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22 March 2021

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CLIENT SERVICES

Infrastructure & Project Finance – Asia

Growth of Asian infrastructure companies will strengthen in 2021 but pace will vary

Infrastructure sectors in Asia, many of which were resilient in 2020 (with the exception of airports), will grow at different paces in 2021, supported by a rebound in economic growth and government stimulus. Most transportation companies will continue to benefit from increasing traffic and throughput but airport operators face a long road to recovery. Utilities will benefit from improving energy demand and the ongoing expansion of renewable energy. Policy-led infrastructure spending may weigh on infrastructure companies' leverage, partly offset by potentially higher recurring fiscal support, ample funding and already strong market positions. Our analysis focuses on rated infrastructure companies in China (A1 stable), Korea (Aa2 stable), India (Baa3 negative), Indonesia (Baa2 stable) and Malaysia (A3 stable).

» **Economic growth and government stimulus will drive growth.** Economic growth in most Asian countries will rebound in 2021, which will fuel an improvement in the operating performance of rated infrastructure companies. Government stimulus measures will add further support as they increase infrastructure spending to power their economies, supporting demand and employment in the wake of the coronavirus.

» **Mixed recovery for transportation in Asia.** The recovery of China's toll road sector will gather pace in 2021 because of the continued improvement in traffic volume. In South and Southeast Asia, the recovery will be uneven, depending on the success of containment of the pandemic, as well as the recovery of economic activity. Rated port operators were relatively less affected by the pandemic in 2020 and will benefit from an improvement in trade in 2021. Recovery for airports is more uncertain in 2021, especially those with a high reliance on international travelers. Public spending in transportation sectors is likely to remain high or increase in 2021, especially road networks.

» **Power utilities will benefit from demand recovery in 2021; renewable energy will expand.** Increased electricity demand in 2021 will be positive for the credit quality of power companies in Asia. Carbon transition will remain a key focus in Asia's power sector, and renewable energy will continue to expand in view of governments' commitment to decarbonize and also because of the improving competitiveness of renewable energy.

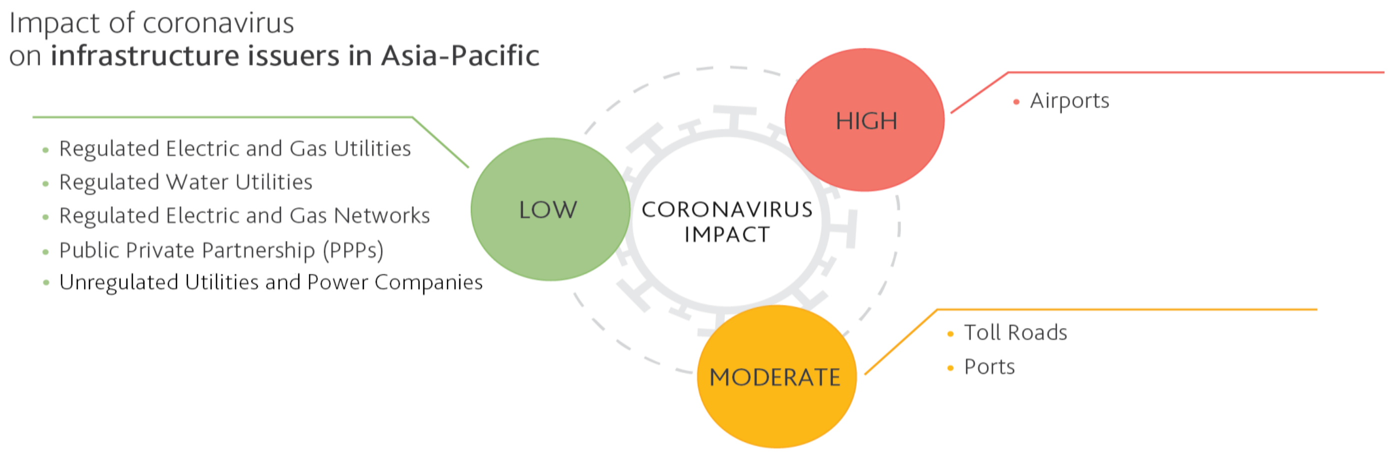
» **Cash flow will improve for rated issuers in 2021; Large capital spending will negatively impact leverage.** Operating cash flow for infrastructure companies in Asia will improve in 2021 from the trough last year, although the extent of recovery will vary. We expect most infrastructure companies to maintain a substantial level of capital spending, driven by fiscal stimulus and government mandates. The leverage of most rated infrastructure companies, particularly transportation companies, is likely to remain high.

Economic growth and government stimulus will strengthen performance of Asian infrastructure companies in 2021

The operating performance of Asian infrastructure companies will continue to improve in 2021 from the coronavirus pandemic and the economic downturns caused by the associated disruptions. However, improvement pace will vary among companies.

In fact, the majority of our rated infrastructure companies face low risk exposure to the disruption from coronavirus, particularly when compared to nonfinancial companies. This is because these issuers are mainly in sectors that provide essential goods and services or have cash flow protected from volume risk, such as regulated utilities (Exhibit 1).

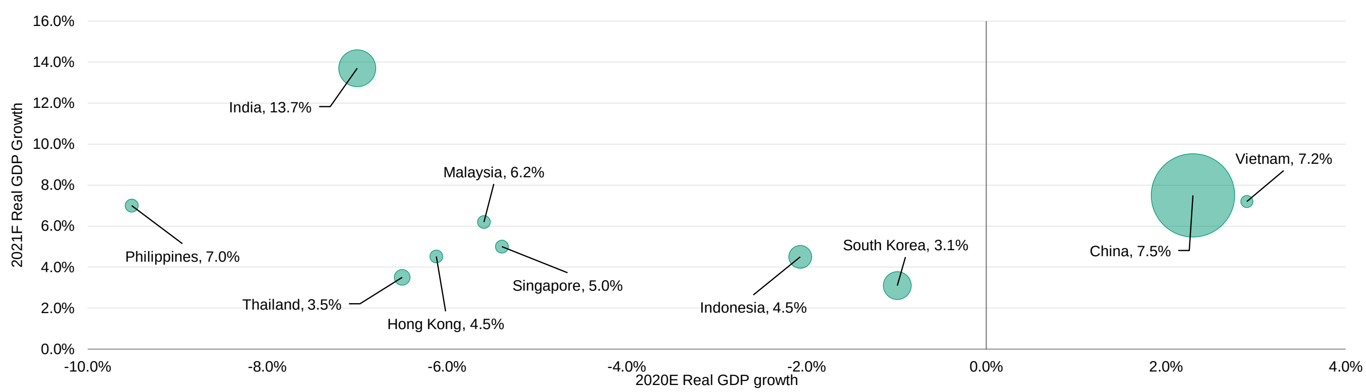
Exhibit 1
Rated infrastructure companies face low risk exposure to coronavirus pandemic



Source: Moody's Investors Service

We expect economic growth to rebound strongly in most Asian countries in 2021 (Exhibit 2) as day-to-day activity continues to resume and economic disruption subsides amid ongoing pandemic management.

Exhibit 2
Rebound in economic activity will drive the improvement of Asian infrastructure companies



Bubble size represents countries' nominal GDP in 2019; Data labels (percentage) represent 2021 real GDP growth forecast.
India's annual real GDP growth is shown in fiscal years.
Source: Moody's Investors Service

China and India will register the strongest rebound in GDP growth in 2021 — 7% and 13.5%, respectively, from 2.3% and -7.2% in 2020 (See Global Macro Outlook 2021-22 (February 2021 Update): G-20 economies will return to growth in 2021 but recovery will not be uniform, 23 February 2021).

The economic rebound in the region will fuel the improving operating performance of infrastructure companies in Asia. Particularly, most of the rated issuers are dominant market players in their respective industries. Nevertheless, the pace of economic recovery and effectiveness of pandemic management will differentiate the prospect of infrastructure companies across the region.

State of pandemic across the region

Pandemic management in a number of economies across Asia, such as China, Korea, Singapore (Aaa stable), and Vietnam (Ba3 positive), has been effective, and many day-to-day activities have resumed, thus helping to offset the economic disruption (Exhibit 3).

Exhibit 3

New infection rates have decreased in many Asian countries

	Number of new cases per week									Percentage change of new cases over previous week								
	January 2021					February 2021				January 2021					February 2021			
World ('000)	3,175	3,754	3,591	3,128	2,853	2,426	2,048	1,872	1,986	5%	18%	-4%	-13%	-9%	-15%	-16%	-9%	6%
India	78,838	72,948	76,246	67,911	65,394	56,694	54,552	60,798	74,129	-31%	-7%	5%	-11%	-4%	-13%	-4%	11%	22%
Philippines	5,934	6,045	8,956	9,310	7,794	7,969	7,990	7,882	10,158	-24%	2%	48%	4%	-16%	2%	0%	-1%	29%
China	391	402	792	947	601	255	170	106	127	-5%	3%	97%	20%	-37%	-58%	-33%	-38%	20%
Indonesia	37,905	42,990	54,392	57,354	62,533	56,540	44,022	45,831	44,213	8%	13%	27%	5%	9%	-10%	-22%	4%	-4%
South Korea	4,913	3,735	2,706	1,963	2,329	2,016	2,014	2,705	1,997	-7%	-24%	-28%	-27%	19%	-13%	0%	34%	-26%
Malaysia	9,982	12,031	15,074	17,746	20,132	19,915	15,854	13,542	12,382	21%	21%	25%	18%	13%	-1%	-20%	-15%	-9%
Singapore	105	139	152	137	141	113	78	46	44	21%	32%	9%	-10%	3%	-20%	-31%	-41%	-4%
Thailand	1,094	1,614	1,133	681	4,453	3,516	722	670	305	50%	48%	-30%	-40%	554%	-21%	-79%	-7%	-54%
Vietnam	33	18	22	11	109	159	141	134	43	27%	-45%	22%	-50%	891%	46%	-11%	-5%	-68%

The first week of January 2021 covers 28 December 2020 to 1 January 2021, for comparison purposes.
Sources: Oxford University, Johns Hopkins University and Moody's Investors Service

These economies have also been able to restart tracing, quarantine and social distancing activities when needed.

There is some heterogeneity in terms of vaccine distribution across the region.

India and Indonesia stand out in terms of early distribution of the vaccines, although the pace of rollout is uncertain given their large populations and the potential difficulties in terms of logistics and supply. India does, however, have the capacity to mass-produce coronavirus vaccines domestically and has experience with vaccination campaigns that may offset some of these risks (see Credit Conditions – Asia: Differing recovery pace across countries, secular shifts will lead to wider differentiation in credit quality, 26 January 2021).

Government stimulus measures will boost infrastructure spending

The strengthening of Asian infrastructure companies will be further supported by government stimulus measures. Most governments in the region aim to increase infrastructure spending to power their economies by supporting demand and employment in the wake of the coronavirus. For example, government budgets for India, Indonesia and Malaysia have a significant allocation to infrastructure in 2021.

Infrastructure investment will focus on transportation and renewable energy, as well as social infrastructure, especially those countries with critical infrastructure gaps such as healthcare, logistics (including cold chain), water and sanitation (Exhibit 4).

Exhibit 4

Highlights of the key development targets and fiscal stimulus in Asia

Country	Highlights of the key development targets and fiscal stimulus in Asia
China	Infrastructure spending will focus on informational networks, urbanization and major transportation and water conservancy projects, which is consistent with the government's new infrastructure development theme announced in 2020. Investments in clean energy and related supporting facilities are another focus of infrastructure spending. A total of RMB610 billion will be earmarked in the central government's budget for major infrastructure projects that support regional development, new infrastructure and new urbanization initiatives.
	In 2020, almost all 31 provinces, municipalities and autonomous regions in China announced their key infrastructure investment plans for the next 5-7 years, covering 24,515 projects under construction or to be built. Under these plans, total investment will reach RMB42,663 billion (including RMB10,214 billion for 2020), of which around 25% will be spent on transportation projects.
Korea	The Korean government aims to invest KRW110 trillion to develop energy and logistics-related infrastructure assets, new residential areas and industrial clusters, and theme parks in 2021, from around KRW104 trillion in 2020.
	Based on the government's plan, the public sector, led by major SOEs, will fund around 59% of the total investments, with the private sector investing the remainder.
India	India is planning Rs110 trillion ($1.47 trillion) of infrastructure investment over fiscal years 2020 to 2025 and has announced a series of projects that form the National Infrastructure Pipeline (NIP).
	In the budget for fiscal 2022, India announced a 26% year on year increase in capex outlay a large part of which will be spent on highways and railways.
Malaysia	Measures introduced in the 2021 budget indicate that the government is prioritizing a strong social safety net, labor market stability and infrastructure investment, which will support domestic demand and a recovery in growth. Key development projects in economic corridors in Johor, Kelantan, Kedah, Sarawak and Sabah will continue, while public infrastructure projects will strengthen economic connectivity.
Indonesia	The government announced a record high fiscal budget for 2021, of which IDR414 trillion (equivalent to $29.3 billion) will be allocated for infrastructure, a nearly 50% annual increase, to catch up on projects neglected during the pandemic and to boost economic growth. The government had cut its infrastructure budget by around 40% during the pandemic in 2020.

Sources: Moody's Investors Service, government websites, legislations, and policy papers

Countries with limited fiscal resources, such as India, have chosen to expand their fiscal deficit in the near term to increase public spending, which is considered a more pressing requirement to revive growth (Exhibit 5).

Exhibit 5

Fiscal deficit will remain wider for longer to support government stimulus in many Asian countries

Fiscal deficit as % of GDP	2018A	2019A	2020E	2021E
China	-2.6%	-2.8%	-3.5%	-1.8%
Korea	1.6%	-0.6%	-4.4%	-3.7%
India	-5.5%	-6.5%	-14.0%	-10.8%
Indonesia	-1.8%	-2.2%	-6.2%	-5.6%
Malaysia	-3.7%	-3.4%	-6.1%	-5.5%
Singapore	0.7%	-0.3%	-15.5%	-2.4%
Philippines	-1.2%	-1.5%	-6.8%	-5.9%
Thailand	0.1%	-0.8%	-4.8%	-4.7%
Vietnam	-0.1%	-2.6%	-3.9%	-3.0%

Estimates as of 17 March 2021; Fiscal deficit is measured by general government financial balance in nominal GDP.
Sources: National authorities and Moody's Investors Service

Mixed recovery for transportation in Asia

Toll road traffic in China will continue to grow in 2021 while Korea will broadly return to pre-coronavirus levels but South and Southeast Asia face an uneven recovery

We expect the recovery prospect for the toll road operators will vary across Asia. China will show the strongest growth prospect in the region, supported by the rebound in economic activities, while Korea will likely return to the pre-coronavirus level.

On the other hand, there will potentially be an uneven recovery in the toll road sector in South and Southeast Asia in 2021, as the state of pandemic varies across the region. The recovery will depend on the success of containing new infection cases and social distancing restrictions, as well as the recovery of economic activity. However, we expect investment in road networks will increase in 2021 and will be driven largely by an increase in public spending.

China: We expect the country's toll road sector to accelerate its recovery in 2021 from the low base of 2020. Toll roads in affluent economic provinces, such as Guangdong, Zhejiang, Hubei, and Jiangsu, reported sound growth in daily traffic volumes in the second half of 2020, ranging from mid single-digit growth to double-digit growth in percentage terms from 2019. The recovery is being driven by a strong business activity following the coronavirus pandemic and resultant lockdowns. The positive momentum will continue in 2021, benefiting rated toll road companies with quality asset portfolios, such as Yuexiu Transport Infrastructure Limited (Baa2 stable).

Toll revenue will be further supported by a more stable policy environment. Toll road companies lost around three months of toll revenue because of a temporary toll-free policy during the coronavirus outbreak in 2020. Further such policies are unlikely to take place in 2021 in view China's ongoing pandemic management.

The Chinese government recently announced its transportation development plan for 2021 to 2035 to facilitate sustainable economic development and continued urbanization (Exhibit 6). In the near term, we expect some planned major transportation projects to be accelerated, driven by government stimulus to boost infrastructure spending.

Exhibit 6
China's development targets will drive expansion of transportation network

	2019 Actual	2035 Target	CAGR
Railways (in KM)	139,000	200,000	2.2%
High-speed Rail (in KM)	35,000	70,000	4.2%
National Expressway (in KM)	108,600	160,000	2.3%
Civil Airports	238	400	3.1%

National expressway refers to expressway projects that are part of the National Truck Highway System.
Sources: China State Council's Outlines on the National Comprehensive Transportation Network Plan (2021-2035)

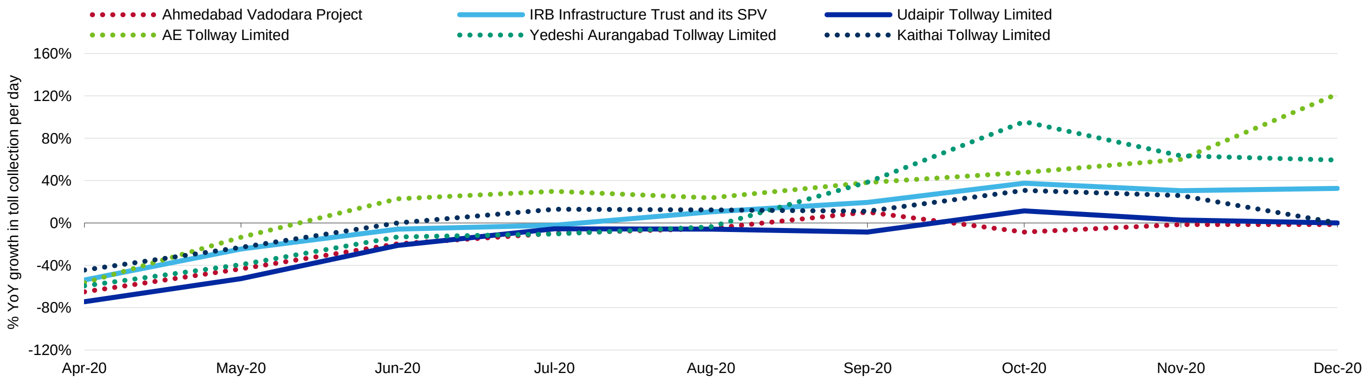
Korea: Toll road traffic volume in 2021 is likely to be similar to or slightly lower than 2019, assuming no lockdowns. Investments in toll roads in Korea will increase over the next 2-3 years in an effort to help recover the country's economy, accommodate growing traffic volume and improve connectivity among cities and provinces in Korea.

India: Toll collections for Indian highways improved significantly in Q4 2020, surpassing pre-coronavirus levels. Relaxation of restrictions put on interstate movement was the key contributor to this increase in traffic and toll collections. As one of India's largest toll road operators, most toll roads of IRB Infrastructure Developers Limited (IRB, Ba1 stable) reported toll collections at pre-coronavirus levels in September 2020 and strong growth in the October-December 2020 quarter (Exhibit 7). However, there has been a resurgence in new infected cases in certain parts of the country lately, which creates some uncertainty about the sustainability of the traffic.

Exhibit 7

Strong recovery in toll collection in Q4 2020 for IRB's highway projects in India

Growth in year-on-year toll collections for selected toll roads of IRB Infrastructure

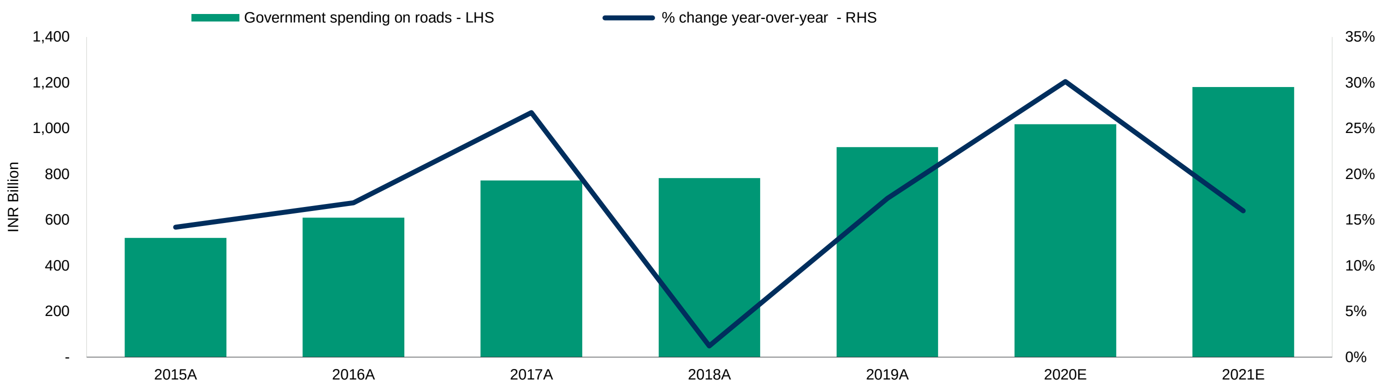


Sources: Offering Memorandum of India Toll Roads, Moody's Investors Service

The Indian government's budget for fiscal 2022 outlines a strong 16% increase in investments in highways (Exhibit 8) and remains a key area of focus for the government to build-up infrastructure.

Exhibit 8

Indian government spending on highways



Sources: Government of India budget documents, Moody's Investors Service

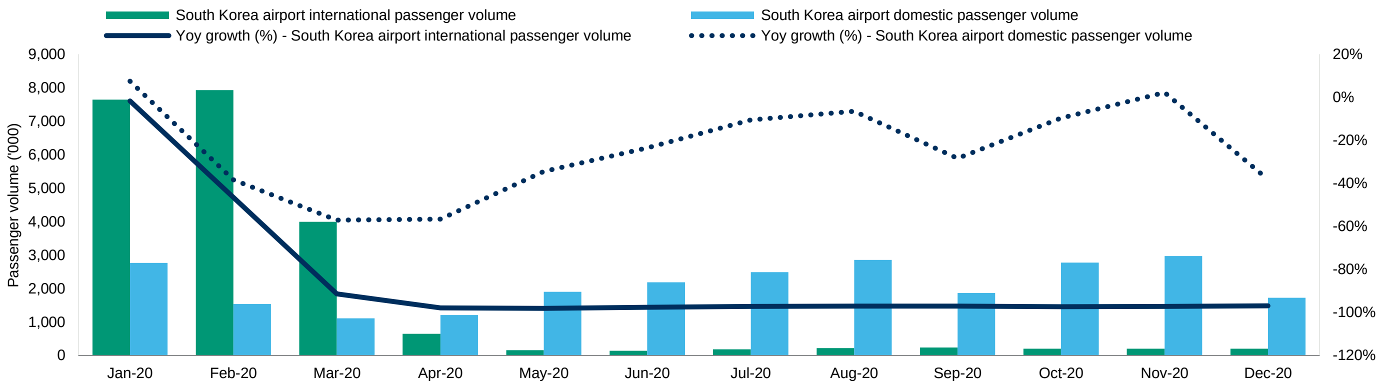
Airports will face a long road to full recovery but an uptick in domestic travel will partly alleviate the pressure

The recovery of airports remains uncertain in 2021 and the pace of any recovery will depend on the success of containing the pandemic and establishment of bilateral travel arrangements.

Korea: As shown in Exhibit 9, international passenger volume decreased by 84% to 14.3 million in 2020 from 2019 because of disruptions caused by coronavirus. International passenger volume will not recover in 2021 unless travel restrictions across many countries and onerous quarantine requirements are lifted. Therefore, the financial metrics of international airports, such as Incheon International Airport Corporation (Aa2 stable), will take time to recover.

We expect Korea's international passenger volume to recover to 2019 levels in 2024-25, assuming vaccines are made widely available in 2022. On the other hand, domestic passenger volume recovered to 85% of 2019 levels in second half of 2020, although overall it declined by 24% to 25.4 million in 2020 from 2019. This recovering trend will likely continue in 2021, thereby supporting credit quality of airports with large domestic flight operations.

Exhibit 9
Airport passenger traffic has declined unprecedentedly but there are improvements in domestic travel

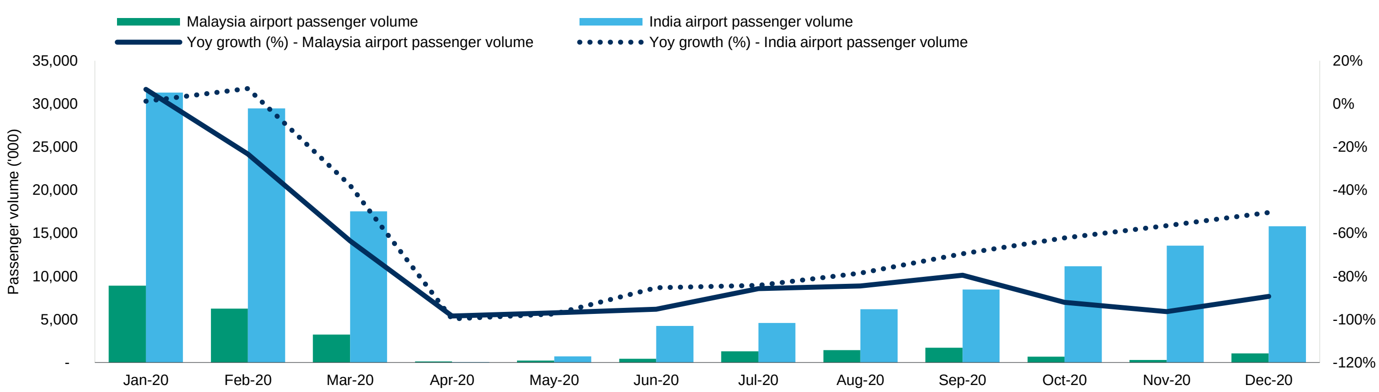


Source: Korea Statistics

India: Monthly domestic passenger numbers have recovered to above 50% of pre-coronavirus levels (Exhibit 10). However, we do not expect a full recovery until around 2023, considering the uncertain timing over the reopening of international borders, potential risks from a resurgence in coronavirus cases or a delay in vaccine rollout. While growing passenger traffic will help boost airport revenue, a recovery in credit quality for Delhi International Airport Limited (DIAL, Ba3 negative) and GMR Hyderabad International Airport Limited (HIAL, Ba2 negative) will likely take longer given their sizable debt-funded capital spending plans.

Malaysia: Monthly domestic passenger numbers remain at around 10% of pre-coronavirus levels for Malaysia Airports Holdings Berhad (MAHB, A3 negative), as a result of restrictions on interstate travel reintroduced in late 2020 amid the second wave of new infections (Exhibit 10) . Upon relaxation of these restrictions – which would likely be linked to a vaccine rollout – we expect domestic traffic to recover gradually on the back of underlying demand. However, a sustained improvement in international traffic — which represents close to 50% of all passenger traffic pre-coronavirus — will take longer to materialize.

Exhibit 10
Recovery in airport passenger volume will be a long process in India and Malaysia



Passenger volume includes international and domestic passengers
Source: Malaysia Airports Holdings Berhad, Airports Authority of India

Port throughput volume will support growth in 2021

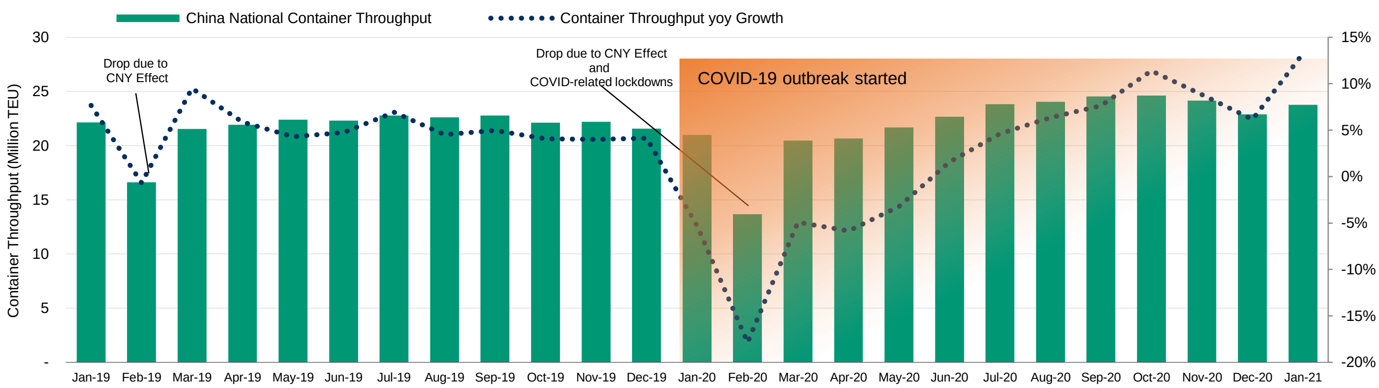
The credit quality of rated port operators in Asia remained mostly stable in 2020 amid the coronavirus pandemic and the weak macroeconomics. This was mainly because of the resumption of local business activities and some recovery in international sea trade volume to support transport of goods such as daily necessities and quarantine and medical supplies in the second half of 2020. There are also company specific reasons behind the resilience such as diversification benefits as well as strong market position.

We expect the Asian port operators will further benefit from an improvement in trade in 2021 along with the gradual recovery of the global economy. Nevertheless, the pace of improvement could be hindered by resurgence of virus infections and new closures and restrictions as coronavirus risks remain high.

Furthermore, the coronavirus may accelerate the diversification of global supply chains and more manufacturing may therefore move away from China, which would be credit negative to throughput volume and port services in China and credit positive to other countries in the region. However, any shifts that do occur will be a multiyear process.

China: Chinese ports have continued to improve since Q2 2020, supported by a gradual resumption of economic activity, rising local consumption and government stimulus (Exhibit 11). Monthly container throughput had already resumed growth beyond 2019 levels since June 2020.

Exhibit 11
Ongoing improvement in China's container throughput since H2 2020



CNY refers to Chinese New Year.
Source: Ministry of Transport of the People's Republic of China

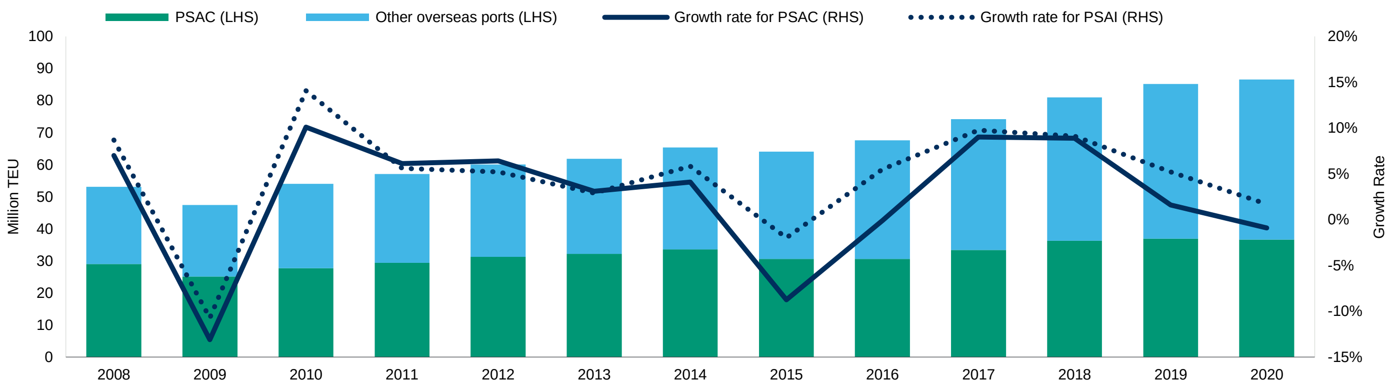
We expect container throughput volume to grow at a mid-single digit percentage in 2021, from flattish growth in 2020, driven by export demand for daily necessities and medical supplies produced in China. The country's container throughput volume grew 13% year-on-year in January 2021.

The continued lockdowns in some countries globally and the limited availability of labor force have resulted in container shortages. The shortage has driven up freight rates for exports, and therefore interrupted trade routes and affected utilization of ports. We expect the impact to be temporary because trade patterns will gradually normalize as labor and business activity resumes in overseas countries. However, the potential resumption of trade negotiations and shift in supply chain may hinder the container growth in later this year.

Therefore, rated port operators in China, such as Shanghai International Port (Group) Co., Ltd (A1 stable) and Hutchison Ports Holding Trust (Baa1 stable) will show improved metrics in 2021, after a moderation in 2020.

Singapore: Container throughput for PSA International Pte. Ltd.'s (PSAI, Aa1 stable) flagship Singapore port was broadly stable in 2020, only moderating by 0.9% from 2019. PSAI itself however reported 1.7% higher throughput in 2020. The diversity and organic growth of PSAI's wider portfolio helped temper trade volatility in 2020. Despite the breadth and severity of the coronavirus outbreak, PSAI's throughput was resilient and did not experience similar levels of decline as past downturns in 2009 and 2015 (Exhibit 12). As with past downturns, PSAI's overall throughput growth in 2020 was higher than PSA Corporation Limited's (PSAC). PSAC is the largest port operator in Singapore and the second-busiest container port globally. PSAI, one of the world's largest port operators, has port projects across Asia, Europe and the Americas. PSAC is wholly owned by PSAI.

Exhibit 12
Throughput at PSAI and PSAC weathered the impact of coronavirus better than expected in 2020



Sources: PSAI data, Moody's Investors Service

India: Cargo traffic for major ports dropped 8.8% year-on-year from April to December 2020. However, Adani Ports and Special Economic Zone Limited (Baa3 negative) reported a strong operational performance with 7% year-on-year growth in container traffic and 5.4% year-on-year growth in overall cargo in the April to December 2020 period.

Indonesia: Container traffic is more resilient for port operators with a domestic focus, such as Pelabuhan Indonesia III (Persero) (P.T.) (Baa3 stable), than those oriented in international trade, such as Pelabuhan Indonesia II (Persero) (P.T.)'s (Baa3 stable), because the latter are more sensitive to the changes in global economic conditions.

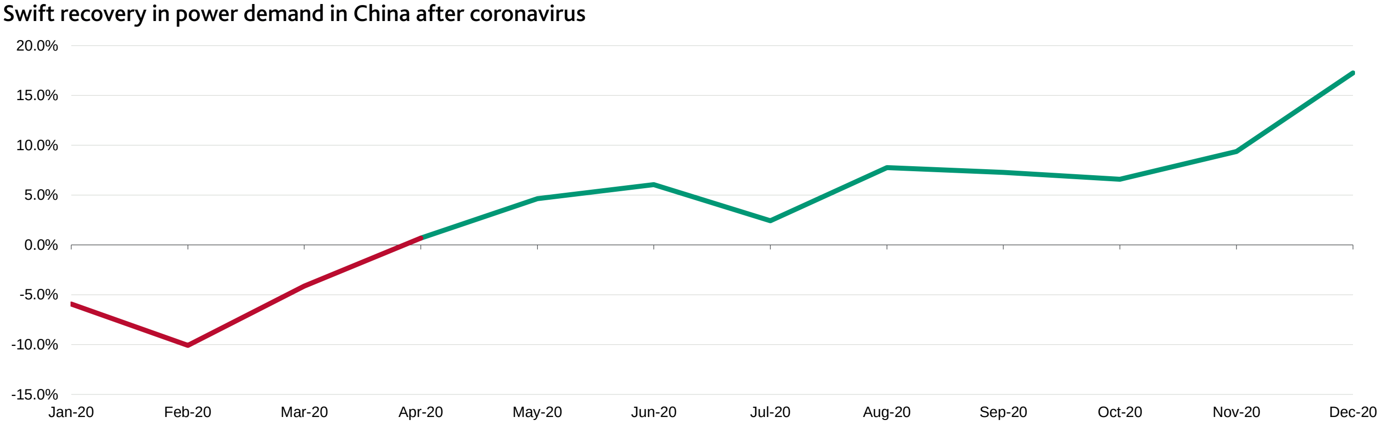
Power utilities will benefit from improving electricity demand, while renewable energy will continue to grow

Strong recovery in electricity demand will provide support to power utilities' credit quality

The strong rebound in Asian economic growth in 2021 bodes well for electricity demand and will be positive for the credit quality of power companies in the region, which were already resilient (see "Power — Asia-Pacific 2021 outlook stable on stabilizing cash flows but regulatory difficulties remain", 9 December 2020).

China: Electricity demand has recovered more swiftly in China than in other Asian countries, reaching growth in April 2020 and showing strong growth momentum in Q4 2020 (Exhibit 13). We expect national power demand will grow at mid single digit in percentage term in 2021 because of the low base in 2020.

Exhibit 13
Swift recovery in power demand in China after coronavirus



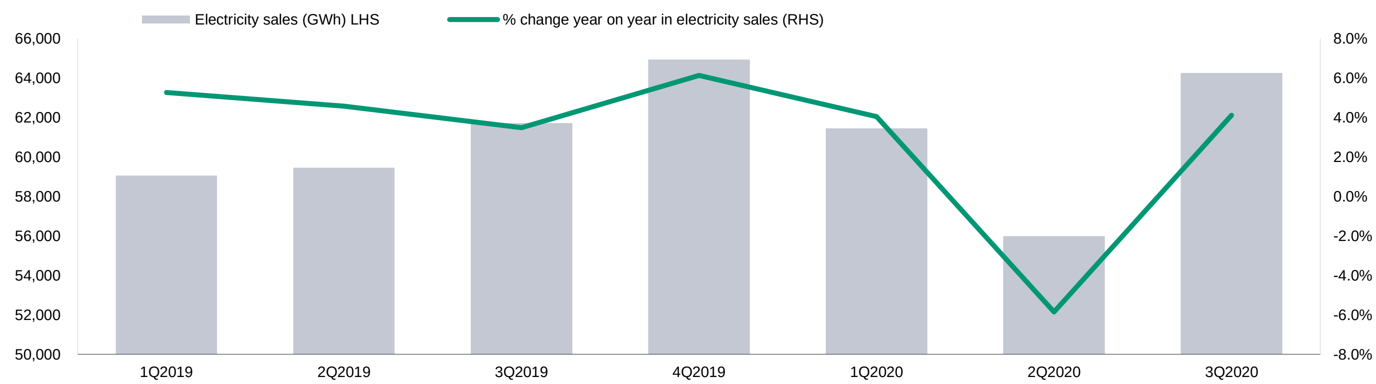
Year-on-year growth.
Source: National Bureau of Statistics of China

Chinese power generation companies will benefit from improved power demand in 2021 but this will be offset by likely tariff declines as a result of further market liberalization, as well as potential increase in coal prices. Grid operators' revenue will also increase under a higher average tariff as the temporary tariff cut driven by government stimulus expired in 2020.

Korea: Electricity demand will bottom out in 2021 to record a low single-digit growth, following around a 2.2% decline in 2020 amid disruptions caused by the coronavirus pandemic. Power companies' cash flow will be supported by recovery of power demand, or incremental cash flow from new power generation capacity, or both.

Indonesia: Electricity sales for Perusahaan Listrik Negara (P.T.) (Baa2 stable), which can be used as a proxy for Indonesia's electricity demand, recovered in Q3 2020 and grew by 4% after it reported a 5.9% decline in Q2 2020 (Exhibit 14). We expect the electricity demand to grow by 3.5%-4.0% in 2021 as the economic growth picks up in the country. Rated power projects in Indonesia were not impacted by the contraction in demand in 2020 because of their competitiveness in tariff as well as the terms and conditions of their power purchase agreements effectively insulates them from demand risk. The recovery in economic growth in 2021 would benefit Cikaranag Listrindo (P.T.) (Ba2 positive) which sells electricity to its industrial estate customers.

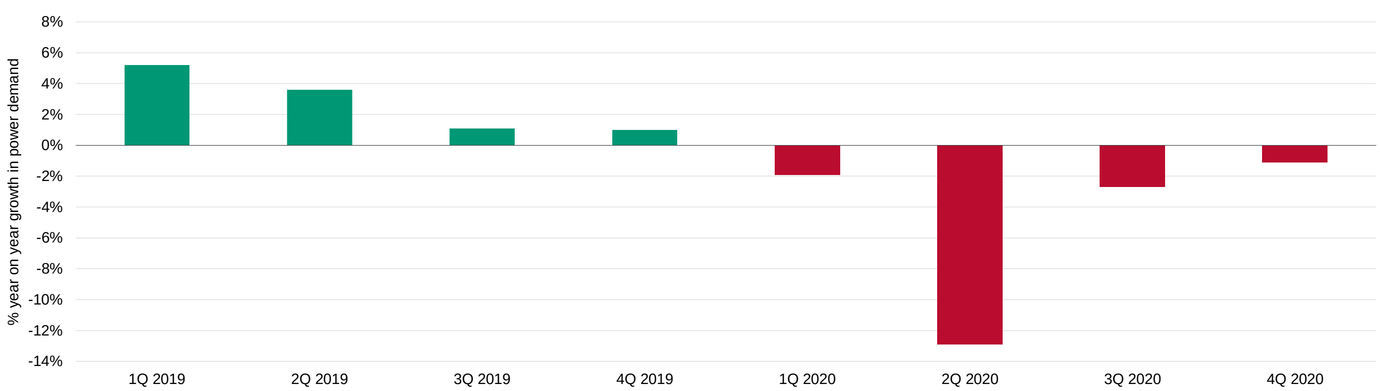
Exhibit 14
Indonesia's electricity demand recovered in Q3 2020



Source: Perusahaan Listrik Negara (P.T.)

Malaysia: The recovery in electricity demand for Malaysia has followed a different trajectory from rest of the region. The reimposition of lockdowns in second half of 2020 as the country faced a second wave of coronavirus infections led to the contraction in demand (Exhibit 15). The recovery in next year would be dependent on government's approach to contain the pandemic and availability of vaccines.

Exhibit 15
Power demand in Malaysia was weak for all of 2020



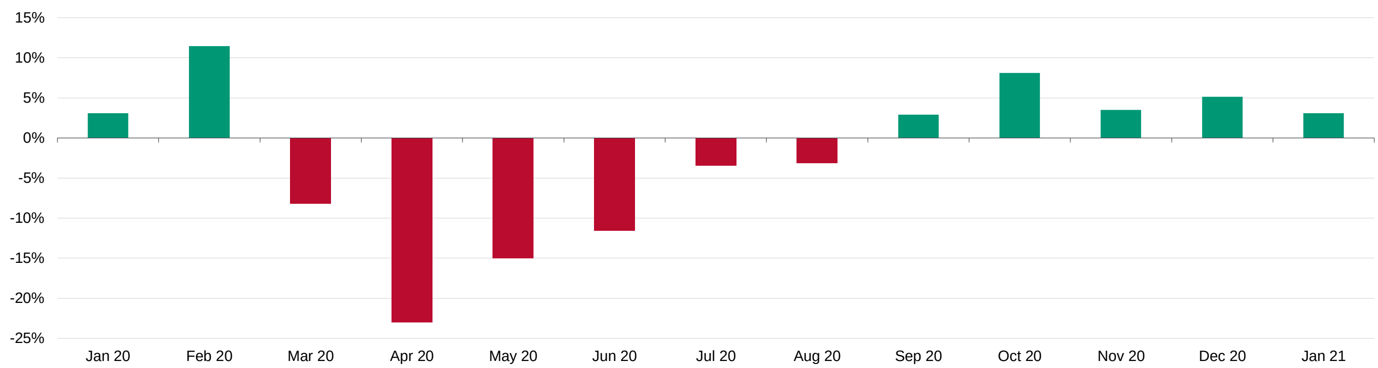
Sources: Tenaga Nasional Berhad and Moody's Investors Service

India: Electricity demand in India has recovered after the lows of early 2020 during the disruptions caused by coronavirus because the operating environment has stabilized (Exhibit 16). As a result, in February 2021, we changed the outlook for the Indian power sector to stable from negative, recognizing the better prospects for the sector as a result, amid an improved macroeconomic backdrop. Indian real GDP is likely to grow at 13.6% in 2021 and electricity demand growth should be around 10%.

Exhibit 16

Five consecutive months of year-on-year power generation growth after six months of declines

Monthly power generation growth and contraction since January 2020



Sources: Central Electricity Authority and Moody's Investors Service

Ongoing carbon transition will support renewable energy expansion in the region

Carbon transition will remain a key focus in the Asian power sector as countries are strengthening environmental targets and stepping up decarbonization strategy, in accordance with their commitments under the Paris Agreement (Exhibit 17).

Exhibit 17

Highlights of key environmental commitments and plans

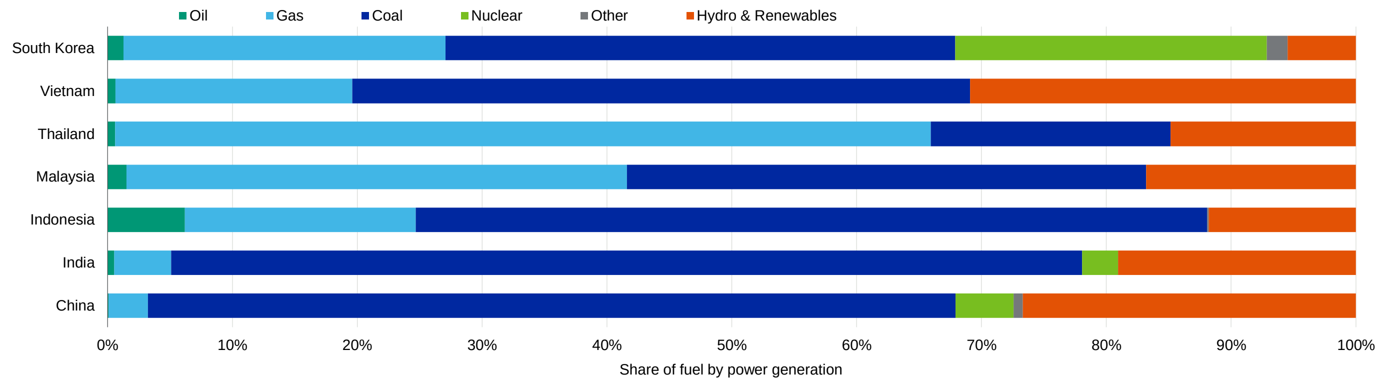
Country/ economy	Governments' latest environmental commitments and plans
China	» Energy consumption per unit of GDP will be reduced by around 3% in 2021 and 13.5% by 2025, while carbon dioxide emissions per unit of GDP will be reduced by 18% by 2025. » Achieve peak emission by 2030 or earlier and lower carbon intensity by 65% from 2005 levels. Increase the share of non-fossil fuels in primary energy consumption to 25% by 2030. » Increase wind and solar power capacity to 1,200GW by 2030, from around 530MW at end 2020. » Achieve carbon neutrality before 2060. » Promote Nationawide Emission Trading System that launched in February 2021
Hong Kong	» Reduce per capita carbon emissions to less than 4.5 tonnes in 2020 and 3.3-3.8 tonnes in 2030, from 6.2 tonnes in 2014. Reduce absolute carbon emissions by 20% in 2020 and 26%-36% in 2030. » Set carbon intensity reduction target at 50%-60% by 2020, and 65%-70% by 2030. These targets imply a reduction of coal in the fuel mix for power generation to 25% in 2020 and less than 25% in 2030, from 48% in 2015. » Become carbon neutral by 2050.
India	» Reduce the emissions intensity of GDP by 33%-35% by 2030 from 2005 levels. Achieve about 40% cumulative electric power installed capacity from non-fossil fuel energy sources by 2030; create additional carbon sink of 2.5 billion tonnes - 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030. » Strengthen measures such as competitive bidding to increase the use of renewables towards the national target of 175 GW of non-hydro renewables capacity by 2022 (100 GW solar, 75 GW non-solar). India's Prime Minister has also announced a more aspirational goal of having 450 GW of renewable energy by 2030.
Indonesia	» Reduce greenhouse gas emissions by 29% (unconditional) from the projected business-as-usual level by 2030. » New and renewable energy to meet at least 23% of primary energy needs by 2025 and at least 31% by 2050.
Korea	» Reduce greenhouse gas emissions by 24% from 2017 levels by 2030 and achieve net zero emissions by 2050. » Increase renewables in Korea's power mix to 34% by capacity and 21% by generation by 2030, and 40% and 26% by 2034, along with expansion of the country's solar wind power capacity to 52 GW by 2030 and 70 GW by 2034 from 16 GW at year-end 2020.
Malaysia	» Reduce GHG emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005.
Philippines	» Undertake GHG (CO2e) emissions reduction of about 70% by 2030 relative to BAU scenario for 2000-30.
Singapore	» Reduce emissions intensity by 36% from 2005 levels by 2030 and stabilize emissions with the aim of peaking around 2030.
Thailand	» Reduce GHG emissions by 20% from the projected BAU level by 2030.

Sources: Moody's Investors Service, government websites, policy papers, legislation, other government documents

In particular, coal-fired power currently accounts for a significant share of power generation for many Asian countries, leaving ample room for renewable energy expansion to support decarbonization (Exhibit 18).

Exhibit 18

Coal-fired power currently accounts for a large share of power generation but renewable energy will increase over time



Data at end 2019.
Source: BP

The proliferation of renewable energy will be further supported by its improving cost competitiveness compared with conventional fuels, as well as the development of supporting facilities such as battery storage, long distance transmission lines and smart grid technology.

However, the pace of carbon transition will vary across the region and will be slower for Indonesia and Vietnam given that coal still remains the preferred fuel for new capacity additions for these countries.

The favorable growth prospects could bring higher leverage to renewable energy companies, driven by increasing capital spending, but could be partly mitigated by incremental cash flow from new projects.

China: China will continue its ambitious capacity additions for renewable energy. The government's target for wind and solar power capacity to reach 1,200GW by 2030 implies an annual increase of 60GW-70GW during 2021-2030, assuming capacity addition will be spread evenly during the period. Non fossil fuels will increase to 25% of primary energy mix in 2030, from around 15% in 2019. The favorable growth prospect of renewable companies will likely come in the expense of coal fired generation companies.

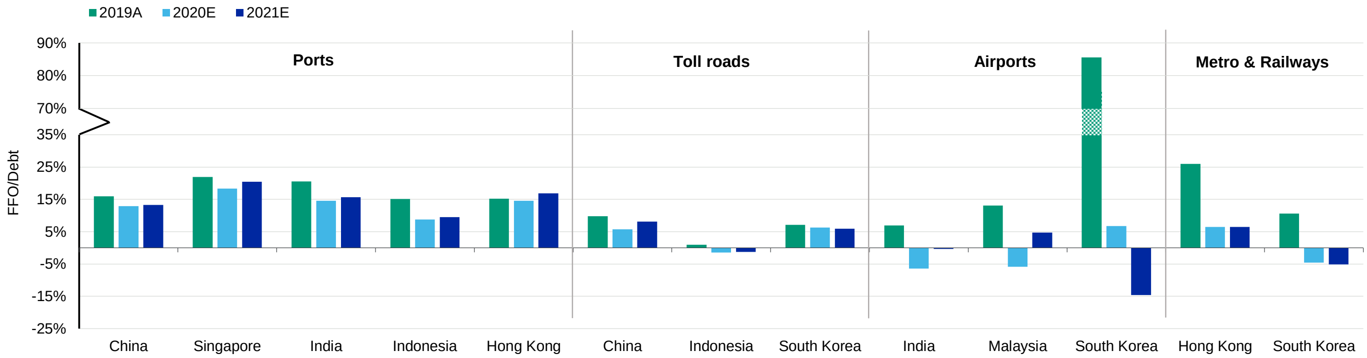
Korea: The country has a target to increase the share of renewable energy generation in the power mix to around 20% in 2030, from around 6% in 2020, mainly through expansion of renewable capacity with a focus on solar and wind. The government also announced a five-year “Green New Deal”, which is a green stimulus, to support economic recovery and sustainable carbon transition following the coronavirus. The green stimulus focuses on increasing renewable energy capacity, particularly in solar and wind expanding the country's fleet of electric and hydrogen-powered vehicles, smart grid investments and improving the energy efficiency of public facilities.

India: India will play a leading role in renewable energy development in the region, in addition to China. The country targets to reach 175GW of non-hydro renewable capacity by 2022 and 450GW by 2030, from the current 90GW. The commissioning of renewable projects delayed by coronavirus will also result in strong growth of wind and solar capacity in 2021.

Cash flow will improve for rated issuers in 2021; Capital spending will negatively impact leverage

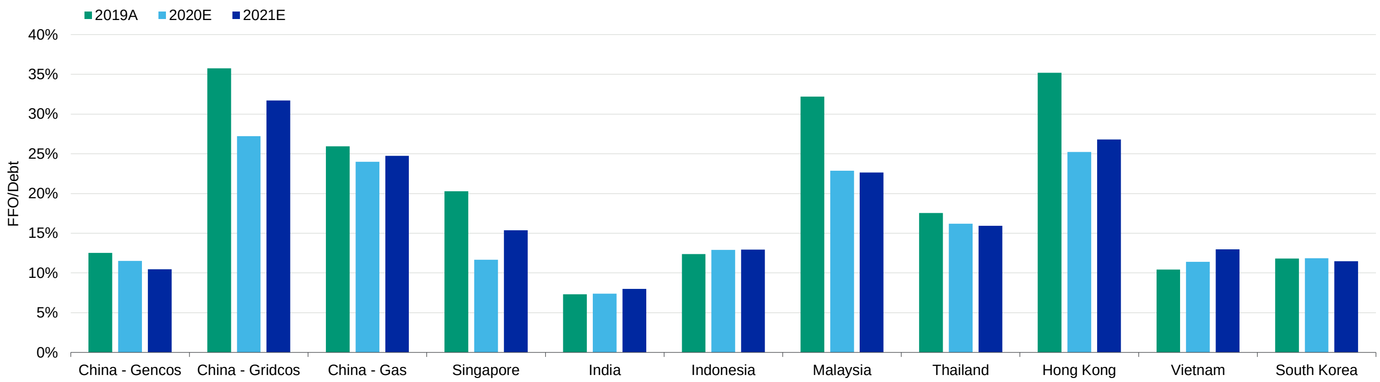
The financial metrics of Asian infrastructure companies will improve in 2021, although the extent of recovery will vary. We expect most companies to maintain a substantial level of capital spending, driven by fiscal stimulus and government mandates. Particularly, increasing infrastructure spending for road networks is one of the common themes in government stimulus programs across the region. As a result, the leverage of most rated infrastructure companies, particularly transportation companies, is likely to remain high (Exhibit 19 and Exhibit 20).

Exhibit 19
Key metrics of rated transportation companies



Indian issuers' FFO/Debt is shown in fiscal years.
Source: Moody's Investors Service

Exhibit 20
Key metrics of rated power and gas utilities



Indian issuers' FFO/Debt is shown in fiscal years.
Source: Moody's Investors Service

At the same time, countries (such as Indonesia) and provinces in China with a tightened fiscal position amid coronavirus have become increasingly selective in providing support to SOEs, which has resulted in a potential weakening of government support for less critical SOEs (see "Cross-Sector – Indonesia: Weaker-than-expected government support reduces credit quality for some SOEs", 26 June 2020).

The financial profiles of rated power companies exposed to demand risk should benefit from the recovery in economic growth. The sharp expansion of the working capital cycle in 2020 as a result of delayed payments for some South and Southeast Asian power companies is likely to reverse in 2021 and will provide some boost to cash flow generation.

China: Most rated infrastructure companies, mainly transportation companies, will continue to receive significant government subsidies and capital injections. As a result, their debt servicing requirements are likely to remain broadly manageable despite higher leverage.

Korea: Most of the rated infrastructure issuers are likely to record financial metrics supporting their credit quality in 2021, because their operating cash will help them avoid excessive debt-funded capital spending.

South and Southeast Asia: For some countries in the region, government measures to lessen the direct impact of coronavirus have come at the expense of infrastructure companies, which are predominantly government-owned. Nevertheless, we expect the strategic role of most rated infrastructure companies, especially those with a policy role or major market position, to remain intact in the long term.

Appendix 1. Asian utilities companies rated by Moody's

Exhibit 21

Issuer	Country/ Economy	Rating	Outlook
Power Utilities			
Korea Electric Power Corporation	South Korea	Aa2	Stable
Singapore Power Limited	Singapore	Aa2	Stable
Korea District Heating Corporation	South Korea	A1	Positive
China Southern Power Grid Co., Ltd.	China	A1	Stable
China Three Gorges Corporation	China	A1	Stable
Shenergy (Group) Co., Ltd.	China	A1	Stable
State Grid Corporation of China	China	A1	Stable
CLP Holdings Limited	China/ Hong Kong	A2	Stable
China General Nuclear Power Corporation	China	A2	Stable
China Huadian Corporation LTD.	China	A2	Stable
China Huaneng Group Co., Ltd.	China	A2	Stable
Guangdong Hengjian Investment Holding Co Ltd	China	A2	Stable
State Power Investment Corporation Limited	China	A2	Stable
Zhejiang Provincial Energy Group Co. Ltd	China	A2	Stable
China Longyuan Power Group Corporation Ltd.	China	A3	Stable
Tenaga Nasional Berhad	Malaysia	A3	Stable
Beijing Energy Holding Co., Ltd.	China	A3	Negative
Ratch Group Public Company Limited	Thailand	Baa1	Stable
Sichuan Provincial Investment Group Co., Ltd.	China	Baa1	Stable
China Resources Power Holdings Co., Ltd	China	Baa2	Stable
Perusahaan Listrik Negara (P.T.)	Indonesia	Baa2	Stable
Power Sector Assets & Liabilities Mgmnt Corp.	Philippines	Baa2	Stable
LLPL Capital Pte. Ltd.	Indonesia	Baa3	Stable
Minejesa Capital BV	Indonesia	Baa3	Stable
SK E&S Co. Ltd.	South Korea	Baa3	Stable
Star Energy Geothermal Darajat II Limited	Indonesia	Baa3	Stable
Adani Transmission Limited	India	Baa3	Negative
NTPC Limited	India	Baa3	Negative
Power Grid Corporation of India Limited	India	Baa3	Negative
Greenko Energy Holdings	India	Ba1	Stable
Xinjiang Goldwind Science & Technology Co Ltd	China	Ba1	Stable
Adani Renewable Energy (Rj) Limited	India	Ba1	Negative
Azure Power Solar Energy Private Limited	India	Ba1	Negative
Cikarang Listrindo (P.T.)	Indonesia	Ba2	Positive
Azure Power Energy Ltd	India	Ba2	Stable
Continuum Energy Levanter Pte. Ltd	India	(P)Ba2	Stable
ReNew Power Private Limited	India	Ba2	Stable
Mong Duong Finance Holdings BV	Vietnam	Ba3	Positive
Neerg Energy Ltd	India	Ba3	Stable
Star Energy Geothermal (Wayang Windu) Limited	Indonesia	Ba3	Stable
Pakistan Water and Power Dev Authority	Pakistan	B3	Stable
Gas Utilities			
Korea Gas Corporation	South Korea	Aa2	Stable
The Hong Kong and China Gas Company Limited	China/ Hong Kong	A1	Stable
Kunlun Energy Company Limited	China	A2	Stable
China Resources Gas Group Limited	China	A3	Stable
Beijing Enterprises Holdings Limited	China	Baa1	Stable
Gail (India) Limited	India	Baa3	Negative
Binhai Investment Company Limited	China	Ba1	Stable
ENN Natural Gas Co., Ltd.	China	Ba1	Stable
China Oil and Gas Group Limited	China	Ba2	Stable
Others			
Korea Water Resources Corporation	South Korea	Aa2	Stable
China Water Affairs Group Limited	China	Ba1	Stable

Ratings and outlooks as of 19 March 2021; Only included rated parents and excluded rated subsidiaries; Others mainly refers to Water Utilities.
Source: Moody's Investors Service

Appendix 2. Asian transportation companies rated by Moody's

Exhibit 22

Issuer	Country/ Economy	Rating	Outlook
Toll roads			
Korea Expressway Corporation	South Korea	Aa2	Stable
Shandong Hi-speed Group Co., Ltd	China	A3	Stable
Anhui Transportation Holding Group Co., Ltd.	China	Baa1	Stable
Guangzhou Communications Investment Group	China	Baa2	Stable
Shenzhen International Holdings Limited	China	Baa2	Stable
Yuexiu Transport Infrastructure Limited	China	Baa2	Stable
Hutama Karya (Persero) (P.T.)	Indonesia	Baa3	Stable
IRB Infrastructure Developers Limited	India	Ba1	Stable
Airports			
Incheon International Airport Corporation	South Korea	Aa2	Stable
Malaysia Airports Holdings Berhad	Malaysia	A3	Negative
GMR Hyderabad International Airport Limited	India	Ba2	Negative
Delhi International Airport Limited	India	Ba3	Negative
Ports			
PSA International Pte. Ltd.	Singapore	Aa1	Stable
Shanghai International Port (Group) Co., Ltd	China	A1	Stable
Zhejiang Provincial Seaport Invt & Op Grp	China	A1	Stable
China Merchants Port Holdings Company Limited	China	Baa1	Stable
Hutchison Port Holdings Trust	China/ Hong Kong	Baa1	Stable
Adani Ports and Special Economic Zone Limited	India	Baa3	Negative
Pelabuhan Indonesia II (Persero) (P.T.)	Indonesia	Baa3	Stable
Pelabuhan Indonesia III (Persero) (P.T.)	Indonesia	Baa3	Stable
Metro & Railways			
Korea National Railway	South Korea	Aa2	Stable
Korea Railroad Corporation	South Korea	Aa2	Stable
MTR Corporation Limited	China/ Hong Kong	Aa3	Stable

Ratings and outlooks as of 19 March 2021; Only included rated parents and excluded rated subsidiaries
Source: Moody's Investors Service

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