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# Global Transport Infrastructure Project Pipeline: Asia Leading Development Globally

11 May 2022

Global

Infrastructure

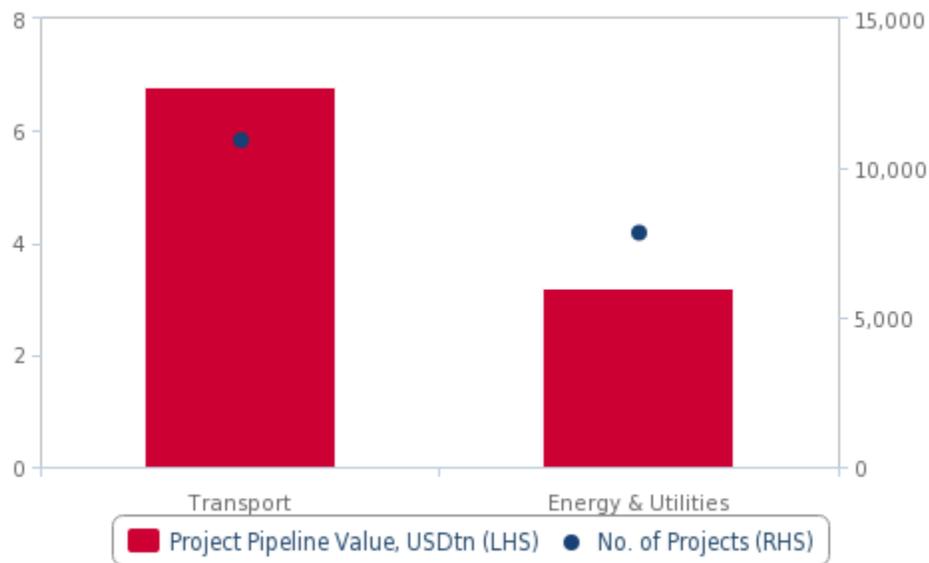
## Key View

- Transport infrastructure development will be a driving force of infrastructure investment globally over the coming decade, driven by the advance of a large pipeline of transport projects with our Infrastructure Key Projects Data including 10,931 transport infrastructure projects either in various pre-construction stages or under construction, with the global pipeline of transport projects involving a combined USD6.8tn in investment.
- In our view, transport infrastructure investment and the advance of projects currently in the transport infrastructure project pipeline will be particularly driven by efforts to expand transport networks and to reduce carbon emissions from the transport sector as global decarbonisation efforts advance.
- Road and bridge and rail infrastructure projects will stand out as the primary sectors to see investment within transport, with both sectors to see robust investment across regions globally.
- Among regions, Asia will continue to be the leading region for transport infrastructure investment, as the region stands out globally for its transport infrastructure project pipeline, with the region home to 4,084 transport projects involving a combined USD3.3tn in investment, respectively accounting for 37% and 48% of the global totals.

**Transport infrastructure development will be a driving force of infrastructure investment globally over the coming decade, driven by the advance of a large pipeline of transport projects.** According to data from our Infrastructure Key Projects Data which includes infrastructure projects above USD30mn in value, globally there are 10,931 transport infrastructure projects either in various pre-construction stages or under construction, with the global pipeline of transport projects involving a combined USD6.8tn in investment. This compares with a global pipeline of 7,834 energy and utilities projects and a combined project pipeline value for energy and utilities infrastructure projects of USD3.2tn. As such transport infrastructure projects account for the bulk of infrastructure projects globally, accounting for 58% of projects and 68% of the global infrastructure project value.

## Transport Projects At Centre Of Global Infrastructure Pipeline

Global - No. Of Infrastructure Projects And Infrastructure Project Value (USDtn) By Main Sector



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

**In our view, transport infrastructure investment and the advance of projects currently in the transport infrastructure project pipeline will be particularly driven by efforts to expand transport networks and to reduce carbon emissions from the transport sector as global decarbonisation efforts advance.** In developing markets, in particular, much of transport infrastructure investment will be focused on building new infrastructure assets across the road, rail, port and airport segments and on expanding infrastructure networks. In developed markets, in contrast, investment will focus to a greater degree on the repair and modernization of existing assets, given a larger, more developed infrastructure asset base in these markets. Electrification will become an increasing driver of transport investment, as governments look to decarbonise transportation, with European markets in particular set to be a key focus of electrification efforts in transport over the coming decade spurred by robust government decarbonisation targets.

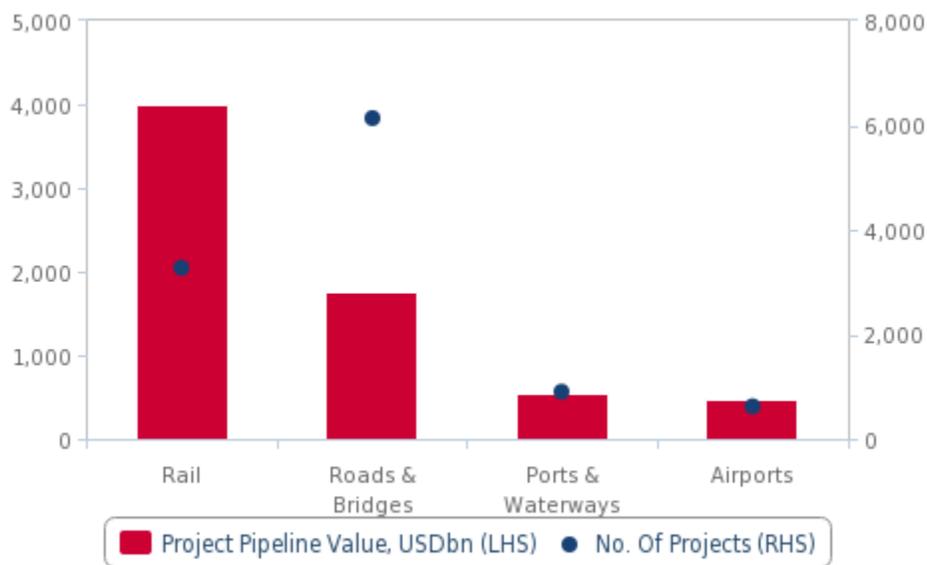
**Road and bridge and rail infrastructure projects will stand out as the primary sectors to see investment within transport, with both sectors to see robust investment across regions globally.** Within the global transport infrastructure project pipeline, road and bridge projects stand out in terms of the number of projects, with our KPD including 6,135 road and bridge projects globally. As such road and bridge projects account for 56% of transport projects globally, the largest share of any transport sector. Road and bridge projects globally involve a combined 1.8tn in investment, the second-highest total of any sector globally and 26% of the global total.

Rail infrastructure follows the road and bridge sector in terms of the number of projects, with the global transport project pipeline including 3273 rail projects, accounting for 30% of the global total. Nevertheless, given the higher average value of rail projects compared to road and bridge projects, rail accounts for the largest share of the total value of the global project pipeline, with rail projects globally involving a total of USD3.0tn in investment, accounting for 59% of the global project pipeline value.

Ports and waterways and airports account for smaller shares both of transport projects globally and the global transport project pipeline value. Our Infrastructure KPD includes 902 port and waterway projects involving a combined USD559bn in value, with the sector therefore accounting for 8% of projects globally and 8% of the global transport project pipeline value. Our Infrastructure KPD includes 623 airport projects, accounting for 6% of transport projects globally, with airport projects involving a total of USD481bn in value, 7% of the global total.

### Rail Projects Account For Largest Share Of Value

Global - No. Of Transport Projects And Total Transport Project Pipeline Value By Sub-Sector



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

**Among regions, Asia will continue to be the leading region for transport infrastructure investment, as the region stands out globally for its transport infrastructure project pipeline, with the region home to 4084 transport projects involving a combined USD3.3tn in investment, respectively accounting for 37% and 48% of the global totals.** We expect the region will see robust investment in transport infrastructure, driven by continued government commitments and ambitious expansion plans for the sector amid ongoing infrastructural deficits to support robust economic and population growth. In particular, over the last two years, the region has seen very strong fiscal stimulus efforts often directed into infrastructure development as part of broader efforts to boost economic recovery from the Covid-19 pandemic, which we expect to feed into developments over the coming years. China in particular will remain the largest driver of transport infrastructure investment in the region with the market holding the most valuable pipeline of transport infrastructure projects in Asia, with a pipeline value of over USD921bn, at approximately 28.1% of the total value of Asia's transport infrastructure project pipeline.

Europe follows as the region with the second-largest pipeline of transport projects globally, both in terms of the number of projects as well as project pipeline value. The region hosts 2661 transport projects, involving a combined 1.3tn in investment. This accounts for 24% of projects globally and 19% of the global transport project pipeline in value. In the case of Europe, transport infrastructure investment will be supported by robust public funding aimed at transport electrification, including considerable funding set to come through the Next Generation EU fund, launched by the European Union in 2021 as part of efforts to support the economic recovery of the bloc following the Covid-19 pandemic. Rail projects will be a major focus of transport investment in the region, with the region home to 993 rail projects involving USD823bn in investment. This represents 37% of transport projects in Europe and 62% of the region's transport infrastructure project value. High-speed rail development will be a key driver of rail investment overall in the region, as governments in several major markets focus on building out high-speed rail networks.

Other regions globally have relatively smaller pipelines of transport projects. In terms of the number of projects, Sub-Saharan Africa follows Asia and Europe with 1412 transport projects, though the far smaller average value of projects in the region means that SSA's transport project pipeline has the lowest value of any region globally. Transport projects in the region have a total value of USD358bn, accounting for 5% of the global project pipeline.

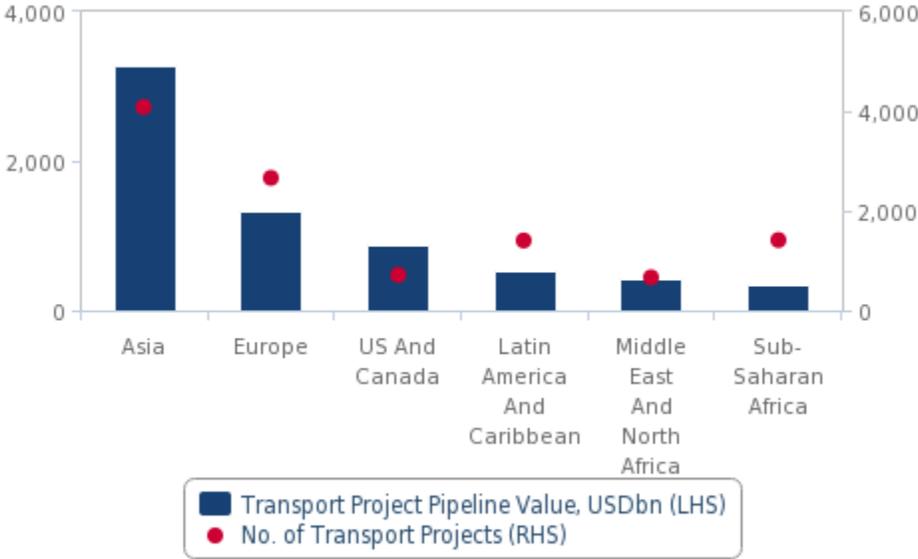
Latin America and the Caribbean follows SSA with 1403 transport projects, with the region's transport project pipeline having a combined value of USD543bn, the fourth highest of regions globally. In the region, we expect transport investment will be driven by efforts by governments to overcome a sizeable gap in both the quality of and access to transport infrastructure in much of the region in particular given underinvestment in recent decades and the stress

placed on infrastructure capacity by rapid urbanisation which has left the region among the most urbanised globally. Within Latin America and the Caribbean's transport infrastructure sector, we expect that road and bridge and public transit development will see the largest shares of investment overall. In the case of road and bridge projects as well as in the freight rail segment this will be supported by efforts to improve land transport networks to boost the competitiveness of the region's export-oriented commodities industries and improve transport access in particular in rural areas while also bolstering urban road infrastructure in numerous cases. In the case of public transit, investment will be driven by government efforts to bolster access to public transit in the region's large urban areas.

The US and Canada total of 711 transport projects, the fifth-highest among regional groupings. Nevertheless, given higher project development costs and in some cases more complex projects in the two markets, transport projects in the US and Canada total USD885bn in investment, the third-highest total of any region globally following Asia and Europe. The US in particular is set to see a considerable increase in transport infrastructure investment over the next five years, with federal government funding for transport projects set to see a robust increase following the passage and signing into law in 2021 of the Infrastructure Investment And Jobs Act (IIJA).

In terms of the number of transport projects, the Middle East and North Africa rounds out the global table, with 662 projects. These projects involve a combined US\$423bn, driven by the region's robust pipeline of rail infrastructure projects, which totals USD213bn of project pipeline value, ahead of roads & bridges with USD84bn. We expect that rail and roads will remain the primary sectors of development, as markets with existing rail infrastructure seek to further develop their mainline transport capacities and to further invest in high-speed rail links.

**Asia Stands Out With Largest Transport Project Pipeline**  
Global - Transport Project Pipeline By Region



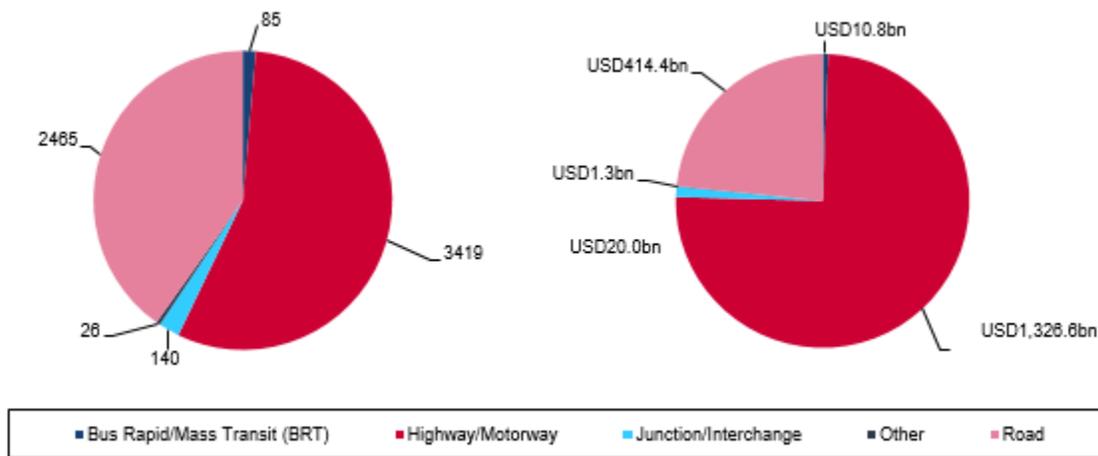
Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

**Sub-Sectors In Focus: Roads And Bridges**

Among large-scale road and bridge projects, highway and motorway projects will be the main focus of investment globally. Our Infrastructure KPD includes 3,419 highway/motorway projects involving a combined investment of USD1.3tn. As such, highway/motorway projects account for 56% of road and bridge projects globally and 75% of the value of the global infrastructure project pipeline. Road and junction/interchange projects total a combined 2,605 projects and a combined value of USD434bn while our Infrastructure KPD includes 85 bus rapid/mass transit projects involving a combined USD11bn in value.

## Highway/Motorway Projects At Centre Of Global Road And Bridge Project Pipeline

Global - Number & Value Of Road & Bridge Infrastructure Projects By Project Type



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

Among regions, Asia is set to outperform in road and bridge development, with the region, with the region home to 2,289 road and bridge projects involving a combined USD932bn in investment. As such the region accounts for 37% of road and bridge projects globally and 53% of the total value of the global road and bridge project pipeline. India will be the main driver of road and bridge infrastructure investment in Asia over the coming years, with the country home to both the highest number of projects in the region with 633 projects, as well as the highest share of the total value of Asia's road and bridge project pipeline, with projects involving a combined investment of USD205.9bn. This large pipeline of projects reflects the government's aim to modernise Indian highways and upgrade the quality of roads, with government projections pointing to USD270.0bn of spending as part of the country's National Infrastructure Pipeline. The Ministry of Road Transport and Highways has also been among one of the Ministries that have received the largest budget allocations for both FY2021/2022 and FY2022/2023.

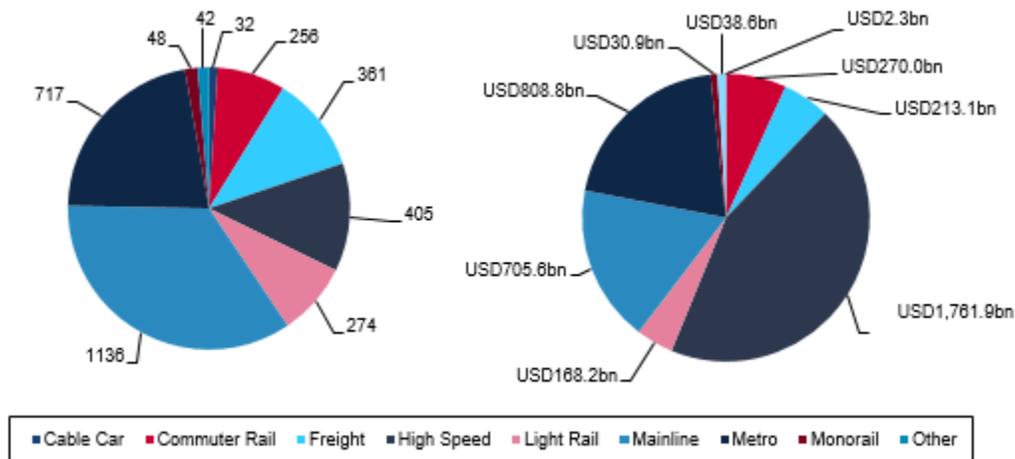
Outside of Asia, we expect road and bridge infrastructure development to be a particular focus of transport investment in regions home to predominantly developing markets, including both Latin America and Sub-Saharan Africa as governments look to improve connectivity, particularly in rural areas, as part of efforts to improve mobility, expand access to government services and to support local industries, including export-oriented commodities industries such as agriculture and mining. In the case of Latin America in particular, private investment will be a considerable source of funding for road projects, with a number of governments in the region having advanced large-scale concessions programmes in recent years.

### Sub-Sectors In Focus: Rail Infrastructure

Within the large global rail infrastructure pipeline, mainline rail projects stand out for their considerable number, with the global infrastructure pipeline including 1,136 mainline rail projects, accounting for 35% of the global rail infrastructure project pipeline, the largest share of any segment. Conversely, in terms of project value, we highlight the high average values of high-speed rail projects. With a pipeline of 405 projects, the high-speed rail segment only accounts for 12% of rail projects globally. Nevertheless, with a combined value of USD1.8tn, the high-speed rail segment accounts for 44% of the value of the global rail project pipeline, the highest of any rail segment. Comparatively, mainline rail projects involve a combined value of USD706bn, accounting for 18% of the combined value of the global rail project pipeline. Among other rail segments, metro projects also stand out with 717 metro projects globally involving a combined USD809bn, respectively 22% and 20% of the global totals for rail projects and rail infrastructure project pipeline value. Our Infrastructure KPD includes respectively 274 and 256 light rail and commuter rail projects, with light rail projects totalling USD168bn in value and commuter rail projects totalling USD270bn in value. Freight rail projects number 361 and total a combined USD213bn in investment.

## Mainline, High-Speed Rail Stand Out Respectively For Project Number, Value

Global - Number & Value Of Rail Infrastructure Projects By Project Type



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

Among regions, Asia will be an outlier for investment within the rail sector, as in the case of the road and bridge sector noted above. The region hosts 1,266 rail projects involving a combined USD1.9tn in investment. As such, the region accounts for 39% of rail projects and 47% of the rail infrastructure project pipeline globally. Mainline China will be the leader for rail investment in the region and globally, with the country's government expected to continue to support robust investment into rail projects following a massive buildout of rail infrastructure in the country over the past several decades. The market is home to 238 rail projects involving a combined USD638bn in investment, placing the market second behind India globally in terms of the number of rail projects and first globally in terms of project pipeline value. More than half of China's rail project pipeline is accounted for by HSR projects, which will continue to be a key focus for the government over the coming years. As part of China's latest five-year transport development plan (2021-2025), China aims to expand its HSR network to 50,000km by 2025, from an estimated 40,000km as of end-2021. This is in line with its earlier targets of doubling the size of its HSR network by 2035, in accordance with the "Eight Vertical, Eight Horizontal" HSR network grid plan. This HSR expansion target is also part of the overarching goal to increase the national rail network from an estimated 146,000km in 2020 to 165,000km by 2025 (and 200,000km by 2035) as well.

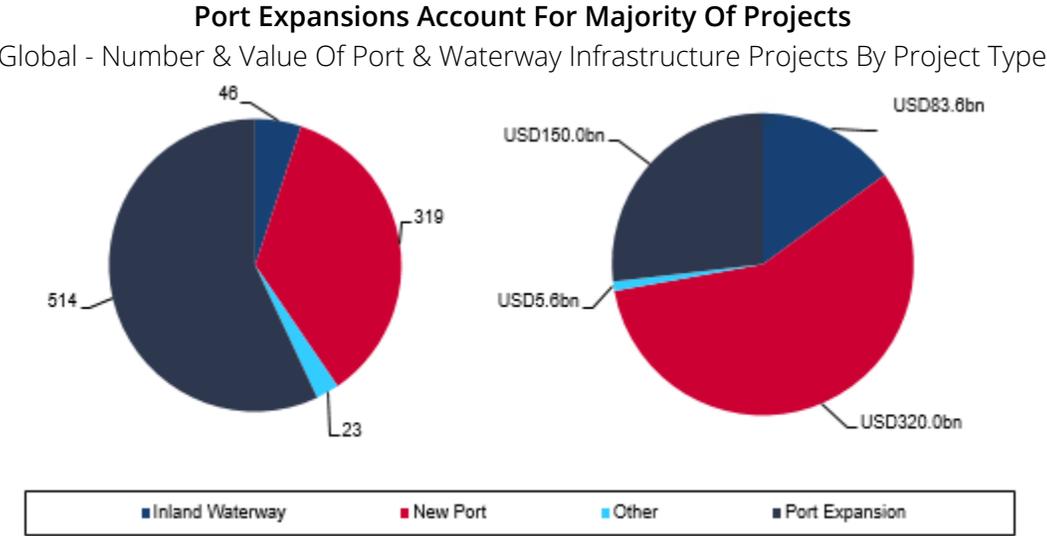
We note that Europe will also be a stand-out region for rail development, with rail infrastructure to be a core focus of infrastructure investment in the region over the coming years. The region is home to 993 rail projects involving a combined USD823bn in investment, corresponding to 30% and 21% respectively of global totals for the number of project and total rail project pipeline value. Much of this will be supported by efforts in the region to advance transport electrification and expand urban transit infrastructure, bolstered by considerable EU funding for those efforts including through the bloc's NextGeneration EU programme. Within the region we highlight Spain, the UK, France, Germany and Italy all as markets set to see robust investment in rail infrastructure development, spurred in particular by investment in high-speed rail networks in turn part of efforts to support the decarbonisation of transport infrastructure.

### Sub-Sectors In Focus: Ports And Waterways

Within the global port and waterway infrastructure pipeline, the majority of projects are expansions of existing port assets, with the global pipeline including 514 port expansion projects out of 902 port and waterway projects globally. Investment in this area will largely be focused on expanding port capacity and preparing ports to receive larger ships. That said, port expansion projects will also likely include a growing focus on port automation and electrification as port operators look to improve operational efficiency and to reduce carbon emissions from port operations.

While port expansions account for the largest share of projects globally, we note that new port projects also are set to be a key driver of port development globally, with new ports accounting for the largest share of the combined value of port and waterway infrastructure projects globally. Our Infrastructure KPD includes 319 new port projects involving a combined USD320bn in investment out of USD559bn total for all port and waterway projects globally.

While a smaller segment of the global ports and waterways project pipeline, inland waterway projects stand to see significant investment, with the global pipeline including 46 such projects involving a combined USD84bn. We note that this segment includes the project in the global port and waterway project pipeline, the proposed USD50.0bn Nicaragua Interoceanic Grand Canal project. One of the largest waterway projects ever planned, we see the project’s realisation as highly unlikely due to its high cost, technical complexity and a lack of significant progress toward its development.



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

Among regions, Asia again hosts the largest pipeline of projects in the case of the port and waterway infrastructure sector with the region hosting 312 port and waterway projects involving a combined USD233bn, accounting for 35% and 42% for global totals of port and waterway projects and project pipeline value. India stands out among markets, with the country home to 122 port and waterway projects involving a combined USD56bn in investment. This is driven largely by the Sagar Mala Initiative, to upgrade and modernise the country’s ports infrastructure, and develop coastal economic zones, which integrate ports with surrounding road and rail networks and improve connectivity to inland manufacturing and consumption centers.

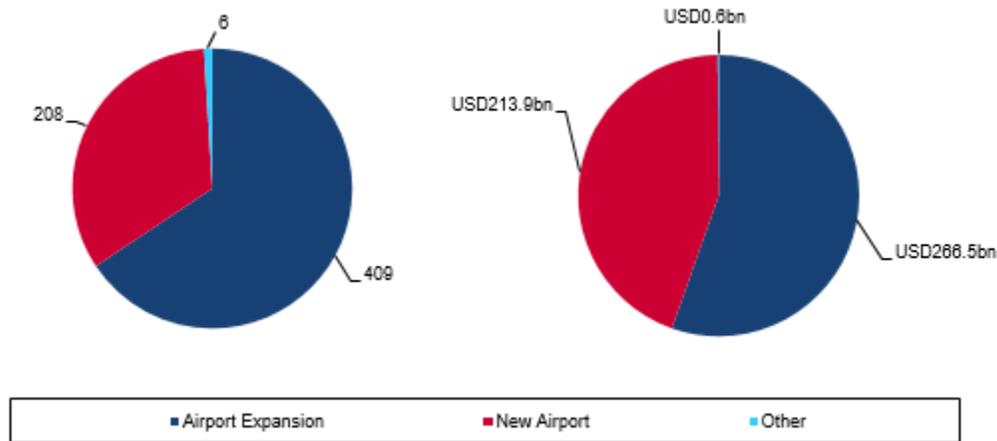
In terms of project value in particular, we highlight that Myanmar also stands out with a port and waterway project pipeline value at USD51.6bn, closely after India. This is driven predominantly by the USD50bn Dawei SEZ Deep Sea Port Mega-Project, which remains in planning stages. That said, we stress that this project faces significant risk given the controversy the project has faced and disputes between the Myanmar government and developers in the past, alongside the broader uncertain investor environment in the market following the military coup

**Sub-Sectors In Focus: Airports**

As in the case of the port and waterways sector, airport development globally will be largely driven by expansions to existing assets, with the global infrastructure project pipeline including 409 airport expansion projects, compared to 208 new airport projects. In terms of investment, both expansion projects and new airport developments are set to see significant investment, however. Airport expansion projects total USD267mn in investment according to our Infrastructure KPD, while new airport projects total USD214bn.

## Airport Expansions Stand Out In Terms Of Number Of Projects

Global - Number & Value Of Airport Infrastructure Projects By Project Type



Note: Excludes Completed And Cancelled Projects. Source: Fitch Solutions Infrastructure Key Projects Data

At the regional level, Asia again leads in terms of both the number of airport projects in the region and the total value of airport projects, with the region hosting 217 airport projects involving a combined USD231bn in investment. These totals see the region account for respectively 35% of projects globally and 48% of the global infrastructure project pipeline value. Among markets globally, however, we highlight the outperformance of the US market, which hosts 59 airport infrastructure projects involving a combined USD85bn, the highest total of any market globally. Airport investment in the market will be supported by a combination of factors including government support for the sector in recent years, a substantial injection of additional federal funding set to come over the coming years following the passage in 2021 of the Infrastructure Investment and Jobs Act (IIJA), as well as robust private investment a select number of large airport projects. Within the US market, we highlight in particular New York's JFK International Airport is likely to be a focus of airport investment over the coming decade, with four large-scale infrastructure projects currently moving forward under the umbrella of the USD18bn JFK Redevelopment program.

We note that across markets, the Covid-19 pandemic has had a particularly considerable impact on airport operations, as travel restrictions and reduced demand for travel weighed heavily on passenger totals, weighing on airport revenues. As such, we expect the residual impacts of reduced revenues in previous years as well as uncertainty around future airport demand to continue to weigh on airport investment to some degree, weighing on project activity in the airport segment particularly over the short term.

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