



**Infrastructure
Investor**

Japan Korea Week 2020

20-24 April
Seoul & Tokyo

Navigating the next decade of infrastructure

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Who's at the top after infrastructure's second best fundraising year?

The latest moves from Japanese investors



Japan's insurers take the direct approach

Two insurance giants – Dai-ichi Life and Nippon Life – have broadened their infrastructure debt scope from anchor investments in funds to making direct structured loans.

By Adalla Kim - 5 December 2019

Infrastructure debt has traditionally been a strongly defensive asset class, with borrowers often being businesses that provide essential assets and which represent the economic backbone of a country, says John Mayhew, London-based head of infrastructure finance at M&G Investments. These borrowers provide stable long-term cashflows to investors and, importantly, the long-dated cashflows are supported by long-life assets.

Among Asian investors, many Japanese insurers have been accelerating their investment activities to secure long-term, stable investment yields amid the prevailing ultra-low interest rate environment. Two Japanese institutions that have been focusing on allocating capital to offshore infrastructure debt investments since 2015 are Dai-ichi Life and Nippon Life.

Dai-ichi Life's infrastructure debt assets are categorised as offshore fixed-income strategies. Meanwhile, Nippon Life Insurance's current infrastructure debt investment scope includes closed-end debt fund investments, project finance and other fixed-income products such as green and social bonds.

Early adopter

As one of the first movers among global infrastructure debt investors from Japan, Dai-ichi now has numerous infrastructure debt exposures, ranging from project financing to committing capital to infrastructure debt funds. The insurance group has also invested in

renewables project financing deals since 2013 and started investing in offshore project finance loans in 2014.

"We do see increased interest in European assets relative to those in the US, due to the lower hedging cost involved"

John Mayhew
M&G Investments

In October 2018, it announced it had made an anchor investment of ¥20 billion (\$186 million; €170 million) in the Cosmic Blue PF Lotus fund, which is managed by Asset Management One Alternative Investments, a Tokyo-based alternative asset manager. The fund aims to invest in projects with long-term and stable cashflows like electricity, transportation, water supplies, sewage systems and hospitals. Other examples of the firm's offshore infrastructure project finance investments include a ¥3 billion deal in October 2014 for a floating production storage and offloading facility in Brazil; a ¥3.6 billion deal in April 2015 for a co-generation power plant in the US; a ¥3.5 billion deal in January 2017 for a German wind farm; and a ¥4.4 billion deal in December 2017 for an Australian desalination plant.

The insurer also has existing exposure to green bonds and sustainability bonds. In June, it committed a ¥6 billion infrastructure loan to an African government, and it has done more than 10 deals in aircraft financing.

This year, Dai-ichi Life established an in-house corporate and





The latest moves from Japanese investors

structured finance department to further strengthen its expertise and flexibility and allow it to expand investment in the field of structured finance.

Dai-ichi Life: The infrastructure debt investor has gained diverse geographical exposure since 2013

Investment type	Region	Amount	Project or fund name	Strategy	Year
Fund		£70m	M&G Infrastructure Loan Fund (Co-investment)	Subordinated/mezzanine debt (acquisition)	2018
Fund		¥20bn	Cosmic Blue PF Lotus	Senior debt (origination)	2018
Project finance		¥3bn	Brazil FPSO project finance	Project finance/loan investments	2014
Project finance		¥3.6bn	US co-generation power plant project	Project finance/loan investments	2015
Project finance		¥3.5bn	German windfarm project finance	Project finance/loan investments	2017
Project finance		¥4.4bn	Australian desalination plant project	Project finance/loan investments	2017

Nippon Life: The insurance group also backed infrastructure-related investments as part of syndicates

Investment type	Region	Amount	Project or fund name	Strategy	Year
Fund		£57m	AllianzGI Infrastructure UK Debt Fund	Senior debt (origination)	2015
Project finance		¥10bn	Turkey PPP Healthcare project	Project finance/loan investments	2017
Syndicated loan		\$33.5m	Chile desalination plant project	Project finance/loan investments	2018
Syndicated loan		£200m	UK windfarm project	Project finance/loan investments	2018

Source: Private Debt Investor, company disclosures, as of 25 September 2019

In May, Masashi Kataoka, a general manager of the insurance company's alternative investment department, spoke as a panelist at the Tokyo Summit hosted by Infrastructure Investor. He told the audience that Dai-ichi Life's alternative investment and structured finance teams had been discussing the organisation's various approaches to infrastructure debt investment.

The fund investment team typically hedges the denominated currency of each investment vehicle. A source told sister title Private Debt Investor: "Under the low-interest circumstances in Japan, Japanese insurers consider hedged infrastructure debt funds to be attractive assets."

Looking across the sub-strategies of infrastructure debt, the insurer's fund investment team prefers making loans to energy-related projects and brownfield infrastructure assets.

Growing sector

As stated in its annual report on 31 March 2018, Nippon Life has chosen infrastructure debt as one of the "new and growing domains" of the firm's investment and finance activities. Its infrastructure debt investment scope includes closed-ended debt fund investments, project financing and buying green and social bonds.

PDI data show the insurer committed £57 million (\$70 million; €64 million) to the Allianz Infrastructure UK Debt Fund. The UK-focused investment vehicle was officially launched in July 2014 and held a final close on £500 million in September 2015. PDI understands the fund entered its harvest period in September 2019.

PDI also understands that Nippon Life's alternative and fund investment department is looking at lending opportunities to European infrastructure assets and corporates in the telecommunications sector.

In 2017, Nippon Life made its first overseas project finance loan – of ¥10 billion – to a public-private partnership investment entity that sought funding for a new project. The capital was provided for the construction and operation of a hospital in Turkey.

The insurance group also backs infrastructure-related investments as part of syndicates. During 2018, it provided a \$33.5 million syndicated loan to a Chilean desalination plant and a £200 million syndicated loan to one of two operators of a windfarm project in the UK.

As part of a globally diversified investment approach, Nippon Life is aiming to improve stable long-term returns by investing in overseas bonds and credit instruments. Its mid-term plan for March 2018 to March 2021 includes investing and financing up to ¥2 trillion in the above-mentioned new and growing areas, including ¥700 billion in planned allocations to ESG bonds.

The company's president, Hiroshi Shimizu, suggested in the 2018 annual report that the initiatives, including deployment of further capital to infrastructure debt, are set to continue for the next two years. Ultra-low interest rates mean the challenge is to generate acceptable returns from investments and match asset duration with existing long-dated liabilities.

From conversations with the market, PDI understands that appetite for infrastructure debt among Asian institutions is dependent on the type of project. Investors are working hard to evaluate underlying projects in detail, says a source familiar with the matter.

M&G Investments' Mayhew says foreign currency hedging is also having an impact on Japanese investors' expected return rates from the investment strategy. "In general, we understand that our clients prefer to hedge their currency risk as this acts to preserve the stable income stream provided by infrastructure debt investments," he says. "We do see increased interest in European assets relative to those in the US due to the lower hedging cost involved." ■

The latest moves from Japanese investors



Mitsui to invest \$140m in 2,500MW Thai gas power plant

The \$1.6bn project is being jointly developed with Thailand's Gulf Energy Development, and has been backed by a consortium of 16 lenders.
By Eduard Fernandez - 22 November 2019

Japan's trading house Mitsui will invest approximately \$140 million in the construction of a 2,500MW gas-fired power plant in Thailand, jointly owned with Thai power company Gulf Energy, the latter told *Infrastructure Investor*.

The 50 billion Thai baht (\$1.6 billion; €1.5 billion) project, which reached financial close this week, will be backed by a 41 billion baht financing agreement. The project finance includes long-term loans from a consortium of 16 local and international lenders and five billion bahts of working capital contributed by the owners of the asset, Gulf Energy said.

"Hence, [Mitsui and Gulf Energy] will need to invest [14 billion baht] in proportion to their shareholding," the power company said.

The project, located in Thailand's Rayong province, will be operated by Gulf PD, which is owned by Independent Power Development, a subsidiary in which Gulf Energy and Mitsui hold 70 and 30 percent stakes, respectively.

The financing consortium for the project includes Japan's SMBC, Mizuho Bank, Sumitomo Mitsui Trust Bank, Germany's DZ Bank and the Asian Development Bank, Mitsui and Gulf Energy said in two separate statements.

The loan, with a 23-year tenure, is 50 percent denominated in Thai bahts and 50 percent denominated in US dollars, Gulf Energy said.

According to Gulf Energy, the project finance has "a considerably lower interest cost than projected", due to an interest rate swap to convert floating interest rate to fixed interest rate, and the low interest rate environment. The loan's interest rate for the project is 3.3 percent, Gulf Energy told *Infrastructure Investor*.

The Japan Bank for International Cooperation will provide financing for approximately \$208 million, Mitsui said.

In a separate press release, ADB said it will contribute \$50 million through a regular loan and will mobilise an additional \$45 million through its Leading Asia's Private Infrastructure Fund.

ADB has also arranged a Term B loan of up to \$85 million, which will be funded by Singapore's Overseas-Chinese Banking Corporation and Germany's DZ Bank, confirmed Shuji Hashizume, a senior investment specialist in ADB's private sector operations department.

Construction of the plant will start in July 2020, and it is expected to start operating in 2023, Mitsui said, adding that a 25-year PPA has already been signed with the Electricity Generating Authority of Thailand.

A spokesman for Mitsui said the project would support the Eastern Economic Corridor (EEC) Development, a plan to develop the eastern part of the country into a major technological manufacturing hub.

"The economic growth in the EEC region with aggressive investments by foreign countries like Japan and China would be the major [driver] for energy consumption in Thailand," the spokesman said.

According to Reiji Fujita, president of Mitsui (Thailand), the project will also support Thailand's energy transition. "It is [...] in line with our strategy to grow natural gas business as the greener fossil fuel and bridge to renewable energy," he said.

This will be the fourth project Mitsui has developed with Gulf Energy in Thailand. Other assets include a 2,500MW gas-fired plant in the Chonburi Province, also part of the EEC, and a small-scale power plant, with a combined capacity of 6,470MW, Mitsui said.

Both companies have also partnered on a natural gas distribution network to industrial estates in the country. ■

The latest moves from Japanese investors

Meet the major Japanese LPs at

Infrastructure
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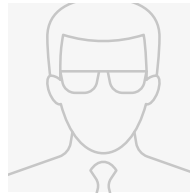
Japan Korea Week 2020

Panel: Meet the major Japanese LPs - preparing for the next wave of institutional capital

- » What is the current process by which LPs select their GPs? Has this changed in recent years?
- » What kind of GP do LPs think is competitive? Large cap vs Mid-Size
- » With expectations of a recession coming, how do LPs prepare for this within their investment strategy?
- » How do LPs monitor from an ESG perspective and how have they implemented their ESG policy?



Takako Koizumi
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The latest moves from Korean investors



HK Summit: 'Very difficult' to tell if GPs are skilled or lucky

Representatives from Hyundai Insurance and China Ping An Insurance said proof of a manager's skill will come during the next downturn.
By Daniel Kemp - 15 November 2019

Buoyant market conditions are making it challenging for LPs to truly assess how much value GPs are adding to investments, the Infrastructure Investor Hong Kong Summit has heard.

Jake Lee, head of infrastructure at Hyundai Marine & Fire Insurance, said: "A lot of GPs have a really good track record. The question I always ask GPs with a great track record, especially on the debt side is: is this because of your ability or because you're lucky?"

"It's really hard for us to differentiate lucky managers from good managers so we're trying to dig into managers' numbers. When the market goes south, we'll see the real value and skills that GPs have - in the current market environment it's very difficult to differentiate."

Lee added that it was "critical" to have local representation in the country where a manager is wanting to expand LP commitments, like South Korea.

Dennis Chan, managing director and head of infrastructure at China Ping An Insurance Overseas (Holdings) Limited, echoed this, saying that most GPs they encounter "do generally very well".

He said that one method they use to assess managers alongside looking at target returns and general track record is to examine if they have good "early-stage" investments.

"Some GPs made tower and small cell investments three to four years ago - initially returns were not good but now they are. That's a sign they're ahead of the sector. One can also look at not just historical records but current funds and what multiple they paid for assets," he said.

Lee added that a concern for Hyundai was the fact that the infrastructure asset class has only existed long enough to see one downturn, during the global financial crisis that began in 2008, with many newer funds and managers only operating in a growing economy.

"The industry doesn't have a 20- to 30-year history in terms of GPs. We don't see funds numbered 7, 8 or 10 as we see in the private equity industry. We don't really know how infrastructure GPs will behave in a downturn scenario like the GFC in 2008. There will be another GFC at some point - how infrastructure GPs behave in a financial crisis, or just a downturn, will be really interesting," he said.

Nicole Connolly, founder and managing director of fund of funds Infrastructure Partners Investment Fund, commented that three of the Australian funds it invests in have track records going back 25 years - but said she expects returns to be compressed in future.

"Our expectation is that returns will be lower going forward because of asset values and purchase multiples being paid now. We're investing in open-ended funds that have been built up over 25 years, so our managers aren't highly acquisitive. They can step back and not buy assets if they think the market's a bit topsey," she said.

Lee added that it was "critical" to have local representation in the country where a manager is wanting to expand LP commitments, like South Korea.

"The GP-LP relationship is like a marriage - you commit to each other and then there's no way back. Once you establish a relationship, you have to keep it reliable. You'll know GPs better after you make investments [with them] - you'll see how they keep their promises." ■

The latest moves from Korean investors

Korea's CWMAA seeks an overseas infra debt fund

The South Korean public pension seeks to commit \$25 million to an overseas infrastructure debt fund.

By Chin Yuen - 12 November 2019

Institution: Construction Workers Mutual Aid Association

Headquarters: Seoul, South Korea

AUM: KRW3.8trn

Allocation to alternatives: 22.80%

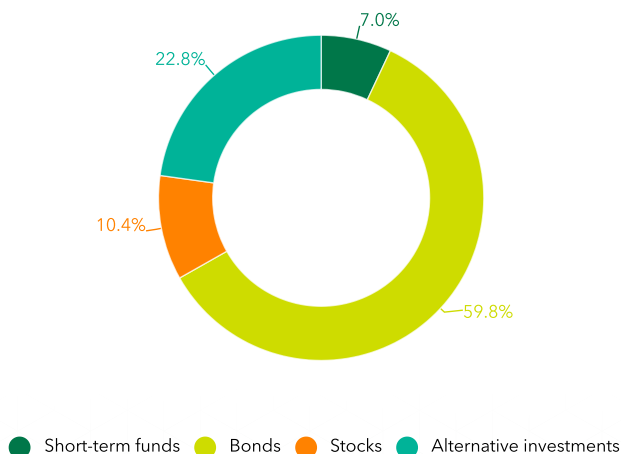
Bitesize: \$10-50m

Construction Workers Mutual Aid Association has issued an RFP for an overseas fund manager to pursue infrastructure debt opportunities.

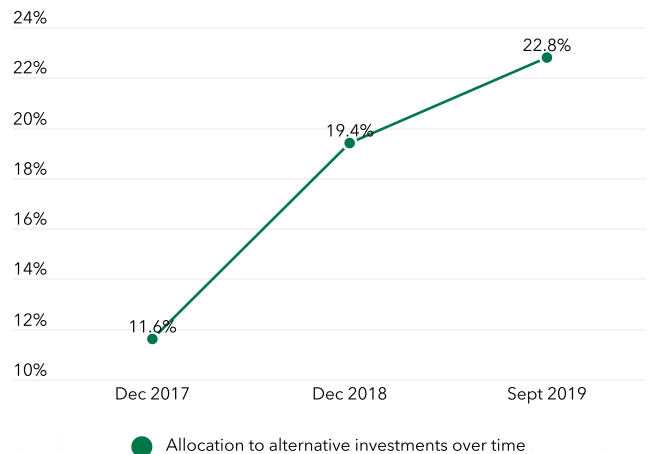
The selected manager will be entitled to a maximum \$25 million commitment for the senior and mezzanine infrastructure debt fund. The submission deadline is 29 November and the decision will be released in February 2020.

As illustrated in the charts below, the KRW3.8 trillion (\$3.29 billion; €2.97 million) pension fund has a current allocation of 22.8 percent to alternative investments. ■

Investment portfolio breakdown



Historic allocation to alternative investments



The latest moves from Korean investors

Meet the major LPs in Korea at

Infrastructure
Investor

Japan Korea Week 2020

Panel: Korean LPs current take on the market

- » How much of a concern is the amount of dry powder we have in the market to LPs?
- » How do Korean LPs evaluate and rate their infrastructure GP relationships so far?
- » How important are ESG factors when choosing a GP?



Jason Hyunjae Kim
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The latest moves from Korean investors

S Korean, N American investors launch OECD-focused infra platform

The partnership has secured \$100m from a Korean investment bank and will seek to raise an additional \$100m from North American investors.
By Eduard Fernandez - 10 October 2019

Diode Ventures, a wholly-owned subsidiary of EPC firm Black & Veatch, has partnered with Alma Global Infrastructure and Energy Innovation Partners to launch a new platform that will invest in renewables and clean energy projects primarily in OECD countries.

The platform, which initially plans on investing \$200 million, has already secured half of that amount from a Korean investment bank, Heejun Park, president and chief executive of Energy Innovation Partners, told *Infrastructure Investor*.

The additional \$100 million, he said, will be raised by AGI, a New York-based infrastructure investment firm, headed by Frederic Brasseur, a former vice-president of Axiom Infrastructure.

According to Park, the Korean investment bank is aiming to sell down its share of the assets acquired through the platform to domestic institutional investors. "Several Korean investors have asked to create an investment platform focused on the energy and infrastructure market," he said.

The platform's seed project is a nearly 50MW shovel-ready solar project that will power southern Japan under a 20-year feed-in-tariff scheme, the three firms said in a statement.

The vehicle will invest \$40 million of equity in the project, a source familiar with the matter said. According to the source, the investors agreed to invest in a greenfield project because the construction risks are being fully assumed by the project developer, who is also the seller, whom the source declined to name.

The source said two to three more projects will be added to the platform in the next three to four months, with a ticket size of between \$50 million and \$100 million.

Park said returns on investments are expected to be in the mid-teens.

According to the statement, the partnership aims to create a diversified portfolio of long-term contracted or rate-regulated assets, by investing in small, medium and large-scale infrastructure projects in OECD countries. While the initial \$200 million will support a pipeline of renewables projects, it is unclear whether future investments will be made in other infrastructure sub-sectors.

While Seoul-based Energy Innovation Partners focuses on the US power generation, shale gas and the energy midstream space, Alma Global Infrastructure and Diode Ventures target a broader range of sub-sectors. AGI specialises in establishing investment platforms in partnership with developers in core transportation, energy, water/waste management and social infrastructure assets, primarily in the US and OECD countries, according to its website.

Diode Ventures, a Kansas-based asset developer, focuses on clean energy technologies; specialised infrastructure, such as data centres; and "food infrastructure" (indoor agriculture and aquaculture). ■

Learn more from the Korean infra community at

**Infrastructure
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**Seoul Summit
2020**

Panel: Korean infrastructure professional's perspectives on the asset class

- » What are the key infrastructure trends and changes in capital flows viewed by Korean professionals?
- » Understanding the role of Korean asset managers in the market
- » Preferences for Inbound vs Outbound sectors – does the former remain a niche strategy play?

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Emerging renewable markets

Climate debt fund raises \$151m for clean energy in emerging markets

The fund will lend money to firms offering access to clean energy solutions for both households and business in emerging markets.

By John Bakie - 16 January 2020

Swiss impact manager responsAbility Investments has held a first close on a private debt fund focused on expanding energy access in emerging markets.

The responsAbility Access to Clean Power Fund has already raised \$151 million from a number of institutional investor partners. It has a hard cap of \$200 million, which it hopes to achieve later in 2020, sister publication *Private Debt Investor* reported.

The debt vehicle will address a lack of access to clean power globally with a particularly strong focus on sub-Saharan Africa and South and South-East Asia. It will target companies that provide solutions for households without access to electricity or businesses looking for cleaner, cheaper and more reliable energy. responsAbility claims it is the first investment fund of its type to actively address solar potential for the commercial and industrial sector.

It will target average financings of \$6 million with durations of three to five years for energy access companies and six to eight years for companies offering distributed generation to SMEs and commercial and industrial customers.

The fund is incorporated in Luxembourg with a fixed 10-year lifespan. Over its lifetime its portfolio companies are expected to provide clean power to more than 150 million people and add 2,000MW of clean energy generation capacity, reducing carbon dioxide emissions by six million tonnes.

Antoine Prédour, who oversees responsAbility's energy debt financing activities, said: "By partnering with entrepreneurs as a first commercial lender, we want to enable clean energy businesses to scale up their activities and attract more funding in the long run."

The fund is set up as a blended finance structure and is divided into four different risk tranches: junior, mezzanine, sub-senior and senior.

Partners on the project include AHL Venture Partners, Ashden Trust, Bank of America, Bohemian Impact Investments, Calvert Impact Capital, Clean Technology Fund, European Investment Bank, Facebook, Dutch development bank FMO, Good Energies Foundation, the government of Luxembourg, International Finance Corporation, Norfund, Austrian development bank OeEB, Shell Foundation, Snowball and the UK Department for International Development.

Emma Navarro, vice-president of the EIB, said its "investment in the fund is a clear demonstration of our commitment to sustainable energy access. By providing debt to companies supplying off-grid and distributed energy generation solutions to households and SMEs, the fund will fill an important financing gap in a sector that is essential to achieving both economic and social development". ■

Trending topics

Digital infrastructure

Segmentation becomes increasingly specialised

Segmentation within the infrastructure asset class didn't emerge in 2019 but it did take on new forms, one being specialist funds.

By Kalliope Gournitis - 27 December 2019

Energy transition and digitisation are two mega-trends participants at our recent European roundtable identified as creators of investment opportunities.

"These trends are stronger than the overall GDP direction of any given market," Simon Söder, a partner at Antin Infrastructure Partners said during the discussion. "We like the fact that energy transition and telecom investment are, relatively speaking, uncorrelated to GDP because they are not driven by everyday economic activity. They are driven instead by the need to upgrade infrastructure for the economy of today, but also for what will be required in 10 years' time."

Those statements apply not only to Europe but globally and it is this tremendous growth potential that has led many fund managers to launch specialist funds.

Within the past 12 months, Stonepeak Infrastructure Partners has reportedly launched its first renewables-dedicated fund setting a target of \$1.25 billion. Macquarie's Green Investment Group is also in the market pitching a \$1.5 billion vehicle dedicated to the sub-sector.

More recently and just as the year was drawing to a close, Mirova raised the largest European renewables fund, Eurofideme-4 at €857 million, while BlackRock Real Assets held a \$1 billion first close on the third vintage of its Global Renewable Power III fund.

The size of the opportunity and the ESG characteristics associated with renewables are certainly part of the reason the sector is attracting so much investor attention, but the growing number of renewables-only funds is also an indication of trending market segmentation.

As Northleaf Capital Partners' co-head of infrastructure Jamie Storrow recently told us, "there are numerous renewable power funds being marketed right now. A few years ago, that degree of focus was rare".

The same can be said about telecoms and digital infrastructure. As Storrow, pointed out, "five years ago, a communications infrastructure fund wouldn't have been a marketable idea".

But, in 2019, the industry saw a fund solely dedicated to the digital infrastructure sector close on \$4.05 billion. While Digital Colony Partners stands out for its size, it's not the only example. Luxembourg-based Cube Infrastructure Managers has already made three investments through its Connecting European Broadband Fund, which targets underserved areas in Europe; while in the US, San Francisco-based GI Partners is looking to raise \$1.25 billion for its debut digital infrastructure fund that will target data centres and fibre opportunities in North America and Europe.

Regardless how fund managers are choosing to specialise – whether by sector, geography, risk profile or transaction size – the key driver is compressed returns.

"Return segmentation is really what is driving [specialisation based on] geography and asset type," Ian Whitlock, a partner in Eight Advisory's infrastructure team, told Infrastructure Investor. "The thing that strikes me is the way that infrastructure funds, pension funds are looking at return segmentation," he noted, referring to trends prevalent in 2019 and those he expects to continue in 2020. ■

Dive deeper into digital infrastructure at

Infrastructure
Investor

Tokyo Summit
2020

Panel: Investing in digital infrastructure

- » What exactly is digital infrastructure?
- » How does the role Infratech play into digital infrastructure?
- » What are the similarities and differences between digital and core infrastructure?

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Trending topics



Big Tech is coming for Infra 3.0

Alphabet's entry into the asset class foreshadows a potential disruption that will force investors to choose between betting on tech or being disrupted themselves.

By Jordan Stutts - 5 November 2019

Around 2015, leading technology companies began rolling out digital personal assistants, and people's morning routines were never the same again.

"Hey, Google, what's the traffic like today?"

"Alexa, check train times from London Victoria to Brighton."

"Siri, give me directions home."

With a voice command, the tech community made one of its first marks on how we use infrastructure, by helping us to better plot our daily routes and reduce our commute times. Now, Big Tech wants to change the assets themselves.

In August, Alphabet, Google's parent company, announced the launch of Sidewalk Infrastructure Partners, an investment firm that aims to back technologies that "pioneer innovative infrastructure systems". SIP has attracted a marquee institutional partner: the C\$201.4 billion (\$153.8 billion; €138.3 billion) Ontario Teachers' Pension Plan, which has committed an undisclosed amount from its venture and growth equity-focused Teachers' Innovation Platform.

In a sense, SIP is a follow-on to Sidewalk Labs, an Alphabet

subsidiary launched in 2015 to identify, research and develop emerging infrastructure technologies. What the new investment arm plans to do – according to Brian Barlow, one of SIP's founders – is connect capital with technology-enabled infrastructure.

"Think about how infrastructure is financed and delivered today. The procurement process, by its very design, inhibits innovation," Barlow explains. "Alphabet has never owned or operated complex infrastructure systems, other than those supporting its own facilities. We knew we were going to have to find partnerships in capital markets to execute this strategy."

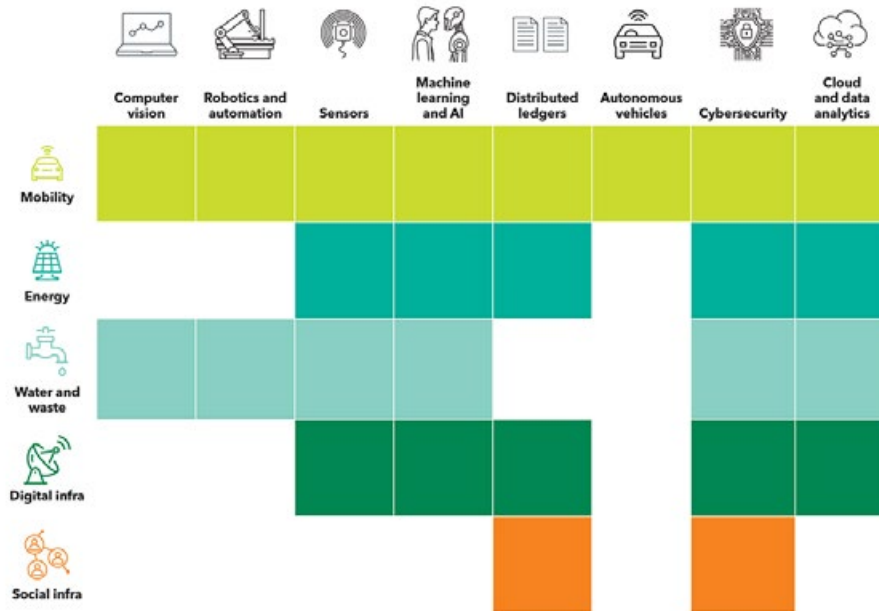
He says SIP is aiming to invest at least \$100 million at a time in companies and projects that are innovating "scalable" technologies in mobility, energy, water and waste. Barlow and Jonathan Winer, SIP's other co-founder, say it will be structured as a firm, not a fund.

"What SIP is designed to do is to take on a lot more risk that is otherwise excluded from more traditional procurement processes," says Barlow. "Innovations end up on the cutting-room floor because that's the first piece of risk that's taken out of a project."

Trending topics

Ripe for disruption

SIP outlines how traditional infra sectors can benefit from technology



Winer says that “well-priced technology risk” will weigh heavily on the investments SIP makes.

Olivia Steedman, senior managing director of the Teachers’ Innovation Platform, says: “OTPP has long pushed the frontiers of infrastructure investing, from becoming a direct investor in the early 2000s, to an investor in greenfield infrastructure a few years ago, and now tech-enabled infrastructure. SIP will help us navigate how technology can be used to leverage and improve the efficiency of traditional infrastructure and energy assets.”

However, it is noteworthy that SIP’s partnership is with OTPP’s Teachers’ Innovation Platform, rather than the pension’s infrastructure group. This shows that even a forward-looking investor like OTPP has yet to develop an appetite for technology risk in its C\$17.1 billion infrastructure portfolio.

Andrew Claerhout, a senior advisor at the Boston Consulting Group and a 13-year OTPP veteran, who spent the last four-and-a-half years at the pension leading its Infrastructure and Natural Resources Group, says investors in the asset class need to pay attention to technology trends and who the early movers are, lest they be left behind.

“Investors must decide whether to seize the opportunity technology enables or cede it to others and risk being disrupted,” Claerhout explains. “Incumbents should leverage their strengths, including their large customer base, their access to capital and their industry knowledge and relationships to embrace technology that improves their offering.”

Risk disruption or risk a bad bet on new technology – those are the options investors must grapple with as they think about how to

deploy capital. Meanwhile, Alphabet and other entrants to the infrastructure sector must figure out how to navigate thorny issues like stakeholder concerns about data and privacy.

No roadmap for the future

There’s no telling exactly how technology will change the infrastructure landscape. The best investors can do in the present is to think big on how to monetise the future.

Winer says the team at SIP, which he and Barlow have built to include both infrastructure and technology experts, has made a list of 20 assets and sectors that are at risk of disruption. Their brainstorming led to ideas such as using sensors to monitor traffic on tolled highways, machine learning to control the heating and cooling of power systems, and cybersecurity to protect wastewater management systems.

Winer admits there is “no map of how we get from where we are today” to tomorrow’s infrastructure. History has plenty of examples of technology that was initially viewed as a fad or trend but which later came to dominate an industry, a recent one being how ride-sharing firms have disrupted the taxi business.

“But what SIP has been created to do is partner with companies like Alphabet, which has access to new technologies, and with investors like OTPP, which has a large infrastructure portfolio and deep expertise, and start asking these questions on a regular basis,” Winer says.

Like many investors these days, airports have caught SIP’s attention. The key with these assets is to make them more efficient, and Barlow believes technology is the best way to bring that about.

Trending topics

"SIP is designed to take on a lot more risk that is otherwise excluded from more traditional procurement processes"

Brian Barlow

Sidewalk Infrastructure Partners

Where disruption is being created, he says, is in airport parking revenues. Instead of passengers driving to an airport and leaving cars in garages or renting cars on arrival, people are turning to ride-sharing services.

"That critical leg of the funding stool is under attack," Barlow says, before offering a solution: the monetisation of curbside pick-up and drop-off. He suggests using "cameras and computer-vision technology to charge ride-sharing companies for access to airports' entrances and exits". This would recoup one revenue stream that is currently being disrupted.

Another idea is to enhance the revenues that are already being generated. Barlow says shopping is a big driver of revenue at airports, and the biggest bottleneck keeping passengers from spending money at stores and restaurants is the security line. "The single most important determinant to how well that piece of the project does is how quickly people get through security," Barlow explains.

SIP's solution? Use cameras and sensors to automate when and where additional security queues should open to handle an influx of passengers.

Technology is making the world turn more quickly, and investing the same way as always will be what leaves certain investors behind. According to Biliana Pehlivanova, managing director for technology and innovation at Macquarie Infrastructure and Real Assets, the advantage will come to those that embrace new ways of doing things.

"Disruption is actually an evolution of technology," she says. "It creates a tremendous opportunity for optimisation, and it enables organisations to rethink their business processes – everything from improving how they interact with clients to how they monitor and maintain the health of an asset."

Once a great asset

Change is a constant, and infrastructure is no exception. But when contemplating what future market disruptions might look like, it is helpful to understand how the industry has already been shaken up.

The most obvious recent example is the rise of renewable energy. Over the last decade, renewables have upended power markets with distributed generation assets. They have also helped catapult environmental, sustainability and governance issues into the mainstream by turbo-charging the 'E' in investor's ESG mandates. The next step in renewables' disruptive journey is battery storage, which is starting to be introduced in energy grids around the world.

A social licence to innovate

There is little doubt that the infrastructure of tomorrow will be powered by big data. To implement these changes, the private sector must address concerns about privacy.

Another example, going back to the 1990s, is what Ross Israel, head of global infrastructure at Brisbane-based QIC, describes as the "containerisation of trade". He tells Infrastructure Investor that the adoption of standardised shipping containers, though not a result of technological innovation, forced the port industry to change its entire approach to logistics.

"Through different types of disruption, the mindset today is to think about technology as software and sensors," he says. "But some sectors of infrastructure have experienced different types of disruption."

Part of the challenge that comes with disruption is the way it can creep up and make assets irrelevant. Claerhout offers the example of Chicago Parking Meters, a deal structured a decade ago by a consortium led by investment bank Morgan Stanley, which bought the lease of 36,000 parking meters in the Windy City. Despite investors having nearly made their money back (thanks to an arguably favourable 75-year concession agreement), he argues that Chicago Parking Meters is now an asset with a business model primed for disruption.

"It was viewed as a core infrastructure asset 10 years ago, but there are question marks around it now because of the risk of disruption," Claerhout explains. "Will people still be parking on the street in the future or will they use a ride-sharing service or have their autonomous vehicle drop them off curbside and park somewhere else?"

How you structure the investment'

Technology is also forcing investors to consider the impact on returns.

Smart Infrastructure Managers was launched this year to target investments in technology-enabled assets. Its managing partner Rob Mah says there will essentially be two opportunity sets for investors.

The first will be investments in companies developing technologies that can be applied to infrastructure.

These opportunities, he says, will remain in the realm of venture capital or private equity: "You don't want technology risk that's never been used before. What you do want to do is take technology that's already existing and scale it."

The second set of opportunities will lie in investments that maintain the hallmarks of the asset class: steady, contracted returns.

"It really comes down to how you structure the opportunity," he says. "If you structure it with heavy support and underpinning from contracted revenue streams, you will probably attract infrastructure capital. If you invest in highly exposed revenue streams that are not underpinned by contracts, then you're likely going to attract mostly growth equity-type investors."

This sentiment is echoed by Claerhout: "I don't think investing in a start-up is what infrastructure capital is meant to be doing."

This is the fine line that firms like Smart Infrastructure Managers and SIP are trying to navigate. As Winer notes, SIP's success will be determined by its ability to find "well-priced technology risk".

He explains that the firm will seek investments at the project level or in companies and back technologies that have been proven at a smaller scale, such as on college campuses or in local municipalities: "That's our sweet spot. There has to be a demonstration project that

Trending topics

can actually get enough data [for us] to be able to underwrite [it].”

‘Disruption is coming’

Mah is convinced that the coming technology disruption provides an opportunity for investors. He says that, through Smart Infrastructure Managers, he has staked his business on it.

“Technology disruption is coming,” he stresses. “If I didn’t think there was a strong case for doing things like this, I would be sitting back doing my old infrastructure investing, slugging it out with everybody else.”

Slugging it out with everybody else is exactly what Claerhout advises investors not to do: “I encourage infrastructure investors and management teams to look at technology, not simply as a threat, but as an opportunity, and to use the fact that they are already players in the market to exploit the opportunities available to them.”

The opportunity for SIP, as a new firm, to disrupt the asset class will come with challenges. The biggest of these could be convincing investors that this is the right opportunity for them.

Winer says: “For institutional investors with larger infrastructure portfolios, they have to ask themselves: ‘Do I also need to have exposure to technologies that may be disruptive to those legacy portfolios?’

Barlow adds: “CIOs in particular are coming to the conclusion that there is some risk in their portfolio that they fundamentally don’t understand. They’re recognising that disruptions are happening within the asset class a lot quicker than expected, and it’s certainly happening within their holding period.” ■

Hey Google, what is Sidewalk Infrastructure Partners?



Sidewalk Infrastructure Partners, an Alphabet subsidiary backed by Ontario Teachers’ Pension Plan, is seeking to upend infrastructure with technological innovations.

Its co-founders, Brian Barlow and Jonathan Winer, say that in order to achieve this the firm is being staffed with experts from infrastructure, finance and the tech industry.

Barlow and Winer both have a range of experience as well.

The former’s track record goes back to his launching of Broadview Capital Partners, a venture capital fund that invests in the communications, networking and fibre industries. He also worked in the public, private and structured derivative market at Scion Capital. He moved into infrastructure in 2006, when he helped launch the private equity firm American Infrastructure Funds. His most recent role was director of infrastructure investments at Sidewalk Labs, an Alphabet subsidiary focused on developing urban innovation solutions.



Winer also worked at Sidewalk Labs as the company’s head of investments. In 2009, he helped launch Nereus, a private equity fund called that invests in alternative energy infrastructure in Asia. He was also a member of DE Shaw Group’s private equity team, where he assisted with growth equity investments and structured finance.

What’s next in 2020 and the decade ahead? Join us at Japan Korea Week to get ahead of the investment and fundraising curves

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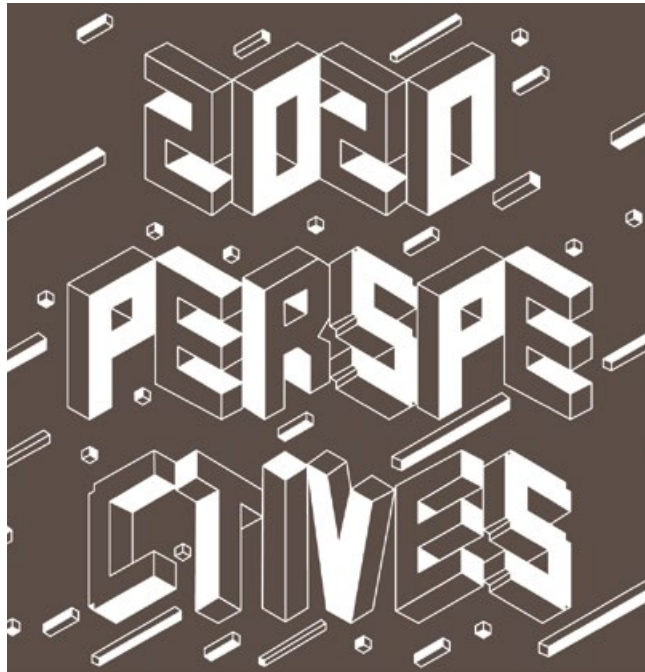
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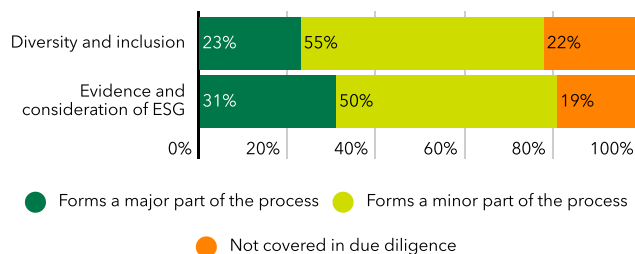


All you need to know about ESG: ESG and diversity not yet centre stage

Although both issues are increasingly industry talking points, they are a priority for only a few LPs, and lack of gender balance in GPs is rarely a deal-breaker, writes Amy Carroll.

By Amy Carroll - 3 February 2020

Environmental, social and governance issues and diversity are typically secondary factors in due diligence



Source: Infrastructure Investor

Only a third of investors in private markets say that analysis of a manager's environmental, social and governance credentials represents a major part of their due diligence process. Surprisingly, 19 percent do not include any examination of ESG practices at all.

Nevertheless, ESG is expected to be a growing consideration. "For European LPs investing in infrastructure, we think ESG will be a

significant factor in the due diligence process," says Darryl Murphy, head of infrastructure debt at Aviva Investors. He adds that there are nonetheless distinct regional differences in terms of approaches to ESG and its perceived importance.

Given the longevity of infrastructure investments and the role the assets play in the environment and society, LPs are increasingly aware that ESG can no longer be a box-ticking exercise. There is also a growing understanding that ESG considerations enhance performance. Viewing dealflow through an ESG lens has unlocked investment opportunities, most notably in sustainable energy generation. In addition, it is increasingly apparent that the number of potential buyers of assets with negative ESG features is steadily decreasing, while a strong ESG rating lowers the exit risk.

Diversity decisions

Has your institution ever refused an opportunity based on a lack of diversity and inclusion at the fund manager level?



Do you actively engage your fund managers to promote gender diversity and inclusion?



Source: Infrastructure Investor

However, analysing ESG compliance is not easy. Covering everything from pollution to workplace equality, it is more nuanced than financial due diligence, and vulnerabilities persist in the tools created for benchmarking ESG performance. This was made clear when Southern Water, which had been given a five-star rating by leading ESG benchmarker GRESB, was fined a record £126 million (\$164 million; €148 million) by regulator Ofwat for failing to prevent sewage spillages over seven years and manipulating figures to avoid penalties.

If ESG is still low on some investors' priority lists, diversity and inclusion receive even less attention. Fewer than a quarter of investors in private markets consider reviews of diversity and inclusion policies and practices to be a major part of their due diligence process. Some 22 percent do not undertake any reviews of diversity and inclusion when making fund commitments.

What was once an interesting talking point could ultimately become a fundraising dealbreaker.

"The overall view seems to be that infrastructure is no better or worse in this area, and indeed has some way to go," says Murphy. "This is an important element to improve upon, both at the manager level

Trending topics

and through increased demands from LPs.”

Despite a lack of overall focus on diversity policies, 14 percent of LPs say they previously declined an investment opportunity because of a lack of diversity at the fund management level. Murphy warns: “Managers should view this finding as a wake-up call, both that diversity and inclusion is an area of increasing importance to investors and also that this is an area which needs to be focused on and improved.”

Research by HEC Partners and placement agent MVision in the buyout space in 2019 concluded that investment committees with at least one female member performed better, with a lower risk of failure,

than all-male teams. Chicago Teachers’ Pension Fund’s initial decision in 2018 to pass on Blackstone Group and Brookfield Asset Management is understood to have been, in part, based on a lack of workplace diversity at the GPs, though it has since committed to Brookfield.

Given the spotlight that has been cast on gender equality, in particular, over the past 12 months, it seems probable that diversity and inclusion will follow in ESG’s footsteps.

What was once an interesting talking point could ultimately become a fundraising dealbreaker. ■

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Infrastructure Investor 50

Top 10 Fund managers The big get bigger

The top 10 II 50 managers account for 55% of the ranking, showing concentration is alive and well across the asset class

Top 10 fund managers vs the rest

Rest - \$224.00bn	MIRA - \$60.77bn	Brookfield- \$38.69bn	EQT Partners - \$17.85bn	IFM Investors- \$16.01bn
	GIP - \$57.42bn	KKR - \$20.19bn	Stonepeak- \$15.03bn	BlackRock - \$13.90bn
		AMP Capital - \$18.25bn	Blackstone- \$14.00bn	

\$496bn

Amount raised by the
50 largest infrastructure
managers over the past
five years

\$272bn

Amount raised by the
10 largest infrastructure
managers over the past
five years

\$195bn

Amount raised
by the five largest
infrastructure managers
over the past five years

\$2.45bn

Minimum needed to get
into the II 50 in 2019

Meet II50 leaders and LPs such as: (★ II50 attendees)

- » ABL Life Insurance
- » Advantest Corporate Pension Fund
- » ★ AMP Capital
- » ★ Antin Infrastructure Partners
- » Aozora Bank
- » ★ Argo Infrastructure Partners
- » AXA Life Insurance
- » Bank of Yokohama
- » ★ BlackRock
- » ★ Brookfield Asset Management
- » ★ Capital Dynamics
- » DBJ Asset Management
- » DENSO Pension Fund
- » DGB Life Insurance
- » ★ EQT Partners
- » ★ Equitix
- » Farmers' Pension Fund
- » ★ Goldman Sachs
- » ★ Hermes Infrastructure
- » Hyundai Insurance
- » Hyundai Marine & Fire Insurance
- » Idemitsu Pension Fund
- » ★ InfraRed Capital Partners
- » ★ InstarAGF Asset Management
- » Japan Post Bank
- » Japan Post Insurance
- » KDB Life Insurance
- » ★ KDB Infrastructure
- » Korea Federation of Community Credit Cooperatives
- » Kyowon Invest
- » ★ Macquarie Group
- » Manulife
- » Marubeni Corporation
- » MG Korean Federation of Community Credit Cooperatives
- » National Federation of Mutual Aid Associations for Municipal Personnel
- » National Kyosai Federation of Japan Agricultural Cooperatives (ZENKYOREN)
- » Nomura Funds Research & Technologies
- » Orix Life Insurance
- » Osaka Shoko Shinkin Bank
- » ★ Partners Group
- » Pension Fund Association
- » Pension Fund Association for Local Government Officials
- » ★ QIC
- » Seoul Guarantee Insurance
- » Shimizu Corporation
- » Shinkin Central Bank
- » Sampo Japan Nipponkoa Insurance
- » Sumitomo Life Insurance
- » Sumitomo Mitsui Trust Bank
- » The Dai-ichi Life Insurance
- » The Gibraltar Life Insurance
- » The K Non-Life Insurance
- » Tokio Marine Asset Management
- » Tokyo Star Bank
- » Tong Yang Life Insurance
- » ★ Vauban Infrastructure
- » And many more LPs...

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