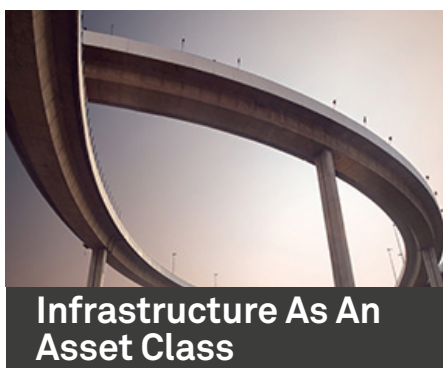


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California Wildfires



Energy Transition

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Editorial Welcome: Achieving Decarbonization Targets Will Not Be An Easy Task

Karl Nietvelt, Head of Global Infrastructure & Utilities Research

“Price affordability will become an increasing focus as the roll-out of renewables and transition away from oil and gas will come at a cost.”

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While the economic outlook improves, the challenges presented by the energy transition continue to mount. The worst of the COVID-19 pandemic appears to be behind us, even if regional infection dynamics and related policy responses continue to underpin relative economic outcomes. However, as the economy recovers, global energy markets are rattled by supply-demand tightness with oil prices reaching \$80/bbl (up from \$65/bbl on average in H1), European gas prices soaring to \$28/mmBtu, and U.S. gas prices exceeding \$6/mmBtu. At the same time, Chinese thermal coal prices have jumped 50% over the last 3 months (to more than CNY1400/te ~ \$216/te). This illustrates the limited alternative renewables currently on offer in an economy that remains anchored in hydrocarbons.

New ambitious 2030-2035 global policy objectives show the challenge ahead to double installed renewables electricity generation sources this decade. To achieve the EU’s 2030 “Fit for 55” carbon reduction objectives, Europe will need to add 45-55GW of renewable electricity generation capacity per year this decade, materially up from the 30GW added in 2020. Similarly, if implemented, President Biden’s U.S. clean energy framework, which targets a full decarbonization of the national power market by 2035, would require renewable capacity additions to double to 30GW per year over 2021-2025 (from 15GW in 2020), and then double again to 60GW over 2026-2030. As for China, its big five central power generation groups have announced it will add 75-80 GW of total renewables capacity during the current Five-Year plan (2021-2025), more than double the pace of growth in the preceding period.

Baseload power needs are growing increasingly important, as greater reliance on volatile renewables may aggravate security of supply. Although the current spike in power prices is driven first and foremost by a steep rise in commodity prices, it has also fueled the discussion of the role of renewables in the energy system and the need for dispatchable power. This has been exacerbated by recent unexpectedly low wind levels in some countries, leading to power outages in North East China and triggering a need to switch to higher-emitting coal-fired electricity generation in the UK.

Policies will need to focus on how to incentivize and price dispatchable power and leave sufficient time for existing gas--or in the case of China, coal--generation to provide much needed system balancing peak-load capacity, especially when the share of renewables in the power mix starts to exceed 50%. Replacing the last 20% of gas or coal-fired power in a system (say by 2035-2045) will be the hardest as it requires effective energy storage, such as hydrogen, batteries, or new

investments in nuclear--all of which are very expensive by today’s standards.

Price affordability will become an increasing focus as the roll-out of renewables and transition away from oil and gas will come at a cost. Amidst record power prices, Spain has just put in place pricing caps and claw-backs on escalating power, gas and CO2 prices. This shows the political sensitivity of keeping energy prices affordable, but also increases regulatory uncertainty that may ultimately reduce utilities’ appetite to make the needed investments to decarbonize the energy system. Consequently, this reinforces the importance of continued cost decreases in renewables in order to meet the 40% reduction target by 2030. However, this is not a given--especially at a time when commissioning costs for solar photovoltaic and onshore wind plants will increase respectively by up to 10% and 8% this year, according to S&P Global Platts Analytics, on the back of higher prices of raw materials.

Changing consumer behavior will be equally important. In July, the International Energy Agency estimated that about 55% of energy-related emissions reductions needed to achieve net zero by 2050 would be “linked to consumer choices such as purchasing an electric vehicle, retrofitting a house with energy efficient technologies or installing a heat pump” powered by electricity. A key question is how intrusive policies will become, as people’s behavior may be difficult to alter. A clear example of this is the recovery of global domestic air traffic, which has bounced back to 85% of 2019 levels on average (vs a mere 26% for international). Domestic U.S. business travel only recovered to 40% of pre-pandemic levels, according to one major U.S. airline, and a full recovery of this segment seems unlikely given environmental considerations and a tendency towards remote meetings.

Long-term policy goals vs the need for near-term action. To achieve a 2-degree trajectory, almost all energy end-use sectors would need to cut annual emissions by 6% by 2025 relative to 2019, compared to an actual 3% projected increase by 2025 under S&P Global Platts Analytics’ reference scenario. For example, the electric power industry would need to reduce the amount of carbon it puts into the atmosphere by 7% by 2025, compared to 2019 (vs a 3% projected increase), while road transportation emissions would need to decline by 1% (vs a 4% projected increase). With economic recovery the priority, the road to achieve carbon reductions will not be an easy one.

Renewables Require A Huge Ramp-Up While Facing New Hurdles

Analysts: Pierre Georges, Sector Lead, EMEA Utilities; Aneesh Prabhu, Sector Lead, North America Unregulated Power; and Bruno Brunetti, Head of Low Carbon Electricity, S&P Global Platts Analytics

The European Commission's "Fit for 55" package targets accelerating decarbonization in the EU by 2030 while creating 10 million tons per year of green hydrogen supplies. To achieve this, Europe will need to add between 45 gigawatts (GW) to 55GW of renewable capacity per year this decade (20GW-30GW per year for solar and 25GW for wind) up from 30GW added in 2020 (20GW of solar and 10GW of wind). Similarly, President Biden's U.S. clean energy framework, which targets a full decarbonization of the national power market by 2035, would require annual renewable capacities doubling to 30GW per year over 2021-2025 (from 15GW in 2020) and doubling again to 60GW over 2026-2030. While government support packages will facilitate this major shift, we see a number of challenges ahead for renewables.

Cost inflation could threaten the pace of renewables growth. Renewable energy production costs are showing their first deviation from the expected long-term decline of about 40% on average by 2030. S&P Global Platts Analytics estimates that commissioning costs for solar photovoltaic plants will increase up to 10% this year, and that the cost of offshore and onshore wind projects will rise 4% and 8% respectively by the end of 2021. The increases stem from higher prices of raw materials-- such as copper, aluminium, and steel--that are used for solar and wind plants, and are causing setbacks to both manufacturing and new-build activity. Additionally, bottlenecks in shipping are contributing to the high-cost environment by making it more difficult to procure materials. If the surge endures, it could throw into question the anticipated gradual decline in production costs and slow the pace of growth.

Record high energy prices may weaken policy support. Furthermore, spiking gas, carbon, and power prices, particularly in Europe, are putting social challenges, such as energy affordability, under the spotlight (see "The Energy Transition And What It Means For European Power Prices And Producers: September 2021 Update," published Sept. 17, 2021, on RatingsDirect). Although coal is increasingly being retired

as part of the energy mix in Europe and the U.S., utilization of the residual operational coal capacity is increasing at a time when decarbonization efforts are stepping up. While initiatives such as "Fit for 55" in Europe and the Biden's clean-energy plan in the U.S. support decarbonization, the social implications of rising power prices could result in waning political support and give way to political and social backlash. As such, we see policy risks on the rise for power producers.

Supply chain reliability and revenue prospects add uncertainty. Meanwhile, renewables supply chains are already struggling to keep up with the required pace of development. In addition, revenue cannibalization risks--the exposure to power prices in the absence of regulatory floor prices or long-term power purchase agreements (PPAs)-- remain a concern for renewable power plants in the longer term. This is because power market fundamentals will alter substantially if and when zero-marginal-cost renewables become the dominant price setters, even if current short-term power prices clearly provide a great incentive to build plants.

Risk of intermittent supply will need to be addressed. Renewables such as wind and solar cannot produce energy around the clock, and given thinning spare capacity margins and extreme weather events, we see an increasing risk of blackouts and need for dispatchable power--that is, power sources that can be turned on and off on demand. As such, intermittency risk will become another key factor to look at when it comes to the renewable energy market's growth prospects. To mitigate this risk and meet net-zero ambitions, renewables growth will need to be accompanied by solutions that boost system reliability (batteries/power storage, transmission upgrades, demand-side response, carbon capture, utilization and storage, as well as hydrogen in the very long term). As the share of intermittent generation increases, carbon-free dispatchable power will become even more relevant, including nuclear.

“Spiking gas, carbon, and power prices, particularly in Europe, are putting social challenges, such as energy affordability, under the spotlight.”



'Fit For 55' Supports European Utilities' Energy Transformation

Analyst: Pierre Georges, Sector Lead, EMEA Utilities

The European Commission's "Fit For 55" package aims to bring the EU's climate, energy, transport and taxation policies in line with its goal of cutting greenhouse gas emissions by at least 55% by 2030 (compared with 1990). The plan includes a range of regulatory and sectoral targets, incentives for creating technological disruption, and other policy instruments to decarbonize the economy and enable change at the consumer level.

To achieve this, the package relies on four distinct pillars:

- Higher carbon pricing in the EU through the extension of the existing Emissions Trading System market to include the shipping sector;
- Wider sectoral decarbonization targets;
- An increase in the production and use of low-carbon fuels in the building and mobility sectors; and
- A focus on the mobilization of funds to stimulate innovation and mitigate social impact.

The "Fit For 55" package demonstrates that the EU has chosen to pursue decarbonization by dramatically shifting its energy mix. Under the plan, electrification would increase to 30% of the final energy demand by 2030 and 57% by 2050, from just 25% today. As such, we expect to see significant growth in demand

for electricity, primarily from 2030, which will likely support high power prices in the long run. That said, forecasting power prices remains extremely tricky given that by 2030, two-thirds of generation may come from zero- or low-marginal-cost renewables, which could actually depress the average power price.

To support this growth, investments will need to significantly pick up--both in terms of producing renewables and--on the network side--to connect and distribute this new capacity. In addition, investment in the infrastructure that will accompany low-carbon mobility, such as charging stations and network abilities, will need to see a considerable boost to support these developments.

We see the European utilities sector as already in a phase of high innovation, and expect this will intensify as the world looks for new ways to transform and lower the costs of the energy transition. We anticipate the "Fit for 55" package will support utilities by providing clearer policies on how and where to invest in the energy transition. Additionally, we expect to see an increase in equity raising and hybrid capital to support investments. As such, while we anticipate a significant mobilization of capital, we currently do not anticipate credit quality deteriorating for this sector.

“We see the European utilities sector as already in a phase of high innovation, and expect this will intensify as the world looks for new ways to transform and lower the costs of the energy transition.”

The Oil And Gas Sectors Reckon With Net-Zero Prospects

Analysts: Thomas Watters, Sector Lead, U.S. Oil & Gas; Elena Anankina, Lead Analyst, EMEA Utilities; and Simon Redmond, Sector Lead, EMEA Oil & Gas

Europe is leading the charge in transforming ambitious net-zero goals into specific plans with measurable implications. As part of the "Fit for 55" package, which outlines the EU's future energy policy, the European Commission published its plans for a carbon border adjustment mechanism in July 2021. Some oil and gas majors, including BP and Eni, have taken note and declared their intention to become energy companies rather than just oil and gas companies, by moving to broader strategies and setting targets to increase the share of renewables in their portfolios.

In the U.S., oil and gas majors are now making similar commitments to reduce greenhouse gases. Companies such as Chevron and Exxon Mobil, for instance, are focusing on carbon sequestration to reduce their carbon footprints. Even small, independent producers have begun including dedicated

carbon emission sections in their investor presentations, outlining the actions they are taking to reduce their carbon footprints. The transition is gathering pace, but brings headwinds for oil and gas producers. In many cases, this has prompted increased consolidation, with merger and acquisition (M&A) activity ramping up across the sector, especially for independent U.S. producers. Relentless investor demands to reduce debt, generate free cash flow, and return profits in the form of dividends or share purchases are also contributing to consolidation pressure.

And while developed markets put their decarbonization strategies into action, many emerging markets will continue to rely on hydrocarbons to sustain economic growth. Globally, roughly 800 million people do not yet have access to electricity. The energy transition also needs to take their demands for affordable power into account.

U.S. Regulated Utilities Grapple With Weak Financials And High Spending Needs

Analysts: Gabe Grosberg, Sector Lead, North America Regulated Power; David Bodek, Sector Lead, U.S. Public Power; and Michael Ferguson, Analytical Manager Sustainable Finance Americas

The Biden Administration has made its intention to promote the energy transition clear, declaring commitment to a series of ambitious targets, including carbon neutrality for the electricity sector by 2035 and for the entire country by 2050. President Biden's \$3.5 trillion plan, which will soon be put to vote in the Senate, and should boost investments in power grids further.

This spending bill is in addition to the recently-announced \$1.0 trillion Bipartisan Infrastructure Framework that focuses on rebuilding roads, bridges, outdated water infrastructure and public transport, and broadband access to address social inequalities. The infrastructure plan also seeks to increase the resilience of transmission infrastructure in the wake of February's Hurricane Uri and other extreme weather events, which are becoming more frequent and severe due to climate change. Additionally, given the Biden Administration's targets for electric vehicle (EV) development--which would see EVs make up 50% of all new cars sold in the U.S. by 2030--we expect the infrastructure framework will focus, at least in part, on investment in EV charging infrastructure (3%).

These policy initiatives occur at a time when U.S. investor-owned utilities have already stepped up capital expenditure pertaining to the energy transition. Spending for regulated electric, gas, and water utilities stood at an all-time high of more than \$160 billion in 2020. This continues to shrink entities' financial cushions, which were already low and partly explains why

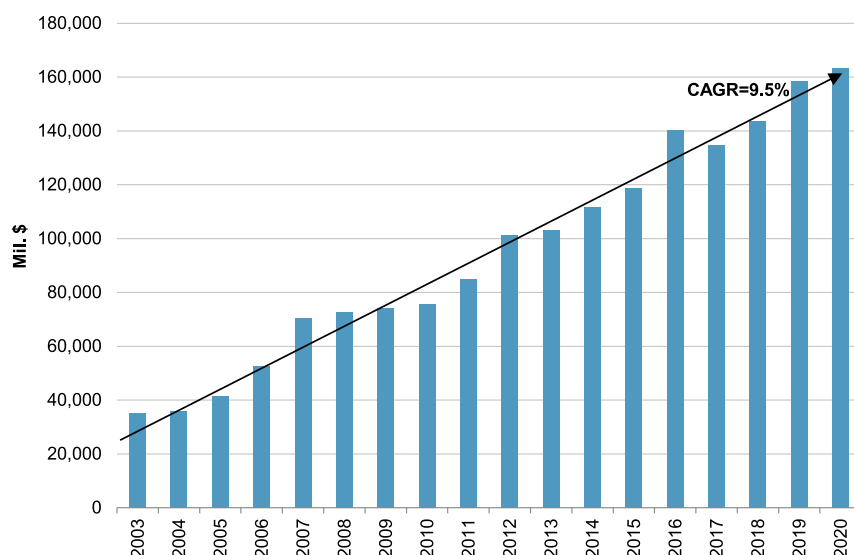
roughly 30% of our ratings on U.S. regulated utilities carry a negative outlook. To offset some of these rising credit risks, utilities have issued common equity, hybrid instruments, sold minority interests in their subsidiaries, and sold noncore assets--including the recent sale of many higher-risk midstream assets.

Meanwhile, S&P Global Ratings' outlook on not-for-profit public power and electric cooperative utilities remains stable overall, bearing in mind their ownership and ability to pass through costs. Costs have so far been manageable as coal retirements pave the way towards a move to gas, and purchase power agreements with wind and solar offtakers are taking place at a measured pace.

Over the next decade, we expect the pace of coal retirements will accelerate in the U.S. In the past decade, the power industry was able to reduce its carbon emissions by about 25% because coal closures were primarily replaced by natural gas-fired generation, which emits about half the carbon of coal. Over the next decade, we expect that the power industry's carbon emissions will reduce by about 40% as coal plants will be mostly replaced with renewables and batteries. While we expect some increase in natural gas-fired generation, this increase will be modest, in our view, and used primarily to bridge any fuel gaps.

“Over the next decade, we expect that the power industry's carbon emissions will reduce by about 40% as coal plants will be mostly replaced with renewables and batteries.”

North American Regulated Utilities' Capital Spending - Electric, Gas, And Water



CAGR--Compound annual growth rate. Source: S&P Global Ratings.
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Airports Face Long Delay To Global Recovery

Analysts: Philip Baggaley, Sector Lead, US Transportation; Julyana Yokota, Sector Lead, Latin America Infrastructure; Izabela Listowska, Lead Analyst, EMEA Transportation

Airports, airlines, services companies and travelers still have a long wait until global air traffic returns to normal. So far, the recovery has proven to be uneven by region, and uncertainty regarding a spike in COVID-19 cases from the delta variant is clouding the industry's prospects. We believe the long-anticipated air traffic recovery may be pushed well into 2022 or later, particularly if intercontinental travel remains subdued, vulnerable as it is to pandemic-related restrictions and sluggish business travel.

The U.S.' large domestic market is buoying air traffic. The resurgence of domestic air travel--which normally accounts for 75%-80% of total air traffic in the U.S.--accelerated throughout the second quarter (Q2) of 2021, leading to a strong summer for airlines and airports. In July, pent-up demand for holidays and leisure travel pushed U.S. air traffic to almost 85% of pre-pandemic levels. This momentum is likely to taper off in Q4 due to the industry's typical seasonality, alongside an increase in COVID-19 cases that appears to be affecting bookings, according to recent data.

Nonetheless, the rebound in traffic and billions of dollars in direct federal support have stabilized U.S. airport operators' credit profiles. This resulted in a return to stable outlooks for the majority of operators we rate in March 2021, and positive outlooks for a few not-for-profit airports in recent weeks. Similarly, our ratings on U.S. airlines now carry stable or positive outlooks, although they remain one to four notches below pre-pandemic levels.

As we expected, business travel and intercontinental flights--which generate a disproportionate share of traffic by revenue passenger kilometers (RPKs)--have not fared as well. Data from some American airlines show that business travel passenger numbers stood at roughly 40% of pre-pandemic levels at the end of Q2. Business travel faces additional vulnerability, since some companies' shift to virtual meetings may become permanent.

Passenger numbers in Europe may barely reach 30% of 2019 levels. Across the Atlantic, Europe's lack of a large domestic aviation market, cross-border restrictions, emergence of COVID-19 hotspots, and slow vaccination rollouts mean that air travel is trailing far behind the U.S. IATA data from May 2021 indicates that air travel across Europe slumped to just 15% of the pre-pandemic level before a modest increase to 23% in June.

Nevertheless, we saw some improvement during the summer. In July, certain rated European airports registered 40%-50% of pre-pandemic volumes as vaccination rates progressed and

the EU's Digital COVID Certificate made crossing borders smoother. Should this trend continue, average air traffic volumes may reach 30% this year, which is at the bottom of the 30%-50% range we forecast in February.

Almost all of our ratings on European airports carry negative outlooks after being lowered by one to two notches in 2020. A key credit consideration for our ratings in the sector is liquidity, which overall remains sound and critical in bridging the gap to a longer-than-expected recovery. We expect air travel should gain momentum in 2022, when European traffic is set to recover to 72% of 2019 levels from 50% this year, according to aviation advocate Eurocontrol's projections.

Asia-Pacific won't see a smooth broad-based air travel rebound. The domestic market in China bounced back quickly and almost reached pre-pandemic levels in July 2021. Yet vaccination rates have been relatively low across Asia, and many governments have adopted a risk-averse approach to the pandemic, with some pursuing a strategy that involves restricting travel to minimize virus transmission, notably in view of the delta variant.

Vaccine rollouts have been slow in Australia, but are speeding up and should approach 70% by the end of October. However, domestic traffic slid in July to 25% of pre-pandemic numbers, after getting to 50%-70% in June. In contrast, New Zealand's airports have seen domestic traffic return to 80%-90% of pre-pandemic levels due to shorter, targeted lockdowns over the past year. The trans-Tasman travel bubble has been tested many times and the surge in traffic observed under quarantine-free conditions suggests that there is still a propensity to travel once the pandemic subsides.

Latin American airports aren't recovering at the same pace. The Mexican and Caribbean markets also benefited from the summer upturn, seeing a strong recovery as U.S. residents opted for destinations closer to home for their annual vacations. This translated into a recovery in July 2021 to 80% of the 2019 level, which is much stronger than 56% for Brazil's domestic air traffic in the same period.

Air travel growth in the region also contributed to the return to a stable outlook for our rating on the airport in Dominican Republic. Recovery prospects also allowed Panama's airport to complete a liability management exercise that shifted the maturity of its notes to 2061. On another positive note, during the peak of the pandemic in 2020, only two issuers globally undertook distressed debt exchanges: Argentina-based Aeropuertos Argentina 2000 and Uruguay-based ACI Airport Sudamerica S.A.

“The long-anticipated air traffic recovery may be pushed well into 2022 or later, particularly if intercontinental travel remains subdued.”

Wildfire Risks Continue To Threaten Credit Quality For Californian Utilities

Gabe Grosberg, Sector Lead, North America Regulated Power, looks at how California's utilities are faring amidst worsening wildfires.

The 2020 California wildfire season was among the most destructive on record, burning over 4 million acres and damaging or destroying 10,000 structures. Yet compared with previous years, a relatively small percentage of the destruction was directly attributable to California's investor-owned utilities (IOU) or public power utilities (POU). We believe this is, in part, a reflection of the efficacy of the utilities' updated wildfire mitigation plans.

California's environment remains highly prone to catastrophic wildfires, a fact which continues to pressure utility credit quality. Based on our analysis of the 2020 season, it appears California's utilities have demonstrated improved operational performance, which could indicate a gradual and sustained operational improvement. Notably, we believe that the use of public safety power shutoffs (PSPS), in addition to the deployment of advanced technologies and system hardening – such as undergrounding or cover conductors – are becoming effective tools for California's utilities to more predictably avert causing a catastrophic wildfire, which we view as supportive of credit quality. A PSPS event is when a utility proactively deenergizes power lines in areas facing elevated wildfire conditions.

Worsening conditions

Leading up to the 2021 wildfire season, California received below-average rainfall for the second consecutive year, creating drier-than-normal conditions. This increases the susceptibility that a smaller wildfire may grow into a catastrophic wildfire. We view high wind conditions, combined with combustible fuel, as the primary catalysts for wildfires attributable to utility equipment because high winds can push trees and broken limbs into power lines, and they can also dislodge energized wires. Similarly, drier-than-normal vegetation conditions can exacerbate the potential for catastrophic conflagrations and are indicative of a worsening environment, which can potentially increase the severity of fires.

We also believe that the duration of the wildfire season may be growing, increasing the chance of a catastrophic wildfire occurring. For example, during the 2020 wildfire season, the first PSPS event occurred in May 2020 and the final PSPS event occurred in January 2021, indicating that wildfire season can be as long as nine months. For the 2021 wildfire season, Southern California Edison Co. (Edison) experienced a PSPS event as early as April 2021, indicating that the 2021 wildfire season may also be a prolonged one.

Technology strengthening operations

Despite worsening climate conditions – and Pacific Gas and Electric and Edison being linked to smaller 2020 wildfires – none of the IOUs were responsible for a catastrophic wildfire in the 2020 season. As such, we believe California's IOUs demonstrated operational improvement during the 2020 wildfire season (in line with the 2019 wildfire season) which we believe to be related to their effective use of the PSPS tool. Furthermore, because of the increased use of advanced technologies, the utilities have improved and are continuing to strengthen their analytics to identify when and where a fire is more likely to begin. That said, we continue to monitor the 2021 wildfires, including the Dixie Fire, whose cause has not yet been determined but has burned for more than two months, caused a fatality, damaged or destroyed more than 1,400 structures, and is still not fully contained.

Additionally, none of the 2020 wildfires were attributable to POU assets. During 2020, POUs continued to refine their respective wildfire mitigation plans and were able to avoid causing wildfires during another dry and hot season with several wind events.

Ratings unlikely to improve

We expect it will take upwards of three to five years for all utilities to fully implement their wildfire mitigation strategies. In the meantime, risks associated with catastrophic wildfires continue to weigh to varying degrees on our ratings on California's IOUs and POUs, which remain exposed to onerous liability claims under the state's inverse condemnation doctrine-- whereby a Californian utility can be financially responsible for a wildfire if its facilities were a contributing cause of a wildfire, irrespective of negligence.

For IOUs and POUs, because we view the likelihood of a change to California's interpretation of inverse condemnation as remote, and favorable climate change patterns are also unlikely to emerge for a state with a long history of drought conditions, we are unlikely to raise ratings for utilities with meaningful wildfire-related risks in the near term. Over the longer term, higher ratings could occur if further credit-supportive legislation is passed that provides for additional credit enhancements such as an automatic replenishing mechanism for the wildfire fund.

“Risks associated with catastrophic wildfires continue to weigh to varying degrees on our ratings on California's IOUs and POUs.”

Further information is available on the Capital IQ portal in the research piece: "How Are California's Wildfire Risks Affecting Utility Credit Quality?"

Atlantia And Autostrade per l'Italia Plan A Divorce

Stefania Belisario, Lead Analyst, EMEA Infrastructure, discusses the credit implications of Atlantia's decision to part ways with its largest subsidiary.

“Although the ASPI concession has not been terminated, Atlantia's dispute with the grantor is leading to a settlement that includes the disposal of a core business for the parent company.”

The costly dispute over the concession under which the Morandi bridge in Genoa was operated, before it collapsed in August 2018, may be approaching resolution. On June 10 2021, Atlantia SpA's board of directors accepted the latest binding offer submitted by the consortium led by state-owned Cassa Depositi e Prestiti (CDP) for the acquisition of Atlantia's subsidiary Autostrade per l'Italia SpA (ASPI), the bridge operator.

Given the close relationship between CDP and the Italian government, we believe the government has incentives to conclude a settlement agreement with ASPI, which is a condition to the closing of the sale.

Following the bridge's collapse, S&P Global Ratings lowered its long-term ratings on Italy-based ASPI and its parent Atlantia by five notches to 'BB-', based on the risk that the ASPI concession could be terminated or renegotiated on conditions that are more unfavourable for the operator. However, upon news that CDP's offer has been accepted, we have raised our long-term ratings on Atlantia and ASPI by one notch to 'BB' with a positive outlook.

While, to date, we have equalized our ratings on ASPI and Atlantia based on the strong financial and operating ties between the two, following the disposal, we expect to separate the two ratings. Indeed, we no longer consider ASPI as a strategic subsidiary of Atlantia and we assigned it a 'bb' stand-alone-credit profile (SACP).

As per the economic and financial plan due to be approved by the grantor, ASPI's concession framework will move to a regulated-asset base (RAB) model, which could offer ASPI more protection than its French and Spanish peers, particularly in case of downside scenarios (such as traffic decline). Nevertheless, remuneration of new investments will reduce to 7.09% (compared to 13.87% on existing assets) and steep rises in maintenance spending will weigh on metrics in the coming years. The timing of the settlement agreement is not certain but the disposal long stop date is set on March 31, 2022. We expect for a time that ASPI's exposure to legacy risk from the collapse of Genoa bridge will continue, although it is too early to estimate the outcome

of ongoing criminal investigations and it will take time to assess the effectiveness of internal governance changes.

Legacy risk could also weigh on our rating on Atlantia. The ASPI disposal agreement contains a risk-sharing mechanism for potential indemnities from criminal and civil claims between Atlantia and ASPI's new shareholders. The disposal proceeds of €8 billion, as per the binding offer, would more than outweigh Atlantia's current gross external debt (€3.5 billion as of June 30, 2021). This would help Atlantia to pursue growth opportunities and potentially provide return to shareholders.

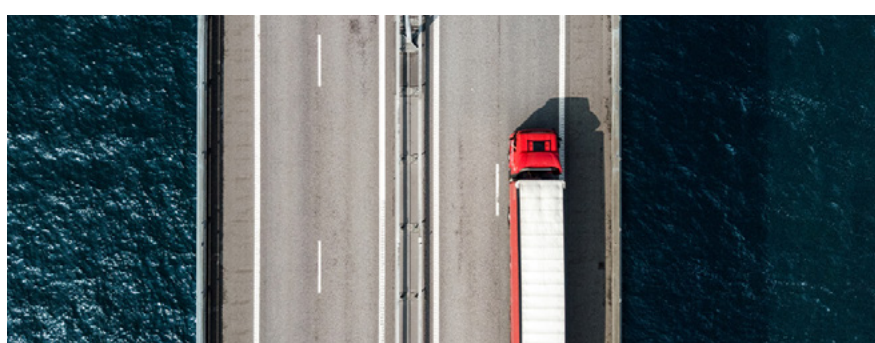
Governance and regulatory risks remain

Even though it accounted for less than 1% of ASPI's revenue, the Genoa bridge collapse has had significant ramifications. These included direct costs to rebuild, tariff forbearance, and an increase in maintenance expenditure, leading to a €3.4 billion total settlement amount with the grantor. For Atlantia, the collapse led to a stipulation that it dispose of its subsidiary. The adverse consequences highlight the heavy weight of governance and regulation on concession-based infrastructure operators.

The collapse also prompted the government to increase its scrutiny of and focus on maintenance and safety. Although this is positive for the long-term balance of risks between the public and private parties, these actions have direct material financial effects on Italian toll road operators. For example, in the aftermath of the collapse, the Italian grantor did not approve any increases in annual tariffs for operators that had not delivered the maintenance included in their economic and financial plans (PEFs).

In this case, although the ASPI concession has not been terminated, Atlantia's dispute with the grantor is leading to a settlement that includes the disposal of a core business for the parent company. ASPI had been the largest cash flow contributor to Atlantia's group and, until August 2018, was one of Atlantia's most important sources of dividends.

When it disposes of ASPI, Atlantia will lose a strategic asset that represents 52% of the total Italian motorway network. Spanish subsidiary Abertis Infraestructuras S.A. will become the largest source of dividends, and we estimate its contribution to EBITDA in Atlantia's consolidated accounts will increase to about 70%-75% from 50% in 2019. Meanwhile, subsidiary Aeroporti di Roma SpA will marginally increase its contribution to about 10% from 8%, based on 2019 figures.



Further information is available on the Capital IQ portal in the research pieces: "Moving On: Atlantia And Autostrade per l'Italia Plan A Divorce" and "Atlantia, ASPI, And Aeroporti di Roma Upgraded By One Notch On Approved Sale of ASPI; Outlook Positive"

Asia-Pacific's Energy Transition Will Be A Marathon, Not A Sprint

Abhishek Dangra, Sector Lead, South and South East Asia Infrastructure, and Parvathy Iyer, Sector Lead, Australia and New Zealand Infrastructure, examine the progress of key markets across the APAC region with regards to decarbonization and climate targets.

The energy transition is firmly underway in key Asia-Pacific markets, but the pace and degree of change will vary sharply across the region. A dependence on fossil fuels will likely prevail for decades, even as renewables play an ever-larger role in power generation mixes. Indeed, currently, over 60% of electricity in the region is generated from fossil fuel-based plants and given the growing demand for power, coal will remain highly relevant in large APAC markets such as China and India for the next ten to thirty years.

Certainly, we expect coal-fired generation emissions will continue to increase in the region. Coal-fired capacities are relatively young (below 20 years) and provide the base load in most Asian countries, and new coal plants are still under construction in some markets. However, even though absolute demand for coal will rise, the share of coal in the generation mix should trend down towards 40% by 2040, with a halt in the introduction of new plants in most markets by 2030. Consequently, the transition from coal in APAC will be far slower than observed in the U.S. and Europe, where coal already makes up just 25% of the energy mix.

Wind and solar are likely to be the fastest-growing power sources in the region, given policy support, market preference, and advances in technology. The declining cost of renewable energy, together with the rise of cost-efficient storage solutions, will be crucial for the region's transition. Growing environmental, social and governance (ESG) risks for fossil fuel companies and an increasing global consensus for climate action could also expedite the shift.

Targets and policies diverge

With regards to climate targets, China may under-promise but over-deliver, while India may well do the opposite. China has set near-term energy and climate-related targets until 2025 which should be achievable even at the country's current pace of decarbonisation. On the other hand, its pledge to see emissions peak by 2030 and achieve carbon neutrality by 2060 is bold given that the country is the world's largest emitter and is likely to see continued growth in energy demand.

Meanwhile, India is set to miss its 2022 emission targets due to delays in new capacity additions and the imposition of duties on imported panels. And with a growing economy and rising population, India will require further additions to keep up with power demand and to resolve persistent blackouts and reliability issues. Nevertheless, renewables remain competitive in India, and the country has set a target of 450GW, or 60% of capacity, to come from renewables by 2030.

In contrast, New Zealand, which targets net zero carbon emissions by 2050, is comparable to Scandinavian countries due to its extensive use of hydroelectric and geothermal plants. The island nation plans to derive 95% of its power needs from renewable energy by 2025 and 100% by 2030. New geothermal and wind projects are already underway to displace the existing thermal units used mainly for reliability needs.

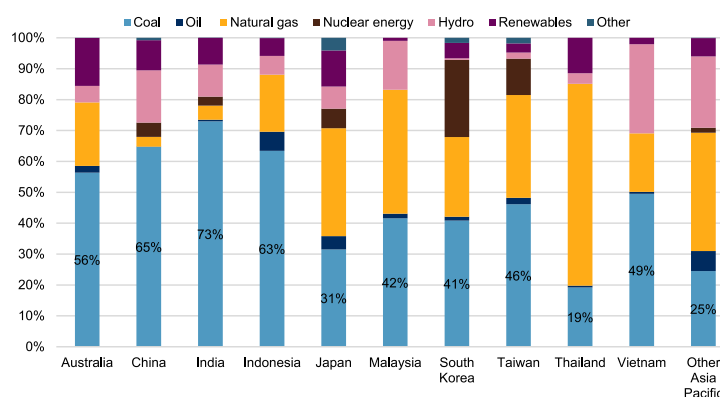
Across the region, carbon policies are still evolving. Most markets have supportive policies for renewables, but limited policies to discourage the use of coal. While China has rolled out a successful emission trading system, Australia has become limited by a lack of clear long-term federal policies, which has had an impact on investments. However, in the past year most Australian states have set their own emissions targets and have identified renewable zones to increase green power. Meanwhile, in Indonesia, policy serves as a hindrance to the energy transition as subsidized electricity prices and a requirement for renewables to be priced at 85% of current grid prices discourage investment in renewable energy.

Access to funding is shrinking for fossil fuel majors, while a rush for green finance is enabling renewable energy companies to raise funds at attractive prices. Renewables alone are not enough for a smooth transition, however. A mix of solutions is needed--including energy savings and transition financing--to allow coal-fired generation to get cleaner before a long-term clean baseload solution is implemented. Industry estimates indicate that China will need to invest well over \$9 trillion to achieve its energy transition goals by 2060, while India requires \$500 billion in investments over the next decade and Indonesia \$41 billion over the next five years.

“Most markets have supportive policies for renewables, but limited policies to discourage the use of coal.”

Further information is available on the Capital IQ portal in the research piece: "Energy Transition In Asia-Pacific: A Marathon, Not A Sprint"

Electricity Generation By Source (2019)



Source: IEA, World Bank Data.
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ESG Concerns Present Growing Challenges for North American Energy Companies

Michael Grande, Sector Lead, US Midstream explores how environmental, social and governance concerns are adding to a complex risk environment.

S&P Global Ratings has recently observed contracting bond tenors and widening spreads for North American oil and gas debt issuers relative to those of European peers, suggesting investors' growing focus on environmental, social and governance (ESG) credit risk may be affecting demand for new issuance from oil and gas companies. Indeed, based on recent issuance, funding costs were about 75 basis points (bps) higher on average for most carbon-intensive borrowers from the North American energy sectors when compared with those with the lowest carbon intensity.

Yet despite investors' growing ESG mandates creating less favourable financing conditions for the energy sector, bond market investors' appetite for new paper was more than sufficient for investment-grade North American oil and gas issuance to reach a new high in 2020.

ESG factors moving front and centre

Recent shareholder actions have clearly demonstrated the growing importance of ESG factors for U.S investors, with increasing calls for greater environmental disclosure, the acceleration of emissions reduction goals and clearer strategies for dealing with the energy transition. At ExxonMobil Corp.'s annual meeting, for instance, shareholders elected three of the four board nominees put forward by hedge fund Engine No.1, aiming to transform the way the company is handling the risks of climate change.

What's more, several banks have exited or scaled back their exposure to the exploration and production reserve-based lending market--in part due to poor returns--with several of the largest banks already restricting financing to exclude funding for projects in the Canadian oil sands and Arctic drilling regions.

In 2020, reserve-based lending facilities of speculative-grade U.S. issuers shrunk by more than 20% on average. While this was, in large part, due to the collapse in oil prices, bank appetite for the sector remains weaker. While we believe that poor returns and higher recent default rates are primary factors, ESG considerations and the expedited timeline of the energy transition could also limit credit

availability. Certainly, if banks continue to exit from, or reduce exposure to, the U.S. oil and gas sector, the reserve-lending market is set to face higher lending rates, stricter leverage thresholds and more restrictive terms.

The path to cleaner energy investment

While, at first glance, it might appear that the upstream industry is the main focus of ESG stakeholders, it is far from their only priority. In addition to addressing environmental and social issues, the midstream industry counts oil and natural gas producers as key customers. As such, companies must strike a balance between their traditional businesses and low-carbon energy pursuits.

In reality, petroleum and natural gas will remain a significant part of U.S. energy consumption for years to come. Yet we anticipate midstream companies will make low-carbon investments and reduce their carbon footprint in the upcoming years. For instance, TC Energy Corp. recently issued a non-binding request for information to identify investment opportunities in wind energy that could generate up to 620 megawatts of zero-carbon energy to electrify a portion of its U.S. pipeline assets.

With industry headwinds increasing, how the midstream industry pivots to cleaner energy while sustaining its traditional business will be a key factor for credit ratings. The existing midstream infrastructure was built to support the expectation of higher levels of production and end-user demand, which is under threat, and might result in lower profits when rates and fees are negotiated in the future.

Moving forward, how companies address these challenges will be paramount to our view of industry creditworthiness. In our view, credit risk for energy companies is rising. This has already led to negative ratings actions and could hamper credit rating upside. On the other hand, many energy companies have publicly committed to continued debt reduction, which, if executed, could temper the potential adverse effects of evolving industry risks in the near term.

Further information is available on the Capital IQ portal in the research piece: "The Energy Transition: ESG Concerns Are Starting To Present Capital Market Challenges To North American Energy Companies".

“Recent shareholder actions have clearly demonstrated the growing importance of ESG factors for U.S. investors.”



Naturgy Energy Group S.A.

On August 8, we revised our outlook on Naturgy Energy Group S.A. to stable from negative and affirmed our long-term 'BBB' issuer credit rating on the company. The decision followed the publication of Naturgy's 2021-2025 strategic plan, which provides clarity on the group's medium-term growth and strategic direction.

A key difference from the previous strategic plan is that Naturgy is now committing to preserve its 'BBB' rating. The company aims to maintain a funds from operations- (FFO) to-debt ratio trending toward 20% by 2025. In addition, Naturgy is rebalancing its dividend policy to €1.20 per share over the strategic plan, with the flexibility to revise it depending on the plan's progress from 2023. We understand this commitment as the company being ready to scale back dividends to preserve FFO to debt above 18%.

On Aug. 4, 2021, the Spanish government approved IFM Investors' offer to acquire up to a 22.7% stake in Naturgy. We assume there will be no material changes to Naturgy's strategy from the takeover offer because IFM would, at most, acquire a non-controlling stake and we understand Naturgy's board unanimously approved the strategy.

The stable outlook reflects our expectation of an acceleration in organic renewables growth, which we expect to be increasingly contracted and will enhance Naturgy's earnings quality. In addition, it captures our view that Naturgy's commitment to a 'BBB' rating entails a flexible dividend policy and will translate into a funds from operations (FFO) to debt ratio sustainably above 18%.

More information can be found on Capital IQ in the ratings update titled: Naturgy Energy Group Outlook Revised To Stable From Negative on Clarified Strategic Direction; 'BBB' Rating Affirmed

Air Baltic Corp. AS

On August 31, we placed Latvia's government-owned Air Baltic Corp AS's 'B' rating on Creditwatch Negative in light of mounting liquidity risk.

Air Baltic's liquidity has been eroded due to the delayed recovery in air passenger traffic, and the airline is currently dependent on sufficient and timely government support to meet its short-term financial commitments. Following the €250 million recapitalization of Air Baltic in July 2020, the Latvian government has agreed an additional €90 million of state aid, which is subject to European Commission (EC) approval. On a stand-alone basis, we consider the airline's capital structure unsustainable.

Our 'B' long-term issuer credit rating on Air Baltic continues to include two notches of uplift from the 'ccc+' stand-alone credit profile (SACP), based on our unchanged view that there is a moderately high likelihood that the

Latvian government would provide extraordinary financial support if needed. We also rate the company's unsecured debt 'B'.

We are placing all our ratings on Air Baltic and its debt on CreditWatch negative, indicating that we could lower them, potentially by more than one notch, if the EC does not approve the proposed equity injection by the Latvian government, which is needed, according to our base case, to avert Air Baltic's liquidity shortfall. We note that government aid in a form other than equity may trigger a breach of the debt incurrence covenant set under the airline's outstanding €200 million senior unsecured notes due 2024. We aim to resolve our CreditWatch as soon as we have clarity on the company's future liquidity position.

More information can be found on Capital IQ in the ratings updates titled: Latvia's National Carrier Air Baltic Corp AS 'B' Rating Placed On CreditWatch Negative On Mounting Liquidity Risk

SAS AB

On April 29, 2021, we lowered our long-term issuer credit ratings on Scandinavian airline SAS AB to 'CCC' from 'B-' based on the risk of a liquidity shortfall.

Since the completion of its recapitalization plan, SAS AB's liquidity has deteriorated markedly, with the cash position depleting by Swedish krona (SEK) 5.5 billion within the first quarter of the fiscal year ending Oct. 31, 2021.

We think the company faces a potential liquidity shortfall because its ongoing liquidity restorative

measures may not compensate for the cash burn from persisting weak air traffic demand, and we now consider SAS' capital structure unsustainable.

The negative outlook reflects the likelihood of a potential liquidity crisis over the next 12 months in the absence of unforeseen positive developments.

More information can be found on Capital IQ in the ratings updates titled: Scandinavian Airline SAS AB Downgraded to 'CCC' From 'B-' On Risk Of Liquidity Shortfall; Outlook Negative

TAP Air Portugal

On August 11, we announced that Portuguese national carrier Transportes Aereos Portugueses, SGPS, S.A.'s (TAP Air Portugal) 'B-' rating remains on CreditWatch Negative, pending clarity on state aid approval.

Tap Air Portugal's liquidity has been eroded by the sluggish recovery of European air traffic, which has forced it into continuous cash burn and constrained its creditworthiness. The Portuguese government has applied for, but not yet received, EU approval to offer additional state aid to TAP Air Portugal. On a stand-alone basis, we consider the airline's capital structure unsustainable.

Our 'B-' long-term issuer credit ratings on TAP Air Portugal and its core operating subsidiary Transportes Aereos Portugueses, S.A. (TAP) continue to include two notches of uplift because we still expect the Portuguese government to extend financial support to the airline if needed. All ratings remain on CreditWatch negative, indicating that we could lower them, potentially by more than one notch, if TAP Air Portugal does not receive approval for state aid.

More information can be found on Capital IQ in the ratings updates titled: Transportes Aereos Portugueses 'B-' Rating Remains On CreditWatch Negative Pending Clarity On State Aid Approval



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