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IJGlobal

Project Finance & Infrastructure Journal

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Çanakkale Bridge in Turkey

NORTH AMERICA
Gusher of investment in the US

ASIA PACIFIC
Tackling congestion in Sydney

MIDDLE EAST & AFRICA
Thermal solar in Dubai

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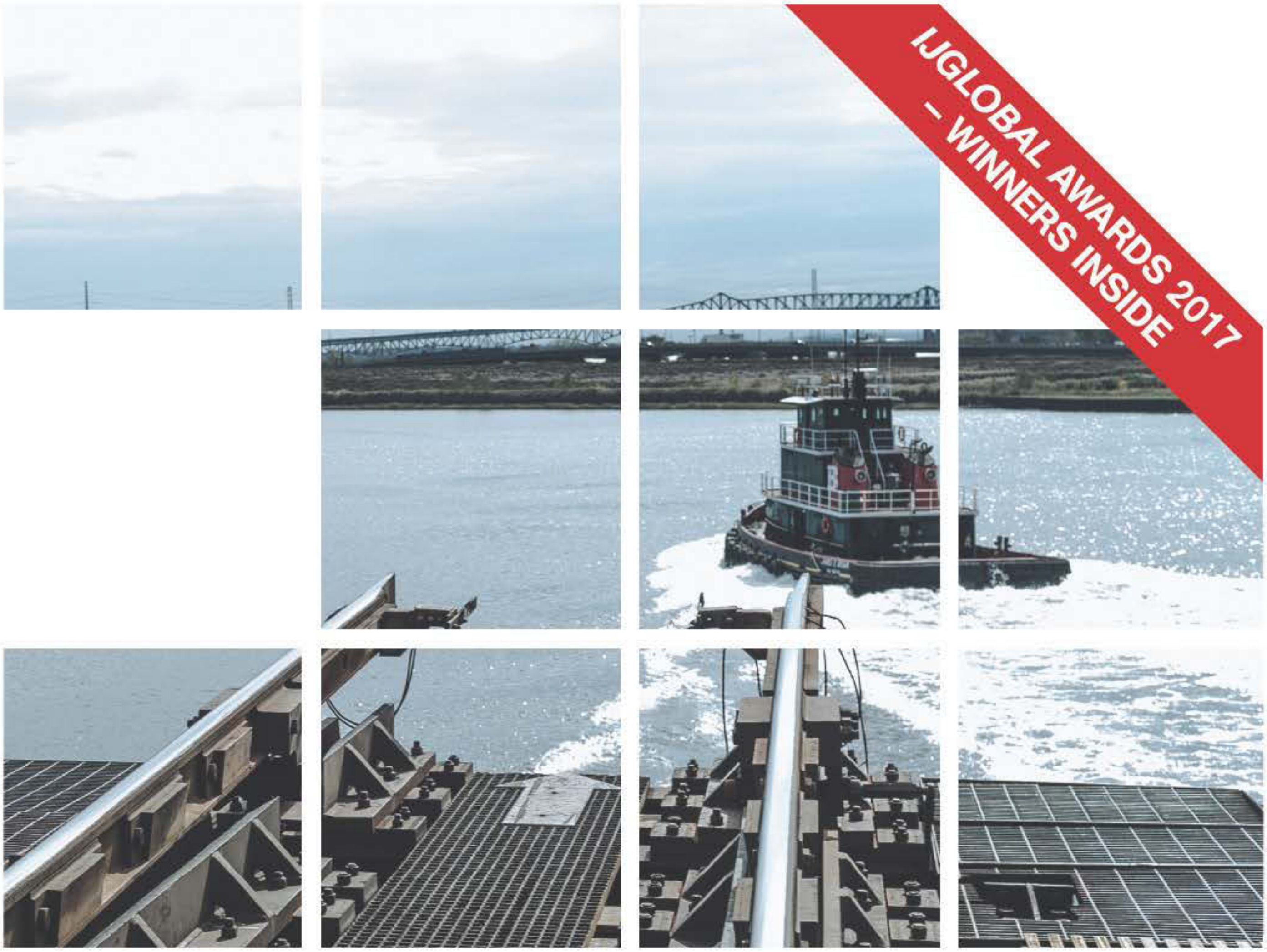

IJGLOBAL AWARDS 2017 – WINNERS INSIDE

End of the line?

The Gateway Program should but may not happen

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Hotline for details of all Euromoney publications

The mood in the US market contrasts sharply with the malaise that has infected Europe in recent times.

Optimism in New York

Suddenly breaking through a pervasive blanket of dark clouds, a ray of sunlight. The Korean War, which has officially dragged on in fragile stalemate for 65 years, is potentially at an end following a meeting between the leaders of North Korea and South Korea shortly before *IJGlobal* went to press.

To follow global political news coverage in recent years has felt like an act of masochism. No doubt this sense of the world falling apart is amplified by the 24-hour news cycle, but that doesn't make the experience any less bruising. To have some positive news to read on international relations is a welcome respite from what has seemed a constant barrage of negativity.

From London it has felt like the infrastructure sector, too, has been in need of some good news of late. Of course, finance professionals in Europe have been keeping busy selling, buying and refinancing any assets they can, and the offshore wind sector is still delivering a trickle of big-ticket greenfield deals. But the phrase "too much capital, not enough projects" has become so well-worn as to be transparently thin.

As detailed in various recent *IJGlobal* editorials, the outlook seems particularly bleak in the UK at the moment. Never mind Brexit, there is virtually no pipeline of major new projects and politicians of all stripes seem opposed to anything that even resembles a PPP.

Which makes the view from the other side of the Atlantic all the more reinvigorating. Reality really is perspective, and a change of scenery can make the world of difference.

Planes, train and automobiles

Spending time in New York reveals a North American market bursting with opportunities and professionals keen to innovate.

You may think you know that the Canadian market is busy, but if I asked you to guess how many greenfield projects are being procured, you would definitely underestimate the number. By my calculation Infrastructure Ontario alone has issued RFQs or RFPs for 15 transport or social infra projects since the start of the year, and several others in the province have seen a preferred bidder picked or have reached financial close.

US infrastructure remains patchy but there are some real grounds for optimism. And not all of that positivity is to do with President Trump's proposed infrastructure plan. If the world's most famous Twitter user can reduce red-tape for major projects that will be widely welcomed, but procurement has always been and will remain a concern of states and cities, not the federal government.

Instead PF practitioners talk up, for instance, innovative financing structures for airport terminals, with airlines rather than assets operators raising debt for upgrades. And there are lots of potential deals in social infrastructure. A transaction like the Ohio State Universities utility lease financing, which was a winner at the recent *IJGlobal* awards, could act as a template for a raft of similar projects.

Renewable energy is gaining momentum, as it is in other regions but the US is leading the way in battery storage technology. Meanwhile, New York State has unveiled plans for a programme of major offshore wind developments.

IJGlobal data for Q1 2018 shows more investment (by value) in North America than any other region. And *IJInvestor* data shows the capital raised by infrastructure funds is increasingly targeting this region too. As well as established institutional investors, new money from Japan and South Korea is coming in.

No one is getting ahead of themselves, however, and many preach caution. US projects in particularly are notoriously slow moving, and even vital ones can run into political troubles (see our cover feature in this edition).

But what really seems different when comparing New York to London is the attitude. It is not questioned that more private investment should be put into infrastructure, just how it should be done. When asked most New Yorkers claim to be completely ignorant that across the pond PPP has become such a dirty word.

Some will always accuse the US of being insular but the same could be said of the London bubble. A colleague likes to point out to those who sneer at Americans unable to accurately locate foreign countries, how they themselves would struggle to point to Oklahoma City on a map.

Instead, I think the reason that those in New York don't recognise the negativity permeating London is that it is illogical. There is so much capital looking to invest in infrastructure, why would you not encourage its deployment? ■

Jon Whiteaker
Editor

Cheniere Corpus Christi Holdings, LLC

USD 1.5 billion

Senior Secured Notes due 2027

Joint Bookrunner

May 2017, USA

Hickory Run Energy, LLC

USD 530 million

Financing a 1,000 MW gas-fire power plant in Pennsylvania

Coordinating Lead Arranger, Swap Coordination Bank, Collateral Agent, Depositary Bank

August 2017, USA

Cubico Alten Aguascalientes Uno SAPI de CV (Solem 1), and Cubico Alten Aguascalientes Dos SAPI de CV (Solem 2)

USD 235 million term loan

MEX 1.035 billion VAT facility

Financing two solar projects totaling 290 MW

Coordinating Lead Arranger, VAT Lender, Hedge Provider, Offshore Collateral Agent, and Administrative Agent

August 2017, Mexico

AES Southland Energy, LLC

USD 2.267 billion

Construction and term financing of the AES Southland Repowering Project

Coordinating Lead Arranger, Joint Lead Placement Agent, Bookrunner, LC Issuing Bank, Administrative Agent, and Intercreditor Agent

June 2017, USA

Aela Generación S.A.

USD 413.5 million term loan

USD 21.3 million DSR LC facility

Financing of three wind assets in Chile

Coordinating Lead Arranger, Mandated Lead Arranger, Administrative Agent, Offshore Depositary and Collateral Agent, Issuing Bank

August 2017, Chile

EdgeConneX Chicago Holdings LLC

USD 224 million

Joint Coordinating Lead Arranger, Bookrunner, Collateral Agent, and Swap Coordinator

December 2016, USA

ITR Concession Company LLC

USD 850 million

Senior Secured Notes due 2024, 2027, 2029, and 2032

Joint Lead Bookrunner, Placement Agent

September 2017, USA

CSOLAR IV West, LLC

USD 400.9 million

Senior Secured Notes due 2041

Joint Lead Bookrunner

August 2017, USA

Henvey Inlet Wind LP

CAD 1,025 million

Construction and term debt financing for a 300 MW wind farm and 104km transmission line in Ontario

Mandated Lead Arranger, Administrative Agent, Collateral Agent

December 2017, Canada

Briefings

FUNDS

Korea Post seeks manager for $500m mandate

South Korea's national postal service, Korea Post (KP), is seeking an offshore infrastructure fund to invest up to $500 million.

The investor is looking for a fund with a global mandate, with a focus on developed countries like Europe, North America and Australia.

KP is seeking an equity fund investing in core infrastructure with exposure to the North American energy sector capped at 20% of the fund's capital, which should not be higher than $1 billion at final close, the RFP said.

KP also said the fund should either be a global multi-strategy fund or have portfolio type structure comprised of different regional/strategy fund. The fund can be either open or closed-ended.

LGIM launches first listed UK infra fund

Legal & General Investment Management (LGIM) announced the launch of the Legal & General Global Infrastructure Index Fund in early April.

The fund is a passive vehicle which aims to provide an opportunity to invest in global listed infrastructure in a cost effective and liquid index solution. It seeks to offer both income and capital growth to investors by tracking the performance of the FTSE Global Core Infrastructure Index.

The fund comprises over 200 index constituent holdings from over 30 countries, providing a broad exposure to listed companies that own, operate, manage or maintain essential infrastructure across a range of sectors – including utilities, industrials, and oil and gas.

Multi-asset fund manager Justin Onuekwusi and head of retail, EMEA Honor Solomon work on this vehicle.

First close emerges on Oaktree transport infra fund

Oaktree Capital Management has raised $282 million for its Oaktree Transportation Infrastructure Fund. The fund emerged from the repositioning in May 2017 of the Oaktree Infrastructure Fund I, the infrastructure-focused vehicle the manager launched following the acquisition of Highstar Capital in 2014.

The original fund had raised $409 million by August 2016, which was the amount in committed capital, into the fund as of 31 March 2017, *IJGlobal* has confirmed.

When they announced the repositioning, the partners said that they would not establish any fundraising goals per fund. However, the new strategy was rumoured to target $2 billion in total commitments for the transport-focused fund and $1 billion for the energy-focused one.

Details emerge on AXA IM's infra equity strategy

Established in late 2016, AXA Investment Managers – Real Assets (AXA IM)'s infrastructure equity strategy has some €1.6 billion ($1.96 billion) of dry powder to deploy across transport, energy and digital infrastructure across Europe.

The infrastructure equity team, based in London and Paris and led by former UBS AM head of infrastructure Mark Gilligan, is looking to grow from its current six members to up to 20 people over the next two years. This includes the four members expected to join the team in 2018.

At present, the team exclusively invests capital on behalf of AXA's European clients. The strategy was kick-started with €2 billion, and to date the manager has deployed around €400 million across two deals: 42% interest in the the A63 motorway in France (roughly €160 million); and a 15% interest in the InterCity Express Programme Phase 1 (roughly €230 million)

Two more deals are expected to sign by the end of summer this year.

First institutional investor for Investec's Africa fund

Investec Asset Management has raised $385 million in debt financing for its Emerging Africa Infrastructure Fund (EAIF), with Allianz Group becoming the strategy's first commercial institutional investor by providing a loan of roughly $120 million.

Allianz Global Investors arranged the financing which comprised senior debt tranches of €75 million ($92 million) and $25 million, both over 12 years.

The new funds will be used over the next five years to support EAIF's core strategy of mobilising private sector capital for investment in infrastructure projects, mainly in fragile states, Investec AM said.

The lending group on this latest round of fundraising consists of existing lenders, including Allianz, FMO, KfW, Standard Chartered Bank, and the AfDB.

3i closes on European Operational Project Fund

UK-based manager 3i reached a €456 million ($562.5 million) final close of the 3i European Operational Projects Fund (3i EOPF) in April, exceeding its €400 million target.

The fund attracted investments from European and Asian investors, including a €180 million from Hyundai Investments and a €40 million commitment from 3i Group.

3i EOPF is an unlisted, closed-ended vehicle with a 10-year life and the option to extend.

The fund invests in operational projects across Europe, with a focus on France, the Benelux, Germany, Italy and Iberia.

3i EOPF has already invested and committed to invest around €85 million in assets across Europe. The fund was seeded with a portfolio of 11 operational social infrastructure assets in France and Italy. ■

More funds news at ijglobal.com

Briefings

M&A

OMERS Infrastructure to sell 12 airport stakes to Vinci

Canadian pension fund OMERS Infrastructure has agreed to sell its interest in Airports Worldwide (AWW) to Vinci Airports.

AWW is a portfolio of airport assets and management contracts across the US, Costa Rica, Northern Ireland and Sweden.

OMERS first invested in AWW in 2009. The AWW portfolio consists of operations at 12 airports.

The transaction boosts Vinci Airports' global network to 45 airports in 11 countries across three continents. It also marks Vinci Airports' first move into the US market.

Vinci Airports is an airport concession holder and operator with 12 airports in France and 10 in Portugal, as well as the Nikola-Tesla airport in Belgrade, Serbia.

AMP Capital takes Ardian's stake in Luton Airport

AMP Capital has acquired Ardian's 49% stake in London Luton Airport. AENA will hold on to its 51% majority stake following the sale.

AMP made the acquisition through 100% equity via its Global Infrastructure Equity strategy, although the identity of the vehicle remains undisclosed.

Ardian's exit multiple is 17x EBITDA, compared to the 10.5x EBIDTA acquisition cost in 2013. Luton London Airport is operated under a concession agreement with Luton Borough Council.

Bidders for the airport included AMP Capital and Infracapital, with the shortlist for indicative bids including several other large infrastructure players. The sale kicked off in full in early 2018.

Final bidders prepare for Macquarie's Techem

Final bids for German sub-metering company Techem are due in the first week of June 2018. The sales process entered the second phase in mid-April following the submission of first bids on 5 April.

The final bidders are expected to be: a consortium comprising CVC, CPPIB and GIC; a consortium comprising OTPP and CDPQ; and Partners Group. Silver Lake Partners may also submit a final bid.

Partners Group could yet join a rival consortium. GIC was originally in a consortium with CDPQ and OTPP before joining CVC and CPPIB.

Brookfield, Carlyle and Goldman Sachs, who were rumoured to be interested, are no longer taking part in the process.

MIRA completed a €1.75 billion ($2.12 billion) refinancing of Techem in 2017 in preparation for the sale having bought the business in 2007 for €1.5 billion. Techem is held in Macquarie's European Infrastructure Fund 2 (MEIF2), managed by MIRA.

Korean pension fund invests in UK solar portfolio

A Korean institutional investor has deployed capital into a 16MW portfolio of four UK solar farms, which Foresight sold to Korean asset manager KDB Infrastructure Investments Asset Management Company (KIAMCO) in late 2017.

Construction Workers Mutual Aid Association (CWMA) has invested in the KIAMCO managed fund KIAMCO UK Solar Fund, which was launched to buy the four solar plants.

Korea Investment & Securities Co (KIS) had been the only investor in the KIAMCO UK Solar Fund but is understood to have sold down the majority of its ticket to CWMA. It is suggested that CWMA has invested KRW33 billion ($30.8 million) into the solar fund, while KIS retained KRW5 billion.

UK-based fund manager Foresight Group sold the four UK solar assets for an undisclosed amount to KIAMCO in November 2017.

KKR to sell UK water utility stake to Arjun Infrastructure

US fund manager KKR has agreed a deal to sell its 75% controlling stake in water-only utility South Staffs Water to pension funds and institutional investors advised by UK-based Arjun Infrastructure Partners. Mitsubishi Corporation is co-shareholder in the utility with the remaining 25%.

South Staffs Water is a regulated water supplier for around 1.6 million customers in South Staffordshire and Cambridge. The utility owns a non-regulated business providing contracted specialist services to the UK water sector, through SSI Services and Echo Managed Services.

KKR bought the utility from Alinda Capital Partners in 2013, and then in March 2016 Mitsubishi Corporation bought a 25% equity stake.

Shareholders back Globalvia with €1bn injection

Pension fund shareholders OPTrust, PGGM and Universities Superannuation Scheme (USS) have invested €1 billion ($1.22 billion) of fresh capital in Madrid-based toll roads and rail operator Globalvia.

Globalvia has said that it will use the new capital "to continue growing by acquiring road and rail projects".

The company manages over 1,600km of toll roads and 90km of railways through 27 concessions, which combined serve over 250 million users every year. The assets are spread across eight countries in Europe and the Americas.

OPTrust, PGGM and USS took ownership of Globalvia in 2015, having previously been its creditors as providers of a €750 million convertible loan. The pension funds agreed to pay up €420 million to purchase the company from FCC and Bankia.

More M&A news at ijglobal.com

Briefings

CAPITAL MARKETS

Largest LNG-to-power in Brazil reaches close

The largest LNG-to-power plant in Brazil, Porto de Sergipe I, reached financial close in April.

Developer Centrais Elétricas de Sergipe (Celse) closed a R5 billion ($1.47 billion) financing with the majority of debt denominated in local currency (reais), with only $88 million in foreign currency.

The project company is a joint venture between Ebrasil and Golar Power (a JV between Norway's Golar LNG and US investment fund Stonepeak Infrastructure Partners). The sponsors will invest $400 million in equity, have issued R3.2 billion in project financing bonds arranged by Goldman Sachs, and will also benefit from direct loans from multilaterals the IFC ($200 million) and IDB Invest ($288 million).

Goldman Sachs Brasil was lead coordinator of the project bonds while GE Energy Financial Services' Global Capital Advisory operated in an informal capacity to assist with structuring the notes.

The export credit agency Swiss Export Risk Insurance (SERV) has insured the bonds which were senior secured notes issued in local currency and mature in 2032. Most subscribers are located in the US.

Swiss Insured Brazil Power Finance – a multi-use Luxembourg special purpose vehicle – will purchase the debentures and will issue notes in an amount equal to 95% of the debentures' amount and 100% covered by SERV-insured debentures.

The project entails construction of a LNG terminal, a 6.5km pipeline, a 1,516MW CCGT power plant, and a 33km electricity transmission line.

Renewable Japan issues solar project bond

Renewable Japan has issued a ¥6.9 billion ($64 million) 22-year project bond to finance its 16.5MW solar power plant in Toba, in Japan's Mie prefecture. Barclays is the underwriter.

This is Renewable Japan's second project bond since the ¥4.7 billion 23-year Nantan bond issued in August 2017. Barclays was underwriter on that issuance too.

Barclays had told *IJGlobal* in September 2017 that it was in talks to arrange "two or three more private placement bonds over the next year."

The Japanese solar developer has 445MW of renewable assets in operation.

Star Energy prices green bond for Indonesian geothermal

Indonesian energy company Star Energy Geothermal has priced a $580 million green bond with a tenor of 15 years.

The issuer is Star Energy Geothermal (Wayang Windu) Ltd, which is owned by Star Energy Geothermal.

The coupon is 6.75%. The fixed-rate, amortising bonds mature on 24 April 2033, and have an 8-year non-call period. Settlement was pending, due on 24 April 2018. The bonds are rated Ba3 by Moody's and BB- by Fitch

Bond arrangers, which ran a global bookbuild including the US, UK and Singapore, are: Barclays Capital; DBS Bank; Deutsche Bank Securities; Maybank Kim Eng Securities

Star Energy Geothermal (Wayang Windu) is owned by Star Energy Group Holdings (60%), EGCO Group (20%), and Mitsubishi Corporation (20%)

Star Energy Geothermal (Wayang Windu) has issued bonds previously, in a $350 million issuance priced at 6.125% in 2013, maturing 2020.

Star Energy Group's geothermal assets comprise the 227MW Wayang Windu geothermal power plant and geothermal field, in West Java, the Salak geothermal field and the Darajat geothermal field.

Aussie IPO for Wirsol solar portfolio

The Australian subsidiary of Germany-based renewables developer Wircon – Wirsol Energy – is to launch a A$500 million ($390 million) IPO for its solar portfolio.

The portfolio will sit in a newly-created company, Bright Acre Energy, and it is understood that UBS has been appointed to run the process.

Bright Acre Energy will comprise five solar projects in Victoria and Queensland with a combined output of 400MW, all of which will be operational by the end of 2018. It is understood to have a pipeline of 700MW and plans to deploy 1GW by 2020.

Among the assets is the 60MW Gannawarra Solar Farm in Victoria, which recently went online. The project will be integrated with the Gannawarra Energy Storage System which will rely on the Tesla Powerpack technology. Once the storage element is operational, Gannawarra will be one of the largest integrated solar and storage projects in the world.

Summit Power shelves IPO

Bangladeshi independent power producer Summit Power has shelved its planned $260 million initial public offering (IPO) in Singapore.

"In light of recent market volatility, the company has decided not to proceed on the current IPO timeline," the company said in a statement to investors.

The Asian Development Bank was supposed to be the cornerstone investor in the IPO and had committed to a $57.5 million investment.

The joint global coordinators for the IPO were: Citigroup; DBS; and UBS.

Summit Power operates 15 power plants in Bangladesh with a combined capacity of 1.2GW. ■

More capital markets news at ijglobal.com

Briefings

POLICY & REGULATION

China and Indonesia sign Belt & Road pacts

China and Indonesia have signed five joint venture cooperation contracts worth $23.3 billion. The contracts are part of China's Belt & Road economic initiative.

The contracts, in order of size, are for the Kayan River hydropower plant in North Kalimantan ($17.8 billion), another hydropower plant also in North Kalimantan ($2 billion), a power plant in Bali ($1.6 billion), a steel smelter ($1.2 billion), and an investment into the dimethyl ethercoal-to-gas industry ($700 million).

The identities of the companies involved were not disclosed by the Indonesian government.

"We want to see continued cooperation not only between the governments but also investors of the two countries," Coordinating Minister for Maritime Affairs General Luhut Binsar Pandjaitan said.

President Xi Jinping unveiled the Silk Road Economic Belt and 21st Century Maritime Silk Road plan in 2013. The $4 trillion initiative was later rebranded to One Belt, One Road – and since then, to simply Belt & Road.

Kenya favours dutch auctions for renewables

Kenya looks set to take decisive moves to scrap its feed-in tariff – or at least discontinue it – in favour of a tender system.

The Kenyan ministry of energy has put Isaac Kiva in charge of the renewable energy agenda and it is understood that it has already drafted a bill to ensure this change goes through.

The government is looking to move away from the old model which, over the last 10 years, has seen developers identify sites and apply for licenses at pre-set strike prices.

Tenders will see the launch of Dutch auctions with the lowest price receiving a PPA.

HSBC buckles under pressure to quit tar sands

Another lending institution has joined the exodus from project financing the "dirtiest" projects as the international banking sector continues to clean up its act… by popular demand.

HSBC has confirmed that it will no longer project finance "new tar sands projects including the construction of any tar sands pipelines", while also committing to reduce its overall exposure to the sector over time.

In 2017, there were similar announcements from BNP Paribas, Natixis, AXA, ING, and AP7 – Sweden's largest pension fund.

Greenpeace is now putting pressure on Barclays – the only other major UK bank lending to North American tar sand pipelines – for it to follow its peers.

HSBC has also ruled out funding new coal-fired power stations with the exception of three countries – Bangladesh, Indonesia and Vietnam – where funding may continue until 2023.

Saudi Arabia announces new privatisation programme

Saudi Arabia has announced a new privatisation plan that will seek to raise some $10 billion by 2020 through the sale of state assets.

The National Centre for Privatisation's (NCP) Privatization Programme will see sales of SR35 billion ($9.3 billion) to SR40 billion of assets including a desalination plant, football clubs, and four flour mills, according to the document.

The programme will also target some SR25 billion to SR33 billion of net savings to the government's operational and capital expenditures as a result of privatising 14 new PPP contracts worth between SR24 billion and SR28 billion.

Morocco launches new solar programme

Morocco has announced plans to procure a second 800MW phase of its hybrid CSP-PV Noor Midelt programme.

Bids for the first phase – Noor Midelt CSP-PV – were received in January 2018 and it is slated for completion by 2020.

Initial plans for Noor PV II will be announced in the coming months and it will deliver solar parks across Morocco that will be financed through domestic and international bonds. This type of bond was used successfully on Noor PV I.

The second project is likely to attract similar bidders as the first, with considerable funding support expected from the African Development Bank.

The government's Moroccan Solar Plan – one of the world's largest solar energy programmes – has a target of 2GW of solar capacity by 2020, and an estimated cost of $9 billion.

Vietnam cancels toll road PPP

Vietnam's Prime Minister Nguyen Xuan Phuc has cancelled what was intended to be the country's first toll road PPP.

The $758 million Dau Giay-Phan Thiet Expressway, backed by the World Bank, has been in the works for a decade but has now been scrapped after the government decided not to offer guarantees on international loans.

The government's disinclination to offer guarantees may also sink another toll road PPP, the Tan Van-Nhon Trach section of the Ho Chi Minh City Ring Road 3. Korea's Kexim is preparing documentation for the tender, but potential investors have again balked at the absence of government guarantees.

More policy & regulation news at ijglobal.com

Briefings

PEOPLE

Banks

MUFG Bank has promoted Darryl D'Souza to head of financial sponsors, structured finance within its investment banking division for EMEA. In his new role, D'Souza will be responsible for engaging with the bank's financial institution clients – primarily asset managers, sovereign wealth funds, pension funds and insurance companies – where they are seeking to act as sponsors on structured finance transactions across all sectors. D'Souza joined MUFG Bank in 2014 and previously held a senior role in the infrastructure finance team.

Isaac Deutsch has been promoted to the role of deputy head of the Americas at SMBC in a shake-up of the bank's structured finance team for the region. Deutsch has been a managing director and head of the bank's specialised finance team for the Americas, as well as chairman for Brazil. Deutsch joined SMBC in 2008 having spent a decade at WestLB. Carl Adams – the current head of Latin America project finance at SMBC – will step into Deutsch's former shoes as Americas head for specialised finance. Adams joined the Japanese lender in 2013, having previously worked at Espirito Santo and for nine years before that at WestLB.

Pierre Nicoli has become Spanish bank Santander's global head of infrastructure M&A, in a newly-created role based in Madrid. He will report to global head of M&A Eduardo Borges. Nicoli joined in April from real estate investor and consultancy CBRE, where he was the firm's head of energy and infrastructure in London. Prior to CBRE, he was head of energy and infrastructure at BNP Paribas in London for almost eight years and has also worked for ING and equity investor and toll road operator Egis.

Sponsors

John Needham has started at UK-based John Laing as group head of legal. Previously, Needham was general counsel at Serco UK & Europe in the local and regional government division, where he spent the last three years. Before that, he was director and general counsel at Balfour Beatty Investments, where he worked for over 12 years. Needham has also worked as a corporate finance lawyer at Hogan Lovells, and corporate project finance manager for Dresdner Kleinwort Benson.

Amey has made a number of new hires, as it takes over facilities management contracts from insolvent construction heavyweight Carillion. Liam Mullen and Shin-Young Kim have both joined as contractors, the former from RSM UK where he was manager of project finance, modelling and valuations, while the latter was previously transaction manager at UPP Asset Finance. They will report to Craig Francis, assistant director at Amey.

Advisers

Herbert Smith Freehills has made up three infrastructure lawyers in Australia to partner level. The three new HSF partners are: Alison Dodd in Melbourne; Sian Newnham in Brisbane; and Clare Smethurst in Brisbane. The appointments will be effective on 1 May 2018. The firm has also hired four partners from Watson Farley & Williams. Rex Rosales and Jahnavi Ramachandran will join HSF in London, with Siva Subramaniam and Samuel Kolehmainen taken on in Singapore. All four specialise in different forms of transport finance.

Richa Prasad has joined infrastructure financial advisory boutique Cranmore Partners as executive director. Joining from SMBC, Prasad will be based in the firm's London office. Prasad will support Cranmore's transactions in the Middle East and Africa, including bid support in the GCC for a number of projects already in the market. Prasad joins Cranmore from SMBC Europe, where she headed up the power, utilities, metals and mining team from 2004. Prior to that she was an assistant vice-president for SMBC Singapore between 2001 and 2003. Other past roles include as manager, investment banking and as an associate at Merill Lynch in the early 2000s.

Asset Managers

Cressida Hogg has left her post as managing director, head of infrastructure at the Canada Pension Plan Investment Board (CPPIB) and is being replaced by Scott Lawrence. Hogg joined CPPIB in 2014. Prior to that she was a managing partner at 3i. She was based in the London office. Lawrence joined the pension fund manager in 2005 as a senior principal to start the infrastructure investments group, and in 2009 moved to the public market investments department to start the relationship investments group. Since then he has been head of fundamental equities. He is based in Toronto.

Grant Dooley, Hastings Fund Management executive director and head of Asia, has left the firm and relocated to Singapore to spearhead ARA Asset Management's newly-established business – ARA Infrastructure. Dooley joined the Singapore-based real estate firm in April as chief executive of the infrastructure business after six years at Hastings. He is responsible for establishing ARA's infrastructure fund management business globally. At Hastings, Dooley was responsible for leading the firm's operations in Asia, with a specific focus on market-entry strategy, institutional investor relationship building and fundraising activities.

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A global view of infra finance

The global infrastructure finance league table for Q1 2018 was greatly enhanced by a couple of spike deals in the Power and Oil & Gas sectors – the largest one in the US and the second biggest in Malaysia.

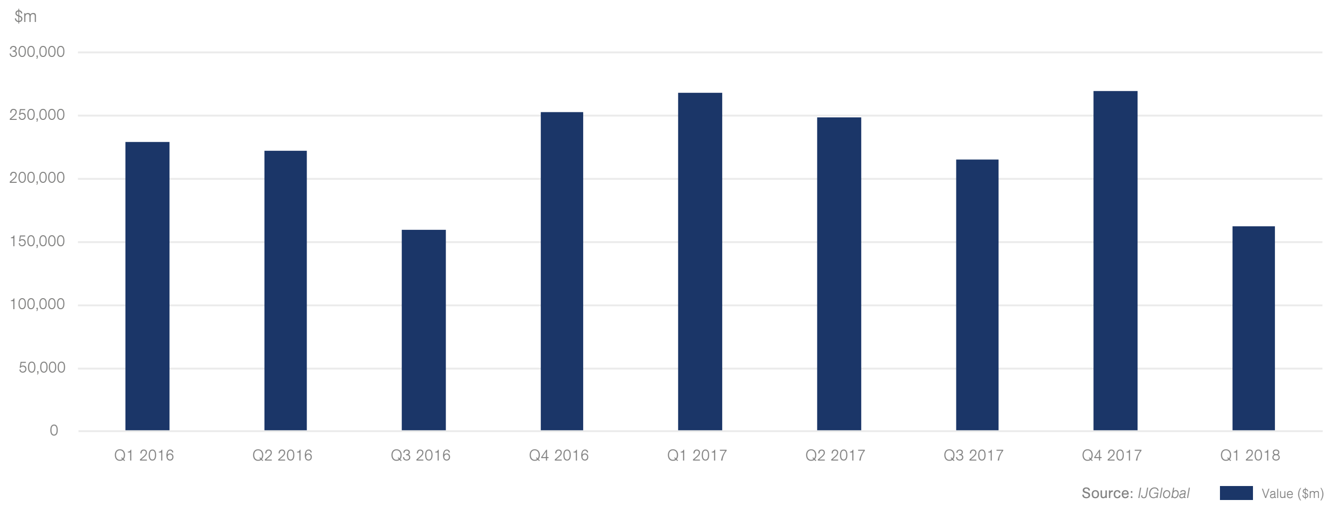
As with the first quarters in 2017 and 2016, M&A activity accounted for a significantly greater proportion of the total than the combined figures for primary financing and refinancing, driven as always by a desire to close deals before the end of many organisations' financial years.

Looking at the charts on Page 10, it is interesting to note that North America and Europe are almost exact opposites in terms of deal value to volume. It demonstrates nicely that there is greater deal flow in Europe, but these are clearly small financings; meanwhile the fewer transactions in North America are of decent scale.

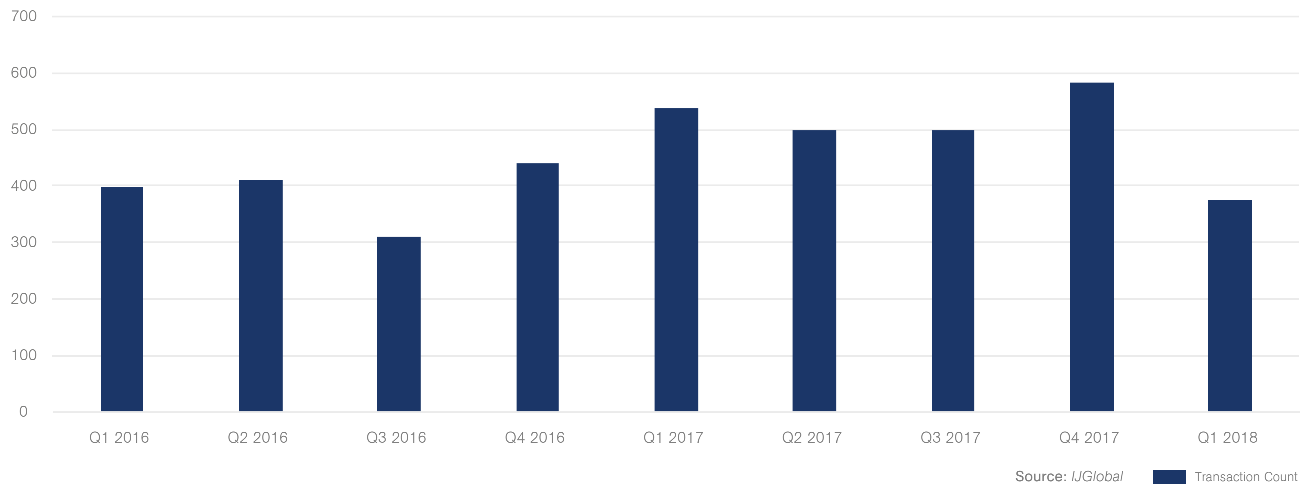
Project finance for global infrastructure in this first quarter has seen a fascinating spread of sectors represented as this instrument is leveraged to great effect in markets at all stages of economic development. PF solutions have been particularly in renewable energy space and the coming years will see this trend continue as the drive to diversify power sources continues and lenders become increasingly comfortable with construction risk.

Drivers for refi remain unchanged and its activity levels are understandable, but greenfield project finance appears to be in decline. These figures, however, will be bolstered in the coming months as more deals emerge as confidentiality relaxes and NDAs are forgotten.

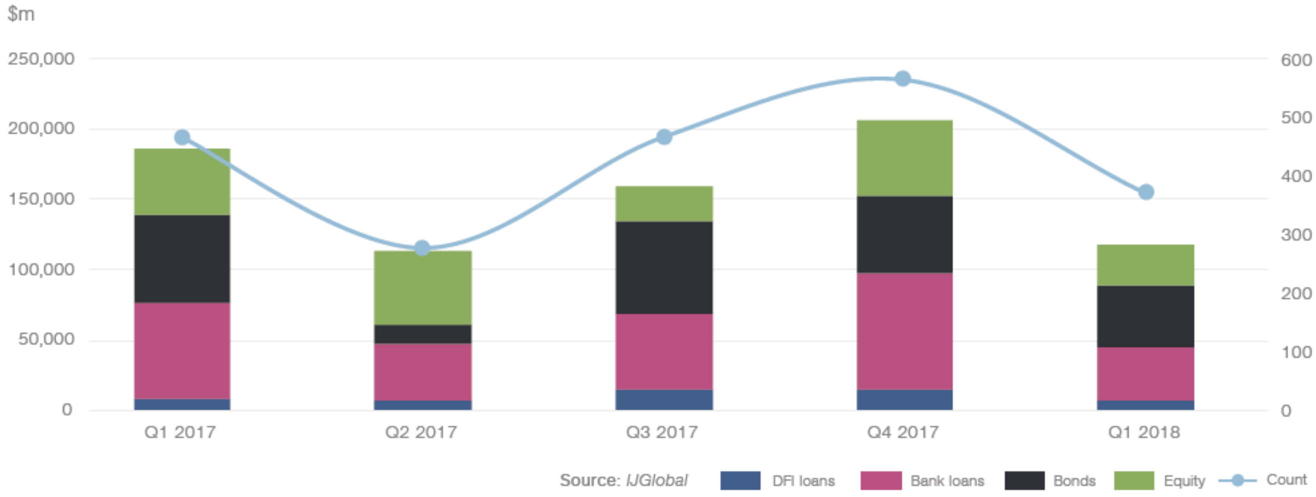
GLOBAL INFRASTRUCTURE FINANCE – VALUE Q1 2016 - Q1 2018



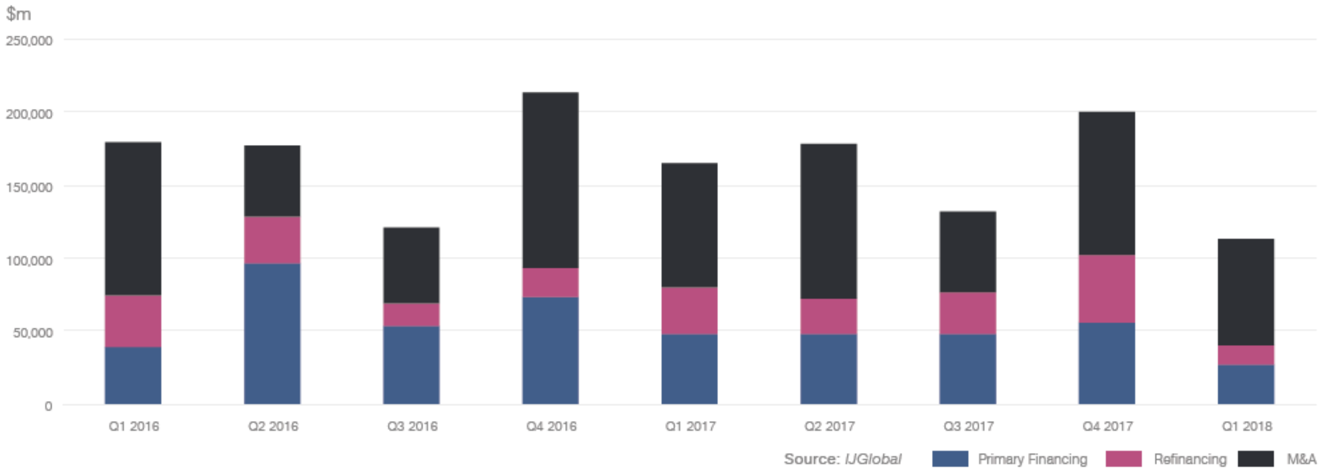
GLOBAL INFRASTRUCTURE FINANCE – VOLUME Q1 2016 - Q1 2018



GLOBAL INFRASTRUCTURE FINANCE VALUE BY SOURCE OF FUNDING Q1 2017 - Q1 2018



GLOBAL INFRASTRUCTURE FINANCE VALUE BY FINANCING PURPOSE Q1 2016 - Q1 2018



GLOBAL TOP 10 INFRASTRUCTURE FINANCE DEALS – Q1 2017 - Q1 2018

Rank	Transaction Name	Transaction Location	Transaction Sector	Transaction Value ($m)	Financial Close Date
1	Acquisition of 80% Stake in Oncor Electric Delivery Company	United States	Power	9,450	09/03/2018
2	Refinery and Petrochemical Integrated Development (RAPID) Bridge Financing	Malaysia	Oil & Gas	8,000	19/03/2018
3	Acquisition of Calpine Corporation	United States	Renewables, Power	5,600	08/03/2018
4	MPLX Bond Facility 2018	United States	Oil & Gas	5,500	05/02/2018
5	Acquisition of Equis Energy	Singapore	Renewables	5,000	19/01/2018
6	Acquisition of 70% in ENGIE E&P International (EPI)	France	Oil & Gas	4,367	15/02/2018
7	Acquisition of 51.11% Stake in Hindustan Petroleum	India	Oil & Gas	4,294	31/01/2018
8	Nacala Railway Corridor (912KM)	Malawi, Mozambique	Transport	2,730	23/02/2018
9	Enterprise Products Partners Bond Facility 2018	United States	Oil & Gas	2,700	15/02/2018
10	Saudi Electricity Company Bridge Facility	Saudi Arabia	Power	2,600	18/01/2018

SPONSORS - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	N/A	EllisDon	5	N/A
=	4	Macquarie	5	5
3	8	Enel	4	4
4	82	Canada Pension Plan Investment Board	3	1
=	1	Engie	3	6
=	N/A	New Energy Solar	3	N/A
=	N/A	Coronal Group	3	N/A
=	N/A	Elliott Management Corporation	3	N/A
=	N/A	Sacyr Vallehermoso	3	N/A
=	8	Tetragon Financial Group	3	4
=	N/A	Blue Elephant Energy	3	N/A
=	16	Mitsubishi Corporation	3	3
13	N/A	Williams Companies	2	N/A
=	N/A	Statoil	2	N/A
=	8	Vinci	2	4
=	N/A	Venado Oil & Gas	2	N/A
=	82	KKR & Co	2	1
=	N/A	SGN	2	N/A
=	1	Brookfield Asset Management	2	6
=	N/A	Fraport	2	N/A

SPONSORS - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	21	Marathon Petroleum Corporation	5,500	2,250
2	N/A	Enterprise Products Partners	2,700	N/A
3	32	Energy Transfer Partners	2,200	1,500
4	N/A	Kinder Morgan	2,000	N/A
=	N/A	NMC Health	2,000	N/A
6	12	Enel	1,906	2,535
7	N/A	San Miguel Corporation	1,900	N/A
8	N/A	Williams Companies	1,800	N/A
9	113	Crown Castle International	1,750	500
10	78	Canada Pension Plan Investment Board	1,744	709
11	N/A	Phillips 66	1,500	N/A
12	N/A	Statoil	1,499	N/A
13	N/A	State Power Investment Corporation (SPIC)	1,480	N/A
14	28	Vinci	1,414	1,693
15	N/A	Venado Oil & Gas	1,383	N/A
16	N/A	Iron Mountain	1,340	N/A
17	17	Engie	1,329	2,338
18	N/A	Ontario Teachers' Pension Plan	1,288	N/A
19	280	KKR & Co	1,190	106
20	N/A	SGN	1,060	N/A

MLAs - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	2	Sumitomo Mitsui Financial Group	30	37
2	3	Mitsubishi UFJ Financial Group	21	28
3	1	ING Group	15	38
4	5	Societe Generale	13	27
5	9	Mizuho Financial Group	11	18
6	3	BNP Paribas	10	28
7	14	HSBC	9	12
8	44	Intesa Sanpaolo	8	4
9	7	Santander	7	25
=	24	Scotiabank	7	9
11	39	Standard Chartered Bank	6	5
=	8	Groupe BPCE	6	19
=	18	Citigroup	6	10
=	5	Credit Agricole Group	6	27
15	11	Commonwealth Bank of Australia	5	13
=	55	Australia and New Zealand Banking Group	5	3
=	28	Bank of China	5	8
=	18	Barclays	5	10
19	14	ABN AMRO Bank	4	12
=	18	ICBC	4	10
=	24	Credit Suisse	4	9
=	18	JPMorgan	4	10
=	44	KfW	4	4
=	90	National Bank of Canada	4	1
=	28	Rabobank	4	8
=	44	Wells Fargo	4	4

MLAs - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	4	Sumitomo Mitsui Financial Group	2,543	2,976
2	5	Mizuho Financial Group	2,360	2,838
3	33	Standard Chartered Bank	2,205	461
4	9	Mitsubishi UFJ Financial Group	2,163	2,425
5	15	HSBC	1,907	1,627
6	7	Citigroup	1,299	2,585
7	8	ING Group	1,112	2,576
8	12	Societe Generale	963	1,943
9	6	Goldman Sachs	910	2,648
10	19	Groupe BPCE	895	1,139
=	N/A	First Abu Dhabi Bank	895	N/A
12	1	JPMorgan	819	4,191
13	2	ICBC	808	3,452
14	11	BNP Paribas	685	2,229
15	54	Intesa Sanpaolo	667	272
16	23	Barclays	609	927
17	208	United Overseas Bank	600	19
18	24	Scotiabank	590	922
19	16	Santander	589	1,555
20	N/A	Bank Hapoalim	582	N/A

PROJECT FINANCE LEAGUE TABLES – Q1 2018

BOND ARRANGERS - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	4	Citigroup	24	24
2	1	JPMorgan	23	44
3	2	Royal Bank of Canada	21	26
4	3	Bank of America	18	25
5	5	Barclays	17	20
6	6	Mitsubishi UFJ Financial Group	14	17
7	10	Wells Fargo	13	14
8	8	Mizuho Financial Group	12	16
=	20	Sumitomo Mitsui Financial Group	12	10
10	6	Toronto-Dominion Bank	11	17
11	29	US Bancorp	10	4
12	15	Scotiabank	9	11
=	39	PNC Bank	9	2
=	12	Credit Agricole Group	9	13
=	9	HSBC	9	15
16	15	Deutsche Bank	8	11
=	24	BBVA	8	7
=	15	Morgan Stanley	8	11
=	13	Societe Generale	8	12
20	15	BNP Paribas	7	11
=	13	Credit Suisse	7	12

BOND ARRANGERS - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	1	JPMorgan	3,176	7,900
2	4	Citigroup	3,037	3,340
3	3	Barclays	1,971	3,387
4	2	Bank of America	1,920	3,500
5	7	Royal Bank of Canada	1,881	2,679
6	11	Mizuho Financial Group	1,474	2,238
7	9	Mitsubishi UFJ Financial Group	1,432	2,419
8	20	Sumitomo Mitsui Financial Group	1,398	1,224
9	6	Wells Fargo	1,388	2,697
10	16	Toronto-Dominion Bank	1,080	1,750
11	13	Deutsche Bank	1,027	2,058
12	8	HSBC	1,015	2,547
13	23	Scotiabank	985	865
14	10	Credit Agricole Group	903	2,300
15	12	Goldman Sachs	818	2,134
16	15	Morgan Stanley	815	1,769
17	19	Societe Generale	784	1,258
18	18	Credit Suisse	775	1,573
19	5	BNP Paribas	747	2,842
20	24	BBVA	745	817

DFIs - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	10	Export Development Canada	5	2
2	1	European Investment Bank	4	5
3	4	International Finance Corporation	3	4
=	10	Asian Development Bank	3	2
5	N/A	Clean Technology Fund	2	N/A
=	10	Japan Bank for International Cooperation	2	2
7	4	Korea Development Bank	1	4
=	N/A	Nippon Export and Investment Insurance	1	N/A
=	4	Overseas Private Investment Corporation	1	4
=	N/A	Private Infrastructure Development Group (PIDG)	1	N/A
=	17	Proparco	1	1
=	N/A	Financiera de Desarrollo Nacional (FDN)	1	N/A
=	8	FMO	1	3
=	10	Inter-American Development Bank	1	2
=	N/A	Climate Investment Funds	1	N/A
=	17	COFIDE	1	1
=	1	European Bank for Reconstruction and Development	1	5
=	17	Banco Nacional de Comercio Exterior - Bancomext	1	1
=	N/A	Bpifrance	1	N/A
=	N/A	CDC Group	1	N/A
=	N/A	CESCE	1	N/A
=	N/A	China Development Bank	1	N/A
=	8	China Exim Bank	1	3
=	N/A	African Development Bank	1	N/A

DFIs - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	1	Japan Bank for International Cooperation	1,219	1,876
2	N/A	Bpifrance	710	N/A
=	N/A	CESCE	710	N/A
4	16	Asian Development Bank	571	110
5	3	European Investment Bank	448	1,122
6	19	Export Development Canada	374	88
7	N/A	African Development Bank	300	N/A
=	N/A	China Development Bank	300	N/A
=	4	China Exim Bank	300	1,112
10	6	International Finance Corporation	227	413
11	N/A	Financiera de Desarrollo Nacional (FDN)	141	N/A
12	15	Korea Development Bank	90	119
13	31	COFIDE	71	23
14	25	Banco Nacional de Comercio Exterior - Bancomext	70	51
15	N/A	Clean Technology Fund	59	N/A
16	8	Overseas Private Investment Corporation	50	318
17	28	Proparco	46	36
18	N/A	Private Infrastructure Development Group (PIDG)	42	N/A
19	20	FMO	39	63
=	N/A	CDC Group	39	N/A

LEGAL ADVISERS - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	3	Allen & Overy	18	21
2	3	Clifford Chance	15	21
3	5	DLA Piper	14	18
4	1	Norton Rose Fulbright	13	26
5	2	Latham & Watkins	12	22
=	5	Linklaters	12	18
7	8	White & Case	11	14
8	11	Simpson Thacher & Bartlett	10	12
9	19	Watson Farley & Williams	8	8
=	7	Milbank Tweed Hadley & McCloy	8	17
11	60	Morgan Lewis & Bockius	7	1
12	15	Shearman & Sterling	6	9
=	15	Mayer Brown	6	9
=	15	CMS	6	9
=	22	Allens	6	7
16	25	Vinson & Elkins	5	6
17	13	Pinsent Masons	4	11
=	60	Bracewell	4	1
=	13	McCarthy Tétrault	4	11
20	15	Hogan Lovells	3	9
=	N/A	Gowling WLG	3	N/A
=	30	Cescon Barrieu Flesch & Barreto Advogados	3	3
=	N/A	Baker Botts	3	N/A
=	30	Cuatrecasas	3	3
=	27	Eversheds Sutherland	3	5
=	41	Osborne Clarke	3	2

LEGAL ADVISERS - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	12	White & Case	15,016	7,759
2	4	Clifford Chance	14,981	13,370
3	1	Milbank Tweed Hadley & McCloy	10,220	24,289
4	3	Linklaters	10,009	16,491
5	18	Shearman & Sterling	9,843	5,356
6	5	Allen & Overy	9,087	12,633
7	N/A	Kadir Andri & Partners	8,000	N/A
=	N/A	Rahmat Lim & Partners	8,000	N/A
9	7	Norton Rose Fulbright	4,292	11,452
10	29	Andrews Kurth Kenyon	4,200	3,125
11	11	DLA Piper	4,196	7,903
12	9	Simpson Thacher & Bartlett	3,752	9,908
13	30	Mayer Brown	2,597	2,946
14	54	Bracewell	2,526	1,000
15	101	Squire Patton Boggs	2,520	278
16	2	Latham & Watkins	2,503	18,149
17	40	Allens	2,253	1,813
18	47	Gilbert & Tobin	2,082	1,534
19	52	Lexist	1,908	1,001
=	N/A	Ergun Avukatlik Burosu	1,908	N/A
=	54	Verdi	1,908	1,001
=	N/A	Winston & Strawn	1,908	N/A

FINANCIAL ADVISERS - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	1	Macquarie	7	11
2	N/A	EllisDon	5	N/A
3	6	Ernst & Young	4	4
=	12	Morgan Stanley	4	3
5	2	KPMG	3	9
=	27	Marathon Capital	3	1
7	17	Mitsubishi UFJ Financial Group	2	2
=	12	Rothschild	2	3
=	3	Royal Bank of Canada	2	7
=	12	Societe Generale	2	3
=	12	Elgar Middleton Infrastructure & Energy Finance	2	3
=	17	JPMorgan	2	2
=	27	Goldman Sachs	2	1
14	N/A	Groupe BPCE	1	N/A
=	6	HSBC	1	4
=	N/A	ING Group	1	N/A
=	N/A	Intesa Sanpaolo	1	N/A
=	N/A	Johnson Rice & Company	1	N/A
=	27	Evercore Partners	1	1
=	N/A	Argonaut	1	N/A
=	27	Astris Finance	1	1
=	17	Bank of America	1	2
=	17	Barclays	1	2

FINANCIAL ADVISERS - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	2	Morgan Stanley	11,786	11,790
2	N/A	BNP Paribas	8,000	N/A
3	16	HSBC	2,730	2,082
4	1	Royal Bank of Canada	2,536	13,901
5	17	Rothschild	2,395	2,022
6	3	Macquarie	1,671	11,685
7	N/A	Canadian Imperial Bank of Commerce	1,249	N/A
8	N/A	Credit Suisse	1,200	N/A
=	12	Bank of America	1,200	2,649
10	N/A	EllisDon	1,037	N/A
11	25	Mitsubishi UFJ Financial Group	974	1,117
12	N/A	Lazard	795	N/A
13	11	Ernst & Young	787	3,036
14	28	Societe Generale	775	804
15	N/A	DC Advisory Partners	629	N/A
16	9	KPMG	616	3,870
17	34	JPMorgan	568	539
18	N/A	Groupe BPCE	431	N/A
19	58	Marathon Capital	397	44
20	13	Goldman Sachs	355	2,548

PROJECT FINANCE LEAGUE TABLES – Q1 2018

TECHNICAL ADVISERS - DEAL COUNT

Rank 2018	Rank 2017	Company	Deal count 2018	Deal count 2017
1	1	Leidos	4	13
2	9	WSP Group	2	2
=	12	AECOM	2	1
=	N/A	Altus Group	2	N/A
=	N/A	Dolsar	2	N/A
=	2	Mott MacDonald	2	9
7	12	Poyry	1	1
=	N/A	Protos	1	N/A
=	N/A	Renewable Energy Systems (RES)	1	N/A
=	4	RINA Group	1	6
=	N/A	Sargent & Lundy	1	N/A
=	N/A	Schuessler-Plan	1	N/A
=	12	Stantec	1	1
=	N/A	Turner & Townsend	1	N/A
=	N/A	Windfor	1	N/A
=	N/A	EOS Consulting	1	N/A
=	N/A	Evergy	1	N/A
=	12	Fichtner	1	1
=	N/A	HDR	1	N/A
=	N/A	HPC Hamburg Port Consulting	1	N/A
=	N/A	Infrata	1	N/A
=	N/A	Kleinfelt Mychajlowycz Architects	1	N/A
=	8	Arcadis	1	3
=	3	Arup	1	7
=	5	DNV GL	1	5
=	N/A	Montgomery Sisam Architects	1	N/A

TECHNICAL ADVISERS - VALUE

Rank 2018	Rank 2017	Company	Value (USDm) 2018	Value (USDm) 2017
1	N/A	Dolsar	1,908	N/A
2	4	Leidos	1,513	5,140
3	N/A	Schuessler-Plan	810	N/A
4	2	Mott MacDonald	704	7,876
5	31	AECOM	582	92
6	N/A	Montgomery Sisam Architects	396	N/A
=	N/A	Kleinfelt Mychajlowycz Architects	396	N/A
8	5	WSP Group	370	1,746
9	N/A	HPC Hamburg Port Consulting	286	N/A
10	18	Arcadis	273	439
=	N/A	Turner & Townsend	273	N/A
12	N/A	Evergy	266	N/A
13	N/A	Altus Group	258	N/A
14	16	RINA Group	169	530
15	N/A	HDR	157	N/A
16	N/A	Infrata	148	N/A
17	N/A	Sargent & Lundy	121	N/A
18	7	Poyry	101	1,177
=	23	Stantec	101	286
20	N/A	Protos	92	N/A

TOP 10 INFRASTRUCTURE FINANCE TRANSACTIONS Q1 2018

Total deal value, Q1 2018: **$156.7 billion**

Total deal volume, Q1 2018: **370**

End of the line?

In most countries you would expect government support for a vital infrastructure project which could have a huge positive economic impact. But the US is not most countries, now more than ever, and the Gateway Program is suffering as a consequence. By Jon Whiteaker.

The Gateway Program is a vast transport infrastructure development that will improve and expand one of the most vital commuter rail links in the US. Although still at an early stage, it has a level of support from multiple state authorities that other projects in the country can only dream of, and it has attracted significant private sector interest.

But proponents of the upgrade for the Northeast Corridor still face a significant hurdle: convincing the federal government to stump up around half of the funding for the first phase of the $30 billion development. Without this federal support, the Gateway doesn't get built.

To approve the grants requested for Gateway would run counter to the Trump administration's desire for states to shoulder more of the burden of infrastructure funding. The Trump infrastructure plan may have talked big numbers, but it is asking others to meet the bill.

And, if multiple reports from Capitol Hill are to be believed, President Trump is trying his hardest to sabotage Gateway. Many leading Democrats in the Senate are supporting the project and, so the reports suggest, Trump wants obstruct its progress in revenge for their lack of support for his proposals.

He was even said to have threatened to veto the omnibus spending bill put forward by Congress at the end of March, which averted a government shutdown, if it had any mention of funding for Gateway. It didn't, but $650 million of federal funding was directed towards Amtrak's Northeast Corridor, of which the Gateway route forms a vital link.

All of this has left the major rail development left in limbo. The President's approach seems cavalier even before you even consider how urgent and necessary the Gateway Program is.

Gateway construction already taken place at the Hudson Yards site   Source: *Amtrak*

No choice

Francis Sacr is the interim finance director of the Gateway Program Development Corporation (GDC), the company formed by Gateway's sponsors: Port Authority of New York and New Jersey (PANYNJ); New Jersey Transit Corporation (NJ TRANSIT); and operator of the existing rail route Amtrak.

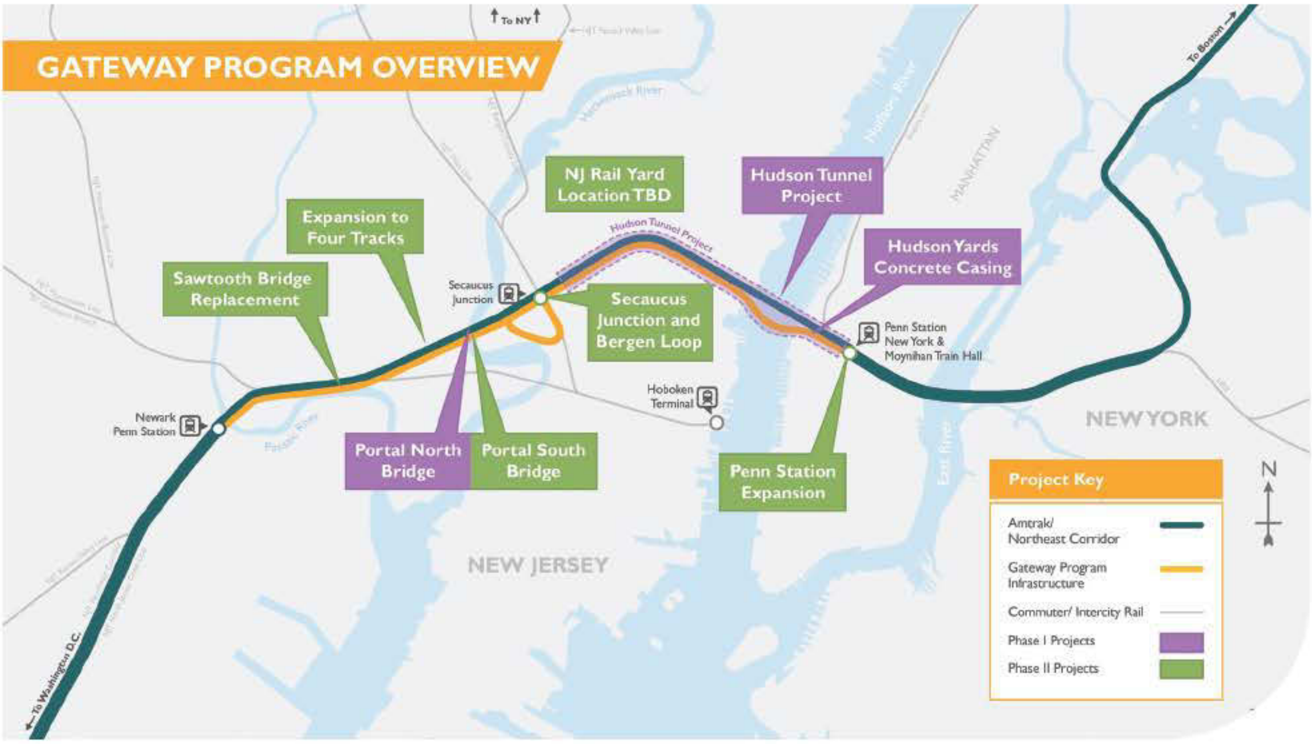
He was appointed to lead the project last summer, after 23 years working on project finance deals at Société Générale. Sacr first joined the French bank in his native Australia. He had trained as a lawyer and was working on secondment at SG for what is now Corrs Chambers Westgarth when he decided he wanted to become a banker.

From working on early privatisations in Australia, Sacr then moved to New York and was involved in the first PPPs in Canada, including the Sea-to-Sky Highway and Richmond Airport Rapid Transit. His experience of ground-breaking transport deals stretches right up to the 2016 LaGuardia Airport deal, where SG advised the sponsors.

Gateway could put even these achievements in the shade. Phase one involves the construction of the new Portal North Bridge (estimated cost $1.7 billion) over the Hackensack River, and the new Hudson Tunnel ($12.7 billion) connecting New Jersey to Penn Station in Manhattan.

When *IJGlobal* met Sacr at his downtown Manhattan office in early March, before the omnibus spending bill was signed, he argued that the necessity of Gateway will ensure its progress: "There is no choice but to replace the bridge and the tunnel. They are both more than a century old and well past the end of their useful lives."

The existing bridge and tunnel were constructed in 1910. Portal Bridge, partially made of wood, sits just 23 feet above the river, meaning it needs to swing open for maritime traffic using 19th century technology. Sometimes it needs to be hammered back into place. And even when the bridge is working properly, trains must slow down to cross it.



Source: *Amtrak*

Meanwhile the North River Tunnels sustained flood damage during Hurricane Sandy, leading to a substantial increase in service disruption in recent years.

As Sacr says, "it creates a huge bottleneck" in possibly the worst place for a bottleneck in the whole of the country. The Northeast Corridor rail network runs from Boston to Washington DC, via New York, Philadelphia and Baltimore. Most of this route benefits from three-to-six track lines, but at its busiest 10-mile stretch (450 trains and 200,000 passengers a day, according to Amtrak) between Newark and New York there are only two tracks. GDC claims that 10% of the national GDP is related in one way or another to the tunnel alone.

So while phase one is just about preserving what already exists, the rest of the $30 billion will be spent on expanding capacity, including a redevelopment of Penn Station, across numerous separate projects.

Sacr says: "We are not ruling anything out. We expect that there will not be a single solution and we are looking at everything from design-bid-build through to DBFOM, and everything in between. The trains and the systems will continue to be run by Amtrak and NJ TRANSIT but there are a lot of procurement models we can consider for the civil works."

Federal funding

Although the justification for Gateway is solid, its funding is far less assured. As Sacr admits, GDC is very publicly searching for every dollar it can get for phase one.

Along with funding from the proponents, GDC hopes to raise several billion dollars in the form of Railroad Rehabilitation and Improvement Financing loans from the government, and more than $1 billion from as yet unspecified capital sources which will be repaid from project revenues. But just under 50% of the funding for the first phase is due to come from federal grants under the government's New Starts programme.

However, the crucial New Starts funding is in serious doubt. In February, USDOT released an assessment on both parts of the first phase of Gateway. To proceed to the next round of approvals, any project must maintain a medium or above rating.

Portal North had previously been rated as medium-high, but had now been relegated to medium-low. The Hudson Tunnel also received a medium-low rating in what was its first ever assessment.

"We viewed those comments as surprising," Sacr says, "both in their own right, and in the context to the additional information we have provided to the federal government since that September submittal.

"This included additional information on Portal North Bridge and that we have received $5.55 billion of commitments from our local partners which will assist us in raising financing for construction."

Those commitments are split between payments from PANYNJ to GDC that facilitate net financing proceeds of $1.9 billion; a payment stream from the State of New York which facilitates net financing proceeds of $1.75 billion; and a similar payment stream of $1.9 billion from NJ TRANSIT.

However, USDOT's assessment

of the Hudson Tunnel described GDC's capital cost estimate and projected operating revenues as "optimistic", and assumed growth in capital revenues as "very optimistic". Similar, though less critical, comments were made in relation to Portal North Bridge.

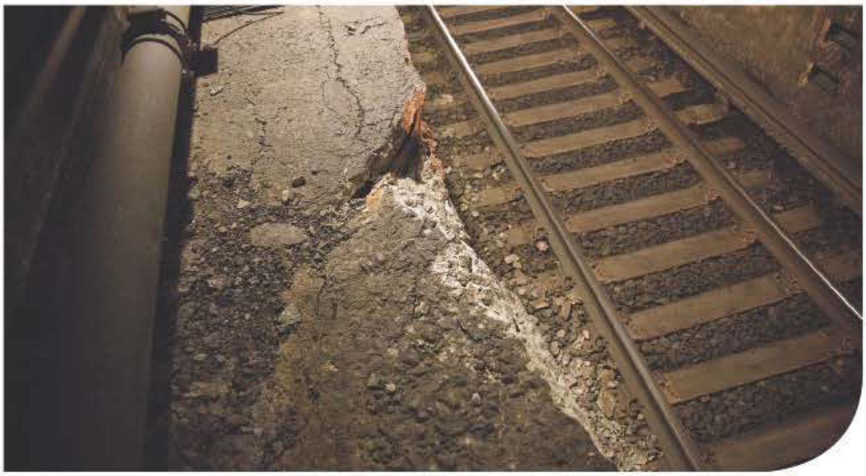
Assessment for New Starts is ongoing, and Sacr says they are in constant dialogue with the federal government in regards to both project funding and technical requirements. Discussions regarding the latter have been more fruitful so far.

The early works continue on schedule. These include the construction of huge concrete boxes to sit underneath the ongoing Hudson Yards development, which will eventually boast several skyscrapers and a giant climbing frame-like sculpture designed by Thomas Heatherwick. The concrete boxes preserve Amtrak's right of way beneath that construction site and will eventually house the new tunnel.

GDC will also shortly launch RFPs for financial and legal advisers, and Sacr says that "despite all the noise you see in the news, the things that we can do – we are doing".

But the bulk of the work cannot start in earnest until an agreed funding plan is in place.

"Everything about this project is big, which is why we can't delay it," Sacr says. "In projects, time costs money. We have an estimated cost today for the tunnel that is based on 2017 dollars, but building costs escalate with inflation, and we are currently in a rising interest rate environment, so that cost will start to go up the longer we delay."



Storm damage to the existing tunnel Source: *Amtrak*

Political football

Since our interview with Sacr, the situation for Gateway has appeared to get worse. In the lead up to the signing of the omnibus spending bill, there were suggestion that some horse trading could take place to unlock funding for the project.

But the President then seemed to harden his stance. Several senior Democratic politicians, including New York Senator Chuck Schumer, have been vocal supporters of the scheme. In typical transactional style, the President allegedly does not want to help Schumer and his colleagues when they oppose so many of his own policies.

If the situation becomes intractable, it will not be the first time a redevelopment of this rail network was derailed by political point-scoring.

A predecessor project, Access to the Region's Core (ARC) was controversially cancelled by Chris Christie - New Jersey Governor in 2010. Like Gateway, ARC would have created a new tunnel under the Hudson River but in contrast entailed the construction of a new Manhattan train terminus close to Penn Station. The project costs were estimated at around $10 billion.

Christie claimed that spiralling costs and an unfair funding burden on the State of New Jersey were the reason for withdrawing support. Critics alleged that he did so in order to keep a campaign promise of not raising gas taxes.

Either way, the project was felled on the whim of a senior politician, and the risk of history repeating itself seems very real.

Sacr would not be drawn on whether GDC would be willing to restructure the financing plan to reduce federal funding requirement, but did say: "This is a nation-building project. We can't toll or tax our way locally to find all of the money. We need a federal government contribution."

The ultimate fate of the project is outside of his control, but Sacr remains optimistic. This project needs to happen, and he believes common sense will prevail.

"Eventually there will be a funding agreement, and at that point they will turn to us and say 'when are you starting?'. So we need to be ready to start."

The exisiting Portal Bridge, built in 1910 Source: *Amtrak*

IJGlobal Awards 2017

It is that time of year again. *IJGlobal* is delighted to announce the winning deals and winning companies for the *IJGlobal* Awards 2017.

Gala awards ceremonies were held in London, New York, Dubai and Singapore during March to celebrate this year's winners. The ceremonies were the end of a sixth-month process to identify the outstanding transactions from 2017. We had a record number of submissions this year, sounded out more market professionals than ever before as part of the judging process and had a record number of attendees at the dinners.

Each of the winning transactions, across all regions and every sector category, are profiled in the following pages.

Congratulations to all the winners!

Winning companies

IJGlobal Awards 2017

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RBC Capital Markets

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Infrastructure Fund
Infracapital Greenfield Partners I

Due Diligence Provider
BDO LLP UK

Institutional Investor
APG

Americas

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RBC Capital Markets

MLA (Latin America)
SMBC

Bond Arranger
JP Morgan

Financial Adviser (North America)
RBC Capital Markets

Financial Adviser (Latin America)
Astris Finance

Legal Adviser (North America)
Latham & Watkins

Legal Adviser (Latin America)
Milbank, Tweed, Hadley & McCloy

Legal Adviser (Latin America, Local)
Philippe Prieto

Technical Adviser
BTY Group

Sponsor (North America)
Arclight Capital Partners

Sponsor (Latin America)
Actis

Alternative Lender
BlackRock - Infrastructure Debt

Infrastructure Fund
Global Infrastructure Partners III

Due Diligence Provider
BDO

Institutional Investor
CDPQ

Insurance Adviser
INTECH Risk

Asia Pacific

MLA
DBS Bank

Financial Adviser
HSBC

Legal Adviser
Allen & Overy

Technical Adviser
Mott MacDonald

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DFI
Asian Development Bank

Public Sector Adviser
PwC

MENA

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SMBC

Financial Adviser
Synergy Consulting IFA

Legal Adviser
Shearman & Sterling

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European Wind

Walney Extension

In many ways this is a typical deal for Ørsted (formerly DONG Energy). The Danish utility and global leader in offshore wind has raised capital, both debt and equity, for a project after construction has already begun.

So far, so usual for Ørsted. But for the first time nearly all of the debt financing for an offshore wind farm has been provided by institutional investors. On top of that, the debt is recourse to two pension funds which now own 50% of the Walney Extension, instead of being borrowed at the project level under a hybrid financing structure.

And as if that weren't enough, once the extension is complete Walney Extension will become the largest offshore wind farm in the world.

Project history

Ørsted was already operating, alongside SSE, the Walney 1 and Walney 2 offshore wind farms off the Cumbrian coast in England when it received planning consent for the Walney Extension in 2014. While stages 1 and 2 totalled 367MW in generating capacity, the new project will be 659MW once completed.

The largest operating offshore wind farm in the world is the 630MW London Array off the Kent coast, which began operations in 2013, but a project of the size of Walney Extension is no exception for Ørsted: it has several projects in its construction pipeline of more than 1GW in size.

Onshore construction began in 2015, with offshore construction starting the following year. Siemens Gamesa is providing 47 of the 87 turbines, with MHI Vestas providing the remainder. The project site covers an area of 145km and is expected to produce enough electricity to power the equivalent of more than 500,000 homes.

The project was among eight projects to be awarded contracts for difference (CfD) contract in April 2014 by the Department of Energy and Climate Change. The CfD provides the project with a guaranteed 15-year tariff. The initial tariff or 'strike price' was £150 ($206.7) per MWh, though this value relates to when the CfD was agreed as it rises with inflation.

Ørsted made a final investment decision on the project in October 2015 after which it began construction. The wind farm is expected to reach commercial operations during the second half of 2018.

Due to its large balance sheet, Ørsted is able to initially fund construction itself. But assuming all of the construction risk it can raise cheaper it eliminates financing costs meaning it can bid lower than its rivals in competitive tenders.

The developer then looks to extract value from the project by selling half of its equity, with the new shareholders raising debt to part fund their share of the wind farm.

This is a model has been incredibly effective for Ørsted, which is building up a huge portfolio of offshore project worldwide. The huge support shown by institutional investors for Walney Extension is not only further vindication for the way Ørsted develops wind farms but also demonstrates how mature and proven the offshore sector is now perceived to be.

The financing

Banks have to-date entirely dominated the debt market for European offshore wind, which makes Walney Extension ground-breaking.

Roughly £1.5 billion in debt was raised for the project, almost solely from institutional investors, in a deal which reached financial close in November 2017.

The participants on the bonds were split between first- and second-tier lenders, though all debt carried a 16-year tenor. Macquarie Infrastructure Debt Investment Solutions (MIDIS) took the largest ticket understood to be around £500 million, followed by Legal & General Investment Management (LGIM) with £300 million.

The debt is split between CPI-linked bonds, fixed-rate bonds, bonds backed by Danish export credit agency EKF, and around £200 million in project finance loans.

Danish pension funds PFA and PKA acquired a 50% stake (25% each) in the project at financial close for roughly £660 million. The deal has a hybrid project finance structure, with the debt recourse to PFA and PKA rather than the project company, though protections have been written into the contract to mitigate risk to the two pension funds in the event of default due to circumstances outside of its control.

One of which is a performance guarantee offered by Ørsted to PKA and PFA, under which it would be obligated to buy-back their shareholding at a price reflecting purchase price and financing costs if either the construction agreement or CfD is terminated.

Ørsted has been leading innovation in the offshore wind sector in recent years, becoming its most dominant developer. It has now won three projects in Germany offshore wind auctions with bids based on no subsidy support, and Walney Extension is another example of its efforts to make it a mature asset class.

Total value: £2.16 billion
Total debt: £1.5 billion
Total equity: £660 million
Project sponsors: Ørsted, PKA, PFA
Borrowers: PKA, PFA
First-tier institutional lenders: Aviva Investors, BlackRock Investment, LGIM, MIDIS
Second-tier institutional lenders: Metlife, IFM Investors, Hastings, Barings, Pension Infrastructure Platform, SunLife, Westbourne Capital
Bond arranger: Goldman Sachs, Citibank
Advisers: RBC Capital Markets, BlackRock, Slaughter and May, Clifford Chance, Watson Farley & Williams, DNV GL
Turbine suppliers: Siemens Gamesa, MHI Vestas

European M&A

Acquisition of HS1

The sale process for the High Speed 1 UK rail concession company, launched in December 2016, proved to be highly competitive.

InfraRed and Equitix were announced as the winners shortly after final bids on 13 July 2017. By the end of the process the eventual winners were head-to-head against a rival consortium consisting of Dalmore Capital, Amber Infrastructure and DIF. Selling at 18x EBITDA, the asset showed how competitive infra funds were willing to be.

The UK Department for Transport and London & Continental Railways sold the concession to operate and maintain the stretch of railway and several stations between the St. Pancras station in central London and Ashford International in 2010 to two Canadian pension funds: Ontario Teachers' Pension Plan (OTPP) and Borealis (now OMERS Infrastructure).

The Office of Rail and Road (ORR) is the economic and safety regulator for the 30-year concession for the line, which expires on 31 December 2040. ORR regulates track access charges, while the Department for Transport regulates station access charges.

The stretch is the UK's first high speed rail line and had cost the government £5.7 billion ($7.9 billion) to build (or £6.2 billion undiscounted). The Canadian pension funds paid £2.1 billion to buy a 30-year concession from the UK government, with the consideration exceeding expectations by £600 million.

Along with the final two bidding groups, the sale also attracted Groupe Eurotunnel. It had tried to buy HS1 back in 2010 but dropped out before the sale got as far as final bids.

There was a surprising amount of clear water between the two final bidders, according to sources close to the process, with around £150 million to £200 million difference in the equity offers.

Buyers: HICL Infrastructure (35%), Equitix (35%), backed by South Korea's National Pension Service (30%)
Sellers: Ontario Teachers' Pension Plan (OTPP), Borealis (now OMERS Infrastructure)
Enterprise value: £3.3 billion
Concession granter: UK Department for Transport and London & Continental Railways
Debt: £1.9 million existing debt, additional £500 million holdco debt raised of which £450 million matures in 2038 and is underwritten by Goldman Sachs
Lenders: MUFG Bank, SMBC, Santander, BNP Paribas
Buyer advisers: Macquarie Capital (financial), Allen & Overy (legal)
Lenders' legal advisers: Linklaters, Ashurst
Sellers' advisers: Bank of America Merrill Lynch (financial), Linklaters (legal)

European Downstream/ Midstream Oil & Gas

61% Acquisition of National Grid Gas

National Grid's sale of a majority shareholding in its gas distribution business offered a rare opportunity in UK infrastructure for a multi-billion pound equity deployment, prompting large asset managers, sovereign wealth funds, pension funds and Asian energy companies to form consortia.

In July 2016, regulator Ofgem granted consent for National Grid to spin off four of its eight UK regional gas networks into a separate licenced operator National Grid Gas Distribution (NGGD). Before the sale of 61% could launch, some National Grid debt was bought back and £3 billion of corporate bonds were issued for NGGD.

The winning Quad Gas Group valued NGGD at £13.8 billion ($19 billion), around 50% premium to regulated asset value, when counting the £7.4 billion total debt at OpCo and MidCo levels.

Banks supported throughout the auction, but at preferred bidder stage Macquarie Infrastructure Debt Investment Solutions (MIDIS) took £502 million of debt at 20-25 year tenors.

Amber and Dalmore asserted themselves as owners of regulated infrastructure, having invested previously in the Thames Tideway Tunnel but historically focused on PPPs.

The winning group consisted of a mix of international players with Chinese, German, Australian and Qatari equity partners, as well as Koreans Hanwha Life and the Scientists and Engineers Mutual aid Association behind Dalmore Capital's equity. This at a time when during the bids the government announced it would review rules on sales of "critical infrastructure" to non-domestic buyers.

The auction was formally launched within a couple of months of the UK's vote to leave the EU, causing market uncertainty.

Total value: £6 billion
Debt: £2.3 billion (£502m private placement, £650m 5-year senior term loan, £650m 3-year senior term loan, £380m revolving credit facility, £120m senior debt service reserve)
Sponsors: MIRA (14.5%), CIC Capital Corporation (10.5%), Allianz Capital Partners (10.2%), Hermes Investment Management (8.5%), QIC (8.5%), Amber Infrastructure/International Public Partnerships (4.4%), Dalmore Capital (4.4%)
Lenders: MIDIS, Bank of China, BNP Paribas, China Construction Bank, Crédit Agricole, CIB, ING, JP Morgan, MUFG Bank, RBC, RBS, Santander, SEB, SMBC, Société Générale
Advisers: Linklaters, RBC Capital Markets, Macquarie Capital, Arup, CMS, Marsh, Clifford Chance, Baker McKenzie, Enzen, EY, Eversheds Sutherland, Morgan Stanley, Barclays, Robey Warshaw

European Rail

West Midlands Rolling Stock

Infracapital and Deutsche Asset Management, via their jointly owned rolling stock lessor Corelink Rail Infrastructure, brought the UK's West Midlands rolling stock deal to financial close in December 2017 with debt from a club of 10 banks and two institutional investors.

The deal achieved attractive debt pricing, starting around the mid-100s over Libor for the bank lending tranche, and a long institutional debt tenor.

The transaction represents another victory for the single asset financing model, a form of funding for rolling stock that has emerged over the last two years. It tapped institutional debt markets, and made inroads into a sector previously dominated by the rolling stock operating companies (ROSCOs), which own and lease fleets out.

However, in this case, Infracapital and Deutsche Asset Management beat Rock Rail, which has led the way in implementing the single asset financing model, and which was also vying to provide rolling stock for the West Midlands franchise.

As part of the West Midlands deal, almost £1 billion ($1.39 billion) will be invested in the network. This will include providing longer trains, rolling out 400 new carriages by 2021, and providing space for an extra 85,000 passengers on rush hour services in Birmingham and London.

The new fleet will consist of 413 new vehicles, which will start entering service from 2020. It will comprise 225 electric vehicles for London services, 108 new electric vehicles for a metro style service on Birmingham's Cross City Lines, and 80 modern diesel vehicles for the regional services around Birmingham. The majority will be built at Bombardier's facility in Derby, with the remainder manufactured by CAF. The franchise covers services across the West Midlands, as well as trains from London Euston to Crewe and from Liverpool to Birmingham.

Total value: £700 million
Debt: £538 million
Equity: £162 million
Sponsors: Infracapital and Deutsche Asset Management, via their jointly owned rolling stock lessor Corelink Rail Infrastructure
Lenders: Crédit Agricole, MUFG, SMBC, BAML, BNP Paribas, RBS, Lloyds, Société Générale, SEB, ICBC, Sun Life, Legal & General Investment Management
Grantor: Abellio and Japan's Mitsui and East Japan Railway Company
Tenor: 5-year bank debt tranche, 32-year institutional
Pricing: Pricing on the bank debt tranche starts in the mid-100bps over Libor, stepping up to 160bp over Libor. Pricing on the institutional debt tranche is just over 200bp over Libor
Advisers: Crédit Agricole, Freshfields Bruckhaus Deringer, Stephenson Harwood, Centrus MDT, Orrick, Ashurst, Atkins, SNC Lavalin, Willis Towers Watson

European Telecoms

Grand Est Broadband PPP

France's largest broadband PPP project, Grand Est was launched in 2012 with the aim of implementing ultra-fast internet connections across the country by 2022. One of the largest contracts in Europe, it used €20 billion ($24.3 billion) of public and private funding.

It followed other French broadband PPPs as part of the Ultra-Fast Broadband Plan launched in 2012, including the €480 million Alsace deal and €900 million Nord-Pas-de-Calais.

First bids were due in March 2017 with the winning consortium – NGE, Altitude Infrastructure, Chrono Invest, Shira and Sobo – being announced in July 2017.

The 35-year concession contract for the design, build, operate and finance of the network was signed on 24 July 2017 with Losange, the project company.

The project will connect 830,000 premises to a new broadband network in the following locations: Ardennes, Aube, Marne, Haute Marne, Meuse, Meurthe et Moselle, and Vosges.

There are an additional conditional 80,000 premises that may be connected as part of this project. Construction is due to complete in 2022.

The project attracted investments of €1.3 billion. A debt package was raised with a group of eight lenders: including French commercial banks (Société Générale, BNP Paribas, La Banque Postale, Arkea), local banks (Caisse d'Epargne, Crédit Agricole, Crédit Industriel et Commercial), and debt fund manager AXA IM.

The project was sponsored by NGE, Altitude Infrastructure, Caisse des Dépôts et Consignations, Quaero Capital (via the Quaero European Infrastructure Fund and a co-investment with the European Investment Bank) and Marguerite. The project has also benefited from a €222 million public grant.

Buyers: NGE, Altitude Infrastructure, Chrono Invest, Shira and Sobo
Granter: The Regional Council of Grand Est Region
Total value: €1.3 billion
Debt: €900 million and a €222 million public grant
Lenders: Société Générale, BNP Paribas, La Banque Postale, Arkea, Caisse d'Epargne, Crédit Agricole, Crédit Industriel et Commercial, AXA IM
Sponsors: NGE Concessions (10%), Altitude Infrastructure THD (10%), Caisse des Dépôts et Consignations (33%), Marguerite (22%), Quaero with the European Investment Bank (25%)
Advisers: Mott MacDonald, Allen & Overy, Société Générale, Bird & Bird, Gowling WLG, De Pardieu Brocas Maffei, Gras Savoye

European Airports

Greece's Regional Airports

Fraport's and Copelouzos Group's Greek regional airports deal is one of the privatisations resulting from bailout negotiations between Greece and the EU following the country's sovereign debt crisis of 2009-2011.

Concessionaire Fraport Greece paid a lump-sum of €1.234 billion ($1.31 billion) to the Greek government's Hellenic Republic Asset Development Fund, which is the largest concession fee Greece has ever received.

Meanwhile, the Greek government expects revenues to exceed €10 billion by the end of the 40-year concession. The government also anticipates the deal will generate further revenues from fiscal, social and other benefits of around €4.6 billion.

As a result of the transaction, Fraport Greece will over the next four years invest more than €400 million in upgrading the airports, many of which cannot cope with demand.

Debt: €968 million
Equity: €650 million
Sponsors: Fraport AG (73.4%) and Copelouzos Group (26.6%) at the closing of the transaction. As of December 2017, Marguerite Fund has joined as a sponsor by acquiring part of Copelouzos' stake: Copelouzos (16.6%) and Marguerite Fund (10%)
Lenders: Alpha Bank, Black Sea Trade and Development Bank, European Bank for Reconstruction and Development, European Investment Bank, International Finance Corporation
Grantor: Hellenic Republic Asset Development Fund
Tenor: up to 25 years
Advisers: Citigroup, Eurobank, Your Legal Partners, Drakapoulos & Vasalakis, Norton Rose Fulbright, Freshfields Bruckhaus Deringer, Alpha Bank, Koutalidis, Aon, Marsh, Chadbourne & Parke, Karatza & Partners, Willis Towers Watson, Mott MacDonald, Steer Davis Gleave, KPMG

European Upstream Oil & Gas

Chrysaor North Sea Acquisition

Chrysaor Holdings' purchase of Royal Dutch Shell's portfolio propelled the independent formed in 2007 into a leading operator in the North Sea.

Owner Harbour Energy is itself owned by private equity fund EIG Global Energy Partners. Following the oil price crash, PE-backed E&P companies were circling portfolios proffered by oil majors' non-core divestment plans. Shell had launched a $30 billion sale programme.

Independents plan to eke out longer lives for mature assets than the majors, through investment and efficiencies. But for some time deals were not materialising between private equity firms and sellers.

Chrysaor and Shell were among the first to find a mutually beneficial deal. Shell retained a fixed $1 billion of decommissioning liabilities, with Chrysaor keeping the remainder ($2.9 billion estimated). Shell provided a $500 million junior prepayment facility and signed a hydrocarbon lifting and sales agreement for oil production. Chrysaor could pay up to $600 million further to Shell between 2018-21 depending on commodity prices and $180 million dependent on future discoveries.

Equity provider: Harbour Energy
Seller: Royal Dutch Shell
Total value: $2.9 billion
Debt: $1.9 billion ($1.5 billion RBL $400 million junior prepayment facility)
Lenders: Bank of Montreal, BNP Paribas, ING Bank, Citibank, DNB (UK), ABN AMRO Bank, Commonwealth Bank of Australia, Lloyds Bank, Royal Bank of Scotland, Barclays Bank, Natixis, Nedbank, JP Morgan Chase Bank, GE Capital EFS Financing, NIBC Bank, Société Générale, Standard Chartered Bank
Advisers: White & Case, Dechert, Watson Farley & Williams, BMO, Maples & Calder, EY

European Power

Acquisition of Calvin Capital

Infracapital sold Calvin Capital, an established UK smart meter purchaser and installer, to KKR Infrastructure Fund II, marking KKR's first investment in the smart meter sector.

The agreement was signed on 6 December 2016. It completed on 31 January 2017 for an enterprise value of £1 billion ($1.4 billion).

Manchester-based Calvin Capital's EBITDA in 2015 was £106 million and the total revenues came to £115 million. Infracapital Partners held Calvin Capital across its first and second fund.

SMBC underwrote all of the £250 million acquisition debt for KKR with a 10-year tenor. The asset had existing debt but this was not carried over in the sale.

The sale attracted bidders including Goldman Sachs Infrastructure Partners, Northern Power Grid, CKI and CPPIB.

Founded in 2002, Calvin Capital through its Meter Fit subsidiaries procures and finances meter roll outs on behalf of UK utilities.

Prior to the completion of the sale, Calvin Capital closed on a contract with SSE for smart meter roll outs (June 2016), raised a £388 million loan from the European Investment Bank (EIB) to finance upcoming roll outs (May 2016) and gained commitments for a £1 billion package for roll outs from the EIB, Barclays, Crédit Agricole, HSBC, Santander, SMBC and MUFG Bank (December 2016).

Seller: Infracapital Greenfield Partners I & Infracapital Greenfield Partners II
Buyer: KKR Infrastructure Fund II
Total value: £1 billion
EBITDA: £106 million (2015)
Debt: £250 million underwritten by SMBC. Existing debt was not carried over
Tenor: 10 years
Advisers: Hogan Lovells (Infracapital), Citigroup (Infracapital), Simpson Thacher & Bartlett (KKR), Clifford Chance (KKR), KPMG (KKR)

European Refinancing

Budapest International Airport Refinancing

Strong performance since a previous debt repricing in 2015 meant that the most recent refinancing of Budapest Liszt Ferenc Airport brought margins sharply down.

In 2015 its debt was priced at levels around 250bp above Euribor, down from an initial pricing in the mid-300bps over Euribor in 2014.

The recent refinancing also reflects a turnaround in fortunes for the airport after the 2012 demise of Hungary's national carrier Malev – which accounted for close to half of air traffic – nearly brought the facility to its knees.

Malev's collapse in 2012 was triggered by the EU's demand that it €130 million ($157.7 million) that it had received in illegal state subsidies. This was followed by the departure of American Airlines and Hainan Airlines, which also severely impacted the airport.

However, the facility was given a new lease of life by changing dynamics in European aviation, which has transformed the airport into an important regional hub.

Sponsors: AviAlliance, Malton Investment, Caisse de Dépôt et Placement du Québec
Lenders: Crédit Agricole, MUFG Bank, Société Générale, BNP, UniCredit, ING, HSBC, Export Development Canada, K&H Bank, MKB, Erste Bank, Raiffeisen Bank, EBRD, AllianzGI, MEAG, MetLife, Macquarie Infrastructure Debt Investment Solutions
Grantor: Republic of Hungary acting through the National Asset Management Agency
Tenor: Bank debt 5 years, institutional 10-15 years.
Pricing: Institutional tranche fixed at high-100bps-over-Euribor, bank tranche starts at 130bp and steps up to 190bp
Advisers: Rothschild, Allen & Overy, BNP Paribas, Linklaters, all banks were MLA and hedge providers

European Roads

Pedemontana-Veneta Toll Road PPP

This Italian toll road was financed via the first unrated greenfield project bond in Italy, which was also the largest European project bond placed without EIB PBCE credit enhancement.

It had a total value of €2.9 billion ($3.5 billion) of which €1.571 billion was a debt facility arranged by JP Morgan. This was split into €1.221 billion senior secured notes maturing in 2047 and €350 million subordinated secured notes placed in the capital markets and maturing in 2027.

The project attracted 32 institutional investors, with tickets ranging from €500,000 to €225 million, taking construction risk without EIB PBCE credit enhancement.

Budgeted capex for the project is €2.3 billion, excluding VAT. Construction completion is expected in September 2020.

The project exposure to interest rate risk is limited to the construction period, and there is no refinancing risk. The capital structure including junior tranche provides a capital cushion to mitigate key senior risks.

Total value: €2.9 billion
Total debt: €1.571 billion
Coupon: 5% on senior notes, 8% with step-ups on subordinated notes
Equity: €430 million
Public grant: €915 million
Construction cost: €2.258 billion
Issuer: Superstrada Pedemontana Veneta
Sponsors: SIS – FININC (51%), Sacyr Vallehermoso (49%)
Bond arrangers: JPMorgan, Banco Santander, Banca IMI, Banca Akros, Kommunalkredit
Legal advisers: Ashurst, Legance, White & Case, Linklaters, Chiomenti, Simmons & Simmons
Additional advisers: Arcadis, Leigh Fisher, Marsh, KPMG, BDO Italia, Arthur Cox Listing Services, BNY Mellon, Bishopsfield Capital Partners
Awarding authority: Veneto Region

European Social Infrastructure

Ikitelli Integrated Health Campus

Ikitelli was the first project in Turkey's €12 billion ($14.6 billion) healthcare programme to be financed in Yen, thanks to significant support from Japanese institutions.

It brought a number of lenders to Turkey for the first time and was entirely financed without support from Turkish banks. It was also the first Turkish social infrastructure project that involved both the Japan Bank for International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI).

JBIC provided almost half of the total debt package via a direct loan. Meanwhile, commercial lenders received a political risk guarantee from JBIC for part of the financing, and insurance coverage for the rest of the financing from NEXI.

Ikitelli took three attempts to finance, with previous sponsor Emsas selling down to a consortium which would eventually feature Japanese trading company Sojitz in 2015.

Ikitelli is Turkey's largest healthcare PPP project in terms of capital expenditure.

Total value: ¥195 billion ($1.8 billion)
Debt: ¥163 billion
Equity: ¥39 billion
Sponsors: Sojitz Hospital PPP, Rönesans Saglık Yatırım, Rönesans Holding
Lenders: SMBC, MUFG Bank, Standard Chartered Bank, JBIC, Nippon Life Insurance Company, Dai-ichi Life Insurance Company, Iyo bank
Grantor: Turkish Ministry of Health
Tenor: 18 years
Pricing: NEXI variable rate tranche is 150bp over Yen Libor, JBIC variable rate tranche is 175bp
Advisers: MUFG Bank, SMBC, Standard Chartered Bank, Willkie Farr & Gallagher, White & Case, Ergun Avukatlık Bürosu, Mott MacDonald, Willis

European Solar

Octopus UK Solar Portfolio Refinancing

In November 2017, Octopus Investments expanded a refinancing of a European solar portfolio which it initially reached financial close on in April 2017.

The original $484 million refinancing had a tenor of 10 years and was split between a term loan, revolving credit facility and a debt service reserve facility. This original loan facility was increased, by exercising its accordion feature, in order to bring additional assets into the portfolio.

This allowed the fund manager to acquire 15 new solar PV assets into the portfolio, such that the debt size increased to £545 million covering 622MW solar PV assets – an increase of 100MW.

The refinancing, known as Jupiter, now covers the largest portfolio of solar PV plants in Europe.

The transaction was structured so that it is a non-recourse to the sponsor and provides flexibility for Octopus Investments to incur additional debt to finance asset acquisitions and adopt a flexible rolling power offtake strategy. Both features are more common in the wider power sector but innovative for a debt facility covering a large solar PV portfolio in Europe.

The new financing was provided by banks that were already part of the syndicate. The nine lenders all acted as mandated lead arrangers.

Total value: £545 million
Tenor: 10 years
Lenders: Banca IMI, Barclays, BNP Paribas, CaixaBank, Royal Bank of Scotland, SMBC, AIB, Sabadell and Santander Global Corporate Banking
Octopus Investments' advisers: Linklaters (legal), RBS (financial), Wood Group (technical issues), PwC (tax and accounting)
Lenders' advisers: Ashurst (legal), Willis Towers Watson (insurance), Operis Business Engineering (model auditor), Sgurr (technical)

European Transport

Acquisition of Empark

Macquarie Infrastructure and Real Assets (MIRA)'s acquisition of Spanish car park company Empark was supported by a complex financing structure.

MIRA's bid was supported by a €590 million ($715.5 million) bridge loan facility. This was quickly taken out prior to completion by the issuance of €475 million of senior secured fixed rate and floating rate high yield bonds and the entry into of a €75 million senior revolving credit facility.

The package includes a wide range of significant flexibilities for MIRA and Empark. The ultimate pricing of the high yield bonds (2.875% for the fixed rate notes and EURIBOR plus 2.750% for the floating rate notes) represents one of the lowest priced high yield bond financed leveraged buyouts in the European market.

The acquisition was made through MIRA's Macquarie European Infrastructure Fund 5.

Empark's portfolio comprises 432 contracts in 189 municipalities and other contracts with customers such as the Spanish and Portuguese public airport operators, under which they manage over 522,000 parking spaces in Spain, Portugal, the UK, Andorra, France and Turkey.

Total value: above €1 billion
Debt: €550 million
Equity: €467.5 million
EBITDA on value: around €75 million
Bridge loan: €590 million
Average car parks concessions: above 25 years
Lenders: Santander, BNP Paribas, JP Morgan, RBS, National Westminster Bank
Sellers: ASSIP Asesoria y Estudios de Mercado (50.37%), Parkinvest (28.42%), Haitong's ESIF I (12.94%), Transport Infrastructure Investment Company (8.27%)
Advisers: Macquarie Capital, BBVA, Clifford Chance, Linklaters, Allen & Overy, KPMG, Arup, Marsh

European Waste

Guipuzcoa Environmental Complex

The Mercado Alternativo de Renta Fija (MARF) registered a new bond issue programme by Ekondakin Energía y Medioambiente for a maximum of €80 million ($97 million), the seventh bond issue in the project bond segment.

This programme is part of an investment of €191 million earmarked for the construction of what will be the main plant for waste treatment, recycling and electricity generation, waste to energy, in Guipúzcoa, in the Basque region of Spain. Construction will be financed through a combination of bond issues and loans, an innovative formula for funding new greenfield infrastructure through MARF.

Under the programme, Ekondakin will make successive monthly issues that will correspond to the payment milestones set out in the plant's construction calendar, scheduled for end-2019.

Once operational, the bonds will have progressive amortisations through nominal reduction until 2047. The coupon will be 3.662%, to be paid monthly during the first three years and semi-annually until final maturity.

The project will have two independent plants for the biological and mechanical treatment of waste and electricity production, with a total treatment capacity of more than 200,000 tons per year. The contract establishes a payments system that will operate on an availability basis and per-ton processed.

Total value: €239.4 million
Debt: €191.5 million
Sponsors: Meridiam, Urbaser, Construcciones Moyua, Construcciones Murias, Altuna y Uría, LKS Ingeniería
Lenders: AG Insurance, Natixis, Rivage, KommuneKredit, CIC Bank, Siemens Bank, Korea Development Bank
Tenor: 30 years
Coupon: 3.662%
Advisers: Deloitte, Cuatrecasas, Gomez-Acebo & Pombo

African Transport

Nacala Logistics Corridor

The $4.9 billion Nacala logistics corridor is a vast project that comprises the upgrading of existing rail lines in addition to the construction of greenfield railway sections in Mozambique, passing through landlocked Malawi.

The scheme includes 230km of new lines as well as work on 682km of existing track. It will connect the Moatize coal mine in the Tete region of northern Mozambique – which is operated by Brazilian miner Vale – with the export port of Nacala-à-Velha, located in the province of Nampula on the country's north east coast.

The project has capacity to transport 22 million tonnes per year, of which 18 million is assigned to Vale's Moatize mine, which produces premium hard coking coal and high calorific thermal coal.

It is hoped that production and exports from the Moatize mine will continue to increase as a result of the railway line. Coal production at Moatize has increased from 3.8 million tonnes in 2012 to 11.3 million tonnes last year (2017). Vale and Japanese trading house Mitsui (a co-shareholder in the mine) are now targeting 20 million tonnes per year.

This will enable coal exports to overtake aluminium in terms of export revenue for Mozambique.

The financing of the project was only possible due to significant support from Japanese institutions. In April 2017, Mitsui acquired a 15% stake in the Moatize mine and a 50% in the rail project from Vale. Those acquisitions were dependent on the financing of the Nacala corridor being completed by the end of December 2017.

The deal provides Vale with an export route for its Moatize coal, and Mitsui a share in that resource.

Construction of the port at Nacala started in 2011 and was completed in 2015. Meanwhile, Vale began construction of the logistics corridor on balance sheet in 2012 and completed it in May 2017.

The opening ceremony for the Nacala corridor was held in May 2017.

The Nacala-à-Velha terminal can store around 1 million tonnes of coal. It is also the deepest port in southern Africa, with a draft of over 60 metres, and capacity to accommodate 150 ships per year.

In addition to transporting coal, regular passenger and general cargo services will be run on large parts of the corridor and the branch lines. Two pairs of general cargo trains will operate on the line each day, while for passengers there is one pair of daily trains.

The project is expected to have a transformative impact on the Mozambique economy and also creates a more convenient, efficient and cost effective connection to the coast for landlocked Malawi.

The corridor will also lead to a reduction of CO_2 emissions and fewer accidents by diverting a proportion of road traffic to rail links. The cost of taking coal to the coast by train is also lower than by truck, increasing competitiveness for Moatize coal on international markets.

The financing of the project was complex due to the cross-border nature of the asset and the mixture of greenfield and brownfield concessions.

The scheme encompasses five separate concessions, completed at different times, in two countries, which had to be brought together into one financing package, something that had not been done before. It was also necessary to coordinate between the two governments to operate the trains effectively and without interruption across both their territories.

The complexity of this financing model has now set a precedent which is expected to be replicated for other projects globally. Unlike Nacala, other infrastructure projects that cross national borders – such as the E18 road, which runs across the south of Finland, Sweden and Norway – have resulted in multiple, separate concessions with separate financings and construction projects for the sections each country.

Meanwhile, the Nacala corridor was also the first onshore project financing in Mozambique and Malawi, which meant it required the negotiation of expropriations for both governments, it created greater financial complexity, and ultimately resulted in a higher risk profile for sponsors and lenders.

Mozambique also brought the $8 billion Coral South FLNG project to financial close in November 2017. However, the offshore location of this scheme meant it was significantly less complicated and financially risky than the Nacala corridor.

The Nacala rail line should have a transformative impact on the Vale business. The mining company has been producing coal at the Moatize site since 2011, and the mine is by some way its most significant investment in coal. It exports to India, the Americas, Europe and Eastern Asia from Moatize.

Vale had previously invested in the 575km Sena railroad, operated by state rail company CFM, that connects Moatize to the Port of Beira. But Vale has described the Sena line as fragile, and it could only support 6 million metric tonnes of coal a year, compared to Nacala's 18 million tonnes.

Total value: $4.9 billion
Debt: $2.73 billion
Equity: $2.17 billion
Sponsors: Vale, Mitsui
Lenders: Standard Bank, Investec, ABSA, Rand Merchant Bank, SMBC, MUFG Bank, Mizuho, SMTB, Nippon Life Insurance Company, Standard Chartered Bank, JBIC, African Development Bank
Grantor: Mozambique and Malawi governments
Tenor: 14 years
Pricing: Pricing on the ECIC (Export Credit Insurance Corporation of South Africa) tranche is between 350-400bp over Libor. The NEXI tranche is priced at 190bp over Libor
Advisers: Linklaters, Vecturis, Willis Towers Watson, Moffat & Nichols, RINA, HSBC, White & Case

African Renewables

Bangweulu Solar PV

Neoen and First Solar's successful financing of the Bangweulu PV project represents a significant step in electrifying sub-Saharan Africa as well as being proof of concept for the International Financial Corporation's (IFC) Scaling Solar initiative. The project is the first to be tendered, developed, and financed under the programme.

Bangweulu Power Company, SPV of the 47.5MW capacity project, will provide electricity to state utility and offtaker ZESCO at a fixed price of $0.06015 per kWh under the PPA – a competitive tariff, making the average price $0.047/kWh over the lifetime of the contract. A second project, Ngonye, was tendered under the same Scaling Solar round and was won by Enel, offering a bid of $0.0784/kWh.

The scaling solar initiative aims to help developing countries bring bankable solar projects to market. Scaling solar projects have standardised documentation with the IFC participating as lead arranger and potentially as lender or equity provider. IFC, via its various Scaling Solar programmes, is developing more than 1,200MW of capacity in Zambia, Ethiopia, Madagascar and Senegal.

For Bangweulu, IFC arranged a debt package comprising an IFC senior A-loan of $13.3 million alongside an IFC-Canada Climate Change Program senior loan of $13.3 million and OPIC senior loan of $13.3 million.

The IFC provided an interest rate swap on the deal with another World Bank Group member, the International Development Association, providing a partial offtaker payment guarantee.

Sterling & Wilson is undertaking both the EPC and O&M contracts.

Both the Ngonye and Bangweulu projects are located in the Lusaka South Multi-Facility Economic Zone in the south of the country.

Project company: Bangweulu Power Company
Total value: $61 million
Debt: $39.9 million ($13.3 million IFC senior A-loan, $13.3 million IFC-Canada Climate Change Program senior loan, $13.3 million OPIC senior loan)
Equity: $21.1 million
Sponsors: Neoen (55%), First Solar (25%), Industrial Development Corporation (20%)
Lenders: IFC, OPIC
Guarantors: World Bank (partial risk guarantee)
Advisers: Trinity International, Norton Rose Fulbright, Cranmore Partners, IFC, Mott MacDonald, Linklaters, Sgurr, BDO, Marsh
Offtaker: ZESCO (25 years)

African Midstream Oil & Gas

Coral South FLNG

This is the first project financing for a floating liquefied natural gas development anywhere in the world, and the first LNG project tapping Mozambique's considerable Rovuma Basin.

Given the complexities of onshore drilling in the country, it is little surprise that the first of many planned LNG projects in the country happened offshore. But it makes the achievement no less impressive.

The Export Credit Agency (ECA)-backed financing had to overcome many obstacles, such as: a low oil price environment; negotiations involving dozens of stakeholders; Mozambique's sovereign default in 2017; a lacked of precedents requiring the creation of innovative financing solutions.

The $4.68 billion debt package for Coral South was provided by a group of 15 commercial banks lending on both a covered and uncovered basis, with ECAs from Italy, France, Korea and China participating in reflection of the multinational sponsor group. The 16-year debt was split between seven tranches.

Coral South will have the capacity to produce 3.4 million per annum and has an estimated total gas reserve of 85 trillion cubic feet.

First LNG production is expected in 2022. BP has signed a 20-year contract with the sponsors to buy LNG production from the project.

The Project will be constructed by a EPCIC consortium made up of TechnipFMC, JGC Corporation and Samsung Heavy Industries acting on a joint-and-several basis under a single contract.

The wider Rovuma Basin, offshore from the northern province of Cabo Delgado in Mozambique, is thought to be the world's largest uptapped gas reserve holding some 150 trillion cubic feet of gas.

Total value: $8.88 billion
Total equity: $4.21 billion
Total debt: $4.68 billion
Sponsors: Eni (25%), ExxonMobil (25%), CNPC (20%), Galp (10%), ENH (10%) and Kogas (10%)
ECAs: The Export-Import Bank of China, Korea Trade Insurance Corporate, China Export & Credit Insurance Corporation, Bpifrance Assurance Export, SACE
Commercial lenders: Crédit Agricole, SMBC, Bank of China, Industrial and Commercial Bank of China (ICBC), China Exim, KEXIM, ABN Amro, BNP Paribas, HSBC, Korea Development Bank, Natixis, Société Générale, Standard Bank, UBI Banca, UniCredit
Advisers: Allen & Overy, Linklaters, Clifford Chance, Kim & Chang, Portland Advisers, BDO, Poten, INDECS Consulting, Merlin Advisors, SGS Horizon

African Power

Hakan Peat-fired Power

Around half of Rwanda's electricity is generated by hydro power plants, the other half through burning fossil fuels. The thermal capacity is dependent on gas imports which are costly for the land-locked East African country but the government estimates that roughly 700MW could be generated from exploiting domestic peat resources.

The 15MW Gishoma peat-fired plant began operations in 2016, and in early 2017, Turkey's Hakan Mining and investment fund Quantum Power reached financial close on the 80MW Hakan project.

Hakan Mining (51%) and Quantum Power (49%) are the project's equity sponsors, while Themis is the project developer and also advised the sponsors on the transaction.

The sponsors raised $345 million in debt from a group of development finance institutions to support the development. This was split between a main $225 million senior debt facility, a $10 million junior provided by Finnfund, and a direct loan ($75 million) and an underwriting commitment ($35 million) from the Africa Finance Corporation.

Rwanda's Energy, Water and Sanitation Authority (EWSA) will be the plant's offtaker under a 26-year power purchase agreement, with payments split between fixed capacity (85%) and variable energy (15%) components. EWSA's obligations under the PPA will be fully covered by a sovereign guarantee.

Rwanda is now keen to push on with more peat-fired power projects, with a competitive tender for another 100MW plant being prepared. The country's first peat master plan, published in 1993, identified 155 million tons of dry peat spread across an area of 50,000 hectares. The richest reserves can be found near the Akanyaru and Nyabarongo rivers and the Rwabusoro Plains.

Debt value: $345 million ($225 million senior debt facility, $10 million junior debt, $75 million direct loan, $35 million underwriting commitment)
Sponsors: Hakan Mining, Quantum Power
Project developer: Themis
Lenders: Eastern and Southern African Trade and Development Bank, African Export Import Bank, Development Bank of Rwanda, Export-Import Bank of India, Finnfund, Africa Finance Corporation
Legal advisers: Clifford Chance, Trust Law Chamber, Trinity
Technical adviser: Sweco
Environmental adviser: Wes Consult

African Upstream Oil & Gas

Vitol Sankofa OCTP

The OCTP development consists of two oil and three gas fields located 60km off the coast of Ghana. One of the shareholders in the project, Vitol, raised some $1.35 billion in debt to part fund its portion of the development.

The financing was notable for its complexity and the participation of UK Export Finance (UKEF) which provided Vitol with its largest direct loan to date and its first to an African project.

The debt package is split between five tranches: an uncovered commercial bank loan; a MIGA-covered commercial bank loan; a UKEF-covered commercial bank loan; a UKEF direct loan; and an IFC direct loan. Each tranche is ranked pari passu and all benefit from a debt service undertaking from Vitol until completion.

The debt has 10- and 12-year tenors and the commercial bank loans are understood to have pricing around 300bp over Libor.

Ghana National Petroleum Corporation (GNPC) will purchase gas from the project on a fixed-rate take-or-pay offtake agreement while Vitol will offtake oil for export. The World Bank is providing a 15-year letter of credit to GNPC to mitigate its credit risk.

GNPC will use the purchased gas to fuel baseload gas-fired power plants in the country.

One of the proposed power projects due to receive gas from Sankofa is Ghana 1000 which is being developed by Endeavor. Located near Takoradi in the Western Regions, the project will consist of around 1,300MW of combined-cycle power generation built over three separate phases. The first 375MW phase will use indigenous gas, while subsequent phases will use imports, perhaps demonstrating the limits of Sankofa's likely contribution gas-fired generation.

Total value: $1.93 billion
Equity: $580 million
Debt: $1.35 billion
Project sponsors: Eni (44.44%), Vitol Holding (35.56%), GNPC (20%)
Borrower: Vitol Holding
Lenders: IFC, UK Export Finance, Mizuho, ING, Standard Chartered, Bank of China, Natixis, MUFG Bank, HSBC, Société Générale
Advisers: Norton Rose Fulbright, Milbank, Herbert Smith Freehills, Curtis Mallet-Prevost Colt & Mosle, Portland Advisers

African Mining & Metals

Nokeng Fluorspar

Financing of the greenfield Nokeng Fluorspar Mine will provide a significant contribution to South Africa's economy, trade income, and create up to 160 jobs in a rural area. Dutch and German DFIs, FMO and DEG, provided two thirds of the senior debt – filling a gap in availability of local financing. Nedbank provided the rest of the senior debt, with a small mezzanine tranche of $6 million lent by Concentrate Capital Partners.

Nedbank's debt has a tenor of 21 months (construction) plus six years and is denominated in Rand. The debt from the DFIs, denominated in US dollars, has a tenor of 21 months plus seven years.

South Africa's Department of Trade and Industry provided a maximum grant of R21 million ($1.7 million) as a contribution towards power supply and road works.

SepFluor is a development company owned by private equity fund African Minerals Exploration and Development Fund II SICAR (AMED II), Ixofluor, Traxys Projects and funds managed by two of AMED II's investors – Kuramo and Tribus Capital.

The Nokeng mine will produce 180,000 tonnes per annum of acid grade fluorspar and 30,000 TPA of metallurgical grade fluorspar. A "significant" portion of the early production has been pre-sold to international fluorspar consumers.

Project company: Nokeng Fluorspar Mine
Total value: $127 million
Debt: $73 million
Equity: $54 million
Sponsors: SepFluor (100%)
Lenders: FMO, DEG, Nedbank, Concentrate Capital Partners
Tenor: 21 months (construction) plus six/seven years.
Advisers: Norton Rose Fulbright, Fieldstone, Herbert Smith Freehills
Offtaker: International fluorspar customers

African Airports

Ravinala Airports, Madagascar

Meridiam, Bouygues, and ADP's Ravinala airports PPP project in Madagascar involves the development of a new international terminal at Ivato Airport, in the district of Ambositra, with an initial capacity of 1.5 million passengers; the renovation of the existing terminal; and a resurfacing of the runway.

The contract also involves the refurbishment of the runway and terminal at the Fascene airport on the island of Nosy Be.

This is one of the first project financings in Madagascar, and the first African airport deal to be financed in some years.

It is part of the Malagasy government's drive to boost economic growth by developing its tourism sector.

Numbers of tourists increased 20% in 2016, and airport traffic is now projected to grow around 4-5% annually, under a conservative estimate.

The improved facilities are expected to boost job creation and set a precedent for future infrastructure investments in Madagascar.

The involvement of the International Finance Corporation (IFC) and the other DFIs created a strong regulatory environment which is expected to attract further foreign investment.

Total value: €216 million
Debt: €126 million
Equity: €63.9 million
Sponsors: Meridiam, ADP Management, Bouygues Group
Lenders: IFC, Proparco, Development Bank of Southern Africa, Emerging Africa Infrastructure Fund, OPEC Fund for International Development
Grantor: State of Madagascar
Tenor: 16 years
Advisers: Allen & Overy, Mott MacDonald, Willis, PwC, Madagscar Law Office, ALG, Gide, Lexel, EGIS, Generali, KPMG, Nera, Monkey Forest

African Water

Kigali Bulk Water Supply PPP

Kigali Water is Rwanda's first IWP, serving a country with one of the highest population densities in Africa. It is also the first water project of its kind in sub-Saharan Africa (outside of South Africa).

The development aligns with the Government of Rwanda's plans to improve water quality and to achieve universal water access, and its success could see more African countries following suit with their own water PPPs.

The project will provide potable water for the eponymous town of Kigali and other nearby populaces. Kigali will provide 40,000 cubic metres of water per day of treated groundwater, which will be extracted from the south bank of Nyabarongo River.

Metito closed on a $38 million package of 18-year debt lent by the African Development Bank (AfDB) and the Emerging Africa Infrastructure Fund (EAIF). A further $2.6 million in junior debt was lent by EAIF (which is a member of the Private Infrastructure Development Group and managed by Investec) with a $6.25 million grant from PIDG's Technical Assistance Facility.

DevCo, a PIDG facility managed by the IFC, provided initial financial support to the Government of Rwanda for the legal, financial, technical and environmental advisory of the project.

Total value: $60.8 million
Debt: $40.6 million
Sponsor: Metito
Lenders: AfDB, EAIF
Guarantors: Government Guarantee provided by Ministry of Finance guaranteeing the offtaker's obligations
Advisers: Norton Rose Fulbright, Trust Law Chambers, K-Solutions and Partners, Synergy Consulting, Willis Watson Towers, Allen & Overy, WSP Parsons Brinckerhoff, Indecs Consulting
Offtaker: Water and Sanitation Corporation (25 years + 30 months construction at $0.75/m³)

North America Social Infrastructure

OSU's Utility and Energy Supply Systems Lease PPP

This landmark social infrastructure deal closed in July 2017, seeing Ohio State University partner with Ohio State Energy Partners (OSEP) – a JV between Engie North America and Axium Infrastructure – to create an innovative solution to power its energy supply systems.

The partnership was structured with a 50-year concession and lease agreement under which the state university pays OSEP through an annual fee that is in part fixed and in part variable, dependent on the amount of capital improvements made by the project company and the operating and maintenance costs incurred by it. The private partner in turn manages and maintains the campus electricity, chilled water/cooling, steam/heating, natural gas and geothermal utility systems.

OSEP was also tasked with launching an energy efficiency programme to modernise campus facilities, helping it meet Ohio sustainability goals of 25% energy efficiency improvements by 2025.

The Engie/Axium JV made an upfront payment to the University of $1.015 billion which is being used to – among other things – enhance access, affordability and excellence across the university.

OSEP also committed a further $150 million to support academic initiatives. This sum will be awarded to faculty positions, financial aid, internships, sustainability, staff development and philanthropy. One of the key applications of this funding is the creation of the Energy Advancement and Innovation Center within the university.

This project was a long time in the planning and the construction environmental management plan (CEMP) took four years to create. It is designed to support the university's goals for sustainability, academic support and operating excellence – while managing the risks associated with a long-dated partnership.

The university had to develop a contract from scratch with sufficient oversight structures and performance requirements, incorporating flexibility to allow for changes over time, identifying risks and – more importantly – ways to mitigate them.

The end results of their work is that the CEMP has delivered an innovative solution that positions Ohio State as an international leader in sustainability, providing new resources to advance teaching, learning and research – a move that remains unprecedented in the US higher education sector in terms of scale, scope and complexity.

> "Beyond impact to the university... the project team delivered a ground-breaking model for risk transfer and resource generation"

Beyond impact to the university and its standing in the energy space, the project team delivered a ground-breaking model for risk transfer and resource generation through a third-party partnership that will serve as a model for similar deals within higher education and municipal market participants.

Financing

As a stand-alone investment, this $1.165 billion transaction represents the largest single deployment of capital in Ohio State's academic mission.

The total debt package comes in at $990 million with an equity contribution of $175 million. The equity slug was provided 50:50 by Engie/Axium.

The long-tenor debt came in the shape of an $850 million private placement backed by up to eight institutional investors. MetLife Private Capital acted as lead investor in this process. The debt has a tenor of 20 years, maturing in 2037.

RBC Capital Markets acted as lead placement agent and bookrunner with MUFG Bank, CIBC and Santander serving as co-placement agents.

The bank debt comprises a $125 million revolving capex loan with a five-year tenor (which will be drawn as required), as well as a $15 million letter of credit facility which was also arranged over five years.

The capex loan is priced at 112.5bp over Libor with a 75bp up-front fee. The mandated lead arrangers are RBC Capital Markets, MUFG Bank, CIBC and Santander.

The Ohio State advisory team was headed up by Barclays as financial adviser and Jones Day on legal with support from local law firm Ice Miller. Technical advisory was headed up by Burns & McDonnell with Mazars working as model auditor. The sponsor team and lenders were advised by RBC and Allen & Overy. Milbank Tweed Hadley & McCloy was lender counsel.

This is not the first investment to have been made into the university's utility system in recent times. The university has deployed some $340 million since 2004 to upgrades, and a further $31 million has been allocated to projects under construction.

The university anticipates around $600 million of capital expenditure over the concession term – of which some $90 million is expected to be invested over the next 10 years.

Total value: $1.165 billion
Debt value: $990 million
Equity value: $175 million
Sponsors: ENGIE North America, Axium Infrastructure
Lenders: CIBC, MUFG Bank, RBC, Santander
Tenor: 20 years for private placement, five-year revolving capex, five-year letter of credit
Pricing: capex loan Libor +112.5bp
Advisers: Barclays, Royal Bank of Canada (to sponsor), Allen & Overy, Milbank, Jones Day, Ice Miller, Burns & McDonnell

North American Project Bond

Indiana Toll Road Refinancing

In one of the largest private placements of 2017, IFM Investors closed on an $850 million refinancing of the operational Indiana Toll Road (ITR) in the US in September 2017.

The debt size was significantly upsized from an initial target of just $300 million after the transaction was almost four times oversubscribed. The four-trance private placement featured 20 participating institutional investors, carrying tenors of seven and 10 years.

IFM acquired the ITR in 2015 for a total consideration of $5.7 billion after its previous operator of the asset filed for Chapter 11 bankruptcy. Its previous owners were Macquarie Infrastructure Partners (25%), Macquarie Atlas Roads (25%) and Cintra (50%).

IFM closed on $2.2 billion in debt to part fund the acquisition, of which $1.27 billion was a five-year term loan provided by 11 lenders. Shortly after it acquired the ITR, the sponsor closed on a further $700 million in fixed-rate, private placement notes with AllianzGI.

The new 144A bonds package replaces the outstanding term loan debt. The bonds breakdown into: a $125 million seven-year tranche priced at 140bp over 10-year US treasuries; a $325 million 10-year tranche priced at 145bp; a $150 million 12-year tranche priced at 155bp; and a $250 million 15-year tranche priced at 170bp.

Among the institutional investors which bought the bonds were MetLife (which is understood to have taken the largest ticket of around $115 million), Prudential, Legal and General Investment Management, OMERS, and Samsung Life.

The ITR is a 157-mile highway opened in 1956. It is the only direct link between Chicago and the Ohio Turnpike.

Total value: $850 million
Debt: $850 million ($125 million seven-year tranche priced at 140bp over 10-year US treasuries; $325 million 10-year tranche priced at 145bp; $150 million 12-year tranche priced at 155bp; $250 million 15-year tranche priced at 170bp)
Sponsor: IFM Investors
Bond arrangers: CIBC, MUFG Bank
Known bond investors: MetLife, Prudential, Legal and General Investment Management, OMERS, Samsung Life
Legal advisers: Orrick, Shearman & Sterling

North American Telecoms

EdgeConneX Chicago Holding

This financing backs EdgeConneX's purchase and re-development of an existing office building outside of Chicago, Illinois, into a 24MW cloud-enabled, edge data centre.

Construction on the facility started in Q4 2016 and was completed in four phases with commercial operation dates between Q1 and Q2 2017.

The project benefits from a 15-year co-location and data centre lease for 100% of built capacity with a AAA-rated offtaker. The financing was split between a 7-year $162.5 million construction term loan, a $10.8 million 6.5-year debt service reserve letter of credit, and a $62.1 million two-year equity bridge loan.

This was one of the first data centres to be project financed in North America.

Given the strong offtake, the transaction was sized on a DSCR basis with coverage levels reflecting contracted cash flow from a AAA offtaker rating, and a lower operating risk profile.

Data centre outsourcing is a growing trend, with many large enterprises embracing the financial and operational benefits associated with wholesale co-location solutions.

However, as people watch more of their video online versus cable TV, and as businesses consume more cloud services, the physical nature of internet infrastructure is changing, with a push to improve the quality of high-bandwidth web services to users outside of the top metro areas.

The best way to do this has been caching the most popular content or web-application data on servers closer to the so-called "tier-two markets". This push has created a whole new category of data centre service providers that call their facilities "edge data centres".

Total value: $235.4 million
Debt: $173.3 million ($162.5 million construction term loan, $10.8 million debt service reserve letter of credit)
Equity: $62.1 million
Sponsor: EdgeConneX
Bond arrangers: ScotiaBank, MUFG Bank, SMBC
Tenor: 7 years construction, 6.5 years DSC LC, 2 years EBL
Advisers: Moelis, Allen & Overy, Shearman & Sterling, Turner & Townsend, INTECH Risk Management

North American Airports

Wade International Airport

The L.F. Wade International Airport Redevelopment PPP was the largest P3 infrastructure deal in Bermuda, following several unsuccessful attempts to launch the project over the past few years.

The new terminal will provide Bermuda with systems that are in line with current large international airports – it is an essential component of Bermuda's plans for economic growth.

The $355 million project cost was met through a US private placement and sponsor equity. The $285 million fixed coupon private placement carries a coupon of 5.9% and amortises over a 25-year term. Around $70 million of shareholder equity will be invested in the latter part of construction.

The project utilizes a unique blend of P3 and government-to-government finance and operating structures.

The project is being implemented under a framework agreement between the Government of Bermuda and the CCC, a crown corporation of the Government of Canada.

Aecon is the private sector partner and is responsible for the project's development, financing, and long-term operation and maintenance.

CCC will deliver a new terminal and associated infrastructure under a fixed price, date guaranteed design and construction contract. CCC will fully subcontract the work to Aecon.

Project value: $355 million
Debt: $285 million
Equity value: $70 million
Sponsor: Aecon Concessions
Bond arrangers: UBS Securities Canada, CIBC World Markets
Prime Contractor: Canadian Commercial Corporation (CCC)
Lead designer: Scott Associates
Grantor: Bermuda Airport Authority
Advisers: McCarthy Tetrault, Mott MacDonald, Mayer Brown, Turner & Townsend CM2R

North American Roads

I-66

Virginia's Interstate 66 (I-66) expansion received the largest Transportation Infrastructure Finance and Innovation Act (TIFIA) loan ever for a P3 project. It also had the largest total value of any greenfield toll road P3 in US history.

Additionally, it was the first greenfield P3 in Virginia to feature a substantial concession fee payable to the state ($500 million, paid at financial close).

As a result of the deal, the concessionaire will contribute $350 million in corridor improvement payments, as well as transit funding payments with an expected net present value of $800 million.

The I-66 project involves widening 35km of the I-66 between US Route 29, near Gainesville and the Interstate 495/Capital Beltway in Fairfax County, Virginia. The widened highway will feature three regular lanes and two express lanes in each direction.

The concessionaire will contribute $800 million over the next 50 years to build and operate transit projects in the I-66 corridor, as well as providing $350 million to the grantor for future congestion reducing projects.

Total value: $3.55 billion
Debt: $737 million private activity bonds. $1.229 billion – subordinate loan under Transportation Infrastructure Finance and Innovation Act (TIFIA) programme
Equity: $1.5 billion
Sponsors: Cintra, Meridiam, APG, John Laing
Bond arrangers: Citigroup, BAML
Grantor: Virginia Department of Transportation
Tenor: $31 million (due 2047), $131 million (due 20490), $222 million (due 2052), $353 million (due 2056)
Pricing: PABS ranges from 3.71 to 4.00%
Advisers: Nixon Peabody, Ashurst, Rubicon, Skadden, Gibson Dunn & Crutcher

North American Refinancing

Windsor, Ontario Parkway

The roughly C$208 million ($162 million) refinancing of the Rt. Honourable Herb Gray Parkway PPP project in Ontario, Canada opened the Canadian market to non-Canadian investors and was conducted in the absence of a bank private placement arranger.

Among the non-Canadian investors was MetLife, which invested on behalf of its own account as well as several global accounts that it manages.

Project sponsors were ACS, Acciona and Fluor. The 22-year bonds, due 30 September 2039, will refinance a C$158 million soft mini-perm bank tranche that was part of the project's overall financing package in 2010. Bond proceeds will also be used to pay-off C$43 million in swap breakage costs and other existing debt interest rate payments. It has a 143bp credit spread with an A2 rating from Moody's.

The sponsors managed a direct-to-market private placement without the use of a bank arranger, which allowed them to engage directly with investors.

The 11km Parkway, located in Windsor, Ontario, connects Highway 401 in south west Ontario to the Canadian border inspection plaza. It separates local and international traffic, eliminates stop-and-go traffic in residential areas, and improves quality of life through the provision of 300 acres of green space and 20km of recreational trails.

Construction value: C$1.3 billion
Debt: C$208 million
Sponsors: ACS, Acciona, Fluor
Financial adviser: Agentis Capital Partners
Legal advisers: McCarthy Tétrault (sponsors), Fasken Martineau DuMoulin (lenders)
Independent engineer: BTY Group
Insurance adviser: Cook Advisory Services
Model auditor: Mazars

North American M&A

Northwest Parkway

The Northwest Parkway in Denver, Colorado came up for sale in 2016, not long after a flurry of three other US toll road concession auctions from 2015.

The each of these auctions were competitive, due to the limited pool of toll road concessions already in private ownership in the US.

HICL Infrastructure, DIF and Northleaf Capital each took equal shares. DIF also brought along BlackRock as an equity co-investor, contributing to the total $499.2 million equity value.

This European and Canadian team beat competition from toll road operator companies Globalvia, and Roadis.

For InfraRed's UK-listed fund HICL this is its debut North American acquisition, while it is DIF's first North American transport purchase.

In using a broadly marketed US private placement (USPP) to support an acquisition bid, this consortium have drawn on the flexibility and agility USPP institutions are now capable of. Around 12 investors supported the consortium, providing committed letters with typical acquisition terms for the final binding bid. Half of the $263 million debt went out long to 20 years, while the other half had a 10-year tenor.

The previous US toll road concession sale had shown institutions can support an M&A final bid, albeit with one institution taking the debt.

Total value: $762.2 million
Debt value: $263 million
Buyers: InfraRed Capital Partners (33.3%), DIF (33.3%), Northleaf Capital (33.3%)
Seller: Brisa
Pricing: 4.56% on 10-year Series A notes, 5.09% on 20-year Sseries B notes
Advisers: Agentis Capital, Norton Rose Fulbright, Kirkland & Ellis, Moelis & Company, Greenberg Traurig, Barclays, Operis, Infrata
Concession expiry: 2106

North American Hydro

Brookfield White Pine

Brookfield White Pine Hydro, a subsidiary of Brookfield Renewable Partners LP, in July 2017 issued a $475 million green bond through a private placement in the US and Canada.

The company has more than 10GW of hydro and wind assets in its portfolio across a number of markets – including North America, Colombia, Brazil and Europe – and this financing was secured against its 380MW White Pine hydropower plants.

The White Pine portfolio is made up of 21 hydro assets on river systems in Maine and New Hampshire, primarily on the Androscoggin, Dead, Kennebec, Presumpscot, Rapid and Saco rivers.

The non-amortizing bond bears an annual coupon of 4.4% that matures in 2032, with the proceeds of the private placement being used to refinance existing indebtedness and for general corporate purposes.

The notes featured a 15-year bullet maturity and received an E-1 green evaluation rating from Standard & Poor's. They are supported by cash flows of the issuer through uncontracted energy sales, capacity payments and ancillary services from the New England power market.

This deal marked Brookfield Renewable's inaugural green bond issuance and the issuer's 15-year bullets priced 25bp tighter than prior to the merchant hydro financing.

SMBC Nikko and Scotia Capital acted as lead placement agents.

Debt value: $475 million
Sponsors: Brookfield Renewable Partners
Lead placement agents: Scotia Capital, SMBC Nikko Securities
Co-agent: MUFG Bank (passive on the bond)
Tenor: 15 years
Pricing: 4.4%
Advisers: Milbank (investor counsel), Torys (issuer counsel)

North American Power

Hickory Run

This was the first financial close for a greenfield power plant in the PJM since the lower-than-expected pricing of the 2020-21 planning year auction.

The 870MW quasi-merchant power project was planned to replace retiring coal plants. Originally due to start construction in 2014 and commercial operations in 2016, Tyr Energy acquired the unit from LS Power in July 2016 and started construction only when financial close was achieved in August 2017.

LS Power was able to bring in two additional equity investors ahead of financial close: Kansai Electric Power Corporation and Siemens Financial Services.

The total project cost is $750 million and the sponsors were able to attract $530 million in debt. This comprises a $380 million floating-rate term loan with construction-plus-five tenor, a $70 million ancillary facility from a sub-group of lenders, and an $80 million fixed-rate tranche backed exclusively by a pair of Korean investors.

With nine known lenders and approximately five more that are said to be involved, the financing package was remarkable for having Asian investors working directly with sponsors without brokers, for the pricing it achieved, and for the high appetite received.

Total value: $750 million
Debt: $530 million
Sponsors: Itochu Corporation's US subsidiary Tyr Energy (50%), Kansai Electric Power (30%), Siemens Financial Services (20%)
Lenders: BNP Paribas, BAML, Crédit Agricole, MUFG Bank, Development Bank of Japan, SMBC, ABN AMRO, National Australia Bank, Shinhan Bank
Pricing: Term-loan – 325bp above Libor rising to 375bp in year six and seven post construction
Advisers: Lummus Consultants International, Leidos, Vinson & Elkins, Latham & Watkins

North American Solar

Moapa Southern Paiute

This financing was considered innovative for being one of the first back-leveraged deals in the capital markets. The transaction backs the acquisition of the Moapa Southern Paiute project by Capital Dynamics.

The project is a solar photovoltaic facility on the Moapa River Indian Reservation in Clark County, Nevada. Originally developed by FirstSolar, Capital Dynamics' Clean Energy and Infrastructure (CEI) acquired the power plant in March 2017.

Initially planned to have a 250MW capacity, Moapa was expanded to a total of 344MW. Commercial operations commenced in December 2016, and the entire output is being sold to the Los Angeles Department of Water and Power (LADWP) through a 25-year PPA.

Moapa did not have existing project debt. The deal was the first infrastructure debt investment made by AllianzGI in a US solar project, providing more than 50% of the total required via a fixed rate note. Remaining funding to refinance a portion of the acquisition was provided by a group of institutional investors.

A joint venture between ABP and CalSTRS closed equity financing for Capital Dynamics. NordLB and KeyBank provided letter of credits.

GE Energy Financial Services and an affiliate of the Goldman Sachs Group share minority tax equity interests in the project.

Total value: $990 million
Debt: $208 million
Sponsors: Capital Dynamics, ABP, CalSTRS
Tax equity investors: Goldman Sachs, GE Energy Financial Services
Lead institutional investor: AllianzGI
Placement Agent: MUFG Bank
Lead arrangers and bookrunners: NordLB, Keybank
Tenor: 25 years
Advisers: Keybank, Milbank, Skadden Arps, Amis, Patel & Brewer, Leidos

North American Wind

Kent Hills

TransAlta Renewables, the Canadian listed independent power producer priced the issue of C$260 million ($202.6 million) 4.454% senior secured amortising notes, payable quarterly and bearing interest from their date of issue, on 27 September 2017. The issuance matures on 30 November 2033.

The bonds are secured by a first-ranking charge over all the assets of the Kent Hills SPV, comprising the operational 96MW Kent Hills 1 and 54MW Kent Hills 2 wind farms as well as the Kent Hills 3.

The proceeds will be partly used to pay down the construction costs on its 17.25MW Kent Hills 3 expansion project and also to make advance payments to Natural Forces Technologies which has a minority stake in Kent Hills.

Kent Hills is a wind generation facility located in Moncton, New Brunswick. It has three phases, two of which are operational with the third to begin operating in October. Like the earlier phases, the third phase will sell all of its output to New Brunswick Power under a PPA, which expires in November 2035.

Kent Hills is owned by TransAlta Renewables (83%) and a privately-owned developer, Natural Forces Technologies (17%). TransAlta is Canada's largest wind generator with more than 1,300MW of net generating capacity.

Bond value: C$260 million
Maturity: 30 November 2033
Pricing: 4.454% senior secured amortising notes
Description: to pay construction cost on Kent Hills 3 wind farm, to make advances to Natural Forces Technologies
Bookrunner: RBC (exclusive private placement agent, sole bookrunner)
Advisers: RBC (financial adviser), Norton Rose Fulbright (borrower), McCarthy Tétrault (lender), Intech Risk Management (insurance), WSP (independent engineer)

North American Storage

Electrodes (Battery Storage)

The project financing of Macquarie Capital's Electrodes Holding battery storage portfolio was awarded the *IJGlobal* North American energy storage deal of the year.

The behind-the-meter battery energy storage systems are located at various large-load commercial, industrial and government host sites in Los Angeles and Orange counties and they are owned and under development by affiliates of Macquarie Capital.

The fleet of energy storage systems deploys Tesla Energy's Powerpack 2 lithium-ion battery system and will be used for utility-grid services including flexible and reserve capacity, solar integration and voltage management in addition to retail energy services such as demand management, back-up generation and enhanced power quality.

This bellwether deal marked an important project financing milestone for the emerging battery-based energy storage sector.

It backs a 50MW / 300MWh in-construction, fleet grid constrained pockets of the West Los Angeles Basin service territory of Southern California Edison (SCE) that Macquarie Capital acquired from Advanced Microgrid Solutions (AMS) in August 2016.

Since the acquisition, Macquarie and AMS have been jointly developing and constructing the portfolio, which is increasingly coming online with the first phase having already completed.

CIT provided the project-level debt to fund the deployment of the systems.

Total value: $200 million
Sponsor: Macquarie Capital
Development partner: Advanced Microgrid Solutions
Lender: CIT
Advisers: Orricks, DLA Piper, Leidos

North American Transmission/ Distribution

Fort McMurray

Fort McMurray West Transmission Line stands out for its P3-style procurement process and its distinctly bold approach.

The sponsors – ATCO and Quanta Capital Solutions – spent a long time investigating P3 precedents, particularly those used by Infrastructure Ontario, Partnerships BC and Alberta Transportation, to determine the best approach.

Meanwhile the procurer Alberta Electric System Operator (AESO) was keen to award the project to a team that was most capable of delivering a high-voltage, 500km transmission line that was to traverse the Canadian countryside.

For the first 24-30 months after the preferred bidder was identified, it was required to consult with affected stakeholders (including several First Nations groups) on the route, as well as having to apply to Alberta Utilities Commission for the right to build and operate the line.

A tailor-made financing model had to be created to allow the flexibility that a project of this nature would require.

It allows price adjustments for changes in the financial markets, and the development of a unique, end-of-development-period price adjustment mechanism, tied to pre-selected indices, to address concerns regarding inflation/deflation and regulatory changes to the length and location of the line.

Total value: $1.2 billion
Debt: $1.1 billion
Sponsors: ATCO Group, Quanta
Bond underwriters: CIBC, RBC
Tenor: 36 years and four months, 14 years and 11 months, 14 years and seven months
Pricing: GoCs +155bp for long tenor, 123bp for two shorter pieces
Advisers: RBC Capital Markets, Norton Rose Fulbright, Bennett Jones, Torys, BDO, Altus, INTECH Risk Management

North American Midstream Oil & Gas

Elba Island Liquefaction

The Elba Island LNG terminal is under construction in Savannah, Georgia in the US, with its first unit due to be operational in spring 2018 followed by the remaining units before the end of the year.

The terminal will have the capacity to export a total of 2.5 million tonnes per year of LNG once constructed.

Original sponsors Kinder Morgan and Shell US Gas and Power received approval for the US Department of Energy to export up to 4 million tons per year to Free Trade Agreement countries in June 2012. Shell decided to sell down its 49% stake in the project to Kinder Morgan in 2015, but retains its 20-year contract to buy LNG produced at the facility.

At the end of February 2017 EIG Global Partners became the new 49% stakeholder in Elba Island for an investment of $925.95 million, of which $646 million is in the form of a five-year construction term loan. The debt has been raised at the holdco level for EIG's minority stake, requiring a careful balance of protections in the credit agreement.

Elba Island is the sixth US LNG-export project to be approved and under construction.

Total value: $925.95 million
Debt: $646 million
Equity: $279.95 million
Buyer: EIG Global Partners
Divestor: Kinder Morgan
Lenders: Société Générale, Morgan Stanley, RBC Capital Markets, ING, Mizuho, ABN Amro, Caixabank, CIC Bank, KfW IPEX, BayernLB, National Australia Bank, Santander, Investec, CIT Bank, Raymond James, Siemens Financial Services, Korea Development Bank, FirstBank Puerto Rico, SMBC, Banca IMI
Pricing: 300bp above Libor
Legal advisers: Skadden, Latham & Watkins, Bracewell
Other advisers: Merlin Advisors, Lockton, Wood Mackenzie

North America Upstream Oil & Gas

ILX Holdings II

The project financing facility in favour of ILX Holdings II (ILX II) won the *IJGlobal* North American Oil & Gas award for upstream O&G.

ILX II – an O&G exploration and production partnership with a focus on the deepwater Gulf of Mexico – is owned by Riverstone and managed by Ridgewood Energy.

When the financing was committed, ILX II was holding nine non-operated interests in O&G fields, only three fields were producing and more than 75% of the company's reserves were still undeveloped.

The facility won the award based on the impact of the loan which would allow the development of non-producing fields as well as additional drilling on producing fields.

The facility structure provides tight monitoring to ensure full funding of development capex until completion. It also features conservative cover ratios, borrowing base redetermination every six months and a mandatory minimum commodity hedging programme to mitigate price risks.

Société Générale acted as sole MLA, structuring, technical and modelling bank; facility and security agent; and account bank for the $250 million facility with a six-year tenor. It was joined by Commonwealth Bank of Australia and Natixis which provided smaller tickets of $75 million each to the term loan facility.

Simpson Thacher & Bartlett was legal adviser to the sponsor, while Bracewell acted for the lenders.

Debt value: $250 million
Sponsor: Riverstone Holdings
Lenders: Commonwealth Bank of Australia, Natixis, Société Générale
Tenor: Six years
Advisers: Simpson Thacher & Bartlett, Bracewell

Latin American Power

Norte III

The $868 million financing of the 907MW combined-cycle gas turbine Norte III plant in Mexico by Macquarie Capital and Techint represents possibly the most innovative financing in Latin America in 2017.

The two sponsors worked their way through a complicated process which involved the restructuring of an existing bridge loan facility as well as an M&A transaction, both happening during original sponsor Abengoa's insolvency proceedings.

Abengoa's demise created a real risk that Norte III could have been scrapped, but instead Macquarie Capital managed to revive it and raise $715 million in fresh debt by financial close on 31 August 2017. The financing is said to have been oversubscribed by 25% and comprises a term loan and a standby letter of credit with a tenor of five years.

The new financing will be used for the construction and development of the gas-fired power plant which is located 30km to the south of Ciudad Juarez, Mexico.

The project

On 9 January 2016, Mexico's National Energy Commission (CFE) awarded Abengoa a 25-year power purchase agreement to design, build, finance, operate and maintain the project. Almost immediately, Abengoa signed on a $200 million bridge loan facility to kick-start the project. The loan was provided by five banks: SMBC, Santander, Crédit Agricole, Bancomext and KfW.

By summer 2015, Abengoa and the five lenders started looking to replace the bridge loan facility with a $600 million long-term financing. At the same time, however, rumour started circling that the Spanish-based company was heading toward financial problems. Despite a $650 million capital increase to reduce corporate debt, Abengoa's stocks fell 46% in two months.

In August 2016, Abengoa was already looking for a buyer for its stake in the project. After conducting a selection process, the embattled developer named Macquarie and Techint as preferred bidders in December 2016.

By September 2017, Macquarie Group and Techint had completed the acquisition and signed on the long-term financing for the project.

Abengoa and its affiliates will remain contracted with the Comisión Federal de Electricidad (CFE), under the same scope and power price agreed on the awarded contract. Techint will take over as engineering, procurement and construction (EPC) contractor to finalize construction for the plant, which includes GE gas turbines and Toshiba steam turbines.

"Despite the challenges that were presented on Norte III, we were able to develop a solution that entailed complex and multi-faceted contractual negotiations combined with a partnership that brought the necessary structuring and the technical expertise"

During its peak construction period, the project will employ 2,000 workers and is expected to provide electricity to more than 5 million houses.

The power plant includes four 175MW gas turbines supplied by GE and two sets of 185MW steam turbines and generators respectively provided by Toshiba and Cockerill Maintenance & Ingenierie. It will receive its gas supply from the San Isidro-Samalayuca piepeline currently being developed by Ienova.

Macquarie Capital's lifeline

Macquarie Capital's senior vice-president Mario Fernandez says it took them 10 months to restructure the deal, close the M&A transactions, agree the new EPC contract for Techint to take over from Abengoa as contractor and raise the long-term project finance necessary to finalize construction.

"Despite the challenges that were presented on Norte III, we were able to develop a solution that entailed complex and multi-faceted contractual negotiations combined with a partnership that brought the necessary structuring and the technical expertise", Fernandez says.

As Fernandez points out, Macquarie Capital and Techint essentially needed to close three deals in one, with all transactions reaching completion on the same day.

Equity sell-down

In March 2018, InfraRed Capital Partners announced that it had bought 35.5% equity in the Norte III from Macquarie Capital through its fifth unlisted vehicle – InfraRed Infrastructure Fund V.

Remaining equity in the project is split between Macquarie Capital (45.5%), Invex Infraestructura (10%), and Techint Engineering & Construction (9%).

Dentons provided InfraRed with legal advice for this deal.

The transaction fits with Macquarie Capital's strategy of injecting capital into projects at a developmental stage, and later extracting value once they have been sufficiently progressed.

Total value: $868 million
Debt: $716 million
Equity: $152 million
Sponsors: Macquarie, Techint
Divestor: Abengoa
Lenders: Natixis, SMBC, Santander, Crédit Agricole, Bancomext, KfW
Financial adviser: Carl Marks Advisors
Legal advisers: Milbank (sponsor), Gonzalez Calvillo (sponsor), Mijares (lenders), Paul Hastings (lenders)
EPC contractor: Techint
Offtaker: Comisión Federal de Electricidad
Turbine suppliers: GE, Toshiba

Latin American Wind

Aela Energia

Involving a lot of players, this portfolio financing had innovative features that are likely to become a benchmark for long-term financing in Latin America. But the deal went through more than 400 contract iterations before reaching financial close as sponsors, multilateral and commercial bankers, and advisers conducted negotiations over the course of a year.

The Aela project consists of three wind farms located in three different regions of Chile, with a total capacity of 332MW, which will sell energy under 20-year PPAs to 26 distribution companies throughout the country.

Market conditions were considered challenging but this led to financing structure innovations. The package included unusual measures such as backended equity, backup PPAs to cover spot market price fluctuations, and a pre-commercial operation date exit mechanism for the equity.

The portfolio contemplates the construction of the Aurora project (129MW) and the Sarco project (170MW), and the refinancing of the operational Cuel wind farm (33MW). These units will be responsible for an increase of 11% of Chilean renewable energy. It also includes the construction of a 71km transmission line in Freirina and Vallenar.

Debt: $413.5 million in a term loan; $30 million in a letter of credit
Equity: $170 million
Sponsors: Actis, Mainstream
Lenders: Caixabank, IDB Invest, KDB, KfW, MUFG Bank, SMBC, Santander Chile
Tenor: 18 years (term-loan), construction + 7 years (letter of credit)
Pricing: 250bp above Libor (term-loan)
Advisers: Carey, Clifford Chance, Milbank, Philippi Prietocarrizosa, Ferrero DU & Uria, Morales & Besa, White & Case, Claro & Companhia

Latin American Hydro

San Martin

This financing supported the construction of a 5.7MW run-of-river hydro project located in the El Tuma-La Dalia municipality, Matagalpa department, Nicaragua. Though small in size, the project will make a significant impact in a country with limited access to electricity.

According to the government of Nicaragua, just 65% of the population has access to electricity, and about 68% of the rural population has no electricity access. San Martin hydro will be the first power plant in El Tuma-La Dalia connected to the national transmission system.

The project also helps to reduce the country's reliance on fuel imports. Around 79.5% of all power in Nicaragua comes from petrol-fired power plants, and just 8.6% from hydropower.

Sponsor Inversiones Hidroeléctricas is one of the few private sector developers to have been licenced to work in Nicaragua in recent years, and previously developed another 5MW hydro project, El Diamante, which is also located in Matagalpa department.

Debt came from Dutch investment fund Triodos Groenfonds, which provided a loan of roughly $4.9 million, and Belgian development finance institution BIO, which lent around $7.6 million.

Though the loans were governed under NY law, they had to navigate a change in local regulations during the negotiation phase.

Total value: $195 million
Debt: $12.5 million
Equity: $6.5 million
Sponsor: Inversiones Hidroeléctricas S.A.
MLAs: Belgian Investment Company for Developing Countries (BIO), Triodos Greenfund
Legal advisers: Andrews Kurth, Arias, Baker McKenzie, LatamLex Abogados

Latin American Solar

Cubico Alten

Among the first renewable energy projects to reach financial close under the new long-term auctions in Mexico after an energy reform, the Solem Solar photovoltaic financing sent a positive message to the market.

Cubico and Alten's project brought together a consortium of local development banks (Banmext and Banobras), multilateral institutions (IFC and IDB Invest, through the China Fund and the Canadian Climate Fund), and a commercial bank (MUFG Bank).

Located in the Mexican state of Aguascalientes, the 350MW complex will be the largest solar power plant in Latin America. Developed by minority partner Alten, it was awarded in the second energy auction in Mexico for the design, construction, commissioning and operation.

Solem has three different power purchase agreements in place: a 15-year PPA for energy; a 15-year PPA for capacity; and a 20-year PPA for clean energy certificates (CELs).

Spanish Grupo Ortiz has been selected as engineering, procurement and construction (EPC), and operation and maintenance (O&M) contractor.

The main sponsor, Cubico, is backed by the resources of the Ontario Teacher's Pension Plan (OTPP) and the Public Sector Pension Investment (PSP).

Total value: $430 million
Debt: $230 million for Solem
Equity: Approx. $200 million
Sponsors: Cubico Sustainable Investments (70%), Alten Energías Renovables (30%)
Lenders: IDB Invest (IIC, Canadian Climate Fund, China Co-Financing Fund), IFC, Bancomext, Banobras, MUFG Bank
Tenor: 20.4 years (IDB Invest tranche)
Advisers: Chadbourne & Parke, Mijares, Angoitia, Cortés y Fuentes, Norton Rose Fulbright, Shearman & Sterling, AWS Truepower, JCRA, ERM, Aon, Willis, KPMG

Latin American Transport

Ruta al Mar

Ruta al Mar highway development will improve Colombia' transport links, upgrading the connection between Medellin and the Caribbean Coast, supporting faster and more economical transportation of imports from ports to cities inland.

The scheme resulted from an unsolicited bid made by concessionaire Construcciones El Cóndor to national infrastructure authority Agencia Nacional de Infraestructura. Unsolicited bids do not receive public funding, which means that the concessionaire bears all the project's demand risk.

Ruta al Mar was also the first project to reach financial close after a long period of market difficulties, ending a year-long drought of Colombian 4G project financings. As a result, it is expected to enable the Colombian 4G programme to regain momentum while making the sector more attractive to international lenders.

The project consists of building, upgrading, operating and maintaining approximately 491km of toll roads located in the departments of Antioquia, Cordoba, Sucre and Bolvar. The work includes the construction of 113km of new roadways, and the improvement of 224km of existing roadways, in addition to the operation of the concession for the next 34 years.

Total value: $710 million
Debt: $174 million bond issue, $316 million in bank loans
Sponsor: Construcciones El Cóndor
Lenders: Goldman Sachs, FDN, Bancolombia, CAF-AM Ashmore Debt Fund
Bond arranger: Goldman Sachs
Grantor: Agencia Nacional de Infraestructura
Tenor: 26-year bond
Pricing: 6.75% annual coupon
Advisers: Clifford Chance, PPU, Arup, Goldman Sachs, Davies Gleave, BTG Pactual, SDG, Posse Herrera & Ruiz Abogados, Paul Hastings

Latin American Project Bond

Autopistas del Sol Refinancing 2017

The refinance of the 76.8km Ruta 27 toll road – Autopistas del Sol – in Costa Rica saw Citigroup arrange bonds and bring the deal to financial close in 2017, winning it the *IJGlobal* award for LatAm project bond of the year.

The proceeds of this transaction were used to refinance existing project finance bank debt incurred in 2007 by the issuer.

Autopistas del Sol, a Globalvia subsidiary, successfully concluded its issuance of $300 million senior secured notes in international markets, as well as the placement of notes in the local market valued at $50.75 million.

This was the first infrastructure project of a Costa Rica-based company created under the General Law of Public Works Concessions with Public Services that sanctions the financing of projects through capital market borrowing.

The deal also broke new ground as the first transaction in which a Costa Rican issuer simultaneously placed bonds in both international and local markets.

Citigroup Global Markets acted as sole global coordinator and bookrunner for the offering.

Autopista del Sol is Costa Rica's only private toll road operator and the development of this infrastructure is viewed as being vital to the ongoing development of the economy in Costa Rica.

Debt value: $350.75 million
Sponsors: Global Via Infrastructuras
Coordinator and bookrunner: Citigroup
Tenor: 13 years and seven months, 10 years and one month
Pricing: 7.38% coupon on longer tenor, 6.8% on shorter
Advisers: Clifford Chance, Jones Day, BLP Abogados
Offshore trustee and agent: Citi

Latin American Refinancing

Celeo Redes

In 2014, Dutch pension fund manager APG agreed with Spanish infrastructure developer Elecnor to buy a 49% stake in Celeo Redes, which then owned 16 Brazilian and Chilean power transmission network concessions.

In May 2017, Celeo Redes' project debt for the Chilean transmission lines was refinanced on bond markets, with institutions taking on an element of greenfield risk. The assets in the portfolio are two trunk transmission projects – Alto Jahuel to Ancoa (AJTE) and Ancoa to Charrua (CHATE). CHATE was in construction at the time of refinancing and became operational during Q4 2017, while AJTE came online between 2015 and 2016.

The dual-currency, two-market bond financing addressed the currency risk, proportionally split in line with the revenues which are a blend of US dollars and Chilean pesos. The $379 million USD bonds have a tenor of 30-years, issued on the Irish Stock Exchange. The locally registered bonds in Chile's inflation-linked peso-denominated unit UF priced at 2.99% on the same tenor, on a UF5.4 million issuance.

It is the first project bond issuance in over a decade in Chile, and the first in the country to finance a portfolio.

Total value: $600 million
Debt value: $600 million ($379 million USD tranche, $221 million (equivalent) UF tranche)
Sponsors: Elecnor (51%), APG (49%)
Guarantors: Alto Jahuel Transmisorade Energia, Charrua Transmisora de Energia
Tenor: 30 years (maturity 22 June 2047)
Pricing: 5.2% on USD series A notes, 2.99% on UF Series A notes
Bookrunners: BBVA, Goldman Sachs, JP Morgan
Advisers: Astris Finance, Mayer Brown, Milbank, Garrigues, Claro & Cia, PwC, Mandy McNeil, Black & Veatch

Latin American Transmission/Distribution

Melo-Tacuarembo

This was the first transmission line under a PPP contract in Uruguay's history, and also the first time one was structured under an operating leasing contract. But the significance of this deal goes beyond that.

Terna's 213km transmission line meant a reassurance that the more than 1GW in non-conventional renewable energy projects that were built in the country in the last five years will reach the final consumer.

Uruguay's grid has been a consistent source of concern but Melo-Tacuarembo will expand the network by approximately 10%.

The operating leasing contract envisages the Italian developer Terna as responsible for the design and construction of the transmission line. UTE, the Uruguayan state electric power company, will be responsible for operating and maintaining the project, paying a fee to Terna for the next 30 years.

The financing package was also seen as innovative in itself. IDB Invest used its AB loan structure, in which IDB Invest provided an A loan with a 17-year tenor (IDB/IIC $38.1m; $17.9m China Fund), while BBVA was responsible for 15 years door-to-door.

In order to enhance the bankability of the contract, IDB Invest included a determination of damages in the event of termination of the contract, and also included the recognition of the lenders as third party beneficiaries in the contract.

Total value: $96.1 million
Debt: $81 million
Sponsors: Terna's Difebal
Lenders: BBVA, IDB Invest
Tenor: 15 years for BBVA, 17 years for IDB
Pricing: 210bp above US Libor 6-month rate (BBVA), 235bp above US Libor 6-month rate (IDB)
Advisers: BonelliErede, Clifford Chance, FERRERE, Guyer & Regules, Hughes & Hughes, Milbank

Latin American Multisource Financing

Pirapora Solar PV Project

This complex multisourced financing provides funding for five special purpose vehicles controlled by Pirapora Solar Holding which are developing solar PV plants in Brazil. The sponsors raised debt at both the holdco and SPV level, and received support from the Inter-American Development Bank for its first ever Reais-denominated bridge financing in the country.

The Pirapora solar complex consists of five PV plants, which each have a generating capacity of 30MW, located near the São Francisco River in the municipality of Pirapora.

The sponsors of the project are EDF Energies Nouvelles (with 80% equity) and Canadian Solar (20%). Energy from Pirapora was commercialised in Brazil's seventh regulated contract environment (RCE) auction on 28 August 2015. Reserve energy contracts (RECs) associated with the projects are valid for 20 years starting on 1 August 2017.

The R612.5 million ($175 million) debt package is split between R421.5 million of non-convertible debentures issued by each SPV, and a R191 million bridge loan from IDB Invest, lent at the holdco level.

The debentures and the bridge loan are both backed by a first-demand corporate guarantee granted by the two sponsors. The fact that the corporate guarantees are governed by foreign law added additional complexity to the financing.

Total value: R$612.5 million
Sponsors: EDF EN, Canadian Solar
Holdco: Pirapora Solar Holding
Debenture Arrangers: Banco ABC Brasil, Banco Société Générale Brasil, Itaú BBA
Bridge Financier: IDB Invest
Financial Adviser: BTG Pactual
Legal Advisers: Bennett Jones, Blakes, Clifford Chance, Herbert Smith Freehills, Mattos Filho, Pinheiro Guimarães
Trustee & Agent: Citi

Latin American Telecoms

Red Compartida

This PPP transaction is the largest telecoms deal ever in Mexico and represents the world's largest open-access wholesale telecoms network. The network will cover 92.2% of Mexico's population.

The project is sponsored by the Altan Consortium which includes Marapendi, a subsidiary of the Morgan Stanley Infrastructure Partners-managed fund North Haven Infrastructure Partners II, and the China Mexico Fund, which is managed by the International Finance Corporation (IFC).

The sponsor group was granted a 20-year concession to design, financing, deployment, operation and marketing of the broadband network in 2016. Altan beat out the only other competing bid for the contract, which was entered by a consortium featuring Rivada Networks and L.P. Spectrum Frontier.

Construction of the 30,000km of fibre network began last year and it was due to begin operating in Spring 2018. The government intends to allocate a premium, unencumbered spectrum on the 700 MHz band for the project.

The financing package breaks down into a 10-year $850 million vendor finance loan from mobile networks Nokia and Huawei, a 14-year $690 million pesos-denominated development bank loan, and $765 million in sponsor equity.

Total Value: $2.305 billion
Debt: $1.54 billion
Sponsors: Marapendi Holding (33.38%), China Mexico Fund (23.36%), Isla Guadalupe Investments (15.95%), Hansam (15.95%), Axtel (4.01%), Megacable Holdings (4.01%), IFC (3.34%)
DFIs: Bancomext, Banobras, Nafin
Vendor Financiers: Huawei, Nokia
Legal Advisers: Clifford Chance, Galicia Abogados, Linklaters, González Calvillo, Hogan Lovells, White & Case
Trustees: Citi, Scotiabank

Latin American Downstream Oil & Gas

Talara Refinery Bond Offering

This $2 billion bonds issuance marked the first ever bond offering for state-owned Petroleos del Peru (PetroPeru). The notes funded the modernization of the Talara project, Peru's largest oil refinery.

The transaction is divided in two tranches of $1 billion each. The first will mature in 15 years and the second is a 30-year tranche – the longest-tenored debt tranche for any Peruvian company to date.

The new debt partially financed the $5.4 billion modernization of Talara, as well as the repayment of short-term debt and all obligations under the syndicated loan due in 2019 that it incurred to finance the project.

Before issuing the bonds, PetroPeru conducted a roadshow in which it met with more than 100 investors in Latin America, Europe and the US.

In the morning of 12 June 2017, PetroPeru announced to the market initial price thoughts (IPT) of 5% for the 2032 bonds and of 6% for the 2047 ones. By the afternoon, PetroPeru announced it was able to tighten by 25bp and 37.5bp for the 2032 and the 2047 notes, respectively.

It was possible because Peru had tight yields and there was a relatively limited supply of dollar denominated notes.

Total value: $5.4 billion
Bonds issuance: $2 billion
Sponsors: PetroPerú
Lenders: BBVA, BNP Paribas Fortis, Citibank, Deutsche Bank, HSBC, JPMorgan Chase, Banco Santander, US Bank
Bond arrangers: BAML, Goldman Sachs, HSBC, JP Morgan, Citi
Pricing: 4.75%/y (tranche 1), 5.625%/y (tranche 2)
Advisers: Clifford Chance, Miranda & Amado, Lazo, de Romaña & CMB Abogados, White & Case

Latin American Midstream Oil & Gas

Project Noronha

In the largest deal so far under Petrobras' divestment plan, a Brookfield-managed fund acquired 90% ownership interest in the natural gas pipeline operator Nova Transportadora do Sudeste (NTS) for $5.2 billion deal, with an upfront payment of $4.23 billion.

The fund Nova Infraestrutura FIP, managed by Brazilian branch of Brookfield and with three other stakeholders, paid $2.59 billion for the shares and $1.64 billion for 10-year debentures convertible into shares issued by NTS for debt owed by the company to Petrobras Global Trading.

There is also a remaining balance on the acquisition to be paid after five years and updated at an annual rate of 3.35%, totaling $850 million.

After closing the transaction, Brookfield's fund sold a portion of its shares to Investimentos Itaú (Itaúsa). Ownership is divided among Brookfield's fund (82.35%), Petrobras (10%) and Itaúsa (7.65%).

The first proposals for NTS were presented in July 2016. The process was halted in February 2017 by a Federal court alleging lack of competition, and was closed on 4 April 2017.

Petrobras has announced a $21 billion divestment plan throughout 2017 and 2018. The sale of NTS came after the state-owned restructured its pipeline transportation business, creating NTS (acquired by Brookfield) and Transportadora Associada de Gas (TAG), which is now on sale.

Total value: $5.2 billion
Seller: Petrobras
Buyer: Brookfield (lead), British Columbia Investment Management Corporation (BCIMC), China Investment Corporation's Capital Corporation, GIC
Legal Advisers: Santander, Hogan Lovells, Lobo e de Rizzo, Mattos Filho, Norton Rose Fulbright, Pinheiro Neto, Tory's, Veirano

Latin American Mining & Metals

Fruta Del Norte gold mine

The Fruta Del Norte project is the first major greenfield mining project in Ecuador to be financed on a limited recourse basis, and its innovative financing will see its debt providers also take equity in the project's sponsor.

Discovered in 2006, the mine represents one of the largest gold finds in the world in recent decades, with an estimated reserve of about 4.8 million ounces of gold as well as 6.3 million ounces of silver.

Lundin Gold acquired the mine from Kinross Gold for $240 million in December 2014, split between $150 million in cash and $90 million in Lundin Gold for the seller.

To fund development of the find, Lundin Gold has sold another chunk of its equity while also raising debt. The financing breaks down into a $150 million gold prepay credit facility and a $150 million stream credit facility, with affiliates of Orion and Blackstone acting as lenders under the respective facilities, and an equity investment by those investors of up to $150 million.

Orion and Blackstone have also negotiated gold and silver offtake agreements which become active upon the commencement of commercial operations.

Ecuador has previously struggled to attract international investment into mining projects, and the financing successfully closed despite negotiations taking part during a presidential election.

Total value: $400-450 million
Debt: $300 million
Equity: Up to $150 million
Sponsor: Lundin Gold
Lenders & Investors: Blackstone, Orion
Financial Adviser: Endeavour Financial
Legal Advisers: Davies Ward Phillips & Vineberg, Lexim Abogados, Norton Rose Fulbright, Shearman & Sterling

Asia Pacific Power

Sirajganj 4 Dual Fuel

After numerous delays, Sembcorp's 414MW Sirajganj greenfield oil- and gas-fired power plant in Bangladesh eventually crossed the finishing line in 2017, setting several precedents on the way.

The 414MW Sirajganj 4 is the first independent power plant (IPP) to be financed on a limited-recourse basis in Bangladesh and has the longest-ever project financing debt tenor in the country.

Sembcorp is also the first international IPP developer to execute a deal in Bangladesh to be developed by international sponsors. Sembcorp Utilities owns 71% of the project and state-owned North West Power Generation Company, the remaining 29%. Sirajganj is also the second largest independent power plant in the country and represents the largest power sector foreign direct investment in recent years.

The project is also the first project to reach completion since the government introduced the new PPP act in 2015. As well as creating a new PPP Authority in the country, the legislation established a range of provisions to mitigate private sector risk for infrastructure projects.

The project has been procured as a PPP on a build, own and operate basis. The plant will be primarily powered by gas fuel but has the ability to operate on high speed diesel as a backup fuel.

Mitsubishi Hitachi Power Systems will supply the M701F gas turbines for the project, and construction is expected to be completed 21 months after financial close.

Bidding

Bangladesh launched the original tender for Sirajganj 4 back in 2010, with eight groups responding to the request for qualifications.

India's Lanco Infratech was the eventual winner of the project but had to withdraw when it subsequently filed for corporate debt restructuring in July 2013.

Singapore's Sembcorp looked to resurrect the stalled development in June 2014 by submitting an unsolicited proposal to develop Sirajganj 4 at the same tariffs, terms and conditions as the original winning bidder.

The Bangladesh government awarded the project to Sembcorp to build the plant, located in north west Bangladesh, in April 2015.

In early August 2015, Sembcorp signed the 22.5-year power purchase agreement with the Bangladesh Power Development Board. The project will sell electricity from the plant at a tariff rate of $0.0399 per kWh for gas-fired power and $0.1696 per kWh for oil-fired power.

> The project is also the first project to reach completion since the government introduced the new PPP act in 2015.

Financing

The financing for Sirajganj 4 consists of a $309 million multilateral loan, provided by the IFC, CDC Group and Clifford Capital, and $103 million in sponsor equity. Each of the lenders is understood to have provided equal-sized tickets.

The debt has a tenor of 14 years, which is the longest ever achieved for a commercial project financing in the region. The loans are denominated in US dollar and are structured with both floating and fixed-rate interest rates.

The financing agreements with the various lenders were signed in November 2016, but a series of delays in arranging the last of the contracts held up financial close until August 2017.

It many ways the deal is a non-traditional financing. It features a non-bank lender in the form of Clifford Capital, with its debt sitting alongside loans from multilateral institutions, and a portion of the loan is covered by political risk insurance from World Bank subsidiary MIGA.

MIGA is also providing a political risk guarantee to Sembcorp for its equity investment in the project.

Project impact

Those working on the deal hope it can pave the way for unlocking participation in the power sector in Bangladesh, one of the brightest spots in Asia's energy market.

Sirajganj 4 should also make a significant contribution to power generation in Bangladesh, with the country blighted by electricity shortages. As recorded in 2016, the country has an electrification ratio of 76%. Demand is also expected to increase significantly over the next few years due to planned increases in industrial activity and population growth.

It is hoped that Sirajganj 4 will encourage further investment into the country, as the project is the first in the country's power sector to attract a foreign investor. In order for that investment to take place, the sponsor and government had to undertake extension negotiations to develop a robust set of project documents to act as a template for future developments.

The project also represents a further strengthening between Bangladesh and Singapore across public and private sectors. In March 2018, the two countries signed four MOUs at the inaugural Bangladesh-Singapore Business Forum. One of the aims of these agreements is to make it easier for Singapore-based companies to do business in the South Asian country.

Total value: $412 million
Debt: $309 million
Equity: $103 million
Sponsors: Sembcorp (71%), North West Power Generation Company (29%)
Lenders: Clifford Capital, Commonwealth Development Corporation, International Financing Corporation, MIGA, Japan Investment Cooperation Agency
Legal advisers: Shearman & Sterling, A&F, Baker McKenzie, DFDL Law
Other advisers: L&T-Sargent & Lundy (technical), INDECS (insurance), IHS Cera (market), KPMG (tax and auditing), (legal), ERM (environmental), Fichtner (engineering)
Political risk insurer: MIGA

Asia Pacific Refinancing

Victorian Desalination PPP Refinancing

The Victoria Desalination Plant provides up to 30% of Melbourne's water requirements, with a 150 billion litre capacity. In 2009, the AquaSure consortium won the contract from the Victoria state government to construct and operate the plant under a 30-year concession.

In 2017, AquaSure undertook a A$766 million ($580.5 million) refinancing of part of the project's debt, with Japanese bank MUFG providing a particularly long-dated facility. In the Australian infrastructure market, where 5-7 years is the going tenor for PPP debt, MUFG underwrote the A$766 million facility in full with a 15-year facility.

Japanese institutions, including regional banks, local insurers and pension funds, are eager for exposure to infrastructure assets in the Australian market. MUFG's syndication of this project's loan to 11 institutions in the so-called "Samurai market" has facilitated not only the entry to Australian infrastructure but even the first project finance deal for some.

With most of the debt denominated in Australian dollars, MUFG also included a small USD tranche (less than 20%), but has guaranteed the same Australian dollar pricing to give certainty for the borrower.

Project company: AquaSure
Total value: A$766 million
Debt: A$766 million
Sponsors: UniSuper, Suez Environnement, Korean Teachers Credit Union, Itochu's I-Environment Investments Pacific, AMP Capital, InfraRed Capital Partners
Lenders: MUFG Bank, Nippon Life, Dai-ichi Life Insurance
Tenor:15 years
Pricing: BBSY + 160bp
Advisers: Allens, King & Wood Mallesons

Asia Pacific Social Infrastructure

New Grafton Correctional Centre PPP

The New Grafton Correctional Centre (NGCC) achieved financial close in June 2017, preparing the way for a state-of-the-art security and surveillance facility with a strong focus on rehabilitation to reduce recidivism.

NGCC – soon to be Australia's largest prison project – is located in Lavadia, around 12.5km south east of Grafton, New South Wales, and it will cater for 1,700 inmates.

NorthernPathways – the sponsor team of John Holland, Serco and John Laing with Macquarie Capital – received stage two planning approval at the end of 2017 and started construction in mid-February 2018, with completion scheduled by 2020.

The prison will be made up of individual facilities holding three different categories of inmates.

Beyond creating Australia's largest correctional facility and embracing a progressive approach to prisoner care, delivering this project as a PPP provides taxpayers with value-for-money.

In a boost for regional residents and businesses, the prison will inject more than A$560 million ($499 million) into the local economy with 1,100 jobs created during construction and 600 jobs once operational.

Total value: A$910.2 million
Debt: A$742.33 million
Equity: A$167.87
Sponsors: John Holland, Serco, John Laing
Lenders: ANZ Bank, CBA, Investec, Norinchukin Bank, Australian Super, NAB, Woori Bank, Korea Exchange Bank, Shinhan Bank, KDB
Tenor: five years and four months
Advisers: KPMG, Macquarie, Herbert Smith Freehills, King & Wood Mallesons, Minter Ellison, Jacobs, NBRS & Partners, Mazars

Asia Pacific Telecoms

AirTrunk Data Centres

Asia Pacific data centres developer AirTrunk successfully raised $400 million in capital for the finance, design, construction and operation of two data centres in Sydney and Melbourne, Australia.

The financing package consisted of an equity investment and mezzanine financing provided by special situations funds from Goldman Sachs and TPG Sixth Street Partners (TSSP) together with a six-year senior debt facility from ING and Natixis.

As a start-up company, AirTrunk managed to attract a significant level of interest in the market and sign over 70 non-disclosure agreements with potential investors, including global funds and private equity vehicles.

Over a period of several months, Norton Rose Fulbright – who acted as AirTrunk's legal adviser – ran parallel due diligence processes with a large number of investors and then negotiated term sheets with six different investor consortia, each with a different proposed investment structure, before Goldman Sachs and TSSP were selected.

On the debt side, there was strong interest from both Australian and international banks and concurrent due diligence streams were run for four different banks until ING of the Netherlands and France's Natixis were chosen.

"The cross border nature of the transaction and complex group structure meant that there was substantial structuring work undertaken and we were required to constantly liaise with overseas counsel and tax advisers," Norton Rose said.

Total value: $400 million capital raising
Sponsors: AirTrunk (22.5%), Goldman Sachs (38.75%), TPG Capital (38.75%)
Senior lenders: Natixis, ING
Financial adviser: JP Morgan
Legal advisers: Norton Rose Fulbright (Airtrunk), King & Wood Mallesons (Goldman Sachs and TSSP), Allens Linklaters (lenders)
Model auditor: Mazars

Asia Pacific Transport

Melbourne Metro Tunnel and Stations PPP

The wider Melbourne Metro Rail project is the largest public transport project to date for the state of Victoria. The project involves delivery of a 9km twin rail tunnels between South Kensington Station and South Yarra, as well as five new underground stations, intended to reduce overcrowding on the City Loop.

The Melbourne Metro Rail Authority launched the project in 2015, selecting an availability-based PPP concession structure. The government was able to divert a A$3.1 billion ($2.3 billion) bond funding package for the cancelled East West Link project to part fund the Melbourne Metro PPP, and pressed on without federal funding.

Three international mega consortia competed in the second round of bidding, with developers from Europe, Asia and Australia bringing their tunnelling expertise, as well as financial investors.

The Cross Yarra Partnership consortium won in July 2017 and reached financial close in December, when UK-based John Laing Group announced it was joining as an investor.

An international group of commercial banks funded the 7-year-and-9-month project debt, understood to be in the region of A$3.35 billion.

Total value: A$6 billion
Debt: A$3.35 billion
Sponsors: John Holland, Bouygues, Lendlease Engineering/Capella Capital, John Laing Group
Lenders: Canadian Imperial Bank of Commerce, Mizuho Bank, ANZ, Westpac Banking Corp, Crédit Agricole, DZ Bank, Bank of China, United Overseas Bank, Credit Industriel et Commercial, ICBC
Advisers: Capella Capital, MinterEllison, White & Case, Allens, Rogers Stirk Harbour & Partners, Hassell, Weston Williamson, KPMG, Herbert Smith Freehills, Arcadis, Arup, WSP, Aurecon, Jacobs, Mott MacDonald

Asia Pacific Airports

Tokyo International (Haneda) Airport Expansion

Ahead of the Tokyo Olympics in 2020, the Japanese government has doubled its target for inbound tourists to 40 million by 2020. The number of inbound tourists grew by 22% on-year in 2016 to over 24 million.

To meet that demand, Japan Airport Terminal is expanding its flagship airport in Tokyo. Haneda Airport's domestic Terminal 2 is being turned into an international terminal with additional landing slots for All Nippon Airways flights.

Under a PFI contract, the works include the design, surveillance, management and maintenance of the international passenger terminal building, parking and other facilities for passengers and customers.

The expansion was financed by a syndicate of some 20 banks and was the largest ever project finance package in Japan. It is also the first time in the country that the upgrade of a core transport infrastructure asset has been undertaken under a PFI contract.

Once the expansion is complete Haneda Airport will overtake Bejing Capital once more as the largest airport in Asia.

It was announced in March that project sponsor Japan Airport Terminal would take a controlling stake in Tokyo International Air Terminal, the operator of the airport's international terminal. It previously had a 38.8% stake and will now hold 51%.

Total value: $1.7 billion
Debt: $1.7 billion
Sponsors: Japan Airport Terminal
Lenders: Mizuho, Development Bank of Japan, MUFG, Bank of Yokohama, Shinkin Central Bank, SMBC, Bank of Fukuoka, Chiba Bank, Hiroshima Bank, Hokkaido Bank, Hyakujushi Bank, Iyo Bank, Mizuho Trust & Banking, Resona Bank, Tokio Marine & Nichido Fire Insurance, San-in Godo Bank, Senshu Ikeda Bank, SMTB

Asia Pacific Water

Clean Ganga Varanasi Wastewater

The Clean Ganga Program – Varanasi Wastewater Treatment Hybrid Annuity PPP is the first project to be executed under India's new hybrid annuity PPP model for the wastewater sector.

It was also one of the fastest processed PPP transactions in the country, reaching financial close within nine months.

Under the terms of the PPP contract, the concessionaire will finance, design, develop, and rehabilitate wastewater infrastructure and operate and maintain it over a 15-year period.

India's federal government will reimburse 40% of the project cost linked to four construction milestones.

The remaining 60% will be paid during the O&M period as quarterly instalments. In addition, the government will pay performance-based O&M charges, and power expenses on actuals, subject to the ceiling quote as part of the bid.

The long term, performance-based payment structure is designed to lock in the sustainability of the projects and result in higher operational efficiency.

Following a competitive international bidding process, the project was awarded to a consortium of Essel Infraprojects from India and Russia's RPC ECOS.

The deal will establish a model that will be followed by several other cities in India, which have a pipeline of 13 projects worth more than $1 billion.

Total value: $18 million
Debt: $8.5 million
Equity: $3.6 million
Sponsors: Essel Infraprojects, RPC ECOS
Lender: IFC
Grantor: National Mission for Clean Ganga, Uttar Pradesh Jal Nigam
Legal adviser: Trilegal

Asia Pacific Hydro

Karot Hydropower

The 720MW Karot hydro power plant was one of the original flag ship projects of what was in 2015 called the Silk Road initiative, now rebranded Belt & Road.

The plant is scheduled to start operations by 2021 and is one of the priority projects of the Beijing-sponsored $46 billion China-Pakistan Economic Corridor programme of investment.

Karot Power Company, a subsidiary of state-owned China Three Gorges Investment Corporation, signed the memorandum of understanding in June 2015 and the 30-year power purchase agreement with Pakistan's Central Power Purchasing Agency in September 2016.

The plant is not only the largest hydro power project to date in Pakistan but is also the largest to date to be on a limited-recourse basis.

The biggest challenge was convincing the regional government of Punjab to issue written deeds for the land conveyance in a province where by local practice, a conveyance of land is typically made orally without a written instrument.

Karot is the first investment by the investment platform established jointly by China Three Gorges Corporation, International Finance Corporation and Silk Road Fund and it is expected to serve as the template for similar deals going forward.

Total value: $1.7 billion
Debt : $1.36 billion
Equity: $340 million
Sponsors: China Three Gorges South Asia (93%), Associated Technologies (7%)
Lenders: China Development Bank, Export-Import Bank of China, IFC
Financial advisers: China Development Bank, China Silk Road Fund, ICBC, International Finance Corporation
Legal advisers: Allen & Overy, Shearman & Sterling
Technical adviser: Mott MacDonald

Asia Pacific Solar

Bungala PV Solar Phase 1 & 2

The Bungala Solar PV project in Port Augusta, South Australia once completed is due to have a generation capacity of 275MW once the first and second phases are commissioned in 2019. In 2017, the project represented the largest ready-to-build solar plant in the country.

The 137.5MWdc Phase 1 reached financial close with 5-year debt from local commercial banks CBA and NAB, Japan's SMBC and France's Société Générale. In April 2017, banks completed the financing for phase 1 and committed the debt required for the 137.5MW Phase 2.

Utility Origin Energy will purchase all Bungala's electricity and renewable certificates out to December 2030, with enough power for 82,000 homes due to be produced.

Local developer Reach Solar Energy negotiated contracts and sourced equity buyers. Advisers highlighted some complexity as the shareholders buying at financial close – DIF and Enel Green Power – are non-local entities at a time when the Foreign Investment Review Board has increased powers and the Australian Taxation Office had proposed a crackdown on staple trust structures.

Total value: A$360 million ($272.8 million)
Debt: A$320 million, A$40 million working capital facility
Equity: A$150 million
Sponsors: Enel Green Power (50%), DIF (50%)
Lenders: Commonwealth Bank of Australia, National Australia Bank, Sumitomo Mitsui Banking Corporation, Société Générale
Debt pricing: BBSY + 185bp (175bp post-construction)
Advisers: Ironstone Capital Advisory, Norton Rose Fulbright, OST Energy, KPMG, EY, ROAM Consulting, Jacobs Consulting, PwC, King & Wood Mallesons, Willis Towers Watson, Whitebox Finance, Mills Oakley, GHD Consulting, ACIL Allen Consulting

Asia Pacific Wind

Triconboston

Pakistan has been slower than others in the region on renewables, but with the 150MW Triconboston project the country is finally demonstrating what can be achieved. The wind farm will be the largest in the country to date.

Triconboston will be the first power project in Pakistan to be financed as a portfolio of three separate plants of 50MW and the IFC arranged what is a relatively large debt financing package with a club of multilateral banks, re-introducing DEG to the Pakistani market, incorporating an Islamic tranche from Islamic Development Bank, and steering the transaction to financial close in May 2017.

The sponsor of the project is Sapphire Group, which is a leading industrial company in Pakistan with significant interests in textiles and power.

The IFC was the mandated lead arranger and also contributed an A loan of $66 million from its own account, as well as mobilising $172 million in parallel loans.

The project will sell power to state-owned Central Power Purchasing Agency Guarantee Limited under a 20-year power purchase agreement.

General Electric will provide the equipment (including 87 1.7MW wind turbine generators) and act as operations and maintenance contractor, but the engineering, procurement and construction contract will be undertaken by two subsidiaries of Power Construction Corporation of China.

Total value: $317 million
Debt: $238 million
Equity: $79 million
Sponsors: Sapphire Group
Lenders: IFC, DEG, Islamic Development Bank, Asian Development Bank
Advisers: RIAA Barker Gillette, Shearman & Sterling, Haidermota BNR, INDECS

Asia Pacific Project Bond

Paiton Energy Refinancing

Paiton Energy's bond refinancing was thefirst investment-grade bond issuance for an infrastructure project in Asia since 2000.

The $2 billion Rule 144A/ Regulation S project bondis also the largest rated amortising international bond since the same year.

The transaction was structured as a combination of an amortising loan and an amortsing bond, with bond investors coming in for two tranches of 13 years and 20 years, some of the longest tenors seen in the region for a project bond.

The loan facilities comprise a $390 million dollar-denominated facility and a $364 million Japanese Yen facility. Both have a tenor of six years.

The dollar loan was backed by SMBC, Mizuho, Barclays, DBS Bank, HSBC, Standard Chartered, and Citibank. The Yen facility was provided by SMBC, Mizuho and Shinsei Bank.

Mitsui, Nebras, JERA and Saratogaown Paiton, which is a coal-fired power complex in Indonesia made up of three units with a combined generating capacity of 2,045MW. The plants sell power to state utility PLN under PPAs.

The proceeds of the refinancing will be used to prepay outstanding senior debt facilities, subordinated shareholder loans and for general corporate purposes.

Total value: $2 billion
Debt: $2 billion
Sponsors: Mitsui (45.5%), Nebras (35.5%), JERA (14%), Saratoga (5%)
Bond arranger: Barclays, HSBC (joint global co-ordinators); Citigroup, DBS Deutsche Bank (joint lead managers and joint bookrunners); SMBC Nikko (joint lead manager); Mizuho Securities, Morgan Stanley (co-managers)
Pricing: 13-year at 4.625%, 20-year at 5.625%
Advisers: Barclays, HSBC, Skadden, Shearman & Sterling

Asia Pacific Mining & Metals

Pilgangoora Lithium Mine

The Pilgangoora Lithium-Tantalum Project is located 120km from Port Hedland in Western Australia's Pilbara region. The area is home to one of the biggest new lithium ore deposits in the world, and this financing underlines how precious this commodity is becoming in a world looking to battery storage to solve many of its energy challenges.

The mine is 100% owned by Pilbara Minerals, a lithium-focused mining company listed on Australia's ASX. It acquired the Pilgangoora Project from Global Advanced Metals in May 2014. The developer's most recent estimates, published in June 2017, the site has a proved and probable ore reserve of 80.3 million tonnes.

Pilbara Minerals began construction of the mine in January 2017 and was due to complete work in Spring 2018.

The developer has already signed offtake agreements or MOUs for all of the projected lithium oxide production with companies from China, Japan, the Americas, and Europe. Among these offtakers are Chinese lithium battery company General Lithium and another Chinese company Ganfeng Lithium.

With these agreements in place the sponsor was able to close on a $180 million financing for the project last year. This broke down into a $100 million in Norwegian secured bonds and $80 million in equity. The deal was the first ever fully secured Norwegian project bond for a mining development in Australia.

Total value: $180 million
Debt: $100 million
Equity: $80 million
Sponsor: Pilbara Minerals
Bond arranger: Pareto Securities
Main offtakers: General Lithium, Ganfeng Lithium

Asia Pacific M&A

Acquisition of Chevron Indonesian geothermal assets

The launch of an auction Chevron for its geothermal portfolio, comprising the two largest geothermal fields in Indonesia, presented a rare opportunity in the renewable energy sector.

Chevron has sold 95% stakes in the 271MW Darajat geothermal field and of the 377MW Salak field.

The winning consortium featured local geothermal company Star Energy, Filipino renewables company AC Energy, and Thai independent power producer Electricity Generating Public Company. Marubeni and Aboitiz entered the only other final bid, after Enel and PLN dropped out.

The winners arranged an acquisition financing package from a diverse, international club of banks and some had no significant experience in Indonesia. The debt commitments reached a leverage of around 60%, and offered a compelling bid to the seller with minimal closing risk. DBS and BPI structured the five-year debt.

Lenders are taking the risk on the offtaker, PLN, while they found confidence in majority sponsor Star Energy as an established Indonesian geothermal operator of the Wayang Windu operational facilities.

Total value: $2.083 billion
Debt: $1.25 billion
Sponsors: Ayala Corporation's AC Energy (19.8%), Electricity Generating Public Company (20.07%), Star Energy Group (60.13%)
Seller: Chevron
Lenders: Bangkok Bank Public Company, Bank of China, BPI Capital Corp, BDO Unibank, DBS Bank, RCBC Capital Corp, SMBC, MUFG Bank
Advisers: Credit Suisse, Clifford Chance, Milbank, Assegaf Hamzah & Partners, Citigroup, Herbert Smith Freehills

Asia Pacific Upstream Oil & Gas

North Sumatra Block A Gas Development

The North Sumatra Block A is the first large-scale gas development in Aceh, an area which was devastated by the 2004 tsunami.

Medco embarked on the development it initiated in late 2015 in a difficult environment for the oil & gas sector, with significant pressure on oil prices and an uncertain outlook for companies operating in this sector.

"It took resilience and perseverance, as well as changes in the ownership of the project, to make it a success", Medco Power International CFO Susie Nasution said.

Starting in early 2017, the oil & price sector stabilized with less price volatility and a shift in focus from cost optimization and capital conservation towards replenishing reserves and renewed investment, according to Nasution.

The reserve based lending structure provided by three international banks will pave the way for its adoption in south east Asia, where it has not been commonly used for greenfield gas development financing.

Ultimately, the deal was "very well received in the syndication market as a stand-out transaction in a sector that saw limited issuance over the past couple of years," said Nasution.

The project involves the development of the three upstream gas-condensate fields – Julu Rayeu, Alur Rambong and Alur Siwah, which contain approximately 253.1 billion cubic feet ("Bcf") 1P reserves and 370.9 Bcf 2P reserves.

Total value: $550 million
Debt: $360 million
Sponsors: Medco Energi
Lenders: SG, ANZ and ING as joint arrangers + 6 banks in syndication
Tenor: 7 years
Pricing: 450bp above Libor, 385bp post-completion
Advisers: Herbert Smith Freehills (lenders), Gibson Dunn (borrower)

Asia Pacific Midstream Oil & Gas

Moheshkhali Floating LNG Import Terminal

The Moheshkhali Floating Liquefied Natural Gas (LNG) project is being co-developed by Excelerate Energy and International Finance Corporation. Once completed it will be the first LNG import terminal in Bangladesh.

Bangladesh faces fast declining domestic gas reserves and acute gas and power shortages – and the Moheshkhali FSRU will expand the country's gas supply by 20%, or enough to generate 3,000MW of power.

The government of Bangladesh had made several unsuccessful attempts to develop LNG import terminals over the last 10 years and the successful implementation of the Moheshkhali FSRU, the first private midstream project in the country should pave way for other private sector led projects.

The Moheshkhali terminal is the first fully integrated turnkey floating terminal solution, providing all services under a single contract.

In terms of financing, this is the first limited recourse project financing for an integrated LNG regas terminal without any post-completion sponsor support.

The 15-year build, own, operate and transfer concession entails construction of a subsea plug connector and mooring system, a subsea pipeline to shore, and tie-in facilities to the existing onshore Moheshkhali-Anowara pipeline, as well as the chartering of a floating storage and regasification unit (FSRU) with a storage capacity of 138,000 m³.

Total value: $180 million
Debt: $126 million
Equity: $54 million
Sponsors: IFC (80%), Excelerate Energy (20%)
Lenders: IFC (mandated lead arranger), CDC Group, DEG, FMO, Japan International Cooperation Agency

Asia Pacific Downstream Oil & Gas

Pengerang Oil Storage Facility

Malaysia's state oil company Petronas is undertaking the ambitious $16 billion Refinery and Petrochemical Integrated Development (RAPID) development, which will produce some 7.7 million tonnes per year of products when operations begin in 2019.

The Pengerang Oil Storage Facility is an early and vital component to the wider development. The facility will be a 1.5 million cubic metres onshore handling and distribution terminal for petroleum and petrochemical feedstock and products in Pengerang, Johor.

The project is underpinned by a 25-year take-or-pay anchor terminal usage agreement with a wholly-owned subsidiary of Petronas, as the facility will service the RAPID complex once complete. Construction of the facility started in 2015.

A consortium led by Petronas raised a $1.25 billion loan from a group of commercial lenders in December 2017 for the facility on a project finance basis, with the sponsors also contributing a chunk of equity capital.

Despite the large size of the facility and this being the first project financing for the wider development, the sponsors were able to achieve high gearing and long tenor debt thanks to the robust terminal use agreement in place.

Total value: $1.55 billion
Debt: $1.25 billion
Equity: $300 million
Sponsors: Petronas (40%), Royal Vopak (25%), Dialog (25%), Government of Malaysia (10%)
Lenders: AmInvestment Bank, DBS Bank, ING, Maybank, MUFG, Natixis, OCBC Bank, SMBC, United Overseas Bank
Financial adviser: SMBC
Legal advisers: Allen & Overy, Putri Norlisa Chair Law, Norton Rose Fulbright, Adnan Sundra & Low

MENA Power

Fadhili CHP

French developer Engie closed in early 2017 on the uniquely structured Fadhili combined heat and power (CHP) project in Saudi Arabia. The project features an unusual dual-offtake structure that sees Saudi Aramco and Saudi Electric Company both purchasing its output under separate contracts. The deal is also the first time that Aramco and SEC have created a joint venture, with both entities taking stakes in the project company alongside Engie.

Engie and Acwa Power were both shortlisted for the project in early 2016 after a competitive tender, with Engie eventually awarded the project.

SEC will offtake power from the 1,507MW gas-fired power plant under a 20-year PPA, while Saudi Aramco will offtake its 1,447 tonnes of steam and 768.8 tonnes of water per hour under a separate 20-year purchase agreement. Steam and water purchased by Aramco will be used for processing and production by the nearby Fadhili gas processing facility, which is developed and fully owned by Saudi Aramco.

Due to the project's unique offtake agreement, there are few candidate locations for other similarly structured CHP projects in Saudi. To see such a project repeated would need a requirement for the power, steam and water in the same location – for instance at other gas processing facilities in the kingdom such as Wasit and Midyan.

Fadhili will play a key role in the industrial diversification of the kingdom, producing the equivalent electricity consumption of 1.4 million people, but also furthering Saudi ambitions to increase the share of gas in its energy mix. The plant will boost Saudi gas production to over 17 billion standard cubic feet per day by 2020 – a priority outlined in the Kingdom's National Transformation Plan. By using more gas for power generation and water desalination instead of burning crude oil Saudi Arabia can meet rising domestic power and water demand whilst also ensuring it is maximising its oil exports.

It comes at an important time for the kingdom, where it is working to diversify its economy. An increase in the supply of natural gas will enable more opportunities in Saudi industries such as steel, aluminium, and other downstream production.

The use of independent power producers (IPPs) – first adopted by Saudi in 2003 – such as Fadhili CHP to bring new capacity on the grid also means that the country will reduce its costs in the short-term whilst bringing in foreign capital and expertise.

IPPs have been a key part of Saudi's strategy to meet power demand growth as well as mobilise foreign capital and expertise. But the government – in the wake of lower oil prices that have put pressure on Saudi Arabia's economy in recent years – is also looking to further privatise its electricity market in order to increase competition and efficiency as well as to raise money.

> IPPs look set to continue playing an important role in the country's energy mix with a number of other procurements also active in Saudi

As the kingdom looks to encourage greater involvement of the private sector in its energy and infrastructure industry with a number of privatisation and procurement programmes underway, IPPs look set to continue playing an important role in the country's energy mix with a number of other procurements also active in Saudi. A big part of this will be the unbundling of the country's power market by spinning out a number of entities both in the generation and transmission sectors.

Financing

Fadhili CHP's debt financing includes a direct loan of $200 million from Korea's export credit agency Kexim and a $105 million US dollar-denominated Istisna Ijara tranche from the Islamic Development Bank.

Saudi lender National Commercial bank also provided a riyal-denominated Istisna Ijara tranche of SR1.204 billion ($321 million). Finally, commercial lenders MUFG Bank and SMBC joined German development bank KFW for a $330 million tranche. The $956 million in debt has a tenor of 22.5 years.

Located around 50km northwest of Jubail Industrial City, Fadhili is expected to begin commercial operations by the end of 2019.

It will be operated under a 20-year build, own, operate and transfer contract. Doosan will provide engineering, procurement and construction services, while Siemens will provide Fadhili's turbines.

Project company: Fadhili Plant Cogeneration Company
Total value: $1.167 billion
Debt: $935 million
Equity: $231 million
Sponsors: Engie (40%), Saudi Electric Company (30%), Saudi Aramco Power Holding Company (30%)
Lenders: Kexim, MUFG Bank, KFW, SMBC, Islamic Development Bank, National Commercial Bank
Tenor: 17.5 years for Kexim's tranche and 22.5 years for the commercial tranche
Advisers: Shearman & Sterling, Chadbourne & Parke, Mizuho Financial Group, DLA Piper, White & Case, Poyry, Benatar & Co, Marsh Insurance, Tractebel, Baker McKenzie, BDO, Fichtner, PWC, WSP Parsons Brinckerhoff
Offtaker: Saudi Aramco and Saudi Electricity Company under separate 20-year agreements
Grantor: SEC, Saudi Aramco
EPC contractor: Doosan
Turbine supplier: Siemens

MENA Project Bond

Acwa Power IWPP/IWP Bond

Acwa Power Sukuk SPC is the first private investment grade bond issuer from Saudi Arabia and the bonds it issued represent the first time Moody's and S&P have rated emerging market IPP/IWPP holding company debt as investment grade.

The issuance was also the first senior structured multi-asset transaction from the MENA region. It consisted of investment grade 5.95% senior secured bonds due 2039 with an aggregate principal amount of $814 million. The issuer is a DIFC incorporated wholly owned subsidiary of Saudi Arabian power and water project owner and developer ACWA Power.

The issue sought to raise longer-term capital in line with the maturity profile of its asset base, repay $500 million in existing debt and to diversify its funding sources

This transaction allowed ACWA Power to monetise future revenues from eight operating independent power producer and water desalination projects in Saudi Arabia which had been financed on a project finance basis.

The bonds are secured on the revenues from these eight projects (dividends and fees), and pledges over the shares in the issuer, certain of the issuer's bank accounts and ACWA Power's Saudi Arabian holding company (as well as, in the future, over ACWA Power's Saudi Arabian operating and maintenance company).

Each of the projects has a 20-year power or water purchase agreement in place with a directly or indirectly government-owned entity; apart from Bowarege and RAWEC with three-year and 25-year agreements, respectively.

The structure is designed to allow ACWA Power to issue a sukuk secured over the same assets in the future.

Total Value: $814 million
Debt: $814 million
Coupon: 5.95%
Expiry: 2039
Sponsor: ACWA Power Management and Investments One Limited
Legal Advisers: Chadbourne & Parke/ Covington (sponsor), Hatem Abbas Ghazzawi & Co (sponsor), Shearman & Sterling (lenders), Al Tamimi & Company (lenders), Dr. Sultan Almasoud & Partners (lenders), White & Case (bond trustee and security agents)
MLAs: Jefferies, China Construction Bank Corporation, Citigroup, Mizuho, NCB Capital, Standard Chartered Bank, MUFG Securities, SMBC Nikko Capital Markets
Financial Adviser: EY

MENA Solar

Sweihan Solar PV

Marubeni and Jinko's Sweihan solar project has a target generating capacity of 1,177MW, which will make it the world's largest single-site solar project. Under construction and expected to come online in April 2019, the project sponsors make use of a summer-time multiplier to achieve what was at the time the world's lowest headline tariff for solar electricity.

Abu Dhabi is aiming to have renewables make up 7% of its energy mix by 2020, and with ADWEA claiming over 15.5GW of capacity as of 2015, Sweihan will be making up the lion's share. Sweihan was its first solar PV IPP, going from prequalification in April 2016 to close in May 2017.

Marubeni bid $0.0242 per kWh – representing the cheapest price ADWEA will pay for electricity from the plant. During times of higher demand such as the hotter summer months between June and September, ADWEA will pay a multiplier of 1.6 times the headline tariff. The low tariff was achieved in part by the project's IRR being set lower than other projects in the region and an over-production of solar panels in recent years leaving a glut of capacity on the market.

With a total cost of $871.6 million, Marubeni and Jinko brought in a group of seven international banks and one local lender under a 26-year soft mini-perm structure, helping to tap long-term debt. Sponsors will have the option of refinancing within five years before an 80% cash sweep kicks in to pay down the principal – and later stepping up to 100%.

ADWEA is not planning new solar in the immediate future. If ADWEA had stuck to a 350MW capacity project it may have needed to begin new procurement after the close of Sweihan.

Abu Dhabi had 1,600MW of gas-fired capacity coming online in 2017 further reducing the motivation for new solar projects.

Project company: Sweihan PV Power Company
Total value: $871.6 million
Debt: $647.5 million
Equity: $224.1 million
Sponsors: Abu Dhabi Water and Electricity Authority (60%), Marubeni (20%), Jinko (20%)
Lenders: BTMU, Mitsubishi UFJ Trust, SMBC, Norinchukin, Natixis, BNP Paribas, Crédit Agricole, First Abu Dhabi Bank
Tenor: 26 years
Pricing: Starts at 120bp over Libor, rising to 225bp and later 250bp
Advisers: Alderbrook, Akin Gump Strauss Hauer & Feld, Fichtner, Norton Rose Fulbright, Shearman & Sterling, SgurrEnergy, Jardine Lloyd Thompson, Crédit Agricole Group
Offtaker: Abu Dhabi Water and Electricity Company (25-year PPA)
Grantor: Abu Dhabi Water and Electricity Authority

MENA Wind

Ras Ghareb Wind Energy

Egypt's renewables sector has had some false starts but is finally gaining some momentum. The Gulf of Suez project, also known as Ras Ghareb Wind Energy, has been many years in procurement but its financing last year demonstrated how privately-led wind projects in the country can get done.

The 262.5MW project was originally tendered in 2009 but was delayed for many years, not least due to the multiple regime changes in Egypt over the period.

A consortium of France's Engie, Japan's Toyota and local construction firm Orascom were eventually awarded the project, ahead of three other international bid groups, in July 2015. The consortium initially bid $0.04068 per kWh, though this was reduced to $0.0382/kWh when a 20-year power purchase agreement was finally signed with state utility Egyptian Electricity Transmission Company in January 2017.

The project's financing package benefited from significant support from Japanese export credit agencies. JBIC has provided an 18-year direct loan of $183 million, while NEXI has covered an additional $128 million commercial bank loan carrying the same tenor.

To support the cash equity requirement, each of the sponsors has also raised a separate two-year equity bridge loan.

Total value: $397.39 million
Debt: $314.14 million
Sponsors: Engie (40%), Toyota (40%), Orascom Construction Industries (20%)
Lenders: Société Générale, SMBC
ECAs: JBIC, NEXI
EBL providers: Société Générale (Engie), Mizuho (Toyota), Attijariwafa Bank (Orascom)
Advisers: Clifford Chance, Zaki Hashem & Partners, Milbank, Shalakany, Lahmeyer International, Mott MacDonald, Fichtner

MENA Social Infrastructure

Paris-Sorbonne Campus PPP

The refinance of Paris-Sorbonne Campus PPP in Abu Dhabi scooped the *IJGlobal* award for social infrastructure in the MENA region with clever financial structuring to push out the tenor and reduce pricing.

The original financing closed at the end of 2008 with a tenor of 20 years, pricing at Libor +215bp. The new financing priced at 135bp, stepping up in five-yearly increments to finish at 185bp.

The remaining 12 years of debt repayment was stretched to 17.5 years, leaving a six month tail.

The refi of a $236.9 million loan package signed on 31 July 2017 and closed the next month (14 August).

Project equity in Paris-Sorbonne University Abu Dhabi Campus is split between two Mubadala subsidiaries: Mubadala Development Company (51%) and Mubadala Infrastructure Partners (49%).

Four lenders on the $230 million term loan took equal shares of the package. They are: MUFG Bank, SMBC, Norinchukin Bank and Korea Development Bank. The same line-up supported the $6.9 million debt service reserve facility.

Paris-Sorbonne University is a public research university established in 1970 and located in Paris, France. It was the first French higher education institution to open a campus in the Gulf region.

Debt value: $236.9 million
Sponsors: Mubadala Development Company, Mubadala Infrastructure Partners
Lenders: MUFG Bank, SMBC, Norinchukin Bank, KDB
Tenor: 17 years and six months
Pricing: 135bp above Libor, stepping up to 185bp
Advisers: Allen & Overy, Linklaters, White & Case, BDO

MENA Infrastructure Programme

Egypt FIT II Programme

Egypt closed 30 projects under the second round of its feed-in-tariff scheme, procuring around 1.8GW of PV capacity at the Benban solar park near the city of Aswan in Upper Egypt.

The first round of the programme was a disappointment with just 150MW of capacity closing against a target of 2GW.

Despite this, Egypt managed to bring investors back into the fold only a year later – and cut the offered tariff from $0.143/kWh for plants 20MW-50MW in size to $0.084/kWh.

FIT II saw the World Bank's IFC and the EBRD each leading the financings of a majority of the projects – 13 and 16 of the deals, respectively. The two DFIs managed to bring in a group of international and regional lenders, a number of which had not been active in Egypt for some time. The World Bank's Multilateral Investment Guarantee Agency also provided political risk insurance to 12 of the projects throughout the programme.

Egypt is aiming to produce 20% of its electricity from renewable energy sources by 2022.

Total value: Around $2 billion
Debt: $653 million arranged by IFC, around $985 million arranged by EBRD
Sponsors: Almost 30 developers, including Access Power, Acciona, EDF, and Acwa Power
Lenders: Groups led by IFC and AfDB
Tenor: 18-year average
Pricing: 450bp over Libor
Advisers: Alesco, Allen & Overy, AON, Baker McKenzie, Bracewell Law, Clifford Chance, Deloitte, DNV-GL, Eco Consult, EcoConServ, EY, Eversheds, Herbert Smith Freehills, Howden, ILF Munich, INDECS, Lahmeyer, Lockton, Marsh, Matouk Bassiouny, Mott MacDonald, Norton Rose Fulbright, PWC, Sarwat A. Shahid Law, Sgurr, Shahid Law, Sharkawy & Sarhan Law Firm, Solizer, Synergy Consulting, White & Case

MENA Downstream Oil & Gas

KNPC Clean Fuels

Kuwait National Petroleum Company's (KNPC) Clean Fuels project involves the upgrading and expansion of the existing Mina Al Ahmadi and Mina Abdullah refineries in order to convert high sulphur fuel oil into higher value products. The development is aimed to boost Kuwait's global position within the oil refining industry, meeting local and international demand for high quality petroleum products.

KNPC raised the ECA-backed financing from seven European and Asian ECAs as well as 10 international lenders. The deal consists of over $6 billion in debt split between direct ECA lending and commercial lenders under ECA-backed tranches with tenors of 10 or 13 years.

With a total cost of $15 billion for the upgrading and expansion, a further KD1.2 billion ($4 billion) was raised from local banks in a separate 2016 deal. The balance is from shareholder contributions and KNPC's own funds.

The refineries are both located in the south of the country, 45km and 60km from Kuwait City. Their combined capacity will be boosted from 736,000 barrels per day to 800,000 barrels per day. Completion of the development is expected in mid-2018.

Total value: $6.245 billion
Debt: $6.245 billion
Sponsors: Kuwait National Petroleum Company (100%)
Lenders: Standard Chartered, Crédit Agricole, Natixis, BBVA, Société Générale, Santander, BNP Paribas, SMBC, BTMU, Mizuho, HSBC, JBIC, K-Exim, K-Sure, SACE, Atradius, UKEF, NEXI
Guarantors: Kuwait Petroleum Corporation guaranteeing KNPC's debt payment obligations
Tenor: 10- and 13-year tranches
Advisers: National Bank of Kuwait, Clifford Chance, Al Tamimi, Latham & Watkins, Natixis, HSBC

MENA Midstream Oil & Gas

Salalah LPG

This transaction was completed against a backdrop of depressed oil prices and a sovereign downgrade for Oman, making the support it garnered from commercial lenders impressive.

State-owned Oman Gas Company (OGC) eventually raised $640 million in debt from eight lenders for the construction of this liquid petroleum gas (LPG) production facility, having received expressions of interest amounting to $1.45 billion from 17 banks. The 15-year debt had initial pricing of 300bp over Libor.

The financing support construction of the Salalah LPG gas processing and storage facility within the Salalah Free Zone in Oman. The facility will produce some 700 tonnes per day of LPG, typically butane, propane and other condensate.

Petrofac will construct the LPG unit and associated facilities, including tie-ins to existing pipeline infrastructure, together with LPG storage and jetty facilities at the Port of Salalah.

The transaction includes a contingent equity structure as a completion guarantee. The contingent equity will be injected by the sponsor to meet the cost of any potential delay.

Total value: $826 million
Debt: $640 million
Equity: $186 million
Sponsor: Oman Gas Company (owned by the Government of Oman – 80%, and Oman Oil Company – 20%)
Lenders: Société Générale, Standard Chartered Bank, Arab Petroleum Investments Corporation, Bank Muscat, Ahli United Bank, Bank Sohar, Qatar National Bank
Financial advisers: MUFG, Bank Muscat
Legal advisers: Freshfields, Clifford Chance, Addleshaw Goddard, Al Susaidy Mansoor Jamal
Other advisers: Jacobs Consultancy, Nexant, JLT Speciality Limited
EPC contractor: Petrofac

MENA Petrochemicals

Salalah Methanol

Salalah Methanol Company, owned by Oman Oil Company (OOC) and Takamul, is a 3,000 million tonnes per day natural gas-based methanol plant in the Salalah Free Zone, an industrial hub in Oman.

Operational since 2010, OOC and Takamul opted to diversify the plant's output with an expansion into ammonia production. The ammonia plant will be utilising the methanol plant's hydrogen rich by-product gas as feedstock making it capable of producing ammonia at a lower cost than usual greenfield ammonia plants.

The transaction provides the capital for the addition of the $450 million ammonia plant to SMC's existing facilities, as well as refinancing SMC's existing $278 million in debt.

The deal was 100% debt financed with a number of international and regional banks joining the deal with local lenders and Export Development Canada. EDC is backing the deal as part of a tie-in with fellow Canadian firm SNC-Lavalin. The EPC contractor will build the 1,000 metric tonnes per day anhydrous liquid ammonia plant, including its utilities and off-site infrastructure, at the existing site.

State company Oman Trading International will offtake all production from the new unit under a 12-year agreement.

Total value: $728 million
Debt: $728 million
Sponsors: Oman Oil Company (90%), Takamul Investment Company (10%)
Lenders: Apicorp, Bank Sohar, Bank Dhofar, Bank Muscat, Ahli Bank Oman, National Bank of Kuwait, Qatar National Bank, ING, Société Générale, Standard Chartered, Europe Arab Bank, Export Development Canada
Tenor: 12 years
Pricing: 285bp over Libor rising to 340bp
Advisers: Clifford Chance, Al Busaidy Mansoor Jamal, Standard Chartered, IHS, JLT Specialty, Allen & Overy

Europe

INSIDE

- Çanakkale Bridge, Turkey
- Don Rodrigo solar, Spain
- Tenders streak in Turkey

Pipeline & procurement deals

Projects with recent tender updates

- Helsinki-Tallinn Tunnel
- Acquisition of Luton Airport
- Akkuyu Nuclear Power Station
- Borssele III and IV Offshore Wind Farms
- Dublin Metro North
- Gridlink Interconnector
- Hornsea III Offshore Wind Farm
- Trans Adriatic Pipeline
- Dardanelles Strait Bridge

Closed deal values by sector

- **Transport:** $8.11 billion
- **Renewables:** $7.79 billion
- **Power:** $4.34 billion
- **Telecoms:** $3.22 billion
- **Social & Defence:** $2.78 billion
- **Oil & Gas:** $2.61 billion
- **Water:** $2.41 billion

Countries with highest closed deal values

United Kingdom	$7.69 billion	50
Italy	$4.74 billion	17
France	$4.58 billion	16
Turkey	$3.44 billion	6
Spain	$2.88 billion	10
Germany	$1.85 billion	7
Netherlands	$1.83 billion	8
Russia	$1.67 billion	4
Norway	$1.45 billion	2
Denmark	$867 million	4
Ireland	$569 million	5
Greece	$416 million	2
Switzerland	$326 million	2
Iceland	$324 million	2
Finland	$290 million	1
Portugal	$285 million	4
Ukraine	$136 million	2
Poland	$61 million	1
Romania	$27 million	2

Transactions that reached financial close

- **15 Jan** Acquisition of Primus Energie Wind Portfolio
- **15 Feb** A10/A24 Neuruppin-Pankow Highway
- **27 Feb** Spalding OCGT Power Plant Expansion
- **14 Mar** Copenhagen Metro Line 4
- **23 Mar** Thessaloniki Port Privatization
- **28 Mar** Dublin Institute of Technology Grangegorman Campus

Source: *IJGlobal*, from 1 January 2018 to 31 March 2018.

DEAL ANALYSIS: The most ambitious of Turkey's recent transport projects receives Korean support to reach financial close. By Beatrice Mavroleon.

Çanakkale Bridge, Turkey

The €3.1 billion ($3.8 billion) Çanakkale toll bridge is the latest in a flurry of transport projects to involve bridges in Turkey's north western regions. The bridge is expected to improve traffic in Istanbul, Turkey's financial centre located around 200km to the north east. It will also create an alternative route linking Europe to Asia Minor to the west of the Sea of Marmara.

Numbers game

At 4,023m, the Çanakkale Bridge will be the suspension bridge with the longest central span in the world (2,023m), overtaking Japan's Akashi Kaikyo Bridge by 32m.

The planned year of opening is also 2023, which is the 100-year celebration of the creation of the Republic of Turkey.

Meanwhile, the ground-breaking ceremony took place on 18 March, the anniversary of the Çanakkale War. The bridge is also known as the 1915 bridge, commemorating the Ottoman Empire's victory in the Battle of Gallipoli.

Financing

Çanakkale Bridge is the second Turkish infrastructure project to receive support from Korean lenders and investors over recent months.

A total of 23 banks and institutions provided the €2.27 billion financing package to project sponsors Yapi Merkezi, Limak, SK and Daelim, with international lenders providing €1.58 billion (or 70%) and Turkish banks providing €683 million (30%).

The group of lenders includes Standard Chartered (MLA, document and technical bank), Natixis (MLA, traffic, modelling and insurance bank), ING (ECA coordinator), Deutsche Bank, Bank of China, DZ Bank, ICBC, Intesa SanPaolo, Siemens Bank, Islamic Corporation for Insurance of Investment and Export Credit (Islamic Development Bank), Korea Development Bank, Kuwait Finance House, KEB Hana Bank, Shinhan Bank, Denmark's export credit agency EKF, Korea Eximbank, Finansbank, Garanti, Akbank, Isbank, Vakifbank, Yapi ve Kredi Bankasi, and Kuveyt Turk.

The 15-year debt, with a 5-year grace period, was signed on 16 March.

Pricing on the uncovered commercial debt is thought to be around 500bp over Libor, while pricing on the commercial covered tranche is believed to have been around 150bp with a 10-15% ECA premium over the 15-year tenor. All-in pricing is expected to be around 2.6-2.7%.

The commercial covered tranche will be covered by KSure and Korea Eximbank.

Korea Eximbank also provided direct lending of €200-300 million. The Islamic Development Bank's Islamic tranche is thought to amount to €100 million.

Meanwhile, ING's tranche amounted to close to €200 million, provided under four separate facilities. ICBC also provided around €200 million, Finansbank around €100 million, and EKF less than €50 million.

Sponsors

The Korean-Turkish consortium's ownership interests in the bridge are shared equally between Turkish Yapi Merkezi and Limak, and Korean SK and Daelim

The sponsor group won the BOT project in January 2017 with a 16-year concession signed in March 2017 with the grantor, the General Directorate of Highways (also known as KGM).

The group outbid Japan's IHI, China's CRBC, and Turkey's Cengiz and Kolin.

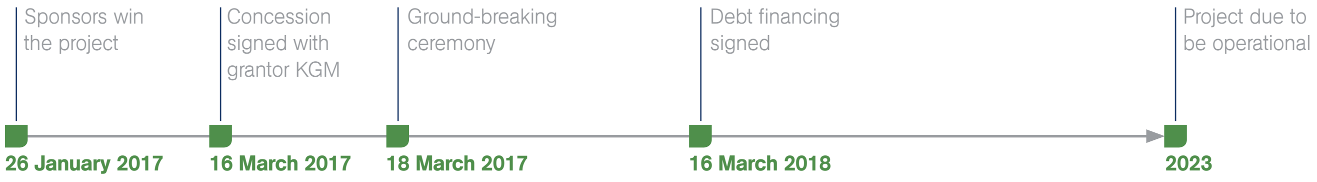
Turkey's Ministry of Transport is guaranteeing payment under the concession for a minimum amount of traffic. If the bridge's tolls do not meet the minimum, the government will top up revenues to the defined amount.

The sponsors will operate the bridge for 16 years, two months and twelve days, which is the shortest concession period proposed in the bids. The infrastructure will then be handed over to the Turkish state.

Sponsors were advised by Standard Chartered (financial), Shearman & Sterling (legal) and Lake Fisher (traffic).

The advisory team for lenders included Clifford chance (international legal), Verdi (Turkish legal), Arup (traffic and environmental), Mott MacDonald (technical), Marsh (insurance), Finansbank (traffic), Garanti (documentation bank) and EY (model).

Timeline



DEAL ANALYSIS: The developer held out for a PPA, setting a new long-term precedent for no-subsidy solar in Spain. By Alexandra Dockreay.

Don Rodrigo solar, Spain

Construction of BayWa r.e.'s 170MWp Don Rodrigo solar PV plant in Spain is set to start following the German developer signing a 15-year PPA with Norwegian utility Statkraft in April. The agreement is believed to set a new long-term precedent for zero-subsidy solar in the country.

The Spanish solar market has reached grid parity due to the fall in construction and panels, and it is becoming increasingly crowded from a grid connection standpoint. PPAs are available from utilities, traders and a growing number of corporates, while Spanish and German banks are preparing to back the PPAs with long-term senior debt as soon as this year.

Construction

Last year, BayWa r.e. estimated that construction costs for solar projects would be around €0.70 ($0.87) per watt capacity at this time, which it still thinks is a roughly accurate estimate. By that estimate, costs for Don Rodrigo – one of the largest solar projects in Europe – would amount to €119 million. Panels for the plant will be provided by an undisclosed European manufacturer.

BayWa r.e. was seeking the longest PPA possible, willing to go down slightly on price to achieve it. Eventual winner Statkraft was not the only potential offtaker in the running, however, with the developer spending 2017 in talks with industrials, traders and utilities.

The price of the PPA is a bit below €40 per MWh, *IJGlobal* understands, through the price is not fixed for the full term of the contract.

Statkraft is buying 100% of Don Rodrigo's output and will market the power to customers in Spain through bilateral contracts or the market.

BayWa r.e. will construct and operate the plant itself, also building a 220kV connection to a Red Eléctrica de España substation for access to the national grid.

The developer did not bid in the Spanish solar auctions for Don Rodrigo, already having obtained a grid connection.

Funding

Although construction of the plant will be fully funded on BayWa r.e.'s balance sheet, the company has held initial talks with possible buyers and is likely to launch a summer sale.

It would be up to investors whether to introduce leverage. But the developer has courted banks in order to ensure it is structuring a bankable project. The exercise has been positive, with Spanish and German banks making offers.

Watson Farley & Williams' Madrid banking and finance head Rodrigo Berasategui says: "Banks could do tenors of even 16 years… It is increasingly going up. There are two tendencies: hard mini-perm and fully amortising schemes. Many senior debt financings should close later this year."

Luis Castro, partner and head of energy & utilities at Osborne Clarke Spain, says: "Banks are requiring a PPA structure of 10-15 years minimum. Leverage on solar deals in Spain several years ago used to be 80% debt, but now it tends to be in the region of 40-60% debt."

Spanish solar auctions

There is significant uncertainty in the Spanish renewables feed-in-tariff (FiT) regime with prices adjusting every six-year regulatory period in relation to bond price movements.

Most bidders in the 2015 and 2017 auctions bid and won capacity with zero tariffs. They were really after the grid connections and are expected to rely on PPAs. The winners are required to connect their projects to the grid in 2019, however.

Castro comments: "Historically, the Spanish solar market has been very focused on feed-in-tariffs so there is limited experience in negotiating the PPA structure when compared with the UK. [This market] is learning a lot from British colleagues, but the complexity arises from the combination of UK PPA structures and Spanish regulation, with international players."

Outside of the auction, applying to the distribution network operators for a connection can take around a year.

BayWa r.e.'s solar projects managing director Benedikt Ortmann says: "It is not so easy in this market to get a grid connection. Many developers are reserving land and making significant down payments to utilities to reserve the connections."

The crowding and competition is expected to rise, as more developers realise that it is feasible to go for grid parity.

Timeline

1 April 2013	Planning applications submitted
13 October 2015	Environmental authorisations granted
6 October 2017	BayWa r.e., Alcalá de Guadaira Municipality sign collaboration agreement
10 April 2018	PPA signs, construction starts
25 April 2018	Huawei signs contract for inverters

DATA ANALYSIS: Turkey's ambitious renewable energy targets are the driver for several large wind tenders in the country. By Lyudmila Zlateva.

Tenders streak

Turkey has become one of the fastest growing energy markets in the world, and the country's renewables market is providing ample opportunity for investment in greenfield projects.

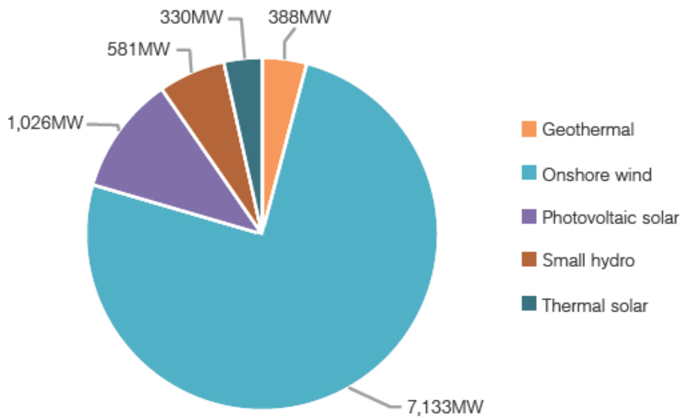
Several large tenders were launched last year as the government tries to meet ambitious renewable energy targets. In late December, Turkey awarded pre-licences to 22 wind projects across nine regions, with a total capacity of 2,130MW. The tender followed another wind auction for 710MW in June, which saw over 200 renewable energy firms competing for capacity.

According to transmission system reports, as of the end of November 2017, the number of licensed wind power plants in the country had reached 161 with installed capacity standing at 6.5GW.

Capacity has grown even further since then, *IJGlobal* data reveals, with a considerable number of projects in the Turkish wind pipeline.

Given the success of last year's auctions, the government will include 1GW of solar capacity in its September offering and is due to launch its first offshore wind tender later in 2018.

Turkish renewables capacity breakdown



Source: *IJGlobal*

Turkish onshore wind deals

Source: *IJGlobal*

On the plus side

Some 10 years after the adoption of the Renewable Energy Law, Turkey introduced Renewable Energy Zones (YEKA) to allow for robust and structured investments in sustainable energy sources.

The government has put in place encouraging policies backed by favorable feed-in tariffs to increase the share of renewables – hydro, wind, solar, and geothermal – feeding into the national grid.

The YEKA model is particularly favourable for the commission of large-scale renewable energy projects through the utilisation of locally-manufactured components. Under the scheme, the largest-ever solar power auction in Turkey's history took place on 20 March 2017. A similar tender for 1GW wind power plants took place in August 2017, with local manufacturing and R&D requirements.

Growing the share of renewables in the country's national energy portfolio to 30% by 2023 has been a staple priority in Ankara's energy policy over the past few years, and will run in parallel to the government's commitment to energy efficiency. The government is enacting laws that set principles for saving energy on individual and corporate levels, as well as providing incentives for energy efficiency investments.

As demonstrated by *IJGlobal* data, the Turkish government has been on track with its targets to grow the share of renewables in its energy portfolio.

North America

INSIDE

- Boston automated fare P3, US
- Gusher of investment
- Obituary: Terry Newendorp

Pipeline & procurement deals

Projects with recent tender updates

- Acquisition of Avista Corporation
- George Massey Tunnel Replacement
- LNG Canada
- PennEast Pipeline
- Acquisition of Westinghouse Electric Company
- Wind Catcher Energy Connection
- Hale Wind Facility
- Kansas City Streetcar System Extension

Closed deal values by sector

- **Oil & Gas:** $27.34 bilion
- **Power:** $16.27 bilion
- **Telecoms:** $4.30 bilion
- **Renewables:** $3.37 bilion
- **Social & Defence:** $2.42 bilion
- **Transport:** $213 million
- **Water:** $170 million

Closed deals by country

United States	$57.17 billion	88
Canada	$4.08 billion	11
Dominican Republic	$74 million	1

Transactions that reached financial close

- **16 Jan** Persimmon I Wind Farm
- **20 Feb** Acquisition of Infinity Renewables
- **26 Feb** New Toronto Courthouse
- **08 Mar** Acquisition of Calpine Corporation
- **26 Mar** sPower US Wind & Solar Portfolio
- **27 Mar** Acquisition of DPL Thermal Portfolio

Source: *IJGlobal*, from 1 January 2018 to 31 March 2018.

DEAL ANALYSIS: Unusually for a US P3, this deal was funded by bank debt rather than tax-exempt bonds. By Jon Whiteaker.

Boston automated fare P3, US

If you ride on the subway in Boston you are likely to use a CharlieCard to pay your fare. The contactless smartcard is named after a folk song famous in the city, about the unfortunate Charlie whose lack of cash for the exit fare means he is trapped in the subway for eternity.

Charlie may finally escape his fate, however, as a project to replace the existing system reached financial close on 20 March.

The new all-electronic automated fare collection system, which will operate across all Massachusetts Bay Transportation Authority (MBTA) services, will now be implemented over the next few years.

John Laing and Cubic Transportation Systems are the developers of the new fare system. The former is providing almost all of the equity investment and will be the system's long-term asset manager. The latter will design, operate and maintain the project – having previously delivered the Oyster Card system in London and Opal system in New South Wales.

The project is being delivered as a P3 – the first fare system to use that delivery model in the US. It is also MBTA's first attempt at a P3.

The financing

Unusually for a US P3, the sponsors are raising bank debt but not issuing any bonds to fund construction.

The full implementation of the new fare system has been estimated to be over $700 million, but the scope of the work being undertaken under the P3 contract has a capital cost of $275 million. The sponsors are highly leveraging the project, with a total equity investment of roughly $27 million.

John Laing is providing $24.3 million (or 90% of the equity) and Cubic the remainder.

The rest of the costs are being covered by a 12-year term loan from CIBC, SMBC and MUFG. Each lender will provide one third of the debt costs.

Most US infrastructure projects in the US raise any required debt in the capital markets, which are deep and highly liquid. Banks cannot compete with the often sub-100bp over Libor pricing, or long tenors achieved through bond issuances. But two aspects of this deal made bank debt the preferred option.

Firstly this type of project is not eligible for tax-exempt bonds, which would have meant undertaking a private placement instead. But the need for delayed draws and the relatively short tenor required would have pushed up the pricing for that type of instrument.

The sponsors were awarded a concession that extends over 3.25 years of construction and 10 years of operations and maintenance (with two five-year renewal options). And so 12-year bank debt was sufficient to meet their needs, giving them a small tail on the initial length of the contract. The shorter tenor meant they were able to attract competitive pricing, said to be around 100bp over Libor.

MBTA will make monthly availability payments to the concessionaire upon demonstration that contract services have been satisfactorily performed.

Procurement

MBTA formally started the procurement process in July 2016 when it issued a request for qualifications. The John Laing and Cubic team were named preferred bidder in November 2017 and they reached financial close in exactly four months.

The unsuccessful bid teams were Accenture, Plenary Group; Scheidt & Bachmann, Star America; and Conduent, InfraRed Capital Partners.

John Laing and Cubic were advised by Torys (legal); Project Finance Advisory Limited (financial); and BDO (tax and accounting).

The lenders were advised by Norton Rose Fulbright, and later Winston & Strawn (legal); Altus Group (technical); INTECH Risk Management (insurance); and Mazars (model auditor).

The new system

MBTA says the new system will "simplify fare collection and improve the delivery of transit services." Transit users will be able to pay fares across the whole Boston area by tapping contactless bank cards, mobile phones or new fare cards.

Integration of the new system will start in 2019, with full implementation the following year, and the retirement of the old CharlieCard system in 2021.

Timeline

19 July 2016	Request for qualifications issued by MBTA
15 November 2016	Request for proposals issued
20 November 2017	Cubic and John Laing named preferred bidder
20 March 2018	Financial close
2021	Retirement of the old system

DATA ANALYSIS: Favourable market conditions encouraged a surge in US upstream oil & gas investments in 2017. By Yavor Guerdjikov.

Gusher of investment

Rebounding oil prices saw a surge in upstream oil & gas investment in the US last year, but that enthusiasm may be more muted in 2018.

Global investment in upstream infrastructure is closely linked to the ups and downs in the price of oil; not least shown in 2014-2015 with activity by independent exploration and production (E&P) firms falling in tandem with the downturn in world oil prices.

The shale oil revolution in the US was a major contributor to the falling prices of the time, with advances in oil and natural gas production giving rise to an abundance of product and players in the domestic market. The country was also cemented as a chief crude oil exporter with an average of 1.1 million barrels per day in 2017.

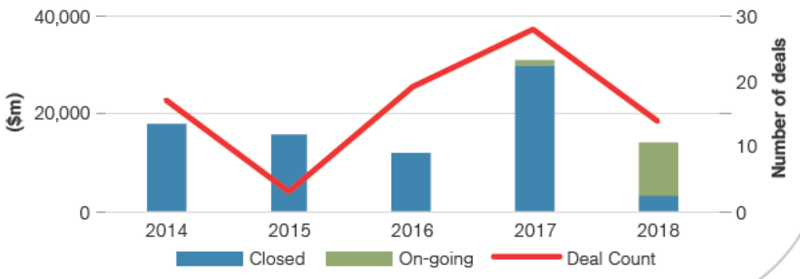
The West Texas Intermediate (WTI) price, which is settled at Cushing, OK, has demonstrated some level of stability over the last two years. In recent months it has risen to its highest level since late 2014.

Oil prices topped $65 per barrel in March and the positive trend has encouraged US E&P companies to embark on capital spending to increase their production capacities.

According to *IJGlobal* data, investment more than doubled in 2017 compared to previous years. The data includes growth oriented investment commitments such as primary financings on upstream infrastructure and M&A transactions in the sector, with much of the investment activity focused on Eagle Ford shale and the Permian Basin on the Gulf Coast.

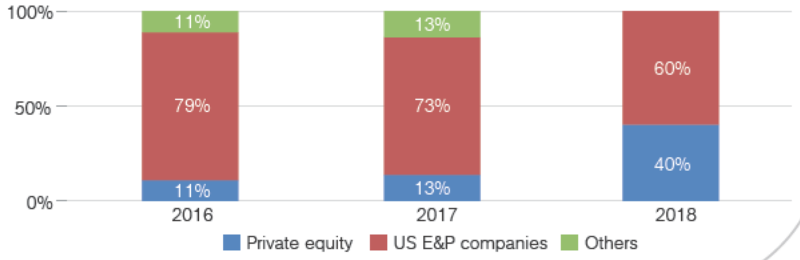
The beneficial market conditions are also attracting private equity investors into US upstream. *IJGlobal* data shows that private equity accounted for 40% of upstream investment in the country in Q1 2018, while US E&P companies stood for the remaining 60%.

US upstream infrastructure investment, 2014-2018



Source: *IJGlobal*

Sponsor participation in growth oriented US upstream deals



Source: *IJGlobal*

However, while companies may be emboldened to increase investment, there is some evidence that shareholders are still wary of another oil glut – and a subsequent downturn in price. US-based Concho Resources saw its share value drop 8.8% following the announcement of its $9.5 billion acquisition of fellow Permian Basin shale oil driller RSP Permian.

> *IJGlobal* data shows that private equity accounted for 40% of upstream investment in the country in Q1 2018

This may lead companies to instead opt for equity buybacks and divestments of non-core assets in order to improve shareholder returns and company value.

There are also concerns of the growing US shale oil production overwhelming the country's refinery capacity. While 90% of the 3.1 million barrels per day increase in production between 2010 and 2017 has come from light tight oil (LTO), most existing refineries are still designed to handle heavier oils than shale.

According to the American Petroleum Institute, the disparity has the potential to create a surplus of LTO reserves which could act as a brake on further price rises and potentially halt further upstream investment.

It is with great sadness that *IJGlobal* reports the passing of one of the giants of the international infrastructure community. By Angus Leslie Melville.

Terry Newendorp

Terry – a warm and well-liked man, steeped in the infrastructure community – lived in Rockville, MD and Bonita Springs, FL. He passed away on 5 March after three-and-a-half years fighting pancreatic cancer.

In a long and successful career, Terry spent 48 years creating complex financial structures for major capital projects worldwide, having worked in more than 100 countries. He was also a passionate fly fisherman and an avid environmentalist.

Born 12 August 1944 in San Antonio, TX, Terry graduated from Purdue University with a bachelor's degree in chemical engineering, and a minor in world history, working in DuPont's patent office to pay his way through GW Law School.

Terry became an international corporate lawyer with a top Chicago law firm, managed the international operations for a newly-acquired Nestle subsidiary (Libby Foods), and was counsel for the trading and finance division of International Systems & Controls, where he worked on large projects in 18 countries, living for six months in Singapore and for two years in London.

When he was 32, he became general counsel and corporate secretary for a publicly-traded oil field services company with activities in 25 countries, becoming one of the youngest GCs at that time for a publicly-traded company.

Then he founded his own firm – Taylor-DeJongh Inc (TDJ) – to act as an advisor on international engineering construction contracts, which led to advising leading companies on projects all over the world.

He worked with the US Export Import Bank when it created a new project finance programme in 1996, selecting TDJ to serve as its official adviser – one of five firms (out of 62 applicants) to win the role.

Terry Newendorp and wife Kathryn Lindquist

TDJ became one of the leading financial advisers to institutions and corporations all over the world on large scale power, oil & gas, and petrochemical projects, and cross border pipelines.

Terry was chairman and chief executive at Taylor-DeJongh until his retirement in 2015.

He also served for four years on the Energy Committee of the United Nations European Commission on Energy (UNECE), the only American on the committee at the time.

Up to the end, Terry was an active member on the board of directors at Venture Global LNG of Washington DC, a domestic US developer and builder of LNG export terminals in Louisiana. He also served on the advisory board and investment committee at Mariner Capital's International Infrastructure Finance Company.

At his memorial service, one of Terry's oldest friends said: "Talking with Terry was like sitting down to read the Economist. You knew you were going to get a broad, evenly-balanced, thoughtful analysis of whatever the subject might be."

Terry is survived by wife of 25 years Kathryn Lindquist – herself a well-known figure across the global infrastructure community – whom he married in summer 1992 in Baltimore County, Maryland.

He is also survived by daughter Nicole Newendorp (David Taylor); son Taylor Newendorp (Kate Murphy); and five grandsons.

The family received friends on Monday 19 March at Hines-Rinaldi Funeral Home in Silver Spring, MD and he was inurned in the Norbeck Memorial Park in Olney, Maryland.

Terry was ever a close friend of *IJ*, a true gentleman in every sense of the word and he will be sadly missed.

Asia-Pacific

INSIDE

- Rantau Dedap geothermal, Indonesia
- Sydney congestion
- Foot off the gas in Bangladesh

Pipeline & procurement deals

Projects with recent tender updates

- Kuala Lumpur-Singapore High-Speed Rail
- Bangkok-Chiang Mai High-Speed Rail
- Phulbari Coal-Fired Power Plant Expansion
- Natuna-Kalimantan Gas Pipeline
- Rupsha Combined-Cycle Power Plant
- Kanbauk Gas-Fired Power Plant
- TAP Transmission Line
- Tokyo New National Stadium Privatisation
- New South Wales SAHF2

Closed deal values by sector

Oil & Gas: $14.89 million

Renewables: $8.33 million

Power: $5.78 billion

Water: $1.45 billion

Transport: $97 million

Mining: $95 million

Countries with highest closed deal values

Malaysia	$8.90 billion	2
Australia	$6.52 billion	22
India	$6.14 billion	11
Singapore	$5.00 billion	1
Pakistan	$2.15 billion	2
Philippines	$2.07 billion	2
Indonesia	$822 million	4
Japan	$723 million	7
Bangladesh	$453 million	1
Hong Kong	$197 million	1
Hong Kong, Macao	$150 million	1
Thailand	$35 million	1

Transactions that reached financial close

- **29 Jan** Hub Coal Power Plant
- **09 Feb** Sumbagut 2 Peaker Gas-Fired Power Plant
- **21 Feb** Bangladesh Railway Rolling Stock
- **13 Mar** Murra Warra Wind Farm Phase 1
- **19 Mar** Bulgana Green Power Hub
- **23 Mar** Rantau Dedap Geothermal Power Plant Phase 2

Source: *IJGlobal*, from 1 January 2018 to 31 March 2018.

DEAL ANALYSIS: This financing required additional concessional funding and an adapted tariff due to a reduction in size. By Mia Tahara-Stubbs.

Rantau Dedap, Indonesia

It took four years for the sponsors of the Rantau Dedap geothermal power plant in South Sumatra, Indonesia to reach financial close on the $700 million project financing for its second phase.

Four years in the planning, the project was delayed after the geothermal resource at the site proved to be smaller than expected. This created complication for the financing and eventually meant more concessional funding than the sponsors had hoped to have to relied on.

The first phase of the project entailed the resource exploration and was funded through $50 million loan from the Asian Development Bank (ADB), through its Clean Technology Fund (CTF), signed in 2014. It was the first time the ADB has helped support a geothermal project from the initial exploration phase.

The completed project was originally due to have a total generating capacity of 240MW, with a sponsor consortium led by Marubeni and Engie signing the project's original PPA with state utility PLN in 2012.

The PPA has since been renegotiated after the exploration phase confirmed that the plant would have a generation capacity of just 98MW.

The project company for the development is Supreme Energy Rantau Dedap. Its largest shareholders are French utility Engie and Indonesian geothermal developer Supreme Energy, both with roughly a 33.3% shareholding. The minority shareholders in the project company are Japanese firms Marubeni and Tohoku Electric Power, which split the remaining equity equally between them.

Reduced resource

Geothermal has many advantages as a power source, not least that it occurs naturally allowing countries fortunate enough to have it as a resource to reduce the cost of imported fuels.

But it is notoriously unpredictable. It is hard to estimate project lifetimes, how consistent the heat emitted with be, and crucially what generation capacity it can support. And so it proved with Rantau Dedap.

The exploration works revealed a smaller resource than anticipated making the 240MW generation target unachievable. This meant the PPA with PLN had to be renegotiated, as the project had become financially unviable at the agreed tariff.

The renegotiation, generally an arduous process with PLN, took 18 months. The new PPA was eventually signed in October 2017, raising the tariff to around $0.13 per kWh from less than $0.10 per kWh.

The PPA is for 30 years – 15 years of which will be covered by a business viability guarantee letter from Indonesia's Ministry of Finance.

Financing

The debt-to-equity ratio was roughly 75:25 on the total $700 million cost for developing the power plant.

The ADB rolled over and extended its four-year CTF facility by another 20 years – to 24.5 years – and also provided a direct 20-year loan of $175.3 million.

CTF is also transferring $28.5 million already committed to ADB's Indonesia and Philippines: Private Sector Geothermal Program, to the project. Under the wider lending programme the debt had been split between senior, subordinated and convertible grants, but is now a $28.5 million senior loan of 20.5 years.

With two Japanese sponsors in the consortium, JBIC is also lending directly $188.8 million to the project.

In addition, the three Japanese mega banks, Mizuho, MUFG Bank and SMBC provided a $125.9 million loan, which is covered by NEXI. *IJGlobal* understands the tenor is roughly in line with the 20-year ADB loan and priced at just under 110bp over Libor. The three banks are equal lead mandate arrangers.

The transaction, which reached financial close on 23 March, is expected to become the template for renewables in the region, particularly for geothermal, sources have told *IJGlobal*.

Advisers and contractors on the deal included: Milbank (sponsors' legal adviser); Latham & Watkins (lenders' legal adviser); Mott MacDonald (technical adviser); Aecom (engineering adviser); Leighton Contractors (civil contractor); and Daya Alam Tehnik Inti (drilling contractor).

The sponsors did not retain a financial adviser.

Timeline

April 2010	Supreme Energy awarded tender
June 2011	International consortium formed
12 November 2012	PPA signed
16 November 2017	Renegotiated PPA signed
23 March 2018	Financial close

NEWS ANALYSIS: Infrastructure Australia gives the green light to road and rail projects to tackle urban congestion in its major cities. By Mia Tahara-Stubbs.

Sydney congestion

Infrastructure Australia's priority list for 2018 is focusing on resolving congestion in Sydney, the country's largest city.

The independent advisory had forewarned of its focus on cities in February, when it called on the federal government to take a more central leadership role in forming urban transportation policy. "Australia needs to start setting national objectives that allow our cities to realise their full potential and remain globally competitive," Infrastructure Australia CEO Philip Davies said at the time.

Beyond solving congestion in Sydney and the country's biggest cities, Infrastructure Australia said more than A$55 billion ($42 billion) will have to be spent on transportation across the country.

"These are the strategic investments recommended by the independent Infrastructure Australia board to best meet the connectivity needs of Australia's growing cities," Infrastructure Australia Chair Julieanne Alroe says.

Sydney's roads are one of the most clogged in the world, with average speeds of 73km an hour, not only slower than Melbourne, but also Boston, Philadelphia, New York and San Francisco, according to an Austroads report in January.

Infrastructure Australia has identified six "High Priority" projects, four of them in Sydney. Of the six projects, five are meant to address urban congestion. The projects consists of M4 Motorway upgrade in western Sydney, NSW; West Connex in Sydney; Sydney Metro, City and Southwest, NSW; Western Sydney Airport; M80 Ring Road upgrade, Melbourne, Victoria; and Brisbane Metro, Queensland.

Some are already moving forward. NSW is in the process of privatising 51% of WestConnex toll road. Shortlisted bidders are awaiting further information from the state government.

The group of shortlisted bidders are understood to include Transurban / AustralianSuper / Canada Pension Plan Investment Board (advised by Macquarie Capital, UBS and Morgan Stanley); Pacific Partnerships (CIMIC Group) (understood to be advised by JP Morgan);

> "Existing government commitments to infrastructure are contributing to a surge in commercial activity over the next five years, with transport infrastructure investment expected to peak in 2019-20"

Plenary / Cintra / Caisse des Dépôt et placement du Québec (advised by RBC Capital Markets and Deutsche Bank); and IFM Investors (advised by Bank of America Merrill Lynch and Citi).

Goldman Sachs is financial adviser to NSW on the auction.

The report also prompted NSW state government to released drafts for four future road and rail infrastructure corridors: North-South rail corridor, between Western Sydney Airport and the existing Sydney train network; Outer Sydney Orbital road and rail freight corridor; Western Sydney freight connection; and M7 road connection to the Bells Line of Road.

Others, however, remain in limbo. The Victorian government has pushed back procurement of the North East Link road PPP near Melbourne until at least after the state government election, which has to take place by 24 November.

More rail

Another key priority will be connectivity between the major cities by rail.

"As Australia's population grows by around 1.5% a year, rail infrastructure will be the backbone to Australia's growing passenger and freight needs," Australian Railway Association chief executive Danny Broad says.

To that end, Infrastructure Australia has identified another 6 projects on the "Priority List", with an implementation window of five years.

"The priority list identifies a number of additional opportunities to improve connectivity between capitals and neighbouring cities. This includes improvements to rail capacity on the Melbourne–Geelong and Brisbane–Gold Coast rail lines, as well as rail upgrades on lines from Sydney to the regional centres of Newcastle and Wollongong," Alroe says.

In addition, Infrastructure Australia has 24 projects under business case study.

The latest Infrastructure Australia lists should result in infrastructure investments peaking in the years between 2019 and 2020, according to construction industry association Master Builders Australia chief executive Denita Wawn.

"Existing government commitments to infrastructure are contributing to a surge in commercial activity over the next five years, with transport infrastructure investment expected to peak in 2019-20," she said. ■

DATA ANALYSIS: Bangladesh looks to renewables and coal to help reduce its reliance on gas-fired power. By Iliyan Videnov.

Foot off the gas

Bangladesh has the potential for significant economic growth but still suffers from huge unmet power demand. And with the lack of access to energy widely stated as the most significant factor hampering its economic and industrial growth, the country is looking to invest in both renewables and conventional power sources.

The energy mix currently provides over 60% of all energy through gas, and the government has taken up several initiatives to diversity the country's sources of energy.

Bangladesh is already a global leader in solar home systems with over 4 million rooftop installations in rural households. But the country has traditionally been lacking in utility scale solar power, standing at only 3MW of total capacity as of April, according to the Bangladesh Power Development Board.

The situation looks likely to change, however. *IJGlobal* has identified three major solar projects in development in the country: the 10MW Tetulia solar farm, located in the northern province of Panchagarh; the 200MW Cox's Bazar solar park on the southernmost tip of Bangladesh; and the 200MW Sundarganj solar PV plant, located in the Gaibandha district in the north.

Additionally, the Bangladesh Economic Zone Authority is in the process of planning two large solar zones in Baher Char area in Chandpur and in Chittagong, producing 1GW and 600MW of power respectively. PowerChina has expressed interest in taking up 75% of the equity requirements for the programme.

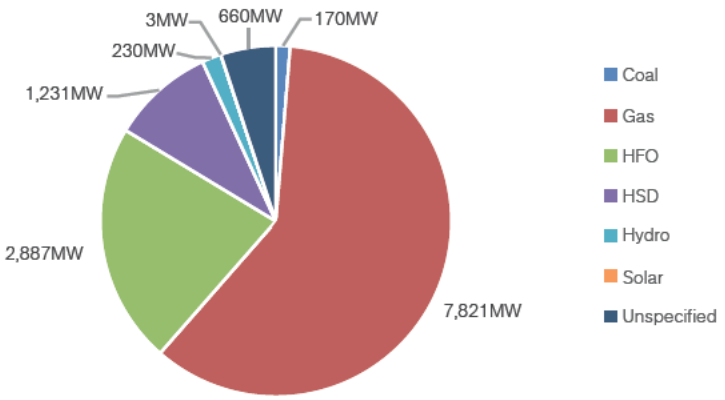
The Bangladesh government has set a target of having 3,168MW of renewable energy capacity installed by 2021. It is also aiming for renewables to have a 10% share of total generation by 2021.

Alongside this renewables push is an even greater investment in coal-fired generation. The government has put coal-fired power at the centre of its 2030 strategy, targeting 50% of all power production to be generated by this technology by that year compared to less than 1.3% today.

Looking ahead, demand for power in Bangladesh is expected to reach 34GW by 2030, according to the government, which is more than double its current generation capacity of nearly 14GW. The country relies on imports for around 15% of its energy needs.

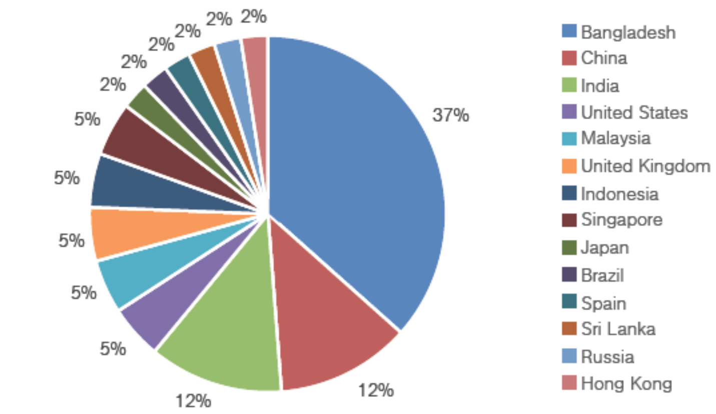
Foreign parties do not only play an important part in the import of energy, however, also supplying elements for and developing new generation facilities. *IJGlobal* data shows that 63% of Bangladeshi energy-generating facilities have foreign involvement in their ownership structure.

Sources of energy in Bangladesh in 2017



Source: *Source: Bangladesh Power Development Board*

Ownership of energy-generating facilities in Bangladesh



Source: *IJGlobal*

Middle East & Africa

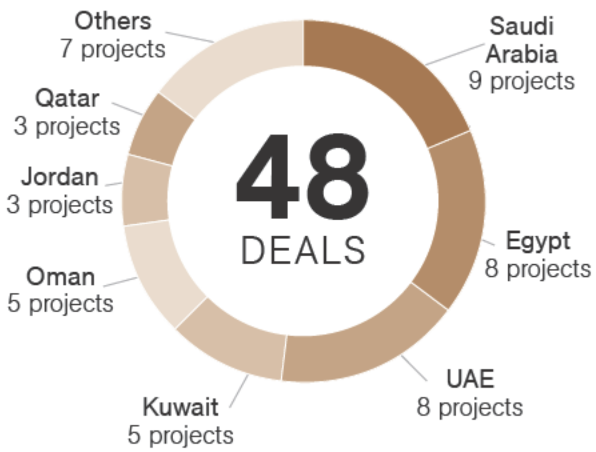
INSIDE

DEWA IV CSP, UAE

Lebanon's designs on PPP

China powers into Africa

Pipeline & procurement deals



Projects with recent tender updates

- Al Dur 2 IWPP
- Ain Sokhna City-El Alamein City Rail
- Noor Midelt CSP-PV Complex
- Jeddah and Makkah School Bundle
- Hassyan Coal-Fired IPP Third Phase
- Red Sea-Dead Sea Canal (RSDSC) Phase 1
- Riyadh Radiology Center
- Tanin Offshore Gas Field

Closed deal values by sector

Power: $4.23 billion

Transport: $2.52 billion

Social & Defence: $2.00 billion

Oil & Gas: $1.55 billion

Closed deals by country

United Arab Emirates	$4.66 billion	4
Saudi Arabia	$2.90 billion	3
Israel	$2.29 billion	3
Libya	$450 million	1

Transactions that reached financial close

- **30 Jan** Beer Tuvia Gas-Fired Power Plant
- **07 Feb** Israel Electric Corporation Bond Facility
- **26 Feb** NMC Health Corporate Facility
- **01 Mar** Acquisition of Marathon Oil Libya
- **14 Mar** Acquisition of 7.5% in Tamar Offshore Gas Field
- **20 Mar** Dubai Metro's Red Line Extension

Source: *IJGlobal*, from 1 January 2018 to 31 March 2018.

DEAL ANALYSIS: Dubai continues its renewables programme with a huge investment in thermal solar. By Jordan Bintcliffe.

DEWA IV CSP, UAE

Acwa Power and Shanghai Electric are looking to finance the 700MW DEWA IV CSP project in Dubai with loans from a raft of European, Chinese and regional lenders under a soft mini-perm structure.

A ground-breaking ceremony took place on 19 March shortly after the PPA signed on 15 March.

The $3.9 billion project, which is the world's largest thermal solar development, comes as another leap forward for renewable energy in Dubai. The Emirate has aggressively pursued renewable energy targets to slash carbon emissions by 16% by 2020, and is looking for renewables to represent 75% of its energy mix by 2015.

Phase four

The CSP development will be part of procurement authority Dubai Electricity and Water Authority's (DEWA) existing Mohammed bin Rashid Al Maktoum solar park. Unlike the latest project, the previous three phases of the solar park use PV technology and consist of the 13MW DEWA I, the 200MW DEWA II and the 800MW DEWA III. The entire park is expected to have a capacity of 5,000MW by 2030.

DEWA will offtake production from DEWA IV under a 25-year PPA. Commissioning is planned for Q4 2020.

Stakeholders in the project include DEWA (51%), Acwa Power (as the majority stakeholder of the remaining 49%) and Shanghai Electric (holding the minority stake of the remaining 49%).

Financing details

DEWA initially tendered DEWA IV as a 200MW project. Acwa's consortium offered a levelised cost of energy of $0.0945 per kWh for the 200MW project, also submitting an alternative offer of $0.073 per kWh for the 700MW capacity version. DEWA awarded the 700MW project to the consortium in September 2017.

DEWA IV has a total cost of $3.87 billion, including a steep equity requirement of around $1.5 billion, for a ratio of 39:61.

The debt financing will be split into two tranches. A $1.5 billion to $2 billion tranche will be provided by Chinese lenders led by the Industrial and Commercial Bank of China (ICBC).

Acwa began early-stage discussions with Chinese lenders in 2017, but more recently confirmed the line-up in ICBC's tranche: ICBC, Bank of China, Agricultural Bank of China, China Minsheng Bank, and Silk Road Fund.

That leaves $500 million to $1 billion of debt from a group of commercial lenders co-led by Natixis and Standard Chartered, which also includes ABN AMRO and Union National Bank.

Acwa and Shanghai Electric are aiming for a 26-year door-to-door tenor for the deal, structured as a soft mini-perm. It will feature a high cash sweep, effectively reducing the tenor.

Acwa used a similar setup for its 2,400MW Hassyan coal-fired project, which reached financial close in November 2016. The use of soft mini-perms for projects across the GCC is being driven by highly-competitive pricing on renewable energy developments, as well as a tightening of restrictions on bank liquidity.

The sponsors are aiming for the debt to sign in Q2 2018 with financial close to follow in Q3. Shanghai Electric will conduct EPC works.

Advisers

DEWA is being advised by KPMG (financial), Ashurst (legal) and Mott MacDonald (technical). Acwa is receiving legal advisory from Covington, while lenders are receiving legal advisory from Allen & Overy.

On the bright side

There are not many CSP projects worldwide to have reached financial close, and even fewer that are close to DEWA IV in size. As well as being the cheapest, DEWA IV will be the highest capacity single-site CSP plant in the world and will have a central tower 260 metres high.

The development will cover an area of 43 square kilometres, which is equivalent to 40% of Barcelona.

Although more expensive than solar PV, CSP makes it possible for solar technologies to produce electricity throughout the day and night by storing heat for later conversion into electricity.

Timeline

15 January 2017	DEWA launches RFP
16 September 2017	Acwa Power and Shanghai Electric win the project
15 March 2018	PPA signed
19 March 2018	Ground-breaking ceremony
Q4 2020	Planned commissioning date

NEWS ANALYSIS: Lebanon launches ambitious infrastructure investment programme to attract private investors. By Jordan Bintcliffe.

New designs on PPP

Lebanon has unveiled plans for a $22 billion Infrastructure Investment Programme (IIP) to be implemented over the coming 12 years, with $6 billion of that designated as PPPs. The programme opens up opportunities for private investors to tap a market desperately in need of key infrastructure, but which has had little PPP success in the past.

Infrastructure projects in Lebanon have struggled to progress in recent years. Since 2001, few projects have reached financial close. Among the projects tabled – but yet to complete financing, are: the €146 million ($180 million) Al-Ghadir wastewater treatment project; the €120 million construction of three industrial zones in Baalbek, Tourbol-Kosaya and Deir El Moukhaless-Jleiliye; and the Bisri dam, part of the country's Water Supply Augmentation project.

Others have been attempted, for instance the 450MW Deir Ammar Power Plant which the IFC provided transaction advisory for back in 2006. Although the project reached an advanced stage, with a tender due to be issued, it coincided with an 18-month political crisis. With a new government ushered in, the Ministry of Energy and Water took office and abandoned the IPP route, tendering the project as an EPC instead.

There have been some successful projects, however, including the operational Tripoli wastewater treatment plant benefitting from an EIB loan in 2009. Additionally, Lebanon's government in 2013 agreed a three-year, $370 million deal to purchase power from two Turkish-owned and operated power ships providing 270MW of capacity; while IBC owns and operates the Municipal Solid Waste Treatment Plant in Saida.

DFIs are likely to play a significant role in any projects to make it over the line. Both Al Ghadir and the industrial zone projects are backed by the EIB, with the industrial zones also receiving financial support from the United Nations Industrial Development Organisation and the Italian government.

A chronic budget deficit has prevented governments from making non-immediate investments with just 4% of the budget invested in infrastructure over the past two decades.

A need for PPP

Lebanon is pursuing PPP to build and develop much needed infrastructure, the High Council for Privatization (HCP) says, in power, education, health, transport, telecoms and other areas. A chronic budget deficit has prevented governments from making non-immediate investments with just 4% of the budget invested in infrastructure over the past two decades.

An influx of refugees has put further strain on the country's already creaking infrastructure, with refugees accounting for half of the total population according to some measures.

In addition, delivery of projects on time and to budget has been difficult, with traditionally procured projects on average exceeding cost by 20% and delayed beyond the agreed timetable by 35%.

The country aims to enhance economic growth through the investment programme, where it has lingered at 1.76% (2016), according to data from the World Bank. It will likewise spur job creation, with an additional 215,000 jobs to be created as a result.

PPP will also "revive and deepen capital markets through the securitization of project assets and listing of SPV shares", according to the HCP's website.

Lebanon's cabinet approved the first draft of its PPP law in 2007, with the Parliament passing it into law on 7 September 2017.

The pipeline

Lebanon is lining up PPP projects in sectors including transport, water, wastewater, economic zones and solid waste. There are 18 planned PPP projects in total, all of which fall under the wider IIP.

The country's HCP released a list of the 18 planned projects and their expected total value, although there is a possibility that more will be released in future. At this stage, the list includes the $2,860 million Khaldeh-Nahr Ibrahim Expressway, the $600 million Zahrani and Selaata IPPs and the $500 million expansion of Beirut Rafik Hariri International Airport.

"This is not an exhaustive list of potential PPP projects," Ziad Hayek, Chairman of the HCP, said. "Many of the projects currently under examination are not listed, for particular reasons in each case."

The projects are at varying stages of readiness, with some still in very early development. They will be rolled out as part of the IPP over the coming 12 years. The IIP itself will be implemented in three phases, each over the course of four years.

DATA ANALYSIS: China looks set to reap the rewards of its investment in African power. By Sophia Radeva.

China powers into Africa

Last year saw a surge in investment in Africa power assets by Chinese institutions with state lenders participating in a number of financings.

Geographically, Chinese lending was concentrated in five countries, *IJGlobal* data reveals, with the largest commitments going to Nigeria and South Africa. As the two largest economies in Sub-Saharan Africa, these countries represent attractive investment opportunities for lenders with the right risk appetite.

Hydroelectric power developments received the most financing in 2017. Renewable power projects – principally using solar technology – are sprouting across the continent, but the growth of this market is slow and developments remain small.

Coal-fired projects continue to be developed across Africa, with the large size of individual projects making them attractive as investments. Chinese lending to coal-fired in 2017 was concentrated in one project: 4,764MW Medupi being developed by South Africa's state-owned utility Eskom.

The flood of Chinese debt follows a 2015 promise by President Xi Jinping to increase investment in Africa by around 40% by the end of 2018. Chinese engagement in Africa is also in line with its Belt and Road initiative, which seeks to strengthen the country's global economic ties.

However, while borrowers will have been glad to receive such strong support from Chinese institutions, critics are concerned that African governments, which are the ultimate guarantors on many of these projects, are being saddled with too much debt.

On the other hand, China is filling a void left by the comparable inaction from Western leaders.

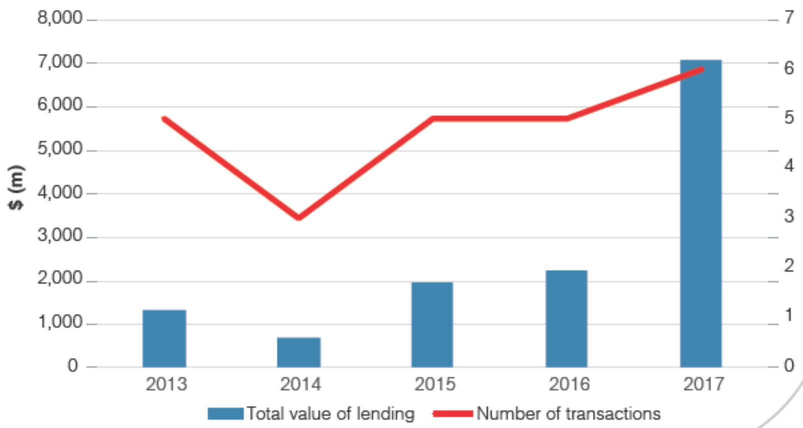
The US government's Power Africa initiative, launched in 2013, sought to double access to electricity in Sub-Saharan Africa. Initial success was limited, however, and the new administration in the White House appears far less focused on supporting African development.

Meanwhile, Western institutions remain largely cautious about investment in Africa. Any deal with IFC or World Bank backing requires lengthy due diligence, whereas Chinese institutions tend to be more flexible and faster moving.

Africa is not only a promising vehicle for geopolitical influence, but its abundant natural resources create attractive markets for manufacturers and construction companies alike. Its demographic boom suggests a significant surge in demand not only for power but also transmission facilities in the years to come.

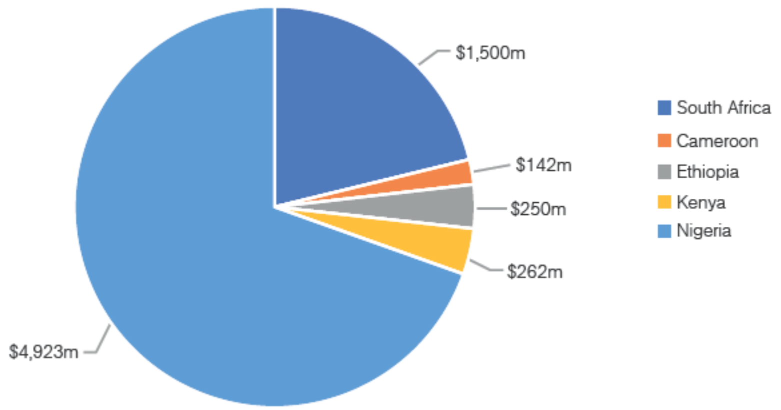
Chinese institutions look well-placed to continue to profit from their investment.

Chinese lending into African power transactions, 2013-2017



Source: *IJGlobal*

Chinese lending into African power transactions by country 2017



Source: *IJGlobal*

Latin America

INSIDE

More than 4G in Colombia

Sparks of life in Brazilian transmission

Pipeline & procurement deals

Projects with recent tender updates

- Ituango Hydropower Plant
- Mexicali-Hermosillo Transmission Line
- Norte-Sul Tramo Centra and Extensao Sul
- Acquisition of InterGen Mexican Portfolio
- Genelba Gas-Fired Power Plant Expansion
- Lima Jorge Chavez Airport Expansion
- Piura New High Complexity Hospital
- Portezuelo del Viento Hydro Power Plant

Closed deal values by sector

Power: $3.90 billion

Renewables: $2.32 billion

Transport: $1.85 billion

Oil & Gas: $1.83 billion

Water: $621 million

Social & Defence: $500 million

Closed deals by country

Chile	$2.61 billion	10
Peru	$1.78 billion	8
Brazil	$1.58 billion	9
Argentina	$1.56 billion	6
Colombia	$1.39 billion	3
Latin American and Carribbean Countries	$1.20 billion	1
Mexico	$936 million	4
Uruguay	$68 million	1
Paraguay	$50 million	1

Transactions that reached financial close

02 Jan Fortaleza International Airport Privatisation

07 Feb Bogota-Villavicencio Highway

28 Feb Acquisition of ExxonMobil's Assets in Colombia

01 Mar Lima Potable Water & Wastewater Treatment

05 Mar Acquisition of Ventos do Araripe 3 Wind Complex

12 Mar Autopista del Sol Chile Expansion

Source: *IJGlobal*, from 1 January 2018 to 31 March 2018.

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NEWS ANALYSIS: Colombian cities are following the lead of the capital Bogota in trying to launch a pipeline of infrastructure PPPs. By Juliana Ennes.

More than just 4G

The Colombian infrastructure sector used to be limited to just the 4G road concession programme that has awarded 32 PPP contracts.

That's all changing… or at least it will be if Enrique Peñalosa, Mayor of Bogota, succeeds in his plans to implement a pipeline of large-to-medium-size projects.

Peñalosa was mayor from 1998 to 2001 and is now back to govern the capital of Colombia for the second time, this session running until 2019. He has ambitious plans that, if successful, will transform Bogota into a huge construction site.

The mayor was famed for implementing structural reforms in his last term. Among the most important developments was the establishment of Transmilenio, a bus rapid transit (BRT) system inspired by the Brazilian city of Curitiba but implemented in a city of 8 million people (a lot bigger than 3.2 million Curitiba).

Funding requirement

Independent of the political battle over the use of the private sector in areas of the economy considered strategic – a debate always present in Latin America when talking about mass transportation, airports, and energy sector – the total funding requirement is daunting. Colombian cities now have a pipeline of projects that will require more investments than the 4G programme has lately been able to attract. It is not only Bogota: other Colombian cities are trying to follow the lead and launch urban projects as well.

Colombia has neither the financial capacity nor the expertise domestically to complete all the projects it needs. But the country seems to be moving forward with its plans, and attracting international attention.

Bankers, lawyers and infrastructure sponsors are saying almost in unison: "in Colombia, I'm focusing more on cities right now."

The new infrastructure announcements are also timely. They will require large amounts of investments, exactly in a moment of great liquidity in the US and in Europe. Returns in the developed world are still very low (though most anticipate a gradual increase in interest rates). It is not uncommon to see bankers say that "there is more money than projects to invest in."

With low returns, a lot of money and a (certain) lack of large projects in the US, commercial banks and investment funds are starting to look for opportunities in Latin America. There has also been a trend of international law firms growing their teams in the region. And foreign sponsors are lining up to form consortia and prepare bids to participate in Southern projects.

The projects

Just some of the projects include: Bogota's first Metro line; Transmilenio, El Dorado II airport; Regiotram; Cartagena airport; six hospitals; PPP schools/public buildings; and Elevated Station Canoas.

The largest upcoming project is the first Metro line in Bogota, which will require a total investment of $3.6 billion. The project is expected to be awarded in Q4 and will offer an alternative to Transmilenio, which is the main public transportation system in the capital city.

Transmilenio is also due to see a complete renewal of its fleet of buses, as well as an expansion of the network to include a new bus corridor in Bogota.

National regulator ANI is currently structuring the PPP for the second airport in Bogota, El Dorado II, which will require around $800 million in investment. Construction is expected to take place between 2019 and 2021.

El Dorado II will be connected to Bogota's public transportation system by the Regiotram project. This PPP includes the construction, maintenance and operation of a light rail system between Facatitiva and Bogota. At 41km in length, it will have 17 stations and a total cost of Ps1.5 trillion ($550 million).

There is also a PPP concession for Cartagena airport coming to market. Works include the expansion of the passenger terminal building, aircraft parking platforms and taxiways. The concession involves the structuring, design, construction, maintenance and operation of the airport expansion, in a project estimated to cost $200 million. It is currently subject to feasibility studies.

Bogota is in the process of awarding six hospitals, with an approximate cost of $400 million: Nuevo Hospital Simon Bolivar; Hospital de La Felicidad; Nuevo Hospital de Santa Clara; Nuevo Instituto Materno Infantil; Hospital de San Bernardino Bosa; and Hospital Usme.

FDN and the Ministry of Education are also trying to structure a series of projects to renew public schools in Colombia, starting in Medellin, Barranquilla, Cartagena and others. There are also projects to renovate public buildings in Bogota.

A public initiative project that would attend not only Bogota but also 14 other municipalities is the construction of a waste water treatment plant called PTAR Canoas, or Elevated Station Canoas. With a total cost of $4.9 trillion ($1.8 billion), it is supposed to clean 80% of contamination of the river. ■

DATA ANALYSIS: Brazil is drawing investment into the country's transmission assets. By Nikola Yankulov and Sophia Radeva.

Sparks of life

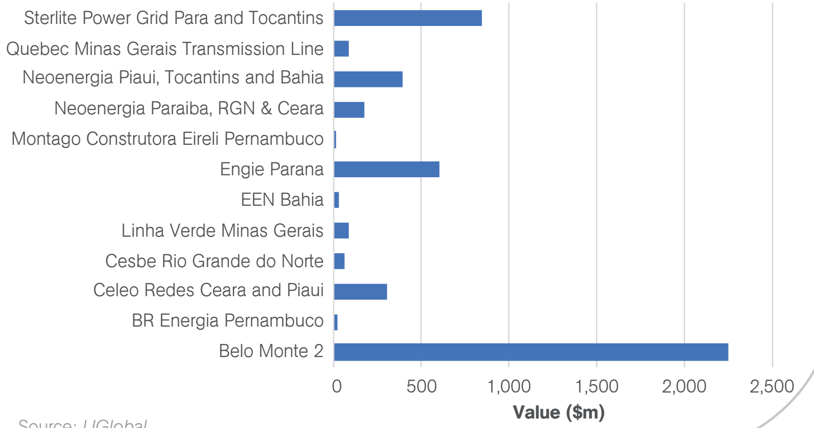
Investment in Brazil's transmission assets is picking up. After years of limited interest in development auctions, improved returns for investors in 2016 revealed a growing appetite for transmission projects.

In 2017, Brazil's National Electric Energy Agency (ANEEL) undertook two transmission auctions. Launched in April, the first auction resulted in 31 of 35 lots being awarded, which added over 7km of transmission lines and substations with 13,132 mega-volt-amperes (MVA) of power capacity, for a total investment of R12.7 billion ($3.82 billion).

Aneel then auctioned 11 groups of projects in December, comprising 4,919km of transmission lines and substations with capacity of transforming 10,416 MVA. Total investment for this auction was estimated at R8.7 billion.

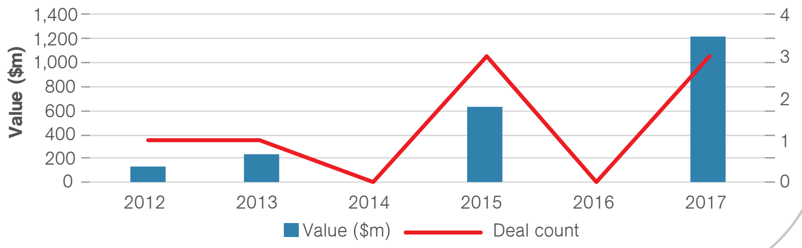
Global players, such as France's Engie, India's Sterlite Technologies and Neoenergia, owned by Spain's Iberdrola, were among the winners to the tenders to build transmission lines at prices averaging 40% below ceiling values set by regulators.

Active transmission/substation projects in Brazil



Source: *IJGlobal*

Closed transmission projects in Brazil, 2012-2017



Source: *IJGlobal*

Power surge

IJGlobal data shows a significant number of active transmission transactions in Brazil, as well as an increase in the number of transactions reaching financial close in the country. Although no deals closed in 2016, the data shows a spike in completed transactions in 2017.

The Brazilian government clearly seeks to accelerate construction, launching the Time to Move Forward – Partnerships programme in 2017 to ensure that previously stalled works can resume. In March, over 30 projects were included in the initiative.

The package includes 24 transmission line lots to be granted under concession – comprising a total of 60 projects across 18 states – to be auctioned by Aneel on 28 June. The 24 lots combined add 3,954km of transmission lines and substations with a total capacity of 13,866 MVA.

> *IJGlobal* data shows an increase in the number of transmission deals reaching financial close in the country

BNDES blockage

Despite the abundance of investment opportunities, BNDES's subsidized interest rates have made it difficult for commercial lenders to tap into the Brazilian market.

Change is in the air, however. BNDES's TJLP rate, which is several percentage points lower than the Brazilian Central Bank's basic rate, was replaced in January by the new TLP. Debuting at a rate equivalent to the TJLP, the TLP is set to converge with the rate of the country's sovereign notes over the next five years.

BNDES announced in March that it intends to reduce its disbursements by 6% relative to 2017, in an effort to reduce its reach as a lender and encourage commercial lenders to participate in project finance.