S&P Global Ratings

INFRASTRUCTURE FINANCE

OUTLOOK

Q3 2018 Review

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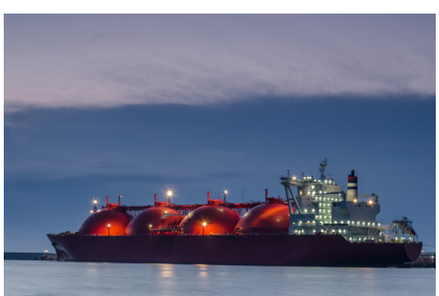
Political and regulatory risk ↘



Disruption ↘

Infrastructure as an asset class↘

Sustainable finance ↘

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EDITORIAL WELCOME

Karl Nietvelt and Mike Wilkins welcome you to this quarter's Infrastructure Finance Outlook by reflecting both on the effects of rising regulatory and political risks around the world on infrastructure credit, as well as on investors' increased focus on ESG.

In the last edition of Infrastructure Finance Outlook, we began these pages by highlighting our most comprehensive ever study of the sector's credit quality, defaults and recoveries – spanning the past 25 years.

Our conclusion? Rated infrastructure the world over – whether it be utilities, infrastructure entities or project financings – has a lower risk profile than infrastructure corporates. Typically, infrastructure assets are, by nature, critical to development and therefore enjoy higher regulatory rigour than other assets. Thanks to many in-built protections in the sector, confidence among long-term investors has largely been resilient.

Regardless of what has come before, is this an unfamiliar story today? Political and regulatory risks are rising in many parts of the world, thereby creating investor uncertainty.

Let's start with the tariff dispute between the U.S. and China, as it is likely to affect the global economy. The total of China's imports that is to be taxed at 25% from Jan. 2019 now stands at US$250 billion (or about half of the value of China's annual exports to the U.S). We expect China to respond by imposing tariffs of 5% to 25% on a further US$60 billion worth of U.S. goods, raising the total to US$110 billion (or about 85% of its American imports). Secondary risks could well be wider, not least hurting port revenues.

In Europe, the likelihood of a disruptive Brexit in March 2019 is increasing as there is no obvious landing zone for the outline political agreement on the future relationship required as part of the legal withdrawal treaty. In this edition, we focus on the impact of Brexit on the U.K.'s airports. Though these assets enjoyed moments of respite following the vote, we believe that uncertainty is starting to bite. With 63% share of EU-bound traffic, the U.K. won't be able to afford to stay out of the ECAA for long. Finally, we also comment on the political risks in Italy for Italian toll-road operator Atlantia.

Another key risk relates to emerging markets, and notably in Latin America. In Brazil because of the country's corruption scandals and current economic struggles, disenchanted voters may favor candidates outside the established political parties – with right wing candidate Bolsonaro now the clear frontrunner. At this point, it's unclear however what his or other candidate proposals would entail. In Mexico, Andrés Manuel López Obrador (AMLO) takes office from December 2018 to steer the country through a political and economic crossroads that could chart its future direction for the next decade.

As part of a far-reaching agenda, AMLO will seek to raise investment in public works and infrastructure, while the question remains if he can deliver on his promises while maintaining fiscal discipline. Uncertainty over the North American Free Trade Agreement's (NAFTA) outcome remains. While negotiations have resumed with positive developments, we don't expect the agreement to be finalized this year.

ESG concerns on the rise

All the while, environmental, social and governance (ESG) is a natural focus for long-term infrastructure investors.

Further supporting the focus on ESG, has been regulators' and governments' increased involvement in this area: October's International Monetary Fund (IMF) and World Bank meetings in Bali highlight this focus, with central bankers, ministers of finance and development, private sector executives discussing issues of global concern, including the world economic outlook, global financial stability combined with economic development, aid effectiveness and climate change.

In turn, we believe that ESG issues have moved from the periphery of the equity markets and towards the fixed-income mainstream. Driven by the increasing prevalence and impact of ESG risks in the business environment, S&P Global Ratings is in the final stages of testing its proposed analytic approach to quantify and qualify an entity's ESG risk exposure and management: the ESG Evaluation. The final Evaluation score is based on the following: an entity's exposure to ESG risks and opportunities; and its preparedness to anticipate and adapt to long-term plausible disruptions, in order support a company's sustainability in the future. In this edition, Michael Wilkins provides more detail about our proposal.

At this pivotal time for infrastructure investors – with so many factors to consider – we hope that this update serves to broaden knowledge, as well as spark questions and discussion. Feel free to put your questions to us.

In the meantime, enjoy reading our latest issue.

AUSTRALIA: REGULATORY RISK ON THE RISE?

The regulatory landscape for Australian infrastructure and utilities is changing. State and federal regulators are stepping up their activity across airports, rail, roads and ports – a trend Richard Timbs believes could dampen financial returns.

Australia's infrastructure market is becoming increasingly subject to greater regulatory activity – focusing on cost structures, service levels, rates of return, and market penetration. The environment reflects the increased tension between the sometimes conflicting interests of customers and shareholders.

Regulators, in an infrastructure market that continues to evolve after years of privatization, are reassessing the balance between these two groups and, in our view, increasingly showing more regard to customer outcomes. In fact, the Australian Competition and Consumer Commission (ACCC) is explicit that it is putting consumer interests first.

Given that this trend may remain a prominent feature for the next five years, investors should begin to consider whether they are appropriately calculating regulatory risk within their investment strategy. Here, we assess what these risks may include – and the likely ramifications for each of several industries: airports; energy; rail; roads; and ports.

How are regulations impacting different sectors in Australia?

Airports face competitiveness scrutiny

The latest inquiry into airport efficiency – due in July 2019 – illustrates the ongoing interest in testing the effectiveness of the regulatory regime. Depending on the recommendations made, the range of outcomes extends from no change to stricter regulations relating to pricing, service and investment.

Energy policy

Energy policy in Australia generally continues to be unclear, inconsistent and politically fraught. To reconcile these factors, as well as balance affordability, reliability and sustainability, the Federal Government has proposed the National Energy Guarantee. Under the proposal, Australia's government aims to lower electricity prices for consumers while managing a transition to renewable energy production.

Rail operators' battles become public

In 2017, the Queensland Competition Authority issued a draft determination against Aurizon – a move that the rail freight company disputes. The disagreement revolves around two key issues: the allowed rate of return on capital investment; and allowed costs for maintenance charges. Aurizon, meanwhile, is defending itself with rigor. However, now at the judicial phase, the continued lack of a resolution could create ongoing uncertainty for investors.

In an unrelated action, the ACCC has instituted proceedings in the Federal Court against Aurizon and Pacific National for allegedly seeking to "lessen competition in the supply of intermodal and steel rail line-haul services".

Roads: more scrutiny, similar outcomes?

Scrutiny of privately operated toll roads is increasing. The most significant inquiry regards the Transurban Group's bid for the WestConnex project in New South Wales. Here, the ACCC is examining two main areas of concern: competition for toll-road concessions, and competition between toll roads.

The state parliament of Queensland, meanwhile, is conducting an inquiry into the operation and pricing of toll-roads in the state. However, such inquiries typically serve to meet public demands of accountability, rather than being a genuine mechanism for change.

Port pricing criticized

In the last decade, the ownership of five key Australian ports has transferred to the private sector under long-term leases. While the ACCC has publicly criticized port pricing in the wake of these privatisations, only Newcastle Port has witnessed regulatory action so far.

What next for investors?

We believe that regulators are by and large not taking new or different approaches to their work. They are, however, responding to changing community expectations against a backdrop of building economic pressures. As such, the increased regulatory focus on pricing and service delivery isn't going away.

What next? Infrastructure investors may need to enhance their regulatory due diligence, while beginning to understand the philosophy and approaches of the businesses in which they invest. All the while, they should look to monitor their exposure to the Australian infrastructure: we remind investors that regulatory frameworks are dynamic and that "low-risk" infrastructure investments does not necessarily mean "no risk".

Further information is available on the Capital IQ portal in the research piece entitled: "Customers Or Shareholders? Why Australian Regulatory Risk Is On The Rise"

WHY ARE REGULATIONS CHANGING?

- Changes from public to private ownership: Over the past 20 years, states have transferred many assets and services to the private sector. This process has accelerated in the past five years.
- Merger and acquisition activity: Private capital buying government-owned assets in competitive bidding processes will naturally be fine-tuning bids to allow it to pay maximum prices, which in turn requires a maximization of expected financial returns.
- Financial strains on consumers: A combination of low wages growth and high utility prices is exerting financial pressure on consumers, leading to negative and vocal reactions from consumers. These views have generated a political response to which regulators are clearly attuned.

"Regulators are focusing more on consumer outcomes in an infrastructure market that continues to evolve after years of privatization."

THE ELEPHANT ON THE RUNWAY: RISKS GROW FOR U.K. AIRPORTS

An agreement about the nature of air travel between the U.K. and the EU post-Brexit has yet to be reached. Beata Sperling-Tyler explores the increasing risks for U.K. airports as Brexit draws closer.

Brexit is set to shape the future of air travel between the U.K. and the EU, but its final form is not yet clear. The main concern for the U.K.'s aviation industry will be the terms of access to the European Common Aviation Area (ECAA), bearing in mind this field does not benefit from WTO rules. Uncertainty about post-Brexit air traffic rights could reduce volumes of traffic and freight passing through U.K. airports once Brexit takes full effect.

Airports begin to feel the pinch

In the 18 months after the vote to leave the EU, U.K. air traffic grew at its strongest pace in years. Arguably, this period has coincided with a good economic recovery across Europe – something that has also worked in the U.K.'s favor. Traffic to the U.K. has also been bolstered by sterling depreciation, which made the U.K. a less expensive destination for tourists. Outbound traffic has kept strong too. British holidaymakers – though recognizing that foreign trips had become more expensive – continued to fly rather than give up their vacations: compromising on shorter trips and downgraded hotels.

However, as Brexit nears, this grace period may reach its conclusion. Traffic growth rates softened to on average flat growth for all U.K. airports in first-quarter 2018, and we forecast annual 0%-2% growth for Gatwick and Heathrow, the larger airports that we rate. This growth is slowing down due to, among other factors, weaker domestic growth and increasing uncertainty about the nature of Brexit deal that may be reached.

"As Brexit approaches U.K. policymakers are increasingly aware of their role in maintaining infrastructure investment: especially in the face of declining economic growth."

Aviation disruption remains possible

Why is ECAA access considered so important? EU membership grants access to the most liberalized aviation market in the world. It is available to any available that is predominately-owned by either corporates or people based in an EU member state.

Through the ECAA, the EU governs 85% of all the U.K.'s international air traffic. If the U.K. government does not secure a new agreement, or set of agreements, air traffic freedoms between the U.K. and the ECAA will cease.

We view this scenario as having a low likelihood but with an extremely high impact, given the 63% share of EU-bound traffic for the U.K.'s airports but similarly any cessation of air traffic would be big economic shock for the EU as well. A more likely scenario, we believe, is that U.K. airports face a drop in traffic growth and commercial revenue due to a more mundane scenario: a slowdown in economic activity and disruption in airline schedules and operations, at least on the runway to Brexit.

Hence, we attach a higher probability that the ECAA grants U.K. airlines open skies access but not cabotage rights – that is, the right to operate within the domestic borders of another country. This would mean that U.K. carriers could no longer operate intra-European flights.

Regulatory pressure possible; offset by stronger political support for airport expansions

There is some evidence that public and political pressures in the U.K. are influencing decisions by regulators to lower the cost of capital, which could reduce returns as has been seen already in the water sector. If this change starts to spread to other sectors, such as the regulated airports, Heathrow – and to a lesser extent Gatwick – will be most affected. At the same time, as Brexit approaches U.K. policymakers are increasingly aware of their role in maintaining infrastructure investment: especially in the face of declining economic growth. Heathrow for instance, recently secured parliamentary approval for its third runway following many years of delays. In fact, we believe that other airports of strategic importance to the U.K. economy, such as Gatwick and London City, might also benefit from greater political support of their expansion plans.

Further information is available on the Capital IQ portal in the research piece entitled: "Countdown To Brexit: The Growing Risks For U.K. Airports"

CAPACITY MARKET UPDATE: ENERGY-ONLY MARKETS BRING HIGHER RISKS

America's power markets are changing, and so too are the conventional wisdoms regarding the merits of the fully regulated compact versus the energy-only market. By comparing two markets, Aneesh Prabhu explains why energy-only markets may bring higher risks from a credit perspective.

Over the past decade, changing market conditions have complicated the debate about whether energy-only markets or a fully regulated compact carry higher risks. Conventional wisdom had it that, because of its cost-plus approach, a fully regulated model does not provide enough incentive to spur investments in new technologies while an energy-only market kept all risk too close to the generator.

But, is this really the case? In this industry update, we contrast and compare the Pennsylvania-Jersey-Maryland (PJM) Interconnection, a fully regulated compact, and the Electric Reliability Council of Texas (ERCOT) markets, an energy-only construct.

PJM Interconnection: tug and pull

The PJM capacity story has, in effect, become a tug and pull between retirements and new supply. One important factor influencing this dynamic is secular load growth, or the lack of it. May 2018 saw the announcement for the PJM's reliability pricing mechanism (RPM) auction results for capacity years 2021/2022. The US$140 per megawatt-day (/MW-day) RTO clearing price came out higher than we anticipated, likely because of the 4 gigawatts (GWs) of retirements announced by FirstEnergy Solutions.

Even though the PJM RPM auction outcomes are still volatile, we see capacity pricing heading toward some stability – at least in the ranges of expected outcomes. Over the past several years, PJM has responded well to unexpected auction outcomes and has moved to implement rules that have mitigated potential arbitrage opportunities. We also note that market heat rates stabilized and started increasing from about the third quarter of 2017 and that implied load has increased for the first time in five years in PJM for the 2018 auction. Further, we believe that price outcome ranges are narrowing because several variables, which could influence pricing, have all stabilized.

The PJM comes with headwinds, of course: demand decimation, changing basis differentials, and renewable penetration has often proved unfortunate surprises to lenders – meaning many have not fared well. Still, the PJM RPM auctions have adequately served their purpose. The market has largely performed as intended – and the market is signalling lenders to bank on.

ERCOT: not for the faint-hearted

In contrast to PJM, the ERCOT market has strong secular load growth. We nonetheless see the ERCOT story as the perfect storm that can result from an energy-only construct. Between 2012 and 2017, the increase in renewables generation continued to shave away at peak scarcity pricing. Milder weather compared with historical averages added to the woes. With load absent, changes in fuel costs and the supply mix have affected market clearing prices and thus lowered infra-marginal rents for incumbent generators.

These developments resulted in inadequate cash flows, and we witnessed a substantial number of rating actions in this region. Fast forward to 2018 and it is figuratively "High Noon" for ERCOT. During the period between July 19 and July 25, 2018, ERCOT was witnessing its highest load ever. This high demand temporarily triggered high wholesale electricity prices, in some locations exceeding US$4,000/MWh. Forward markets through 2020 have risen substantially, too, on the back of strong summer forwards.

We see the ERCOT story as the perfect storm that can result from an energy-only construct. A forward capacity construct budgets supply for expected load that eventually might, or might not, materialize. On the other hand, an energy-only market keeps price signals more "market facing," which may not provide future scarcity signals as effectively as a capacity construct would. As a result, an energy-only market is prone to more booms and busts compared to a capacity market.

As such, ERCOT's ride is not for the faint-hearted. In fact, we believe that investors do not continue to pour money into future projects when they have lost money on similar investments. Therefore, while there is no doubt that the energy-only construct has potentially saved ERCOT ratepayers billions of dollars between 2012 and 2017, we think an energy-only market also creates greater uncertainty from a lending perspective. Lower average power prices comes at a cost: occasionally higher peak prices. We see this – the boom and bust of an energy-only market – as more risky from a credit perspective.

Bringing in the verdict

We believe that the PJM capacity construct – despite a few blips – is a workable model. In fact, as key variables that affect the auction stabilise, its workability can only improve. In comparison, we believe that an energy-only market creates greater uncertainty from a lending perspective. This challenge stems from the fact that the system is not providing adequate signals beyond two years, in spite of healthy load growth. Thus, all else being equal, our ratings of merchant portfolios in ERCOT are one to two notches lower than similar portfolios in PJM.

Further information is available on the Capital IQ portal in the research piece entitled: "Capacity Market Update: Why S&P Global Ratings Views Energy-Only Markets As Higher Risk From A Credit Perspective"

"Changes in fuel mix, customer preferences, technological innovation, and increased distributed generation have put pressure on commodity markets."

CHINA'S LOCAL GOVERNMENT FINANCING VEHICLES ARE IN TRANSITION

The ratings of seven local government financing vehicles have been downgraded to reflect their weakening financial connection to the local and regional governments. Gloria Lu and Laura Li explore some of the questions on investors' minds regarding these developments.

"A new rule implemented earlier this year prohibits LGFVs from mentioning government support in their bond offering documents."

In China, the relationship between local government financing vehicles (LGFVs) and their local and regional governments (LRGs) parents is in transition.

Over the past 18 months, government policy and creditor hesitation has added complexity to the refinancing needs of LGFVs. LGFVs tend to be nonprofit and heavily leveraged, but are able to obtain funding due to explicit or implicit government guarantees.

However, as the central government continues with its overall deleveraging campaign and the crackdown of off-balance sheet borrowings of LRGs, some new guidelines and rules seek to separate the links between governments and such financing vehicles

While we view this as a multi-year process, the direction is clear enough to warrant a reassessment of China's unique local-government financing structure. In turn, we recently lowered our long-term issuer ratings on seven out of 15 LGFVs. Here we explore some of the questions on investors' minds regarding these sector shifts.

Q: Why hasn't S&P Global Ratings downgraded all 15 publicly rated LGFVs?

Five of the seven LGFVs we downgraded play critical roles to the local government and, in our view, have an "almost certain" likelihood of extraordinary support – our highest assessment. This means the ratings reflect and move in tandem with the credit profiles of their LRG owners. However, given the trend of a weakening relationship between the LGFVs and their government sponsors, we now make a one notch differentiation, even if government support for these entities is still higher than most of their peers.

Q: Will LGFVs become more profit oriented and, if so, will this impact their credit profile?

Yes, we believe their business models will transform over time, with a mixed impact on credit profiles. Moving to operating models based on commercial principals is a long-term and formidable task for LGFVs. Moreover, forays into new businesses that are potentially more profitable can also expose LGFVs to more market risk.

For instance, the LGFV, Changsha Pilot Investment Holdings Co. Ltd., is moving into more market-based businesses, such as commercial real estate and gas stations. We lowered our long-term issuer credit rating on the company to 'BB+' from 'BBB-' to reflect increasing exposure to commercial activities, and the falling likelihood of extraordinary government support. That said, if the companies can improve their cash flows to debt leverage metrics without resorting to large-scale investments, an LGFV's stand-alone credit strength could be enhanced.

Q: Why is liquidity analysis so important to LGFVs and what is the trend so far?

Similar to any corporate borrower, liquidity for LGFVs can deteriorate due to significant short-term debt maturities, delays in receiving payments for services provided, high committed capital expenditures, or sudden loss of capital-market access.

In particular, many LGFVs face large short-term debt maturities without committed sources of refinancing. This means that lenders are making policy-based lending decisions as to the ability and willingness of an LRG to provide support to the LGFVs on a timely basis. In the event of heightened liquidity or refinancing risk at an LGFV, we believe this could signal diminishing government support, as reflected in our downgrade of Zhenjiang Transportation Industry Group Co. Ltd. to 'BB-' from 'BB'.

Q: How does China's deleveraging campaign affect the credit outlook for the LGFV sector?

The credit stability of China's LGFV sector is highly subject to policy cycles and government priorities. During the first half of 2018, new restrictions together with the deleveraging campaign in the financial sector led to tightening liquidity for LGFVs and increased their funding costs significantly.

But, the backdrop of U.S-China trade tensions and the record-low growth of infrastructure spending, led Chinese policymakers in July 2018 to temper its language and encourage new infrastructure projects as part of an effort to boost the cooling economy. That said, while authorities have eased pressure on LGFVs recently, we believe deleveraging of the corporate sector will remain a key objective. As such, there will be longer term pressure on LRGs and LGFVs to figure out how to reduce debt levels, even if such actions impact economic growth.

Further information is available on the Capital IQ Portal in the report entitled: "Chinese Local Government Financing Vehicles In Transition: What's Behind Our Downgrades Of Some But Not All Rated LGFVs?"

NAVIGATING LNG'S CHOPPY 'CS': CAPACITY, CONTRACTING AND CREDIT

The reconfiguration of supply and demand in the LNG industry is changing the nature of global LNG contracts. Aneesh Prabhu assesses the evolving risks for sellers, traders, and offtakers.

Contracts: will Asia's LNG markets see a shift to more hub- or spot-based gas indexation?

For long, the liquefied natural gas (LNG) business model was solely based on long-term contracts, oil-linked pricing, destination restrictions, and take-or-pay clauses. The combination of high crude oil prices, rising Asian demand, increasing access to cheaper shale gas led to the introduction of significant U.S. Henry Hub-indexed LNG supplies.

In Europe "gas-on-gas" pricing competition also became a reality over the last decade with the share of spot-linked trading volumes as a percentage of total consumption rising to 54% in 2017, from less than 5% in 2006. According to Gazprom, 54.5% of European gas pipeline and LNG contracts are now indexed to gas, with the share of oil standing at 38% (down from over 90% at the start of the century). Such transformation was accelerated during the 2009-2012 prolonged European crisis, as prevailing European hub prices fell to levels 25% below oil-indexed LNG contracts, triggering two trends: a wave of price renegotiations between utilities and suppliers, and the rapid development of liquid traded gas hubs.

Similarly, Asian spot prices dropped substantially over 2016 till September 2017, meaningfully below pricing in longer-term contracts, due to periods of relatively weak Asian demand, particularly in 2015, and more recently because of increased supply from new projects coming on stream. This increased appetite from Asian buyers to index LNG contracts to spot gas pricing rather than oil. At the same time, a trend toward smaller volumes and shorter tenures for LNG contracts accelerated. According to energy consulting firm Poten And Partners, the average contract lengths for deals signed in 2017 fell to 6.7 years from 11.5 years in 2016. However, Asia is by no means Europe, as its markets are less liberalized , nor interconnected, which limits gas-on-gas competition and a step shift to more gas based contracts.

Still, we note a meaningful increase in Asian LNG derivative trade on the JKM, underpinned by increasing hedging of market-based LNG pricing as market participants increasingly manage their physical pricing exposure in the financial markets. In addition, since Q4 2017, the Japan-Korea-Marker (JKM) spot index, used for Asian LNG contracts, has strongly recovered back to price levels of oil-indexed LNG contracts. Consequently, in 2018, pricing continues to be heavily weighted toward oil links, with 15 of 23 deals priced against Brent or Japanese Crude Cocktail (JCC) with equally longer terms again (back to over 13 years). However, oil-related LNG pricing (in $/mmBtu) has been reset from mid-11% to slightly higher than 12% of Brent (down from 13-14% historically).

Capacity: contrary to the narrative of excess supply, spot LNG pricing took a turn in 2018, but will it last?

Despite a meaningful increase in supply of LNG capacities this year, LNG prices saw a steep increase over the last 12 months. Clearly the rise in oil prices contributed to this, but there are also structural drivers: these include the considerably greater than expected Chinese demand, increased European short-term (coal-fired displacement) and long-term demand (shutting down nuclear units etc.), and simply ever growing concern over continued lack of final investment decisions (FIDs) of new trains. Also, somewhat unnoticed is the decline in supply from countries such as Algeria, Indonesia, Papua New Guinea, Nigeria, and Malaysia.

At this point it is unclear if these supply declines are temporary or chronic, but they are reflected in the spot pricing that registered an uptick as demand continues to be strong. Most incremental demand (about 20-25 mtpa) in 2018 comes from Asia. We estimate that about half of this growth will come from China and the remainder largely from Japan, South Korea, and India.

That said, we still believe that Asian spot LNG prices could weaken again through 2022, in view of nearly 53 mtpa of new liquefaction capacity which continues to ramp up in Australia (55%), the U.S. (25%), and Russia (16%) through year-end 2019. A key unknown factor in this respect will be the sustainability of Chinese demand, especially against the backdrop of a growing trade dispute.

Credit: changing credit risks

As the industry evolves the credit risks change, too. However, with a flurry of recently announced projects globally, we expect to rate transactions – such as oil-linked or gas-hub-linked revenue payments – that carry market risks.

Market risks have for instance emerged from volume variability. In recent months, buyers have gained greater leverage in contract negotiations: asking for more quantity flexibility, cargo cancellation rights, back-end ramp-down rights, etc. These new transactions could also have re-contracting risks, given that offtake contract terms have generally become shorter. We see these contractual terms as riskier for a project than the take-or-pay provision in legacy contracts, and believe terms will likely have to retighten.

We also foresee evolving counterparty risk, too. Indeed, some newer buyers – rated lower than traditional LNG buyers – are purchasing shorter contract durations than the traditional 20-year LNG SPA. If the credit ratings on the offtaker are low, the project ratings could be constrained by the counterparty's credit quality even if the stand-alone credit profile on the project is stronger. Such projects may have to counter higher business risks with stronger financial measures to achieve investment-grade ratings.

Further information is available on the Capital IQ Portal in the report entitled: "Capacity, Contracting and Counterparties: Navigating LNG's Choppy 'Cs'"

"Oil-linked contracts to be the mainstay in LNG contracting, even if offtakers are now demanding more flexibility in contracts with shorter duration, smaller volumes, destination flexibility, or different indexation."

CAN INDIA CLOSE ITS INFRASTRUCTURE GAP?

India's infrastructure is struggling to keep pace with its rapid urbanization. In the wake of this, Abhishek Dangra examines what's causing the gap between infrastructure demand and supply.

India is on a path towards rapid urbanization – a trend that necessitates unprecedented infrastructure investment. However, the government is deemed to be falling short of providing better infrastructure: according to the World Economic Forum's Global Competitiveness Report, India ranked 66th in terms of infrastructure. Though we expect this ranking to improve noticeably over the next five years, this comes with predictable headwinds. Projects suffer delays, costs overrun, and – like all democracies – societal considerations may play their part. Roadblocks, such as currency weakness and trade protectionism, could strain the government's budget or reduce project returns, too.

We nonetheless believe India's economic growth opportunities and the viability of projects should continue to attract capital. That said, the sizable deficit in infrastructure supply and demand will likely persist – with growing macroeconomic risks threatening to slow investments. Here, we examine the diverse regulations and peculiarities of different sectors to understand whether or not India can bridge its infrastructure deficit.

"We still expect the sizable deficit in infrastructure supply and demand to persist, with growing macroeconomic risks threatening to slow investments."

Q: How big is India's infrastructure gap and can it be bridged?

The Indian government estimates US$4.5 trillion of infrastructure investment will be needed through 2040: substantially more than India's GDP 2017 of US$2.6 trillion. In any case, India's infrastructure deficit is too large to be eliminated any time soon.

While the government believes ample infrastructure funding is available, others disagree. In fact, leading financiers at the Asian Infrastructure Investment Bank's 2018 summit suggested that many domestic banks, saddled with bad assets, will only lend selectively – thereby constraining available capital.

We believe private investor demand for Indian infrastructure assets is significant – for specific sectors and for the right assets. Notably, private investments lead the way in renewables and airports thanks to favorable economics. Investors generally prefer sectors where regulations or growth prospects provide greater visibility on cash flows. For other sectors such as railways (including bullet trains), government spending and government-to-government loans may remain the key source of funding.

Q: What's the impact of regulatory differences among sectors?

The impact is notably high, especially with regards to utilities and airports facing heavy regulations. Though similar regulatory mechanisms govern these two sectors, cash flow trends among them vary sharply – a result of differences in the maturity of regulations and the timeliness of implementation.

Utilities, for example, benefit from a regulatory framework that has been stable for two decades – granting them full pass-through of costs. Given this, we expect earnings growth to remain protected for utilities at about 9% annually until the fiscal year 2020. By contrast, airports face long delays in implementation of tariffs and ambiguity in tariff components. This, we believe, may contribute to a sharp drop in revenue and earnings for airports through to 2020 – even though passenger traffic is likely to enjoy double digit growth, as a percentage.

Q: What's your expectation for capex and leverage for rated infra companies?

We expect capital expenditure (capex) to remain high for Indian infrastructure players across sectors, but leverage trends will likely vary.

Rated utilities will, in our view, maintain elevated capex of about US$8 billion annually, but the commissioning of new capacities and regulated returns on investment should increase earnings. In turn, we expect the segment to deleverage.

We anticipate higher leverage for rated airports in 2018-2020 – with FFO-to-debt ratio set to weaken to around 15% from above 20% in 2015-2017. Delhi Airport, for instance, is set to incur significant expansion capex of more than US$1.16 billion. At the same time, delays in implementation of tariff adjustments will likely result in lower tariff rates. Without timely recovery of future capex costs through tariff adjustments, credit metrics may come under pressure.

Q: How do macroeconomic factors affect the infrastructure sector?

The infrastructure sector has a high correlation with the overall macroeconomic environment. Regulations, economic activity aside, interest rates and demand growth can also significantly influence cash flows and, in some cases, even boost project viability. The most resilient are regulated utilities; while renewables, ports and airports will be most at risk to unexpected macro shocks (see table). The intensity and duration of shocks will be the key determinant of the overall impact.

Further information is available on the Capital IQ Portal in the report entitled: "India's Infrastructure Marathon: Why Steady Growth Can't Close The Supply Gap"

MACRO RISKS THAT CAN AFFECT THE INFRASTRUCTURE SECTOR

Macro risk	Impact on rated issuer	Least exposed rated issuers	Most exposed rated issuer
Economic slowdown	Moderate	Regulated utilities	Ports
Rising interest rates	Medium	Regulated utilities	Renewables (with high leverage of above 8x debt-to-EBITDA and floating rate loans)
Funding enviroment	Medium	Regulated utilities	Airports
Weaker rupee	Low	Regulated utilities	Renewables
Higher inflation	Low	Renewables and utilities	Ports
Global trade war	Low-moderate	Utilities	Ports
Political uncertainty	Low-moderate	Utilities	Renewables

Source: S&P Global Ratings

CREDIT FAQ: THE GENOA BRIDGE COLLAPSE

Following the tragic collapse of the Morandi Bridge in Genoa, the toll road operator – Autostrade per I'Italia SpA (ASPI) – faces political, economic and reputational risks. Tania Tsoneva explores the potential credit implications.

On August 14, 2018, a portion of the Morandi Bridge, Genoa, collapsed – causing fatalities. Following this tragedy, S&P Global Ratings has placed ASPI, its parent company Atlantia, and another Atlantia subsidiary, Aeroporti di Roma SpA (AdR), on CreditWatch Negative reflecting the risk of potential litigation consequences.

At this time, the extent of any such consequences is unknown, as is the timing and amount of any potential compensation payment in the event of a concession termination. Here, we answer questions we have received from investors.

Q: As this situation unfolds, what is S&P Global Ratings monitoring?

The situation is expected to remain uncertain as news flow, government statements, public sentiment, and ASPI and Atlantia's actions continue to shape proceedings. That said we believe the next milestones relate to the outcome of the extraordinary board meetings for Atlantia and ASPI, and the ongoing investigation into the cause of the collapse by the prosecutor and the Ministry of Transport.

In addition, we will evaluate whether Atlantia and ASPI are able, within the scope of the current ratings, to meet any costs that ensue from restoration work. So far, Atlantia's and ASPI's management have pledged €500 million to rebuild the bridge within eight months from approval, suspended toll collection in the area, and established a fund to support the casualties' families and the city of Genoa.

Q: What are some of the resulting risks for ASPI and for Atlantia?

The aftermath of the Genoa bridge collapse has reinforced the political and reputational risks related to large infrastructure investment. Indeed, calls have already been made for ASPI's management to resign and we believe that the governance framework and risk controls within the group will soon come under scrutiny. Though the costs of restoring the Morandi Bridge and making good on any other claims are not yet fully quantified, a successful claim from ASPI could help to mitigate the overall financial impact of repair work and third-party-related liabilities.

Strengthening the oversight of the concession and operating environment could also take place. These governance factors, if implemented, could affect the long-term viability and returns of the business. Reputational risks, too, can result in less constructive dialogue on investment budgets, which could be a double-edged sword for Italy if investment reduces.

While the cause of the Genoa bridge collapse remains unknown, we do not see termination of the concession agreement as likely over the short to medium term. Furthermore, if it were terminated, we believe the negative impact could be mitigated by the contractually stipulated compensation for early termination. Nevertheless, there is also potential for drawn-out legal proceedings or a toughening of concession terms on new investments.

Q: Why do you see the termination of the concession agreement without compensation as unlikely in the near term?

Currently we do not foresee a scenario that would lead to a speculative-grade rating on ASPI, and consequently on Atlantia, over the near to medium term. We see termination of the concession agreement as unlikely in the near term and without compensation. Finding a replacement concession or taking over the operations of a large toll road network could, in our view, deter the government from terminating the ASPI concession on practical grounds.

We also believe a termination of the concession through a law decree enforcing expropriation or nationalization of the assets is remote. Such actions might impair foreign investments in the country if the rule of law and control of disputes become unpredictable. The financial consequences of termination, be it due to breach of the contract or in the public interest, might be mitigated by the contractually agreed termination compensation. The compensation amount depends on assumptions related to cost of capital and future cash flows, but we have seen estimates of ASPI's enterprise value averaging about €25 billion. Even with the 10% penalties specified under the contract, the amount should cover ASPI's gross financial debt of €10.7 billion at June 30, 2018.

Q: What's your view on the risk of more fines, if the concession is breached?

To date, the cause of the bridge collapse remains unknown, as does the outcome of the criminal investigation and the legal proceedings against the company. A negative outcome from the criminal investigation may result in significant fines, currently difficult to quantify. The magnitude and timing of legal fines, as well as how Atlantia will manage any financial flexibility both within the group and in the operational and regulatory environment at the time, will determine the effect on the rating.

Q: What could the credit implications be for ASPI bondholders, should the concession be terminated?

Another contingent risk is the put option on ASPI's €8.5 billion euro bonds. Our understanding is that the bondholders can only trigger the put option in case of termination of the concession. However, we believe a termination of the concession agreement is not effective until compensation is duly received. This reduces the risk of a liquidity shortfall in case the bondholders decide to enact the put option. According to ASPI's concession contract – and examples such as the motorway Centro Padane in Italy – we expect ASPI will continue to manage the network and collect toll charges until the transfer date, when the guarantor assumes assets and liabilities, including financial liabilities outstanding at that time.

Further information is available on the Capital IQ portal in the research piece entitled: "Infrastructure Operator Atlantia 'BBB+' Rating Remains On CreditWatch Negative Following Genoa Bridge Collapse" (Oct, 4), and "Genoa Bridge Collapse: Uncertainty In The Aftermath Weighs On Italian Toll Road Owner Atlantia" (Aug, 21)

"The aftermath of the Genoa bridge collapse has reinforced the political and reputational risks related to large infrastructure investment."

ABOUT AUTOSTRADE PER I'ITALIA SPA (ASPI)

- Italy's largest toll road operator, Autostrade per I'Italia SpA (ASPI) is a subsidiary of Atlantia SpA.
- It manages Italy's A10 toll road under a single concession agreement with the Italian government.
- In the first half of 2018, Autostrade per I'Italia SpA (ASPI) accounted for about 68% of Atlantia's EBITDA. It is the largest toll road operator in Italy, managing about 2,855km of toll roads – some 52% of Italy's tolled motorway network.


MULTILATERALS TURN TO PRIVATE SECTOR

The growing use of credit enhancements and clearly defined project pipelines is allowing multilateral institutions to increase their engagement with the private sector. Michela Bariletti and Alexander Ekbom explore how this trend may be vital in meeting the UN's Sustainable Development Goals.

Covering several social and economic development issues worldwide, the UN's 17 ambitious Sustainable Development Goals (SDG), known as the 2030 Agenda, will require annual investments of US$5 trillion-US$7 trillion.

To address these very large investment needs, sovereign owners have called on multilateral institutions (MLIs) to ramp up assistance for resource mobilization in the private sector (see chart). This, in our view, can be achieved both by committing their own balance sheets and, more importantly, by mobilizing additional co-investments from the private sector to both private and sovereign projects. Further, as MLIs begin to gradually increase their exposure to the private sector, we also expect them to play a catalytic role in supporting private-sector funding, particularly in low-income countries.

"Sovereign owners have called on multilateral institutions (MLIs) to ramp up assistance for resource mobilization in the private sector."

Mobilising the private sector

Private-sector lending (PSL) is not new to MLIs. Bodies such as the International Finance Corporation, IDB Invest, Black Sea Trade and Development Bank, and the European Investment Fund (EIF) have been lending almost exclusively to the private sector since they were founded. Others, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development, have consistently provided a larger share of financing to private-sector operations.

More recently, private-sector mobilization (PSM) has become an important goal for shareholders, too. For instance, the European Fund for Strategic Investments (EFSI) – spearheaded by the EIF and EIB – targets a total of €500 billion in lending until 2020. More than €400 billion of this, as co-investments with the EIB and EIF, should derive from the private sector for small and mid-size enterprise and infrastructure investments in the eurozone.

This combined growth in the private sector has also encouraged institutional overhauls, as well as supported the creation of new MLIs. Indeed, the African Development Bank's most recent 10-year strategy calls for more infrastructure financing and private-sector lending in support of its mandate. Also, the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank have largely been created to address the large infrastructure financing gap, with substantial initial paid-in capital endowments of US$20 billion and US$10 billion, respectively.

KEY TERMS

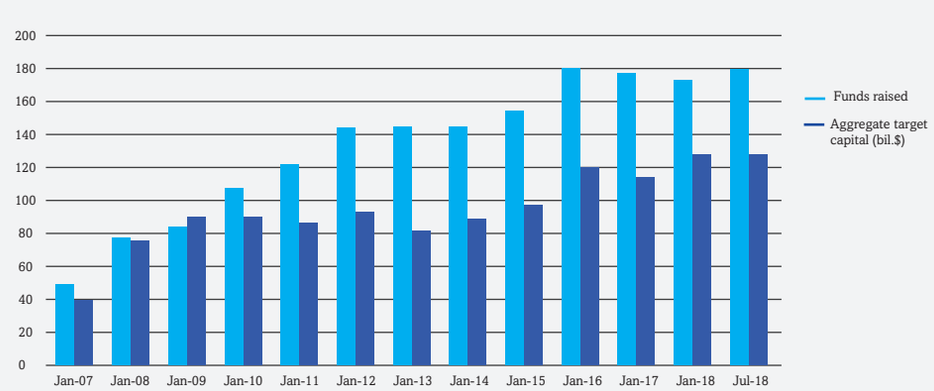
- Private-sector lending (PSL): direct lending to the private sector. In the context of MLI lending, PSL affects the risk that each MLI carries.
- Private-sector mobilization (PSM): catalyzing private-sector capital through public policy and financial intervention or intermediation. It is thought that PSM improves the risk profiles of private-sector partners, thereby encouraging private investment.
- Private-sector catalyzation (PSC): MLI activity not related to private financing e.g. advisory services, support for policy reform, and capacity building.

The role of credit enhancement

Private-sector capital waiting to be deployed into infrastructure investments is at a record high (see chart). Institutional and private investors see investing in infrastructure as offering several advantages, such as generally higher recovery rates in the event of default than for corporate bonds and more attractive yields than for government bonds and similarly rated corporate bonds. That's because of infrastructure projects' illiquidity premium and long-dated maturities that match pension fund long-term liabilities.

Although there is significant capital interested in

INFRASTRUCTURE FUNDS IN THE GLOBAL MARKET



Note: Data as of January 2007 to July 2018 Source: Preqin, S&P Global Ratings

infrastructure, the credit risk profile of existing global opportunities may not be attractive for institutional investors. To date, they are mainly investing in developed countries. Approximately 97% of total private capital investments mobilized by multilateral lending institutions (MLIs) occurred in high- and middle-income countries, according to the MLI community's joint 2017 report "Mobilization of Private Finance."

The much smaller share of private-sector investing where MLIs are involved in low-income and emerging markets is, in our view, due to their higher underlying investment risks. Such elevated risks include political and regulatory uncertainty, embedded risks in government concessions, currency exchange rate risk, and policies that are often less developed and somewhat unpredictable.

That said, many of these risks could be effectively transferred to a third party using credit enhancements and risk mitigation instruments. Credit enhancement aims to mitigate specific risks of a project that may weigh on its overall credit profile and therefore make that project less appealing to private-sector participants. To be effective, we believe credit enhancements must offer a menu of risk/return options that are both suitable and useful to various types of investors and investments. We believe that MLIs will increase engagement with the private sector via credit enhancements to facilitate private capital deployment. Plus, commercial insurers will likely continue to innovate to effectively deploy their capital across different projects and expanded geographies, and look at the whole capital structure beyond senior debt.

Beyond credit enhancement

Credit enhancement initiatives will not succeed alone. The key to increasing private-sector mobilization is to promote better understanding of the risks associated with infrastructure lending, develop a pipeline of projects with uniform structures with clarity about risk allocation, and support the authority and procurement phase to enhance market sophistication, transparency, and standardization. We also believe that support from the MLI community in the form of private-sector catalyzation (PSC) is likely going to play a major role in increasing PSM volumes. We also believe that MLIs and their partners will likely have to assume the riskiest parts of the investments, especially in the initial stages of projects.

The impact of greater PSM on ratings

Deepening private sector involvement is one of the most important changes to the MLI sector in decades. But doing this, while faced with limits on future capital increases (due to sovereign fiscal constraints) will likely be difficult. One thing that can't be ignored is that significant efforts will need to be devoted to building both the knowledge and capacity required to support PSM in a greater number of lower-income countries. What is clear, however, is that private-sector recourse is likely to change the landscape. For now, we see a higher likelihood of these changes affecting an MLI's business risk profile rather its financial risk profile.

Further information is available on the Capital IQ Portal in the report entitled: "It's Time For A Change: MLIs And Mobilization Of The Private Sector" and "It's Time For A Change: The Role Of Credit Enhancement In Mobilizing Private Investment In Infrastructure"

"We believe that many of these risks could be effectively transferred to a third party through the use of credit enhancements and risk mitigation instruments."

OUR PROPOSAL FOR ESG EVALUATIONS

Michael Wilkins outlines how S&P Global Ratings aims to provide a deeper insight into an entity's environmental, social, and governance (ESG) exposure, thanks to the ESG Evaluation.

"Our final ESG Evaluation score will combine an entity's ESG Profile with our long-term Preparedness assessment."

ESG EVALUATION AND CREDIT QUALITY

- The proposed ESG Evaluation is not a credit rating, a measure of credit risk, or a component of our credit rating methodology.
- However, we expect that the ESG Evaluation analysis will provide additional or complementary insights to the treatment of ESG factors when we apply our credit rating methodologies. For example, the percentage of water an entity recycles, or the degree of supply-chain audits for compliance with human rights conventions, may not be meaningful for our assessment of creditworthiness, but could affect the stakeholders of a company, financial institution, or government entity.

We are currently in the latter stages of testing the analytic approach for our new ESG Evaluation. This is a cross-sector, relative assessment of an entity's ability to operate successfully in the future and optimize long-term stakeholder value in light of its natural and social environment and the quality of its governance.

Our analysis is grounded in financial materiality by assessing the potential of ESG risks and opportunities to affect stakeholders – in which we include appropriate groups such as employees, the local community, the government, regulators, customers, and suppliers – that can have a financial impact, either directly or indirectly, on an entity.

ESG profile

Under our proposed approach, we will first establish an ESG Profile for a given entity. Our ESG Profile analysis starts with a global assessment of ESG-related exposure by sector and region, which we call the ESG Risk Atlas. There is a sector Risk Atlas and a country Risk Atlas. The sector-level analysis draws on the vast knowledge and experience of our analytic community and public data to develop a global matrix of ESG exposures by sector. We expect to refresh our sector Risk Atlas on a regular basis, and in time, we may provide more sector differentiation if meaningful (see chart).

We then combine this with results from our detailed ESG diagnostic questionnaire, which will provide us with a comprehensive understanding of the entity's current ESG exposure, policies, practices, metrics, disclosure practices, and how it has handled past ESG-related controversies.

This brings us to the final step: our analytical adjustment. Here, we will make adjustments to provide a more forward-looking opinion of ESG exposure – given that the diagnostic questionnaire will most likely be based on past performance.

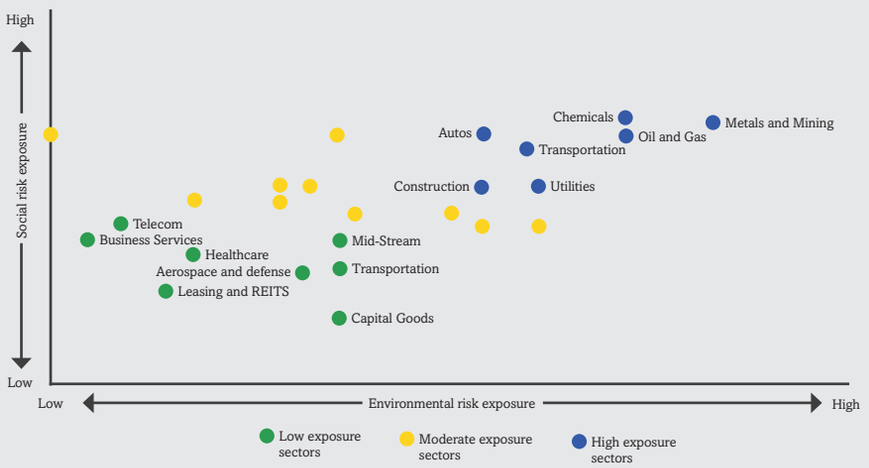
ESG Factors

Environmental	Social	Governance
Biodiversity	Customers	Reporting
Carbon	Human capital	Structure
Waste	Human rights	Transparency
Water	Safety	Values
	Social cohesion	

ESG EVALUATION

Source: S&P Global Ratings

CHART: INDICATIVE SECTOR RISK ATLAS



Long term preparedness

Secondly, we assess the entity's long-term preparedness, namely its capacity to anticipate and adapt to a variety of long-term plausible disruptions. Such disruptions are not limited to environmental and social scenarios, but could also include technological, political, or other scenarios where relevant. This is because, in our opinion, high-quality corporate governance includes the full spectrum of potential risks and opportunities an entity faces.

What's the score?

Our final ESG Evaluation score will combine an entity's ESG Profile with our long-term Preparedness assessment, thereby indicating our view of how effectively the entity is set up to manage its ESG exposure and opportunities. The ESG Evaluation thus provides an opinion on an entity's relative exposure to observable ESG-related risks and opportunities, and our qualitative opinion of the entity's long-term Preparedness for opportunities and disruptions.

At an entity's request, we expect to indicate in our reports the extent to which the entity has aligned its financial disclosures with the 11 recommendations by the Financial Stability Board's Taskforce on Climate-related Financial Disclosures (TCFD). As part of our ESG Evaluation and at an entity's request, we will comment on the proportion of metrics and targets that the entity discloses relative to the TCFD's suggested disclosure list.

Further information is available on the Capital IQ portal in the research piece entitled: "S&P Global Ratings' Proposal For Environmental, Social, And Governance (ESG) Evaluations"

ESG IN RATINGS VERSUS THE ESG EVALUATION PROPOSAL

- We already incorporate an analysis of ESG factors into our credit ratings when these factors are sufficiently material and visible.
- We expect that the ESG Evaluation analysis will provide additional or complementary insights to the treatment of ESG factors when we apply our credit rating methodologies. For example, the percentage of water an entity recycles, or the degree of supply-chain audits for compliance with human rights conventions, may not be meaningful for our assessment of creditworthiness, but could affect the stakeholders of a company, financial institution, or government entity.
- Ultimately, the effect on stakeholders could translate into a future financial impact on the entity, which is a particular focus for the ESG Evaluation, but may be too uncertain or not material enough to incorporate in our credit rating analysis.

THE RISE OF ESG IN FIXED INCOME

Corinne Bendersky explores why the increased severity and frequency of ESG-related risks, rising regulatory attention and a growing investor base of values-driven millennials has caused a rise in fixed-income ESG.

"Assets managed according to ESG strategies reached nearly US$23 trillion by 2016 – accounting for around one-quarter of professionally managed assets globally"

Environmental, social, and governance (ESG), long considered a niche consideration in equity investing, has made major inroads on the mainstream fixed-income market. Here, we explore the foundations of ESG and what is driving interest, understanding, and adoption in the fixed-income marketplace.

The foundations of ESG

ESG is considered within the context of corporate behavior and investment management. It is by no means a new phenomenon: 19th century religious groups established investment guidelines informed by ethical and religious values. Since then, the investment approach in the equity markets remained niche, but started to grow in popularity following the creation of the first ESG-focused mutual funds in the 1980s. By 1999, the Dow Jones Sustainability Indices (DJSI) were created, the first global sustainability benchmarks tracking the stock performance of thousands of companies in terms of economic, environmental, and social criteria.

It wasn't until the launch of the UN Principles for Responsible Investment (UN PRI) in 2006 that the concept of ESG began to enter the mainstream. The investment principles, which encourage the incorporation of ESG factors into investment and ownership decisions, have attracted 1,800 signatories worldwide (from a base of 100 signatories). This list today represents nearly all of the world's professionally managed assets.

A growing sector

This investment approach has gained a foothold in the fixed-income market in recent years largely due to growing recognition that ESG-related issues can present immediate and material credit risks, as well as longer term and more esoteric risks.

For instance, weather-related supply chain disruptions, pollution spills, product safety recalls, and workplace fatalities – all under the ESG umbrella – have each had financial and credit repercussions, with the World Economic Forum citing ESG-related risks as some of the most pressing that we face in its Global Risks Report.

ESG growth has also been bolstered by an evolving regulatory landscape. Countries around the world have woken up to the pivotal role the finance sector plays in deploying capital to achieve policy objectives. This has in large part been prompted by the Paris Agreement, which will require investment of an estimated US$1 trillion a year to meet its climate targets. That said, the scope of regulation is broader than climate finance. Regulators are now working to embed sustainable finance principles into the financial sector and reorient the economy to meet sustainable development goals.

Looking forward

Up 25% from 2014, assets managed according to ESG strategies reached nearly US$23 trillion by 2016 – accounting for around one-quarter of professionally managed assets globally. We expect ESG demand to continue its growth trajectory as millennials, who by 2025 will collectively comprise 75% of the workforce, place greater emphasis on integrating these values into their investment choices. Indeed, millennials, who are considered a values-driven generation, are poised to receive a wealth transfer estimated at nearly US$30 trillion from baby boomers. A 2017 report by Morgan Stanley found that 85% of millennials are interested in sustainable investing and are twice as likely as the general population to invest in companies that have social or environmental targets.

Further information is available on the Capital IQ portal in the research piece entitled: "The Rise Of ESG In Fixed Income"

WHAT ARE ESG FACTORS?

- Environmental factors: include biodiversity, carbon, waste, and water
- Social factors: include customers, human capital, human rights, safety, and social cohesion
- Governance factors: include reporting, structure, transparency, and values.

COULD BIOFUELS SUPPORT GLOBAL DECARBONIZATION?

Michael Ferguson explores the risks and costs involved in expanding the next generation of biofuels in the U.S.

Although ambitious mandates have been in place for the past decade, advanced biofuels have failed to proliferate in the U.S. This is a result of regulatory action, technological limitations, and market volatility. However, despite this weak showing, there are signs of progress that may lead to a significant expansion of the market in the next few years. As such, we anticipate that nations will look to decarbonize their economies in part by using biofuels to power their transportation fleets in pursuit of Paris Agreement targets.

Carbon goals: a role for biofuels?

The Renewable Fuel Standard (RFS) mandates that refiners blend a certain amount of ethanol into the gasoline supply on an annual basis in order to achieve federal decarbonization goals.

Though doubts linger over ethanol's role as a decarbonizing agent, there are comparably fewer misgiving about the role that advanced biofuels could play. This group of fuels, including biodiesel, renewable diesel, and cellulosic ethanol, is being promoted to decarbonize transport sectors across the world.

Uncertainty remains over the role that advanced biofuels might play in the federal RFS in the future. But other government entities have provided incentives that look likely to bolster the market. Even though biodiesel still makes up less than 4% of the total blending pool in the U.S., there is considerable room for growth of the industry through fuel switching to meet state mandates.

Among the frontrunners could be California. The Golden State has positioned itself as a leader in renewable energy and recently expanded its clean economy dominance into the transport sector through its Low Carbon Fuel Standard (LCFS).

The standard is an ambitious one: it requires a 10% reduction in carbon intensity between 2010 and 2020, with that figure possibly increasing to 20% by 2030. The LCFS acknowledges that, while ethanol may be the most common fuel additive, other fuels are more effective in decarbonizing, and the standard ascribes credits accordingly. As California was already subject to the federal RFS, this has inevitably necessitated fuel switching, which will lead to the development of a market for advanced biofuels. Other leaders include Iowa, the largest biodiesel and ethanol producer in the country.

Credit Implications

While the advanced biofuels market may have substantial promise, especially with the potential value of these fuels as decarbonizing agents becomes clearer, there are meaningful risks that could weaken issuers' credit quality – from market pressures to construction risks.

First, biofuel producers face considerable market volatility. Corn ethanol producers, for instance, face similar market pressures as the corn market itself, as prices can be affected by unpredictable weather and consumption patterns. This has an enormous effect on the profitability and feasibility of ethanol, both as a biofuel and as a blending ingredient for gasoline refiners.

Compounding this risk is the fact that biofuel revenue streams are often diversified into a variety of credits – the value of which regulation will largely determine. Given that regulation often reflects the impermanent political preference of the day, even in states and countries that value renewable fuels, credit pricing can remain uncertain.

Second, the construction risks. Given that this is a relatively new asset class for North America, uncertainty abounds around the best locations for biorefineries. The technologies for biofuels are often new and only proven on a pilot scale (not commercial scale), which could affect credit quality. Typically, in large, complex construction, especially those for newer technologies, we would anticipate a comparatively higher degree of cost overruns or time delays due to a shorter track record.

> "Major technological risks remain, complicating the construction process and potentially affecting credit quality."

Hope for the future?

With all of these factors clouding the picture for biofuels, we remain focused on a number of critical rating factors. More advanced biofuels are still subject to significant construction and operating risks, which curbs our assumptions about liquidity and raises our expectation for operating costs. However, as capacity increases, we will look to determine how closely actual operating performance aligns with independent engineer forecasts.

We also continue to monitor regulatory developments around the world to determine whether and to what extent countries' and states' decarbonization efforts will stimulate nascent biofuels markets. And we will continue to watch the political scenario unfold in Washington, D.C. regarding ethanol to determine whether opposite sides can reach a consensus on RFS that can provide great market certainty.

Further information is available on the Capital IQ portal in the research piece entitled: "Despite Risks And Costs, The Next Generation Of Biofuels Could Support A Global Decarbonization Effort"

WHAT ARE THE PROSPECTS FOR GREEN SUKUK ISSUANCE?

Amid growing interest from investors and rising energy demand, Timucin Engin provides an update on the green sukuk market.

"The dearth in green sukuk supply for was put at US$143 billion for 2017."

Demand for green sukuk – an Islamic financial instrument where issuers use the proceeds of investments to finance renewable energy or other environmentally beneficial assets – is outweighing the market's sporadic supply. Investors are eyeing such opportunities as they increasingly prioritise socially responsible considerations in their investment choices.

Since Malaysia-based Tadau Energy issued the first Green Sukuk in 2017, a handful of other sukuk have been issued in compliance with Malaysia's Sustainable and Responsible Investment Sukuk Framework. Notably, we've seen issuance in Indonesia where, in March 2018, the sovereign issued the largest Green Sukuk to date – US$1.25 billion for various green projects (see table).

Growing demand, limited supply

This comes as power demand is rising: by 2040 energy needs are expected to increase by as much as 66% in Southeast Asia and 45% in the Middle East. This will likely necessitate a higher contribution of renewably sourced energy to the energy mix.

In turn, some core Islamic finance countries have set ambitious renewables targets. the Association of Southeast Asian Nations (ASEAN) has an aspirational target to increase the relative weight of renewables in their energy mix to 23% by 2025. Many Gulf Cooperation Council (GCC) nations are looking at investing in renewables. Dubai is targeting a renewables mix of 75% by 2050, while Saudi Arabia expressed its intentions to build a gigantic US$200 billion solar project. Upon completion by around 2030, the plant is expected to generate 200,000 megawatts (MW) of electricity per year.

Here enters the green sukuk. Green sakk allow issuers to access not only the pool of conventional investors interested in green projects but also Islamic investors. Not only do conventional investors have interest, but many have revised their investment guidelines to incorporate socially responsible considerations.

Issuers are also tempted by the significant shortfall of sukuk offerings compared with demand. The dearth in green sukuk supply for was put at US$143 billion for 2017, according to an estimate by Thomson Reuters.

Tapping the green sukuk market can therefore be an opportunity for issuers to target a wider pool of investors and exploit potential excess demand to their advantage, which could take the form of higher appetite, lower pricing, or longer maturity.

Meeting demand

For the Islamic debt instrument to meet the demands of ASEAN and GCC countries, and even prosper, the market needs a regulatory push. This could take the form of tax breaks or additional funded or unfunded enhancement mechanisms (for example, guarantees or offtake agreements).

An example of such government support is the Green Technology Financing Scheme (GTFS) launched by Malaysia in 2010. This leverages a 60% government guarantee and 2% annual rebate on interest and profits to reduce the cost of funding for eligible projects. Another example is the Sustainable and Responsible Investment (SRI) Sukuk framework the Malaysian Securities Commission launched in 2014, which defines eligible SRI investments and introduces certain tax deductions.

The market, we believe, would also benefit from greater standardization of legal documentation and Sharia interpretation, which would avoid issues that could disturb its growth trajectory.

What next for the green sukuk market? Growing demand for cleaner or renewable energy that is clean or renewable means that ASEAN and GCC countries will need to attract substantial amounts of investment in renewable energy projects over the next several years. While banks traditionally have taken a leading lender role in these countries in such projects, we expect some of these deals to find their way to the capital markets as green sukuk or bonds.

Further information is available on the Capital IQ portal in the research piece entitled: "What Are The Prospects For Green Sukuk Issuance?"

GREEN SUKUK ISSUANCES TO DATE

Issuer	Country	Issue date	Currency	Funds raised (mil. US$)	Use of funds
Tadau Energy Sdn Bhd	Malaysia	Jul-17	MYR	58	Solar power project
Quantum Solar Park Semenanjung Sdn Bhd	Malaysia	Oct-17	MYR	236	Solar power project
PNB Merdeka Ventures Sdn Bhd	Malaysia	Dec-17	MYR	461	Real Estate (complying with certain green building accreditations)
Mudajaya Group Berhad (Sinar Kamiri Sdn Bhd	Malaysia	Jan-18	MYR	63	Solar power project
Indonesia	Indonesia	Mar-18	USD	1250	Various Green Projects
UiTM Solar Power Sdn Bhd	Malaysia	Apr-18	MYR	57	Solar power project

Source Bloomberg.

BRIDGING NORTH AMERICA

Bridging North America General Partnership's Senior Secured Notes Rated Preliminary 'A-'

Debt proceeds will help to design, build and maintain the C$3.46 billion Gordie Howe International bridge – a crossing between the U.S. and Canada.

On August 29, 2018, S&P Global Ratings assigned its preliminary 'A-' rating to the senior secured notes issued by the Bridging North America General Partnership (BNA). The notes are as follows: C$163.5 million 3.644% series A senior secured notes due May 31, 2038 and C$291.0 million 4.058% series B senior secured notes due Aug 31, 2053. The outlook is stable.

Bridging North America General Partnership (BNA) will design, build, operate, maintain, and rehabilitate the Gordie Howe International Bridge project – which will connect Windsor, Ontario, to Detroit, Michigan. BNA will use debt proceeds, together with C$2.74 billion in progress payments and C$37.50 million in capital payments from WDBA and C$93.04 million in equity contributions, to fund construction of the C$3.46 billion project over an estimated construction period of 74 months.

This preliminary rating reflects the strength and experience of a highly integrated consortium that has extensive experience designing and building similar large civil projects, significant risk sharing under the concession agreement and the project's contractual structure wherein construction and operational risk are passed down through the concession term.

The final rating will depend on our receipt and satisfactory review of all final transaction documentation – including legal opinions. Accordingly, this preliminary rating should not be construed as the final rating. If we do not receive final documentation within a reasonable timeframe, or if the final documentation departs from the materials we reviewed, we reserve the right to withdraw or revise our rating.

The outlook is stable thanks to the expectation that the project will complete construction on time and within budget. The construction schedule is reasonable and comparable with similar projects in North America. Once completed, we expect operations to be characterized by well-defined responsibilities and stable availability-based revenues. Once the project is operational, we expect a minimum debt service coverage ratio (DSCR) of 1.18x, with an average of 1.34x through life of long-term debt.

Nevertheless, we could lower the rating if the project's construction were materially delayed beyond our downside scenario. During the construction phase, we could also lower the rating if the creditworthiness of Fluor Corp. or the Windsor-Detroit Bridge Authority (WDBA), the revenue counterparty, declined below the rating on the project. During operations, we could lower the rating if the minimum DSCR consistently fell to about 1.5x, or if the rating of the irreplaceable operation counterparty or revenue counterparty declined below the project rating.

Further information is available on the Capital IQ Portal in the research piece entitled: "Bridging North America General Partnership's Senior Secured Notes Rated Preliminary 'A-'"

TRANSPORT FOR LONDON

Transport for London 'AA-/A-1+' Ratings On CreditWatch Negative On Delayed Opening Of The Elizabeth Line

In response to TFL's announcement that the Elizabeth Line will be delayed, we are placing 'AA-/A-1+' long and short-term issuer credit ratings with negative implications.

On September 5, 2018, S&P Global Ratings placed its 'AA-' long-term and 'A-1+' short-term issuer credit ratings on London-based transport operator Transport for London (TfL) on CreditWatch with negative implications. At the same time, we placed our 'AA-' issue rating on TfL's senior unsecured debt on CreditWatch negative.

The CreditWatch negative placement follows TfL's announcement that the central section of the Elizabeth Line – between Paddington and Abbey Wood – will be delayed until Autumn 2019, having been previously planned for opening in late 2018. We estimate that this will lead to lower-than projected revenues for the next two to three years and potentially increase costs given the extended schedule.

The project has also been hit with cost overruns. A July 2018 estimate showed that costs could be up to £590 million above the total estimated project cost of £14.8 billion. The U.K.'s Department for Transport (DfT) agreed to contribute £150 million of the £300 million of additional funding made available for Crossrail Ltd, the operator owned by TfL. We understand that TfL is well advanced in exploring options for selling and leasing back the Elizabeth Line rolling stock.

We will evaluate how the delay will affect TfL's financial position – particularly its liquidity coverage – and our assessment of its management and governance. While we do not know the full magnitude of the cost implications, it's likely that the Elizabeth Line's operating revenue over the next two to three years will likely be lower than our current projections. We also foresee additional cost overruns arising from the extension of the working schedule.

We could lower the rating on TfL if its liquidity position comes under pressure due to higher costs or major delays. We could also lower the rating if our view of TfL's management and governance weakened, resulting in a weaker enterprise risk profile. Lastly, we could lower the rating if we believe there is a lower likelihood of timely extraordinary support coming from the U.K. government. Conversely, we could affirm the rating if we believe the cost implications from the Elizabeth Line delay are not going to negatively affect TfL's operational revenues or liquidity position.

Upon opening, the Elizabeth Line is still expected to add 10% capacity to London's rail network and significantly increase TfL's operating revenues.

Further information is available on the Capital IQ Portal in the research piece entitled: "Transport for London 'AA-/A-1+' Ratings On CreditWatch Negative On Delayed Opening Of The Elizabeth Line"

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GREEN EVALUATION UPDATES

GREENALIA

Greenalia Biomass Power Curtis Teixeiro, S.L.U. is seeking to borrow up to €125 million to build, start up, and operate a 49.9 megawatt (MW) biomass plant. This includes the feed-in lines, substations, and all other installations necessary to connect the plant to the distribution network of Teixeiro, a town in the province of La Coruña, Spain.

The company was awarded the right to build this power capacity in a Spanish auction conducted by the Ministry of Energy in January 2016. Once operational in 2020, the project be able to sell 324 GWh per year to the grid using approximately 498,000 tons of forest biomass. Greenalia S.A., the ultimate parent company, comprises a group of companies with over 40 years of experience in providing raw forest products in a variety of sectors such as pulp, power, heating, pellets, wood panels, and timber.

The transaction achieves a Green Evaluation score of E1 on our scale of E1 (highest) to E4 (lowest) and an overall score of 77. The evaluation reflects a strong Mitigation score of 79 that is supported by proceeds allocated to a biomass renewable energy project in Spain, which has a grid carbon intensity that we consider medium, combined with our hierarchy adjustment that reflects the role green energy plays in systemic decarbonization of the economy. The E1 score also reflects solid Governance (80), given the lender protections inherent in a project financing structure, combined with an above-average score in Transparency (66).

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "Greenalia Biomass Power Curtis Teixeiro €125 Million Senior Secured Loan"

DZ BANK

DZ BANK AG's first labelled green bond awarded 'E1' green evaluation

DZ Bank's €250 million bond issuance for the financing of onshore windfarms achieves highest possible score.

As part of its ongoing debt issuance program DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main (DZ BANK) intends to issue its first labelled green bond: comprising €250 million in fixed-rate preferred senior notes, due October 2023.

DZ Bank will allocate the issuance proceeds to a portfolio of loans originated for operational onshore wind power projects in Germany. The portfolio, comprising 60 projects across 11 different federal states, and with a total installed capacity of about 738 megawatts (MW), avoided greenhouse gas emissions amounting to the equivalent of around 790,000 tons of CO2 in 2017.

The transaction achieves an overall Green Evaluation score of E1/85, with a weighted average of Mitigation (60%), Governance (25%), and Transparency (15%).

The strong Mitigation score of 87 reflects the significant positive environmental impact of the underlying wind power plants. We consider onshore wind power to be a long-term sustainable energy solution that is critical to climate change mitigation and therefore place it towards the top of our carbon hierarchy. We assess Germany's grid carbon intensity as "medium-high" and we expect onshore wind to play a vital role in its systemic decarbonization.

As part of its disclosure commitments, DZ BANK will report annually on two items: how the note proceeds are being used; and on the portfolio's environmental impact, according to a comprehensive predetermined reporting template. This will include quantification and disclosure of estimated avoided emissions. These estimates are based on emissions factors published by the German Environment Agency and therefore very transparent regarding the underlying methodology employed to determine those estimates.

Further, the robust Governance score (78) and strong Transparency score (84) are supported by the green bond framework in place that governs use of proceeds and regular reporting. In our view, the transaction thereby meets the basics of the four pillars of the voluntary Green Bond Principles 2018 (GBP).

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "DZ BANK AG Proposed €250 Million Fixed-Rate Preferred Senior Notes"

DENVER AIRPORT

'E1' Green Evaluation for Denver Airport's US$2.3 billion bonds

Reductions in water use and energy consumption contribute to high Green Evaluation score.

The Department of Aviation of the City and County of Denver – the owner and operator of the Denver International Airport (DEN) – is issuing US$2.3 billion in airport system subordinate revenue bonds, set to mature in December 2048. The allocated proceeds evaluated have achieved an overall green evaluation score of E1/87.

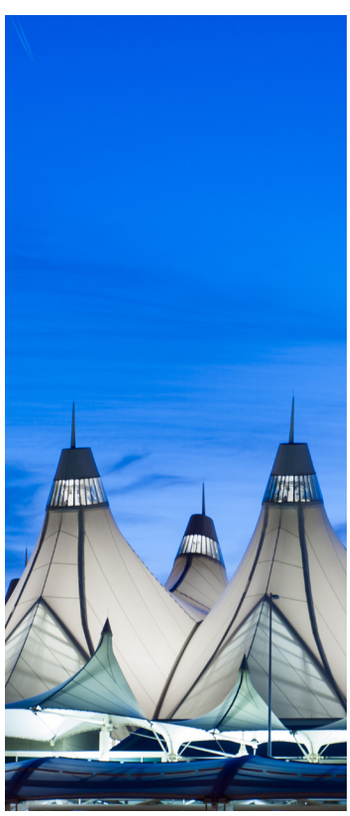
A portion of the proceeds of the series 2018A and 2018B bonds will be used for capital investments under the 2018-2022 Capital Improvement Plan (CIP) – a city programme totalling US$3.5 billion dedicated to replacing and repairing roadways, terminal complex buildings and other assets. By 2021, a total of 43 new gates will be added, thanks to concourse expansions, as well as new airline and concessions space. Other projects include roadway, airfield and apron improvements.

Under Denver regulation, all new city buildings and major renovations must achieve LEED Gold certification – and must also adhere to U.S. Environmental Protection Agency's Energy Start program standards, among other measures.

The airport's Concourse C-West, completed in 2015, achieved LEED Gold standards – achieving myriad environmental benefits. These include 16% less energy use and 20% water use reductions. Based on our review, the upcoming improvements to concourses A-West, B-East, B-West and C-East should yield similar results.

We determined our 'E1' score by taking a weighted average of the transactions solid governance (76), strong Transparency assessments (79), as well as its excellent Mitigation score (93). In our view, the expected reductions in water and energy usage place this project toward the top end of scores for green buildings.

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "Denver Airport System Subordinate Revenue Bonds Series 2018A and 2018B"



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