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Infrastructure Finance

Outlook

Q4 2018 Review

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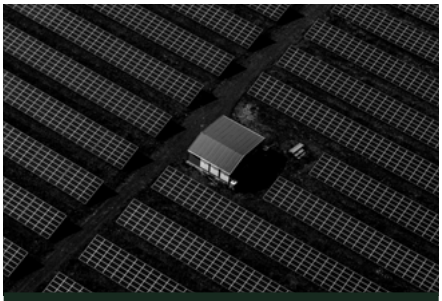

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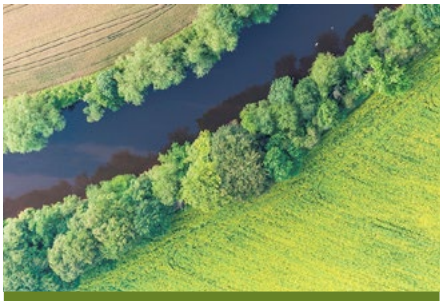

Sustainable Finance ↘

Contents

Editorial Welcome

Karl Nietvelt and Michael Wilkins set out what 2019 may have in store for the infrastructure space

The year of ESG and sustainable finance

Environmental, social, and governance (ESG) matters are climbing the business agenda and investors are stepping up their focus in their investment mandates on companies that are seen as acting more sustainably. The following three drivers explain, in our view, the heightened relevance of ESG to credit quality:

- ESG-related impacts on a company's performance are becoming increasingly obvious as climate-change is causing more extreme weather events. Similarly, the broader public's desire for a sustainable future is having a greater direct influence on both product and brand acceptance by customers.

- Environmental and social regulations are evolving to address the shift in societal priorities and managing political and regulatory relationships are increasingly intertwined with ensuring broader public acceptance.

- Potential financial impacts have surged in monetary terms, as ESG-related breaches or perceived lack of focus on social concerns are triggering more decisive action and litigation risk.

During our November EMEA Infrastructure & Utilities conference, U.K. water utility Thames Water underscored how ESG had changed the company's strategic direction with an emphasis on delivering on operational performance targets (including customer satisfaction), aligned with objectives set out by the regulator.

The most recent case of how E, S, and G factors contributed to a severe credit deterioration is California-based utility PG&E (see box).

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PG&E

After having already experienced three rating downgrades in 2018 due to escalating wildfire risks, a combination of events hastened the deterioration in credit quality of California-based PG&E, which, together with its utility subsidiary Pacific Gas and Electric, filed for bankruptcy under Chapter 11 of the U.S. Bankruptcy Code on January 29, 2019.

In its press release PG&E stated that "throughout the forthcoming process, it remains committed to "working with customers, civic leaders, regulators, policymakers, the financial community and other key stakeholders to consider alternatives to provide for the safe delivery of natural gas and electricity and new safety solutions in an environment challenged by climate change".

In the immediate aftermath of the 2018 Camp Fire in California, we believed that credit risk had increased but also expected that regulatory and political support for the utility's credit quality remained. This was reflected in our downgrade on November 15, 2018, of PG&E's issuer credit rating to 'BBB-', and our CreditWatch listing with negative implications. At this time, we indicated that increasing financial, political, and operational risks related to the Camp Fire had increased the probability of a downgrade of one or more notches over the next few months. Still, legislators and regulators appeared to us to remain supportive, as we believed that they recognized that having financially healthy utilities is not only in the best interest of ratepayers but also necessary for the State to reach its ambitious renewable portfolio standards. Some indicated that they were looking into the possibility of extending the state's bill SB 901, which addresses the utilities' 2017 wildfire liabilities to include the 2018 wildfires.

However, public anger further intensified in November and December as the full extent of the catastrophic Camp Fire became more evident. The negative public sentiment toward the utility intensified and the California Public Utility Commission opened a new and unrelated proceeding to consider potential penalties against the utility for the alleged falsification of natural gas safety records. Following this disclosure, some of the political and regulatory officials who previously supported the utility expressed their distrust of the utility. These events culminated with PG&E issuing a press release on late January 4, 2019, indicating that its board of directors was reviewing its structural options, including its operations, finances, management, and governance. The announcement was a clear indication, in our view, that governance and oversight needed to improve to account for the company's unique enterprise risks. Later that evening, media reports speculated that PG&E could be preparing for a voluntary bankruptcy filing as part of its contingency planning. It was the totality of these events that led us, on January 7, to downgrade the issuer credit ratings on both PG&E and Pacific Gas & Electric to 'B' and, one week later, to 'CC' following the company's announcement earlier that day of the intention to file for Chapter 11 protection on or around January 29.

What matters to infrastructure investors in 2019: Brexit, populism and country risk/ sovereign credit quality

Beyond the concerns about the slowing global economy and the potential late stage of the credit cycle, the key focus for infrastructure investors is rising political risk, partly as a result of growing populism and nationalism, and the extent to which it may affect contractual and regulatory stability and, ultimately, sovereign credit quality.

In Europe, all eyes remain focused on the fall-out from a potential disorderly, no-deal Brexit. Although not our base-case, a no-deal Brexit would mean new customs, regulatory authorizations, license procedures, and the implementation of border controls. The negative operational effects of a no-deal Brexit are likely to be significant, even if the E.U. and the U.K. have announced contingency plans, notably to avoid airline travel disruptions. In Italy, the outcome for Atlantia, following the devastating Genoa bridge collapse, will be a clear test of the populist government's stance toward private financing arrangements of infrastructure and the strength of the concession agreement. In addition, 2019 will also be a year with regulatory resets in Germany, Austria, Portugal and Spain.

For the U.S., there is current interest from the President and both political parties in prioritizing Infrastructure. However, there is no consensus on how infrastructure will be funded and disagreements over immigration could put a stop to a unified plan. While President Trump's Infrastructure plan outlined broad-based policy changes (see President Trump's Infrastructure Plan: A Substantive Shift To Private-Sector Funding, February 14, 2018), it became clear that political headwinds would limit what could be achieved in 2018. Nevertheless, progress was made in the airport sector and with streamlining planning permissions.

Emerging markets saw political elections throughout 2018, but their effect on policies, in countries such as Mexico and Brazil, remains to be seen. 2019 is also an election year in India and Argentina. One of the higher-profile infrastructure events in emerging markets is the turmoil around the Mexico City Airport Trust, where the incoming president surprisingly announced that, once in government, he intends to cancel the ongoing New Mexico City International Airport project (NAICM). Nevertheless, the recent cash tender offer and consent solicitation results announced at the end of 2018 were positive in that they should lead to debt reduction and reduce uncertainties for the transaction once fully and duly executed. However, even if debt holders have recourse to cashflows from the existing airport, uncertainties continue around the litigation risks of the credits that did not consent and the potential unintended consequences of the project's wind-down.

Finally, China's efforts to avoid abrupt deleveraging is likely to mitigate the substantial refinancing needs for local government funding vehicles (LGFVs) in 2019. However, over the longer term, we still believe this sector is subject to credit transitioning risk as LGFVs are phased out as the preferred financing arms for local and regional governments. Over time, on-balance sheet funding channels are likely to gradually develop into more liquid and viable alternative local government financing options for infrastructure projects.

COP 24

Financing was a focal point, too, at COP24, held in Katowice, Poland, in December 2018. On a global scale, financing from public, private, and multilateral sources is scaling up, which we expect could broaden the climate-aligned asset types and financing vehicles across geographies. But financing of such efforts, particularly in the developing world, is still lacking – and climate finance remains a relatively small portion of the overall global finance market.

This, we believe, is partly because demonstrating to decision-makers the "resilience benefit" of committing to capital intensive projects can prove difficult. In our view, however, this perception may begin to shift. Later in this edition, we set out why it makes economic sense to tackle global warming – and offer the case study of China, which has positioned pollution control and an environmentally-conscious society at the forefront of its development agenda.

Throughout this edition of Outlook, then, we aim to keep you abreast of our most high-profile global research published in the past quarter – and to provide insights about how the industry can navigate these challenges and opportunities. We hope you enjoy reading it.

Default And Recovery In Unrated Project Finance: 1995-2016

Karl Nietvelt and Trevor d'Olier-Lees share S&P Global Ratings' findings from its study into the historical default and recovery performances of global project bank loans for infrastructure projects

"In our view, sovereign and economic-related stresses, as well as industry-related crises, have triggered the lion's share of project defaults."

Q: Karl and Trevor, can you tell us more about the study and the dataset used?

A: S&P Global Ratings recently analysed the default and recovery performance data of 7,064 unrated global project bank loans issued between January 1, 1995 and December 31, 2016. This dataset, we believe, accounts for approximately two-thirds of total global project finance loans generated during this timeframe.

Q: What default trends did you see across the period?

A: Over the time period, there was an average annual default rate of 1.5% for all projects. This rate falls to 1.3% when we consider only power, transport/social infrastructure, and oil & gas sectors (the segments that collectively we deem "core infrastructure"). And the percentage drops further still to 0.7% for projects under public governance, such as public-private partnerships (PPPs) or projects governed by the U.K.'s Public Finance Initiative (PFI) – which illustrates the distinctly lower-risk profiles of such financings compared to the overall dataset.

Q: How do default trends compare in the developed and developing worlds?

A: We found that emerging market and developing economies (EMDEs) had a higher average annual default rate of about 1.8% for EMDE-B countries and 1.6% for EMDE-A (see Definitions). This compares with 1.4% on average for OECD countries and 1.3% for the European Economic Area (see chart).

The disparity, however, is less severe than we had expected – in part because emerging market economies, especially those in Asia-Pacific, were less affected by the 2008-2009 financial crisis and the prolonged 2011-2015 crisis in southern Europe.

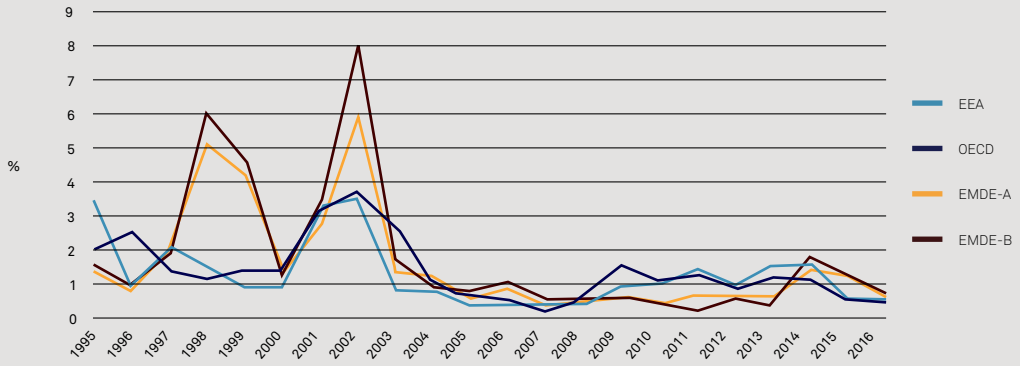
Q: Were there any outlying performances by region?

A: We found some notable outliers in both OECD and EMDE countries. In our view, sovereign and economic-related stresses, as well as industry-related crises, have triggered the lion's share of project defaults.

Understandably, emerging-market countries that have previously endured severe sovereign crises or face higher country risks, such as Argentina, Thailand, Colombia, Indonesia, and Egypt, have shown above-average defaults. And by region, perhaps the biggest outlier is Latin America: averaging 2.2% compared to global averages of 1.5%. North America has also lagged behind with a default rate of 1.8%; likely the result of the utilities crisis and dot-com bust of 2001-2003.

By contrast, we find comparatively low annual defaults across some OECD, as well as EMDE, countries. These include Canada, Japan, the Netherlands, as well as most Middle Eastern countries and – maybe somewhat unexpectededly – Turkey, Russia, and Mexico.

Annual Default Rates By Advanced Versus Developing Countries



Key Definitions

The dataset was split according to classifications used by the World Bank:

- EEA: European Economic Area
- OECD: Organization for Economic Cooperation and Development
- EMDE: Emerging market and developing economies
- EMDE-A: Non-high income countries, plus Eastern European countries in transition such as Poland, Hungary, Slovakia, and those in the Baltics
- EMDE-B: These are EMDE-A countries excluding the non-high-income OECD countries (such as Mexico, Turkey, and Chile) and countries within the European Economic Area

Q: How do default rates compare by industry?

A: Most defaults occurred in the power segment (39%), followed by infrastructure (23%), and oil & gas (10%). Transport/social infrastructure projects displayed the lowest average annual default rates, and power projects the highest rate among core infrastructure.

That said, the picture is different if taken from 2008 onwards – which marked the start of the financial crisis. Transport/social infrastructure felt the effect of a flagging economy far more than power projects. As such, while power projects have shown the highest default rate over the entire period, they've in fact displayed the lowest rate for these three sectors over the past 10 years.

Q: Let's move on to recoveries. What were the key recovery rate trends of this period?

A: Project finance loan recovery rates averaged a high 84% on a nominal basis compared with 77% on a discounted basis. What's notable about project recovery rates is that they have been fairly constant across cycles and largely delinked from the year of default and resolution.

In contrast, corporate recoveries tend to be negatively correlated to spikes in default rates, reflecting the more direct impact of adverse economic conditions on corporate valuations. The main exception relates to 2010-2011 when recovery rates dropped to 64% after the financial crisis, down from 80% previously.

Q: How do recovery rates compare geographically and economically?

A: For default recoveries we focused on western Europe, North America, Latin America, and the Asia-Pacific (excluding Oceania), as we believed the data for these regions were enough to develop meaningful conclusions.

Interestingly, though, we found that differences between these regions were minimal – with all showing average discounted recovery rates close to the global average of 77%. As for the differences between the developed and developing worlds, we observed only minor divergences in recovery rates for OECD, EMDE-A and EMDE-B countries – of 78%, 77% and 75% respectively.

We did, however, observe a meaningful difference in average time to recovery: 1.7 years for projects in the OECD, versus 2.6-2.8 years in EMDE-A and EMDE-B countries. We believe that this may reflect the better predictability of insolvency proceedings and legislation in most OECD countries.

Further information is available on the Capital IQ portal in the research piece entitled: "1995-2016 Global Bank Loan Unrated Project Finance Default And Recovery Report"

"Project finance loan recovery rates averaged a high 84% on a nominal basis compared with 77% on a discounted basis."

Industry Top Trends 2019: Utilities

S&P Global Ratings analysts reflect on the trends and developments that utilities face in 2019

"As companies de-risk their portfolios, ratings headroom for EMEA's unregulated utilities is building."

EMEA regulated utilities

Our outlook for regulated utilities in Europe, the Middle East and Africa (EMEA) is stable. Underpinning this are the region's generally supportive regulatory frameworks, which have mostly protected companies from emerging macroeconomic risks, including global trade wars, lower economic growth, inflation and rising interest rates.

That said, the emergence of some populist movements in Europe could prompt greater political interference for utilities. Criticism over service quality and bills has led to calls by some parties for the nationalisation of certain utilities – most notably for water utilities in the U.K. and Italy. In addition, some rated utilities remain sensitive to country risk and sovereign ratings. For instance, we recently revised Italy's sovereign outlook to negative, which had direct rating implications for Snam and Terna – two of Italy's biggest utility providers.

EMEA unregulated utilities

EMEA's unregulated utilities are broadly stable, too. As companies de-risk their portfolios, ratings headroom is building. Typically, this approach helps reduce debt – and in this instance the sector's credit metrics are beginning to improve.

Against this backdrop the key risk we see lies in how companies use their regained financial headroom. This impending evolution of capital allocation will likely depend on whether financial policies change to accommodate more shareholder remuneration; how investments in new technologies and business models develop; and whether merger and acquisition (M&A) activity accelerates.

Furthermore, the rate of technological change poses a challenge for power companies. First movers in renewables are now better positioned than followers, but it remains unclear whether it will be the same in other domains, such as e-mobility, smart technologies, and energy storage solutions.

North America's regulated utilities

Rating trends across regulated electric, gas, and water utilities in North America remain mostly stable, largely thanks to their generally supportive regulatory oversight. While this remains our general sector outlook view, the situation in California shows the complexity in managing regulatory risk, especially when combined with governance issues and adverse public opinion stemming from liabilities from the state's recent wildfires (see Editorial Welcome).

However, U.S. tax reform, robust capital spending and flat-to-slightly negative load growth have served to weaken the sector's financial measures. For 2019, we expect only modest financial improvement – as slightly improving margins should partially offset by rising debt. Weaker credit measures from tax reform will likely persist, too, though we expect that some utilities will offset this reduced revenue with further equity infusions or asset sales. Other factors to consider include rising interest rates, inflation, technology, climate change, and regulatory lag – which could pressure the industry's credit quality further.

North America's unregulated utilities

Similarly, almost 80% of our North American independent power producers (IPPs, or merchant generators) have a stable outlook – up from 55% at the same point last year (correct as

of October 2018). This upward trend mostly reflects corrections to capital structure – with independent power producers (IPPs) increasingly shedding debt to counteract the backwardation in expected future cash flows. As such, business outlooks for the sector still reflect a demand slowdown.

In 2019, those engaging with retail power and/or generation contracting are best placed for the evolving market. IPPs with only modest retail business, exposure to coal-fired generation and limited regional or fuel diversity are vulnerable to further credit deterioration. And disruptive forces like energy efficiency and advancing battery storage may add to this.

Latin America

The outlook for Latin America's energy sector is generally stable, underpinned by single-digit growth in GDP and electricity demand. Going forward, we expect non-conventional renewables to continue increasing their role in energy sectors across Latin America. Recently illustrating this were the aggressive price bids for solar and wind power in Brazil, Chile, and Mexico – where average prices fell to a record low of US$30 per megawatt hour (MWh). We also expect that hydrology conditions will continue to influence spot prices, particularly in Brazil, Peru, and Colombia, where the energy matrix is exposed to an overabundance of rain or extended periods of drought.

Politics may shape energy considerations, too, following last years' elections in Brazil, Mexico, and Colombia . By contrast as mentioned in our Editorial Welcome, we do not foresee significant activity in Mexico, with potential changes over energy reform. In Colombia, however, we expect a mega renewable auction to take place throughout 2019 backed by over 10-year contracts.
While we see utility regulation as generally supportive in Latin America, Argentina faces regulatory uncertainty over who will bear the recent increases in electricity production operating costs – a concern elevated by the recent depreciation of the Argentine peso. Adding complexity is next October's general election.

Australia's policy uncertainty

Australia's energy market remains in a state of flux as political disagreements are prolonging policy uncertainty. This continuing policy vacuum risks delaying planned investment in new generation across the National Energy Market (NEM) – affecting power market competition and further reducing investor confidence.

Moreover, the demise of the federal government's National Energy Guarantee (NEG) policy and the uncertain likelihood of an emissions goal beyond 2020 could affect the long-term development of renewable energy. And, with state and federal elections impending, we believe any clarity is unlikely to come soon.

Nevertheless, the falling cost of renewables, coupled with individual states' own renewable energy targets, are likely to spur some new generation. However, despite relentless growth over the past few years, renewables have not yet been adequate to offset the loss of generation from retired coal-fired plants. As such, striking a balance between emission goals and building reliable energy sources will be critical for system operators when planning efficient investment in generation and networks.

Further information is available on the Capital IQ portal in the research pieces entitled: "Industry Top Trends 2019 Utilities – EMEA Regulated"; "Industry Top Trends 2019 Utilities – EMEA Unregulated"; "Industry Top Trends 2019 North America Regulated Utilities"; "Industry Top Trends 2019 North America Merchant Power"; "Industry Top Trends 2019 Utilities – Latin America"; "Australia's Energy Policy Uncertainty Delays Vital Investments For System Reliability"

"The outlook for Latin America's energy sector in 2019 is generally stable, underpinned by single-digit growth in GDP and electricity demand."

Industry Top Trends 2019: Transportation Infrastructure

S&P Global Ratings analysts explain what key trends, such as Brexit, U.S.-China trade wars, and merger and acquisition (M&A) activity, might mean for transportation infrastructure globally

"During 2019, modest growth across global and regional economies looks set to boost airport passenger growth."

The outlook across all regions is mostly stable. And although the global economic slowdown may cool growth prospects, we do not envision a retraction in absolute revenues for airport, port or road and car park operators.

Airports

During 2019, modest growth across global and regional economies looks set to boost airport passenger growth. This growth, combined with intensifying competition, is driving expansion at several international airports. Against this backdrop, merger and acquisition (M&A) activity is likely to continue.

The opportunities span multiple regions. Europe, buoyed by low interest rates, accumulating financial headroom and a pipeline of opportunities, has curated favourable conditions. Though Latin America may not be quite as active, 12 airports are scheduled for privatisation in Brazil. Given the more favourable prospects under the new business-friendly administration, we expect the auctions to spark interest from international bidders. In France, the privatisation debate is equally likely to accelerate, as the French assembly recently approved the sale of the country's majority stake in Aeroports de Paris (ADP), worth up to €10 billion based on current market capitalization.

The key risk factor relates to Brexit. The future relationship between the E.U. and the U.K. has become increasingly uncertain – particularly for the terms of access to the European Common Aviation Area (ECAA), even if the European Commission has announced contingency plans and its intention to ensure continued flow of air traffic. The eventual terms may affect the operating environment for transportation infrastructure assets with significant exposure to E.U.-U.K. traffic. As a result, we recently revised the outlooks to negative (from stable) on the rated debt related to Heathrow and Gatwick.

Ports: risks contained?

The port sector remains a largely stable beneficiary of investment – with most port services set to see continued growth. And, as a result of solid credit performances with generally stable outlooks, our forecast remains positive overall.

However, the U.S.-China trade war could produce short-term volatility for certain Asia-Pacific routes. Already, ports have seen some adverse impacts, but signs suggest that container volume is holding up well. In fact, to September 2018 container rates between Shanghai and Los Angeles have increased 40% year-on-year. And while trade volume may not suffer, an increase in intra-Asia trade may change trade patterns.

Brexit is also a concern. Changes to customs, border and immigration processes and the knock-on impacts for inland transport of goods could impact U.K. ports. The need for new customs checks on imports and exports is likely to cause considerable congestion at U.K. and mainland European ports. Particularly affected could be Dover where new customs requirements could cause challenges for roll-on roll-off ferry services, which handle tens of thousands of HGVs travelling between the U.K. and the E.U. each day.

Risk from M&A activity may also factor in. For Chinese companies, acquisitions have been particularly prevalent since the launch of the Belt and Road Initiative (BRI). China Merchants Port, for instance, has acquired three international port assets: including the Port of Newcastle in Australia, TCP Participações SA in Brazil, and the Hambantota port in Sri Lanka. These acquisitions have increased the company's leverage significantly, leading to a one-notch downgrade in late 2017.

Roads and car parks: sluggish growth to take toll?

For now, the macroeconomic backdrop continues to support the performance of toll-road operators – with inflation set to benefit revenues in 2019. That said, rising U.S.-China trade tensions and a softening economy could mount risks of traffic slowdown and revenue stagnation for toll-road operators. Possibly exacerbating this issue are toll-road operators' higher leverage levels, caused by M&A activity, rigid shareholder distributions, and dividends.

In response, some operators may respond by enacting deferred toll-rate increases or pursuing network extensions to increase vehicle traffic. For example, in China we expect toll-road mileage to increase at 5%-6% until 2020, while Indonesia is planning to nearly double its existing toll-road network in the next five years.

In line with such expansions, M&A activity is also flourishing. And depending on the nature and structure of such transactions, M&A may affect issuers' credit metrics, which are relatively weak in the sector.

Further information is available on the Capital IQ portal in the research pieces entitled: "Industry Top Trends 2019: Transportation Infrastructure" And "Countdown To Brexit: Just 100 Days Left To Find A Firm Foundation For The Transportation Infrastructure Sector"

The Year Of Refinancing Risk For China's LGFVs?

As an estimated US$10 billion of offshore bonds issued by Chinese local government financing vehicles (LGFVs) reach maturity this year, Gloria Lu answers the pressing questions on the subsequent refinancing risks

Q: Gloria, why is LGFV refinancing risk reaching a critical stage in 2019?

A: The looming maturity wall in 2019 is related to a jump in new issuance from 2016, after a loosening in regulations made it easier for Chinese companies to tap overseas debt markets; and many issued three-year bonds.

S&P Global Ratings estimates that offshore bonds issued by LGFVs worth over US$10 billion – or one-third of outstanding issuance in the sector – will come due in 2019. To put this into perspective, since metro-rail developer operator Beijing Infrastructure Investment Co. Ltd. issued the first LGFV offshore bond in 2014, there have been some 140 offshore bond transactions worth in the region of US$36 billion.

Q: How do you anticipate issuers to respond?

A: Borrowers need to plan well in advance to make timely payments or refinance debt. LGFV issuers with stronger credit profiles may choose to repay maturing bonds given their good access to cheaper onshore funding. This reflects the potential narrowing of interest spreads between the Chinese renminbi (RMB) and U.S. dollar as China eases monetary policy to bolster the slowing economy while U.S. treasury yields, albeit slowly, have been rising. Issuers may also consider increasingly volatile Chinese exchange rates, which may elevate concerns over the currency risk of foreign borrowings, adding to the costs of offshore issuance.

Q: Do discrepancies exist between domestic and international investors in terms of uptake?

A: Chinese investors are the most important source of liquidity and dominate LGFV bond purchases – and this is unlikely to abate over the coming six to 12 months. Chinese financial institutions are well versed in the LGFV sector or have established credit relationship with the issuers in the onshore market. While there were spells in 2018 during which Chinese investors retreated from the LGFV sector, sentiment has since improved. This is largely thanks to easing signals from the central government. Since August 2018, China has softened its deleveraging mandate to focus on "stabilizing leverage." In our view, China is unlikely to tighten again in the next few months, given a need to boost confidence and economic activity amid slowing growth, sharply decelerated infrastructure spending, and Sino-U.S. trade frictions.

In contrast to Chinese investors, many foreign investors are more selective on the LGFV sector. We expect they will shy away from most names or also ask for higher pricing to participate in these transactions. This is due to more restrictive investment mandates, as well as persistent concerns over the heightened policy risk, high leverage levels, and the opaque nature of LGFVs and their government owners.

Q: What are your projections for future LGFV issuance?

A: We anticipate that LGFV offshore bond issuance will accelerate over the coming six to 12 months to refinance maturing bonds. In our view, the relevant regulator, the NDRC, seems ready to accommodate new issuance applications for the purpose of refinancing. In November 2018, Beijing Infrastructure Investment issued senior unsecured notes of US$400 million with a coupon rate of 4.15%, of which US$300 million will be used to refinance senior unsecured notes due in March 2019. Some issuers that have bonds maturing in the first half of this year tapped the debt markets last month, such as Wuhan Metro Group Co. Ltd.(unrated), Shaoxing City Investment Group Ltd. (unrated), and Chongqing Nan'an Urban Construction & Development (Group) Co. Ltd. (BBB/Stable/--).

Furthermore, the pipeline of new issuers is likely to be especially strong for LGFVs of prefecture cities and lower-tier governments. These issuers generally have constrained access to onshore borrowings because of weaker credit standings, and are less cost-sensitive. Despite the government-directed relaxation of financing conditions in the last quarter of 2018, onshore lenders remain cautious as to which LGFV borrowers they serve amid a flight to quality. This could lead to more first-time issuers from different regions in a bid to test the offshore markets.

Q: Looking forward, how do you view default risk this year?

A: The default risk for LGFVs in the offshore bond market will be generally low this year. Most LGFVs may be willing to pay higher costs to secure cornerstone investors for refinancing in the current market conditions. However, over the longer term, we still believe this sector is subject to the credit transitioning risk as LGFVs are phased out as financing arms for governments. Over time, on-balance sheet funding channels will gradually develop into more liquid and viable alternative local government financing options for infrastructure projects.

Further information can be found on the Capital IQ in the research piece entitled: "How Will China's LGFVs Deal With The Substantial Offshore Refinancing Risk In 2019"

"S&P Global Ratings estimates that offshore bonds issued by LGFVs worth over US$10 billion – or one-third of outstanding issuance in the sector – will come due in 2019."

What Are The Implications Of France's Energy Plan?

Following the release of France's new energy plan known as PPE, Pierre Georges and Claire Mauduit answer the most pressing questions around the likely ramifications

"We understand that after 2035, the share of nuclear in the energy mix will stay at about 50%, with no stated intentions in the draft PPE to reduce this share further."

Q: Pierre and Claire, what has been happening?

A: On November 27, 2018, France delivered its national energy roadmap, PPE, for the coming decade. The plan not only sets out power demand, supply, energy mix, and energy efficiency targets; it also includes an ambitious long-term plan to reduce nuclear power from the energy mix to 50% by 2030 (from around 75% today), as the country's reliance on an aging nuclear fleet and about how to manage nuclear waste has caused doubt for some.

Q: What does this mean for France's nuclear fleet?

A: Despite any concerns, nuclear power in France still has a long future. If anything, the PPE merely highlights France's pro-nuclear stance as well as nuclear power's critical position in the country's energy mix for at least the next few decades. We understand that after 2035, the share of nuclear in the energy mix will stay at about 50%, with no stated intentions in the draft PPE to reduce this share further.

Maintaining a 50% share of nuclear in the mix would mean eventually extending the asset life spans of the existing fleet (beyond 50 years) and building new reactors to replace old ones. Although no decision has been taken on new builds, we understand the French government would be in favor of such projects to the extent they are economically viable.

Q: How might the transition pan out for EDF, the country's only nuclear operator?

A: EDF today has a sizable nuclear fleet capped at 63 gigawatts (GW), and PPE plans for the company to shutter 12.6 GW of nuclear capacity (or 14 reactors) by 2035, but the first closures are expected after 2025.

As such, our preliminary view is that the PPE points to no material deviation to EDF's nuclear generation activities for the next decade. For the time being, we expect no material changes to its investment profile and only minimal changes to the late-cycle nuclear liabilities.

To mitigate this, EDF has already planned to offset its exposure to nuclear generation by focussing on renewables growth, the development of smart networks, and by promoting e-mobility and energy efficiency solutions. We anticipate that its additional annual investment efforts will not exceed a net €500 million – a marginal rise compared with total annual capex of €12 billion.

Also important is that the French state has confirmed its strong support for EDF. The government has asked the utility to propose a potential restructuring aimed at facilitating the funding of its large investment needs. We believe these developments, if and when implemented, could be credit positive.

Q: How might PPE affect other energy sources?

A: A big push for solar and wind capacity additions can be expected, in line with European Commission targets of 40% renewable-produced generation by 2030. The bulk of new capacity additions are likely to be either solar (photovoltaic) or onshore wind farms. Due to high costs and complexities, offshore wind installations should only marginally increase to 2.4 GW by 2023.

PPE also incurs a critical role for hydro assets in balancing the grid – particularly as they are France's second-largest source of electricity. Given the limited options to expand the hydro asset base, PPE will likely focus on upgrading the existing hydro fleet to become more responsive to the intermittency of renewables, rather than on building new plants.

Lastly, to reach CO2 emissions targets, the French government has decided on a complete coal and fuel oil phase-out of by 2022. This should only have a marginal impact on supply, however, as it corresponds to five remaining plants of a total capacity of 3 GW.

Q: What challenges do you foresee arising from the PPE?

A: In our view, the PPE could lead to a flat to slightly negative power demand until 2030 – largely thanks to the fruits of energy efficiency initiatives, which in our view should more than offset any increased demand. As such, the risk of overcapacity means that the PPE relies on exports, which in turns means greater exposure to neighboring countries' energy plans and the potential need for increased interconnections – this may only add complexity to this ambitious transition plan.

Q: So, what are the next steps?

A: There's still a considerable validation process ahead. The proposals are now open to public consultation, and a final PPE proposal could be transcribed into law within the next few months. Final terms will be decided by mid-year 2019 and validated through a decree from the French Parliament.

Finally, we note the French government has expressed a willingness to propose a new remuneration framework for the existing nuclear fleet, which could be a strong positive for the group's credit quality. Yet as previously mentioned, the timing and details of such a regulatory change remain uncertain and remote.

Further information is available on the Capital IQ portal in the research piece entitled: "France's New Energy Plan: Implications For The Power Market And EDF's Credit Quality"

"A big push for solar and wind capacity additions can be expected, in line with European Commission targets of 40% renewable-produced generation by 2030."

California's 100% Renewable Mandate: A Greener Future For The Golden State

Michael Ferguson discusses the possible impact of California's renewable mandate on the incumbent grid

In September 2018, Jerry Brown, the outgoing Californian Governor, unveiled a new gold standard for renewable energy in the U.S.: a mandate requiring the state to derive all its power from renewable energy sources by 2045. The announcement precipitated a chorus of praise from environmentalists, but even its most ardent supporters acknowledged that substantial technological and political challenges lie ahead.

Among the concerns is the inherent reliability issues involved in using intermittent energy sources. Also, the mandate comes amid backsliding on environmental progress at the federal level. These challenges, though surmountable, may prompt significant credit implications for the state's power generators. As such, the mandate's repercussions could prove a significant disrupter for California's incumbent grid.

"Among the concerns is the inherent reliability issues involved in using intermittent energy sources."

Gas-fired generation: high risks

Recently, California's gas-fired generation has been floundering – with negative load growth and the rise of renewable power resulting in the so-called duck curve and uncertain pricing. Given this, and the already diminished role of coal and nuclear power in California, the most severe negative impacts of the renewable mandate are likely to fall on gas-fired merchant generators. In fact, there is a near market consensus that new gas fired capacity is impracticable at this point. And, with the looming threat of batteries encroaching on gas's role as a guarantor of grid reliability, the economic rationale looks likely to further erode.

Solar and wind power: mostly favorable

From a credit perspective, solar and wind power stand to benefit significantly. But while these two asset classes represent the overwhelming majority of progress in renewable installation so far, further developments in battery storage over the next decade will be necessary for progress to continue.

We also remain interested in how the next generation of renewable assets will proceed. At the fore of this is offshore wind, which we expect to grow sharply. For California, where offshore waters are relatively deep and thus more challenging to build in, we expect that floating offshore wind could be a viable solution.

Hydro and geothermal: well-positioned

It is likely that hydro and geothermal assets will accrue the most substantial benefits. In being closer to baseload, the resource risk for these assets is not nearly as problematic. In fact, they solve a critical problem that load serving entities, including utilities, municipal power authorities, and Community Choice Aggregations, will need to address: how to meet this ambitious mandate while still guaranteeing reliability.

Also, their longer anticipated asset lives will likely make them compatible with the ambitious mandate. We believe that even aged hydro assets can have lives as long as 50 years with continued capital spending. And unlike a full repowering of a solar or wind project, this spending tends to be more gradual.

But while these two asset types may generate power without emissions, the processes of building them are much more environmentally disruptive compared, for instance, to solar assets. This may prohibit their growth.

Paying for it all

The anticipated run up in renewable capacity and complimentary technology, as well as longer term re-powerings and maintenance of existing renewable facilities, is going to require an immense amount of financing during the coming decades. To this end, California has recently committed to using green financing in order to support its development of new infrastructure.

But we expect the heightened focus on debt funding may mean evaluating an evolving mix of environmental, social, and governance (ESG) risks, too. Most major players in the California market, whether in the energy industry or not, have adapted to the consumer and political preference for clean power. Carbon emissions are thus both an environmental and a social risk.

Further information is available on the Capital IQ portal in the research piece entitled: "Next Generation: How California's 100% Renewable Power Mandate Affects Markets"

Why PFI's Successor May Look Familiar

In October the U.K. government announced the abolition of the private finance initiative (PFI) for new projects but remains committed to public-private partnerships (PPPs). So, is this really the end? Joest Bunse explain why it may not be

On October 29, 2018, the U.K.'s Chancellor of the Exchequer announced as part of the new Budget, the government, while honouring existing contracts, will abolish the use of the private finance initiative (PFI) and Private Finance 2 (PF2) for future projects. In principle, this development could have marked a beginning of a significant shift in the government's approach to funding infrastructure projects if it either develops alternative models or borrows from the funding tools already used in other sectors of public interest.

It's unlikely to be the game changer some had expected, however. The Chancellor, Phillip Hammond, stated in his Budget that the government remains "committed to the use of public-private partnership where it delivers value for the taxpayer and genuinely transfers risk to the private sector." In turn, this could more accurately set the course for the U.K.'s future use of this financing model. As such, we still believe that the government will continue to make use of public-private partnerships (PPPs) in the future, albeit in a different form.

So, what options are on the table? The main alternative option, funding all infrastructure on the public balance sheet, is not at the government's disposal. Instead, the government could resurrect PFI albeit under a different name.

PPPs can work well

We consider it likely that any new PPP model will closely mirror key features of the PFI framework. In our view, despite the criticisms of PFI contracts, the framework supports many aspects of public infrastructure policy. The PFI framework has been the subject of criticism for several years now, although much of the debate seems to overlook the benefits of risk allocation among its participants.

In some cases, the rationale behind the criticism of PFI seems apparent since the January 2018 collapse of Carillion, one of the U.K.'s largest private suppliers of public services. But Carillion's failure serves to demonstrate that, when well structured, PPPs can work. Indeed, the most significant costs to the U.K. taxpayer may not come from Carillion's involvement in PFI projects; they may instead come from the hundreds of contracts the public sector negotiated with Carillion directly. As such, the narrative negates to distinguish between Carillion's distinct roles as a PFI subcontractor and as direct public sector contractor.

In practice, two hospital PFI projects, which at the time of Carillion's collapse were being built, demonstrate that the risk allocation of the PFI model largely worked the way it was designed to. Through the use of PFI, the taxpayer may ultimately pay less for those hospitals than if the public sector had contracted directly with Carillion to construct those hospitals.

A story all too familiar?

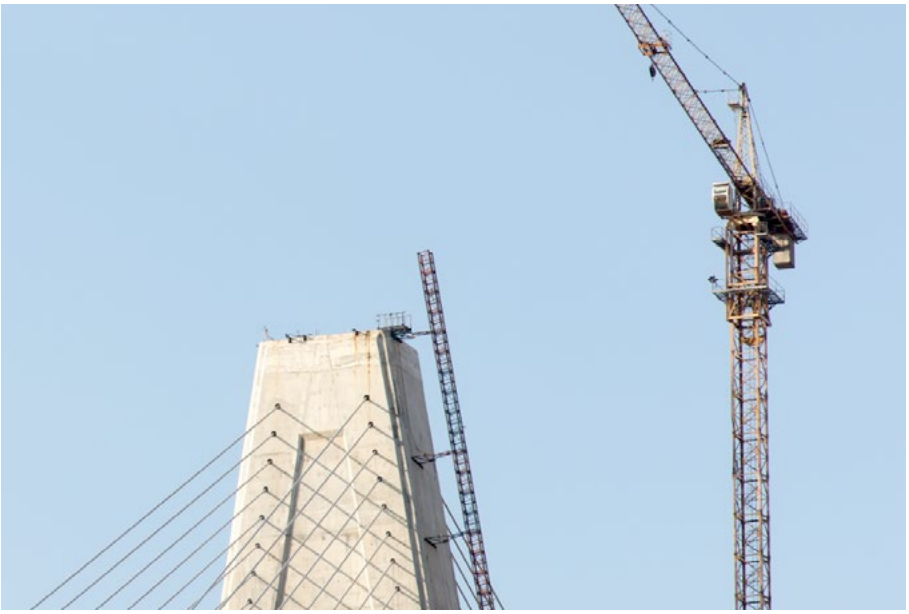
In truth, the to-be-phased-out PFI model will likely provide the benchmark for any future PPP model. The U.K. has the largest – and arguably the most efficient – PPP market in Europe, with a high conversion of approved-to-executed projects. In combination with a deep capital market, the investor-friendly English legal system, and a common language shared with international investors, the PFI framework has been a catalyst for rapid growth in privately financed infrastructure.

When it comes to devising an alternative, there are few if any countries with a more efficient PPP framework to look to. In fact, two that would come to mind – the U.S. and Canadian models – are already similar in scope to the U.K. PFI, so the lessons to be learned here are few.

With the Budget leaving the door open to use PFI under a new guise, the opportunities for a true alternative may appear scarce. It seems most likely that PFI's successor may look remarkably similar, after all.

Further information is available on the Capital IQ portal in the research piece entitled: "The Successor To U.K. PFI Will Probably Look Like U.K. PFI"

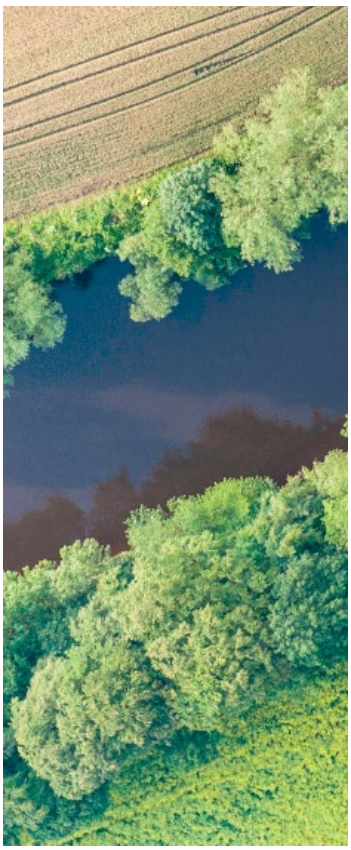
"We consider it likely that any new PPP model will closely mirror key features of the PFI framework."



Climate Adaptation Financing: What Is The Benefit Of Resilience?

With climate change exacerbating extreme weather events, adaptation financing needs to substantially increase. Miroslav Petkov examines how such investment can provide a high "resilience benefit" and how this can be quantified

"Adaptation projects strengthen the resilience of buildings, critical infrastructure and communities against the risk of extreme weather."



Over the last two years, the world has seen a flurry of extreme weather – exposing many countries' vulnerability to these events. Climate change may make matters worse, irrespective of whether we manage to keep global warming to 2°C or not. Attention to climate change adaptation – and how to finance it – is therefore increasing, given the need to raise enough public and private investment to protect exposed communities against the potentially devastating effects of physical climate risk.

S&P Global Ratings refers to this cost-effective protection – which carries an attractive risk-return profile for investors – as a "resilience benefit". Yet while the advantages of adaptation infrastructure are apparent, substantial increases in financing for such projects are still required to address the economic impact of extreme weather.

Investing in Adaptation

Adaptation projects strengthen the resilience of buildings, critical infrastructure and communities against the risk of extreme weather or longer-term shifts and variability in weather patterns caused by climate change. This could involve hard or soft engineering infrastructure – such as a flood wall, or early-warning system, respectively – and projects can be large and complex or small and simple.

In practice, the benefits are manifold. Had the levees in New Orleans been as effective as intended, the major flood caused by Hurricane Katrina in 2005 and subsequent property damage, would have been avoided. Economic disruption can also extend far beyond the affected region through global supply chains. For example, the 2011 floods in Thailand had a global impact on computer and car production as manufacturing of key parts was concentrated in the flooded area.

Yet even in the face of high need and benefit of adaptation, financing for such infrastructure is still lacking. Global adaptation needs have been estimated by 2030 at between 6-13 times above all international public finance available today. While the benefit of existing adaptation infrastructure is often appreciated, quantifying the expected benefits of new projects is usually difficult as it requires models to capture the myriad benefits across weather events of varying magnitude and over a long projection period. Additionally, when quantifying the overall net benefit, it is important to consider all costs (e.g. maintenance) and potential negative impacts.

Quantifying the benefit

In recognition of this, S&P Global Ratings bases its evaluation of an adaptation project on the increase in resilience the project is likely to provide for the covered geographical area or asset base – resulting in an adaptation score.

Our resilience benefit assessment considers damage caused by extreme weather events or due to longer-term shifts and variability in weather patterns caused by climate change. Additionally, it estimates the reduction in expected damages that the infrastructure funded by the green bond is designed to achieve over the targeted period.

Our approach can be clearly seen through the following hypothetical example: a U.S. river diversion project. With a total financing of US$1 billion, the project will reduce the height of a 100-year flood from 12 metres to 8 metres and the height of a 500-year flood from 15 metres to 11 metres at a major city.

The estimated resilience benefit ratio – based on well-established stochastic flood-modeling methodology and expert input to determine the allowance for climate change – came out at 2.6x, as the reduced damages and economic benefits are estimated at US$2.6 billion, outweighing the US$1 billion invested.

Demonstrating the value of the adaptation benefit should be important for all stakeholders: sponsors, the public and investors alike. It is also likely that a strong resilience benefit will attract more private investors. It is true that the return of those investments is not always directly linked to the expected resilience benefit of the investment. However, in many cases, adaptation investments may indirectly help returns. We believe that the ability to demonstrate the resilience benefit of a financing through robust modelling will be an important catalyst in stimulating future investment in adaptation.

Further information is available on the Capital IQ portal in the research pieces entitled: "Determining The Resilience Benefit Of Climate Adaptation Financing"; "Plugging The Climate Adaptation Gap With High Resilience Benefit Investments".

The Economic Benefits Of Tackling Global Warming

Global decarbonization could not only have environmental benefits, but economic ones too. Yet progress has been slow. Marion Amiot explains how carbon pricing, policy change and green investment can help alleviate the effect

Climate change is no longer just a problem for the future. Recent research shows that under business-as-usual carbon emissions, the risk of extreme heatwaves and floods is likely to increase by 50% this century.

And these are just the tip of the iceberg in climate-related shocks that will impact economic activity. Indeed, global warming of 3°C – the estimated trajectory based on countries' current pledges since 2015 – is estimated to lower global output by 2%. Warming of 6°C would lower global output by 8%. For this reason, limiting global warming to 1.5°C is imperative, but increasingly unrealistic.

The cost of climate change

Indeed, global warming is costly. More frequent extreme weather events that damage infrastructure will lead to faster capital depreciation, lowering the rate of return on such investments. Furthermore, increased temperatures have been shown to be detrimental to workforce productivity and will affect the labor supply through higher heat-related mortality and illness. Given that these estimates are rough, we may even be underestimating the cost of climate change.

Climate change could also worsen existing global issues, such as poverty and uneven distribution of wealth. Indeed, emerging and developing economies in the Caribbean, Asia, and Africa are far more exposed to climate change than advanced economies. This is not only because the latter are better prepared, but also due to advanced economies being generally located in colder regions.

Slow to act

Given the ramifications, why hasn't more been done to combat global warming? One big hurdle is that its worst effects will occur in the future, which makes it difficult to compute the opportunity cost for acting now. Another issue is that countries have little incentive to change emissions behaviour given that the effect is diffuse across borders and renewable infrastructure is costly.

The Trump Administration's announcement to withdraw from the Paris Agreement may suggest that some see little need to redirect resources toward greener energy in order to mitigate climate change. Underpinning climate change action is the notion of a global public good – something that provides little incentive for countries to take costly measures to reduce emissions, gives rise to the "free-rider problem" and explains why policymakers worldwide have struggled to coordinate.

Although global warming is increasingly affecting consumers and companies through frequent floods, hurricanes and wildfires, it still comes with problems of attribution. Companies that do not feel the consequences of global warming are worried that a switch to greener spending may hurt their purchasing power or profits.

What can be done?

Fiscal incentives, therefore, are imperative to mitigate climate change. Carbon pricing would be the most efficient way to reduce emissions. However, implementation is still problematic. Regional, country or local level action constitute a second-best approach, giving countries more flexibility to design policy in line with their priorities or constraints.

Companies that integrate environmental goals into their strategy are more likely to achieve sustainable long-term value creation, especially if environmental regulation advances. Against this backdrop, we have seen a plethora of traditionally "non-green" industries – including metals, mining, energy and power – looking to broaden sustainability strategies.

As decarbonization efforts intensify, so too has awareness around "green" investment. China's recent surge of clean energy and sustainability investment signals an acceleration of the country's agenda to become a green superpower. And China's efforts have fostered rivalry in other corners of the globe. Even oil-rich Norway has been looking to decarbonize further, tightening its standards with a focus on its transportation sector, where there is still room for improvement.

Overcoming technological hurdles and navigating complex political and regulatory environments are imperative for the success of decarbonization strategies. Low-carbon power projects reside at the intersection of economics and politics, where the continued deployment of energy technologies will require ongoing access to capital markets. This may be an expensive proposition in the short term, but one that may well pay off in the future.

Further information is available on the Capital IQ portal in the research piece entitled: "Why It May Make Economic Sense To Tackle Global Warming"

"Overcoming technological hurdles and navigating complex political and regulatory environments are imperative for the success of decarbonization strategies."

Untapped Potential: How The Green Economy Is Broadening

With the labelled green bond universe growing, Michael Ferguson assesses its performance thus far

"Even sovereigns have become a major component of the green financing universe, with more than US$14 billion issued in the first half of 2018."

The green bond market continues to expand. Estimated to surpass US$200 billion in 2018, the scope of green products has grown immensely from the market's historically narrow definition of asset types and financing structures that constitute a green financing.

Development and expansion

While investment grade corporate bonds have historically dominated green financing, the market appears to have understood that other securities also need a means for establishing their relative greenness. Even sovereigns have become a major component of the green financing universe, with more than US$14 billion issued in the first half of 2018. Securitizations, too, continue to grow in frequency and scale.

While the immediate pricing impact of green bond issuance may be modest, it could partially reflect low interest rates and the comparatively higher credit quality of green bond issuance. More than 90% of labelled green bonds have been rated investment grade. While higher interest rates may have negative impacts on overall bond issuance, it may also allow for somewhat more pricing separation. Anecdotal evidence suggests greater liquidity in green-labelled issuances, with higher levels of over-subscription that could ultimately manifest in better pricing.

Greening the economy

Even though not all polluting activities and businesses fall under global carbon regulations, we've continued to see a greening trend across the economy – even across sectors not traditionally thought to be environmentally sound. There are a number of potential reasons for this mass greening, such as more discerning investors; increasingly strict investor mandates; potential future regulations; compelling economics; and an increasingly environmentally- and socially-conscious consumer base.

As a result, some industries with carbon intensive legacies are attempting to repackage themselves as "green", such as the U.S. power sector, which has had sharp declines in carbon intensity. Other sectors lag, however (see chart). But with agriculture, mining, and manufacturing companies becoming greener – spurred in part by legal and regulatory movements – we believe there could be parity in future.

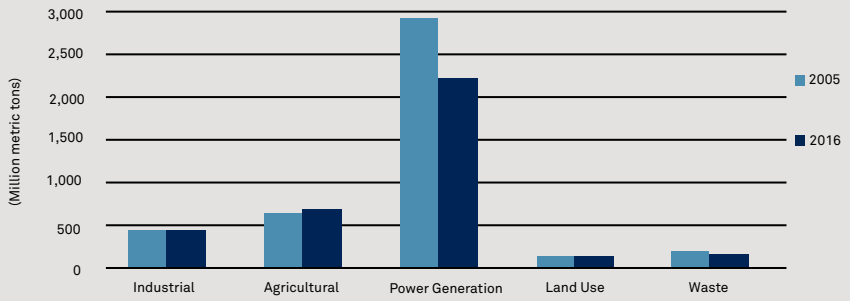
Untapped potential

While developed nations have been cutting carbon emissions, the global picture is harder to discern. But the broadening definition of "green" could support more decarbonization everywhere and the overall greening of the global economy.

As such, we expect a stronger and broader green bond market in coming years with new asset classes, as new industries decarbonize and existing ones look to reposition themselves and show off their green credentials.

Further information is available on the Capital IQ portal in the research piece entitled: "Untapped Potential: How the Green Economy Is Broadening"

U.S. Carbon Emissions Declines, 2005-2016



Source: U.S. EPA

China: The New Green Superpower?

With its burgeoning green bond market and government-led efforts to transition to a low-carbon economy, Corinne Bendersky looks at how China is emerging as a green superpower

China has become a major player in the global green finance market, promoting environmentally-friendly policies and strategically investing in clean technologies. Indeed, Chinese leaders have ramped up their emphasis on environmental issues, elevating pollution control to the same priority level as financial risks and poverty. Not only has this manifested in the application of a green agenda to the ambitious Belt & Road Initiative (BRI), but also in the country's engagement with the green finance market to attract investment and expand its geopolitical influence.

But China still has a long way to go to transform its status from major polluter to a green superpower. Widespread air, water and soil pollution persist, and China's carbon-intensive economy presents a difficult starting point for such change. But, if the country manages to execute its green strategy, it is likely to reap considerable long-term benefits.

Ambitious targets

China's climate agenda, outlined most recently in its Five-Year plan, includes ambitious targets to reduce absolute and relative carbon intensity and carbon dioxide emissions by 2030. Realising these climate goals will require substantial financing – estimated to be between US$480 billion and US$640 billion as a minimum each year from 2015 to 2020. China estimates that 85% of this financing will need to come from both domestic and foreign investors.

As a result, President Xi Jinping has called on green finance to buttress its green agenda and banks are expected to continue playing an overwhelming role in promoting and extending green loans, bonds, equities, insurance, and funds. While the green bond market is still nascent in China, a diverse set of issuers started to appear in 2017. In the same year, supportive government policies helped enable China to become the second-largest issuer of green bonds, with around US$23 billion of internationally-aligned new issuance (see chart).

Underscoring Chinese green finance market development will be financial innovations such as green asset-backed securities (ABS) programs. Local government bond issuance is also expected to grow at a faster rate. Yet more incentives are needed to boost the investor appeal of green finance products to investors in the domestic market. Further, opening China's bond market to international investors would also help foster responsible investment in China and increase green bonds demand, particularly when consistency and transparency are also tackled effectively.

Ahead of the curve

China's green strategy centres on leading the renewable and clean energy technology revolution. China already dominates in manufacturing solar panel technology – representing about 71% of global production in 2017. Now the country is pursuing battery storage, which promises to unlock the intermittency challenges of renewable energy. China's strategic investments in renewables, batteries, and electric vehicles could push the country to the forefront of the energy transition, supporting its economic expansion and aspirations of global leadership.

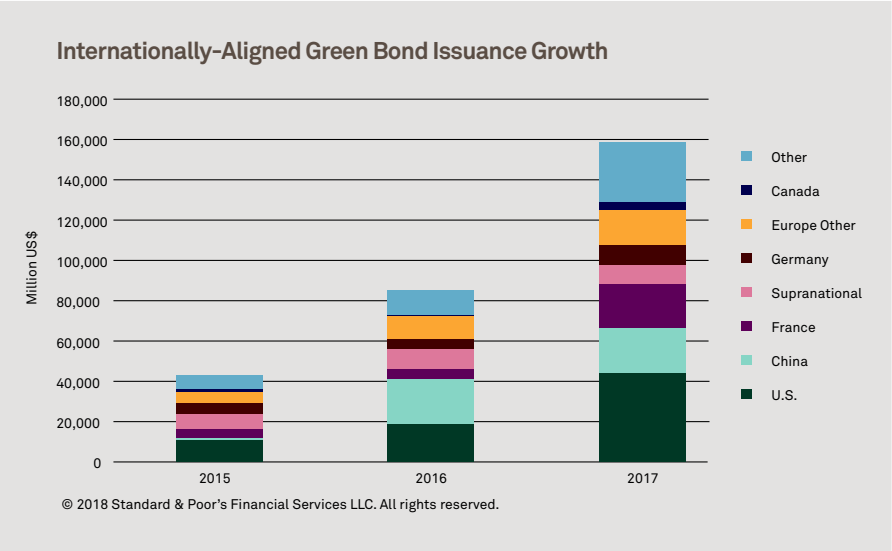
China's new environmentally-focused stance is most apparent in its change in strategy towards acquiring funding for the BRI. Incorporating a green agenda to the BRI is indicative of China's recognition of the critical role of private investment in achieving the project's US$6 trillion funding requirement by 2030.

Obstacles ahead

Despite China's efforts to gradually "green" its economy, a number of obstacles still impede the country's transformation into a green superpower. A reliance on fossil fuels, an escalating trade war with the U.S. and a lack of consistency towards investment by Chinese entities all undermine the country's desired image as a climate leader. That said, China has a major role to play in global efforts to address climate change. And if these obstacles are overcome, China's ambitious green strategy could well drive its economic expansion and influence abroad.

Further information is available on the Capital IQ portal in the research piece entitled: "Greener Pastures: China Cuts A Path to Becoming A Green Superpower".

> "China still has a long way to go to transform its status from major polluter to a green superpower."



Mexico City Airport

Mexico City Airport Trust 'BBB+' Ratings On CreditWatch Negative

In response to the Mexican president-elect's announcement that the New Mexico City Airport will be scrapped, we have placed Mexico City Airport Trust's US$6 billion in senior secured bonds on CreditWatch with negative implications

On October 31, 2018, S&P Global Ratings placed the 'BBB+' issue-level rating on Mexico City Airport Trust's (Fideicomiso 80460 or the trust) US$6 billion senior secured bonds on CreditWatch with negative implications. This action followed an announcement by president-elect, Andrés Manuel López Obrador, of his intention to cancel the New Mexico City Airport (NAICM) project upon taking office. Instead, his administration plans to build two runways at the Santa Lucia military base, improve the existing Mexico City Airport, and reactivate the Toluca airport in order to address the current capacity constraints in the capital city.

On December 21, 2018, S&P Global Ratings left its 'BBB+' ratings on the trust unaffected following its cash tender offer and consent solicitation results. The ratings remain on CreditWatch with negative implications. The trust communicated on December 20, 2018, that 71.3% of holders had delivered their consent accorded to the solicitation released on December 3, 2018 (later amended on December 11, 2018).

As a result, the Mexico City Airport Trust has accepted for purchase notes tendered on a pro rata basis according to the pro ration procedures described in the documentation. In practice, the trust will accept for purchase US$299.99 million of the principal amount of its 2026 notes, US$300 million of the principal amount of both its 2028 and 2046 notes, and US$899.99 million of the principal amount of its 2047 notes, reducing debt outstanding by 30%.

Once fully and duly executed, the debt reduction and the changes to the structure will significantly reduce uncertainties for the transaction. The immediate impact will be the improvement in the credit metrics. More important for the longer term, the combination of lower debt and the cash-flow sweep should also significantly reduce refinancing risk. Finally, the changes also somewhat reduce the uncertainties around the impact of the overall airport transportation strategy for passenger traffic in Mexico City over the transaction.

We are not taking a rating action at this time because of the different administrative steps needed for this strategy to be fully implemented. The initial steps are related to the successful modification of the debt documentation and the subsequent cancellation of the notes that will be purchased. More broadly, the uncertainties continue to be related to litigation risks of the credits that did not consent and the potential unintended consequences of the project's wind-down.

Further information is available on the Capital IQ portal in the research pieces entitled: "What's Behind Our CreditWatch On Mexico City Airport Trust" and "Mexico City Airport Trust 'BBB+' Debt Rating Still On Watch Negative On Amended Tender Offer And Consent Solicitation"

Atlantia

Infrastructure Holding Company Atlantia Downgraded On ASPI's Concession Governance Risk; Outlook Negative

Given the potential for regulatory, operational and financial repercussions following the Genoa bridge collapse, we have lowered the long-term issuer credit rating on Atlantia SpA and its subsidiary ASPI from 'BBB+' to 'BBB'

Given the potential for regulatory, operational and financial repercussions following the Genoa bridge collapse, we have lowered the long-term issuer credit rating on Atlantia SpA and its subsidiary ASPI from 'BBB+' to 'BBB'

On November 5, 2018, S&P Global Ratings lowered the long-term issuer credit rating on Italy-based Atlantia SpA and toll road network operator Autostrade per l'Italia SpA (ASPI) to 'BBB' from 'BBB+'. At the same time, we affirmed the 'BBB+' rating on airport operator Aeroporti di Roma SpA (AdR).

The rating actions reflect the continuing uncertainty surrounding the operating environment and potential toughening of concession terms on new investments for Atlantia's Italy-based toll road operator subsidiary, ASPI, in the aftermath of the Genoa bridge collapse. This is particularly in light of the government's less supportive sentiment toward privately-owned infrastructure companies, especially road operators.

The extent of any regulatory, operational, and financial ramifications from the Genoa bridge collapse are not yet fully known. Nevertheless, we see a risk to the future cash flows under ASPI's concession agreement due to the strained relationship between the company and the concession grantor, the Ministry of Infrastructure and Transport (MIT). For instance, we are uncertain as to the amount of new investments and the rate of return for the next period (2018-2022), which are yet to be approved by MIT. Meanwhile, we understand that tariffs and investments may continue under the previously approved period (2013-2017).

At present we do not foresee a scenario that would lead us to downgrade ASPI, and consequently Atlantia, to speculative grade (below 'BBB-') because the concession agreement's termination is unlikely in the immediate term in our view. Finding a replacement concession or taking over the operations of such a large toll road network (equivalent to 52% of Italy's motorways) could deter the government. We also consider the termination of the concession through a law decree enforcing expropriation or nationalization of the assets as only a remote possibility. Such actions might impair foreign investment in the country if the rule of law and control of disputes become unpredictable.

Further information is available on the Capital IQ portal in the research pieces entitled: "Infrastructure Holding Company Atlantia Downgraded On ASPI's Concession Governance Risk; Outlook Negative"

Ence Energia S.L.U

Ence Energia S.L.U awarded 'E1' For Its Proposed €69.4 Million Multi-Tranche Capex Facility

Ence Energia's proposed €69.4 million issuance for the financing of biomass plants achieves highest possible score

Ence Energia S.L.U.– the renewable energy division of the largest biomass operator in Spain – is looking to raise €69.4 million to expand its power generation business through a combination of a second green debt facility and notes issuance. Ence Energia has allocated €60 million to the construction of a new 46-megawatt (MW) biomass plant in Puertollano and plans to upgrade a biomass plant in La Loma, southern Spain with the remaining proceeds. It has since undergone environmental and administrative processing to obtain the different permits and authorisations needed to develop a biomass power plant.

The combination of a strong Mitigation score, combined with the above-average scores in both Governance (83) and Transparency (82), results in a final score of 'E1'. This is at the top of our scoring range from 'E1' (highest) to 'E4' (lowest). The overall score of 79 is a weighted aggregate based on scores for governance, transparency and mitigation.

The Net Benefit Ranking score of 15 is low given that Spain's already fairly decarbonized grid and the relatively high carbon cost of biomass power plants compared to other renewables.

The associated emissions, however, are not considered to be contributing to climate change because a roughly equal measure of carbon dioxide will be reabsorbed by growing a subsequent fuel load for the power plant.

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "Ence Energia S.L.U.'s Proposed €69.4 Million Multi-Tranche Capex Facility"

Rhode Island Infrastructure Bank

Rhode Island Infrastructure Bank's US$19.8 Million Revenue Bonds 2018 Awarded 'E1'

Investments in green energy projects and green building refurbishment in Rhode Island contribute to high Green Evaluation score

Rhode Island Infrastructure Bank is proposing to issue US$19.8 million in Efficient Buildings Fund revenue bonds series 2018 A green bonds. The proceed will be used to refund previously issued Building Fun bond anticipatory notes (BANs) bond issuance will take out BANs and to fund an additional loan associated with onshore wind, solar power, HVAC, and LED lighting projects – all within the state of Rhode Island.

The transaction received an 'E1' Green Evaluation score – the highest on our scale. The very strong score of 85/100 echoes the excellent Mitigation score of 85, which largely reflects that the splitting of the proceeds between green energy projects and green building refurbishment.

In addition, it reflects the excellent Transparency score of 86, owing to the bank's clear project selection process and required post-completion reporting. The overall score is also indicative of the robust Governance score (83) due to strong oversight of bond proceeds to ensure loans will be used as approved.

While very strong, the Mitigation score is perhaps not quite as strong as might be expected, with roughly 66% of the proceeds allocated to green energy technologies, which are at the top of our carbon mitigation hierarchy. The mid-range net benefit ranking of solar and wind (which is lower than hydro generation) and the mid-range carbon intensity of the area globally are also contributing factors to the Mitigation score.

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "Rhode Island Infrastructure Bank Proposed $19.8 Million Revenue Bonds Series 2018 A"

Royal Schiphol Group

Royal Schiphol Group N.V. (Schiphol) plans to issue its first green-labelled bond. Proceeds from the proposed €500 million green bond will be allocated to improving the energy efficiency of its airport terminals and pier buildings, commercial and other real estate, constructing new energy-efficient buildings and investing in clean transportation assets and infrastructure in Amsterdam, the Netherlands.

The transaction achieves an overall score of 74/100, equivalent to a Green Evaluation score of 'E2', with a weighted aggregate of Transparency (70), Governance (90) and Mitigation (74). The favourable environmental impact of the projects and their relatively high position in our carbon hierarchy also contribute to overall score. The overall Green Evaluation score, however, is limited by the medium carbon intensity of the regional grid mix in the Netherlands and is capped at the Mitigation score.

The Transparency score is weakened by Schiphol's commitment to report data by project category, rather than at the individual project level.

Further information is available on the Capital IQ portal in the Green Evaluation entitled: "Royal Schiphol Group Proposed €500 Million Green Bond"

Contacts

Commercial

George Slavin
Sales - New York
+1-212-438-2629
george.slavin@spglobal.com

Jonathan Usdin
Sales - New York
+1-212-438-0154
jonathan.usdin@spglobal.com

Alberto Santos
Sales - Latin America
+1-212-438-2329
aj.santos@spglobal.com

Sandra Pereira
Sales - EMEA
+(44) 207-176 3746
sandra.pereira@spglobal.com

Mireille Barthez
Sales - EMEA
+(33) 1-4075-2528
mireille.barthez@spglobal.com

Dongsheng Hong
Sales - APAC
+(65) 623-96317
dongsheng.hong@spglobal.com

Analytical

Susan Gray
Global Head of Corporate &
Infrastructure Ratings
+1-212-438-0040
susan.gray@spglobal.com

Andreas Kindahl
Global Head of Infrastructure Ratings
+(46) 8-440-5907
andreas.kindahl@spglobal.com

Karl Nietvelt
Head of Analytics and Research
Global Infrastructure
+(33) 1-44 20 67 51
karl.nietvelt@spglobal.com

Sustainable Finance

Michael Wilkins
Corporate & Infrastructure Ratings
+ (44) 20-7176 3528
mike.wilkins@spglobal.com

Nicole Martin
Corporate & Infrastructure Ratings
+1-416-507-2560
nicole.martin@spglobal.com

Mike Ferguson
Corporate & Infrastructure Ratings
+1-212-438-7670
mike.ferguson@spglobal.com

North America

Anne Selting
North America Transportation & P3s -
San Francisco
+1-415-371-5009
anne.selting@spglobal.com

Trevor d'Olier-Lees
P3s & Renewable Energy - New York
+1-212-438-7985
trevor.dolier-lees@spglobal.com

Mike Grande
North America Energy Midstream - New York
+1-212-438-2242
mike.grande@spglobal.com

Kyle Loughlin
North America Utilities - New York
+1-212-438-7804
kyle.loughlin@spglobal.com

Aneesh Prabhu
North America Energy & Power - New York
+1-212-438-1285
aneesh.prabhu@spglobal.com

Gabe Grosberg
North America Utilities - New York
+1-212-438-6043
gabe.grosberg@spglobal.com

Simon White
North America Energy - New York
+1-212-438-7551
simon.white@spglobal.com

Dhaval Shah
Canadian Infrastructure - Toronto
+1-416-507-3272
dhaval.shah@spglobal.com

EMEA

Beatrice de Taisne
EMEA Utilities
+(44) 207-176-3938
beatrice.de.taisne@spglobal.com

Pierre Georges
EMEA Utilities
+ (33) 1-44 20 67 35
pierre.georges@spglobal.com

Michela Bariletti
EMEA Infrastructure Ratings
+(44) 207-176-3804
michela.bariletti@spglobal.com

Latin America

Pablo Lutereau
LATAM & APAC Infrastructure & Utilities -
Buenos Aires
+(54)-114891-2125
pablo.lutereau@spglobal.com

Candela Macchi
LATAM Infrastructure & Utilities - Buenos Aires
+(54) 11 4891 2110
candela.macchi@spglobal.com

Julyana Yokota
LATAM Infrastructure & Utilities - Sao Paolo
+(55) 11-3039-9731
julyana.yokota@spglobal.com

Asia-Pacific

Richard Langberg
APAC Infrastructure & Utilities - Hong Kong
+(852) 2533-3516
richard.langberg@spglobal.com

Gloria Lu
Greater China Infrastructure & Utilities - Hong Kong
+(852) 2533-3596
gloria.lu@spglobal.com

Abhishek Dangra
South East Asia Infrastructure & Utilities - Singapore
+(65) 6216-1121
abhishek.dangra@spglobal.com

Richard Timbs
Australia Infrastructure & Utilities - Sydney
+(61) 2-9255-9824
richard.timbs@spglobal.com

Parvathy Iyer
Australia Infrastructure & Utilities - Melbourne
+(61) 3-9631-2034
pavathy.iyer@spglobal.com