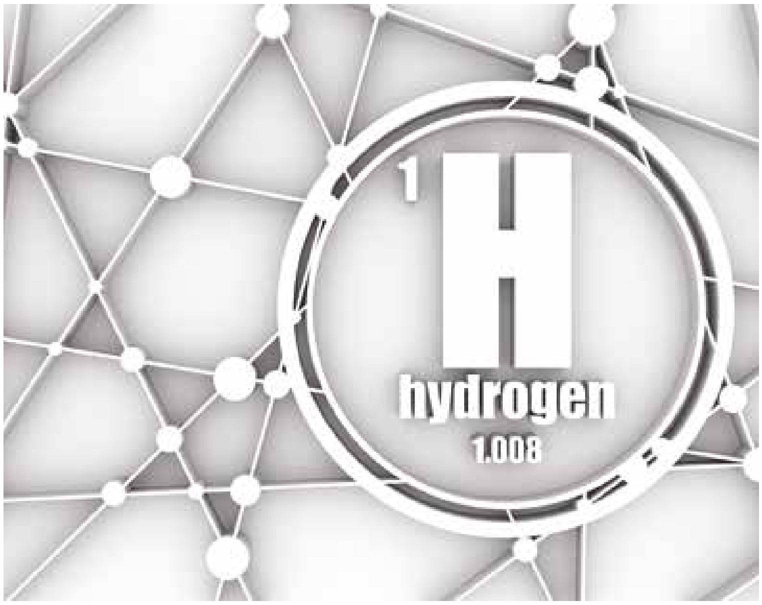
However, we are also observing a scarcity in the number of renewables assets available for financing. This is because renewable assets are environmentally friendly by nature and therefore represent an obvious sector to invest in for any organisation looking to boost its sustainability credentials. That means strong competition among debt providers and, consequently, a significant compression on returns. It's a challenging sector for those reasons, but we continue to seek and identify the right assets, offering the right risk-adjusted returns.

Q What about opportunities in the telecoms sector?

Clearly, the onset of covid has highlighted the importance of connectivity as home working has become more prevalent. The fibre optic roll-out was already a major source of financing opportunities pre-pandemic, but we've seen a marked increase in dealflow and now expect that to last for the foreseeable future.

In terms of ESG, fibre primarily has a social impact, bringing internet connections and high-speed broadband to rural communities across Europe, bridging the internet divide, and helping to meet social development goals identified by the EU.

Furthermore, although there is some expectation of a return to working norms, as vaccination programmes continue to make progress, many companies are likely to allow a mix of home and office working. This would not only reduce the commercial rent burden of the business, but also offer individuals a lifestyle away from urban areas, if they desire, thus providing an



Q When will hydrogen become a bankable proposition?

Hydrogen is a great example of the type of asset that currently requires government support.

Both the US and EU governments are currently considering the nature of the subsidies and political support they are going to provide to that sector, in order to serve as a catalyst for project development.

While we do see a lot of projects at the work-in-progress stage, these are primarily equity opportunities, right now.

However, I believe they will become bankable in the future, but we've not yet reached that stage.

"Private markets will need to co-operate with government regimes if we are to meet 2050 targets"

additional economic boost for rural communities – all facilitated by investment in telecoms infrastructure.

Elsewhere, we see opportunities in the data centre sector for those assets powered by renewable energy.

Q Are you also seeing opportunities to support utilities in their energy transition?

There are opportunities to support utilities in their energy transition – for example, through the phasing out of coal generation and a shift towards more sustainable capacity. There are also opportunities around the addition of battery storage to renewables plants, taking that intermittent generation and turning it into a baseload power supply.

In the longer term, we anticipate that green hydrogen will reach a stage where it can replace the gas that is currently being used as an interim source of energy. But first, the cost of producing that green hydrogen will need to become more competitive, because currently it's still too expensive.

Q Digitisation has been another prominent theme in recent years. What are the sustainability angles there?

Digitalisation is providing opportunities around smart meters and smart grids, which can then enable the optimisation of networks and of base load capacity to provide greater energy efficiency and, therefore, to reduce carbon footprint. The same is true of smart cities, which can help reduce the carbon footprint of a whole neighbourhood.

Digitalisation is also an important tool for EV charging stations, which rely on smart data and apps that are made available to EV owners.

Meanwhile, for the infrastructure asset class overall, digital transformation enables managers to collect and process large volumes of data in order to optimise assets from an ESG perspective, while simultaneously reducing operational and maintenance costs.

> *"There are opportunities to support utilities in their energy transition – for example, through the phasing out of coal generation"*

Q What role can lenders play in driving sustainability through their deployment activities, as well as their terms and conditions?

Lenders have less direct influence than equity investors because they don't have voting power. But lenders are still able to exert influence through their investment selection, which dictates the level of liquidity available for a specific sector or project. For example, more liquidity may be available for a renewable asset today than for a hydrocarbon storage facility.

Lenders can also insist on specific ESG due diligence on an asset and include reporting requirements as part of the financing documentation. So, certainly, lenders have a role to play in creating a more sustainable world.

Q You mentioned that sustainability sectors command strong competition among lenders. How can you avoid the most hotly contested areas?

The market is highly competitive, so lenders need to broaden their investment horizon and move towards new frontiers. Being a first mover in a new sector puts you in a position to capture a premium. If you want to invest behind sustainability themes and maintain your returns, the answer is to explore the next wave of opportunities.

Q How do you manage risk when you move into a new sector?

We rely heavily on due diligence. As a lender, we don't take the same kind of risks that an equity investor does, but we would structure more protective terms in a new sector than we might in a sector that is better known and understood. So, it's a mix of risk-sharing with the equity provider and the structuring of the financing.

Q How can lenders differentiate themselves as a sustainable partner of choice?

Fully embed ESG into investment processes on an asset-by-asset basis. We've done this since launching the private debt and real asset team in 2017 because we believe that ESG will impact performance in the long term.

What that means in practice is that we carry out a full ESG analysis, in just the same way that we do technical and financial due diligence. We have an in-house sustainability centre, but we also use an external consultant that provides quantitative analysis on every asset in terms of carbon footprint and alignment with a two-degree trajectory. That consultant scores the net environmental contribution of the asset and benchmarks it against its peers. Therefore, we have a strong ESG ethos and that's attractive to many of our investors.

Q What do you think the future holds for private capital's role in creating a more sustainable future?

Private capital is an important source of liquidity and, therefore, is a strong contributor to the acceleration of the energy transition and digital transformation going forward. We rely on government to put the right regulatory framework and incentives in place. But private capital must step up to leverage that public funding in order to create a more sustainable world. ■

Providing clarity to sustainability-linked financing

Guest comment by **Susan Gray**

Second-party opinions are helping corporate issuers to substantiate their sustainability claims, offer confidence to market participants and enhance execution

Sustainable finance is critical to the successful execution of the energy transition. The speed at which the market is growing has seen issuance multiply year after year – sustainable bond issuance is expected to exceed $1 trillion in 2021 – with the introduction of new products greatly expanding the universe of issuers able to obtain sustainable financing.

Of these, sustainability-linked debt instruments – which include sustainability-linked bonds and sustainability-linked loans – are potentially the most important for companies implementing transition financing across all sectors. However, there is a lack of transparency and consistency when it comes to environmental, social and governance marketing, alongside non-uniform labelling of commitments and reporting. This means it is increasingly challenging for investors to identify which corporates' sustainability claims are reliable, and which companies are guilty of green or sustainability washing.

Sustainability-linked instruments – and especially those linked to carbon-exposed sectors – are of particular concern. Such instruments enable issuers to use the proceeds for more general corporate purposes and are underpinned by selected sustainability performance targets.

Important steps are underway to improve the quality of disclosure and reporting in the sustainable debt space. A number of voluntary standards, aimed at enhancing market transparency for use of proceeds within the sustainability linked debt market, now exist.

These include the International Capital Market Association's Sustainability-Linked Bond Principles and the Loan Market Association's Sustainability-Linked Loan Principles. And although these principles are voluntary, an estimated 97 percent of use of proceeds and 80 percent of sustainability-linked bonds issued globally in 2020 adhered to them, according to the ICMA.

Objective views

Whether, and to what extent, corporates are fully aligned with these principles remains under question. As a result, issuers are increasingly turning to reputable and informed second-party opinion providers to substantiate their sustainability claims, while stakeholders are consulting these assessments before making investment decisions.

At S&P Global Ratings, for instance, we recently launched our SPO service for sustainability-linked financings, which assesses the alignment of entities' sustainability-linked frameworks or transactions with the five components of the SLBP or SLLP. These include a selection of key performance indicators, calibration of SPTs, instrument characteristics, reporting and post-issuance review.

To inform on the credibility of these projects, for the first time, S&P Global Ratings will give its opinion on the materiality and ambition of the selected KPIs in line with ICMA alignment principles in order to enhance investor understanding and improve execution.

Investor demand for more detailed ESG disclosure will continue to drive improvements in this field. And while there is still some way to go in terms of harmonising the sustainable debt industry, SPOs will address the need for greater transparency and informed assessments for instrument-level ESG disclosure in a growing debt market. ■

Susan Gray is global head of sustainable finance business and innovation at S&P Global Ratings

KEYNOTE INTERVIEW

Navigating the fast-moving ESG space

Foresight and deep sector expertise are key when investing in a long-term asset class like infra, say Crédit Agricole CIB's Matthew Norman and Tanguy Claquin

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Q Have you seen a shift in focus on ESG in recent months?

Tanguy Claquin: ESG was already an important topic among our clients prior to the pandemic. But now it's an absolute priority. That shift has been driven by several factors. First, covid-19 has laid bare the speed at which the economy can be disrupted. This was a health crisis, but in many ways it exposed how a climate crisis could have similar effects. So, there's a heightened sense of urgency.

Second, the regulatory framework around sustainable finance is moving very fast. In Europe, there is the EU taxonomy, which means every asset is classified according to its contribution to environmental objectives. But we're also starting to see similar regulation emerge in other jurisdictions, including the US, where the SEC is looking closely at ESG disclosure, and in several large jurisdictions in Asia, such as Japan and China.

So, the combination of the pandemic and regulatory pressure means ESG is now at the top of the agenda for corporates, investors and banks.

Matthew Norman: This has clear connotations from an infrastructure perspective, due to the very long-term nature of the asset class and the essentiality of the services being provided – not just to customers, but more generally to communities and society at large. That means that both ESG risks and opportunities are more prominent in infrastructure than in other sectors. Taken in conjunction with the pandemic and the regulatory backdrop, the discussions we're having with infrastructure clients have evolved significantly over the past 12 to 18 months.

Q What challenges is that growing emphasis on ESG creating for the infrastructure industry?

MN: There are two key challenges. One is the speed at which regulation changes and the other is how to measure ESG work.

LPs and GPs are making investments over a long-term horizon. Trying to manage those investments in a fast-moving environment when it comes to government policy and regulation around ESG is challenging. Navigating long-term government commitments and short-term policies, which are not always aligned, is challenging. We've seen that across the transportation, real estate and energy sectors, for example.

Understanding and measurement of ESG is increasingly important to investors and their stakeholders, and it has led to a proliferation of frameworks. But those frameworks remain inconsistent, and there is still uncertainty around interpretations of outcomes and how those can be measured and benchmarked.

TC: Following up on how to measure ESG, another challenge is this issue of data availability. Not all assets have the

> *"ESG is now at the top of the agenda for corporates, investors and banks"*
>
> **TANGUY CLAQUIN**

data we require around social and environmental impact when lending. We need training and education within the finance community to remedy that.

Q How has the banking sector built its capabilities to address emerging ESG demands?

TC: Most banks have had ESG teams in place for some time, but Crédit Agricole CIB was doing this already back in 2010, when it became one of the first banks to start structuring green bonds for our clients. Today, we're embedding ESG data into our systems, so that we can steer our portfolios towards a better alignment with the Paris agreement, which is a commitment the bank has made.

This has meant changing the way the bank works and investing heavily in training and data. All while being spurred on by climate change demands and the associated regulation.

Q What are clients looking for when choosing a partner for infrastructure investment in a sustainable future?

MN: Due to uncertainty around regulation and policy direction, clients are looking for partners they can rely on over the long term. They are looking for partners that are committed to working through any challenges that emerge along the way and that have a depth of experience in the asset class. Crédit Agricole CIB has been heavily involved in the infrastructure sector for a very long

Greening the UK's gas pipeline

In March 2020, Crédit Agricole CIB acted as bookrunner on Cadent's inaugural transition bond. Cadent Gas is one of four companies that own and operate the eight gas distribution networks in the UK.

Cadent is currently undertaking a replacement of its existing iron pipeline network with new plastic piping, in order to reduce leakage and to pave the way for increased hydrogen usage in the UK.

The issue comes under Cadent's recently established Transition Bond Framework, which lays out eligible uses of proceeds (that is, retrofit of gas distribution networks, renewable energy, clean transportation, energy efficiency buildings) with 100 percent of the proceeds from the sale of this bond to be used for the mains replacement project. "We have been working with Cadent for many years which led us to act as a bookrunner on their inaugural transition bond," explains Matthew Norman.

"Retrofitting of such infrastructure can have a massive impact on the reduction of greenhouse gas emissions, which makes it a necessary investment for the energy transition," adds Tanguy Claquin.

time. It's in our DNA from both a financing and advisory perspective.

At the same time, clients are also looking for partners that have invested heavily in ESG and sustainability-linked themes over a long period of time. As Tanguy said, Crédit Agricole CIB was at the forefront of the development of green and sustainable finance, and we have a proven track record. We're also one of the founding partners of the Equator Principles, dating back to the early 2000s. We've been focusing on ESG-related topics for a long time and we have dedicated teams, which continue on this journey, alongside our clients.

It's important to have an open and honest dialogue about where risks and uncertainties lie in a rapidly changing landscape. We're very well placed to do that.

TC: Clients want to work with organisations that are as committed to ESG as they themselves are. We have demonstrated that by being first movers in the market. We have people in our business that have dedicated their whole careers to sustainability.

Q How do you expect the ESG outlook to evolve?

TC: There is a big debate happening at a European level at the moment, which I believe will eventually extend to all jurisdictions, and that is the extent to which social and environmental themes should be combined. The next stage of the EU taxonomy will involve a social taxonomy. As part of the consultation, the question being asked is should the social and environmental remain separate or be merged?

Infrastructure is interesting from this perspective, because most investments do, in fact, tick both boxes. There is always a social component because the infrastructure is there to serve communities. The question is how to strike the right balance between the two sets of criteria, because it's important not to cut corners on either.

> *"There are two key challenges. One is the speed at which regulation changes and the other is how to measure ESG work"*
>
> **MATTHEW NORMAN**

Q What investment opportunities will emerge as a result of sustainability themes?

MN: The energy transition is a critical theme running through many of the world's largest economies. Over the past 15 years, we've observed a natural development of renewable businesses, which have led to investment opportunities. Now, we're looking ahead to see what the next phase of the energy transition will bring. Electric vehicles will be a huge component of this and will involve massive investment in primary infrastructure, such as EV charging ports.

Another exciting area is hydrogen. As a bank, that is an area where we've been leading the charge. Crédit Agricole sits on the Hydrogen Council. We've set up a hydrogen task force and we have a dedicated team working on hydrogen opportunities. That team has already secured a number of proprietary transactions, the first of which are now moving through to close.

Corporate and industrial players are still dominating those fields today. But, given the capital constraints of those players and the scale of the capex intensity of these emerging sectors, such as hydrogen and EV infrastructure, it will undoubtedly become necessary to mobilise financial investors.

As these markets mature and the performance track record is observed, these assets will become available for traditional M&A activity, which may be better suited for traditional LPs.

Overall, integration of ESG assessment into either investment strategies/funds or companies should enable infrastructure investors to improve resilience and sustainability and thus create value, for example by lowering the cost of capital.

Q Finally, what will it take to successfully navigate the ESG landscape?

TC: There are multiple different regulations coming through and so you need to have a partner to help navigate that complex landscape – a partner that has the dedicated resources required to understand that regulation and to distil the most important points as they pertain to individual clients. You also need a partner that understands emerging technologies in order to provide you with the right tools to finance those projects.

MN: Deep sector expertise is very important. ESG risks vary significantly from subsector to subsector and from asset to asset.

And with a dramatically accelerated pace of change, it's vital to work with an organisation that understands each industry in depth to aid in navigating a moving landscape.

After all, just look back a couple of decades to see how radically things can change. My involvement in the energy and infrastructure sectors dates back 20 years.

In that timeframe, perception around coal and coal infrastructure, for example, has been completely upended. Deep sectoral expertise is a pre-requisite in the current environment. ■

Matthew Norman is global head of infrastructure and Tanguy Claquin is global head of sustainable banking at Crédit Agricole CIB

Source for Tanguy Claquin photograph: Ludovic Le Couster@AFP

An energetic transition

Guest comment by **Richard Moore**

Infra investors are taking a robust approach towards capitalising the energy transition, says the Campbell Lutyens managing director

Amid the tumult of 2020 and 2021, we have seen one trend solidify and grow into a pillar of the private investment asset class: LPs' focus on sustainable investing. Although this has manifested itself in greater attention paid to both the 'S' and the 'G' of 'ESG', the increase in LP appetite has perhaps been most pronounced around the 'E'.

This interest did not begin with covid-19. Similar to the digital infrastructure space, LPs' allocations and commitment to sectors related to the energy transition had already been growing before the pandemic – most notably in renewable energy, a well-established portion of the energy transition bucket.

In 2015, $7.5 billion was closed for renewables strategies. In the first half of 2021, the figure had risen to around $19 billion, according to *Infrastructure Investor* fundraising data. Since the word 'lockdown' entered our everyday vernacular, we have seen investor interest and activity in the energy transition increase markedly. More than $500 billion was invested in low carbon opportunities in 2020 (compared with less than $300 billion in 2011) – a figure driven by political, regulatory, social, environmental and economic dynamics.

At Campbell Lutyens, we have been fortunate – at the fulcrum between GPs and LPs – to have seen the developments over the past 18 months at close quarters, advising on both primary fundraisings and secondary transactions in traditional renewables and energy efficiency. During this period, we have identified three key themes around the LP approach towards the energy transition: a rise in sustainability-oriented investor allocations; decentralisation of energy supply as a non-traditional renewables focus area for investors; and hydrogen as a non-traditional renewables focus area for investors.

Rise in sustainability-oriented allocations

The rapidity of capital flows into the energy transition space has been a direct result of the increases at source and the creation of special investing pockets by institutional investors. These are being driven, in part, by pressure exerted by key stakeholders: in the case of retirement funds, it is coming from individuals making pension contributions; in the case of sovereign wealth funds, from governments.

Examples of recent sustainability allocations being created or increased include New York State Common Retirement Fund's creation of a $20 billion Sustainable Investments and Climate Solutions Program, hiring dedicated staff to execute the strategy, and the Abu Dhabi Investment Authority's growing renewable energy exposure. ADIA now has an indirect interest in assets with a renewable energy capacity of more than 20 GW and "continues to invest in opportunities associated with a lower-carbon future", according to its 2020 annual review.

These specific allocations, and defined priorities among some of the world's largest capital allocators, are key to ensuring increased capital flows from institutional investors into the energy transition play.

Energy supply decentralisation

In our recent energy transition conversations, LPs have increasingly been asking about sectors and subsectors outside of traditional renewables. Prominent among these is a focus on the decentralisation of energy away from traditional centralised grid systems, and including energy efficiency initiatives with commercial and industrial buildings, as well as the provision of distributed generation.

Energy efficiency entails the delivery of cheaper, cleaner and more reliable energy solutions at the point of use, thereby reducing or eliminating reliance on the grid or subsidies. The technologies involved include combined heat and power units, roof-top solar installations, and efficient lighting, heating and cooling solutions.

Energy efficiency is driven by government support, corporate net-zero agendas, established technologies and the broad application across existing built infrastructure. Perhaps the strongest appeal of the energy efficiency subsector is its potential scale: according to the International Renewable Energy Agency, there is an identified market opportunity in the 15 years to 2030 of between $10 trillion and $29 trillion – compared with between $5 trillion and $9 trillion for traditional renewables.

Campbell Lutyens' analysis – based on data by Preqin, *Infrastructure Investor* and Inframation – estimates that since the start of 2015, around $54 billion has been raised across 108 closed or still-raising funds for centralised or utility-scale renewable generation. This compares with around $4 billion across 14 closed/raising funds in the energy efficiency space.

So, while there have been meaningful steps forward in the energy efficiency space by managers such as Octopus Energy and Sustainable Development Capital, the potential for greater private investor involvement is vast.

Hydrogen

Another area in which we have seen investor interest piqued is around green hydrogen. This is produced through the electrolysis of water into hydrogen and oxygen, a process that does not emit harmful emissions. This contrasts with 'black' and 'brown' hydrogen, which relies on a more environmentally damaging steam-methane reforming process to separate hydrogen from water and methane.

"The potential for greater private investor involvement in the energy efficiency space is vast"

Uses for green hydrogen include greener gas (reducing the concentration of carbon per unit of energy), electrification (particularly in buildings), transport and storage (with hydrogen fuel cells having a higher driving range than batteries).

From an investor viewpoint, hydrogen is at an earlier stage in portfolio allocations. There are few hydrogen-focused funds, but we are seeing hydrogen play an increasing role in the broader investment strategies of diversified energy transition funds.

Two prominent infrastructure managers making meaningful strides in the hydrogen space are Meridiam and Ardian. Meridiam, in partnership with Hydrogène de France and SARA, has begun construction on the West Guiana Power Plant, the world's largest power plant project to store intermittent renewable energy using hydrogen. As of Q2, Ardian was engaged in 10 active hydrogen projects, representing more than $1 billion of potential capex across upstream and downstream opportunities.

Hydrogen is relatively nascent in the private markets compared with the more established traditional renewables sectors. Nevertheless, we expect hydrogen – recently described by the European Parliament as 'an energy carrier for a climate-neutral economy' – to become an increasing proportion of investor portfolios through diversified and, over time, specialist fund exposure.

Urgency

Traditional renewables have played a part in LPs' infrastructure portfolios over many vintages during the past two decades, either through generalist managers or sector specialists. Now, however, the broader political, social, environmental and economic narrative has transformed investor priorities and shaped allocations to the energy transition space.

We are seeing LPs and GPs alike grappling with the opportunities and challenges thrown up by Articles 8 and 9 of the EU taxonomy. We are watching with interest the growth of institutional investment in areas like energy efficiency and hydrogen. Even in the level-paced private markets, we are feeling – as with so much touched by climate change – the fierce urgency of now. ■

KEYNOTE INTERVIEW

Making a measurable impact

Meridiam's founder and CEO, Thierry Déau, explains how the firm is delivering positive social and environmental outcomes, and value creation, through impact investing

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Q What does impact investing mean to Meridiam and how do you define it?

Impact is first about intent and then about measurable outcomes. So, as a firm, we've defined impact in a way we could measure it, by aligning our contributions to a number of the United Nations Sustainable Development Goals (SDGs), which we've identified as strategic for us.

Impact is also about the difference you are actually making. You're not going to have the same impact building a 1GW solar plant in France as you are in the middle of Africa – 1GW of solar in Africa will make a huge contribution to the continent's clean energy production, but in France it would seem rather small. So, impact is also relative with regards to the local environment.

Q What impactful outcomes are you specifically looking to address as a firm?

We've selected five strategic pillars in terms of delivering and measuring impact. The first relates to sustainable infrastructure and sustainable cities – SDGs 9 and 11. The second involves the provision of affordable and clean energy – SDG 7. The third pillar is climate action – SDG 13, and we measure the temperature of our portfolios to align them with the Paris Agreement and a two-degree or less trajectory.

The fourth is focused on inclusion, and for this we have some subcategories around gender balance, access to quality employment, and both economic and social value creation. They include SDGs 5, 8 and 17. Our final pillar is about protecting and enhancing biodiversity – SDGs 14 and 15.

Those five pillars drive our mission. They ensure that as an organisation we use our skills and investment to maximise the benefits we deliver for people and the planet.

Q How do you measure progress against those SDGs?

The UN SDG system comes with its own set of KPIs and indicators, which are very helpful. But obviously you sometimes need to build proxies, in order to measure what's appropriate for a particular company or project. So, Meridiam has developed its own proprietary Sustainability Impact Measurement Platform called Simpl to address this. It took two to three years to build such capability. We also set up an independent scientific committee overseeing our use of the tool, in order to build transparency and credibility.

Q Can you share an example of an investment that's met some of those SDGs?

One example involves a 46MW biomass plant that we own in Côte d'Ivoire with EDF, known as BIOVEA Energie. This business is creating a positive impact by providing clean energy to a community, meeting the renewable electricity needs of 1.7 million people per year, all powered by agricultural waste.

But what really excites us is the social dimension. This is a facility that allows 12,000 smaller planters, in a 60-kilometre radius, to recycle the residues of palm leaves from the local crop. In selling such waste, these planters have been able to restructure the way they organise their production. That will create a 20 percent increase in income for these planters and, therefore, a meaningful improvement in living conditions for a rural community which was previously struggling.

In addition, around 5,000 new jobs will be created, while the project will

Case study: Port of Calais, France

Decent work and economic growth is one of the SDGs that I like to highlight, and our investment in the extension of the Port of Calais is an excellent example of putting this into action.

We've just completed six years of construction at a time when the world has faced not only covid, but also Brexit. Calais is the major link between France and the UK, carrying 10 million passengers and 43 million tons of freight per year. Maintaining that flow of goods and people was clearly impactful in its own right. But our investment also had a significant impact, both on ensuring the resilience of the infrastructure in the face of climate change, but also the economic and work prospects of the communities in Calais.

The project was designed to anticipate the long-term effects of climate change by protecting the port against rising sea levels, while preserving the environment and biodiversity. Meanwhile, Calais has been a poor and neglected city for many years, struggling to deal with a refugee crisis. Our investment injected significant capital into that community.

We implemented a number of programmes to retrain the local population, allowing it to take advantage of the jobs we were creating. During the entire duration of the works, approximately 3,500 people worked on the site daily, representing nearly three million cumulative work hours, with over 2,000 jobs created.

At the same time, we supported an ecosystem of local small and medium-sized enterprises (SMEs), which received €185 million in contracts. In this way, Meridiam has both supported trade through improvements made to a major logistics route and ensured that the local community enjoyed the benefit of our investment.

also contribute to the fight against deforestation by promoting good agricultural practices that will increase yields. Finally, the planters will benefit from the provision of combustion ashes, which will be used as a natural fertiliser.

SDG 7 – the provision of clean energy – is a relatively simple one and this plant will certainly contribute to Côte d'Ivoire's ambition to achieve 42 percent of its energy mix from renewable energy sources by 2030, while cutting greenhouse gas emissions by 4.5 million tons of CO_2. This is the kind of social impact that makes all the difference when we're reviewing an investment of this nature.

Q COP26 is just around the corner. What is the role of impact investing in tackling climate change?

Impact investment must become more mainstream. I'm the chair of Finance for Tomorrow, a Paris-based group tackling the issue of sustainable finance. Together with government, we've put together a working group on impact, which is looking to build consensus around a definition and then agree methodologies to make that consistent.

Providing clarity will promote the use of impact. That is important because impact investing has the potential to play a huge role in tackling climate change, precisely because tackling climate change alone is not enough. We need impact investors that are set up to take the other SDGs into account, as well. In that way, impact will become paramount in solving the equation of a just transition.

Q How does an impact approach lead to value creation?

My strong belief is that value creation is both financial and non-financial – both social and environmental – and that the two are inextricably linked. Of course, impact creates non-financial value. But when you're dealing with public infrastructure, that non-financial value creates significant financial value as well.

Infrastructure assets typically rely on long-term contracts with the public sector. By approaching environmental and social issues in an impactful way, you are reducing the level of risk on your contract. That creates a resilience around cashflows that you wouldn't otherwise have.

> *"Financial and impact performance go hand in hand"*

Q What is your approach to communicating impact to investors and why is that important?

Communicating impact is very important to our investors, but also to all the other stakeholders involved in our assets and projects. It's impossible to imagine owning a port or airport today without expectations around the communication of impact to public sector stakeholders, for example.

And then, as you say, investors are also increasingly demanding transparency around that impact as well. To that end, we've created an online platform where investors can readily view the non-financial performance of their own investments.

Q How would you describe investor appetite for impact and is it changing?

Impact used to be viewed as an opportunity for foundations to do good, but at a cost to financial performance. That misperception has now largely been dispelled and we're proud to promote this idea that financial and impact performance actually go hand in hand.

Impact simply isn't sustainable without that financial objective. As a result, we've seen investors that were initially curious about impact now increasingly embracing the idea that it needs to play a role in their portfolio.

Q Meridiam has become a benefit corporation. What does that mean?

We're currently a benefit corporation under French law and in the process of registering to become a benefit corporation in the US. What it means is that we're formally a mission-driven company and, as such, legally allowed to include social and environmental objectives in our bylaws – in our corporate goals – alongside financial objectives. And we must report against those goals.

Further, we have to appoint an independent mission committee to oversee our impact measurement and performance, and submit ourselves to independent audits.

The adoption of this status was made possible by the promulgation of the Loi Pacte by Emmanuel Macron in May 2019, and Meridiam became one of the first French companies to take advantage of that, just a few months later.

Q What role will impact play within infrastructure going forward?

Impact will increasingly drive strategic flows of capital for infrastructure. The world is under growing pressure to deal with climate change, on the one hand, while also having to deal with challenges around economic development and a fair transition on the other.

Having clear intent and then being able to measure performance against those intentions is entirely appropriate for infrastructure investments. That, in turn, will make impact progressively more mainstream within the asset class. ■

Even better than the real thing?

Purchasing voluntary carbon offsets could offer a lower-cost route to decarbonising infrastructure projects than transforming construction and operational practices – but LPs may not be convinced.
Alastair O'Dell reports

Infrastructure projects often have inescapably huge carbon footprints. From construction methods reliant on cement and steel, to facilitating activities such as power generation and international travel, associated emissions have become impossible for LPs to ignore.

ESG-themed investing is already pervasive and is increasingly becoming mandatory. For example, the UK Pensions Schemes Act 2021 has compelled retirement funds with £5 billion ($6.8 billion; €5.9 billion) or more in assets to fulfil new climate change risk management and reporting requirements. Next year, schemes larger than £1 billion will be caught by the regulations.

As pensions have become cornerstone investors in infrastructure projects, they have been faced with the problem that, although technology can chip away at the margins, emissions cannot plausibly be eradicated in the foreseeable future.

This leaves voluntary carbon offsets as the leading mechanism to bridge the gap between LPs' demands and industrial reality. Voluntary carbon offsets are more complex and fragmented than established cap-and-trade systems such as the EU's Emissions Trading System, which involves allocating transferable allowances to designated industries, such as power generation. Voluntary carbon offsets allow non-designated entities such as infrastructure projects, where decarbonisation may be prohibitively expensive, to purchase certificates linked to carbon-reduction projects such as reforestation.

Real-world impact

Consultancy McKinsey & Co estimates that demand for carbon offsets could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050. These offsets undoubtedly have positive real-world effects – they direct private finance to climate projects that may not otherwise get off the ground and support technological innovation.

However, the central question around offsets is to what extent they are equivalent to actually reducing emissions. The answer partly depends on the type of offset used. The UK's Environment Agency this year reviewed 17 approaches to offsetting, according to seven criteria.

It decided that all options "have strengths and weaknesses" and "no silver bullet was found". Some remove carbon from the atmosphere, while others reduce the rate of emissions. Each type of offset has a different timeline, with some only providing benefits far in the future. Despite the array of options, only two were accredited by the Environment Agency. It concluded that a mixture of offsets would be needed to accurately map the emissions of any particular entity.

"An effective sustainability strategy requires a multifaceted approach that decarbonises emissions at their source, with any residual emissions offset," says Brooks Preston, managing director, sustainability, at Macquarie Asset Management. "Enabling the full potential of voluntary carbon offsets requires ambitious action from all market participants to overcome the remaining structural and policy uncertainties that exist in some markets."

Widespread benefits

Despite these issues, LPs can benefit from offsets in a variety of situations. On the supply side, there are numerous types of infra project that can generate offsets. "Renewable energy projects can earn supplemental income from selling renewable energy certificates, where such markets exist," says Michael McGowan, principal at Mercer Alternatives. "Another example is renewable identification number credits created from the production of certain biofuels."

On the demand side, infra assets that produce emissions, such as midstream energy assets or conventional power plants, can buy credits to reduce their carbon footprints.

Even in these circumstances, questions persist about how effective offsets are. "Despite being less invasive than conventional fossil fuel production and theoretically carbon-neutral over the production lifecycle, biofuels still release emissions when combusted," says McGowan. "Similarly, if an owner of midstream energy assets seeks to position them as carbon-neutral through buying offsets, there is no actual reduction of emissions from the assets themselves."

There are several open questions with respect to whether offsets result in reduced emissions or create unintended consequences. Is a renewable power plant selling offsets actually reducing emissions or meeting new electricity demand? Are some projects being created simply to generate offsets or do the assets themselves actually produce something that is beneficial to society? In addition, buying offsets from projects in another part of the world may reduce emissions globally, but does not necessarily improve air quality for people living near the emitting assets.

In 2020, Nest, a £20 billion UK workplace pension scheme, announced a plan to become net-zero across its investments by 2050 or earlier and to halve its portfolio's carbon emissions by 2030. "While there remain questions about how a sophisticated portfolio like ours can achieve net-zero, the priority is to achieve real-world carbon reductions before we turn to things like carbon offsetting," says Katharina Lindmeier, senior responsible investment manager at Nest. "We want to have a real impact in reducing the threat of climate change to our members and their investments by reducing the amount of carbon emissions getting into the atmosphere in the first place."

> *"The priority is to achieve real-world carbon reductions"*
>
> **KATHERINA LINDMEIER**
> **Nest**

Carbon offsets can play a central role in decarbonisation in two scenarios. First, offsets can be a reasonable short-term measure while decarbonisation plans are being formulated and implemented. For example, UK railways industry pension scheme Railpen has committed to decarbonisation targets for its publicly listed assets but acknowledges in its Net Zero Plan report that it "might be required" to use offsets in the short term. It intends to do so only when there is "no feasible alternative".

Secondly, once a decarbonisation plan has been implemented and cannot be extended at a reasonable cost, offsets could be used to cover stubborn, hard-to-abate emissions on an ongoing basis. For example, Nest is focusing on reducing the emissions within its portfolio but leaving the door open to using offsets in the future.

"Offsetting could play a role in our portfolio further down the line," says Lindmeier. "But there is work to be done to ensure the calculation of the level of carbon captured is robust, and that we have certainty in the carbon emissions they're covering and over what expected timeframe."

Scobie Mackay, managing director in Macquarie's commodities and global markets group, prefers the approach of developing a decarbonisation plan first, and using offsets as an interim measure. "[Offsets] are a necessary tool in a realistic decarbonisation pathway," he says. "Initially, there will be more reliance on offsets but over time, as structural decarbonisation efforts progressively deliver absolute reductions, reliance on offsets can be tapered." Mackay adds that offsets "must meet the test of additionality and fulfil other essential quality criteria". However, all types will be needed as part of the global decarbonisation effort, "regardless of whether they emanate from either avoided emissions or carbon removal projects".

Green preference

Although the people we spoke to are amenable to offsets to varying degrees, their distinct preference is for investments that make a direct contribution to the energy transition, rather than ones where decarbonisation measures are necessary. The next decade will be crucial for achieving decarbonisation goals. Carbon offsets of all kinds are likely to play a major role alongside renewable energy assets and other initiatives. ■

KEYNOTE INTERVIEW

Accelerating the decarbonisation journey

Reducing the CO2 output of infrastructure assets creates an exciting opportunity for generating compelling returns and making a meaningful environmental impact, says Roger Pim, abrdn's senior investment director, infrastructure

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Q To what extent does brownfield wind and solar investment present an attractive strategy today?

A significant amount of capital has been flowing into renewables in recent years, particularly at the large-cap end of the market. That has put huge pressure on returns and made brownfield opportunities less attractive. There is also limited additionality from an ESG perspective if you're investing in assets that have already been built out.

However, the decarbonisation of the energy sector is a key focus for us, so we have sought to identify those slightly more complex opportunities in the mid-market, where we can generate value. It's still possible to source such opportunities that offer highly attractive risk-adjusted returns. A good example of that can be found in the ground-mounted solar PV space, where we've been working for many years with a number of developers in the Polish market.

Through those long-term relationships, we've been able to acquire nine separate portfolios, bringing them together to create a sizeable portfolio of around 385 MW. It's taken a lot of work, but in doing that we've been able to build an asset that will generate a strong return with downside protection through a 15-year contract for difference, without taking on material greenfield risks or other exposures. It's still possible to source such brownfield renewable opportunities in the mid-market, but it's challenging and requires strong networks and experience.

Q What other areas represent interesting opportunities to deliver both a positive environmental impact and attractive returns?

There are a wide range of areas: district heating, for example. Fundamentally, it's the most efficient form of space heating, particularly for people living in colder climates, which provides a strong tailwind from a decarbonisation perspective.

We've been very active investors in mid-market district heating, which offers the potential for highly attractive returns, as well as positive environmental impacts. Those positive impacts can be achieved not only by investing in district heating in the first place, but by accelerating the decarbonisation of the sector.

For example, a business we've acquired in the Finnish market historically relied on power generated from peat. We've transitioned that to renewable biomass and have invested significant capex to improve the efficiency of the boilers, which has dramatically cut down the carbon intensity of the asset. We're now also looking at other ways to further decarbonise these businesses going forward.

It's all about identifying assets where you can accelerate that journey, allowing you to generate great returns, while also having a positive and material environmental impact.

Q What role are biogas and geothermal technologies playing in your portfolio?

Geothermal is another interesting space. It's fascinating technology and we have recently invested in the space via a gas distribution business we own in the Finnish market.

As part of a decarbonisation transition at that company, we began looking at a shift from traditional natural gas to biogas, and then, more recently, we also invested in geothermal technology. The idea is to transition the business to become more of a heat provider, using carbon-neutral technologies to accelerate that transition over time.

It's important to remember that there is no one, single solution. If we're going to meet the net-zero carbon targets outlined in the Paris protocol, we will have to embrace a whole raft of different technologies. What works best will differ depending on the sector and situation.

Q How much potential does hydrogen have to contribute to decarbonisation and what are the challenges that still need to be overcome?

Hydrogen has incredible potential when it comes to meeting energy transition goals, particularly for certain sectors that require a molecule-based fuel. It's something we have been looking at for some time. But it can be very difficult to invest directly in hydrogen, given the current complexity and lack of scale opportunities.

That said, we do have an interesting opportunity at the moment. One of our investments – a Dutch gas pipeline, which has historically transported gas from the Dutch North Sea onshore – is involved in a number of interesting early-stage projects. The first is in the carbon capture and storage space. The

Q What are the challenges in the decarbonisation of the transportation sector? And what other opportunities is that creating?

There will be huge changes as a result of the decarbonisation of the transport sector over the coming years. We are obviously already beginning to see the electrification of the road and rail sector. We have been particularly active on the rail side, procuring brand-new electric and bi-mode trains to replace diesel trains in the UK with our partner Rock Rail.

We've acquired over £2.5 billion of rolling stock and anticipate further opportunities to come. Encouraging more people to use public transport is, through providing a better customer experience, in itself an important component of the decarbonisation of the sector, while changing from diesel to electric can cut emissions by up to 65 percent.

As mentioned, we're also looking at the possibility of hydrogen and battery-powered trains. The technology already exists. It's simply a case of finding the right opportunities.

second, involves the offshore production of green hydrogen.

So, hydrogen is an exciting area with a very important role to play in the energy mix, particularly in those hard-to-abate sectors. But it's not without its challenges, including the importance of decarbonising the hydrogen production itself.

We must ensure we're producing enough green hydrogen, rather than relying on blue or grey hydrogen. We also need to improve hydrogen's cost-competitiveness by scaling up production to give us the necessary economies of scale. Meanwhile, the other side of the equation involves building up customer demand to get the supply/demand balance right.

Q With those newer and rapidly evolving sectors, such as hydrogen, how do you decide when is the right time to invest and where you should be investing within that ecosystem?

The key thing is to understand the sector well and then to build on an existing area of expertise. Take the hydrogen example. There we are leveraging the management team's experience of the pipeline business.

We're also looking at some hydrogen train opportunities, based on our experience in the rolling stock space. Hydrogen has the potential to be an excellent solution for the decarbonisation of rail traffic, particularly in those more rural areas that are difficult to electrify. Combining our skillset in rail with hydrogen creates interesting opportunities. So, building on existing experience is the logical way to go.

Q What resources, skillsets and expertise are required to execute the decarbonisation transformational strategy?

Something that is very important today, which may not always have been the case in the past, is the full integration of ESG into the business.

"If we're going to meet the net-zero carbon targets… we will have to embrace a whole raft of different technologies"

It is no longer feasible to have ESG at arms-length. It is vital that the entire investment team is fully up to speed on ESG matters as they pertain both to the investment and asset management phase.

That requires a dedicated effort around upskilling. ESG cannot be viewed as a separate exercise or dealt with by a separate team.

ESG also needs to be fully integrated and it's been really encouraging to see that this is no longer something we have to push on to senior management of underlying assets. The majority are fully aware of the role that infrastructure plays in the decarbonisation journey and are already building ESG factors into their day-to-day decision-making processes.

In addition to that complete integration, measurement is also critical. KPIs need to be identified up front, and then monitored right through the life cycle of the investment as part of our ESG value-creation plan for each asset we own.

Q What approach offers investors the chance to have both the biggest possible impact on the energy transition and the most compelling returns?

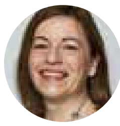
There are two key approaches. First, ensure ESG is fully integrated into all aspects of the business – from investment, through asset management, all the way into reporting.

Second, and probably even more importantly, it's critical to be an active investor.

Transitioning existing assets, even those that face ESG challenges, to ensure they are in line with the Paris agreement and reach the highest possible ESG standards, is imperative.

It isn't enough to simply invest in 'green' assets. It is all about accelerating that transition. That creates the best opportunities for strong returns, as well as the most meaningful environmental impact. ■

Biodiversity net gain is coming…




Guest comment by **Lucy Morton** and **Mihai Coroi**

… and infrastructure developers in the UK need to be ready for it, say Mott MacDonald experts

The much-heralded UK Environment Bill will receive Royal Assent before the end of the year. Among its chapters will be a new obligation: infrastructure developments in England will now need to ensure a 10 percent net gain increase in biodiversity.

These changes are, on the whole, a welcome step forward in policy. We face both a climate crisis and a biodiversity crisis, with vital ecosystems around the world on the verge of collapse. Infrastructure can play a critical role in the transition not only to a net-zero world, but to a greener one.

Policy step change

Biodiversity net gain is not an entirely novel concept in the UK. In 2012, the UK National Planning Policy Framework recommended that local planning authorities ensure that biodiversity net gain was delivered on developments where possible. In 2018, this was extended to all projects.

In reality, planning authorities have not enforced this requirement and only a very small number of schemes have voluntarily implemented BNG. Although some local planning authorities have begun requesting BNG as a condition of planning, this mandatory, nationwide BNG requirement represents a step change in policy.

The situation is somewhat different in other countries where, since 2012, developments that use the widely recognised International Finance Corporation environmental and social standards have had to show BNG in areas of critical habitat and no net loss in areas of natural habitat.

These standards have also been adopted by the 100 financial institutions that are members of the Equator Principles Association and, together with principles and guidance set up by the Business and Biodiversity Offsets Programme, are considered to represent international good practice.

New burdens

Needless to say, these changes will place significant extra burdens on infrastructure development in the UK.

One of the key issues will be the availability and cost of the land required to create additional habitat. Although there has not been a standard approach to ecological mitigation in the UK, where developments were required to address habitat loss under planning conditions, they generally used a compensation ratio of 1:1 or 2:1 (that is, two hectares of habitat created for one hectare lost).

10%

Biodiversity net gain that infra developments will be required to make under the UK Environment Bill

These ratios have the potential to be significantly higher when the Environment Bill comes into force as a result of using the Department for Environment, Food & Rural Affairs' new biodiversity metric. This requires higher multipliers to account for delivery, as well as the spatial and timescale risks associated with the implementation of habitat enhancements.

In densely populated areas like the south of England, it will be difficult for larger development projects to find the available land required to deliver BNG, or the cost will be so high that the economics of the project might not look so attractive. Where existing land has already been purchased and signposted for future expansion, there will be a reluctance to give this up to achieve BNG.

Options

The current draft of the Environment Bill does provide other options for developers should onsite habitat creation prove to be too expensive. These include the purchase of biodiversity 'units' from a habitat bank or as biodiversity 'credits' from the secretary of state. When compared with implementing BNG on site however,

the cost of these credits will likely be far higher in order to encourage actual habitat creation.

According to the draft of the Environment Bill, biodiversity gain sites will need to be maintained for at least 30 years after the completion of the development. This is a significant commitment. We are expecting further detail from the government on this but, based on our experience, the design and implementation of a robust monitoring programme is essential to achieve and demonstrate the success of the mitigation and enhancement measures.

Again, it's important to understand the added cost of this requirement. Not only will developers have to prepare a monitoring plan and undertake regular onsite reporting; they will also be expected to intervene if the reporting shows poor progress towards the net gain goal.

Biodiversity is economically viable

While the Environment Bill does place significant new burdens on infrastructure, economically viable developments that increase biodiversity are possible. We only need to look abroad to find them.

"Economically viable developments that increase biodiversity are possible"

"There is now agreement that the biodiversity and climate crises should be addressed together"

It is also worth noting the role nature plays in underpinning our economy and the wider societal benefits to be gained from increased biodiversity. Vital to success will be investment in screening and scoping to identify the available measures for net gain, and a mitigation hierarchy that seeks to limit the impact of the development on the existing habitats, flora and fauna – after all, it is cheaper to retain it on site than create it elsewhere.

BNG feasibility studies should be used to select and evaluate the most cost-effective options to demonstrate BNG. A BNG feasibility study should consider ecological, political, social, governance and financial risks and opportunities. Long-term biodiversity monitoring and evaluation should be planned in from the start to validate environmental impact predictions and verify the success of methods to limit this impact.

Governments and organisations around the world have made commitments to implement climate mitigation and adaptation measures, and to achieve carbon net-zero. These measures often involve habitat creation and restoration, but the focus is generally on carbon sequestration rather than biodiversity gain. Conversely, the BNG approach does not address carbon sequestration or other non-biodiversity benefits.

There is now agreement that the biodiversity and climate crises should be addressed together. The tools available to measure carbon net-zero and BNG will ideally be integrated in the near future but, until then, it is imperative to consider multiple benefits for any habitat creation and restoration schemes. ■

Lucy Morton is environment global practice leader and Mihai Coroi is biodiversity and ecology technical principal at Mott MacDonald

EXPERT COMMENTARY

The future of sustainability lies in our ability to address agricultural resilience, adapting to and mitigating the impact of climate change while securing and enhancing essential food, water and land resources, says Instar's Gregory Smith

Growing resilience through agricultural infra

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Following two years of unprecedented disruption, from a global pandemic to raging forest fires, it is more certain than ever before: the world is undergoing radical change. Our population continues to grow at a rapid rate, estimated by the World Bank to reach over 10 billion by 2050, a trend that exacerbates already pressing challenges, including urbanisation, resource scarcity and climate change.

With existing infrastructure barely keeping pace with current levels of demand and maintenance requirements, successfully achieving a more sustainable future necessitates a long-term approach prioritising both preventative and restorative action to address climate change as well as nature loss.

When it comes to sustainability, discussions often centre around the idea of reducing our environmental footprint, focusing on specific monitoring and initiatives like reducing corporate emissions.

While the ability to operate and exist without further damaging natural resources is important to future-proofing our communities and mitigating further environmental deterioration, it is only a fraction of a much larger equation.

We must move away from purely reactive strategies in response to the wave of environmental effects playing out around the world and towards a concept of resilience that equips our infrastructure to withstand changes, whether those be trends in population, environmental factors or technological advancements.

As Jamais Cascio, a renowned futurist and thought leader on the intersection of environmental, technological and cultural change, said: "Sustainability is about survival. The goal of resilience is to thrive."

Energy efficiency in action

In 2020, Saskatchewan announced a project to irrigate up to 500,000 acres of land from Lake Diefenbaker, more than doubling the irrigable land in the Canadian province.

Proposing a 10-year construction process with a budget of around C$4 billion, these irrigation projects are an investment in environmental and socioeconomic development within the province. Over 50 years, the projects are predicted to result in a C$40 billion to C$80 billion increase in gross domestic product, and the creation of 25,000 construction jobs by the start of operations.

Within agricultural infrastructure – a sector accounting for 40 percent of emissions in the US, 70 percent of water use globally and responsible for feeding our communities – the concept of 'resilience' allows us the opportunity to reduce environmental impact and frame new solutions for longevity, helping our communities to adapt and flourish in an evolving landscape. Innovation, technological advancements and new investment in the sector offer a unique pathway to rethinking and reimagining our relationship with the natural environment around us.

More than this, agricultural infrastructure investment addresses the very human impact of our current landscape: water scarcity, food waste and land pollution. Ultimately, resilient agricultural infrastructure is necessary for communities to thrive, grow and prosper.

Thirst for change

By 2050, the Organisation for Economic Co-operation and Development anticipates that nearly 40 percent of the world's projected population will be subject to severe water stress. Today, the United Nations reports that 80 percent of countries, both developed and developing, are already failing to find sufficient funding for national drinking water and sanitation requirements.

As a sector, agricultural infrastructure arguably plays the largest role in our efforts to secure the world's freshwater supply. According to the World Bank, agriculture currently accounts for 70 percent of all freshwater withdrawals globally and an even higher share of consumptive water use, making this sector the largest factor in our communities' ability to thrive. Addressing the basic human need for water as populations increase necessarily requires improvements to these existing systems, including enhancing monitoring technologies, modernising irrigation, and increasing efficiency and productivity.

More broadly, meeting the demand for clean potable water without depleting existing aquifers necessitates better management of water supply and new approaches to water distribution across industries. By implementing innovative approaches, enhancing efficiency and monitoring, we can make the most of our current supplies of this limited natural resource.

While some jurisdictions in the US report losing between 30 percent and 40 percent of water from source to destination, according to the country's Environmental Protection Agency, innovative solutions such as smart meters and real-time identification of leaks can save up to 75 percent of water loss, allowing for earlier issue identification and maintenance.

One person's trash

As the global population continues to rise, food waste is placing an increasing strain on our essential infrastructure and natural resources. Despite food shortages and decreasing available land, landfills in the US continue to brim with food waste products, taking up around 18 percent of the nation's arable crop land and 21 percent of all freshwater according to ReFED, a US non-profit dedicated to ending food loss and waste.

The agricultural and energy infrastructure sectors, which closely intersect, have an opportunity to adapt to

Embracing adaptability

The Rialto Bioenergy Facility in Southern California began construction in 2018 with the aim of providing an efficient, local energy solution through the diversion of 300,000 tons of organic waste each year.

Once operational, the facility will be the largest food waste diversion and energy recovery facility in North America, taking 700 tons of food waste and 300 tons of biosolids each day and converting them into renewable energy and organic fertiliser.

On an annual basis, the Rialto facility alone will be responsible for producing 13MW of energy while reducing approximately 220,000 metric tons of carbon dioxide.

this reality and reframe the current 'waste problem' as a reliable, clean energy solution.

By using food and animal waste, which contribute to about 6 percent of global greenhouse gas emissions, bioenergy repurposes what is frequently written off as undesirable. Instead, it creates a source of value: delivering green energy, opening up usable land and connecting farmers to a previously untapped resource.

Incorporating waste-to-energy and anaerobic digestion facilities within existing agricultural operations has the potential to mitigate further damage to the environment while generating new economic opportunities. Such innovative changes will assist in making our agricultural infrastructure – and communities – truly resilient.

Using trees to restore sustainability

In 1999, the West Virginia Department of Environmental Protection approved the US state's first bioremediation project using trees to decontaminate high levels of petroleum compounds in the soil and groundwater at Cabin Creek.

Over the course of seven years, the project successfully reduced the levels of gasoline by 82 percent for soil and 59 percent for water, and levels of toluene by 90 percent for soil and 84 percent for water.

Significantly, this project showed an effective alternative to traditional remediation – which would typically require an investment of around $65 million – for $220,000, less than 1 percent of the cost.

Forest for the trees

Efficient land use, including the rehabilitation of the natural environment and reforestation efforts, is fundamental to a sustainable future. In the last three decades alone, the World Bank estimates a global loss of 1.3 million square kilometres of forested area, more than the entire country of South Africa. At the same time, reports in recent years have stressed the importance of trees and forested areas to our long-term health, with benefits ranging from removing carbon dioxide from the air, helping to decontaminate water, supporting local wildlife and biodiversity, to a spectrum of physical and mental health advantages that arise from human proximity to trees.

Furthermore, forestry management and reforestation are among the most important solutions to addressing the effects of climate change. Serving as 'natural infrastructure', trees play an integral role in the carbon cycle. The European Environment Agency reports that one mature tree can clean almost 22 kg of carbon dioxide from the atmosphere every year.

Notably, new technological developments and research enables us to not only reduce the current human impact on the environment, but to restore land and bodies of water that have been polluted. Bioremediation, the use of specific plants to remove toxins in contaminated soil or water, is an exciting development towards such efforts and an extension of the critical role trees play in balancing our environment.

It is a slower, but considerably more cost-effective, approach that can be further improved with time, capital and technological advancements. With investment, we can rehabilitate, reclaim and restore the finite resource of land, which is crucial to long-term stability and growth as our population increases and climate change impacts our natural landscape.

Building for resilience

Ultimately, our survival and ability to progress as a society will come down to the resilience of our agricultural infrastructure, which directly informs our ability to support, grow and protect the essential human needs within our communities.

As we witness changes in our environment and the undeniable impact of climate change, it is clear that the time for action is now.

We must push past our current understanding of sustainable operations to proactively reclaim our natural resources by staunching water loss, preserving land, reducing emissions arising from food waste and reforesting our woodlands and communities. Simply put, in the words of German entrepreneur Jochen Zeitz: "Sustainability is no longer about doing less harm. It's about doing more good." ■

Gregory Smith is president and chief executive officer of Instar Asset Management

INVESTOR

Q&A

The UK's largest private pension scheme is divesting from certain sectors in its bid to invest responsibly for the long term. David Russell, head of responsible investment at USS Investment Management, explains why

Q It's been almost a year since your joint statement with GPIF and CalSTRS calling for a greater focus on long-term sustainability-related risks. What kind of response has this had?

A Since March 2020, an additional 12 global funds have joined as co-signatories to 'our partnership for sustainable capital markets' statement. It is for each signatory to decide how to respond to address the challenges and opportunities highlighted in the statement. For our part, we hope that the support for the statement will send a strong signal to the market that asset owners now see long-term sustainability risks as a core component of investment and stewardship processes.

Q How does USS engage with external managers to drive climate action?

A USS has a detailed ESG monitoring process which includes questions around how a manager is managing climate change-related issues. These will of course vary in relevance depending on the sectors and type of companies in which the GP is investing, but we expect all managers to consider what the impacts of a changing climate, and climate-related regulation, will have on their assets. As part of our monitoring programme, we review private equity portfolios to identify assets where climate change (either physical risks or transition risks) may be present and ask the GP how these are being managed.

Q What progress has been made over 2020 and what are your responsible investment aspirations?

A Notwithstanding the issues associated with covid-19, we believe ESG issues in general, and climate change in particular, have continued to move up the agenda of private equity managers. Increasing numbers of GPs now routinely provide ESG data in standard fund documentation, including information around climate change related issues: we believe this will be the norm going forward.

During 2020, USS Investment Management itself made some major strides forward in its recognition of the growing importance of ESG and regulatory pressures on the portfolio, and as a result announced plans to exclude and, where necessary, divest from companies in those sectors that were deemed to be financially unsuitable over the long term. These were: tobacco manufacturing; thermal coal mining, specifically where this makes up more than 25 percent of revenues; and controversial weapons – companies that may have ties to cluster munitions, white phosphorus-based weapons and anti-personnel mines.

The burning of coal, in particular, has a significant impact on climate change. With a focus on reductions in emissions and a decrease in the cost of alternatives, it is likely that markets have failed to value adequately the potential risks coal mining companies face. This in turn will lead to pricing pressure. This cannot be mitigated by engagement, hence our decision to divest.

Over the next two years, if not earlier, USS Investment Management will cease investing the scheme's assets in companies in these sectors and begin to fully divest of any such companies where we have investments we can control. These exclusions will be kept under review and may be changed or added to over time and will be made across the defined benefit and defined contribution sections. ■

INVESTOR Q&A

Close partnerships with management teams are key to building more sustainable business practices, says Katharine Preston, vice-president, sustainable investing at OMERS

Q In November, OMERS was among eight Canadian pension plan investment managers that called for improved ESG data reporting by companies and investors. What progress is required in this area?

A We believe integrating ESG factors into our investment approach is not a trade-off for strong returns. Instead, it is a key element of our fiduciary duty that will safeguard our portfolio and drive value for our members over the long term. We know that while companies face a myriad of disclosure frameworks and requests, it is vital they report relevant ESG data in a standardised way to provide clarity and improve data flow. Markets around the world are beginning to mandate and regulate disclosure requirements, so having a standardised approach is necessary.

Q How do OMERS Private Equity and other OMERS business units integrate sustainability considerations into investment decisions?

A OMERS believes that well-run organisations with sound ESG practices will perform better, particularly over the long term. When looking at what ESG means for OMERS, we start with broad principles, and then we integrate specific factors into investment decision-making, across all investment teams and asset classes. We integrate these in a number of ways,

> *"Our approach continues to evolve as more data becomes available"*

including through ESG assessments of potential new investments and ongoing oversight and influence of ESG issues in our investee companies. For each ESG assessment, we seek to evaluate a range of material ESG factors, including climate change, inclusion and diversity and board structure.

Q The events of 2020 have brought ESG risks to the fore. Has this impacted your approach?

A Investing responsibly to deliver sustainable returns to our members over the long term has always been in our DNA as an organisation. The events of 2020 have highlighted urgent challenges facing our global community, and the need for more inclusive economic growth.

Our approach continues to evolve as more data becomes available, as tools develop to better measure these factors and as our portfolio companies respond to, manage and anticipate material ESG factors. Our internal Sustainable Investing Committee reviews our approach to ESG integration across the portfolio on an annual basis to ensure we employ best practices.

Q How do you engage with OMERS portfolio companies in private equity and other spaces on ESG?

A We engage directly with portfolio companies in various ways. When investing in private assets, we typically acquire governance rights, including board seats. We exert our board-level influence to encourage the investee company to maintain and build on sustainable business practices and long-term thinking. Through this active governance, OMERS can influence material ESG-related practices in our investees' strategies and operations.

Having close partnerships with the management teams of our portfolio companies is central to our investment philosophy. We partner with our portfolio companies to find opportunities to evolve sustainable business practices and grow sustainably. ■

KEYNOTE INTERVIEW

African opportunities appeal to impact investors

AIIM's head of ESG, Dean Alborough, says that managing risk is key to achieving impact in Africa – and the standardisation of reporting will make life easier for fund managers

For investors seeking to put their money to work in driving positive impacts, Africa offers unparalleled opportunities. In particular, the twin challenges of tackling climate change, while improving energy access for the 600 million Africans who lack electricity, mean a flood of investment in renewable power infrastructure is required. The African Development Bank estimates that up to $525 billion will be needed up to 2030.

Dean Alborough, head of ESG at African Infrastructure Investment Managers, believes that appetite for investments that address the continent's infrastructure deficit will continue to grow. He tells *Infrastructure Investor* that a robust framework for managing both risks and positive impacts is essential for operating effectively on the continent – and he welcomes the growing momentum towards the standardisation of impact reporting.

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Q Why is Africa an attractive market for impact investors?

Africa is very diverse across the 54 countries, which each have their own set of priorities and challenges, but overall Africa is one of the world's most underserved markets from an infrastructure perspective. There's a structural imbalance between the demand for core services, such as transport, water, logistics and digital, and the supply of those services. And because investors are working from such a low base on the continent, the impact that capital can have is much higher than in many other markets.

So, as a global impact investor, if you're looking across the world and you're serious about creating positive impact in underserved markets, then

Africa has to be a key consideration for capital allocation. And the international investors that do allocate relatively large sums towards infrastructure in Africa tend to be very much geared towards the impact output agenda. DFIs at this stage might be a little bit ahead of the curve in terms of understanding impact, but very quickly large pension funds are matching the DFIs' level of granularity in terms of the information they're looking for.

Q What is AIIM's strategy for realising impact opportunities?

From a strategic perspective, like many others, we use the UN Sustainable Development Goals as a top line set of goals. And we link our focus areas to the SDGs and also very specifically to the SDG targets. We've also adopted an ESG and impact management framework – this informs what we invest in and what actions we look to take with an investment.

When we looked at the breadth of the challenges in Africa, we wanted to answer a few key questions: "What are the biggest global challenges that we can contribute to? What are the key challenges locally for us? And where can we as a business make the biggest difference?" So, in answering those questions, we came up with five key focus areas: climate change, diversity, decent work, sustainable infrastructure and governance.

We have a group of assets that are more obviously in the impact investing space. However, across our portfolio, in all our assets, we try and unlock impact wherever we can. So, it's not a case of "these are our 'impact assets' and we're not interested in achieving impact with our other assets". We simply recognise that in some assets those positive impacts might be less tangible. To be honest to the market, we're not going to go out and claim every single asset as impact investments in the purest sense.

"If you're serious about creating positive impact in underserved markets, then Africa has to be a key consideration for capital allocation"

Q How does AIIM manage and measure impact?

To operationalise our strategy, we implement a globally benchmarked environmental and social management system, which governs the risk management and positive impact management through the investment cycle.

Managing the risk is just as important as driving a positive impact – you have to ensure the positive impact actually happens without unintended consequences and negative impacts. So, on the risk side, we adopt and apply a set of international standards and guidelines. These are pretty extensive and they cover all the elements of risk we encounter in private markets.

In practice, positive impacts are actually very tightly linked to risk management. People talk theoretically about impact and risk management as if they're separate, isolated domains. But if you work with a portfolio company on the ground to seek a positive impact, you very quickly find yourself also having discussions with them around managing negative impacts in their business as well.

From a positive impact perspective, we use the theory of change approach – we identify the end impact and outcomes we're looking to achieve, and work backwards from that to identify the key metrics to be tracked. We use the approach at a sector level. So, for example, we've developed a theory of change for the power sector and another one for digital infrastructure. We find that developing these on a sector level makes it more practical to use the theory of change across a large set of portfolio companies.

Q Investors are prioritising climate change. How does this affect your approach to operating in Africa?

The effort to combat climate change is the most important global trend that influences impact investing in Africa. This trend will shift investor appetite to low carbon power supply, especially towards renewables. We're quite fortunate, because unlike a lot of other asset managers, our exposure to fossil fuel assets is quite limited, especially relative to the listed space.

We want to be part of the solution for a 1.5 degree world and we want to accelerate the energy transition. So, we're targeting renewables as much as we can. The impact thesis is that renewable energy promotes economic growth, improves livelihoods and mitigates climate change. We've invested heavily in scaling renewables in South Africa through our IDEAS Fund. We've invested through the fund in 28 renewable energy facilities, which generated 29 percent of all renewable power in South Africa in 2020. We've also invested in several portfolio companies that provide off-grid power, mainly through solar, to homes and small businesses in various African countries.

Q And how does AIIM approach the management of climate change risk?

We're implementing the Task Force on Climate-Related Financial Disclosures framework. The TCFD has certain

Africa rising: capital can make a bigger ESG impact in the continent than in other markets

pillars – governance, strategy, risk management, and metrics and targets – that you need to deal with in order to say that you're managing climate risk.

From a strategy perspective, in private market investments, much of the transition risk is actually dealt with up-front in the fund's investment strategy. You're linking the fund's mandate to identify climate risk with strategic outcomes. A lot of that affects sector selection. We input climate risk into our actual fund strategies at a really base level. And climate mitigation and adaptation analysis is dealt with through the rest of the investment process.

Then in terms of risk management, we apply the materiality approach. We carry out a prioritisation exercise of climate risks across our assets. We use various climate risk forecast data to identify, calibrate and understand those risks for future climate scenarios. We've built in, using the TCFD framework and our ESG management system, climate risk right through the investment cycle – the screening phase, the due diligence phase, the investment transition phase, the asset management phase, and also the exit phase.

Q In terms of ESG and impact reporting, do you see data standardisation becoming a reality?

There is a real impetus now for the standardisation of ESG and impact metrics. We saw the five leading standard setters coming together with a shared vision last year and now the World Economic Forum has endorsed the IFRS Foundation's proposal for a Sustainability Standards Board. So, it seems like IFRS is taking a lead position in this consolidation, and the other standard setters look like they're willing to collaborate to come together. It's moving very quickly.

$525bn

Amount required up to 2030 to meet the target of universal electricity access, as estimated by the African Development Bank

Q Will adapting to standardised reporting requirements present a burden for AIIM?

I don't foresee a major issue for us in adapting. The strategy we took in developing metrics was to use globally standard metrics as much as possible. My expectation is that standardisation might only shift maybe 10 percent of the metrics we use.

It's actually going to be a huge step forward for us, because what happens practically at the moment is that every capital provider has their own nuanced set of data that they want to see. You then get this friction up the data chain, where some shareholders aren't really aligned and then fund managers within an LP structure can't really align. Standardisation should do away with most of that friction.

Ultimately for us, as a fund manager, collecting data will be that much easier. Our fellow shareholders will be aligned and the management in the portfolio companies will recognise that "this is standard data, we need to provide it, we need to perform on it".

But there is going to be additional work for some African companies, because any international capital that comes into Africa is going to have these reporting requirements attached to it. Some companies are going to have to get up to speed on proper data collection. A lot of these companies are very sophisticated, but there's also a whole set – especially small and medium-sized businesses – that are not yet geared for this. They will need to understand what data they need to collect and why they need to collect it. They're going to have to start having data systems, like they have financial reporting systems, and they're going to have to articulate this reporting properly to capital providers. ■

On the minds of ESG heads

From net-zero targets to KPIs, experts share their views on how the infrastructure asset class can become more sustainable

Panel

Raj Agrawal
Global head of infrastructure, KKR

Dan Grandage
Head of ESG, private markets, abrdn

Felix Heon
Sustainability director, Antin Infrastructure Partners

Dan Watson
Head of ESG, Amber Infrastructure Group

Q The world is racing to meet net-zero targets by 2050. Can infrastructure deliver?

Dan Grandage: Current forecasts are for $3.7 trillion required cumulative infrastructure spend per annum until 2040 to meet global demand. The pressure on public finances as a result of the measures that governments were required to take in response to the impacts of covid-19 will continue to constrain state budgets for many years to come and will mean that the private sector will need to play a larger role if this target is to be realised.

Felix Heon: Infrastructure can deliver, but certainly not alone. Achieving net-zero emissions requires collective action. Infrastructure companies can take a variety of steps to decarbonise their operations, but only with the active involvement of all stakeholders. For instance, regulators need to enforce policies to incentivise all actors to move towards net-zero; private and public organisations need to accelerate R&D to mature and scale low-carbon technologies; and investors and banks need to provide financing to phase out carbon-intensive assets and build greener ones.

Raj Agrawal: Infrastructure investing will be one of the key facilitators of the global transition to net-zero. Analysts project that over $100 trillion of investment between now and 2050 will be required to achieve this global objective. We believe much of this will be in sectors where we are actively investing, such as renewable power generation, and in the scale up of newly proven technologies, such as battery storage and carbon capture, where we are spending a lot of time. In this way, growth in infrastructure investing is critical to the drive to net-zero.

Dan Watson: For the world to meet its net-zero targets by 2050, infrastructure has to deliver. The big challenge that infrastructure faces is what net-zero looks like for project delivery. While tools and frameworks, like the EU taxonomy, are hugely helpful, there is very little agreement on what targets should be set for the net-zero delivery of infrastructure. Until the supporting industries, such as steel and cement production, are decarbonised, there needs to be a recognised approach to delivering infrastructure in line with net-zero pathways.

Q Net-zero aside, what other big ESG-related challenges are asset owners facing?

DG: The transition to a low-carbon economy is definitely the most challenging ESG risk, and the one receiving the most airtime. However, understanding and managing labour and human rights issues associated with infrastructure assets has been a key tenet of our approach for some time. We need to not only consider the health and safety of employees and our supply chain, but we must also protect the local community, particularly where minority or indigenous peoples are impacted.

FH: To me, figuring out how to better share wealth among portfolio company employees and their communities at large is one of the biggest ESG-related challenges private equity will face. The industry has grown exponentially over the last decade, and so has its economic and societal importance. As such, firms today face both heightened scrutiny and an increased expectation that they actively tackle inequality, an issue which has been highlighted by the disproportionate impact of covid-19 on low-income populations.

DW: The variety in reporting frameworks and standards has created a challenge for reporting and communication more broadly. We want to select suitable benchmarks that help to drive meaningful change, but also resonate with investors. To date, this has not been easy to achieve. We're hopeful that the emergence of the EU Sustainable Finance Directive Regulation, taxonomy, and emerging UK Sustainability Disclosure Requirements will act as an anchor for asset owners to frame their ESG reporting strategies.

Q What is the most common question you get from LPs?

DG: The most common ESG-related question at present is in relation to what types of assets we would not invest in, typically from a fossil fuels perspective, but sometimes from a wider ethical perspective too. We find that many LPs are going through change and coming under pressure from their boards and shareholders to clearly articulate their approach to ESG, and this is resulting in an increased number and sophistication of ESG-related queries.

FH: In the past few years, our LPs have become increasingly focused on climate change, an ESG issue highly material to most infrastructure companies. We receive frequent investor questionnaires covering the actions we take to both reduce portfolio companies' carbon footprints and to identify, assess and address the climate change-related risks they're exposed to. More recently, we've also been receiving questions related to how we promote diversity and inclusion at both the firm and portfolio-company level, especially from our US-based LPs.

DW: Increasingly, we're getting more sophisticated questions around climate change risk and scenario analysis. This is, of course, down to the recommendations of the TCFD and a good demonstration of how having a clear framework for reporting will enable LPs to ask more robust questions on material ESG issues. Moving forward, we expect there to be greater focus around SFDR and taxonomy alignment – particularly around how we're working to reduce adverse impacts and evidence sustainability through recognised third-party benchmarks.

Q What are the most important ESG KPIs/metrics?

DG: The key metrics we focus on across assets are typically in line with the principal adverse sustainability impact indicators as defined under the SFDR, although we also use the Sustainability Accounting Standards Board as a useful high-level pre-investment screen. Assets have different environmental and social impacts depending on the nature of the asset, the location and the surrounding area. Once the most material impacts have been identified, appropriate targets can be put in place.

FH: KPIs that are business-specific, reliable, comparable and tied to a company's success. One-size-fits-all KPIs are rare, as every company's ESG impact profile is unique. It may make sense to report one company's carbon intensity in CO2 emissions/unit of revenue, while it may prove irrelevant for another company whose emissions are not correlated to sales. It's also important to source KPIs from trustworthy data, measure them consistently to compare them over time, and link them to companies' operational or financial performance.

RA: We recognise that no two businesses are the same and therefore take a company-specific approach to our management of ESG issues, including with the identification of their KPIs. While there's no one-size-fits all approach, one commonality across companies is our measurement of baselines and reporting on progress in improving those measurements over time. In addition, we approach this effort with humility, recognising that really smart leaders have spent years thinking and working on these questions. To that end, we use SASB's industry-specific standards as a primary input when identifying the ESG issues that we track. We believe we can achieve stronger business outcomes when we get this right.

DW: The emergence of TCFD will accelerate the development of KPIs/metrics that link climate risk to financial performance. While greenhouse gases will be a helpful indicator to some, it doesn't necessarily communicate the risks of the underlying investment. Metrics like 'expected insured losses' or 'climate-adjusted investment rate of return' are likely to emerge as LPs seek to understand the material climate risks to their investments.

Q What does the future hold for sustainability in infrastructure?

DG: In order to ensure that environmental and social impacts are the most advantageous, sustainability factors need to be appropriately embedded into the procurement process for new assets. The public sector is rightly encouraged to seek value for money in procurement. However, this is often interpreted in terms of least cost rather than optimum quality and 'whole life' value. Additionally, a key point that must be addressed to drive forward ESG progress in the sector is the standardisation of ESG measurement and benchmarking.

FH: The global focus on sustainability will completely transform the infrastructure landscape over the next decades, giving rise to greener, smarter, better connected and more socially inclusive infrastructure, that will be essential to addressing the world's most important ESG challenges, such as climate change and inequality.

RA: I am very excited by the potential growth in and impact of infrastructure investing with respect to sustainability. We see tremendous opportunity to invest well while doing good. In addition to obvious areas like renewable power generation, we also seek to transform sectors like data centres from massive power consumers to sustainable assets with green generation and storage.

DW: I'm hugely optimistic for the future of sustainability in infrastructure. By having a renewed focus on delivering infra sustainably, there will be multiple indirect benefits for society alongside financial returns for investors. Sustainability will increasingly be seen as a quality indicator, which will have direct relevance for the long-term financial performance of investments. ■

KEYNOTE INTERVIEW

Tuning into nature

Protecting natural habitats and biodiversity will require a huge amount of investment in the years ahead, says Dr Barbara Weber, founder of B Capital Partners, presenting a big opportunity for private capital

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Q What are nature-based solutions in the context of infrastructure?

Nature-based solutions are quite simply any actions that protect, manage or restore natural ecosystems, at the same time as providing benefits for people, protecting habitats and enhancing biodiversity. Infrastructure is the obvious means to safeguard vulnerable places where people live and work, such as building defences that protect the areas by coasts and rivers from flooding. Climate change has increased the need for sustainable and resilient infrastructure.

The added challenge is to create resilient protection in a natural way, which doesn't generate additional damage to the environment or have unintended consequences for communities and natural ecosystems. To get there, a change in mindset is required – accompanied by suitable regulation and legal frameworks – to set the right incentives and thereby align interests, which in turn allows private capital to enter this space and to help address the issues while ensuring a viable economic return for investors.

Q Why are you drawing attention to this area?

It is of utmost importance in the context of climate change and supporting the SDGs. On an international level, the World Economic Forum formed a council focused on nature-based solutions. The World Conservation Congress in Marseille looked at issues like marine biodiversity and realigning economies with conservation aims. They have been raising awareness and discussing the benefits of nature-based solutions for communities – often indigenous peoples – that have been negatively impacted by climate change.

B Capital has been looking at ways to support nature-based solutions by bringing private capital into this space, as the public sector cannot meet the challenge on its own. Approached by the international dredging industry, we got Swiss Re to join forces. Together, we've organised workshops that have brought together people from the marine industry – such as dredging companies – with insurers, international development banks, thinktanks, and private capital that possess that sustainability gene. Our aim is to understand the opportunities, set goals and ultimately to find investable, resilient, sustainable solutions that work for all stakeholders. To this end, we need critical mass and international, cross-sectoral co-operation to get there.

Q How big is the opportunity?

There is no real data that ties together the size of this market. But there is plenty of evidence that shows current levels of investment in marine and coastal infrastructure, and the funding gap that exists to meet annual investment needs. For instance, across nine flood-prone economies in Asia, \$33.6 billion was invested in river and coastal flood protection, which is roughly one-third of the annual projected \$98.4 billion investment requirement – so essentially a \$65 billion annual shortfall.

Dredging activity sheds some additional light on the spread of marine and freshwater works globally to protect and clear rivers and coasts. Asia accounted for 28 percent of dredging activity in 2019, with Europe also accounting for around one-quarter of activity, and the Middle East, the Americas and Africa the remainder. There is not only an urgent global need for investment given the rapid pace of climate change, which exacerbates the situation, but for sustainable investment not to make matters worse.

Q What are the main areas of marine and freshwater development?

The main areas are port development and maintenance, flood barriers, like damns and dykes, river flood defences, and breakwater constructions. There is also land reclamation, dredging that makes rivers and other waterways navigable for shipping. These are the traditional areas for coastal and river infrastructure investment.

Q How do nature-based solutions vary and why are they essential?

Nature-based solutions address many of the same themes as traditional infrastructure. The main difference is they do so in a sustainable way – for example, mangrove restoration and forestry, wetland restoration, coral reef regeneration, eco-friendly breakwaters and river protection, or the re-use of materials dredged from rivers and ports for sustainable uses.

The impetus comes from climate change. Around the world, we are dealing with rising sea levels and more unpredictable and violent weather conditions. We're seeing more floods, even in Europe, such as the catastrophic flooding witnessed in Germany over the summer, which cost many lives and affected the livelihoods of many people in the region. Estimates put the size of the recovery fund needed for rebuilding at €13 billion for the Rhineland-Palatinate region alone, and €30 billion across Germany.

The primary aim of nature-based solutions in marine and freshwater infrastructure is to tackle the issue head-on and prevent these kinds of disasters in the future, but also to do it in a sustainable way that doesn't add to climate change through the kinds of solutions or materials used, or sacrifice biodiversity and local habitats.

Q How active is private capital in this space at the moment?

Nature-based solutions are a new area for private investors. Existing solutions have been funded with public money and sometimes foundations. It is also worth pointing out that there are relatively few truly nature-based solutions. Quite often the existing solutions could be termed hybrid, meaning that they combine some sustainable elements with more traditional materials and methods.

Pure solutions are, for instance, mangrove plantings in Asia, Africa and Latin America. These can reduce coastal erosion and the threat of flooding, while also increasing biodiversity and providing new employment and food sources for local communities through fishing and aquaculture.

Amazing pioneering projects across the broader field of nature-based solutions exist. For instance, Swiss Re designed a reef insurance policy with Mexican regional governments that insures the coral reef off the Yucatan peninsula. The policy pays out funds to restore the reef after damage – for example, from a hurricane. That's important because the reef is home to a vast ecosystem and protects the coastline, but also generates tourism income for local communities.

There is a huge opportunity for private capital to get involved more widely. This requires truly sustainable solutions, including economic sustainability. The challenge is to work towards creating a sustainable business model and, hence, an investment case, which is good for all stakeholders.

Q What are the barriers to private capital involvement?

One of the main issues is carbon pricing today. Quite simply, the business case doesn't fly because nature-based solutions cannot compete with traditional solutions.

The carbon price doesn't reflect carbon's true cost, making nature-based solutions (look) more expensive. Because of that, governments, which procure those projects and traditionally pay the bills, have no incentive to require sustainable solutions. Naturally, the private sector will not offer them. Hence, sustainable solutions need to get the right focus from governments. Tender processes must ensure that projects are outlined as nature-based – or, at the very least, hybrid and sustainable.

Development banks and private capital can push this development by jointly making their financing conditional on sustainable or even nature-based

Marine biodiversity: one of many spaces where infra investors can support vital solutions

solutions. First initiatives of this kind exist, for instance, in Mexico with FONADIN, supported by the German development organisation GIZ, and also the G20 Solutions Lab through its 'Scalability of sustainable infrastructure' initiative, where I was one of the 25 international experts invited to get together in three one-week meetings.

Another issue raised at our workshops is that positive externalities of projects do not flow through to the sponsor. If you think about a new train line going through a country, the land around that line becomes more valuable, particularly where you have a station. There the public sponsor shares its additional revenue stream from increased real estate tax income (the positive externality) with private capital.

In the case of nature-based marine infrastructure solutions, natural defences protect the coastline and make the land behind more valuable as a result. The benefit for business and communities flows back to the public stakeholder and is not shared with the private investor.

A potential way forward is to quantify the future revenue stream generated by protecting that coastline, followed by an open conversation with all stakeholders. Once we figure out what that protection is worth, we can agree how this value should be shared between the public and private sector. Further, one can develop ideas to capture positive externalities – such as touristic nature reserves.

Q Which financing models can help make the nature-based solutions space investible?

Once capital providers join forces and all demand sustainable nature-based solutions from governments – essentially, solving the collective action problem – blended finance would be one way to attract private capital.

How will this work? Development banks will partner with private capital taking the first hit in case of project default. Private capital follows behind at a lower level of risk. Examples of this model are already successfully at work internationally and have been discussed in our workshops. For instance, the Danish development bank invited Danish pension funds into a structure to finance sustainable renewable infrastructure in Africa. While this is not a nature-based solution, it proves that a blended finance model can work for all parties.

Public-private partnerships are also a way forward to bring investment into this space as long as sustainability or nature-based solutions are a hard condition in the procurement. For that, a sound legal framework is needed, which also provides capital providers with a safety net with regards to proper business conduct during the asset's lifetime.

Q What are the next steps for infrastructure capital to support nature-based solutions?

Co-operation among capital sources is key. To this end, B Capital Partners, together with Swiss Re, is talking with other asset owners and fund managers to broaden our discussions to a wider group of stakeholders. Development banks are important and influential players as they need to put this on the agenda with governments.

In late September, we helped organise and participated in the Central Dredging Association Dredging Days conference. This brought the topic of financing sustainable marine and freshwater infrastructure to more parties interested in – and committed to – developing nature-based solutions.

Ultimately, we need to determine project by project who the beneficiaries of the respective nature-based solutions will be. In doing that, we can work out by whom – and how – these solutions should be paid for. Yes, it is early stages, but the need is pressing, the investment requirement is enormous, and the opportunity for private capital is sizeable. There is an increasing number of construction industries, asset owners, fund managers, insurers and other parties looking for sustainable, nature-based solutions. I am certain that through our co-operation and like-minded initiatives we will get there. ■

Uncertainty is delaying taxonomy action

Claire Coe Smith reports on why some infra managers are proving slow to embrace the EU's new disclosure regime

The EU taxonomy for sustainable activities, which came into force in July 2020, introduced a classification system for investment activities in a bid to tackle 'greenwashing' and help investors make more environmentally friendly choices. The disclosure regime at the heart of the taxonomy's implementation comes into effect in January, and managers now face a huge data burden and a level of uncertainty that is putting many off taking action.

Valeria Rosati, a senior partner at Vantage Infrastructure, says the danger is that many infrastructure fund managers will approach the taxonomy as a compliance burden rather than an opportunity to change the conversation on sustainable investing. "When the taxonomy was established and the draft rules were published, we felt that the majority of the manager community saw it as a burden – simply more regulation and more disclosure obligations," she says. "The way we approached it instead was as an opportunity, because we focused on its objective, which is to encourage capital to flow to where it can make a positive impact by empowering investors to make informed decisions."

Challenges

Although the taxonomy is especially relevant to infrastructure managers, because so many of the activities that meet the 'mitigation' environmental objective are infrastructure plays, putting it into practice is not easy. Vantage embarked on an early pilot programme, putting in place tools and protocols, and encountered plenty of teething problems. That is not the only thing putting managers off embracing the new approach.

"Consultants tell us the number of managers focused on this is small at the moment," says Rosati. "There are two challenges behind that. First is the fact that the EU taxonomy is potentially expanding, so there is uncertainty putting people off being too proactive. We have taken a different view – we've developed a tool for what we have and if the remit changes, we will go back.

"The second thing is about other countries and other regimes. There's a general level of concern about the variety of standards that managers now have to report against, and some global managers would rather wait for the dust to settle and figure out what applies."

The EU published proposals in August to extend the taxonomy beyond climate change to include classifications for companies contributing to other environmental goals, such as biodiversity and the circular economy.

At the same time, there is a growing recognition that the EU taxonomy affects all investment managers marketing to EU-based investors, wherever those managers are based, and that other global regulators might follow a similar path with their own taxonomy regulations.

Paul Ellison, a partner specialising in funds regulation at Clifford Chance, says: "Certainly, the EU taxonomy is having some influence on the requirements in other jurisdictions. It's picked up quite a lot of interest beyond the UK and Europe, and that is having an impact on the narrative about global ESG standards and developing regulation in different countries."

For now, Ellison says the publication in March of the draft technical standards – which set out the precise methodology firms will need to apply when making sustainability disclosures – has moved implementation on considerably among managers. The final version of those rules should be published before the end of the year, so that disclosures can start next year.

"In March, firms were able to take their principles-based approach and start to grapple with the granular nature of the data that they need to collate," says Ellison. "At the moment, although the technical standards remain in draft form, we are seeing a lot of managers considering launching Article 8 and Article 9 products that will make disclosures in accordance with the obligations going forward. But obviously there's still uncertainty around some of the detail."

Foresight Group recently announced the final close of Foresight Energy Infrastructure Partners. The sustainability-led energy transition infrastructure fund has more than €800 million of commitments and is one of the first fully validated EU taxonomy-compliant sustainable investment funds. Its first two acquisitions were assessed by third parties and deemed to be in line with all the criteria required to validate them as sustainable under the taxonomy.

Henry Morgan, sustainable investment manager at Foresight, says:

> *"The EU taxonomy is potentially expanding, so there is uncertainty putting people off being too proactive"*
>
> **VALERIA ROSATI**
> **Vantage Infrastructure**

"Our approach was that we know we are really closely aligned with the taxonomy across the vast majority of our infrastructure portfolio, but we didn't want to be accused of marking our own homework. We didn't have a way of demonstrating that in a robust fashion. But because FEIP reached a first close at the same time as the taxonomy was coming to prevalence, with every acquisition it makes, we seek external validation."

He agrees that the taxonomy is something of a moving target: "There's just this constant challenge to stay compliant with the changes. Our approach has changed continuously, rolling with the changes in the taxonomy itself."

For infrastructure, Ellison points to two challenges around implementation. The first relates to the practicalities around data collection, particularly for assets in other parts of the world where it may be difficult to apply EU standards or there may be a reliance on proxy data.

"The other challenge is perhaps in the nature of some of the assets," he says. "While solar panels or wind farms may be easy to categorise as promoting environmental objectives, others may be harder to take a view on and different investors may think about them in different ways."

One example would be financing for a new fleet of diesel trains to connect remote communities to public transport for the first time.

Rosati says her firm has encountered complications: "Sometimes you don't have all the information you need, and where the information is not complete, there are judgements to be made. If you're looking to make an investment that is EU taxonomy-aligned and conducting a due diligence phase assessment, you have to look at the information gaps and ask whether that information will become available later, how you can make it available, and whether it will actually even tick the boxes when you do get it.

"Even within a taxonomy-aligned sector, you might find a company doesn't meet all the tests, so then you have to think about that pathway and start making assumptions."

Game changer

It will be some time before we can tell the extent to which the taxonomy will be a game changer in sustainable investing. "It already is a game changer in terms of driving forward the agenda," says Morgan. "Investors, be they institutional or retail, are really under pressure to ensure they are investing people's money in a more responsible, sustainable fashion, and the taxonomy is critical in giving investors and investment managers the guidebook to achieving sustainable investment.

"As capital moves towards responsible investing, this will help achieve that shift quickly by taking the objective thinking out of the process. Once investors have decided they want to invest sustainably, the taxonomy will help drive capital towards those sectors at a rate of knots." ■

EXPERT COMMENTARY

The key to success in this segment of infrastructure is being uncompromising in your ambitions but strategic in the pace and delivery of change, says Valeria Rosati, senior partner at Vantage Infrastructure

Driving ESG excellence in the mid-market

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"Are our aspirations for ESG improvement too ambitious? How confident are we, given the company's scale?". Our team was being quizzed by Vantage's equity investment committee on the late-stage, detailed assessment of two separate mid-market investments. We had been progressing work on these exciting business cases with growth potential, solid net-zero investment positioning and energetic management teams. Nevertheless, our due diligence had highlighted areas for improvement in ESG to bring them in line with our standards and strategy.

The mid-market space provides fertile ground for investors with a sustainable mindset to marry attractive, growth-driven investment returns and positive ESG contributions to generate a more sustainable future. However, this requires an active asset management approach and, from a sustainability viewpoint, a solid upfront plan to balance ESG opportunities, challenges and operational priorities.

Opportunity and challenge

"Opportunity is missed by most people because it is dressed in overalls and looks like work," Thomas Edison famously said. In our experience, the mid-market infrastructure space often provides investment managers with material opportunity to add value by driving best practices in ESG through active asset management. This is largely as a result of three favourable factors: more direct involvement during longer-term investment cycles; an ability to establish a closer working partnership with management teams; and nimbler decision-making structures with concentrated ownership.

While these factors mean that both ESG transformation and ESG value-add can really be achieved, there are obvious challenges that accompany these tasks.

Resourcing Firstly, the smaller scale and earlier positioning in the growth cycle means that resourcing can be constrained. In the past, we have seen larger portfolio companies state that additional resourcing was the bottleneck to getting started, especially when they initially failed to see ESG as a strategic priority or lacked an ESG culture. They approached ESG as a 'separate workstream' from their day-to-day business and sought internal or external manpower to perform these new ESG deliverables.

For larger companies, extra resourcing can often be approved, given the small cost to value ratio, to get an acceleration in the pace of progress. A mid-market company is even more likely to be faced with resourcing constraints. However, the support cost is more material relative to its size. Furthermore, even after an investment in upfront support is made, the upkeep of ESG continues to require an unavoidable ongoing commitment.

Starting from a low base The second challenge appears when the company's ESG journey starts from a low base. Because the mid-sized companies we target measurably contribute to a net-zero economy, sustainability is often rooted in their corporate mission. However, this may not be matched by the adoption of ESG best practice, their governance structures may be underdeveloped, and complacency or a lack of knowledge can detract from delivery.

While insufficient managerial willingness to improve will constitute a deal breaker, as an experienced and active manager we see a relatively better opportunity to make a difference in the mid-market. Part of our value-creation strategy is precisely to set out an ESG roadmap and provide portfolio companies with the right tools.

Six tips for investing sustainably in the mid-market

1 **Strategy shapes everything**
Do not make the common mistake of engaging mid-market management on processes, disclosures or even structures first. This makes it look like a chore. Start from embedding ESG best practices in the strategy so it emerges as an imperative for success.

2 **Get stuck in**
Be ready to work side-by-side with management and make allowances for a substantial investment of your time and resources, especially during the 100-day plan right after completion.

3 **Balance qualitative and quantitative incrementally**
Phase your data ambitions. It takes time to get everything in place and to collect complete information. Carefully choose the data you need and leverage qualitative engagement.

4 **Reward through progressive targets**
Improving targets over time is more motivating, achievable and less daunting for mid-market management than reaching first place in year one, especially as a company's mindset and culture will not change overnight.

5 **Benchmark carefully**
Small movements can drive big changes for smaller companies. For instance, the departure or hiring of staff could significantly swing the diversity position of a mid-market company. A single construction project can materially increase emissions from the prior year. Make allowances for this in your benchmarking.

6 **Add to exit**
In a world where sustainability is the future, ESG improvements add value at exit. Target, incorporate and track this carefully in your asset management strategy.

Future business growth The third challenge lies, paradoxically, in future business growth, a central pillar of many business cases.

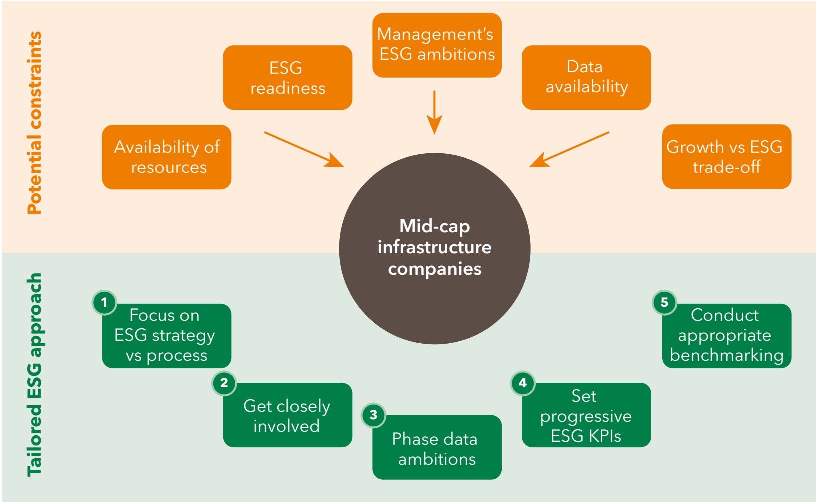
Growth is certainly not an exclusive prerogative of mid-market companies, and both larger scale and mid-sized businesses may have material expansion in their plans. However, their combination of constrained resourcing, lack of readiness and growth delivery means that our ESG priorities and implementation plans must be finely balanced.

Furthermore, when sustainable companies' operations expand or greenfield construction lies ahead, the year-on-year environmental footprint of an investment may deteriorate during business ramp-up and construction. This makes benchmarking particularly complex in those phases, though not impossible, and longer-term ESG goals need balancing against shorter-term negative consequences. For instance, a company's growing water consumption may be distorted by the increase in FTEs as operations expand, while consumption per employee shows a decreasing trend thanks to effective resource management measures.

Facing these ESG challenges looks like hard work and this is where Thomas Edison's wisdom comes to life. These challenges are not reasons to exclude sustainable mid-market investments with scope for ESG improvement from a pipeline, but rather to include them. They are opportunities for the investment manager to add value during ownership and at exit, by providing resources, expertise and strategic guidance.

Since 2018, the average GRESB score of our managed portfolio grew from 58 (out of 100) to 95, as alignment to best practices was delivered. We have experienced at first hand that shareholder-driven ESG transformations can definitely happen and bear fruit.

ESG in the mid-market: approach and potential constraints



Source: Vantage Infrastructure

Data – to have or not to have?

A growing thematic in the ESG world is reliance on data to drive investment decision-making and change. Many data-related solutions are emerging to streamline collection and analysis for companies or managers, but they are only as useful as the information they are populated with. Benchmarking assessments seek to provide impetus to data provision and support to standardisation.

Data constraints for a mid-market company will become apparent at the due diligence stage, with three key questions for the investment manager: Is the data available now or will it be in the future? How will I be able to access it? Can I analyse it using the same investment framework applied also to larger companies?

During the due diligence phase of our most recent equity acquisition of a mid-market infrastructure company, we sought to establish alignment of the company's activities with the EU taxonomy using Vantage's in-house EU taxonomy process and tool. As technical criteria are 'pass' or 'fail' in nature, lack of complete data makes the exercise challenging. The task is no easier for minimum social safeguards, where information may be even scarcer, and judgements are required.

The data environment of a mid-market infrastructure company can generally be improved post-acquisition, but this needs to be driven by the shareholders and embraced by management. On the debt side, engagement is key to ESG information access – both pre-investment, when disclosure obligations can be negotiated into lending documentation, and on an ongoing basis through constructive dialogue. The response can be dependent on the willingness and capacity of management to act, but given the typically smaller lending syndicates to mid-market transactions, lenders' ability to steer outcomes can often be more meaningful than when we are one of many voices all demanding different metrics.

> *"ESG challenges are opportunities for the investment manager to add value during ownership and exit"*

Do these data challenges mean that our ESG risk assessment frameworks are also not fit for purpose in the mid-market segment? Or that our requirements for ongoing disclosure need to be downsized?

That is not our experience. We have consistently managed to apply both our equity and debt ESG risk frameworks to companies of different sizes and at varying stages of maturity. We have also not reduced our ESG ambitions and expectations due to size.

But to make this possible, we must be methodical in drawing ESG lessons from the management of broader portfolios and adapting them to each company with a tailored implementation plan.

In conclusion, investing sustainably in the infrastructure mid-market space presents unique opportunities, which outweigh the ESG challenges. ■

Making ESG part of pay day

Guest comment by **Nicholas Sehmer**

Fund managers that rise to the challenge of linking compensation to ESG performance now are likely to reap the rewards in the medium to long term, says Sheffield Haworth's director, infrastructure, private equity and asset management

With environmental, social and governance concerns becoming ever more influential across the business world, LPs and GPs face the thorny challenge of how to tie ESG to compensation. Although there are no easy solutions, ESG-linked compensation is likely to become commonplace sooner rather than later.

As a sign of how influential ESG has already become, consider that almost half of FTSE 100 companies have ESG targets in their annual bonuses and long-term incentive plans. In a recent Capstone Partners survey, 27 percent of global private equity LPs said they would be happy to "trade lower performance for excellent ESG credentials".

LPs are increasingly looking to achieve their returns through investment in businesses with strong ESG credentials. As a result, funds lacking such credentials will find it difficult to raise capital.

For impact and sustainable funds, it makes sense to tie fees and compensation to the sustainability performance of their assets. Some of them are already doing this, but other infrastructure and real estate players may question if it is even worth trying. GPs will need to build meaningful ESG-linked KPIs, decide how to best apply them and work out how to measure the results.

Impact on recruitment

Despite the difficulties involved, the writing is on the wall. It is only a matter of time before tying compensation to ESG performance becomes mainstream – whether the market likes it or not. So, how is this likely to affect recruitment in the sector?

Although many candidates are passionate about ESG, at present these appear to represent a small sub-section of the overall talent pool. This means firms that most closely link compensation to ESG may struggle to hire top talent, at least in the short term. Having said that, the firms that are pioneers in the space are those that truly believe in the benefits of sustainable investing and are likely to attract talent with a similar mindset.

> *"GPs will need to build meaningful ESG-linked KPIs, decide how to best apply them and work out how to measure the results"*

Anything that affects compensation is always going to be divisive and will take some time to get used to. If ESG performance is outside their control, candidates are likely to find this more frustrating. However, the more it happens, the more candidates will become used to the idea. Many of them will realise that now is the time to adopt a new mindset around compensation for the good of their long-term career and that being at a fund with strong ESG credentials will make it easier to raise capital and therefore generate returns and carry.

While the short-term impact for firms may be somewhat negative, we are likely to see LPs favouring first-mover firms that experiment with compensation models and that gain reputations for strong ESG performance. This in turn will make them magnets for the best talent in the long run. It's time to grasp the nettle. ■

The ESG talent pool

Responsible investment-related roles are proliferating across private markets, with firms searching for individuals with skillsets ranging from investor relations to a track record of ESG integration

As the private equity industry's focus on environmental, social and governance issues continues to gather steam, and as LPs dial up the pressure on managers, the question of how firms resource ESG functions is becoming increasingly critical. Affiliate title *Private Equity International* asked two recruitment experts – US-based Mary Gay Townsend and UK-based Simon Nixon – to outline the hiring landscape.

Panel

Mary Gay Townsend
Managing partner at Norgay Partners

Simon Nixon
Managing director and head of alternatives at Carpenter Farraday

Q What demand are you seeing for senior ESG- and responsible investment-related roles in private equity?

Mary Gay Townsend: The demand for investing using ESG guidelines has been increasing and has accelerated over the past year in the US. This includes a strong interest in investing in funds that back diverse management teams. As firms acquire more data that reflects diversity managers' track record and ability to outperform their peers, there is an expectation that increased demand for diversity-led funds will follow. We expect more firms will get into the game because of this trend, and when they do, they are going to want the best talent to run these strategies.

There has also been increased demand for impact investing. As performance metrics and returns point to success, impact investing is increasingly viewed as not only the right thing to do from a social standpoint, but also the economically practical decision. In many cases, we have seen firms look internally for talent to run these efforts or lead ESG. They will often move a top performer out of traditional investing into a leadership role within impact investing. This is a good retention strategy that rewards strong talent with a leadership role in a growing sector.

Simon Nixon: We have seen an increase in demand, albeit at a relatively subdued rate. Many private equity firms are small organisations, so it is currently only the larger players recruiting dedicated professionals to lead ESG. In smaller funds, aspects of ESG are usually split across a range of functions. For example, leading on diversity in both the funds and portfolio companies can be taken on by an internal HR professional within the fund. It is also more common for operating partners or those involved in 'asset management' to spearhead ESG initiatives in portfolio companies. For embedded ESG, we also see a lot of hiring from corporate ESG departments or from specialist consultants.

For firms recruiting positions covering the full spectrum of ESG initiatives, the role can often sit in investor relations. A lot of the requirements and initiatives are driven by LPs and will continue to increase as the EU Sustainable Finance Disclosure Regulation becomes active.

Q What kind of skills and experience are PE firms looking for?

MGT: Regardless of strategy or industry, the strongest private equity investors are smart, deeply curious, motivated to learn and inquisitive with excellent interpersonal ability. Especially when it comes to recruiting talent for ESG roles and investment opportunities, we see firms looking beyond traditional PE backgrounds and into other areas to build candidate slates. PE is in many ways an apprenticeship model and nurturing smart and motivated professionals is one way to grow successful investors. Sources they can tap into include LPs, such as endowments and foundations, as well as companies that focus on relevant industry verticals like energy, agriculture and infrastructure.

We are also seeing strong candidates coming from the public sector and central banks whose experience working with governments and municipalities is valuable to impact investing and ESG standards. Finally, given that many GPs are eager to effectively communicate to LPs the steps they are taking to incorporate ESG into their investment strategies, many firms are also looking for candidates with communications, PR or marketing backgrounds.

SN: The jobs can be very different between organisations, especially where there may be a split between those who see it as a regulatory/box-ticking exercise and those who really believe it should be part of the investment and post-acquisition process. The skills we look for are varied, including investor relations, marketing and PR, internal training on ESG, and external engagement through industry seminars and events. We also look for individuals with a track record of leading ESG implementations in portfolios. This requires the seniority and influence to be able to get leadership teams on board with why such ESG initiatives should be introduced.

Q How much competition is there for talent?

MGT: Because ESG and new impact investment verticals are still nascent in the US without large numbers of legacy platforms to tap when looking for talent, there is a lot of competition. Firms are having to think outside the box about where to source their talent.

Historically, PE firms tend to fish in the same pools of candidates from the same platforms with similar professional backgrounds. While this can be perceived as a 'safe' route to take, a lack of diversity in perspectives and backgrounds can put investment teams at a disadvantage over time. Good talent is everywhere, and candidates can gain the relevant skills and experience in many different professional environments. PE funds need to catch up in this regard, but we are seeing a growing commitment to doing that and, in many ways, it is being driven by the need to recruit with ESG in mind as they add new strategies.

> *"Firms are having to think outside the box about where to source their talent"*
>
> **MARY GAY TOWNSEND**
> **Norgay Partners**

SN: At present, there is not what would be classed as a competitive market for talent, as most organisations are looking for tailored or specific skills relevant to their needs rather than uniform experience, so the supply of candidates with experience is still greater than demand. For those with a track record of successfully integrating ESG across PE funds, the talent pool is significantly smaller, which can make recruitment more challenging and, in some cases, more costly.

Q What hiring trends are you seeing for impact funds?

MGT: Demand has increased and many firms are actively looking to establish or grow impact investing capabilities. We expect this trend to gain momentum as larger firms build out their platforms and teams. Mid-sized and smaller firms will need to keep up and spin-offs will inevitably take place. Keeping up with the competition makes for a compelling argument to build and raise funds. This will in turn lead to a greater need to build strong management teams that can both attract capital and deploy it into impact investing opportunities. Success begets success and I think we will see that drive demand for more impact and diversity funds and, as a result, more recruiting activity around it.

SN: Impact investment funds are generally smaller and can be focused on growth investing, but we are seeing an increase in first-time funds. Many of them are involved in areas such as sustainable food supply, energy storage and financial infrastructure for underserved emerging markets, but the largest focus is primarily on energy transition, renewables and other more nascent energy technologies. In certain specialist areas there are very few experienced investors, so we find that we are recruiting industry experts, which is perhaps a little more akin to venture capital recruitment rather than private equity. ■

KEYNOTE INTERVIEW

Grid support is crucial and urgent

Infrastructure that can store, predict and optimise supply and consumption is expected to be critical to reliable energy supply in the UK, explain Quinbrook's David Scaysbrook and Anne Foster

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Q What are the options for investors in UK renewables today?

David Scaysbrook: There are two main routes – listed and unlisted markets. Within the listed space, there are dedicated vehicles that only invest in UK renewables, along with more generalist infrastructure vehicles with some level of exposure, as well as integrated power companies that have a mix of renewables as part of a larger energy business.

In the unlisted sector, there are a growing array of investment funds which invest directly into renewable projects as well as vertically integrated supply businesses, either through 'evergreen' vehicles or closed-end vehicles with a defined maturity. These vehicles also cater for both equity and debt or debt hybrid investments. We're certainly seeing a significant increase in the allocation of private capital to unlisted funds and dedicated vehicles, with an unprecedented volume of 'first time' allocations from LPs seeking exposure to the UK energy transition.

Q Where are the best opportunities to invest?

DS: We've invested in UK renewables for over 20 years and have definitely moved on from 'plain vanilla' wind and solar as energy markets are disrupted and becoming more complex and, frankly, riskier. As weather-dependent renewables push through 35 percent of total installed capacity in the UK, we're experiencing some foreseeable yet unintended consequences of having that level of renewables penetration in a power system that was never designed for it. That's bringing new investment risks as well as opportunities into play and that is fundamentally reshaping our investment strategy. Today, we're focusing more on flexible and dispatchable capacity, demand response, storage and targeted grid support infrastructure.

Flexible generation capacity (or peaking capacity) fills in the critical supply gaps when the wind doesn't blow and the sun doesn't shine. With the recent disruption in UK energy markets, we're seeing the real value that flexible and responsive peaking capacity can have in the UK power market, which is increasingly dominated by variable renewables – we started building out our Velox portfolio of peaking assets several years ago in anticipation of greater volatility and recently they've been running flat out.

There are also times when there's too much wind in a given location (like northern Scotland) and it's getting choked off by constraints on the UK power transmission system. That's wasteful and is being addressed by National Grid. Storage solutions like batteries will enable the UK to store that surplus wind in those choke point locations – and then, when the wind drops off, export it into the power system for value. That's another important piece of flexible energy infrastructure that enables more variable renewables to connect to the grid going forward.

Green data centre opportunity

Data centres are some of the largest corporate purchasers of renewable power in the world today. Their power demands are growing at exponential rates.

DS: The industry is at the vanguard of carbon reduction initiatives and the application of supportive technology – not only through renewable procurement but also in offsetting carbon emissions. For example, Microsoft is retrospectively offsetting all carbon right back to when the company was founded in 1976. Green data centres are growing at incredible rates, and almost every major operator is committed to net-zero. It's a logical place for Quinbrook to focus.

The tech industry is siting data centres in places where renewable energy is plentiful and cheap. Our Gemini solar and battery storage project in Nevada is selling all its power – 690MW – to the local utility NV Energy. One of their anchor customers for the power was a 200MW hyperscale data centre being built by Google. That was a lightbulb moment for us. Data centres were moving out of metro locations into areas with cheap land, fibre connections, water supply and, most importantly, cheap renewable power. We now have over 20 host sites for hyperscale 'green data centers' under development in the US and one here in Australia.

AF: In Ireland, we're seeing growth in data centres interfering with power markets and supply. So that's where the optimisers and control businesses, as well as renewable generation and supply, also come into play. In the UK, there are several drivers. One is that the climate is incredibly well suited to data centres – it increases some of the power efficiencies and takes away some of the need for additional energy for temperature control. Secondly, there's a big push to have greater security over data, so it's becoming more localised.

It's important to remember that renewables are intermittent and most data centres require energy reliability 24/7. So, we need to implement multiple sources of power until the full suite of renewable power solutions are commercially feasible.

Q What are the main challenges in the UK power market?

Anne Foster: We're looking towards an energy market that's no longer primarily vertically integrated but is significantly more distributed, both from an ownership and locational point of view. In addition, there is a forecast rapid increase in electrification and overall demand, be that for vehicles, household heating or rapidly growing industries such as data storage.

The challenge is to ensure that the grid continues to be accessible, reliable and secure. How do you fill peak periods? How do you avoid blackouts? How do you support the grid voltage on a 24/7 basis irrespective of changing weather?

That's where a meaningful allocation of new investment needs to go. It's one thing to invest in new renewables generation, but that doesn't work unless you also put in all the other pieces that help ensure that renewable generation is fully used, distributed and doesn't undermine grid security.

Q How is the drive to net-zero shaping investment?

DS: It's creating orphaned assets such as coal and conventional gas plants and carbon-intensive industrial processes not powered by renewables. Instead, LPs are redirecting their capital to sectors that contribute positively to the reduction of emissions – and, as renewables get cheaper, this is opening a vast array of new opportunities. The energy transition is both disruptive and revolutionary from an investor's perspective.

There's a very significant increase in the opportunity set, although traditional renewables still dominate investor capital flows within the energy space. This is in part because one of the most obvious ways for buyers, including large corporates, to decarbonise is by swapping the source of their electricity to renewable energy. The UK has been relatively late to shift to corporate power purchase agreements, but is catching up quickly. Ultimately, that looming growth supports more investment in renewables and it becomes a virtuous circle.

Q What is the next step for companies?

DS: As we move into deeper net-zero implementation, sectoral commitments and transformations are the next big challenge – and opportunity. Some steps involve mass electrification, some don't.

There are a host of opportunities in greening energy commodities as well – such as renewable power to oil rigs and mines, to reduce carbon intensity, carbon sequestration, direct air capture, new electrolysers for green hydrogen, steel mills that have electric arc furnaces and new biodiesel refineries, just to name a few.

Q How are you using technology to make renewables work better?

DS: Optimisation is a word you'll hear a lot more going forward. Power assets and power markets will increasingly be managed most efficiently via algorithmic dispatch protocols with the assistance of machine learning and AI.

Human controllers simply cannot manage the vast number of variables that are now influencing the behaviour and outcomes in power systems, where both utility-scale and distributed energy solutions are rapidly proliferating.

Look, for example, at weather prediction and the use of real-time weather data on power system behaviour and efficiency – it's a natural area for advanced algorithmic management.

We already see algorithmic optimisation in battery storage. One of the leading UK optimisers is a data science team based in Oxford. They are using algorithms to maximise revenue from battery storage in ways that humans just cannot replicate.

> *"Delivering large-scale and low-cost, 24/7 renewables for energy-intensive sectors is the holy grail"*
>
> **DAVID SCAYSBROOK**

Big data combined with blockchain technology is another area of technological advancement that goes to the core compliance: tracking, and verification of the true provenance of renewable energy and its use in real time. Just because a company buys power from a wind farm in Scotland does not mean those megawatts are fully matched to its operations. What happens when the wind farm is not supplying power to the grid but the company's plant is still consuming grid power?

What we see on the horizon is 24/7 matching of the renewable energy that customers procure with their actual consumption at their facilities using advanced blockchain verification platforms – getting down to hourly granularity to track where their power comes from and the carbon intensity of any grid purchases so that they have verifiable data records for their carbon reporting and monitoring of progress to their net-zero targets.

Q How important are ESG and stewardship practices in the renewable energy sector?

AF: You can almost always find a link between managing ESG well and protecting and growing capital value. For us, building better businesses leads to better outcomes for all stakeholders. The two are fundamentally combined.

The push to net-zero cannot be at the expense of other important societal needs. For example, if you take jobs away in carbon-intensive industries, you have to also seek ways to bring back support to those impacted communities. We look for ways of building assets in communities that have relied on fossil fuels in the past and hopefully creating opportunities to train people in the clean energy sector.

From an environmental point of view, it's critical to look at where projects are located. There's interesting work going on in locating renewables in sympathetic ways to improve ecosystems and support local farmers.

One thing we've worked on is getting pollinators on to solar farms and building habitats that can attract local wildlife and bees, which are critical to local farming communities. Facilitating increases in biodiversity needs to be part of the overall infrastructure planning.

It's important to consider all areas – job creation, social impact, supply chain impact, human rights impact and long-term community impact. We think about how we benefit communities, particularly local and rural communities that have been hit by covid-19 and where renewable energy can help to drive economic benefits.

Good stewardship means working day-to-day with portfolio companies and their diverse teams, and actively sharing best practice across regions. To drive positive change, we work very closely with our portfolio company teams to support their impact on the ground. ■

David Scaysbrook is co-founder and managing partner and Anne Foster is global head of ESG at Quinbrook Infrastructure Partners

The A-Z of ESG and sustainability in private markets

From Access to finance to Zero emissions

Words by **Evie Rusman**

What does sustainability mean to infrastructure investors?

That was the question we sought to answer when we teamed up with Brighton-based illustrator Lee Playle at the 2019 Infrastructure Investor Global Summit in Berlin, writes Evie Rusman. The idea was to create an illustrated A-Z of sustainability and ESG based on the suggestions of conference delegates.

The challenge was as much a creative endeavour as a journalistic enterprise. Could our artist succeed in producing 26 illustrations by the end of two days at the conference? Would the resulting two-metre by three-metre illustrated wall, which became one of the talking points of the forum, adequately encapsulate the breadth of vision of ESG and sustainability?

The answer was a resounding yes. "What I really like about this is that it helps to demystify the concept of what ESG actually means in contemporary investing and particularly in an asset class like infrastructure," said Adam Kirkman, head of ESG at AMP Capital. "ESG can be quite a complex concept, and therefore has a complex set of issues. But this list demonstrates how broad a concept ESG is, as it covers everything from gender diversity to environmental management."

Investors are under pressure to meet global sustainability targets and, as a result, ESG is a priority when considering projects. Partners Group, KKR and Natixis have all incorporated ESG metrics into their manifestos and portfolios.

In 2019, Mirova launched a natural capital investment vehicle dedicated to land degradation and sustainable use of oceans. Witold Marais, investment manager at the firm, said: "My favourite letter is B for blue economy. I believe that protecting our environment is the prerequisite to making any kind of infrastructure investment relevant. If our environment collapses, then all the rest becomes useless."

The A-Z was so popular that we decided to run it in its entirety in this special report. No one is claiming this is the definitive list – we could repeat the exercise all over again and get 26 entirely different suggestions – but then that is the compelling thing about ESG: it's a mission that knows no bounds.

So whether it's C for collaborate – and the opportunities created by working together – or R for renewables – and how to minimise the sector's environmental impact, we hope you, like us, marvel at the breadth of vision on display here.

As the climate crisis continues to accelerate, ESG has never been more important, and the A-Z demonstrates just how far this concept extends.



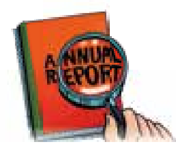















Illustrations: **Lee Playle**

Access to finance

This is essential if vital infrastructure projects are to go ahead. But it's been an issue throughout the pandemic due to a significant fall in investing

"The covid-19 pandemic has been affecting economies worldwide, leaving small and medium-sized enterprises particularly vulnerable," says Rogério Santos, IFC's head of financial institutions for Brazil and the Southern Cone. He talks of its $100 million of financing to Santander Brasil to help mitigate covid's impact on the country's economy: "IFC's loan will allow Santander Brasil to support small and medium-sized companies, including women-owned businesses, enabling them to continue their business and preserve jobs."

John Owers, director of African funds and capital partnerships at CDC Group, says: "For new managers it is as hard as it's ever been [to raise funds]. It's much easier for managers that have been around a long time, that are used to working through crises."

Blue economy

The blue economy is a term relating to the exploitation, preservation and regeneration of the marine environment

More private capital is waking up to the importance of investing in initiatives that protect ocean wildlife.

Witold Marais, investment manager at Mirova, says: "I believe that protecting our environment is the prerequisite to making any kind of infrastructure investment relevant. If our environment collapses, then all the rest becomes useless. In particular, I feel the sustainable use of oceans has been neglected compared to other types of infrastructure assets. At Mirova, we have launched a natural capital investment dedicated to land degradation and sustainable use of oceans."

Joel Dunn, chief executive of Chesapeake Conservancy, also warns that public financing is not going to be enough to reduce biodiversity loss: "We've done the math. We need to increase the pace of conservation."

Collaborate

By forming alliances, infrastructure firms can help reduce the sector's impact on climate change more quickly through the sharing of tools and resources

Zoe Haseman, global head for sustainability and ESG at Jacobs, says: "The focus for net-zero right now is on enabling delivery, and this requires all of us to work together – businesses, governments and communities around the world. The interface with businesses and cross-industry partnerships is vital to informing policy, stimulating innovation, sharing learning and, ultimately, improving action."

In November 2020, five private markets giants created the One Planet Private Equity Funds group. In a statement, the group said its aim was to "advance the understanding of climate-related risks and opportunities within our investment portfolios so that we can build better and more sustainable businesses". The move highlights the pressure put on private markets to act fast.

Data security and privacy

Companies are continually looking for ways to use data to offer more personalised and innovative solutions. But this comes with security and privacy risks

Covid-19 has only accelerated security concerns as hackers are becoming more sophisticated and using the pandemic to their advantage.

Megan Starr, global head of impact at Carlyle Group, says: "Businesses are experiencing a rapid transformation in how their customers, employees and suppliers interact. While these changes have unlocked new opportunities, we also believe they have enabled an unprecedented number of cyber threats. We work closely with companies to ensure that effective business continuity plans and data protection programmes are in place. Our experience with cyber threats has also taught us that education is key in the ability to effectively respond to and mitigate the harmful effects of a cyber incident."

Energy usage

One of the UN's priorities is to ensure access to affordable, reliable, sustainable and modern energy for all by 2030

Carmela Mondino, head of ESG and sustainability at Partners Group, says: "The emergence of new solutions to ensure power reliability and flexibility is now one of infrastructure's key investment themes. As buildings increasingly electrify and electric cars become more prevalent, energy usage patterns are becoming less predictable. This is leading to power grid instability and more damaging power outages."

Elizabeth Seeger, KKR managing director for sustainable investing, adds: "Companies whose products and services provide solutions facilitating the energy transition will be essential to secure our planet's health and promote sustainable development, while supplying a product and/or service that is and will continue to be in high demand and critical to our livelihoods."

Fair trade

Fair trade enables investment in building rural infrastructure, which supports coffee-farming communities and uplifts developing economies

Many coffee-growing communities are in remote areas, far from basic infrastructure and services.

David Dewez, partner and head of Latin America and the Caribbean at impact investment manager Incofin, says fair trade is a key area of opportunity for investors and a priority for the firm. "Our Fairtrade Access Fund aims to promote the development of a fair and sustainable agriculture sector, availing of a dedicated team with specialist knowledge in each of the 12 different crops, including coffee, cocoa and Brazil nuts, and the regions in which it invests," he says.

The FAF operates in Latin America, the Caribbean and Africa, offering lending products for agricultural exporters that work primarily with smallholder farms that have a strong commitment to sustainable development.

Gender diversity

It is increasingly apparent that this has a positive impact on the financial performance of firms

According to McKinsey & Co data, companies in the top quartile for diversity and inclusion are 25 percent more likely to have above-average profitability than those in the fourth quartile.

"We believe that a diverse team, with different thinking styles and visions, will bring deeper discussions and more innovative ideas and solutions," comments Coralie De Maesschalck, head of ESG and CSR at European private debt business Kartesia.

Due to the positive correlation between diversity and business performance, the conversation surrounding gender diversity is getting louder, with firms incorporating inclusion initiatives into their portfolios.

Gurpreet Manku, the British Private Equity & Venture Capital Association's deputy director general and director of policy, notes: "At a very base level, firms are hiring more women and therefore, as their workforce diversifies, there's more opportunity for them to progress. More women in senior levels also improves recruitment as it sends a message to applicants that this is a firm [where] they can succeed."

Abris's Pawel Gieyrnski also warns that the private markets will suffer if they decide to take a back seat on this. "I believe we need to look at diversity not just as a 'nice to have' but as a crucial element of value creation," he says. "Cognitive bias is a huge issue in private equity and one that can't be solved by the middle-aged white men who dominate the industry."

Summa Equity's head of people, Line Heje Brekke, agrees: "Private equity won't be successful in attracting and retaining women without shifting from its historical alpha male culture to one that is more inclusive and team-orientated."

For Summa Equity, hiring criteria are at the forefront of the firm's mission to be inclusive. "We always try to attract a 50:50 split of male and female employees at associate level," Brekke says. "And if we have an imbalance, we make sure that our next hire corrects that. It hasn't been difficult so far because we see a pool of both great male and female candidates."

EXPERT COMMENTARY

Infrastructure capital's commitments to renewable energy and net-zero are also driving wider positive social outcomes, says Panos Ninios, co-founder and managing partner of True Green Capital (TGC)

Solar's social power

During the past 18 months, we have seen the world's most pressing problems pushed to the forefront. The covid-19 pandemic forced millions out of work, protesters demanded racial justice, and a changing climate wreaked havoc across the globe. On the brighter side, these tumultuous times have prompted a heightened awareness of the need for social change and the critical role of businesses in spearheading this change.

This article focuses on the increasing emphasis on the 'S' in ESG investing, specifically in relation to climate change, where the environmental, social and economic impacts are often linked.

ESG-motivated investors, once primarily interested in the environmental impact of a company's strategy and its governance standards, are now prioritising a business's social intent. Corporate leaders, in turn, are understanding that a socially minded strategy can help address some of our global challenges and drive financial success.

Defining and measuring the 'S' in ESG, however, and integrating it into a company's strategy is not always easy. At True Green Capital (TGC), we have been committed to social responsibility from the outset. In the aftermath of the 2008 financial crisis, when risky decision-making by some business leaders led to millions of Americans losing their jobs and homes, TGC's founders sought to design a business around investing in environmentally friendly assets, while at the same time bringing value to our stakeholders, the economy and the local communities in which we operate.

A decade after our founding, we continue to believe our business is one in which all three ESG principles are inherently embedded in our investment process and daily operations.

ESG principles

Growth in ESG assets has accelerated during the pandemic, with no signs of a slowdown. Global ESG assets are on track to exceed \$50 trillion by 2025, more than one-third of the projected total assets under management, according to a report by Bloomberg Intelligence in February of this year.

Case study: LADWP Projects, Los Angeles

There are many significant clean air issues in Los Angeles and the city's mayor, Eric Garcetti, is committed to making improvements – with the goal to reduce GHG emissions by 45 percent by 2025, achieve 50 percent renewable energy production by 2030, and net-zero by 2050. LADWP, the local municipal utility, is particularly motivated to fulfil this mandate by 2025.

TGC's 16.9MW Westmont rooftop solar installation in the city, which is part of the LADWP portfolio, has played its part in keeping the mayor's mission on track. The project, one of the largest solar rooftop projects in the world, operates on four commercial rooftops on what is one of LA's largest distribution centres. To date, it has generated around 60MW in renewable solar energy.

Looking forward, we expect that our 200MW-plus pipeline of actionable projects over the next five years will be a major contributor towards the long-term goal of 50 percent renewable energy production by 2030. Furthermore, in collaboration with the City of Los Angeles and the local unions, TGC implemented a programme to train and employ combat veterans in building our solar project portfolio.

Behind this trend is a sharpened focus on our climate crisis, spurred by images of wildfires burning across our planet, the current White House administration's energy strategy, and mounting pressures on the financial industry to step up.

While companies have made progress in mitigating their environmental impact (the 'E') and incorporating good governance practices (the 'G'), they have been slower to recognise the connection among these two components of ESG and certain social outcomes (the 'S'). The climate crisis, consequences of which are felt most harshly by the world's poorest communities, has shown how the 'E', 'S' and 'G' are inextricably related.

As an investor, owner and operator of sustainable real assets in communities across 15 US states, all three components of ESG are critical to TGC's management of its people, operations and portfolio. In TGC's view, value creation and ESG investing are complementary goals.

Renewable energy at the core of 'E'

The E in ESG contemplates how an organisation impacts and is impacted by its environment. It has become clear that renewable energy sits at the core of the effort to combat climate change and, thus, businesses involved in renewable energy production are inherently addressing the E, though investment in clean energy must increase dramatically over the next three decades to achieve net-zero emissions by 2050, according to a report by the International Energy Agency entitled *Net Zero by 2050: A Roadmap for the Global Energy Sector*.

TGC invests in solar power generation, making a zero-carbon footprint an inherent goal. We pursue resource efficiency by building smaller, localised solar power plants, thus minimising the waste involved in distribution over long distances, and we track and report meaningful environmental metrics to our stakeholders. Finally, before approving an investment, environmental issues are identified, and we maintain ongoing dialogue with federal, state and local agencies to ensure adherence to protective measures related to wetland and water bodies, endangered plants and wildlife habitats, archaeological sites, and historical and cultural resources.

Shift to social

The 'S' in ESG addresses how a business manages its relationships with employees, suppliers and communities. The social pillar has lagged for various reasons, but a recent shift is palpable across the investment community.

For example, in its 2021 Stewardship Expectations, BlackRock Investment Stewardship addressed climate change but also spoke of its intensified engagement on social issues, including setting forth a more holistic set of expectations around how companies monitor and manage their impacts on people.

At TGC, we designed our strategy to ensure our firm and employees have a positive impact on the communities in which we operate and at the same time create value throughout the investment process. For example, we bring value to local communities by employing local construction crews and local service providers, working with unions and training veterans. Nearly 100 percent of TGC's construction and operations personnel are residents of the communities where our assets are located.

We also train and employ veterans to build solar projects, and we contribute to the communities where we operate by choosing solutions to business problems that contribute to the local economy. Examples include power price discount offers through our community solar programme that inherently benefit communities suffering from energy poverty; and our affinity marketing programme that, by design, financially benefits local organisations while supporting customer acquisition for our power generation projects.

Promoting energy affordability is another example. Our NY Community Solar Portfolio has enrolled over 14,000 mostly rural residential electricity consumers who receive clean power at discounts off their utility rate.

Improving energy resiliency is another way capital can have a social community impact. Our solar installations across eight US military bases, for example, have enabled those bases to reduce their reliance on power supplied by the grid. We are also partnering with corporations to help them meet their resiliency needs.

Case study: Solar Farms, New York

Through SFNY, our community solar affiliate in New York, we have taken several steps to promote environmental goals, which we believe make a positive impact on the wider local community. For example, we are enrolling residential electricity consumers at a discount. The project has also created around 600 local construction jobs, employing more than 40 full-time sales personnel to acquire and service customers.

TGC is also partnering with local communities to build and operate assets sustainably. We partnered with Cornell University on a sheep grazing study, the goal of which is to mitigate any environmental threats resulting from the removal of land for agricultural purposes. As part of the study, conventional grass mowers were replaced with grazing sheep on our solar farms. This approach controls vegetation, which prevents panel shading, and thus maintains the agricultural use of the land. Further, it employs local shepherds, providing agriculture jobs to the local community.

Good governance

The 'G' in ESG looks at the internal systems, controls and procedures a company follows to govern, make decisions and comply with regulations. Its elements can also include a commitment to giving back to society, values and ethics, and transparency.

Abiding by principles of good governance protects the interests of investors, employees and other stakeholders. Governance considerations are centred on ensuring the happiness of employees and promoting a healthy work/life balance through flexible scheduling and remote work policies, safety, considering the construction activities inherent to TGC's investment strategy, and giving back to the communities in which we operate.

"The social pillar has lagged for various reasons, but a recent shift is palpable across the investment community"

As the events of the past year and a half have proven, the three pillars of ESG are deeply intertwined. By embracing the 'S' and adopting a holistic approach to ESG investing, businesses can drive profitability while maximising value to their employees, stakeholders, local communities and beyond. ■

Habitat protection

Infrastructure can result in loss of wildlife as environmental concerns are not often considered during design, planning or construction

According to WWF, the building of infrastructure can block migration routes, make it easier for poachers to access land, and increase pollution, thereby imperilling species.

The Asian Infrastructure Investment Bank's Environmental and Social Framework considers avoiding projects that may result in habitat loss. "Our mandate and mission is to finance and invest in infrastructure for tomorrow," notes AIIB's Joachim von Amsberg. "We have a commitment to sustainability: environmentally, addressing issues like air and water quality, biodiversity, pollution and climate change; financially and economically, focusing on projects with a sound return potential that raise economic growth and productivity; and socially, helping provide inclusive access, especially to those currently excluded from infrastructure services."

Independent board members

Investors can have more of an impact if they request seats on portfolio companies' boards

In a company whitepaper, partners from Kartesia said: "With a long holding period of typically four years, a private debt fund can influence real change at a company. It can request a seat on the Board to enshrine its part in ESG matters or negotiate monthly meetings with either management or the company sponsor."

Kartesia also makes clear in its sustainability policy that it uses monthly or quarterly meetings with management or shareholders to promote a commitment to ESG in its portfolio companies. "Kartesia always aims to be the sole lender and when this is not possible assumes the majority position and controls the negotiations on legal documents for the transaction," said the firm's partners. "As a result, Kartesia will maintain an open and ongoing dialogue with management."

Justice

The pandemic has fuelled a rise in mental health awareness as people were forced to minimise social interactions

Organisations have been expected to support their workers in navigating the impacts of covid-19.

For KKR, providing mental health support to its staff was a priority. The firm introduced initiatives, including virtual classes, a stipend of $300, a reimbursement benefit of up to $250 for fitness equipment, as well as dinner allowances.

In a note to staff, KKR said: "We heard about the mental and physical toll that this tough period is having on you. While we cannot undo the horrors of this global pandemic or the effect it has had on our communities, we do want to do all we can to support you during this unprecedented time."

Firms also upped their diversity, equity and inclusion targets, following the rise to prominence of movements such as Black Lives Matter, which have put pressure on corporates to do more.

KPIs

They help companies track their sustainability efforts and enable them to put the necessary measures in place to meet their ESG targets

Carmela Mondino, head of ESG and sustainability at Partners Group, explains: "Quantitative reporting through KPIs helps provide insights into how investors are fulfilling their commitment to building sustainable infrastructure. 2020 marked the third consecutive year Partners Group reported through our ESG KPI dashboards, which cover topics such as energy management, gender equality and board maturity. This year, we were able to report on 155 individual data points on our private infrastructure dashboard."

Julien Duquenne, co-head of green and sustainable finance, origination and advisory for EMEA at Natixis Corporate & Investment Banking, adds: "KPIs are key to assessing the ability to report on any environmental and social benefits and the positive impact of the infrastructure being financed through bonds or project finance loans.

"They are also fundamental in the sustainable finance space where KPIs embedded into any 'KPI-linked' financings must be ambitious and meaningful to the activity of the borrower/debt issuer. These KPIs must be measurable and externally verifiable, ideally against science-based trajectories. GHG emission reduction pathways, for example, must be tested and monitored regularly so as to capture and monitor mid-to-long-term sustainable commitments of the borrower."

Labour rights

Companies are under continuous pressure to create inclusive and safe working environments for their employees

This is being fuelled by a rise in mental health awareness in the corporate world. Despite this, it appears that, generally, major investment managers are not acting as allies on labour rights. A 2021 report from PIRC found that less than two-thirds of policies set out social standards for investee companies, while fewer than a quarter make any positive reference to expectations on labour rights. This compares with more than two-thirds of policies that set out expectations on environmental standards.

Alice Martin, labour specialist at PIRC, says: "Whilst there have been well-organised efforts among institutional investors to align portfolios with carbon reduction targets in recent years, social standards, particularly in relation to labour rights, have been a blind spot."

Nevertheless, Martin suggests some progress is being made. In 2019, Schroders removed Amazon from an ESG-friendly responsible investment fund, citing that the company did not meet the firm's criteria of being socially sustainable. "There are signs that foundations are upping the ante on understanding the social implications of their portfolios and exerting influence on this," Martin says.

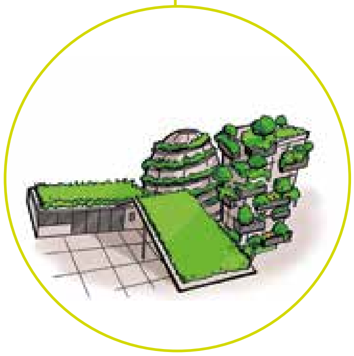
Management oversight

This helps companies identify challenges from the onset to the completion of an investment, thus enabling them to make essential changes

"Due diligence provides the manager with negotiating power that is useful," says Coralie De Maesschalck, head of CSR and ESG at mid-market investor Kartesia. "The due diligence phase is critical because it is the chance to request management changes related to ESG at an early stage of a deal. It is also when we can get companies to understand our reporting requests.

"Our ESG questionnaire, for example, runs to four pages. We ask them to fill that out annually. Our thinking is that if they are required to complete it during due diligence, they are much more willing to update it each year." She also argues that, as lenders, funds often have little or no direct influence over the strategic direction of the company, so strategic ESG due diligence is critical: "We have to identify ESG issues during the early due diligence stage because it is hard for us to ask for improvements later."

From an assets perspective, Rick Walters, chief of standards and Innovation at GRESB, argues that management oversight has only really taken off in recent years: "Management oversight of ESG for infrastructure funds has always been strong, but until a few years ago, it was less common for infrastructure assets. Now we find that almost all assets have someone at a senior level with ESG responsibility."



Nature-based solutions

For years, infrastructure has been dominated by solutions that are harmful to the environment. A switch to nature-based solutions is now a priority

Nature-based solutions are often higher-quality, lower-cost, more resilient and more beneficial to society than maintaining, repairing or replacing grey infrastructure. Natural resources can also help to reduce loss of biodiversity and restore essential ecosystems such as wetlands, which can protect communities from flooding and other natural disasters.

Clean hydrogen is one solution that investors are becoming increasingly interested in – if developed properly, it has the potential to play a role across the energy mix, from energy storage, to fuelling transport, to heating homes.

Angus Taylor, Australia's minister for energy and emissions reduction, argues that the use of hydrogen appears promising as the country looks to switch to cleaner energy sources. "We see hydrogen as an enormous opportunity for Australia to continue our strong position as an energy exporter and an energy superpower," he says. "Australia is extremely well-positioned because of our natural resources [where] we can produce low-cost solar that can be complemented by wind, and [because] we have deep relationships with critical customer countries."

Occupational health and safety

Before undertaking infrastructure projects, it is important to assess all the associated risks and ensure that appropriate safety measures are in place

This will not only guarantee a successful project; it will also build a strong company reputation – one that stands the test of time.

Carmela Mondino, head ESG and sustainability at Partners Group, argues: "Occupational health and safety is central to infrastructure assets' licence to operate. Transforming the culture around health and safety is an important way of creating long-term value and delivering positive stakeholder impact. At Partners Group, health and safety forms a key element of our annual portfolio sweeps to assess ESG topics of common relevance across our portfolio. We have improved the average lost time incident rate across our assets from 0.4 in 2018 to 0.1 in 2020."

Plastic waste

Overconsumption of plastic and the mismanagement of plastic waste are taking their toll, causing landfills to overflow and threatening vital ecosystems

"There are more than 8 million tons of plastic entering our oceans every year," says Simon Dent, blue investment director at Mirova Natural Capital.

One reason for this is that in some parts of the world waste management infrastructure is limited or non-existent, and so plastic waste is not managed properly.

Firms are waking up to this problem. In 2020, Mirova invested in Plastics for Change to accelerate the plastics circular economy and promote social change. In the same year, the firm also backed Recycling Technologies, a specialist plastic recycling technology provider.

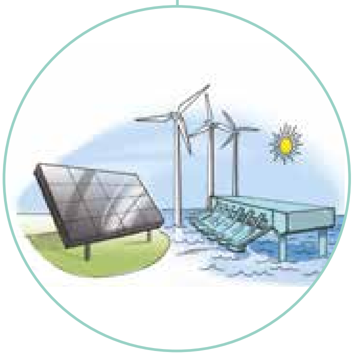
"Creating circular value from plastic waste is a necessary step to help cut the scourge of plastic pollution reaching our oceans," says Dent.

Quality control

When making sustainable investments, managers must ensure measures and checks are in place throughout the process, from planning to exit

Yasemin Lamy, CDC Group's deputy chief investment officer and head of asset allocation and capital strategy, argues: "Most importantly, a fund manager pursuing impact should employ high-quality practices in how they work – from managing their own teams towards quality employment with diversity and inclusion to managing environmental, social, impact and governance risks in their portfolio. The best investors consider the value chain [from] start to finish."

Lamy also says that as long as firms can demonstrate genuine intentionality and high-quality measurement throughout the investment process, there may be a lot to gain from having more fund managers in the impact space.



Renewables

An increase in renewable energy would reduce reliance on fossil fuels, which would reduce carbon emissions. So, it should be a priority for LPs when considering new energy projects

Alex Brierley, co-head of Octopus Renewables, explains: "Facilitating a successful transition to renewable energy is, in my view, the central pillar to achieving net-zero. The role for private capital to direct investment into this transition is critical. Encouragingly, we are seeing first-hand institutional investor appetite to invest in renewables infrastructure and the wider energy transition."

A 2020 report from Octopus revealed that 80 percent of LPs surveyed planned to increase allocations into the sector over the following three to five years.

"Renewables infrastructure can present a compelling investment opportunity, targeting stable and predictable cashflows against a backdrop of heightened market volatility, along with attractive risk-adjusted returns," says Brierley. "Against this backdrop, pension funds in particular look closely at renewables infrastructure as an ESG investment opportunity."

Stonepeak senior managing director Hajir Naghdy says: "Renewable energy provides a critical pathway to rapidly decarbonise the global electricity sector and is an increasingly attractive area for investment, given continued economic and public policy tailwinds globally."

Renewables are also needed to reduce power shortages as there is an unlimited supply. And with the UK's recent energy crisis, this now seems more important than ever.

Social licence

Maintaining social licence is critical to the success of infrastructure projects and services

Gwenola Chambon, CEO at Vauban Infrastucture Partners, says: "Social licence to operate refers to the consultation and engagement process with stakeholders that enables us to ensure that our infrastructure projects are positively embedded in their local communities over the long term. This process comprises direct and transparent dialogue with all parties involved in order to fully understand everyone's concerns and to ensure convergence of interests. This partnership must be ongoing over time as we need to keep pace with evolving demands and to constantly reaffirm the social utility of our infrastructure day after day."

Adrian Dwyer, chief executive of Infrastructure Partnerships Australia, also believes planned spending should take greater account of social licence: "As we accelerate infrastructure investment and planning to speed the recovery, there is a major opportunity to innovate in the way we engage with communities and put social licence at the front of our thinking about infrastructure delivery.

"While physical distancing and barriers to face-to-face consultations with communities create challenges, they also provide an opportunity to transform the way we traditionally build and maintain social licence. When infrastructure developers and operators have the support of the communities they serve, they have more flexibility to innovate and experiment, which creates benefits for government, business and the community."

Transparency

Disclosure regulations such as the SFDR and the TCFD's framework have forced companies to be transparent about their ESG risks

Rick Walters, GRESB's infrastructure director, says the EU regulations will require a "step change" in terms of transparency as it pertains to ESG criteria and the need for more aligned, comprehensive and quality ESG reporting.

They come as stakeholders are more concerned about the projects firms are investing in. If a company appears to be hiding something, it may be damaging reputationally and financially.

Elizabeth Seeger, KKR managing director for sustainable investing, adds: "In a rapidly moving landscape, where ESG and impact practices continue to evolve and stakeholder expectations around decision-useful information are increasing, the bar will continue to get higher. As a result, communicating transparently about challenges and progress through a multi-stakeholder lens will become increasingly critical."

Underwriting criteria

The number of industry participants that integrate ESG risk factors into their risk assessment and underwriting processes is growing

Theresa Shutt, chief investment officer at Fiera Private Debt, says: "For both corporate and infrastructure debt, ESG metrics will become increasingly mandated by investors such that companies with good ESG practices will become preferred investments. Due to the higher intrinsic quality of those businesses, they will also outperform. There is now good data showing that prudent ESG underwriting provides better returns."

Allison Spector, director of sustainability at Nuveen, agrees: "Consideration of material ESG factors and impact externalities, both positive and negative, will become standard practice. It already is at Nuveen. Collecting and using this data to inform investment due diligence and underwriting will become the norm for the private credit investment process."

Voting rights for shareholders

Voting on key issues is a way for investors to demonstrate their commitment to ESG

It is becoming commonplace for voting to be considered part of investors' fiduciary duty. In October, BlackRock announced it was going to provide institutional investors such as pensions and endowments with the option of conducting shareholder votes related to their investments.

"We believe clients should have more options on how to participate in index-holding votes, if possible," BlackRock said in a client note announcing the change. "We are committed to exploring all the options to extend our proxy voting options to more investors."

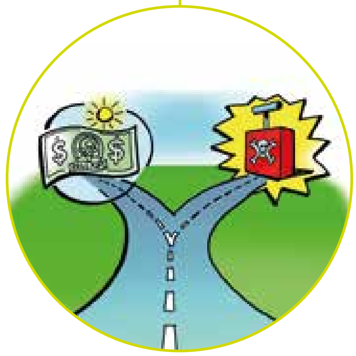
BlackRock's decision on proxy voting will begin next year and marks the first move by a major asset manager to give the ultimate owner of votes in a company the right to use them.

Waste reduction

Waste management is becoming a pressing concern as the continuing rise in the global population leads to increasing demand for infrastructure

According to the US Environmental Protection Agency, construction and demolition projects filled the country's landfills with almost 145 million tons of waste in 2018. In addition, 75 percent of all construction waste from wood, drywall, asphalt shingles, bricks and clay tiles ends up in landfill. This has created a shift from disposing of waste via landfill to recovering valuable resources through recycling and energy recovery.

Firms are now realising the value of waste as a means to create energy. Edwin Yuen, senior private sector operation specialist at the Asian Infrastructure Investment Bank, suggests that in order for waste-to-energy to be effective, companies must think about reducing waste from the get-go. "WTE is only one part of a comprehensive, waste management plan," he says. "Projects should begin with waste minimisation as a public policy, followed by waste recycling and WTE incineration, and ending with the remaining ash delivered to local landfills."



Exit route

A robust exit strategy allows vendors to maximise returns while minimising issues

McKinsey & Co emphasises the importance of exit preparation throughout the ownership period. In an article, the firm's partners stated: "The last critical step of the private equity investment process, the exit, can greatly affect the final return on investment. Even after years of doing all the right things – including taking a proactive approach to ownership, aligning performance incentives and being thoughtful about M&A – a poorly planned or executed exit can turn a good deal into a mediocre one."

The firm argues that one of the most important elements of great exit preparation is constantly honing a well-developed, well-articulated and evidence-backed view of why an asset represents an exciting investment opportunity.

Youth and the future generation

Being able to predict trends and take the measures necessary to thrive during periods of change is key if firms are to ensure a sustainable future

"Change is constant, and any responsible manager needs to have their eyes on the future as well as the here and now," says Kit Hamilton, co-head of Macquarie Infrastructure Debt Investment Solutions. "That is how you ensure you are positioning the capital of your clients in a way that best mitigates risk, while still being able to identify and pursue the opportunities that come with change."

Investing in the future is also arguably one of the key aspects of tackling the climate crisis, especially as the next generation will feel its impact more significantly.

Stéphane Ifker, senior partner at Antin Infrastructure Group, predicts that the future will be dominated by technology, and argues that firms must tap into this in order to bring about the energy transition. "In the context of climate change, scarceness of resources and decarbonisation, [portfolio company] Idex's solution for Nice Méridia is a showcase for a smart energy network, using geothermal energy, a district heating and cooling network, and a smart grid," he says. "Thanks to its ability to make the most of local energy sources, to optimise economic and environmental costs and to guarantee their performance in use, Idex has been able to anticipate the challenges of the energy transition."

Zero emissions

Net-zero initiatives continue to dominate the ESG agenda as the private sector races to reduce its carbon emissions in line with global targets

Alex Brierley, co-head of Octopus Renewables, says: "Meeting the UK and EU net-zero carbon emissions targets will require unprecedented investment in low-carbon infrastructure across the region, with a large proportion of this green investment required from the private sector. It is pivotal that investment managers, regulators and policymakers work together to remove barriers to entry, structural issues, market failures and misaligned incentives that are currently holding back investment."

According to Brierley, government incentives and industry collaboration are key to success, particularly on a global scale. A 2020 Octopus report showed that more than two-thirds of global investors (68 percent) cite a lack of international co-operation as the number-one factor negatively impacting the energy transition.

"Once capital is unlocked, there also needs to be a greater focus on deployment," Brierley says. "In our view, inward investment to renewables infrastructure is crucial but cannot be looked at in isolation. The sector is still relatively immature and so the need for large, diversified energy managers with an understanding of the entire energy system – from creation to distribution to usage – is essential to drive systemic change."

Points of view

Experts share thoughts on sustainability in the infrastructure asset class

"Infrastructure investing will be one of the key facilitators of the global transition to net-zero"

RAJ AGRAWAL
Global head of infrastructure
KKR

"We need to not only consider the health and safety of employees and our supply chain, but we must also protect the local community"

DAN GRANDAGE
Head of ESG
abrdn

"One-size-fits-all KPIs are rare, as every company's ESG impact profile is unique"

FELIX HEON
Sustainability director
Antin Infrastructure Partners

"Our survival and ability to progress as a society will come down to the resilience of our agricultural infrastructure"

Gregory Smith
President and CEO
Instar Asset Management

"The three pillars of ESG are deeply intertwined"

PANOS NINIOS
Co-founder and managing partner
True Green Capital

"Increasingly, we are getting more sophisticated questions around climate change risk and scenario analysis"

Dan Watson
Head of ESG
Amber Infrastructure Group