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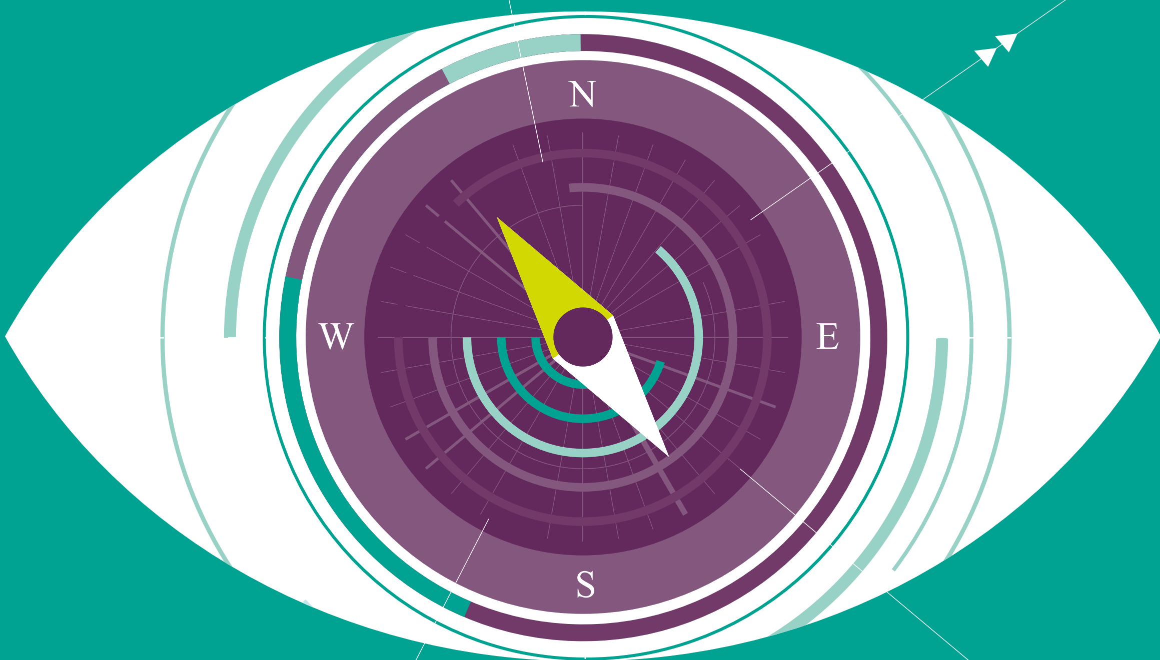
Where investors look next

Public-private problems

The return of Blackstone



Roundtable: What lies beyond 2020?

Renewables on the rise

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We provide leading advisory services and capital to our clients across the real assets sector.

OMERS Infrastructure has sold its 100% interest in its P3 Healthcare Portfolio to Plenary **Transaction Value Not Disclosed** Exclusive Financial Advisor to OMERS November 2019	Northland Power has agreed to acquire Empresa de Energía de Boyacá (EBSA) in a transaction valued at **C$1.05 billion** Financial Advisor to Northland Power and Sole Provider of a Fully Committed Bridge Financing Facility September 2019	RES and Steelhead Wind has agreed to jointly develop the 470 MW Maverick Creek Wind Project with Liberty Power **Transaction Value Not Disclosed** Exclusive Financial Advisor to RES and Steelhead August 2019	TC Energy has agreed to sell its Ontario Gas-Fired Portfolio to Ontario Power Generation in a transaction valued at **C$2.87 billion** Exclusive Financial Advisor to TC Energy July 2019
Kilmer Group and HMSHost have sold their equity interests in ONroute to Arjun Infrastructure Partners and Fengate **Transaction Value Not Disclosed** Exclusive Financial Advisor to Kilmer and HMSHost May 2019	Ontario Teachers' Pension Plan have sold its 100% interests in BluEarth Renewables to DIF **Transaction Value Not Disclosed** Exclusive Financial Advisor to OTPP May 2019	SNC-Lavalin has announced that it has reached an agreement to sell 10.01% interest in 407 ETR to CPP Investment Board in a transaction valued at **C$3.25 billion** Financial Advisor to SNC-Lavalin April 2019	Williams and CPP Investment Board have formed Northeast Joint Venture and acquired remaining 38% interest in Utica East Ohio System from Momentum Midstream **US$3.8 billion** Co-Financial Advisor to Williams March 2019
Enmax has agreed to acquire Emera Maine in a transaction valued at **US$1.31 billion** Exclusive Financial Advisor to ENMAX Corporation and Sole Provider of a Fully Committed Bridge Financing Facility March 2019	Brookfield has made a strategic investment in TransAlta in a transaction valued at **C$750 million** Exclusive Financial Advisor to TransAlta March 2019	Axium Infrastructure has acquired Coachella Partners LLC, a 24.5% investment option in the West of Devers Transmission Upgrade Project from Oaktree **Transaction Value Not Disclosed** Exclusive Financial Advisor, Sole Lender, Sole Structurer and Swap Execution Agent to Axium Infrastructure February 2019	SemGroup and KKR have formed SemCAMS Midstream joint venture and acquired 100% ownership of Meritage Midstream from River Stone **C$1.9 billion** Exclusive Financial Advisor, Joint Bookrunner, Co-Lead Arranger and Syndication Agent to SemGroup January 2019

Contact us: cibccm.com | +1 416 594-8793

How to contact us

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

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

Special Projects Editor
James Linacre
james.l@peimedia.com, +44 20 7566 5465

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

Senior Reporters
Zak Bentley
zak.b@peimedia.com, +44 20 3862 7497
Jordan Stutts
jordan.s@peimedia.com, +1 646 214 4158

Reporters
Eduard Fernández
eduard.fh@peimedia.com, +852 6996 4355
Daniel Kemp
daniel.k@peimedia.com, +61 452 300 346

Contributors
Kyle Campbell, Amy Carroll, Claire Coe Smith, Chase Collum, Julia Lee

Managing Editor, Production: **Mike Simlett**

Head of Production: **Greg Russell**

Production Editors: **Daniel Blackburn, Adam Koppeser**

Copy Editor: **Eric Fish**

Head of Design: **Miriam Vysna**

Senior Designer: **Lee Southey**

Designer: **Denise Berjak**

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

Subscriptions and reprints
subscriptions@peimedia.com

Customer Service
customerservices@peimedia.com

Editorial Director: **Philip Borel**

Director, Digital Product Development:
Amanda Janis

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

Managing Director, Americas: **Colm Gilmore**

Managing Director, Asia: **Chris Petersen**

Group Managing Director, Brands and Markets:
Paul McLean

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Insight

Success stories **Managers have been capitalising on a surge in demand for the asset class across North America over the past year**

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Apollo plans fundraising
The firm unveiled plans to use its recent $1 billion deal to acquire US power and midstream assets from GE Capital as a foundation to form a dedicated infrastructure strategy. Management said on an earnings call that the acquisition and the new strategy would complement Apollo's $1.5 billion infrastructure debt strategy as well as an equity fund the firm was planning to launch.

Antin expands into US
Antin Infrastructure Partners confirmed its ambition to expand into the US with a new office in New York, its first outside of Europe. The office would add to Antin's presence in Paris, London and Luxembourg.

MIP IV closes on hard-cap
Macquarie's MIP IV – the firm's fifth North America-focused fund, with a focus on utilities and energy, transport, communications and waste management – closed on a $5 billion hard-cap, exceeding a $3.5 billion target and the $3 billion raised for its predecessor fund.

EQT in midstream return
As a final allocation from its €4 billion third infrastructure fund, EQT invested an undisclosed amount in Houston-based Kodiak Gas Services. The midstream energy company was where EQT also made its first investment out of the fund.

Brookfield buys into Oaktree
Brookfield agreed to acquire a 62 percent stake in Oaktree at a 12 percent premium, creating one of the world's largest asset managers with combined AUM of $475 billion.

AVAIO's first infra fund
After spinning out of AECOM in January, New York-based AVAIO launched an inaugural $1 billion infrastructure fund with plans to deploy roughly two-thirds of it to North American infrastructure investments.

Denver pulls PPP plug
Denver International Airport terminated a $1.8 billion PPP agreement to revamp the 1.5 million-square-foot Jeppesen Terminal with a consortium led by Spanish developer Ferrovial after unexpected costs and delays derailed the project. In November 2018, four months after the project broke ground, weak concrete used in the terminal's original construction was discovered, leading to disagreements between airport management and the developers on safety, cost and completion schedule issues.

IFM makes midstream splash
Australian manager IFM Investors struck a deal valued at $10.3 billion, including $6.5 billion of equity at a price of $41.50 per common unit, to acquire its fourth midstream asset to date: Houston-based publicly traded master limited partnership Buckeye Partners. The Buckeye equity commitment added to the $12 billion that IFM had already invested in US infrastructure since 2006.

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$4bn debut digital fund
Digital Colony Management closed its debut digital infrastructure-focused fund on $3.75 billion with a final $300 million commitment from a GP, surpassing its $3 billion target. It partnered with Colony Capital on the Digital Colony Partners vehicle, which has already committed nearly $1 billion. Most of the investors were pensions from the US and Europe.

Blackstone closes first phase
Blackstone wrapped up the first phase of fundraising for its debut open-ended infrastructure vehicle with $14 billion of commitments from more than 80 investors. The first close is the largest ever for a debut infrastructure fund and placed Blackstone Infrastructure Partners among the industry's largest investment vehicles. The fund will focus primarily on US infrastructure across the energy, communications, transport, and water and waste sectors.

Stonepeak launches fund IV
New York-based Stonepeak Infrastructure Partners launched its fourth flagship infrastructure fund, targeting $10 billion in commitments with no hard-cap. Fund IV will follow a similar strategy to its predecessor vehicles, investing in North American power, water, energy, communications and transport assets. Stonepeak is targeting April 2020 for its first close.

GIP awaits $22bn close
GIP was reported to be nearing a final close on the largest-ever infrastructure fund as it awaited two $1 billion LP commitments to reach a total of $22 billion. The outstanding commitments were set to drive the fund $2 billion over its hard-cap with permission from its already committed LPs. The fund is strategically similar to predecessor vehicles, seeking control positions in energy, transport, and water and waste management assets.

Watchlist Three trends that could define the market in North America

Blackstone is bringing the heat

The $14 billion Blackstone Infrastructure Partners fund, which may yet grow to $40 billion, completed its first close with commitments from more than 80 investors, including a cornerstone investment from Saudi Arabia's Public Investment Fund. The close is the largest ever for a first-time infrastructure fund and immediately puts Blackstone Infrastructure Partners among the industry's largest investment vehicles.

The $10 billion Stonepeak Infrastructure Fund IV, which is currently in market, suggests that appetite for ever-larger funds is strong. The two previous Stonepeak funds – SIF II, which closed in 2014, and SIF III, which closed in 2018 – were sized at $3.5 billion and $7.2 billion, respectively.

However, Blackstone Infrastructure Partners is not just big. The fund also stands out for its heavy focus on North American infrastructure, which sets it apart from the globetrotting flagships managed by the likes of market leaders Brookfield or Global Infrastructure Partners.

Pension documents indicate that North America will account for 70 percent or more of Blackstone Infrastructure Partners' investments. Two of its earliest investments were in Tallgrass Energy and Carrix as it pursues opportunities across energy, communications, transport, and water and waste.

Everything's going green

The California State Teachers' Retirement System has put reducing its carbon footprint at the top of its list of priorities. It is one of the few US institutions to adopt a formal policy on global warming and rolled out an 18-month low-carbon transition work plan in October.

Renewables continue to dominate North American infrastructure, with Will Marder, Wilmington Trust's head of project finance, noting that "wind and solar are undoubtedly leading the charge". After years of wind outpacing solar, the latter's benefits – not least its shorter construction cycles and simpler tech – mean the situation is turning around. As Marder says, it's "easier to figure out where the sun is going to shine than where the wind is going to blow".

According to Mark Voccola, senior managing director at Ardian, the transition toward renewables and gas-fired power is producing many opportunities "in everything from pipelines to gathering systems and transmission lines".

The opportunities in the US are more attractive than those in Canada, says Voccola's colleague Stefano Mion, also a senior managing director at Ardian. This is because "the Canadian market is well developed" and "there are competitive advantages for local players" that make it harder for international funds to get involved.

PPPs are under the spotlight

There's a lot of excitement about the potential of public-private partnerships, but alarm bells have also been sounded. Fluor Corporation has publicly shared its unease with fixed-price PPPs, while the likes of SNC-Lavalin and Skanska have stepped back after suffering losses.

"There have been snippets of commentary in companies' earnings reports and earnings calls indicating undertones of frustration in [the PPP] market," says Nicholas Varone, director of Fitch Ratings' US corporate finance group.

However, Shearman & Sterling partner Paul Epstein believes the US federal government's position – that states and localities should bear more responsibility for the cost of infrastructure improvements – provides openings for private investors: "It could also push states and localities to consider not only different funding models but also alternative procurement strategies, leading to more creativity in the way projects are designed and structured."

Ohio State University's first-of-its-kind energy management PPP, under which it will lease its utility system to the private sector in exchange for an upfront payment and 50-year concession agreement, is a good example. Whereas large transport PPPs have been delayed by political stalemate, university deals are often easier to get moving.

Doug Fried, US head of infrastructure, mining and commodities at Norton Rose Fulbright, says: "Investors have to deal with the boards of the universities, so these projects in some ways are less politically sensitive than those dealing with elected officials on things like toll roads." ■

Editor's letter

Making a statement in US infrastructure

James Linacre
james.l@peimedia.com

During his State of the Union address in February 2018, US President Donald Trump called on Congress to produce a bill that would generate "at least $1.5 trillion for the new infrastructure investment" the country needed. This would be spurred by $200 billion in federal funds.

But what of the state of the market? Well, neither the $200 billion nor a game-changing infrastructure bill have been seen yet. If the president's dream is ever to be realised, it will be incumbent on private investors to deliver it.

Private capital is doing its part. As the US is the largest economy in North America, it necessarily attracts most of the attention. The country's energy revolution goes a long way to explaining the fact that 75 percent of the deals completed by the top 10 infrastructure funds over the past five years have involved some form of power generation.

Yet although energy opportunities are plentiful, digital infrastructure remains acutely underinvested. Data centres, fibre and towers will all be needed as digital moves from a luxury consumer sector to essential infrastructure.

> **"Although energy opportunities are plentiful, digital infrastructure remains acutely underinvested"**

Public-private partnerships are also under the spotlight. Fluor Corporation has spoken out about its unease with fixed-price PPPs, while SNC-Lavalin and Swedish construction firm Skanska have both stepped away from the market.

However, opportunities are out there. The 2017 Ohio State University PPP was truly innovative and has prompted a number of followers. Significant transport projects also remain in the offing.

Although PPPs are facing mixed fortunes in the US, they remain popular and successful in Canada. This will allow for new projects, but also the opportunity to sell assets that are already up and running.

Perhaps the promised US federal stimulus is not going to be missed so much, after all. North American infrastructure appears to be striding forward regardless.

James Linacre

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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KEYNOTE INTERVIEW

Land of infrastructure opportunity

Rapid urbanisation, the growth in energy exporting and changing consumer behaviour are all creating huge demand for infrastructure investment in the US, says MIRA's head of Americas David Fass

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Q What makes North America an attractive market for infrastructure investors right now?
There are a number of macro trends that are continuing to drive strong investor interest in North American infrastructure. Some of the key themes that we are observing are around demographics shifts and urbanisation.

Even in a developed country like the US, people are increasingly moving to city centres in pursuit of higher value jobs, education opportunities and better connectivity. When you have that kind of rapid urban growth, that obviously creates huge demand for, and pressure on, the infrastructure of our major cities.

Anyone who has travelled around the US would be aware that there is a huge need for ongoing investment to maintain and upgrade the existing infrastructure in the country. When you think about this in the context of other macro trends such as urbanisation, an ageing population and climate change, the need for investment is only going to grow exponentially in the future.

How to fund the required investment in infrastructure is a key question. With government balance sheets stretched at federal, state and local levels, we continue to see an important role for private investors to help close that funding gap.

Q How would you describe LP appetite?
The fundamental appeal of North American infrastructure to LPs remains strong. It is a growing market with a stable regulatory environment and transparent legal system. In addition, we are seeing increased allocations from US-based investors as well as new entrants making allocations for the first time.

In a low interest rate environment, institutional investors are also attracted to the stable and predictable cashflows that the asset class can offer over a long time horizon. This makes the sector particularly attractive to insurance companies, pension funds and sovereign wealth funds that need to 'match' their long-term liabilities.

As institutional investors become increasingly focused on environmental, social and governance issues, they are also looking for ways to deploy capital in a way that will help stimulate economic growth and support communities. We believe infrastructure will continue to offer opportunities to do this.

Q Conventional power generation remains one of the most significant investment opportunities in the region. What does the future hold for this sector?

Natural gas is now, and we expect it to be for some time, a critical source of energy in North America and globally. It remains low cost, abundant in supply and is a cleaner, more sustainable energy source than coal. The shale gas revolution is also providing many opportunities to invest in related infrastructure – such as pipelines, rail and ports – that has enabled America's shift to become a net exporter of energy.

Of course, as energy producers, investors and consumers look towards a future in which renewable energy sources become a larger part of our energy supply, natural gas and combined-cycle power plants will provide important energy sources we need both now and during the long-term transition to a world in which renewables lead the way.

Q What about the renewables industry?

As renewables continue to evolve as an asset class and as technology brings the cost of production into parity with fossil fuels, we believe that there is a significant opportunity for further investment in large-scale renewable energy in the US. These opportunities are increasingly popular with investors, both from a sustainability perspective and on a purely commercial basis.

We believe that the size and diversity of North America create numerous opportunities for wind and solar technologies. We are also looking at investment opportunities in energy storage, waste-to-energy and hydrogen.

Q You mentioned that transport is a major US infrastructure theme at the moment. How do you see that sector developing?

As the US population grows and continues to consolidate in urban areas, infrastructure demands will grow. Congestion in our biggest cities is an issue today and we need to develop alternative ways to transport

Case study: Goethals Bridge

NYNJ Link, a consortium comprising MIRA and Kiewit Development Corporation, won a 35-year concession to finance, design, build and operate a new bridge to replace the existing link between New York and New Jersey in 2013.

Over the following five years, the investors worked collaboratively with numerous government entities to deliver the $1.5 billion Goethals Bridge. The project was the Port Authority of New York and New Jersey's first long-span bridge built in the region in 80 years. It was also the port authority's first public-private partnership.

Connecting two states and two cities, the project had to consider the current and future needs of numerous stakeholders. This required extensive consultation with local authorities and commuters, as well as significant environmental protections for seasonal spawning fish in the river below and birdlife in neighbouring wetlands.

The consortium created a taskforce with the port authority to tackle challenges around planning, engineering design, management of existing traffic, scheduling of works and construction. This approach generated a number of innovations, including a dual-bridge solution, splitting the tower and separating the eastbound and westbound structures.

This innovative design gives the structure an expected service life of 150 years. The bridge opened in 2018 to state-of-the-art technical specifications, including seismic protection and in-built sensors that can detect potentially serious problems long before they become apparent to human inspection.

people, which will drive opportunities in both toll roads and public transit.

We also expect the supply chain to continue to evolve to meet the demands of e-commerce and two-day or even one-day shipping. This will require capital for new and enhanced infrastructure and across US ports, railroads and logistics assets.

Changing technology is also expected to create opportunities. Electric vehicles and autonomous vehicles will require different physical infrastructure than vehicles powered by combustion engines. There will be opportunities to provide infrastructure to support 3D printing and drone technology as well.

Q Where else are you seeing opportunity?

We're seeing the definition of infrastructure evolve to include 'non-traditional' assets such as computer and data storage, fibre and 5G networks.

We think technology is going to have a big part to play in solving the challenges of the future, particularly as we think about the impacts of urbanisation and climate change. So we are looking at what opportunities there may be as we move towards a reduction in internal combustion engine vehicles in the expectation that electric vehicles and autonomous vehicles will become the major transportation tools of the future.

Q How would you describe the competitive dynamics of North America's infrastructure industry?

Competition is always there, no matter where you are in the world. We have, however, seen the pool of competitors in North America grow quite significantly over the past decade. Macquarie is the largest infrastructure investor in the world, and although there is a growing pool of capital that is looking at alternatives and is attracted to the investment fundamentals of infrastructure, we feel our decades of experience and our leadership position give us an advantage in continuing to source and execute attractive opportunities.

Q How does the political backdrop impact infrastructure investment in the US?

It is certainly something that you need to be aware of. It is complex.

It can make investment difficult and sometimes it can make things move slowly.

Part of the complexity of operating in the US is that decision-making doesn't just happen in Washington.

A lot of decisions around infrastructure spending get made at a state, municipal or even town level. So it's very important to develop close working relationships with state and municipal stakeholders where we are or may be looking to invest capital.

Q What does the future hold for infrastructure in North America and what are MIRA's ambitions for the market?

The infrastructure spending gap is not going away.

There will continue to be vast demand for capital and for well-executed projects carried out in a sustainable, safe and climate-friendly way. Meanwhile, the flow of institutional capital towards alternatives continues to grow.

We think these factors will bring significant growth from a North American infrastructure perspective in the coming decades. We are very excited to be in this dynamic market and, given our strong track record of investing in North American infrastructure, to be playing a leading role. ■

Case study: Puget Sound Energy

Puget Sound Energy is the largest electric and gas utility in Washington state, a part of the US that is focused on resilient, reliable and sustainable energy to support its growing population and economy.

MIRA took Puget private in 2009 and, prior to divesting earlier this year, had invested more than $8 billion to maintain and grow the utility's natural gas and electric systems, thereby improving energy delivery to its 1.5 million customers.

More than 400MW of hydroelectric, wind and solar generation capacity have been added over the past 10 years. During this period, Puget has become the largest producer of wind energy in the state and the third-largest utility owner of wind power in the country.

The expansion of renewable generation capacity has also enabled the business to announce the retirement of three coal-fired power plants by 2025 without jeopardising security of supply. During MIRA's ownership, the board committed to halving its carbon footprint by 2040, on top of meeting state goals.

Despite this significant investment, average monthly customer bills have remained broadly flat – increasing by just $1 over the decade. Customers also benefited from initiatives designed to help them reduce their energy consumption.

"As technology brings the cost of production into parity with fossil fuels, we believe that there is a significant opportunity for further investment in large-scale renewable energy"

Grand designs for US infra

The pipeline of projects in the country looks good, despite the standstill at federal government level. Claire Coe Smith reports on the role private capital can play

Although President Donald Trump's pre-election promises of a $200 billion boost in spending for US infrastructure have so far failed to materialise, investors remain positive about the outlook for projects in 2020 and beyond.

Trump set out his ambitions during his State of the Union address in February 2018, promising that $200 billion of federal funds would "spur at least $1.5 trillion in infrastructure investments with partners at the state, local, tribal and private level". Little has happened since, and there is zero optimism of an infrastructure bill materialising in Congress any time soon.

"Obviously there is currently a huge amount of tension between the Democrats and the Republicans," says Norman Anderson, chief executive at CG/LA Infrastructure. "The idea that they will get together in an election year to do an infrastructure bill is beyond silly."

He argues that the focus of both parties on public funding needs to change if a much-needed wave of private investment is to take off. "We have $23 trillion of national debt and that is increasing by $1 trillion a year, yet both parties are focused on public infrastructure," says Anderson. "The public infrastructure model is broken, and they should be focusing on transitioning the model from public to private, but they aren't doing that at all.

"We see the combination of an increasing number of obvious opportunities for private investment into infrastructure and a systemic failure on the part of government to facilitate getting those opportunities off the ground."

> *"The public infrastructure model is broken, and [the political parties] should be focusing on transitioning the model from public to private, but they aren't"*
>
> **NORMAN ANDERSON**
> **CG/LA Infrastructure**

But although there is little direction coming from Capitol Hill, projects are getting done.

Doug Fried, US head of infrastructure, mining and commodities at law firm Norton Rose Fulbright, says: "While there hasn't been much happening at the federal level in the Trump administration on the infrastructure side, the good news is that in the US most of the projects really happen at state or local level.

"So, while Trump can do certain things to possibly encourage private investment in infrastructure, really the transactions come from the states and cities. That is currently where the action is and where things are starting to get done."

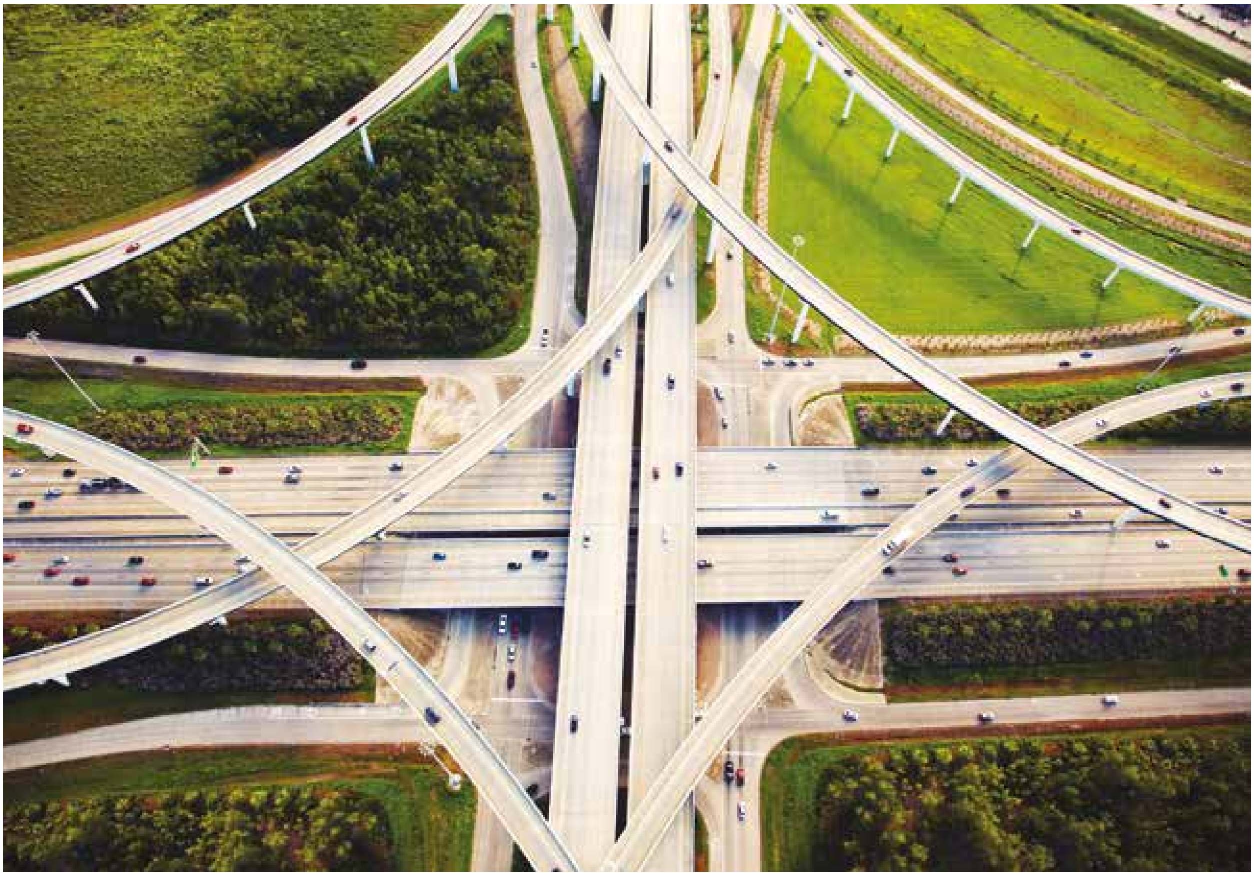
There is a growing view that some major projects will start moving forward in the near future to satisfy investors that are crying out for opportunities to invest. "The trend is positive," says Fried. "A couple of clients have made the comment to me that they are happy with their pipelines in the US at the moment, which I haven't heard in the past."

More public-private partnerships

In the face of government funding shortfalls, market participants expect public-private partnerships to start picking up in the US over the coming years.

Paul Epstein, a partner specialising in project development and finance at law firm Shearman & Sterling, says: "The fact that the federal government has taken the position that states and localities should bear more responsibility for the cost of infrastructure improvement isn't necessarily a bad thing for private investors.

"It could potentially create gaps in the



capital structure on projects that could be filled by private capital. It could also push states and localities to consider not only different funding models but also alternative procurement strategies, leading to more creativity in the way projects are designed and structured."

A great deal of private investment in infrastructure over the years has been channelled towards transport projects, and there are more of those in the offing. However, newer areas are also attracting interest. In 2017, Ohio State University signed a first-of-its-kind PPP energy management deal. This involved leasing its utility system to the private sector in exchange for an upfront payment and a 50-year concession agreement.

Whereas political stalemate has often got in the way of large transport PPPs, Fried says university deals can be easier to get moving: "What we are finding is that investors have to deal with the boards of the universities, so these projects in some ways are less politically sensitive than those dealing with elected officials on things like toll roads."

Since the Ohio deal, other universities have come to market with PPPs that have proved popular with partners. "It is attractive to investors because there's a large upfront payment and that has to be funded," says Fried. "It gives investors the opportunity to write a big equity cheque, whereas on some of the other infrastructure opportunities the deals might be large overall but the equity cheque may be smaller, and people get frustrated by that."

Investment opportunities

"The PPP market has been quite successful in Canada, where the volumes have been significantly higher than in the US," says Stephen Dowd, a partner at CBRE Caledon and head of the consultancy's infrastructure investment practice. "The US is slowly developing those markets, which are very much state or locally focused, and that will continue to gain pace."

One of the biggest projects in the offing is a plan to fix traffic congestion in the DC metropolitan area by expanding Maryland's I-495 and I-270 motorways through a PPP, with tolls helping to pay for the cost of construction. Another proposal that is being closely watched is the Sepulveda Transit Corridor Project, which will involve building a rail line or monorail through the Santa Monica mountains and join up the Los Angeles transport network.

A flurry of airport terminal projects are also proceeding or close to proceeding under PPP arrangements. These include the JFK Terminal One project in New York, a consolidated rent-a-car facility at Newark Liberty International Airport in New Jersey, and the project to upgrade Phoenix Sky Harbor Airport in Arizona.

"Investors continue to make proposals and be interested in applying both their financial capital and their human capital to these projects across the US," says Epstein. "What the market is hoping to see is some of these major projects getting off the ground and progressing in a concrete and tangible way, like the Maryland I-495 programme for example. This year has been largely quiet from that standpoint."

Outside PPPs, Dowd says more than

half of the investment he is seeing in North American infrastructure is in renewables. He adds that midstream energy, serving the expanded oil and gas markets, is another growth area: "The private infrastructure markets have had a great opportunity to participate in and fund some really good value in midstream energy. It will be interesting to see if that continues, and to what degree."

Anderson points to several private investment projects that have the potential to make a huge difference if they can get off the ground. These include the 240-mile Texas Central Railway, which will connect Dallas and Fort Worth with Houston, in a project worth $20 billion; the Anbaric Offshore Electricity Transmission Highway to harness offshore wind power; and the $20 billion SeaOne Caribbean clean fuel supplies project.

Another is the Northeast MagLev project to improve travel between the major cities in the north-east corridor – home to 17 percent of the US population and 20 percent of the country's jobs.

The challenges lie in overcoming political hurdles. Anderson has called for a new infrastructure office to be set up in the White House to oversee priority projects and for the creation of a National Strategic Infrastructure Council. "The US needs to understand that facilitating priority private investment projects is a strategic priority," he says. "Time really is money when the private sector is involved, so we need to change our attitude to focus on priority projects and the highly efficient use of funds."

> *"The PPP market has been quite successful in Canada, where the volumes have been significantly higher than in the US. The US is slowly developing those markets"*
>
> **STEPHEN DOWD**
> **CBRE Caledon**

The role of government needs to change from that of owner to that of performance optimiser when it comes to public assets, adds Anderson. The good news is that investors are ready and willing to inject capital once projects can be unlocked.

"The US market has been somewhat challenging, at least relative to other jurisdictions, over the years," says Epstein. "The capital will be there for appropriate projects. A key hurdle has been achieving the collective view across all stakeholders that a given project is appropriate for private long-term investment and that it is really the best option, or [offers the best] value, for the relevant constituency."

Further commitment from government to driving forward investment in US infrastructure is still needed. But, for now, the lack of funds at the federal level is not all bad news for private investors. ■

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North American infrastructure: 2020 and beyond

Six infrastructure experts tell Jordan Stutts about the opportunities and challenges that lie ahead in the US, Canada and Mexico

The US has not seen a major government infrastructure package since President Dwight Eisenhower's administration in the 1950s, so excitement surrounding a much-touted federal commitment to overhauling the country's ageing infrastructure was palpable when President Donald Trump took office in 2017. However, this year, enthusiasm was notably tempered by caution at a gathering of six North American infrastructure experts hosted in New York last month.

"There was a period of euphoria on the back of a federal infrastructure bill in the US infrastructure market as people imagined a massive federal infrastructure build, which never really had much hope of becoming reality, at least in the medium term," explains Mark McComiskey, partner at AVAIO Capital.

"That is because the majority of decision-making around infrastructure is handled at a state and local level. There is little the federal government can do beyond financial incentives, and these do not streamline the permitting and stakeholder issues that delay infrastructure projects. The sense of euphoria now seems to have deflated and it is back to business as usual."

David Williams, managing director and head of global infrastructure and power at CIBC Capital Markets, however, is slightly more optimistic. "Action at a federal level has meant that decision-makers, at a local level, can no longer just kick the can down the road though," he says. "They are taking it upon themselves to advance projects, so it does seem like there is more going on."

3%

Proportion of deals of more than $1.5 billion over the past five years

George So, managing partner at InstarAGF Asset Management, meanwhile, reinforces the idea that a local approach is, in any case, best. "Municipalities are responsible … for around 60 to 70 percent of infrastructure, but from a tax perspective, they only get 10 cents on the dollar. That creates a real opportunity for the private sector to fill that void. The local level is where you can get the best bang for your buck while adding value to the community."

High energy

And, of course, even without a meaningful federal injection, the US, as the largest country in North America, offers myriad investment opportunities. It does, however, continue to be a heavily energy-focused market. Three-quarters of deals completed by the top 10 infrastructure funds over the past five years involved energy of one form or another, according to McComiskey, with Brent Tasugi, investment director at AMP

PHOTOGRAPHY: **BRIAN SHUMWAY**

Brent Tasugi

Investment director, AMP Capital

Tasugi joined AMP in 2017. He was previously a senior vice-president with Oaktree Capital Management, and focuses on origination in the North American infrastructure markets, including the transport sector, where he has particular expertise.

Chris Beall

Founder and managing partner, NOVA Infrastructure

Beall has more than 20 years' experience in private equity, investment banking and infrastructure operations and engineering. He was previously a managing director and co-portfolio manager for Oaktree Capital's infrastructure strategy.

Mark McComiskey

Partner, AVAIO Capital

McComiskey is involved in all aspects of investment and operational activities at AVAIO. He has over 20 years' experience in private equity and infrastructure, and has invested more than $4 billion of equity in energy, infrastructure, transport and manufacturing projects.

David Williams

Managing director and head of global infrastructure and power, CIBC Capital Markets

Having joined CIBC's merchant banking group in 1990, before working in M&A, Williams joined the infrastructure group in 1999 and has led more than 300 transactions in the power, pipeline and infrastructure sectors globally.

George So

Managing Partner, InstarAGF Asset Management

So is responsible for strategic and business development, transactions and asset management. He was founder of Kindle Capital Group and a member of the Canada Pension Plan Investment Board's private investment infrastructure team.

Bruce Chapman

Partner and co-founder, Threadmark

Chapman has more than 18 years' experience of capital raising and corporate finance. He was previously a partner at CP Eaton Partners and Continental Capital Partners and was an officer in the British Army's Royal Green Jackets.

> *"Many managers that historically inhabited the mid-market space have been sucked up into the mega-market and left deal sizes of $50 million to $200 million relatively underserved"*
>
> **BRUCE CHAPMAN**
> **Threadmark**

Capital, adding that over half of all transactions his firm sees contain an energy component.

"But, if you take a step back and consider the macro challenges hanging over North America – climate change, urbanisation, demographic shifts – you start to see the breadth of need for infrastructure investment," Tasugi says. "That need reaches down, at a local level, to utilities, transportation and telecoms."

Indeed, some elements of the US energy industry appear to have lost their shine – most notably midstream. While huge amounts of capital poured into opportunities, particularly between 2010 and 2013, in order to capture the shale revolution, the dynamics have now shifted, and this explosive growth is no longer the low-hanging fruit it once represented.

"That capital was supported by high volume growth rate, as domestic production supplanted imports," explains Chris Beall, managing partner and founder of NOVA Infrastructure. "Now, those imports have largely been displaced and so growth rates have moderated. Today, the US is trying to take a global share from sovereigns with non-economic reasons to maintain production, and that is a much harder game to play."

There is now also considerably more black swan risk associated with midstream investment, including a leading Democratic presidential candidate who says she is willing to ban all fracking, one participant points out while asking not to be quoted. "That has got to have an impact on midstream. Some niches may benefit as activity is diverted, but as a whole, it is a big negative. There is real political risk, at least for the next year."

Digital dealflow

Elsewhere, digital infrastructure remains critically underinvested, according to Tasugi. "As digital devices proliferate and as corporates continue to outsource their data handling, significantly more data centre infrastructure will be required," he says. "The deployment of 5G will also require more fibre and tower investment and there will certainly be a role for private capital to play."

So adds that the digital space is becoming more interesting as an investment proposition as it transitions from a consumer sector towards essential infrastructure. "A mobile mast for banking communications is as necessary as a fixed line telephone was back in the sixties and seventies," he says.

"What were once luxury items are now

serving an everyday need. That creates massive demand for infrastructure as well."

As infrastructure investors continue to expand their parameters, the question of the level of associated risk becomes increasingly relevant. Our roundtable participants are not afraid to challenge each other on the question of whether digital infrastructure could ever be considered core.

"I don't think it is possible to generalise," says Beall. "Is a road core? What if you leverage it 25 times and put an accreting swap on it? You have to analyse downside protection asset by asset and contract by contract."

McComiskey, however, notes that there is risk inherent in certain components of digital infrastructure. "What happens to fibre-to-home projects that have just been paid for if 5G delivers on what it promises? The impact of what is happening in the digital world on traditional infrastructure is meaningful," he says. "Just look at parking lot investments which were considered core at the time they were made. What ridesharing has done to demand, particularly in New York, has been brutal."

In addition to digital risk, dramatically escalating fund sizes are a notable element of today's market. But does the opportunity set match the amount of money being raised?

"It is only possible to look about five years into the future easily; 10 years feels almost impossible – 30 years, no way"

CHRIS BEALL
NOVA Infrastructure

"We are seeing $20 billion-plus funds being raised and while there is no doubt that there are assets large enough to absorb those funds, it does require a shift away from where those managers have historically deployed," says Bruce Chapman, partner and co-founder of Threadmark.

McComiskey also questions whether there are enough mega deals to go around. "Over the past five years, 4,900 infrastructure deals were completed at below $1.5 billion in North America. Over the same period, there were only circa 150 deals done at more than $1.5 billion."

He continues: "In today's market, there are a fair number of infrastructure investors whose minimum equity cheque is approaching $1.5 billion. Combine that with the pension funds and SWFs that are increasingly active in direct investment, and it is hard to see that there is enough dealflow in this size range to feed everyone with that kind of appetite."

Deficit spending required

So, however, points out that there is still a vast infrastructure deficit in North America. "Trillions of dollars need to be invested over the next 25 years and 75 percent of the infrastructure required over the next 30 years has not actually been built yet. The need is definitely there, and so I think there will be room for everyone to play within their specific areas of focus, whether that's bulge bracket or mid-market, specialised or diversified."

Beall, meanwhile, believes that growth in capital under management creates a lot of opportunities downstream, at the smaller end of the market. The key to capitalising on that, he says, is relationships. "If you are only looking at banked transactions or are focused on PPPs, I think dealflow will be a concern. But the US economy is massive and there are lots of smaller projects looking for capital, for those prepared to put in the elbow grease."

Chapman agrees that growth in fund size has made the mid-market a more attractive space to play in. "Many managers that historically inhabited the mid-market space have been sucked up into the mega-market and left deal sizes of $50 million to $200 million relatively underserved."

Furthermore, new entrants to the infrastructure industry, including direct pension funds and sovereign wealth funds, are not set up to take advantage of mid-market opportunities, which has a positive impact on mid-market returns. "The new entrants that have come in are predominately large dollar players," says McComiskey. "These new entrants often have lower overall return hurdles than traditional funds. Focusing on the middle market, where these new players are less likely to operate, means you do not have the same pressure on returns."

"It is not only the amount of capital they have to put to work that precludes the mid-market for many direct investors," says Chapman. "Mid-market transactions are generally delivered through relationships developed over a very long gestation period. It is not something these pension funds are set up to do. They just do not have the headcount."

Some investors operating in the large-cap space would deny that those inhibitors exist, because they have portfolio companies that can come down into the mid-market. "But entrepreneurial businesses are not indifferent to whether you are a financial or strategic investor," says Beall. "A strategic investor looking to synergise a management team is much less attractive than a financial partner which can provide capital and support to help them grow."

Beyond the main risks that are being

"Action at a federal level has meant that decision-makers, at a local level, can no longer just kick the can down the road"

DAVID WILLIAMS
CIBC Capital Markets

Canada and Mexico

The US may be the biggest market in North America but what opportunities do Canada and Mexico currently represent?

"Canada has led the way in the PPP so, in addition to new projects, there will be opportunities to sell PPP assets that are up and running," says David Williams, managing director and head of global infrastructure and power at CIBC.

However, Williams adds that the political situation in Mexico is making it a less attractive market than it was even a year ago. "Mexico is in North America but has some of the same political turmoil that we are seeing in some countries in South America. A number of managers have not done well there. While returns can be higher than you can earn in the US, the risk/return trade-off has made the market less attractive to many investors."

George So, managing partner at InstarAGF Asset Management, agrees that the scale of demand for infrastructure investment in the US is so great that you simply do not need to venture south. "Given the scale and quality of the opportunity that is available here, we do not see the need to take the emerging market risk, the political risk or the currency risk."

"The impact of what is happening in the digital world on traditional infrastructure is meaningful"

MARK McCOMISKEY
AVAIO Capital

"As digital devices proliferate and as corporates continue to outsource their data handling, significantly more data centre infrastructure will be required"

BRENT TASUGI
AMP Capital

identified and discussed, Beall is quick to point to rate-based risk as a significant danger. "We are seeing that play out on a massive scale in California. People are talking about the political repercussions, but at the end of the day, it was at least partially caused by underinvested infrastructure."

"The starkest example of that is in the UK, where the rates of return allowable to water utility and electricity grid investors was slashed after privatisation," adds McComiskey. "This may deprive them of investment just when it is needed most to support the transition to renewables. The US water industry has seen underinvestment also, as around 3,700 systems do not meet minimum clean water standards and that is largely because it is politically impossible to raise rates."

But for So, the most significant threat facing the infrastructure market right now is the macroeconomic backdrop. "I think the potential for market contraction should be one of our highest priorities – whether that is a full blown recession or mild correction. What will that do to our assets? What will it do to our capital position and how do we weather that storm?"

Rising values

The situation is exacerbated by sometimes dizzying valuations. Fully contracted data centres are regularly pricing at north of 20x EBITDA, says McComiskey. Ports, meanwhile, are again pricing in the high teens and low twenties. "There isn't a sector out there for operating infrastructure assets for the faint of heart right now," he adds. "What impact will that have when the tide goes out?"

The situation clearly differs depending on whether you are planning to hold assets as bond substitutes for a long period – where interest rates will have a potentially profound effect – or if you are planning to build value through a growth strategy where you can proactively increase value.

"In a downturn, I think you are much better off with a more lightly levered business with operating leverage, rather than a long-dated bond approach," says Beall. "I am of the view it is only possible to look about five years into the future easily; 10 years feels almost impossible – 30 years, no way."

He continues: "If you are buying assets you intend to hold for 30 years, you had better have a very robust internal policy around aggressively re-evaluating market conditions every four to five years. Whereas, if before exiting you have a strong management team and a very good five-year plan, you reduce the exposure to something unexpected that may happen 30 years down the line."

"For me, the discipline provided by a defined exit horizon is a compelling reason to stay in the closed-end market."

Chapman, however, says that there are assets that fit neatly within an open-ended structure, with PPPs being an obvious example. "It is fine to develop those assets in shorter-dated funds, but once up and running, I think they fit more naturally in an open-ended vehicle."

However, he cautions that there does need to be a recognition that not all assets are suited to those structures. "We are now seeing managers that have been heavily focused on the PPP space, many of which are now, frankly, starved of dealflow. Some of those firms are expanding their definition of core and I question whether those assets really belong in longer-duration funds."

And that, says McComiskey, is a risk to everyone. "In an economic downturn, those assets are not going to respond like long-term contracted assets. People who thought they were invested in core infrastructure will find out that was not always the case. That could cause a reputational problem for the sector as a whole."

"The local level is where you can get the best bang for your buck while adding value to the community"

GEORGE SO
InstarAGF Asset Management

The most active investors

Our Global Investor 30 lists the leading LPs in terms of the amount of capital, but which investors are the most active?

Of the top 10 most active investors, only the European Investment Bank does not heavily favour North America – all the others place North America first, or second only to a multi-regional focus.

Predictably, the EIB favours Europe. Of the other nine – all of which are headquartered in the US – six have a regional focus on North America, two give equal weighting to North American and multi-regional strategies, and only one has prioritised a multi-regional approach over a specific one.

All figures are for the number of commitments made over the past five years.

Between them, the top 10 have allocated $181.8 billion globally to infrastructure since the start of 2014.

1 European Investment Bank

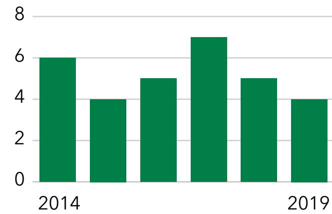
Number of commitments in past five years

31

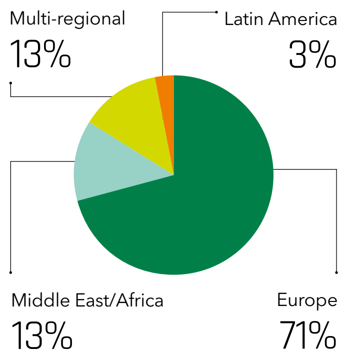
Size of portfolio

$620.0bn

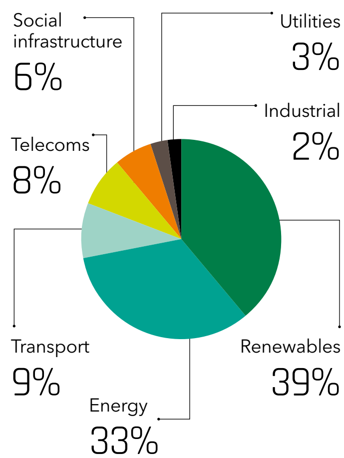
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

Figures may not add up to 100% due to rounding

2 Teacher Retirement System of Texas

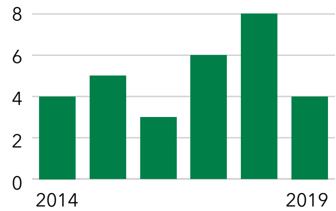
Number of commitments in past five years

30

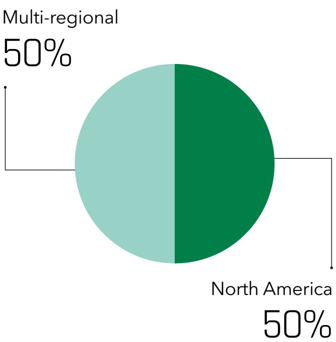
Size of portfolio

$152.2bn

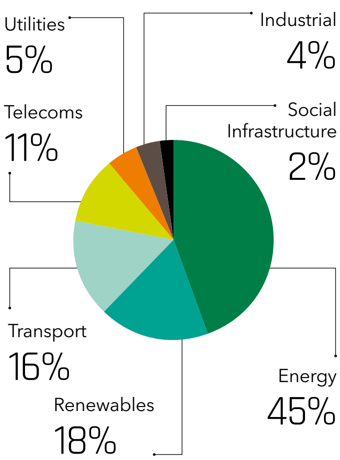
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

3 University of Michigan

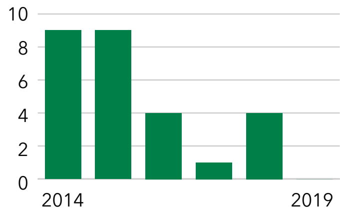
Number of commitments in past five years

27

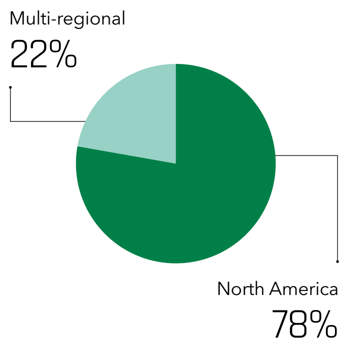
Size of portfolio

$12.1bn

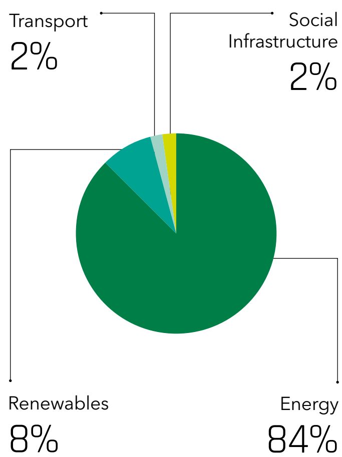
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

4 San Francisco Employees' Retirement System

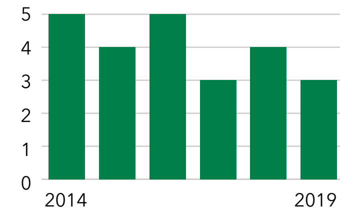
Number of commitments in past five years

24

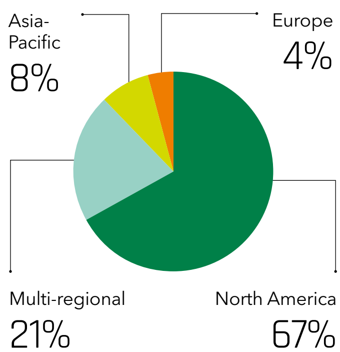
Size of portfolio

$26.7bn

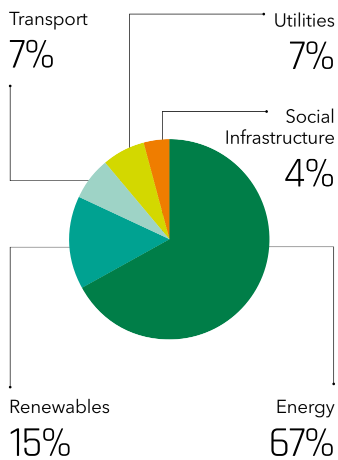
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

5 Oregon State Treasury

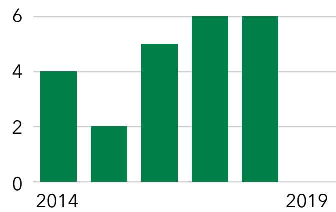
Number of commitments in past five years

23

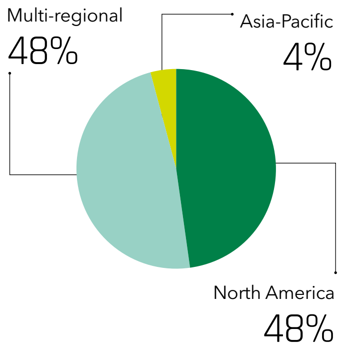
Size of portfolio

$103.9bn

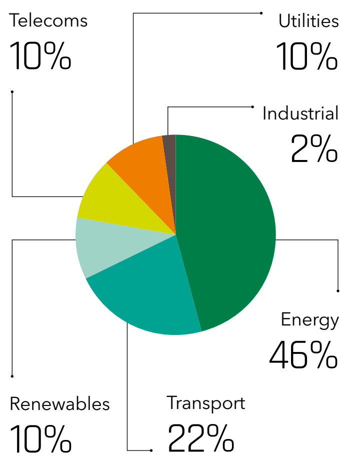
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

6 Maine Public Employees Retirement System

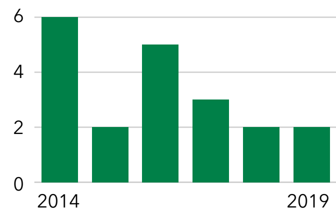
Number of commitments in past five years

20

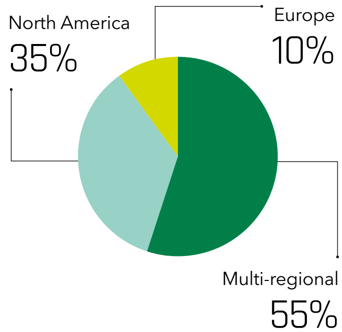
Size of portfolio

$14.9bn

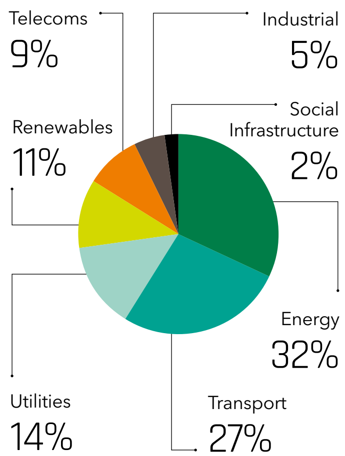
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

7 Virginia Retirement System

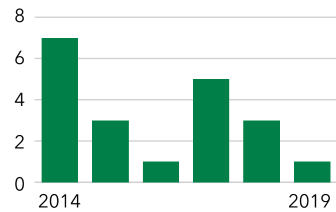
Number of commitments in past five years

20

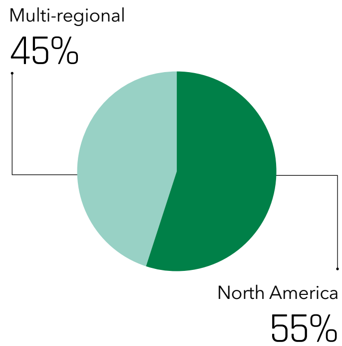
Size of portfolio

$82.3bn

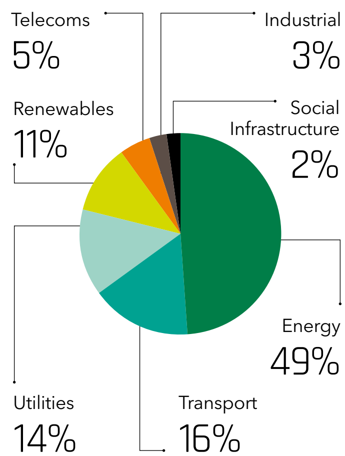
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

Figures may not add up to 100% due to rounding

8 Alaska Permanent Fund

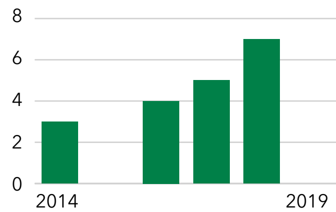
Number of commitments in past five years

19

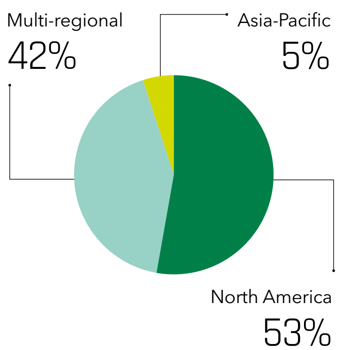
Size of portfolio

$65.6bn

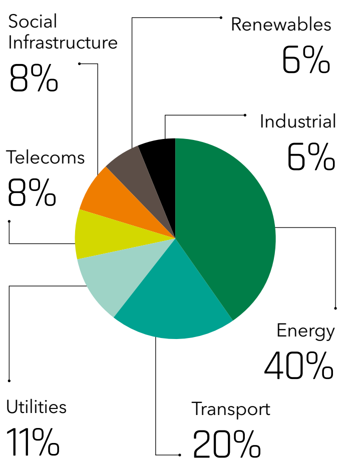
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

9 New Mexico Educational Retirement Board

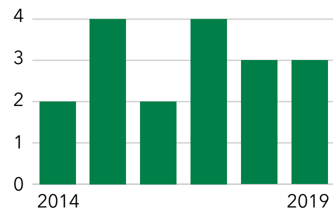
Number of commitments in past five years

18

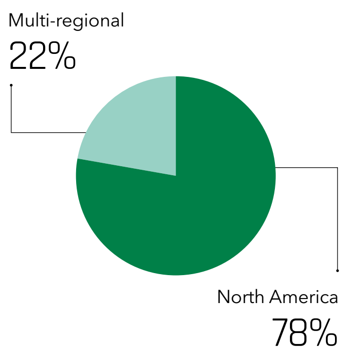
Size of portfolio

$12.5bn

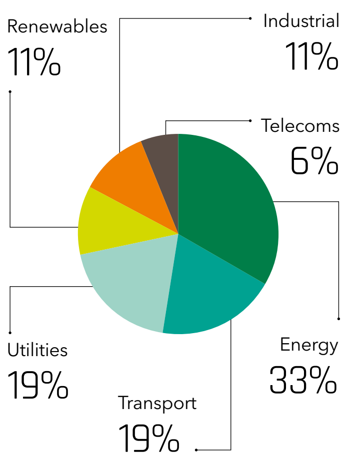
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

10 Employees Retirement System of Texas

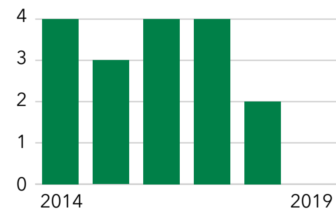
Number of commitments in past five years

17

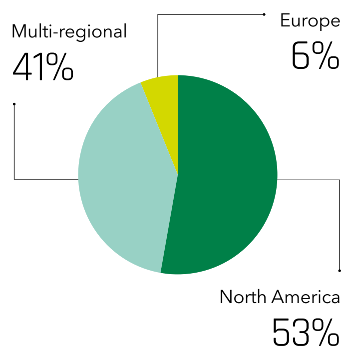
Size of portfolio

$28.7bn

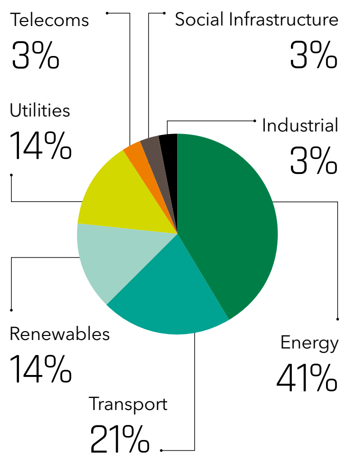
Fund commitments by vintage



Total commitments by regional focus



Total commitments by strategy



Source: Infrastructure Investor

KEYNOTE INTERVIEW

European expertise, US opportunities

Ardian has brought a 14-year track record of European investment to US shores and is embracing the country's essential infrastructure story, say the firm's senior managing directors Mark Voccola and Stefano Mion

Q Ardian raised its first fund dedicated to North America in 2018. What makes this an attractive market for you?

Mark Voccola: There are a tremendous number of opportunities in this market right now, across an ever-broadening definition of infrastructure. That's being driven by several key trends.

First is the energy transition – the increasing amount of renewable energy and gas-fired power generation in the US, and all the infrastructure associated with moving that around. We see opportunities in everything from pipelines to gathering systems and transmission lines, as well as generation itself.

The other major source of dealflow that we see is around telecommunications infrastructure, driven by the huge acceleration of data consumption that is taking place in an increasingly digitised economy.

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Q Do you primarily focus on the US, or do you see opportunities in Canada as well?

Stefano Mion: We tend to focus more on the US. The Canadian market is well developed in terms of opportunities for public-private partnerships in a wide range of sectors. But there are also competitive advantages for local players that can make it complicated for international funds to make inroads. Given the scale of the US market and the sheer number of opportunities, that is where we spend the majority of our time.

Q How would you describe the renewables story in the US right now?

SM: The US is the biggest consumer of electricity in the world, but renewables still have a very small share of the market. That is unsustainable. If you consider the growth potential of wind and solar in the country, as well as developments in energy storage, being active in the renewables space is a must.

We see a wide range of opportunities. There are still a lot of greenfield projects being developed, taking advantage of the tail end of the current system of tax incentives. There is also a good market for brownfield opportunities.

We have reached a point where there are assets in the market that are more than 10 years old. Those assets have a track record in operation, which eliminates some of the volatility associated with this sector. In particular, there are a number of assets coming towards the end of their tax incentives, which creates a natural transition for a new capital structure and new ownership.

We are also seeing the aggregation of independent power-producing companies, and this is one of the areas where we have invested. To date, we have aggregated renewables assets with an accumulative 800MW in operation and we continue to study more opportunities in the sector.

At the same time, we see local and international utilities that have historically been major players in the US renewables space looking to rotate capital in order to play more on the energy management side. That is creating dealflow opportunities too.

Q What about the conventional power market? How is that sector evolving?

MV: The US market has moved away from coal, primarily for economic reasons. The abundant availability of low-cost natural gas has changed the power generation mix over the past decade and we are seeing both greenfield and brownfield opportunities arising from that.

On the greenfield side, those opportunities are focused around replacing the coal fleet with new, efficient, clean burning gas-fired assets. The latest technologies from the original equipment manufacturers are significantly more efficient than the technologies of 10 years ago.

Intermittent energy generation – primarily wind – is also creating opportunities to invest in peaking gas-fired assets. Going forward, at least in the medium term, I think it's safe to say that most of the power generation opportunities in the US are going to be either gas-fired or renewable.

Q What opportunities are you seeing outside the energy space?

SM: We focus on essential infrastructure assets, the same investment strategy that we have pursued in Europe for almost 14 years now. In that bucket, we include roads, airports, regulated assets and telecoms.

As Mark mentioned, the telecoms sector is a particularly exciting space right now. We see a significant need for investment to support build-up storeys around towers, where there is always the need for more spectrum. Again, you have the mega-players looking to buy up smaller players and then there are the independent companies trying to gain scale through aggregation.

Fibre networks are also being deployed through different types of contracts. You have PPP opportunities, where fibre is being deployed in cities. You also have private roll-out strategies, where a lot of capex is needed to increase networks.

Data centres provide a third category. There is huge demand for data storage as corporates increasingly look to outsource their data storage needs. We therefore expect to see a significant spate of investments in the data centre space.

Skyline: A renewables buy-and-build story

In 2018, Ardian partnered with Transatlantic Power Holdings to build a renewables platform based in the US.

Skyline Renewables focuses on the onshore wind sector. Its first acquisition was Whirlwind, a project based in Texas. Whirlwind was a wind farm comprising 26 turbines and with a total capacity of 60MW. The deal included the buyout of tax equity interests from JPMorgan and cash equity interests from RES Americas.

In September of last year, Skyline went on to acquire the 166MW farm Hackberry Wind Farm. The following month it acquired Starwood Energy's 51 percent interest in the Horse Creek and Electra wind farms, both of which are 230MW projects. All three projects are also located in Texas.

In February, Skyline purchased a 117MW wind farm portfolio from NJR Clean Energy Ventures, the clean energy subsidiary of New Jersey Resources. The farms are located in Iowa, Kansas, Pennsylvania and Wyoming, and providing clean energy to major population centres across the US. The deal marked the first tax equity financing fully negotiated by Skyline and brought the company's wind portfolio to 803MW of controlled capacity.

Ardian's ambition is to build one of North America's leading clean independent power platforms with total installed capacity of 3GW. It is now looking to develop and build its own projects, in addition to buying and operating existing assets. And although it continues to focus on wind as the cheapest way of generating electricity, it is also pursuing solar opportunities and monitoring the evolution of power storage.

"Most of the power generation opportunities in the US are going to be either gas-fired or renewable"

MARK VOCCOLA

Q You mentioned a focus on transport assets as well. What opportunities does North America present in that category?

SM: Transport is a major theme in the US market, which has been talked about for many years now but has continued to lag the Canadian market – and even the Mexican and Chilean markets – in terms of volume until recently. There are a number of PPP road projects that have taken place.

There is also increased interest in the airport space, with local authorities starting to recognise the potential for PPP as an economic opportunity. Airports are certainly a sector where we expect to see a lot more activity in the US in the years to come.

Q What particular challenges do you associate with investing in this market?

SM: Infrastructure is all about long-term investment. It's about backing management teams in their need for growth and backing companies in search of capital investment. It's about continuing to invest and update infrastructure to ensure it remains sustainable.

All of that means you need to take a long-term view and, as in every market, long-term views are becoming increasingly challenging due to rapid tech advances and other macro trends. But that is where sticking to essential infrastructure, which allows you to understand the downside protections, gives you a better sense of the opportunities that can provide the stable returns that we have promised to our LPs.

Q What about the political backdrop? Is that not a challenge?

MV: History shows that essential infrastructure assets perform well across different state and federal administrations. We don't make decisions based on trying to predict political outcomes. Essential infrastructure is going to add value in any political climate.

Q The state vs federal political structure can also frustrate decision-making though, can't it?

SM: Obviously, the fewer decision-makers you need in an investment process, the easier it is to arrive at your desired outcome. And if you do need to involve more decision-makers, it is easier if the chain is aligned in terms of policy. But that is true for every jurisdiction where we operate, not just the US.

"Sticking to essential infrastructure, which allows you to understand the downside protections, gives you a better sense of the opportunities"

STEFANO MION

Q How supportive is the domestic limited partner base?

SM: We have been talking to US limited partners for a number of years now as we have been raising capital for our European funds. We saw a major shift in appetite for infrastructure about five or six years ago. Before then, the majority of large US pension plans and insurance companies had very low allocations to real assets. And where they did have allocations to real assets, they tended to focus on real estate and timber.

When they started to invest in infrastructure, meanwhile, they primarily focused on energy opportunities. But now the trend is for institutional investors to expand their real asset allocations to fully embrace infrastructure. They recognise the downside protection – the stability – that that creates in their portfolios and they are looking for diversification.

The appetite for co-investments has also materially increased. This allows GPs like us to create a more direct relationship with our investors and support them in diversifying their portfolio.

Q What does the future hold for North American infrastructure and what are your ambitions for the market?

MV: I think that it's a fantastic market to be investing in, given the number of opportunities we expect to see over the course of our current fund and its successors. There are tens of billions of dollars of investment opportunity out there. Given those opportunities, and all the appetite that we see from limited partners to participate in those opportunities, we are excited about what the future holds.

SM: Since we entered this market a few years ago, we have continued to apply the strategy we have developed in Europe over the past 14 years: backing management teams and companies in their growth strategies and their need for investment. That is already proving successful.

We see a lot of fund managers in this market looking for high IRRs over a short time period. The track record we have in supporting companies in their long-term growth is something which is proving to be a differentiating factor and we intend to keep on building on that. ■

Blackstone's back, all right

The firm's infra behemoth comes with a strong North American slant, writes Bruno Alves

Over the summer, Blackstone closed the first phase of fundraising for its first open-ended infrastructure vehicle on $14 billion. The fund, quite apart from its size, is notable for its heavy focus on North America.

The first close came after Blackstone collected commitments from more than 80 investors. These included a cornerstone investment from Saudi Arabia's Public Investment Fund, which agreed to match dollar-for-dollar the amount Blackstone collected from other LPs.

What a difference nine years makes. When *Infrastructure Investor* covered the first close for the maiden incarnation of what is now Blackstone Infrastructure Partners with the headline 'Make way for Blackstone' in March 2010, the vehicle had closed on $200 million.

Now it is time to make way for Blackstone all over again. This time it is targeting an eye-popping $40 billion, thanks to the Saudi commitment to provide up to $20 billion. The first iteration of Blackstone Infrastructure Partners, which was ultimately abandoned, had been looking for a much more modest $2 billion.

A source familiar with the latest fundraise notes that 50 percent of the investors committed to Blackstone Infrastructure Partners are new to the firm. The close is the largest ever for a first-time infrastructure fund and immediately puts Blackstone Infrastructure Partners among the industry's largest investment vehicles at a time when interest in the asset class is at an all-time high.

Blackstone founder Stephen Schwarzman's stated ambition to turn the new infrastructure business into a global leader will see the firm square off against the likes of Brookfield, with which it already spars in other asset classes, and Global Infrastructure Partners, the asset class's de facto king.

And it's here where Blackstone's mega-fund starts to look different from the globetrotting flagships managed by Brookfield and GIP. Firstly, because it's open-ended; and secondly, because its path to world domination will come via a North America-focused vehicle.

Pension documents indicate that North America will account for 70 percent or more of Blackstone Infrastructure Partners' investments. The fund will be invested across energy, communications, transportation, and water and waste.

Intentionally or not, this geographical focus recalls the origins of the PIF's dollar-matching commitment, announced when Schwarzman travelled to the Saudi capital Riyadh alongside US President Donald Trump in 2017. Blackstone, however, has made it clear on several occasions that Blackstone Infrastructure Partners was never dependent on Trump's now-dormant $1 trillion infrastructure programme. To its credit, it is putting its money where its mouth is.

In the space of six months, Blackstone acquired a controlling interest in Tallgrass Energy and a minority stake in Carrix. The acquisitions are understood to have amounted to a combined $2.5 billion equity cheque.

Investment in the pipeline

Tallgrass Energy is a US midstream energy company involved in transporting crude oil and natural gas from some of the country's most prolific basins. It has been going since 2012 and owns and operates 8,300 miles of natural gas pipelines, more than 800 miles of crude pipelines and more than 300 miles of water pipelines across the US.

Carrix is one of the world's largest privately held marine terminal and rail operators. It also has operations and investments in cruise services, warehousing and cold storage, trucking, project development, terminal operating systems and vessel planning solutions.

It remains the case that Blackstone Infrastructure Partners could not, for example, acquire an asset in the US like London's Gatwick Airport (the sale of which, we recently learned, turned the California Public Employees' Retirement System's $155 million investment into $1.24 billion after nine years) simply because most US airports are publicly owned. However, with the ability to deploy up to $2.5 billion in equity per deal, the fund would only need to average about three transactions annually to invest its $14 billion over the next two to three years.

Blackstone Infrastructure Partners' ability to invest large amounts of equity gives it a competitive edge. When your minimum equity investment is $1 billion-plus – as pension documents pertaining to the fund show its intended investments will be, while targeting 10 percent net returns – you start to operate in a more rarefied space.

Being a permanent capital vehicle should also enable the team to go slow when needed. If Blackstone Infrastructure Partners keeps sourcing deals without sell-side bankers – as it did with its first two transactions – the fund should stay on the right side of sellers eyeing it hungrily as a North America-focused piggybank.

Blackstone is not new to infrastructure per se, having already invested $7 billion in the sector. But that portfolio's combined 39 percent IRR – as of 31 December 2017, according to public presentations – betrays a private equity approach to these assets.

This approach does not detract from the team's experience. Sean Klimczak, who is leading the strategy, joined Blackstone in 2005 and has spent more than a decade working on the firm's energy investments. It does mean, however, that some will consider Blackstone Infrastructure Partners ground zero for the firm's infrastructure efforts.

In that sense, the team's performance will be scrutinised closely. It will also face the kinds of questions regarding alignment that surface each time a publicly listed corporation like Blackstone enters a new asset class – such as whether Blackstone Infrastructure Partners is simply a branding exercise to boost the firm's share price. From what we know, the team's carry is entirely dependent on Blackstone Infrastructure Partners' success and is not firm-wide, so they certainly have skin in the game.

Ultimately, this is Blackstone we're talking about, and its track record in private equity and real estate speaks for itself. Past performance might not be indicative of future results, but when you've got this kind of past performance, it would be foolish to ignore it. ■

A $7bn track record

Although Blackstone Infrastructure Partners is the firm's first infra fund, it is no stranger to investing in the asset class

$46bn+

Initial value of projects

$7bn+

Total capital invested

27

Number of investments

2.2x

Gross multiple on invested capital

39%

Gross IRR

Source: Chicago Teachers' Pension Fund
Note: data valid as of 31 December 2017

CalSTRS' low-carbon plan reveals new priorities

Climate concerns have climbed up investors' priority lists, as the $240bn pension's new sustainability plan shows. Kyle Campbell reports

The California State Teachers' Retirement System is taking the lead among US institutions to reduce its carbon footprint and mitigate exposure to environmental threats such as coastal flooding and wildfires.

Its adoption of a low-carbon plan in October came after California governor Gavin Newsom signed an executive order the previous month requiring CalSTRS and the California Public Employees' Retirement System – the two biggest US investors – to devise sustainability plans. Such measures are not uncommon for similar-sized investors globally. However, the $240 billion pension is one of the few US institutions to adopt a formal policy on global warming.

The Sacramento-based institution rolled out an 18-month low-carbon transition work plan on 3 October, though few details have been cemented. CalSTRS' director of corporate governance, Kirsty Jenkinson, tells sister title *PERE* that the first step will be to conduct a detailed analysis of the risks associated with climate change as well as the opportunities for investing in potential solutions.

Access all areas

The new strategy will touch all asset classes. "Different assets have different exposures," she says. "Our job is to work out where we need to be apprised of what."

The pension will need standards for its in-house team and third-party managers. CalSTRS' low-carbon plan reflects a broader trend by US investors, and particularly those with ample resources, to take an active approach towards the climate crisis.

Susan Swanezy, a partner at New York advisory firm Hodes Weill & Associates who specialises in matters of environment, social and governance investing, says: "The environmental component of ESG is moving from best practices in operations and development to risk management, to 'are you factoring in these considerations in your investment decision-making practices?'"

> *"CalSTRS is ahead of the curve in the US market. Their leadership will put pressure on other large institutional investors"*
>
> **NEIL PEGRAM**
> **GRESB**

US investors tend to pay less attention to environmental concerns than their global peers. Just 35 percent of institutions in the country have ESG policies, according to the 2019 *Allocations Monitor*, an annual report from Hodes Weill and Cornell University's Baker Program in Real Estate. By contrast, 65 percent of investors from Europe, the Middle East and Africa reported having ESG programmes. The figure was 76 percent in Asia-Pacific, where AustralianSuper and other pensions have taken leadership roles in sustainability.

Even among US investors with ESG policies, just 25 percent of respondents said they modelled their investment strategies on them. Yet that tide is turning. The Americas saw the fastest rate of ESG policy adoptions between 2018 and 2019 – jumping from 26 percent to 35 percent.

Neil Pegram, director of Americas for the Global Real Estate Sustainability Benchmark, a Dutch firm that tracks real asset sustainability, says CalSTRS' low-carbon plan could encourage more US investors to follow suit. "CalSTRS is ahead of the curve in the US," he says. "Their leadership will put pressure on other large institutional investors and US pension plans to set sustainability roadmaps and increasingly recognise sustainability and carbon issues as material risks."

Jenkinson says CalSTRS is determined to balance public sentiment with principles of sound investment: "We need to recognise where people's interests and concerns lie but our job, ultimately, is to bring it back to managing the portfolio in a way that makes sense." ■

KEYNOTE INTERVIEW

Renewables' starring role in 2020

Solar, 5G roll-out and data centres will dominate North American infrastructure in the year ahead, says Wilmington Trust's head of project finance Will Marder

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Q Which sectors are attracting the most attention in North America as we head towards 2020?

The power sector, and especially renewables, continues to dominate North American infrastructure. We see moderate but stable interest in technologies such as hydro and geothermal. But wind and solar are undoubtedly leading the charge.

For many years wind outpaced solar. Now it is the other way around. The market is finding that there is a broader application for solar power, that the construction cycles are shorter, that the tech is simpler to work with and that finding good quality sites is less of a challenge. It is simply easier to figure out where the sun is going to shine than where the wind is going to blow.

Prices for both technologies are also coming down. Wind and solar are now competitive with conventional power generation technologies in many markets – particularly in the US south-west – independent of any production or investment tax credits, which are now being wound down.

And future demand drivers are well sign-posted. California, for example, has been having well-publicised issues with its transmission and distribution network and sees solar as offering the ability to move to a more decentralised, distributed generation model. I think this is something we will see more and more of as Californians deal with blackouts and as the utilities look to curtail power delivery in places prone to forest fires.

Q What about offshore wind? Is that the next big opportunity?

Obviously, there is a long history of offshore wind in Europe and it did appear to be poised to take off in North America, with a number of large projects teed up and ready to go. But a recent decision by the Bureau of Ocean Energy Management to conduct additional research into environmental impact has effectively put a temporary halt on development, stretching out timelines for these projects.

There is an awful lot of capital out there looking for a home at the moment, particularly from the infrastructure debt funds, and the hope had been that these large-scale, offshore wind projects offered a great opportunity to put billions to work, and potentially to get a premium in terms of pricing over land-based wind energy for taking on the risk of financing some of the earliest projects. Now that has run into a hurdle, it will be interesting to see how quickly – or not – this matter is resolved.

Q Storage solutions are critical for efficient renewable power generation. What activity are you seeing in that space?

In the utility-scale solar space, storage is a really hot topic. It has so many different applications, whether it's filling in gaps in power generation or being used for load shifting. We hear a lot about the 'duck curve' in California. The time of day when domestic electricity is needed – the morning and evening – is different to when the solar energy is being produced. Storage is therefore a critical component for making this work.

Q Where does all this leave conventional power generation in North America, when it comes to infrastructure investment opportunities?

Coal will continue to be phased out slowly over time. But, in fact, natural gas has enabled this move towards renewables. It has given us a cleaner base load capacity, which has meant older, dirtier, less efficient coal plants could be retired.

The use of natural gas in peaking plants has allowed more wind energy, in particular, to be brought onto the grid and so, while I don't expect to see any more coal plants getting built in my lifetime, I do think we will continue to see considerable build-out of natural gas. Indeed, there has been continued development in key markets, such as Pennsylvania-New Jersey-Maryland, and another very large project is just beginning construction now.

"For many years wind outpaced solar. Now it is the other way around"

Q What about infrastructure activity outside of energy? What opportunities is 5G likely to bring, for example?

The US is a little bit behind other countries when it comes to rolling out 5G, but that is certainly poised to create huge demand as a massive upgrade of equipment becomes necessary. We saw it with the transition from 3G to 4G, but this time around the demand will be even higher because a greater concentration of towers is required as well. I expect to see a wave of project financing from both the big tower companies and the major cell phone providers.

Q What will be the biggest challenges for the North American market in 2020?

One of the things that lenders wrestle with is the term of financing they can offer. Prior to the credit crunch, utilities were entering into long-term power purchase agreements and lenders were offering very long dated debt. If you had a 20- to 25-year PPA, you could get up to 20-year debt from a bank. It was all fairly straightforward.

After the credit crunch, the banks pulled back and didn't want to go out more than three to five years. At the same time, the economy was depressed and there wasn't much growth in demand for energy. Instead, what we saw taking place was a transition from coal-fired to renewable energy as utilities strived to meet hurdles, such as RPS standards.

A lot of those goals have now been met and so there isn't much demand for these long-term PPAs. Instead we see the opportunistic buying of renewable energy at very low prices, driven by the comparable price of natural gas. We also see that corporate buyers are replacing the utilities.

Corporates are directly entering into PPAs with renewable energy providers because they find that it is cheaper than buying through a utility. The contracts that these companies – Apple, Facebook, Netflix, AT&T – are entering into are far shorter than the old utility models, often eight to 10 years. That is forcing lenders to consider the merchant risk in the later years of a project.

Q What changes have you seen in the make-up of the lending market?

Before the credit crunch, large infrastructure projects might go out to one or two commercial banks, which would act as mandated lead arrangers. These banks would put up hundreds of millions of dollars and feel pretty comfortable that they could syndicate that debt and bring other banks in.

That model was changed dramatically by the credit crunch. Banks pulled back in terms of how much they wanted to lend, narrowed their focus to particular sectors or clients, or else exited the market altogether. Large projects could no longer raise all the debt capital they needed from one place. And so, we started to see bigger deals find capital from several different pockets.

There would be an institutional investor tranche and a commercial bank tranche. That's when we started seeing more frequent holdco loans – finance subordinated to the project level debt. In the immediate aftermath of the credit crunch, this was a way to add leverage to a deal when lenders weren't comfortable putting a lot of debt in at a project company level. Today, when there is a very high availability of capital, borrowers are still raising additional leverage at a holdco level, to reduce the equity risk for the sponsor and to allow developers to recycle more capital for the next project.

It has been an interesting evolution that has enabled us, as a third-party provider of trust and agency services, to play in multiple places in the capital stack. We can be an agent for the lenders at the project company level, and we can be an agent at the holding company level on the same transaction. Unlike many of the big Japanese and European banks that do their own agency work, we don't have conflicts of interest because we ourselves are not a lender.

Q If we are facing another downturn, how do you expect the North American infrastructure ecosystem to be affected this time?

The market looks very different today than it did a little over a decade ago. Back then, infrastructure was dominated by commercial banks. Yes, you had institutional investors such as the life insurance companies and a few pension funds, but they tended to be more passive. They tended to take on transactions originated by others and were looking for super high-quality metrics. Those institutional investors didn't really get into construction financing. They were just starting to get involved with tax equity, for example in US renewables.

Fast forward to today, and you have so many more players in the market. The institutional investors have evolved and become more flexible, to fill that gap left by the commercial banks. A lot of those institutional investors are originating on their own, they are providing construction financing and delayed draw facilities that look, and feel, a lot like commercial bank debt. They are also now more willing to play in deals that historically they would have considered out of their comfort zone. At the same time, we have also witnessed a proliferation of infrastructure funds, providing both debt and equity in the market. Those funds have raised a tremendous amount of capital that obviously needs to be deployed.

I don't sense the economy is anywhere near where we were 10 years ago, with banks collapsing and lending plummeting. But if we are heading towards another recession, there are so many more pockets of capital available now, that if some participants do decide to take a break, I really don't think we would feel the impact in the same way. ■

"There are so many more pockets of capital now, that if some participants decide to take a break, I really don't think we would feel the impact in the same way"

Q How will investment in data centres evolve?

Our lives continue to become ever more digitised, from entertainment, to online banking, to communication and e-commerce. And everything we do gets backed up to the cloud. Vast amounts of data are being consumed and stored and so we will see a lot more data centres being built. A few years ago, these data centres would have been seen as a real estate investment. But in the last 18 months or so this has emerged as an infrastructure play. When you build a data centre you enter into a long-term contract to provide data services, or cloud storage, and that contract can be monetised in the project finance market. And, of course, because so much money has been raised by infrastructure debt funds, they are always looking for new places to deploy their capital.

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Public-private problems

PPPs are in danger of falling out of favour in North America, write Kalliope Gourntis and Jordan Stutts

Fixed-price public-private partnerships are not looking as attractive as they once did. Fluor Corporation is the latest to express its unease at the arrangements, though it says it will evaluate them on a case-by-case basis rather than pulling away completely.

Being increasingly discerning will narrow down an already limited range of options. "The fact is, there are very few active transportation PPP procurements in North America at the moment," says David Parker, vice-president at Fluor. "And we expect the pipeline of new PPP procurements coming to market in 2020 will be quite limited."

SNC-Lavalin went further in the summer, citing fixed-price PPPs as the "root cause" of its low second-quarter earnings. Having had its fingers burnt, the Montreal-based company declared that it was withdrawing from ongoing bid processes. At the time, SNC-Lavalin was bidding for the C$1.4 billion ($1.05 billion; €940 million) Pattullo Bridge PPP in British Columbia, the C$2.8 billion Millennium Line Broadway Extension and the C$2.6 billion Edmonton Valley Line West light-rail transit.

Swedish construction firm Skanska announced a similar move at the end of 2018, when it declared its intention to pull out of the US PPP market after having taken a $100 million writedown from two high-value projects. Although it did not disclose which projects caused the loss, it was at the time involved with the $4 billion Central Terminal B project at New York's LaGuardia Airport and the $2 billion Interstate 4 expansion in Orlando, Florida.

If LaGuardia was indeed the cause of Skanska's loss, it would not be the only airport to throw up a tricky PPP. Denver International Airport declared in Q3 2019 that it would terminate a $1.8 billion PPP agreement with a consortium led by Spanish developer Ferrovial after unexpected costs and delays derailed the project.

The airport was unable "to reach an agreement on the cost and schedule impacts" of setbacks to the renovation of Jeppesen Terminal with JLC Infrastructure and Saunders Construction. At issue was the discovery of weak concrete used in the terminal's original construction in the 1990s, leading the two sides to struggle to agree on safety, cost and a completion schedule.

The airport said it would repay the portion of funding that JLC Infrastructure and Saunders Construction contributed to the project – around 25 percent of the design and construction cost, for which $770 million had been budgeted. A new contractor will be sought to complete the project.

> *"There have been snippets of commentary in companies' earnings reports and earnings calls indicating undertones of frustration in that market"*
>
> **NICHOLAS VARONE**
> **Fitch Ratings**

One becomes two

SNC-Lavalin blamed PPPs for C$367.6 million of negative cashflows in the second quarter of this year. The company has announced that it will reorganise itself into two businesses, separating its "high-performing" engineering, nuclear and infrastructure services groups from its PPP development arm. "This will form the focus of the future of our company," says SNC-Lavalin's interim president, Ian Edwards.

Nicholas Varone, director of the US corporate finance group at Fitch Ratings, says: "In the US, there have been snippets of commentary in companies' earnings reports and earnings calls indicating undertones of

Running into difficulty: New York's $4 billion LaGuardia Airport Central Terminal B was one high-profile PPP in which Skanska was involved when it pulled out of the US market

Troubled waters: SNC-Lavalin withdrew from the procurement process to build a C$1.4 billion replacement for the Pattullo Bridge in British Columbia

frustration in [the PPP] market. But it hasn't been as explicit as Skanska or SNC-Lavalin."

Although this is a new issue in North America, it has occurred before in Australia. Mega-projects in the country, including PPPs, had a history of losing money, with contractors writing off A$6 billion ($4 billion; €3.7 billion) on projects completed between 2000 and 2005.

The difficulties in North America appear to have two principal causes: increased competition and questionable risk allocation.

"We believe the pendulum has now swung too far out to the public sector side, and so the public sector has put more risks on to the private sector simply because they could," says Michael Barz, special counsel at Duane Morris, in reference to the US PPP market. "What happened was a result of incredibly intense competition."

Inappropriate risk allocation is particularly problematic for contractors. However, it could also have broader implications for infrastructure investors, the public sector and the very concept of PPPs if contractors no longer have an incentive to participate in such projects.

"A healthy PPP market needs a healthy construction sector," says Mario Angastiniotis, Fitch Ratings' director of infrastructure and project finance in Canada. "Contractors may be willing to lose money on one or two deals to keep the pipeline going. But if you're constantly losing money, then you have to ask yourself why you're in it."

Risk aversion

Barz's colleague Richard Dyer, a partner at Duane Morris, notes that equity sponsors passing risks on to contractors has exacerbated problems in the space. "Far too often, the sponsor negotiates with the government entity and [although] they negotiate hard, they may not when it comes to construction issues," he says. "The sponsor then pushes the risk down to the contractor, who did not have a seat at the negotiating table. That results in more risk being passed down to the contractor."

Scott Zuchorski, Fitch Ratings' senior director of global infrastructure and head of North American transportation and PPPs, says: "In a January report, we noted that where too much risk is pushed on to the private sector that perhaps would have been better off retained by the public sector, it resulted in delays, disputes and other problems."

Improper risk allocation can be a serious issue. One example of the type of risk that may be more appropriate for the public sector to take on is that of third-party approvals. Government is usually better placed to secure such approvals, as it has more leverage over and more longstanding relationships with the public agencies responsible for granting them.

Redressing that balance would go a long way to keeping the PPP model alive. That would be good for the private sector – which clearly has an appetite for PPPs, as shown by the level of competition in the market – and for the public sector, which needs the capital, knowledge and experience of the private sector to bring infrastructure up to standard.

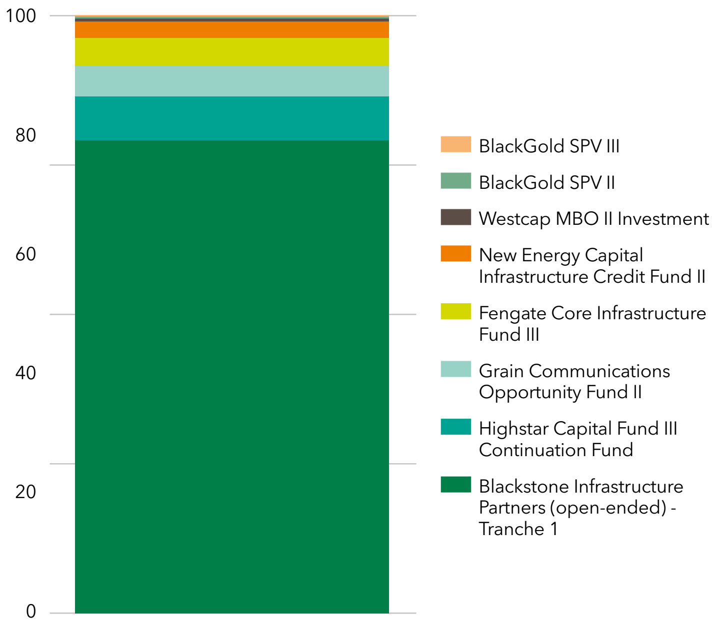
Parker says one of Fluor's primary criteria will be "more balanced risk sharing between the owner and private sector", which will limit how many procurements the company takes on. In August, it reported a net loss of $555 million for Q2. The following month, its chief executive, Carlos Hernandez, announced that the company would sell its government-focused business and construction assets.

Following the second-quarter losses, Fitch downgraded its credit rating outlooks for three US light rail PPPs that Fluor is developing. The agency changed the outlook to negative for the $2.2 billion Eagle P3 project in Denver, the $4.9 billion automated people-mover development at Los Angeles International Airport and the $5.6 billion Purple Line project in Maryland. In all three cases, it cited "credit deterioration of key project counterparties". ■

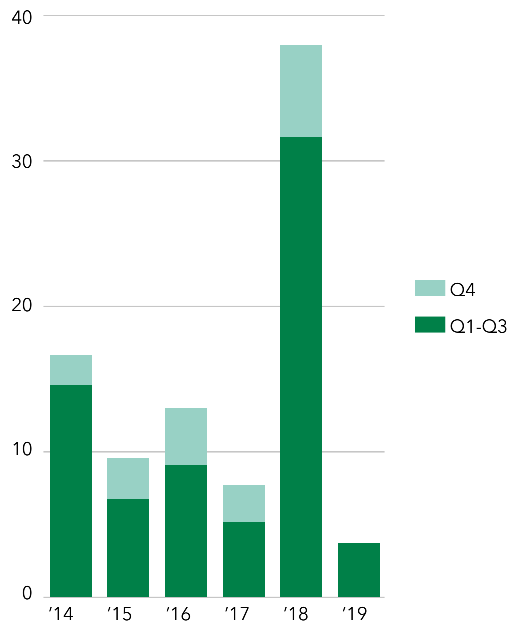
North America-focused fund closes

Blackstone's game-changing vehicle sets a new benchmark, but it is far from the only game in town

Blackstone dominated the North American funds to close in 2019 (share of capital raised, %)



North America-focused fundraising ($bn)



15 largest North America-focused funds closed since 2008

Fund	Head office	Manager	Current size ($bn)	Year close
Blackstone Infrastructure Partners (open-ended) – Tranche 1	US	Blackstone	14.00	2019
Stonepeak Infrastructure Fund III	US	Stonepeak Infrastructure Partners	7.20	2018
Energy Capital Partners III	US	Energy Capital Partners	5.05	2014
Macquarie Infrastructure Partners IV	Australia	Macquarie Asset Management	5.05	2018
Energy Capital Partners II	US	Energy Capital Partners	4.34	2010
Stonepeak Infrastructure Fund II	US	Stonepeak Infrastructure Partners	3.50	2016
Macquarie Infrastructure Partners III	Australia	Macquarie Asset Management	3.04	2014
Carlyle Energy Mezzanine Opportunities Fund II	US	The Carlyle Group	2.82	2016
EnerVest Energy Institutional Fund XIV	US	EnerVest	2.40	2015
Tenaska Power Fund II	US	Tenaska Capital Management	2.40	2008
LS Power Equity Partners IV	US	LS Power Group	2.25	2018
LS Power Equity Partners III	US	LS Power Group	2.08	2014
EnerVest Energy Institutional Fund XIII	US	EnerVest	2.00	2013
Highstar Capital IV	US	Highstar Capital	2.00	2012
John Hancock Infrastructure Fund	US	John Hancock Investment	2.00	2018

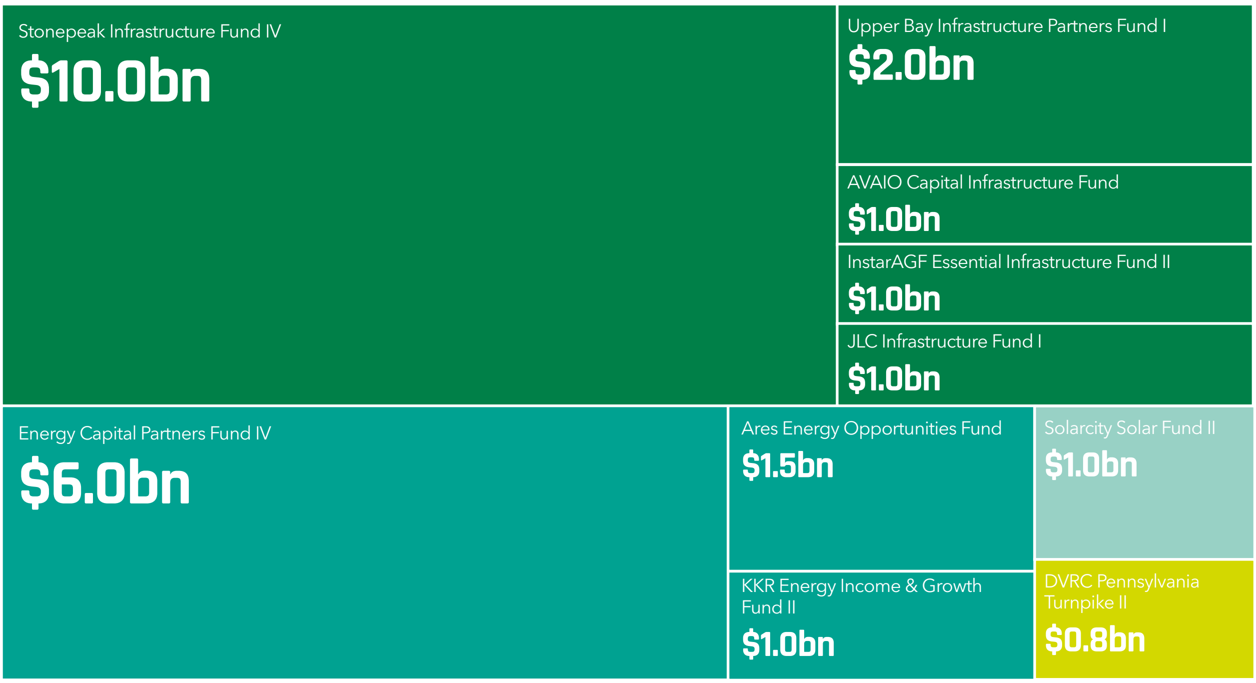
Source for all data: Infrastructure Investor

Funds in market

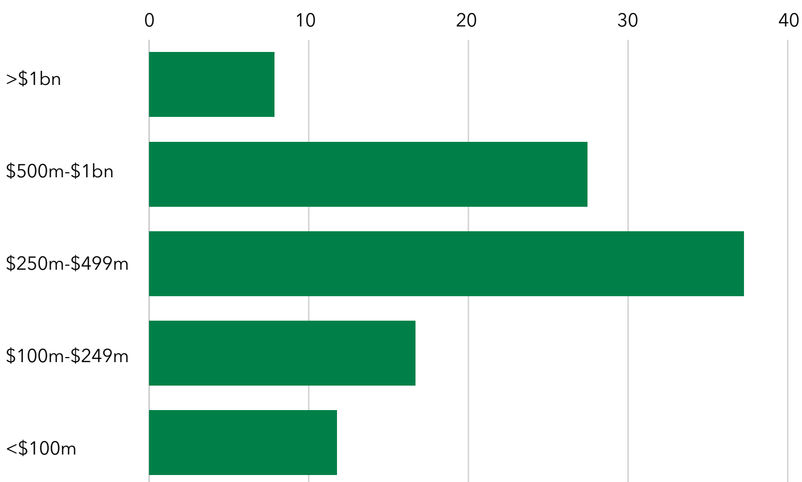
Infrastructure Investor was tracking 113 North America-focused funds in market at the start of October. So where are they focused and which are the biggest?

Ten largest funds in market

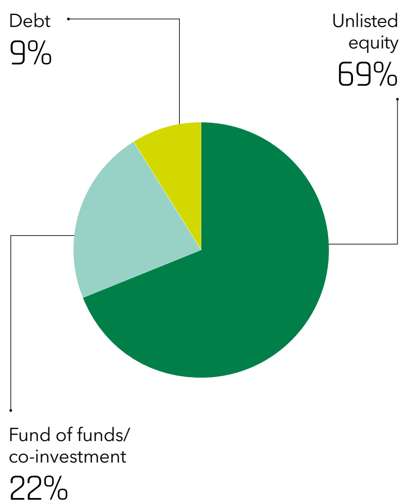
Diversified Energy Renewables Transport



Proportion of funds in market by target size, where known (%)



Strategic focus (%)



Source for all data: Infrastructure Investor

Embracing diverse management

The Chicago Teachers' Pension Fund has 42% of its assets committed to 'diverse' fund managers. By Jordan Stutts

There are a lot of changes that Angela Miller-May, chief investment officer at the Chicago Teachers' Pension Fund, wishes her staff could make. The first would be to raise the $10.6 billion pension fund's 16 percent allocation to alternative assets, which includes $235 million committed to infrastructure.

Miller-May views equities as 'return enhancers' and alternatives – especially infrastructure – as 'defensive asset classes'. Even though she recognises increasing market volatility, she says the CTPF must maintain high exposure to equities. "Every month, we have to sell off some equities and raise the cash to pay the pensioners," she explains. In 2015, Miller-May says the pension had to liquidate $500 million throughout the year to pay its pensioners. In 2018, the figure had fallen to about $250 million. "All of that is cashflow out," she says.

The CTPF is currently 52.1 percent short of its total funding. "I wish [infrastructure] could be more than 2 percent right now," she says. "The things we can do, we do in smaller increments, and it just takes longer to overcome the bad years."

Those bad years include more than two decades of what Miller-May describes as political mismanagement of state contributions that were once set aside for the CTPF, not to mention the aftermath of the 2008 crash. From 1995 to 2016, when Illinois state lawmakers revised a law that cut a property tax that had funded the pension, it lost out on more than $2 billion in contributions. And yet Miller-May has still managed to lead an investment team that puts money to work differently than others in the industry. The CTPF has been one of the most vocal US pension funds in calling for diversity in finance.

Forty-two percent of the CTPF's assets are committed to fund managers that can be classified as minority, women and disadvantaged business enterprises (MWDBEs).

The draw of MWDBEs

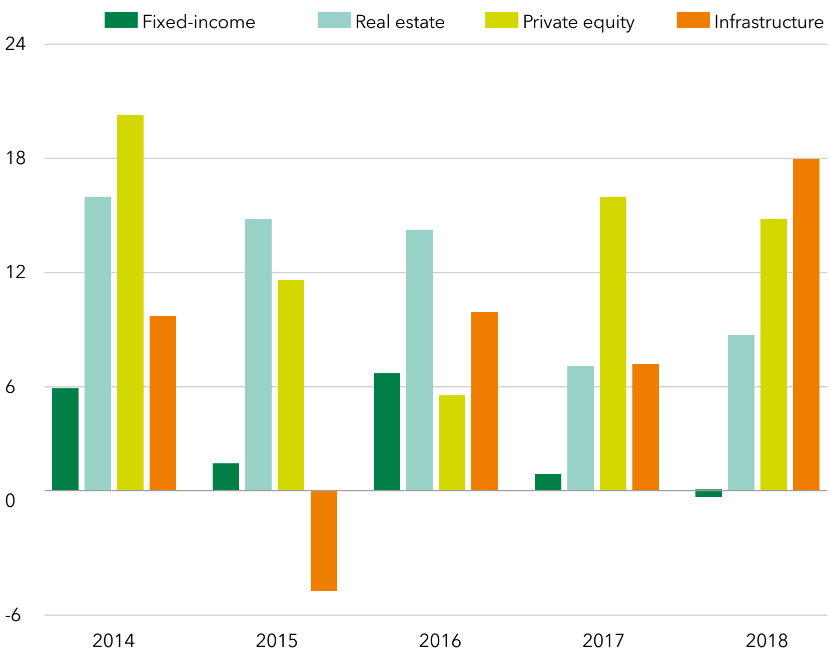
It is easy to understand the CTPF's moral reasons for pursuing diversity. However, the pension's underfunding raises questions about whether it is fiscally responsible to place money with MWDBE firms – many of which are new to fund management – when every penny counts.

According to Miller-May, the retirement system's commitment to diversity starts with Illinois state mandates, which require public pensions to invest a certain portion of assets with MWDBE-owned firms. The CTPF has embraced that initiative and run with it. "The goal in my mind is to be representative of Chicago's teachers," Miller-May says.

Fee breaks are another advantage to working with MWDBE firms, she explains, adding that the CTPF negotiates fees that are "helpful to us but not harmful to the manager". She recognises that many of those fund management firms are just starting out and need a certain amount of fees to "sustain their business".

Finally, Miller-May adds that MWDBE firms are usually in a similar position to the CTPF. "They can't fail," she says, noting that such firms often approach the pension while raising their first fund. "There is no coming back from this fund if it's not successful, so they're pretty hungry to do business with us and to learn." ■

Apart from a bad 2015, which Miller-May attributes to currency risk, infrastructure has formed part of what she describes as 'defensive assets' (returns, %)



Source: CTPF (as of 30 June 2018)