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Infrastructure & Energy
Outlook

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A Cross-Sector Look At COVID-19 Recovery

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Andreas Kindahl, Global Head of Infrastructure Ratings

"While it is too soon to predict when exactly when we will see the end of the COVID-19 crisis, as international vaccine roll-outs gather pace, our analysis has turned towards recovery."

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The pandemic and its aftermath will continue to dominate credit conditions through 2021. A little over a year ago, the world plunged into severe economic downturn as a result of pandemic-induced lockdowns. A slew of negative rating actions quickly followed: 27% of corporate and infrastructure ratings and just below 20% of total project finance ratings were downgraded in 2020. The impact was especially pronounced for weaker, more highly-leveraged companies and issuers in infrastructure sectors heavily affected by social distancing measures or reduced patronage. These include airports, convention centers, sports stadiums and – to a lesser extent – toll roads, with stronger resilience of heavy vehicle traffic and a faster-than-anticipated bounce-back once lockdowns were lifted.

Overall, however, infrastructure as an asset class has demonstrated a high degree of resilience: only 10% of transportation infrastructure entities suffered a one-notch downgrade, whereas single and multiple-notch downgrades affected 50% of the wider corporate transportation ratings universe. Only 6% of regulated utilities experienced a negative rating action, versus downgrades for 35% of the rated oil and gas sector last year.

The unparalleled fiscal and monetary policy response by governments and central banks across the globe has been critical to avoiding a collapse in confidence, demand, and of the financial markets. And, while it is too soon to predict when exactly when we will see the end of the COVID-19 crisis, as international vaccine roll-outs gather pace, our analysis has turned towards recovery.

So, where are infrastructure ratings heading? We believe credit conditions will likely remain favorable, underpinned by improving economic sentiment, vaccination programs offering a clear exit path from pandemic restrictions, and continued supportive financing conditions. However, there are wide variations in regional and sectoral recovery prospects and, if anything, the gap is growing.

We call this the "K-shaped" recovery. Power and commodity prices have rebounded to pre-pandemic levels, while the accelerated roll-out of green policies in the U.S., China and Europe will likely provide impetus for further business growth opportunities in renewables, such as offshore wind and potentially, hydrogen. At the other end of the spectrum, we see airports remaining negatively impacted for a while longer, but with important regional differences.

We expect air traffic to rebound much faster in the U.S., as about 70%-80% of traffic is domestic - a trend we also witnessed in China. By contrast, European air traffic, which is more reliant on international travel, is expected to take considerably longer to bounce back – even if widespread vaccination is achieved by the end of Q3 in most developed markets. Opening up borders increases the risk of the spread of new variants and it will likely take until at least 2022 before the vaccination is rolled out in many emerging market countries. Indeed, current country-specific risks related to new, more contagious variants – such as those we are seeing in Brazil and India – will continue to pose credit risks for infrastructure assets.

In addition, we continue to closely monitor other important topics, such as the rapidly increasing importance of environmental, social, and governance (ESG) considerations throughout the financial ecosystem, the effects of the energy transition away from fossil fuels on the infrastructure and energy sectors, and other secular trends that have been accelerated by the pandemic and that may affect and shape global infrastructure "post-COVID".

The S&P Global Infrastructure and Utilities Ratings team, comprising 130 highly talented analysts across the world, remains dedicated to nurturing global infrastructure capital market growth by enhancing transparency, delivering credit risk benchmarks, and providing analytical insights. We believe that our local analytical staff, combined with our established global reach, are critical to understanding market nuances that underpin our globally comparable benchmarks, which are highly valued by international investors. In this new edition of the Infrastructure and Energy Outlook, each of our regional experts provides a snapshot of recent key developments and events to look out for in the months to come. We would encourage you to contact them to discuss these current and emerging trends, as we are not only happy to share our views, but also value the opportunity to learn from our external stakeholders.

U.S. Transportation: Economic Growth Plan Signals Recovery

Trevor D'Olier Lees, Sector Lead, U.S. P3 Infrastructure, and Kurt Forsgren, Sector Lead, U.S. Not-For-Profit Transportation Infrastructure

The past quarter has seen an overall recovery for many roadway transportation assets across North America. As lockdown restrictions continue to ease, domestic toll road travel has demonstrated recovery for many operators across the sector. Commercial trucks performed particularly well after an initial shock in spring 2020, given a sizeable shift in consumer behavior toward e-commerce.

That said, there are still laggards. For instance, congestion-relieving toll roads, such as the 95 Express Lanes and the 407 International, are still seeing reduced traffic. Among the most affected infrastructure niches, however, remain conference center hotels, which continue to struggle as business travel remains subdued, while a return to normal for stadiums is equally uncertain.

As for the U.S. airport sector, domestic travel – which accounts for an important 80% share of total traffic – has seen an uptick in activity. The slow recovery of international travel, however, still means that some airports will continue to underperform.

Overall, strong progress on vaccination roll-outs and an improved economic outlook have resulted in more stable prospects for not-for-profit transportation infrastructure. This also takes into account the more than US$38 billion in additional direct federal grants authorized for transit and airport operators under the US$1.9 trillion American Rescue Plan stimulus package.

The American Jobs Plan will inject more than US$1 trillion into U.S. infrastructure

The first part of President Biden's "Build Back Better" program for economic recovery will look to reinvest in infrastructure and improve employment levels weakened by the pandemic. About half of the US$2.3 trillion American Jobs Plan, combined with US$400 million in estimated clean energy tax credits, is targeted for traditional infrastructure. This includes roadways and bridges, airports and ports, transit and rail, water, power grids, renewables, and new infrastructure assets to encourage the expansion of both the still-nascent electric vehicle segment and broadband internet into underserved regions.

The plan also extends beyond traditional infrastructure assets, and includes US$400 billion to increase in-home care for elderly and disabled citizens by improving pay and benefits for caregivers, with another US$213 billion to be spent on affordable housing.

For related reading, please refer to the following report: "U.S. Not-For-Profit Transportation Infrastructure Sector View Is Now Stable For Airports, Mass Transit, And Toll Roads"

"...President Biden's "Build Back Better" program for economic recovery will look to reinvest in infrastructure and improve employment levels."

M&A Continues Apace For European Utilities

Pierre Georges, Sector Lead, EMEA Utilities

Over the past quarter, the ongoing acceleration of the energy transition has seen European utilities fortify efforts to align with the EU commitment to achieve a net-zero carbon economy by 2050. Alongside this, after hitting a three-year high at the end of 2020, mergers and acquisitions (M&A) have continued on the same trajectory given macroeconomic trends for the sector remain favorable.

Noteworthy transactions include National Grid's acquisition of PPL's Western Power Distribution operations, Veolia Environnement's acquisition of waste group Suez, and accelerated strategy execution in the Fortum Uniper transaction in the form of adjustments to senior management.

Stable ratings against an unclear regulatory backdrop

Generally speaking, we expect utility companies' creditworthiness to remain steady. However, we see pockets of risk arising in jurisdictions where regulation is currently under review, including the U.K., the Netherlands and Sweden.

We also expect to see updates on the status of nuclear power within the energy transition, following calls from a number of countries to include it in the EU taxonomy for sustainable investments. The outcome would provide greater visibility on the direction of the sector, with potential consequences for Électricité de France and wider-reaching implications for the European energy market.

For a full update on the outlook for the European utilities sector, please turn to page 11.
For more information, please also visit "The Leading Edge of Infrastructure" Podcast, Episode 7.

U.S. Utilities: ESG Risks And Minimal Financial Cushions Are Squeezing Credit Quality

Analysts: Gabe Grosberg, Sector Lead, N.A. Regulated Power, and Aneesh Prabhu, Sector Lead, N.A. Unregulated Power

Environmental, social, and governance- (ESG) related risks have had a significant impact on credit quality in the U.S. power and utilities sector the past quarter. February's Texas winter storm, for instance, exposed the industry's vulnerability to extreme weather events, leading to multiple downgrades. We also downgraded Duke Energy Corp. because it agreed to a significant disallowance related to the recovery of coal ash costs.

In our view, many utility companies are currently managing their financial positions with little-to-no cushion from our downgrade threshold. For example, we recently revised our rating outlook on American Electric Power Co. Inc. to negative from stable because we expect its financial measures to consistently reflect the lower end of the range for its financial risk profile category (see "American Electric Power Co. Inc. Outlook Revised To Negative On High Capital Spending And Limited Financial Cushion," published April 28, 2021). The lack of a sufficient financial cushion increases the industry's vulnerability should an unexpected event that has not been built into its base-case scenario occur. Given the potential for further extreme weather events, we continue to monitor the industry's financial and hedging practices.

As we move toward the summer months, we will continue to monitor how utilities position themselves to withstand the sometimes tight alignment between power generation and demand, which could lead to a recurrence of scarcity pricing. The coming three-to-six months could be pivotal for the sector should we see some consolidation of President Biden's tax plan.

Notably, the proposed 7% hike in the corporate tax rate – taking it to 28% – would increase cash-flow-to-debt metrics by about 100 basis points (BPs). This seems counterintuitive; however, utilities fully recover the statutory income tax expense from customers, while actual tax payments depend on prevailing fiscal depreciation, deferred taxes, and holding company interest.

The plan also promulgates the Energy Efficiency and Clean Electricity Standards, which seek to foster the development of renewables in the pursuit of a carbon-free power sector. Key to this plan is a 10-year extension of investment and production tax credits for renewables and storage, as well as a boost to research and development. That said, many in Congress oppose the overall size and social components of the plan. As such, we believe the final package, which is expected before the end of summer, will look different to its current form.

For a full update on the Texas winter storm, please turn to page 8.

"As we move toward the summer months, we will continue to monitor how utilities position themselves to withstand the sometimes tight alignment between power generation and demand."

Project Finance Forges Ahead After Disruptive Year

Analyst: Michele Sindico, Lead Analyst, Project Finance, and Ben Macdonald, Lead Analyst, Project Finance

The bulk of project finance ratings have proven largely resilient to the fallout of the pandemic, on the back of supportive contracts and liquidity. Among those still under considerable pressure, are social projects exposed to volume risk, such as stadiums and hotels. Many remain closed or are operating at severely reduced levels, and are relying on liquidity reserves since revenue has not improved sufficiently to cover operating expenses and debt-service obligations.

Although prospects of traffic recovery for transportation projects remain uncertain, we expect to see a gradual resurgence in regions where vaccinations are well underway or expected to increase in the second quarter of 2021, such as in the EU and North America.

We will also continue to closely observe the strategy of universities in the context of student accommodation projects. We see an increasing risk of universities choosing to prebook fewer rooms than in the past. Alongside a more permanent move toward remote learning, this could have implications for student accommodation projects' metrics in the short and medium term.

We downgraded slightly less than 20% of project finance debt during this period of economic stress, equating to 58 of over 300 rated projects. The largest impact has been felt by transportation and social infrastructure projects exposed to volume risk. Last year, we lowered our ratings on about 33% of transportation projects, followed by 17% for volume-based social infrastructure projects. By comparison, power projects were more stable in aggregate, with about 12% being affected in 2020. However, only one-third of the power projects we rate are fully merchant exposed, and those remain under stress due to continued slippage of pricing and demand.

For related reading, please refer to the following reports:
The U.K. Corporation Tax Hike Weighs On Project Finance Financial Metrics,
COVID-19 Propels Higher Market Risk For U.K. Student Accommodation Projects; Outlooks Negative,
The Outlook On The U.S. Merchant Power Sector Is Negative.

Europe's Aviation And Toll Roads Won't Bounce Back Just Yet

Analyst: Tania Tsoneva, Lead Analyst, EMEA Infrastructure, and Rachel Gerrish, Sector Lead, EMEA Airlines

Although Europe is ramping up vaccinations, a meaningful rebound of air travel across the continent this summer remains uncertain. Even assuming most of the population is immunized by the end of the third quarter, we expect air traffic in Europe will be only 30%-50% of the 2019 levels this year versus our November 2020 forecast of a 40%-60% shortfall. In the U.K., the gradual unwinding of mobility restrictions could come in the form of a traffic light system, with a list of "green" countries considered safe. As such, passenger numbers could recover quickly as tourists visit green countries. But if this does not happen, air traffic levels could be even worse this year.

Our ratings on European airports remain, on average, one notch lower than before the pandemic (see "Another Stretch Year For Europe's Airports", published March 22, 2021). European governments have been cautious about reopening cross-border travel, even in the U.K. where 60% of the population has been vaccinated, owing to the risk of exposure to new variants of the coronavirus. An exception to this could be U.K.-U.S. traffic, which could potentially reopen by June or July.

The latest lockdowns have not restricted travel on European toll roads as much as they did last year

However, the situation differs from one country to another, with Spanish toll roads generally underperforming those in Italy and France. There are strong indications that, as in 2020, traffic on toll roads will pick up quickly in the summer once restrictions are eased.

M&A activity has continued as road operators seek to diversify or replace cash flows from expiring concessions. For instance, Vinci has announced its €4.9 billion acquisition of an asset portfolio owned by Spain-based ACS Industries, which has an attractive pipeline of renewable generation projects. This could trigger a domino effect, since the ACS Group has expressed an interest in buying Italian motorway Autostrade per l'Italia (ASPI). The sale of ASPI isn't yet final; however a series of bids were put in by a consortium of Cassa Depositi e Prestiti and infrastructure funds.

For a full update, please turn to page 10.

"Although Europe is ramping up vaccinations, a meaningful rebound of air travel across the continent this summer remains uncertain."

Mexico And Brazil Take Contrasting Approaches To Infrastructure

Analyst: Julyana Yokota, Sector Lead, Latin American Infrastructure

The Latin American infrastructure sector has witnessed a number of significant government actions in recent months, particularly in two of the region's largest markets: Mexico and Brazil. Since the election of President López Obrador in 2018, the Mexican government has played a larger role in the sector, with one of its main objectives being the strengthening of state-owned utility company Comisión Federal de Electricidad (CFE), as well state petroleum company Petróleos Mexicanos (Pemex). Under the recent energy sector reform, approved in March 2021, the dispatch order of the Mexican electricity system was adjusted to prioritize all existing CFE power plants, rather than prioritizing dispatch by cost.

By contrast, in Brazil, the government is looking to foster greater private-sector involvement, launching an infrastructure concession auction for airports, ports, and roads to attract investment. Infrastructure investment in Brazil has traditionally been relatively low, especially for an emerging economy. Public infrastructure spending is currently around 0.5% of GDP, a far cry from the 2%-4% in most countries. This has been holding back productivity, providing opportunities for private investors to step in.

Changes could be significant

In the months to come, we anticipate that Mexico's proposed reform will affect the stability of the Mexican regulatory framework. Although the legality of the reform is still being processed in the Mexican judicial system, the new regulations would affect some contracts signed since 2014.

Meanwhile, we expect Brazil may face some difficulties attracting international investment, given the long-term impact of the pandemic; although its stable regulatory framework will likely prove attractive to overseas investors. What's more, there is still space for local players to participate, especially because they have the financial flexibility to do so and benefit from their status as incumbents in the market.

For a full update, please turn to page 12.

China To Continue Strong Recovery In 2021

Analyst: Richard M Langberg, Head of Asia-Pacific Infrastructure

China's Two Sessions – the country's most important annual parliamentary meeting – took place in early March 2021, laying out the country's economic roadmap for the next five years. It didn't set an explicit GDP target, leaving room for China to achieve other objectives pertaining to social welfare, deleveraging, and its energy transition.

Alongside this, China's announced new-energy targets were less ambitious than we expected, with annual renewable capacity additions of at least 66 gigawatts (GW) on average in 2021-2030. This undershoots the record 120GW added in 2020. The only 2030 target officials raised was the share of non-fossil fuel in the nation's primary energy mix, namely to 25% from a previous threshold of 20%, and up from the current 16%. It is worth noting that China tends to underpromise and overdeliver, so we can likely expect more in this area.

The various levels of Chinese government largely fuel infrastructure investment. At the Two Sessions, China announced that it would issue Chinese renminbi (RMB) 3.65 trillion (about US$570 billion) in local government special purpose bonds in 2021. This marks a small decline from last year. While a significant portion of the bonds will be deployed to finance infrastructure projects under construction, the government is placing less emphasis on infrastructure for economic recovery. In general, we expect infrastructure growth for this year will likely be in the low single digits, in line with the subdued growth seen in the previous two years.

In the coming months, China will likely continue its strong recovery from the pandemic

We forecast real GDP growth of 8% for 2021. Energy consumption will remain high alongside demand, and the national emission trading system should start trading carbon credits in the middle of the year. China's power sector is still contending with high coal prices and, as a result, we expect the margins of coal-fired power companies to be squeezed.

Additionally, local government financing vehicles (LGFVs) face a RMB2.7 trillion maturity wall in the onshore bond market in 2021, with tougher funding conditions for weaker issuers. This follows high-profile defaults by state-run corporations, including Henan-based Yongcheng Coal and Electricity Holding Group Co. Ltd. (not rated) in November 2020. As deleveraging returns to the government agenda and officials tighten rules on bond issuance, LGFVs will be under increasing refinancing pressure in 2021.

For a full analysis of China's five-year decarbonization plan, please turn to page 13.

"China's power sector is still contending with high coal prices and as a result, we expect the margins of coal-fired power companies to be squeezed."

A Mixed Outlook For South And Southeast Asian Infrastructure

Analyst: Abhishek Dangra, Sector Lead, APAC Infrastructure – South and South East Asia

South and Southeast Asia has seen a varied recovery from the pandemic. India's economic performance has bounced back significantly, but the recent variant outbreak may prompt us to revise down our base-case assumption of 11% growth over fiscal years 2021-2022 – particularly if the government is forced to reimpose broad containment measures. Other countries in the region, including Indonesia and Thailand, have experienced a more muted recovery due to a stronger dependence on tourism.

Overall, the region has seen funding availability improve markedly in the past quarter, thanks to increased access to capital markets. Although this has favored companies across the board, credit differentiation is notably sharper, coming at a significant cost for companies with weaker financial metrics.

Uncertainties lie ahead

Along with tracking the speed of the economic recovery and each country's success in containing the virus, investors will be scrutinizing issuers' access to funding in the coming quarter. From an investor perspective, the market remains volatile. This could affect corporate growth plans if the cost of capital increases or capital funding sources start to dry up.

The pandemic is also straining sovereign and provincial governments' balance sheets. This has raised investor concerns about the continuity of regulations in those provinces, and the robustness of government support for state-owned entities. For instance, in late 2020 we took rating actions on some Indonesian government-related entities that reflected a lower likelihood of timely extraordinary government support.

For related reading, please refer to the following reports:
Cross-Sector Outlook: India's Escape From COVID
India Infrastructure: Recovery Won't Be Quick

Global Oil And Gas Markets Find A Better Balance As Demand Recovers

Analysts: Thomas A Watters, Sector Lead, North America Oil & Gas; Simon Redmond, Sector Lead, EMEA Oil & Gas; and Michael Grande, Sector Lead, North America Midstream

In the first quarter of this year, we saw a rebound in demand for both oil and gas after dramatic lows in the second quarter of 2020. For the oil sector, the recovery remains on track, even though jet fuel demand is unlikely to return to pre-pandemic levels before 2022. Similarly, gas prices have settled into a pattern of relative stability, although they remain subdued across Europe and Asia.

Supply cuts are supporting oil prices

We anticipate U.S. oil production will decline this year, given investors' calls for oil producers to moderate investments and increase profitability. This, together with major supply cuts from OPEC and Russia, has underpinned the strong upswing in prices this year.

We believe that OPEC will continue to aim for a trading range of $60-$70 per barrel. If prices go beyond that level, perhaps due to a stronger-than-expected increase in demand, it is plausible that U.S. shale oil producers could ramp up production again.

Nonetheless, a number of developments on the horizon could prompt downside to prices, or at least keep a lid on them. For instance, OPEC has an overhang of 7 million barrels per day (bpd) – of which 2.1 million bpd could come back by July – that it could eventually bring to the market in a bid to increase its market share. And, if the Biden administration loosens sanctions on oil-producing Iran and Venezuela, the market could end up with additional supply. There are demand-side risks too, since the economic recovery could subside later this year should there be a strong resurgence in COVID-19 cases.

For a full update on the outlook for the European utilities sector, please turn to page 11.

"We anticipate U.S. oil production will decline this year, given investors' calls for oil producers to moderate investments and increase profitability."

S&P Global Ratings Revises Oil And Natural Gas Price Assumptions, Introduces Dutch Title Transfer Facility Assumption

In March, S&P Global Ratings revised its WTI and Brent crude oil price assumptions for 2021 and 2022, as well its AECO natural gas price assumption for 2022.

In addition, to enhance the transparency around our rating inputs, we are also publishing our assumptions for a key European benchmark, the Dutch Title Transfer Facility (TTF). For comparability and consistency with our Henry Hub and AECO futures, we show TTF prices in US$ per million Btus (mmbtu; rounded to the nearest $0.50) rather than € per megawatt hour (MWh).

Further information is available in the research piece: "S&P Global Ratings Revises Oil And AECO Natural Gas Price Assumptions And Introduces Dutch Title Transfer Facility Assumption".

S&P Global Ratings' Oil And Natural Gas Price Assumptions

	--New prices--					--Old prices--			
	Brent ($/bbl)	WTI ($/bbl)	Henry Hub ($/mmBtu)	AECO Hub ($/mmBtu)	TTF ($/mmBtu)	Brent ($/bbl)	WTI ($/bbl)	Henry Hub ($/mmBtu)	AECO Hub ($/mmBtu)
Remainder of 2021	60	55	2.75	2	6	50	45	2.75	2
2022	60	55	2.5	1.75	5.5	50	45	2.5	1.5
2023 and beyond	55	50	2.5	1.5	5.5	55	50	2.5	1.5

bbl--Barrel. WTI--West Texas Intermediate. HH--Henry Hub. TTF--Title Transfer Facility. AECO--Alberta Energy Co. mmBtu--Million British thermal units. Note: Prices are rounded to the nearest $5.00/bbl and $0.25/mmBtu. Source: S&P Global Ratings.

Utilities' Credit Profiles Will Continue To Face Repercussions Of Texas Storm

Aneesh Prabhu, Sector Lead for North America Unregulated Power, looks at how disruptions to electricity and gas markets provoked by February's winter storm have affected Texas' utilities.

"February's gas and electricity costs have created formidable liquidity needs that many, but not all, market participants are struggling to satisfy."

Cold weather events are not unique, but the severity of Texas' winter storm – known unofficially as "Uri" – and the operational dislocations it caused certainly were. The storm saw 46,000 megawatts (MW) of 82,000 MW generation capacity across the Electric Reliability Council of Texas (ERCOT) go offline, with power prices spiking to US$9,000/MWh and prices averaging US$6,600/MWh over the six-day period in mid-February. Sustained high prices over several days saddled the sector with an estimated US$55 billion of extraordinary electricity prices, in addition to margin calls on contractual positions. As a result, February's gas and electricity costs have created formidable liquidity needs that many, but not all, market participants are struggling to satisfy.

Credit impact varies

Unsurprisingly, the power market disruptions provoked by Uri have acted as a catalyst for negative ratings actions affecting a string of electric and gas market participants in Texas and the Southwest. Among these, market participants that were short on power or natural gas suffered substantial losses. Many of the affected utilities faced significant liquidity demands to cover unprecedented commodity procurement expenses and collateral calls.

In terms of sector, the credit effects of the storm proved most acute among Texas' electric cooperative and public power utilities. To date, we have lowered our ratings on seven entities, including three multi-notch downgrades and four single-notch downgrades. In addition, we placed 21 public power and electric cooperative utilities' ratings on CreditWatch with negative implications to reflect the potential for further rating actions.

By contrast, merchant generators, independent power producers (IPPs), and investor-owned gas distribution companies have proven less exposed to credit pressures and there have been only three ratings downgrades in these sectors. In addition, four of the companies in these sectors have either a negative outlook or a negative CreditWatch listing. We view Texas-based investor-owned electric utilities as structurally less exposed to the storm's financial and operational fallout because they neither produce nor purchase electricity for their retail customers.

What's next for creditworthiness?

Looking ahead, unpaid bills for wholesale purchase of electricity and gas represent the most significant financial exposure likely to pressure ratings. Additionally, latent negative credit pressures could materialize as ERCOT socializes an estimated US$3.1 billion defaulted power payments to non-defaulting market participants, which could create additional financial pressure.

Some market participants might also face the potential for governmental directives and adverse judgments in pending and anticipated litigations, whose outcomes may require generators to disgorge portions of power sales revenues, in turn affecting creditworthiness.

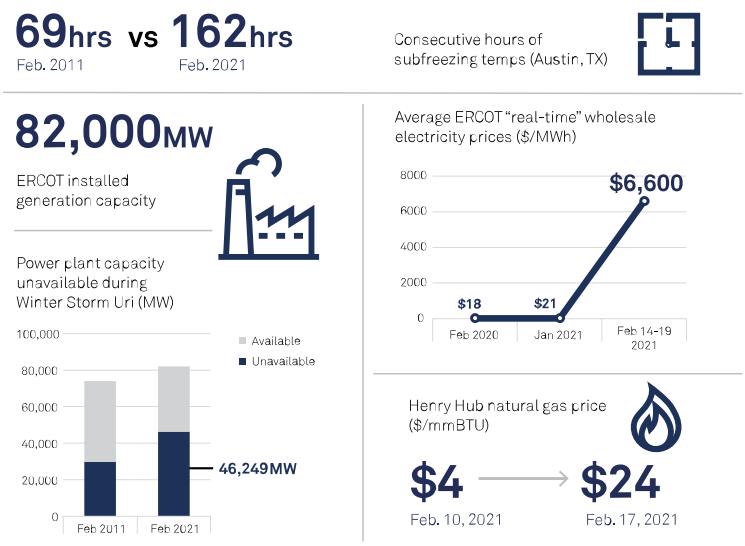
In the meantime, we are monitoring several credit drivers that could lead to additional negative rating actions. Among them, we believe market participant defaults could grow if unrated retail electric provider companies (REPs) or other rated or unrated market participants continue to default on their obligations.

In addition, public power utilities, electric cooperative utilities, and some natural gas distribution utilities may need to pursue steep rate increases to amortize the debt they plan to issue to fund payments to ERCOT and gas suppliers. Should they occur, sizeable rate increases could impair customer affordability and in turn, lead to negative rating effects.

Over time, we anticipate that market participants will seek to reconsider hedging policies and explore the availability of hedging structures and supply commitments that could better enable them to shield financial performance from extreme prices of the kind and duration experienced during the storm. However, we anticipate that in Uri's aftermath, counterparties may be less willing to provide hedges or price them more expensively.

Further information is available in the research piece: "Winter Storm In Texas Will Continue To Be Felt In Utilities' Credit Profiles".

By The Numbers: Winter Storm Uri And ERCOT



Source: S&P Global Ratings.

Uneven Path Ahead For Fiber Telecom Infrastructure

Mark Habib, Sector Lead for EMEA Telecoms, examines the outlook for fiber companies operating in an increasingly competitive landscape.

Fiber telecom infrastructure covers a broad range of assets in various stages of development, and with differing competitive landscapes. Governments and infrastructure investors are prioritizing the asset class as parts of the world move toward recovery. But despite some attractive utility-like characteristics, we think fiber investment faces two key challenges compared to the economic predictability of traditional infrastructure: a lack of a mature regulatory framework and market exposure.

In the U.S., most fiber companies are local, non-wholesale players, directly competing for retail or enterprise customers. In large Tier I markets, they typically face pricing pressure with at least two competing independent providers: the LEC (local exchange carrier), and cable (either Comcast or Charter). Even Tier II and Tier III cities typically have no less than three players in the market. As a result, we assign a fair or weak business risk profile to most U.S. fiber companies.

In Europe, the majority of urban markets are similarly competitive. But even in rural regions with less competition, fiber lacks a track record of stable cost recovery and returns. We also question whether the fibercos have rate flexibility to deal with unexpected operating or investment costs if they have set offtake terms with retail telcos.

Absence of strong regulation

To profitably operate traditional utility networks, which can also be quite heterogeneous in terms of size and markets, a supportive regulatory framework is often key. Yet for fiber companies, such regulation is currently absent.
In the telecom sector, we often think of regulation as a challenge to profitability, particularly for a company with a dominant position and market power. Anti-monopolistic regulation typically seeks to promote a level playing field and limits excessive pricing to protect consumers and encourage competition.

Yet as with other types of infrastructure, regulation can play a critical role in whether a fiber company can recover costs and earn an economic return with a high degree of certainty, while maintaining a business model shielded from competition and disruption.
Instead of a framework to punctually recover all costs and earn a return, the examples of wholesale fiber regulation to date largely consist of setting maximum rates or co-investment rules. Such regulation doesn't provide a basis for the full recovery of new and expansion fiber or maintenance capital costs.

Of course, more supportive regulation could emerge from the COVID-19 pandemic, which has enhanced the strategic profile of telecom infrastructure in the eyes of many stakeholders. Indeed, given the societal benefits evidenced during the pandemic, government and regulators may reprioritize advanced telecom networks as a more strategic objective and therefore be willing to pursue frameworks that encourage investment. Regulation that gives better visibility and confidence in an economic return could support such goals.

Material market risk prevails

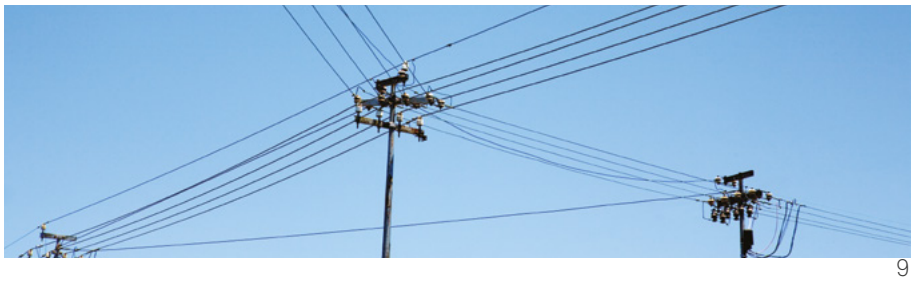
Alongside a lack of regulation, fiber companies are also exposed to material market risk in terms of take up, particularly in cases where there is competing infrastructure. Many fiber wholesalers – especially those operating in dense markets – are not monopolies and therefore face significant market competition from cable, copper, or even other fiber providers.

What's more, there is potential for competitive disruption over time from alternate forms of data transmission. Data can already be provided through fixed-line, mobile, and satellite alternatives to fiber today. 5G fixed-wireless access, in particular, has received a lot of attention. While we think the millimeter-wave mobile frequencies needed to truly compete with fiber performance face coverage and reliability challenges, it is nonetheless an example of a potential and evolving technology risk.

From a commercial perspective, with a more mature fiber asset, investment risk moderates and recovery of capital begins to recede as a rating concern. If the asset operates in a clear, circumscribed service market with high penetration, low competition, and effective economic barriers to entry, revenue visibility improves. This doesn't eliminate the possibility of customers downgrading to cheaper copper services. However, we believe the risk of churning away from fiber is more manageable than the risk of migrating to fiber in the first place – especially if copper phaseouts begin.

Further information is available in the research piece titled: "Credit FAQ: Telecom Fiber Sales: Limited Financial Benefits And Big Credit Questions".

"Fiber companies are exposed to material market risk in terms of take up, particularly in cases where there is competing infrastructure."



Europe's 2021 Air Passenger Traffic Likely To Stall At 30%-50% Of 2019 Level

Tania Tsoneva, Lead Analyst for EMEA Infrastructure and Rachel Gerrish, Sector Lead, EMEA Airlines, examine how airports and aviation have fared amid a resurgence of restrictions in Europe, and look ahead to the future of the sector.

"The rebound in European air traffic has been delayed and a more meaningful recovery will now have to wait until after the crucial summer season."

As the pandemic drags on into its second year, new travel restrictions implemented to curb the spread of what appear to be more contagious COVID-19 variants came as yet another blow to Europe's aviation industry. New rounds of lockdown measures eroded consumer confidence, putting our previous air traffic assumptions of a meaningful summer recovery in Europe at risk.

While the outlook for air travel remains uncertain, we currently forecast that European air passenger traffic (measured by revenue passenger kilometers, RPKs) in 2021 will recover to only 30%-50% of 2019 levels – and revenue will follow the same pattern. As in 2020, European air traffic is likely to underperform global air traffic in 2021, given the prevalence of international travel in the region. Indeed, according to the International Civil Aviation Organization (ICAO), nearly three-quarters of European passenger air traffic was international in 2019, compared with just 16% in North America.

Demand having understandably faltered, the rebound in European air traffic has been delayed and a more meaningful recovery will now have to wait until after the crucial summer season. This will fuel further cash burn and debt accumulation for European airlines and airports and could cause some downgrades.

Our revised traffic forecasts lead us to expect many European airports to post weaker ratios in 2021. Despite this, we have not changed our view of the shape and pace of recovery after 2022. We expect ratios to strengthen over the medium term as the recovery unfolds, especially for airports that have greater flexibility to manage cash burn and limit rising debt during the pandemic.

Most European airports have been downgraded since the start of the pandemic, which should limit the likelihood of further downgrades. However, all relevant ratings currently have a negative outlook or are on CreditWatch with negative implications. The airports most at risk are those with tight financial headroom, limited flexibility to preserve credit quality, and less favorable recovery prospects. That said, our rated European airports have robust liquidity positions and can take mitigating measures.

Recovery contingent on immunization, with low cost airlines expected to recover first

Nevertheless, there is evidence of a huge amount of pent up demand for travel. When travel corridors have opened during the pandemic, bookings have typically surged for certain destinations. We anticipate that the first to recover will be the low-cost and ultra-low-cost airlines and leisure carriers, which serve short-haul networks. Primary airport hubs and legacy carriers will take longer to recover because they rely more heavily on long-haul destinations and business travellers.

Vaccine roll-outs have created an encouraging path back to more normal levels of social and economic activity, and if the EU can accelerate production, we think it could achieve widespread immunization by the end of the third quarter, enabling air passenger traffic to recover more meaningfully later in 2021.

However, implementation is proving more complex than expected. Most EU countries got off to a slow start and the emergence of new variants has led to concerns over vaccine efficacy. Under our base-case scenario, we now expect the recovery of European air traffic to be weaker and slower in 2021 than we previously forecasted. Governments might, however, relax restrictions significantly once the more vulnerable demographic groups have been vaccinated.

For now, we still assume that air travel in Europe is unlikely to return to pre-pandemic levels until at least 2024. What's more, in the longer term, growth in the sector is likely to be slower than the 4%-5% per year we saw in recent decades. The pandemic has accelerated moves toward working from home and the use of digital technologies, which could have a lasting effect on demand for business travel. Companies are also likely to rethink their cost saving efforts to support a green agenda, which could depress demand further.

Further information is available in the research piece: "Europe's 2021 Air Passenger Traffic Likely To Stall At 30%-50% Of 2019 Level".

Diverging Credit Path For European Utilities

Pierre Georges, Sector Lead for EMEA Utilities, looks at the diverging path for European utilities amid a growing political commitment to the energy transition.

A year on from the start of the pandemic, European utilities are proving that that their business models remain resilient, having played a critical role throughout the crisis in spite of operating challenges due to lockdowns, with consequently lower power demand. This is thanks to the continued strengthening of activities in the sector in recent years, including a growing share of regulated networks and long-term contracted renewables.

Governments are now ambitiously aiming for a net-zero carbon economy by 2050, implying a huge push for renewables and other low-carbon energy solutions. Utilities have a unique role to play in reaching those goals, with many having prepared themselves over the past decade for a greener economy.

Despite this, not all European utilities have been able to accelerate this transformation due to political, geographic, or system constraints. As a result, we now see divergence across the sector in companies' ability to effectively seize the investment opportunities offered by new European policies.

Growing commitment

European utilities started to accelerate their transformation in 2016, when power prices crashed on the heels of lower commodity prices due to the development of U.S. shale gas – moving away from merchant-based and fossil fuel generation and growing into cheaper, greener, longer-term contracted renewables.

At the same time, governments have been making increasingly important commitments to the energy transition. European policies, for instance, have taken a significant environmental turn. The allocation of funds, higher targets for renewables, and ultimately, commitments to a net-zero carbon economy, all point to a much more favorable environment for utilities.

While competition increases and returns decrease from historically high levels, we see the risks associated with renewables as contained and manageable because technologies have matured, and these projects are still largely governed by long-term fixed or floored prices. We do see mounting risks from new entrants – in particular oil and gas players – but at this stage we believe utilities, as early movers in the renewables space, will maintain some degree of competitivity in a rapidly-growing market.

Cheaper financing fuels transformation

Certainly, improving financing conditions is a favourable element for the sector. This is particularly important since utilities are in a heavy investment phase. Debt capital is at historical lows in Europe, and we expect this trend to continue in the coming years. What's more, we see more favorable conditions stemming from European funds facilitating the energy transition, in particular in southern Europe, while the European Central Bank (ECB) favors sustainable finance transactions in its quantitative easing program.

However, as investment needs increase and remuneration declines, we do perceive a risk from the current disconnect between recently-adopted policies and the continued emphasis on affordability. We recognize that recent regulatory outcomes factor in the lower cost of capital. Yet, these lower outcomes may also reflect a harsher stance from regulators toward shareholders because network owners have offered generous dividend payments in the past years. As such, in some markets, lower remuneration could result in subdued investments.

Coal, gas and nuclear face uncertainty

We expect that European utilities will be willing to shut down their fossil fuel assets as environmental, social, and governance (ESG) pressures rise, and the economics become weaker for European coal and lignite assets. For gas being used in networks, which in a European context is viewed as a transition energy, we foresee generally stable and supportive regulatory frameworks in the coming decade, though investments in new gas-fired plants are becoming harder to come by. Meanwhile, the role of nuclear in Europe remains in limbo, with no decision yet about the position of the technology.

Ultimately, utilities most exposed to renewables and power networks will continue to perform better than those exposed to commodity-linked generation, retail, and supply or gas infrastructure – all less aligned with a net-zero carbon economy.

"Governments are now ambitiously aiming for a net-zero carbon economy by 2050, implying a huge push for renewables and other low-carbon energy solutions."

Further information is available in the research piece: "The Energy Transition And The Diverging Credit Path For European Utilities".

Brazil Faces Risks In Keeping Momentum In Its Ambitious Infrastructure Concessions Program

Julyana Yokota, Sector Lead for Latin America Infrastructure at S&P Global Ratings, evaluates the challenges facing the Brazilian government as it rolls out new round of auctions.

"...the proposed bill isn't President Andrés Manuel López Obrador's administration's first attempt to propose changes to the country's electricity law."

The Brazilian government sponsored a new round of infrastructure auctions aimed at attracting investment and improving the productivity of the economy, along with fostering economic recovery after the pandemic. The first batch of concession auctions, which commenced on April 7, consists of 22 regional airports, five port terminals, one highway and one greenfield railroad. Brazilian federal auctions pipelines for 2021 and 2022 include additional 30 airports, 5 ports, 15 ports terminals, and 11 roads (16,488km).

S&P Global Ratings doesn't expect this auction round to see massive participation from foreign sponsors, as they're still recovering from the pandemic's harsh economic effect. However, there's sufficient investor appetite for Brazilian infrastructure assets, given the country's still considerable infrastructure shortfall, ample liquidity, and Brazil's favorable regulatory framework. What's more, air, roadway, port, and railway traffic in Brazil has held up relatively well in 2020 and should experience a similar trend in 2021.

Near-term challenges could cause set-backs

Despite the success of previous concession auctions, the new round faces short-term issues. Brazil's economic outlook will largely be shaped by the pandemic's trajectory. The recession and large government support measures led to a record fiscal deficit and a significant surge in government debt in 2020, and currently, the country is facing the worst phase of the pandemic since its outbreak last year. As the pandemic and economic situations worsen, political tensions could grow and potentially undermine the approval of new reforms.

At the same time, the essential nature of the service provided by infrastructure assets has sustained their resilience during the pandemic, as demonstrated by the relatively small number of distressed exchanges and bankruptcy proceeding for the sector's global players in 2020.

The new concessions could also benefit from the ample liquidity in the capital markets and the inherently strong market position of these assets, which are typically monopolies in the areas that they serve. Furthermore, these concessions operate under a regulatory framework that we view as favorable and relatively stable, with a good track record of contract performance and regulatory oversight.

Further information is available in the research piece: "Brazil Faces Risks In Preserving Momentum In Its Ambitious Infrastructure Concessions Program"

Reform To Electric Law Deepens Challenges For Mexican Power Projects

Recently-proposed energy reform in Mexico could pose a threat to domestic projects, explains Daniel Castineyra, Director for Latin America Infrastructure.

On March 2, Mexico's Congress approved a reform of the country's electric law, prioritizing state-owned utility Comisión Federal De Electricidad's (CFE) power plants in the dispatch order for the Mexican electricity system and displacing renewables and private power plants.

In our view, this bill is part of the current administration's strategy to strengthen CFE's role in the electricity market and for CFE to become the main driver of the government's energy policy. While many uncertainties remain about how modifications will actually be implemented, we outline some of the risks to our rated portfolio and the country's electricity market that we think could arise from the law.

Potential effects on credit quality

The proposed new dispatch order in the system could affect our rated portfolio in different ways. Increasing curtailment risk could pose obstacles – though this risk would depend on the characteristics of the nodes where projects are located, which include energy supply and demand, CFE's capacity, and grid congestion. Additionally, we believe location could have implications for prices. It could negatively or even positively affect renewable projects that are able to dispatch right after CFE and could therefore benefit from higher merchant prices.

Of course, the proposed bill isn't President Andrés Manuel López Obrador's administration's first attempt to propose changes to the country's electricity law, with previous agreements suspended following legal disputes. In our opinion, the legislation could face additional legal challenges not only on the domestic front but also internationally because the new scheme would favor CFE above foreign investments, which could create inconsistencies with international trade agreements .

Further information is available in the research piece: "Proposed Reform To Electric Law Could Deepen Challenges For Mexican Power Projects"

China's Climate Ambition Restrained By Supply Security

Richard M Langberg, Head of Asia-Pacific Infrastructure, and Shaun Roache, APAC Chief Economist, look at the environmental implications of China's 14th five-year plan.

China's new five-year plan (5YP) sets a steady course towards decarbonization and the fulfilment of its Paris Agreement commitments. However, there were few new measures to speed up the macro rebalancing to consumption from investment that we think could cut put the economy firmly on the path to net zero emissions by 2040. Additionally, while specific energy targets, including the decline in energy intensity and fossil-fuel share, are in line with pre-COVID-19 trends, there was no increase in climate ambition.

We believe China's climate ambitions are being held back by its efforts to achieve supply-chain security in strategic sectors, including energy and technology. This could encourage more investments and manufacturing at the expense of consumption and services – thus hampering efforts to rebalance the economy.

Rebalancing is essential to decarbonization

Rebalancing, which entails a shift from heavy industry to light manufacturing and services and a complementary shift from investment to consumption, is central to China's decarbonization efforts. By changing the relative size of industries, the economy would naturally become less energy intensive. We have estimated that if private consumption's share of total spending rises from less than 40% to 55% of GDP over the next two decades, China's carbon emissions would fall by a third.

To meet this goal, the pace of rebalancing toward consumption would have to double over the next two decades. However, rebalancing has lost prominence in the new 5YP.

The latest blueprint omits a target for the share of services in total value added (or GDP). The government fell 1.5 percentage points short of its 56% target for the service sector share from the previous plan which ended in 2020. In addition, it no longer targets faster growth in household disposable income compared with GDP – an effective way of lifting consumption and demand for services, at the expense of investment and heavy industry.

Supply-chain risk mitigation prioritized

Why has rebalancing lost prominence? Our interpretation is that it has been deprioritized as supply-chain risk mitigation has acquired more importance. This will mean more policies that benefit industry, including tax credits, subsidies, and preferential access to credit. And we are already seeing evidence of this. The State Council has announced new tax deductions for investment spending by the manufacturing sector, while the central bank is targeting an increase in the share of loans to manufacturing firms.

Whether China can lift its manufacturing share of GDP – at the expense of services – while embarking on a credible path to net zero emissions remains to be seen, but there is a clear trade-off between economic structure and carbon intensity across countries.

Energy targets unambitious

To help mitigate climate change, the new plan targets reductions of 18% in carbon intensity and 13.5% in energy consumption per unit of real GDP over 2021-2025. S&P Global Platts Analytics believes that these targets indicate China will stay on its current trajectory to fulfil its Paris Agreement pledge to achieve peak emissions by 2030. As such, we see no ambition to quicken the pace of lowering emissions and the targeted path for energy and carbon intensity of GDP is consistent with a slow pace of economic rebalancing.

The 5YP neglected to include specific targets for coal – which currently accounts for around 80% of China's emissions. The most relevant energy-related target is an increase of non-fossil fuels in the primary energy mix to 20% in 2025 from about 16% in 2020. The plan was also silent on renewable energy capacity, so the latest goal we have is the commitment made by President Xi Jinping in December 2020 to achieve a minimum 1,200 GW capacity for both wind and solar power by 2030.

Will China under-promise and over-deliver? The government often sets binding targets at achievable levels and it has outperformed most of its past energy and climate-related goals. Renewables capacity is rising quickly. We would not be surprised to see some outperformance at the end of the current 5YP period in 2025. Overall, though, we believe that China has missed an opportunity to accelerate progress towards its commitment of net zero carbon by 2060.

More information can be found in the research piece titled: "China's Climate Ambition Restrained By Supply Security"

"We believe China's climate ambitions are being held back by its efforts to achieve supply-chain security in strategic sectors, including energy and technology."

Oil And Gas Producers Face Higher Industry Risks

Thomas A Watters, Sector Lead for North America Oil & Gas, and Simon Redmond, Sector Lead for EMEA Oil & Gas, evaluate the evolving nature of the risks facing the oil and gas sectors.

"As clean energy becomes an increasing part of the energy landscape, it poses a medium- to longer-term threat to oil and natural gas demand growth."

The ongoing energy transition, together with commodity price volatility, is increasing risks for oil and gas producers amid concerns over weaker profitability in the sector. To factor these trends into our ratings, in January, we revised our industry risk assessment to moderately high risk (4) from intermediate risk (3).

We revised the industry risk for the oil & gas exploration and production (E&P) industry in part because of the increased environmental threat posed by greenhouse gas emissions, evolving government policies and emission standards, and the rising role of renewables in the energy landscape supported by its cost-competitiveness.

We believe the structural changes for fossil fuels result in increasing product substitution and growth trend risks. Another driver behind the change is the heightened investor demand to focus on environmental, social and governance (ESG) principles, which may make future market access more challenging. We believe that, as clean energy becomes an increasingly important part of the energy landscape, it poses a medium- to longer-term threat to oil and natural gas demand growth – even if we think the energy transition will be spread over several decades.

Strategic announcements made in 2020 and earlier by BP, Shell and Total, for instance, were a direct response to the energy transition and the increasing risks and uncertainties for oil and gas producers as a result of governments' and consumers' concerns and actions on greenhouse gas emissions. Moreover, average returns on capital for the industry have been declining over the past decade. This reflects both high historical development costs and generally lower, more volatile prices, which we believe may persist.

We see these factors as more material for ratings now than they were previously. As a result, we placed our ratings on nine companies and their subsidiaries on CreditWatch with negative implications earlier this year and revised the outlooks on two ratings to negative. Subsequently, we lowered ratings on Chevron, ExxonMobil, Imperial Oil, Royal Dutch Shell, Total, ConocoPhillips and Canadian Natural Resources as CreditWatch status was resolved.

These actions affected some of the highest ratings in our oil and gas portfolio, especially given these companies bear the burden of sustaining the strongest credit quality in the face of the evolving industry risk profile. Our view is that the challenges the sector faces are more important for these ratings, at this point, than the precise strategic adaptations and choices the companies make. Additionally, overall, we do not see materially different dynamics for producers of oil compared with gas in part as both are fossil fuels.

Further information is available in the research piece: "S&P Global Ratings Takes Multiple Rating Actions On Major Oil And Gas Companies To Factor In Greater Industry Risks".

The Hydrogen Economy: Hot Air Or Future Reality?

Massimo Schiavo, Director, Infrastructure, and Karl Nietvelt, Global Head of Analytics and Research for Infrastructure Ratings, take a sector-by-sector look at the potential of clean hydrogen to drive decarbonisation across the economy.

Hydrogen is often regarded as a key component of the energy transition. However, determining whether it will be widely adopted over the next two decades is contingent on several key factors. Among them, supportive net zero policies, a steep decline in production costs from electrolysis and policy support – including a broad push towards renewables – will play a crucial role.

Transitions take decades, and current methods of production present setbacks. Grey hydrogen – produced via the steam reforming of fossil fuels – currently represents the primary source of hydrogen on the market, but it is incredibly carbon intensive. Green and blue hydrogen, on the other hand, offer lower-carbon alternatives, with green being produced via the electrolysis of renewables and blue offsetting emissions through carbon capture and storage (CCS). Yet cost continues to present a major challenge, with green hydrogen production costs unlikely to be competitive with grey and blue hydrogen before 2030.

Hydrogen could fuel a cleaner future

Despite this, we believe hydrogen has strong potential. The industrial gas sector is likely to be one of the first to benefit from the move toward a hydrogen economy given its established logistics capability along the hydrogen chain. Indeed, the top three industrial gas companies each already earn about US$2 billion in revenue from hydrogen business annually, and the rising need for cleaner hydrogen could bring substantial growth.

To capture the potentially higher outsourcing demand, leading industrial gas players would have to make large investments in blue and green hydrogen facilities – with some already involved in pilot projects that could come on stream by 2030. Existing end markets, such as oil refining and chemicals, will also be among the early adopters of hydrogen.

In addition, hydrogen is likely to be highly complementary with the natural gas industry. We believe that green and blue hydrogen could provide oil and gas majors diversification opportunities amid increasing pressure from investors and regulators.

Meanwhile, in the U.S., where there is ample carbon dioxide (CO_2) storage availability by way of depleted oil and gas reservoirs, blue hydrogen could have long-term potential for oil and gas producers, assuming supportive future zero-carbon policies. In contrast, Europe's regulatory environment appears to prioritize green hydrogen over blue, pushing European oil and gas producers to focus more on renewables.

Of course, in terms of power generation, hydrogen is still far from competing with gas on cost. However, it could play an important role beyond 2030 in providing storage and firm back-up power as the share of renewables increases, and if policies seek to decarbonize the power grid further.

For vehicles and steel, a hydrogen future is still far off

In the automotive sector, we expect hydrogen to play a limited role in decarbonizing global light-vehicle mobility this decade. Despite concerns about their range and durability, battery electric vehicles currently offer far superior energy efficiency than hydrogen fuel cell vehicles. Despite this, beyond 2030, the phase-out of combustion engines, scarcity of materials for battery manufacture, and government policies could support hydrogen as an alternative decarbonization technology for light vehicles.

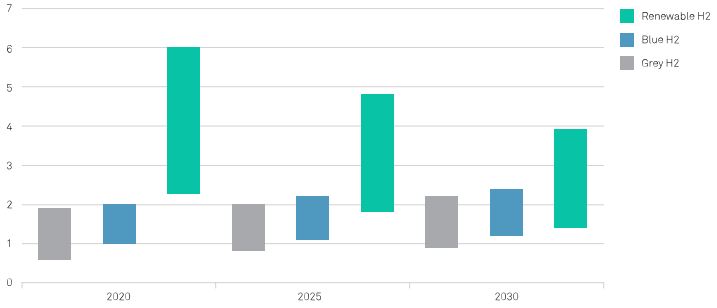
For heavy trucks and commercial vehicles, there could be some potential for hydrogen this decade given weight and range considerations and tightening CO_2 emission targets in the EU from 2025. Some manufacturers have cautiously established exploratory joint ventures and partnerships to explore hydrogen's potential.

In harder-to-abate sectors such as steelmaking, we believe that hydrogen is also set to play only a limited role in the coming decade. Net zero commitments across the globe imply that steel must eventually be fully decarbonized, but using hydrogen to do so would be extremely costly, and the sector's profitability has been weak for years. In our view, hydrogen will likely only be part of a solution beyond 2030 if net zero carbon policies provide sufficient incentives. A more likely route to reduce emissions in the sector may be through process improvements and a shift to electric-arc furnaces.

Further information is available in the research piece: "The Hydrogen Economy: Hot Air Or Future Reality?"

> "The industrial gas sector is likely to be one of the first to benefit from the move toward a hydrogen economy given its established logistics capability along the hydrogen chain."

Hydrogen Cost Development For Different H2 Technologies
Real €/kg H2



H2--Hydrogen. Sources: Hydrogen Council, HIS, IEA

U.S. Battery Storage Approaches Inflection Point

Aneesh Prabhu, Sector Lead for North America Unregulated Power, explores why power storage systems may be the missing piece in the energy transition – and why large-scale deployment may soon be on the cards.

Battery power storage solutions have long been regarded as complementary to renewable energy, which now occupies an increasingly prominent part of the U.S. energy mix. Yet as technology advances and costs continue to decline, battery storage could now be on the verge of assuming a larger role in the U.S. power sector.

Batteries have enjoyed strong growth over the past five years, with global installed capacity increasing at a 25% compound annual rate. But the same growth has so far failed to materialize in the U.S., which had just 25 gigawatts (GW) of power in storage at the end of 2020 – a number that pales in comparison to the total renewables already on the grid.

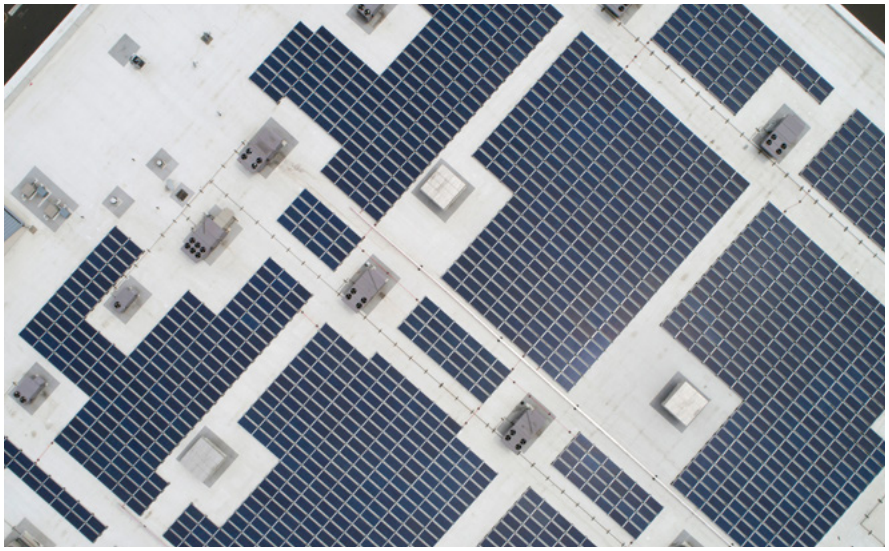
"S&P Global Platts Analytics expects the U.S. storage market to increase nearly nine times in 2020-2023."

In the same five-year period, the U.S. has installed just over 1 GW of new battery storage installation, a third of it in the Pennsylvania-Jersey-Maryland (PJM) Interconnection and a quarter in the California Independent System Operator (CAISO) region. However, the technology's potential is now attracting significant investor interest and from 2024 onwards, we expect total capital investment in North American battery storage to exceed US$3bn annually.

Impetus for expansion

S&P Global Platts Analytics, an affiliate of S&P Global Ratings, expects the U.S. storage market to increase nearly nine times in 2020-2023 – fuelled largely by advanced battery energy storage – with cumulative deployment approaching 10 GW by 2024.

State targets and support schemes – including utility procurement through integrated resource planning processes – will be an important factor driving this growth.



Seven states, including California and New York, are now targeting a total of 11GW of battery deployment by 2036. Additionally, the continually declining cost curve – fuelled by lower capital costs for storage and declining PV solar installed capital costs – and the potential for revenue stacking will remain key to achieving a positive return on investments.

The versatility of technology is also a key advantage, and the growth of storage solutions to economical peak-shifting four-hour applications will play an important role in encouraging adoption. In certain markets, battery costs have declined sufficiently to compete with gas-fired peaking generation – for example, we estimate that a utility scale battery solution would currently cost around US$1,250-US$1,300/kW, which is comparable with the cost of building a gas-fired peaker plant in California.

The missing piece of the puzzle

While the declining cost of battery storage is certainly a strong argument for its adoption, its complementary role in improving the economics of solar power generation is, in our view, more compelling. Indeed, given batteries would provide the much-needed firming that solar power needs, we think large-scale co-located solar plus storage deployments are now imminent, which would be a gamechanger for the power industry.

Solar power generation is interruptible, and all solar units produce energy at the same time. As such, as the grid continues to add to solar installed capacity, daytime reliability issues are mitigated so effectively that the remaining reliability challenges move into the evening hours. This consequently diminishes the marginal effectiveness of adding more solar plants – unless battery storage systems are able to store energy and deliver it to the grid when most needed.

In addition to offering a firm power product, adding storage has meaningful up-front benefits from qualifying for investment tax credits (ITCs). Storage effectively doubles the capital costs of a solar project, 26% of which can then immediately attract ITC benefits and also avail modified accelerated cost recovery system depreciation. Together with declining PV solar installed capital costs, as well as lower operating and maintenance requirements, the falling cost of storage should result in a significant uptake in solar plus storage in the years to come.

Further information is available in the research piece: "Going With The Flow: The Competitiveness Of Battery Storage Economics In the Power Sector".

Vistra Corp.

On April 29, 2021, we downgraded Vistra Corp to 'BB' from 'BB+' following revised estimates of the financial costs from the winter storm that swept Texas in February.

Following the storm, leverage increased over $3.0 billion as Vistra temporarily funded payments it had to make from revolver draws, a newly raised 364-day term loan A, and monetization of future capacity payments.

Vistra's higher leverage results in the downgrade as we expect adjusted debt to EBITDA to lag expected financial measures through 2022. We now expect adjusted debt to EBITDA of about 3.5x, instead of the 2.8x the company reported at year-end 2020. We do not expect leverage levels to start declining until Summer 2022, unless Vistra reprioritizes debt reduction from winter 2021-2022 cash flows.

We will reassess the company's business risk profile (BRP) once ERCOT reforms are implemented.

More information can be found on Capital IQ in the ratings updates titled:
"Vistra Corp. Downgraded To 'BB' From 'BB+'; Outlook Stable; Debt Rating Actions Taken"

Georgia World Congress Center Authority

On March 25, 2021, Georgia World Congress Center Authority (GWCCA) priced $227.395 million hotel project revenue bonds series 2021A to fund the construction of the Signia by Hilton in Atlanta, Georgia. We assigned the series a 'BBB-' rating, reflecting our view of the construction and operations phases of the project.

The construction phase entails a relatively simple construction task of a typical high-rise building with no complex structures by a very experienced construction contractor. The operations phase reflects the hotel's dependence on Atlanta's cyclical and competitive hospitality market to attract transient guests and Georgia World Congress Center's (GWCC's) ability to attract group bookings as well as our view on the current and potential enduring impacts of the COVID-19 pandemic.

The stable outlook reflects our expectation that the project will complete construction on time and within budget. In addition, we view there is adequate liquidity in place to sustain delays up to our construction downside scenario.

More information can be found on Capital IQ in the ratings update titled:
"Geo. L. Smith II Georgia World Congress Center Auth Series 2021A Revenues Bonds Rated 'BBB-'"

Heathrow Airport

On March 4, 2021, we took our 'BBB+' Class A issue ratings and 'BBB-' Class B issue ratings for Heathrow Airport off CreditWatch, where we placed them on a negative outlook on Sept. 30, 2020, and affirmed them.

Stringent restrictions on international travel across European countries will result in Heathrow's passenger numbers totalling about 40% of 2019 levels in 2021, which is lower than we previously expected.

We think the U.K. aviation regulator, the Civil Aviation Authority (CAA), will take a balanced approach that will support Heathrow Funding Ltd.'s (HFL) financeability. We therefore believe the regulatory framework in the period starting January 2022 should remain supportive and transparent.

The negative outlook reflects that we could downgrade HFL's debt by one notch if traffic levels are worse than we forecast, or the H7 regulatory package is such that the company cannot achieve weighted average FFO to senior debt of at least 7% and weighted average FFO to total debt of 5%.

More information can be found on Capital IQ in the ratings updates titled:
"Heathrow Funding Class A 'BBB+' And Class B 'BBB-' Ratings Taken Off CreditWatch Negative And Affirmed; Outlook Negative"

Ratings Updates

Energias de Portugal

We upgraded Portuguese electricity utility Energias de Portugal (EDP) to 'BBB/A-2' on March 16 2021 amidst stronger metrics. EDP has taken various actions since July 2020 to significantly strengthen its balance sheet, which have resulted in better than expected cash flow and leverage metrics.

We view EDP's new strategic plan, which focuses on materially improving financial leverage while accelerating growth in lower risk renewables and regulated networks – with an ambitious €24 billion aggregate investment target over 2021-2025 – as positive.

The stable outlook reflects our expectations that EDP's funds from operations (FFO) to debt will remain above 19% and debt to EBITDA close to 4.0x in 2021, improving to above 20% from 2022.

More information can be found on Capital IQ in the ratings updates titled:
"Portuguese Electric Utility EDP Upgraded To 'BBB/A-2' On Stronger Metrics; Outlook Stable"

Ratings Updates

ACI Airport Sudamerica

On Jan. 20, 2021, we lowered our debt rating on ACI Airport Sudamerica S.A.'s (ACI) notes to 'CCC' from 'B-' on eroding liquidity concerns.

We expect ACI's capital structure to weaken and the risk of the notes' default in 2021 to rise due to a weaker-than-projected air traffic recovery through 2024.

The negative outlook incorporates our view of greater uncertainty over the air traffic recovery in 2021 and 2022, which could further pressure the project's ability to keep costs under control. This is compounded by already tight liquidity given that the debt service coverage ratio (DSCR) will be below 1x in 2021 and 2022 and the debt service reserve account (DSRA) for ACI's Series 2020 notes won't be funded until November 2022.

More information can be found on Capital IQ in the ratings updates titled:
ACI Airport Sudamerica Debt Rating Lowered To 'CCC' From 'B-' On Eroding Liquidity, Outlook Remains

National Grid PLC

On March 2, 2021, we downgraded National Grid PLC to 'BBB+' from 'A-' following Ofgem's final determination for the regulatory period starting April 1, 2021. While National Grid will largely accept the regulator's final determination, it is appealing the allowed return and the outperformance wedge. It plans to embark on a substantial capital expenditure (capex) plan while only marginally changing its dividend policy.

We expect National Grid's financial metrics to weaken below the level expected at the previous rating and do not expect the appeal to make a significant difference to revenue.

The stable outlook indicates that the group's operations will remain sizable and diversified and we expect National Grid to maintain funds from operations (FFO) to debt at about 12%; above the 10% downside trigger for the current rating.

More information can be found on Capital IQ in the ratings updates titled:
National Grid PLC Downgraded To 'BBB+' On Weaker Metrics Following Ofgem Final Determination; Outlook Stable

Adani International Container Terminal Private Ltd

Adani International Container Terminal Private Ltd. (AICTPL), a container terminal operator based in Mundra, Gujarat, has issued a US$300 million senior secured fixed-rate 10-year bond to refinance its existing loans. On February 3, 2021, we assigned our 'BBB-' long-term issue rating to the bond, reflecting AICTPL's minimum debt service coverage ratio (DSCR) of 1.23x and average DSCR of 2.22x.

The stable outlook reflects our expectation that AICTPL's satisfactory competitive position, proximity to India's industrial hinterland, and multiple debt reserves will allow the company to maintain a minimum DSCR of at least 1.23x over the tenor of the debt.

More information can be found on Capital IQ in the ratings updates titled:
Adani International Container Terminal Private Ltd.'s Debt Assigned 'BBB-' Rating; Outlook Stable

North Queensland Export Terminal

On March 21 2021, we lowered our issue credit rating on North Queensland Export Terminal Pty Ltd's (NQXT) debt to 'BB-' from 'BB+' to reflect the increasing refinancing risks associated with the project, difficulty in accessing markets, and potentially higher borrowing costs for the project.

Near-term liquidity risks remain as we believe the refinancing of the upcoming maturity is not going to proceed. Beyond the imminent liquidity risks, refinancing risks and borrowing costs associated with the project have increased. We believe widening of credit margins could remain a persistent feature for future refinancing, owing to ESG-related considerations over coal assets in general as well as this project itself.

The negative outlook continues to reflect increasing uncertainty as to the nature and timing of future refinancing plans as well as borrowing costs.

More information can be found on Capital IQ in the ratings updates titled:
North Queensland Export Terminal Rating Lowered To 'BB-' On Refinancing Risks; Outlook Negative

Eletrobras

On March 12, 2021, we affirmed our 'BB-' global scale issuer credit and issue-level ratings on Centrais Elétricas Brasileiras S.A. (Eletrobras) and affirmed our 'brAAA/brA-1+' national scale ratings.

In February, Brazil's President, Jair Bolsonaro, issued a provisory measure, MP 1031, aiming to accelerate the privatization of Eletrobras. We view the issuance of MP 1031 as a sign that the government views Eletrobras's privatization as a priority for 2021. Although the administration expects the provisional measure to be approved, we believe political obstacles remain high, as seen in more than 500 amendments Congress has proposed to MP 1031.

The stable outlook on Eletrobras reflects our view that even if the likelihood of receiving extraordinary government support further diminishes as the privatization advances, the company's Standalone Credit Profile (SACP) will remain unchanged.

More information can be found on Capital IQ in the ratings updates titled:
Eletrobras 'BB-' And 'brAAA/brA-1+' Ratings Affirmed On Renewed Government Drive For Privatization, Outlook Still Stable

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