Private Participation in Infrastructure (PPI)

2021 Half Year (H1) Report

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Acknowledgement & Disclaimer

This report was prepared by a team comprising Deblina Saha (Task Team Leader), Seong Ho Hong, Teshura Nair, and Apala Bhattacharya, with editorial inputs by Luba Vangelova and design inputs by Pablo Alfaro Chavez. The team is very grateful for the support and guidance received from Fatouma Toure Ibrahima (Practice Manager of PPP Group, IPG Global Practice). The team is thankful to Mark Alexander Giblett (Senior Infrastructure Finance Specialist, IPG Global Practice), Helen Mary Martin (Senior PPP Specialist, IPG Global Practice), and Fernanda Ruiz-Nuñez (Senior Economist, IPG Global Practice) for providing valuable comments which helped shape the report. Photos by Shutterstock.com. This report describes Private Participation in Infrastructure (PPI) as indicated in the Private Participation in Infrastructure Database. The database records investment information for infrastructure projects in low- and middle-income countries globally. The PPI Database represents the best efforts of a research team to compile publicly available information, and should not be seen as a fully comprehensive resource. Some projects—particularly those involving local and small-scale operators—tend to be omitted because they are usually not reported by major news sources, databases, government websites, and other sources used by the PPI Projects database staff.

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Foreword

This year's Private Participation in Infrastructure[1] first half-year (H1) report shows clear signs of recovery in infrastructure investment since the first wave of the pandemic. In 2020, COVID-19 brought the infrastructure sector to a near standstill, with investment levels at historic lows since the inception of the PPI database. Although the pandemic continues to cause global disruption, investment levels are partially returning to pre-pandemic levels in many countries, indicating that the infrastructure business is slowly adopting to a new normal amidst the pandemic.

As countries plan their recoveries, including the use of infrastructure spending to stimulate post COVID-19 economies, it is important for countries to 'build back better' and ensure that proposed new infrastructure investments are green, resilient, and inclusive.

While the demand for infrastructure is now higher than ever, many governments are facing severe fiscal constraints as a result of the significant respources that have been spent by governments on trying to mitigate the substantial economic and social impacts of the pandemic. These fiscal constraints mean that governments will have to increasingly rely on private sector investment to help finance infrastructure development.

However, at the same time there is still a lot of uncertainty amongst private sponsors and financiers given the uncertain macroeconomic outlook and, as such, there has been a notable shift in investment towards markets that are traditionally 'safer' and countries that have had more success in combatting the pandemic. Concerns about credit quality, the liquidity of borrowers, and the financial robustness of counterparties, especially in developing countries, continue to linger, even as investments in the infrastructure sector make a solid recovery.

The PPI database team will continue to closely monitor and report on the pandemic's impact on private infrastructure investment commitments as the road to recovery begins.

1 Private Participation in Infrastructure (PPI) as defined by the Private Participation in Infrastructure Database (http://ppi.worldbank.org/methodology/ppi-methodology).

2021 Key Highlights

Investment commitments of **US$21.9 Billion in 133 projects** in H1 2021 **68% from H1 2020**

Investment levels in Latin America and the Caribbean (LAC) increased by 84% from H1 2020.

LAC dominated investments with commitments of **US$14.5 billion, 41% of the H1 2021 total.** Brazil led the recovery in the region with 88% of LAC investments.

Europe and Central Asia (ECA) saw investment commitments of **US$4.7 billion, a 279% increase from H1 2020.**

The region was led by Uzbekistan: With investment commitments of US$2 billion; it was a new entrant to the top five countries with the highest investment levels.

Although South Asia (SAR) had the second highest commitments in H1 2020, commitments **fell by 49% in H1 2021 to US$2.5 billion.**

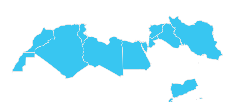
India, usually a regional leader, posted investment commitments of US$2.2 billion.

East Asia and Pacific (EAP) posted investment commitments of US$9.9 billion, a 124% increase from H1 2020.

Though the region usually out-invests others, it provided only 28% of total investment in H1 2021 compared with 13.2% in H1 2020

China posted investment commitments of US$5.8 billion (US$2.9billion in H1 2020) with no megaprojects.

Sub-Saharan African (SSA) received **US$3.6 billion,** a **105% increase in investment levels from H1 2020.**



Investments in the **Middle East and North Africa (MENA)**, one of two regions to mark an increase in H1 2020, fell to US$415 million, a 59% decrease.

2021 Key Highlights

The transport sector outpaced the energy sector in H1 2021, showing US$14.4 billion across 40 projects (a 216% increase from H1 2020 levels), accounting for 40% of global PPI investments.

Investment commitments in the energy sector totaled US$13.4 billion across 62 projects, a 7% decrease from H1 2020 levels.

The water and sewerage sector, which usually posts low investment levels, had its highest commitments in a decade, at US$7.8 billion across 23 projects. This is a nearly five-fold increase from H1 2020.

Renewable energy continued to dominate; 95% of electricity generation projects were in renewables. The most popular form of renewable technology was solar photovoltaic (PV).

IDA

Development and export finance institutions (DEFIs) played a critical role in continuing to provide investment commitments in International Development Association **(IDA)** countries. **Nine out of 13 IDA projects** received some form of DEFI support.

Executive Summary

Investment[2] commitments in the first half of 2021 stood at US$35.6 billion across 133 projects, marking an increase of 68 percent from the first half (H1) of 2020 but still a 12 percent decrease from the previous five-year H1 average (2016-2020). Although COVID-19 continues to affect countries worldwide, several regions have shown strong recoveries in infrastructure investments.

Private investment commitments in all regions except for South Asia Region (SAR) and the Middle East and North Africa (MENA) displayed signs of recovery. Following the previous year, Latin America and the Caribbean (LAC) continue to lead investments in the low- and middle-income countries in the first half of 2021, accounting for 41 percent of total PPI investments in the period. LAC saw an 84 percent increase in investment levels from the first half of 2020, and the region has already reached 96 percent of 2020's full-year investment level.

East Asia and the Pacific (EAP) and Europe and Central Asia (ECA) surpassed their 2020 full-year investment levels. Sub-Saharan Africa (SSA) recorded its highest half-year PPI investment levels in the last five years. However, SAR only attracted US$2.5 billion in investments, a decrease of 49 percent from the first half of 2020. Private investment commitments in MENA also fell by 59 percent to US$415 million compared to the first half-year of 2020.

Investment commitments in the first half of 2021 in International Development Association (IDA) countries[3] totalled US$2.5 billion across 13 projects in 10 countries. This compares to US$2.4 billion across 13 projects in nine countries in the first half of 2020 and US$1.9 billion for the five-year H1 average (2016-2020). Development and export finance institutions (DEFIs) once again played a critical role in supporting these high investment commitments, with nine out of these 13 IDA projects receiving some form of DEFI support.

The transport sector outpaced the other PPI sectors, attracting US$14.4 billion across 40 projects. This accounted for 40 percent of global PPI investments in the first half of 2021. All four subsectors within transport (airports, railways, roads, and ports) displayed clear signs of recovery. However, the energy sector received only US$13.4 billion across 62 projects, recording the lowest half-year investment levels in a decade. Similarly, the municipal solid waste (MSW) sector also recorded its lowest half-year investment levels, only attracting US$70.7 million over eight projects, with the information and communication technology (ICT) sector not recording any projects in this period based on the data provided.

At US$7.8 billion across 23 projects, private investment commitments in the water and sanitation sector in the first half of 2021 recorded their highest level in the last 10 years. Seventy-two percent of investment commitments in the water sector occurred in Brazil, where the country's government has agreed to privatize the Rio de Janeiro's water and sewage treatment plants.

2 "Investment" refers to private investment commitments at the time of financial close in energy, transport, water and sanitation, municipal solid waste and ICT-backbone projects serving the public in low- and middle-income countries, including natural gas transmission and distribution, but excluding oil and gas extraction. ICT-backbone infrastructure includes fiber optic cables, mobile towers, and other hard assets, with an active government component.

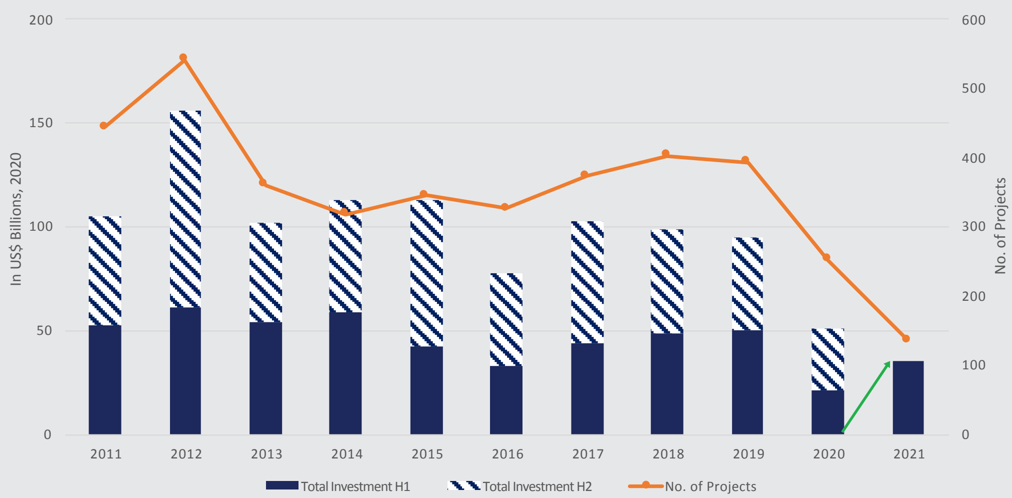
3 IDA countries are those eligible for support from the IDA, which is the part of the World Bank that helps the world's poorest countries (http://ida.worldbank.org/).

Overview

PPI investment in the first half of 2021 accounted for US$35.6 billion across 133 projects, a 68 percent increase from the first half of 2020 investment levels (Figure 1). This is a much stronger recovery than that seen after the global financial crisis of 10 years ago, when investment levels increased by only 17 percent from the first half of 2011 to the first half of 2012. Recovery to pre-COVID-19 investment levels can already be seen in some regions.

FIGURE 1

Investment commitments in Infrastructure Projects with Private Participation in Emerging Market and Developing Economies (EMDEs), 2011–H1 2021



The first half of 2021 saw investment commitments in 39 countries, an increase from H1 2020's 32 countries and even from H1 2019's 38 countries. The first half of 2021 also showed an increase from the previous five-year H1 average (2016-2020) of 35 countries. This is a remarkable recovery, considering the significant ongoing economic and social impacts of COVID-19. The large number of countries can be primarily accounted for by investments in 12 Sub-Saharan African (SSA) nations, with investment commitments of US$3.6 billion, a 105 percent increase from US$1.8 billion in nine countries in the first half-year of 2020. Europe and Central Asia (ECA) also showed a substantial recovery, with investment commitments of US$4.7 billion in the first half of 2021, a 279 percent increase from the first half of 2020 across 10 countries.

Latin America and the Caribbean (LAC) accounted for US$14.5 billion of investment commitments, an 84 percent increase from the first half of 2020. The region fell short of investment commitments in the first half-year of 2019 by a mere 3 percent. Nevertheless, US$5.6 billion was accounted for under three transactions for the concession of Rio de Janeiro's national water utility in Brazil. On the other hand, East Asia and the Pacific (EAP), which posted investment commitments of US$9.9 billion (a 124 percent increase from the first half of 2020), fell substantially below the region's investment commitments before the pandemic. Compared to the first half of 2019, investment levels in the EAP region were down by 53 percent.

South Asia Region (SAR) and the Middle East and North Africa (MENA) were the only regions that further decreased in investment levels from the first half of 2020, at US$2.5 billion and US$415 million, respectively. These were 49 percent (SAR) and 59 percent (MENA) decreases from the first half-year of 2020 levels. These regions, especially South Asia, saw significant disruptions due to the ongoing pandemic in the first half of 2021.

On an individual country basis, the highest half-year 2021 investment levels were in Brazil, with commitments of US$12.7 billion, accounting for 0.88 percent of the country's gross domestic product (GDP; Table 1); these levels were an increase from 0.2 percent of GDP in the first half-year of 2020, when the country came second in the country PPI rankings. These high investment levels can be attributed to the financial closure of five megaprojects[4] , including the concession of Rio's water and sewage treatment plants. China retained its spot among the top five countries for investment commitments, with US$5.8 billion. It moved up to second place (from third in the first half-year of 2020), accounting for 0.04 percent of GDP. This was an increase from 0.02 percent in the first half-year of 2020. In third place is Vietnam, returning to the top five investment destinations at US$2.2 billion, with a GDP share of 0.82 percent, an increase from 0.45 percent in the first half of 2020.

Climbing one position, to fourth, is India, also with investment commitments of US$2.2 billion, accounting for 0.08 percent of its GDP. This is a slight increase from the first half of 2020, when its investment commitments represented 0.07 percent of GDP. Uzbekistan is the new entrant to the top investment destinations list, at US$2 billion and 3.43 percent of GDP which is significantly higher than its H1 2020 levels, when it posted investment commitments of only US$159 million, accounting for 0.28 percent of GDP. Uzbekistan was also the country with the highest level of PPI investment as a percentage of GDP at 3.34 percent.

In the first half of 2021, these five countries together attracted US$25 billion of investment, representing 70 percent of PPI investments in low- and mid-income countries.

Table 1: Top Five Countries with Investment Commitments in 2020

Country	H1 2021 PPI (US$, millions)	H1 2021 PPI as a Share of GDP	H1 2020 PPI as a Share of GDP	Number of Mega-projects in H1 2021
Brazil	12,692	0.88%	0.20%	5
China	5,827	0.04%	0.02%	0
Vietnam	2,228	0.82%	0.45%	0
India	2,161	0.08%	0.07%	0
Uzbekistan	1,978	3.43%	0.28%	1

4 With reference to the PPI database, megaprojects refer to projects with investment commitments of US$1 billion or greater.

Based on PPI as a percentage of GDP, the top five countries for the first half of 2021 are: Uzbekistan (3.4 percent), the Democratic Republic of Congo (2.3 percent), Côte d'Ivoire (1.1 percent), Bulgaria (1.0 percent), and Ukraine (0.9 percent). The largest project in Uzbekistan was the Sirdaya 1.5-gigawatt (GW) combined cycle gas-turbine (CCGT) power plant being constructed in the city of Shirin. The power plant is part of the Uzbekistan government's plan to improve the efficiency and capacity of its electricity production, while also boosting economic growth and reducing environmental impact. Upon completion, the project is expected to meet 15 percent of Uzbekistan's power demand and account for 8 percent of its total installed power capacity. Uzbekistan, which recorded its first PPI transaction in 2019, has now sustained PPI for three consecutive years.

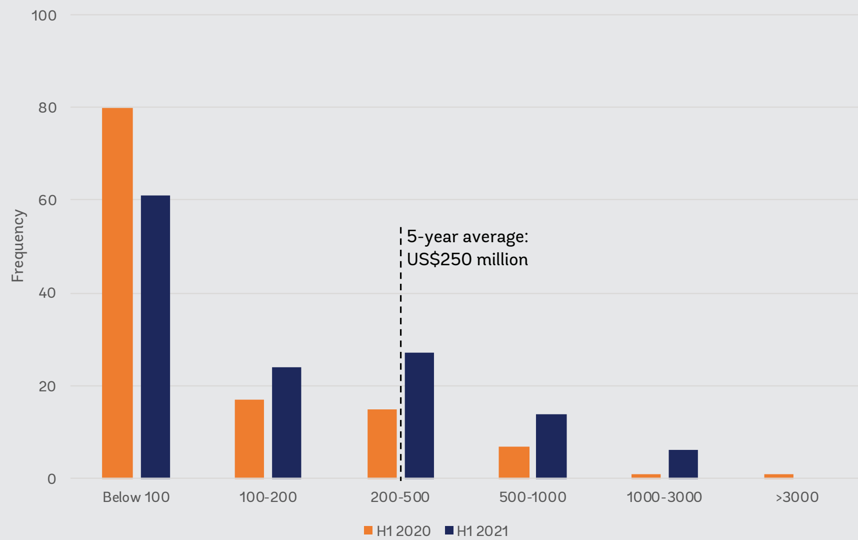
Meanwhile, in the Democratic Republic of Congo (DRC), a Dubai-based company is set to begin work on the US$1 billion Banana Port development, the country's first deep-sea port along its Atlantic coastline. In addition, two solar power projects in DRC have helped it to become the lead destination for PPI in SSA in the first half of 2021. While PPPs have long been considered as an option to promote the development of key sectors in the DRC, including the electricity and telecommunication sectors, the country did not have a comprehensive legal framework to support PPPs until relatively recently.

Project Size

The average (mean) project size in the first half of 2021 (US$268 million) was higher than the average project size for the first half of 2020 (US$172 million). In addition, the median project size in the first half-year of 2021 (US$116 million) was significantly higher compared to the first half-year of 2020 (US$66 million). The higher median indicates that the first half of 2021 saw an increase in larger projects

Investments in small projects (<US$100 million) fell from a 66 percent share in the first half of 2020 to a 46 percent share in the first half of 2021. On the other hand, medium projects (US$100 million to US$500 million) rose from 26 percent to 39 percent in the first half-year of 2021. The share of projects ranging from US$500 million to US$1 billion almost doubled—from 6 percent to 11 percent—and the share of megaprojects (>US$1 billion) increased from 2 percent to 5 percent (Figure 2).

FIGURE 2
Size Frequency Distribution of Infrastructure Projects with private Participation in EMDEs, H1 2020 and H1 2021



Project Type

Greenfield projects continued to dominate in the first half of 2021, accounting for 73 percent of all PPI investments, in line with the previous five-year H1 average of 75 percent and 87 percent in the first half of 2020. In the first half of 2021, the majority of greenfield investments were directed to the energy sector (49 percent), whereas 70 percent of brownfield investments occurred in the water and sewerage sector instead of in the transport sector, which in the past has typically attracted more brownfield investments than other sectors.

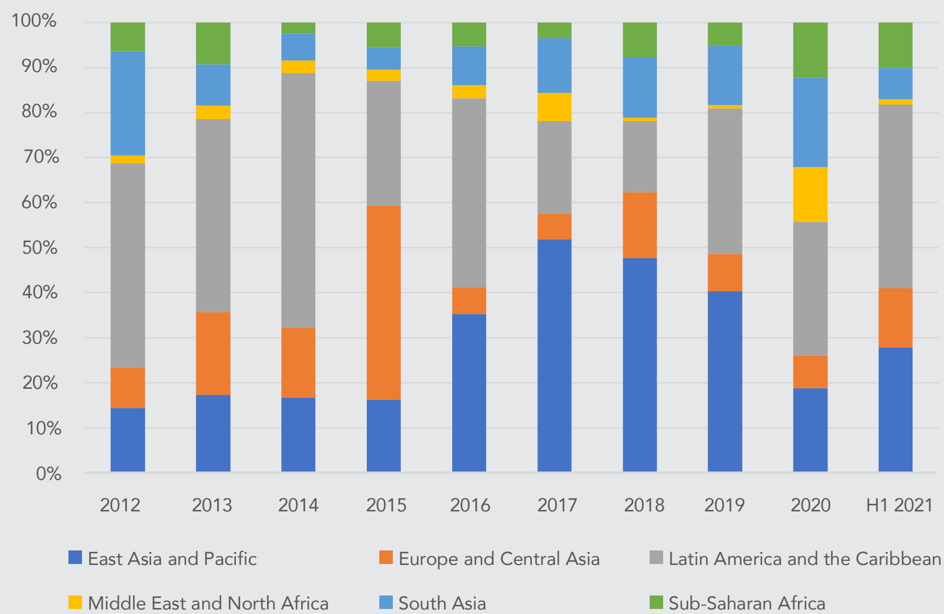
In the first half of 2021, 10 transactions were recorded as management contracts, a decrease from 18 in the first half of 2020 but double that of the first half of 2019 which saw only 5 management contract transactions. There were four divestitures (one in the first half of 2020 and three in the first half of 2019, all in the energy sector. The transport sector, which took a large hit in the first half of 2020, saw a recovery in the first half of 2021, with the financial closure of 41 projects and investment commitments of US$14.4 billion. Of these, greenfield investments accounted for 78 percent. Although its investments are still significantly lower than pre-COVID-19 levels, the transport sector showed good recovery from the first half of 2020 levels, when transport projects largely based on user fees or tariffs saw a sharp decline.

Geographic Spread

Private investment commitments in all regions except for SAR and MENA displayed signs of recovery. LAC continues to lead investments, accounting for 41 percent of total PPI investments in the first half of 2021. LAC saw an 84 percent increase in investment levels from the first half of 2020 and had already reached 96 percent of 2020's full-year investment level in the first half of 2021. EAP and ECA similarly surpassed their 2020 full-year investment levels in the first half of 2021. In the first half of 2021, SSA recorded its highest half-year PPI investment levels in the 2012 to 2020 period.

FIGURE 3

Regional Share of Investment Commitments in Infrastructure Projects with Private Participation in EMDEs, 2012–H1 2021



However, in the first half of 2021, SAR only attracted US$2.5 billion in investments, a decrease of 49 percent from the first half of 2020. South Asia's lowest half-year PPI level in a decade can be attributed to the fact that India (usually a country with the highest investment levels in the region) as well as other countries in the region, were severely impacted by the COVID-19 in the first half of 2021. Private investment commitments in MENA also fell compared to both the first half of 2020 and to the previous five-year H1 average.

Latin America and the Caribbean

With US$14.5 billion, LAC received the largest investment of any region in the first half of 2021. Private investment commitments in LAC increased by 84 percent from the same period in 2020, and 24 percent from the previous five-year H1 average. In the first half-year of 2021, LAC surpassed its 2020 full-year investment levels.

Brazil represented 87 percent of LAC's half-year 2021 investments. As part of President Bolsonaro's plan to spark private-led infrastructure investments, Brazil continued to advance its concessions agenda in 2021. The Brazilian government agreed to privatize Rio de Janeiro's water and sewage treatment plants[5] which raised US$5.6 billion. Strong private sector participation in Brazil's infrastructure is expected to continue as the country's government aims to attract about US$56 billion in infrastructure investment over the coming years, with significant private sector participation.

Other LAC countries with PPI transactions were the Dominican Republic, Ecuador, Mexico, and Peru.

East Asia and the Pacific

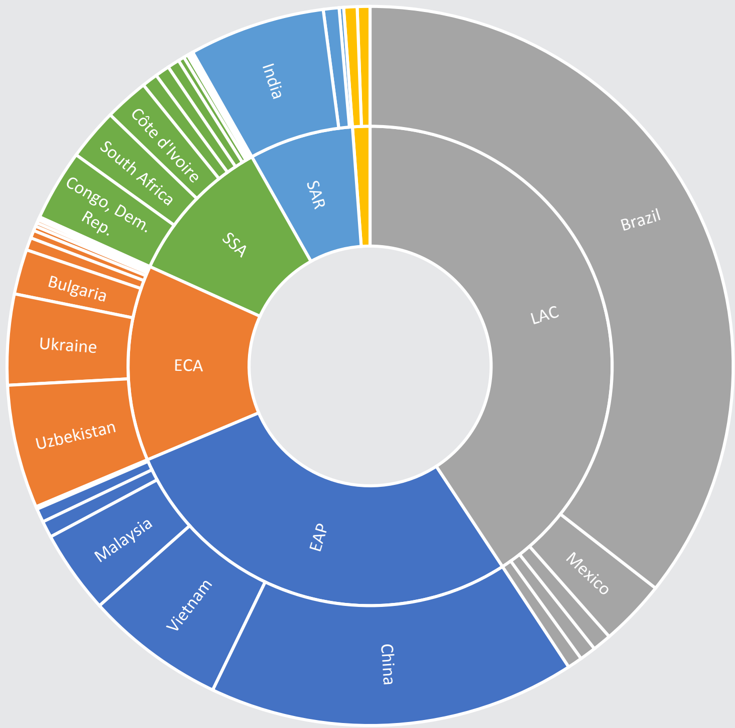
EAP attracted US$9.9 billion in investments in the first half of 2021, an increase of 124 percent from the first half of 2020, but a decrease of 35 percent compared with the five-year H1 average. The increase in investment commitments in EAP can be explained by increases in China (US$5.8 billion), Vietnam (US$2.2 billion), and Malaysia (US$1.3billion).

In the first half of 2021, Vietnam was the country with the third highest level of PPI investments globally. With its significant infrastructure needs, Vietnam has been aiming to increase public-private partnerships and foreign direct investment to meet infrastructure needs. In line with this, in April 2021, Vietnam's transport ministry announced its transport infrastructure master plan for 2021 to 2030; the plan is expected to cost US$43 billion to US$65 billion. The two largest PPI projects in the first half of 2021 were expressways under a public-private partnership (PPP) scheme. Strong PPI performance in Vietnam is expected to continue following the implementation of Vietnam's PPP law in January 2021.

Other EAP countries with PPI transactions were Cambodia, Indonesia, and the Philippines.

5 Water projects have usually been sponsored by the public sector because high input costs and below cost recovery tariffs make such projects unviable from the private sector's perspective.

FIGURE 4
Investment Commitments in Infrastructure Projects with Private Participation In EMDEs, by Region and Country, H1 2021



Europe and Central Asia

ECA, with US$4.7 billion, saw a 279 percent increase from the first half of 2020 (US$1.2 billion). This was mainly due to significant PPI increases in Ukraine and Uzbekistan. In the first half of 2021, Uzbekistan alone had US$2 billion worth of investments, primarily in the energy sector.

Uzbekistan, which recorded its first PPI transaction in 2019, has attracted PPI for three consecutive years and became the country with the fifth largest PPI commitments in the first half of 2021. A key theme of Uzbekistan's economic revitalization since 2017 has been to accelerate infrastructure development through private sector participation. This led to an ambitious public-private partnership program that included passing a PPP Law, creating a dedicated PPP agency, and requiring line agencies to actively promote PPPs for key projects. In January 2021, a long-awaited amendment to the PPP[6] Law was approved and signed, paving the way for more investment in sectors including renewable energy, health, and transport. This amendment is expected to lead to a large number of PPP projects being procured over the next few years.

Other ECA countries with PPI transactions were Albania, Armenia, Azerbaijan, Bulgaria, Kazakhstan, Macedonia, the Russian Federation, and Turkey.

6 Law No. 669 filled the majority of the existing loopholes in the PPP Law and clarified the mechanism for implementing PPP projects in Uzbekistan.

Sub-Saharan Africa

SSA's private investment commitments achieved a remarkable performance in the first half of 2021. SSA received US$3.6 billion across 15 projects, a 104 percent increase in investment levels from the first half of 2020 and a 111 percent increase from the five-year H1 average. The increase in SSA is partly explained by the US$1.1 billion of investments in the Democratic Republic of Congo.

The Democratic Republic of Congo received investments of US$1.1 billion across three projects, a port concession (US$1 billion) and two solar mini-grids. A Dubai-based port developer is finally starting the Banana Port development along the country's coastline. The deep-sea port development is aimed at attracting more direct calls from larger vessels from Asia and Europe, and boosting the country's economy. The Democratic Republic of Congo has been considering PPP as an option to promote the development of key infrastructure. However, the country was missing a comprehensive legal framework to support PPPs until a new PPP Law entered into effect in 2018.

Other SSA countries with PPI transactions were Angola, Burkina Faso, Chad, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, South Africa, and Uganda. The number of countries achieving private investment commitments in the region have been steadily increasing which has contributed to the region's success.

South Asia

SAR attracted US$2.5 billion in investments in the first half of 2021, a decrease of 49 percent from the first half-year of 2020 and its lowest investment level in a decade.

One of the main reasons for this sharp fall is probably due to a decline in investments in India arising from a devastating second wave of COVID infections that hit India in the first half of 2020. However, PPI figures in the region (including India) are expected to improve in the second half of 2021 as the situation gradually improves and the government eases restrictions to reopen economies.

Other SAR countries with PPI transactions were Sri Lanka, Pakistan, and Bangladesh. Pakistan was an entrant in the top five countries for investment commitments in the first half-year of 2020, but its investment levels then fell in the first half-year of 2021 to US$250 million.

Middle East and North Africa

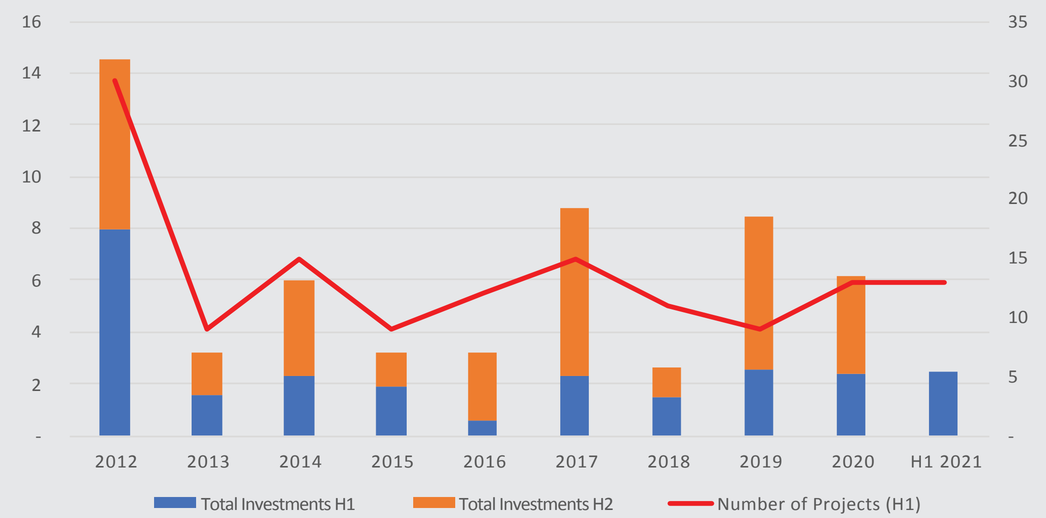
MENA's first half of 2021 investment level (US$415 million) decreased by almost 60 percent from the first half 2020 level (US$1 billion). Investment was also down from the region's past five-year H1 average. Thanks to a port container project, Morocco has sustained PPI investments for five consecutive years. Besides Morocco, Egypt is the only other country with PPI investments in the region.

Investments in International Development Association (IDA) Countries

IDA countries' investment commitments in the first half of 2021 totaled US$2.5 billion across 13 projects in 10 countries. This compares to US$2.4 billion across 13 projects in nine countries in the first half of 2020, and US$1.9 billion for the previous five-year H1 average across 8.6 countries.

FIGURE 5

IInvestment Commitments in Infrastructure Projects with Private Participation in IDA Countries, 2012 – H1 2021



Private investment commitments in the IDA countries are showing slight signs of recovery in the first half of 2021. As in the past, development and export finance institutions (DEFIs) played a critical role in supporting private investments into IDA countries, with nine out of these 13 IDA projects receiving some form of DEFI support (mostly from multilateral institutions).

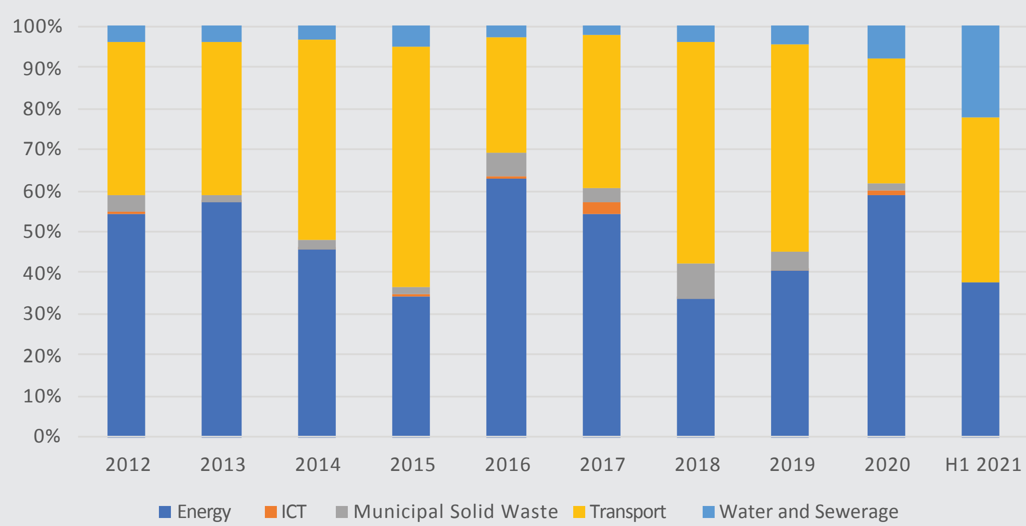
These large commitments were mainly due to sizable investments in the Democratic Republic of Congo and Côte d'Ivoire. The Democratic Republic of Congo received investments of US$1.1 billion across three projects, including a port concession (US$1 billion) and two solar mini grids. Côte d'Ivoire managed to receive private investment commitments for three consecutive years. In the first half of 2021, the country achieved financial closures on a biomass power plant and a port terminal project. Ethiopia had its first PPI investment in five years, for the country's first geothermal project developed by an independent power producer.

Table 2: Investment Commitments and Number of Infrastructure Projects with Private Participation in IDA Countries, H1 2021		
Country	**Total Investment (US$ Millions)**	**Number of Projects**
Congo, Dem. Rep.	1,135	3
Côte d'Ivoire	701	2
Ethiopia	251	1
Uganda	229	1
Cambodia	41	1
Burkina Faso	35	1
Chad	30	1
Mozambique	26	1
Bangladesh	N/A	1
Ghana	N/A	1
Total	2,449	13

Sector Trends

In the first half of 2021, the transport sector outpaced the other PPI sectors, attracting US$14.4 billion across 40 projects. This accounted for 40 percent of global PPI investments. The energy sector received US$13.4 billion across 62 projects, accounting for 37 percent of investment commitments in the first half-year of 2021. The water sector recorded its largest half-year PPI investments, receiving US$7.8 billion across 23 projects. However, the municipal solid waste (MSW) sector attracted only US$70.7 million over eight projects, and the information and communication technology (ICT) sector did not record any projects based on the data provided.

FIGURE 6
Share of Sectoral Investment Commitments in Infrastructure Projects with Private Participation in EMDEs, 2012–H1 2021



Transport

Transport-sector investment commitments totaled US$14.4 billion across 40 projects in the first half-year of 2021, a 216 percent increase from the first half-year of 2020 levels, but approximately the same as the five-year H1 average. All four subsectors within transport—airports, railways, roads, and ports, displayed clear signs of recovery.

Within the transport sector, the road subsector received the highest level of investment commitments at USD9.2 billion. Brazil accounted for the largest share of global road investments, at US$3.7 billion, followed by China (US$2.3 billion) and Vietnam (US$7.3 billion). The railway subsector received US$2.4 billion, the second largest investment commitment within transport. This is mainly due to China's Tianjin Metro extension project. Other countries with railway projects are Brazil, Indonesia, and Mexico.

Port projects received US$1.9 billion in private investment commitments in the first half of 2021, indicating signs of recovery. This is a significant leap from the first half-year of 2020, when ports and railways were severely impacted by COVID-19, with decreased volume of containers and cargo. Most of the projects occurred in SSA, the largest being the Democratic Republic of Congo's Banana Port concession. Other countries with port projects are Angola, Côte d'Ivoire, and Morocco.

Finally, the airport subsector received US$900 million in investment commitments. This compares to US$231 million in the first half-year of 2020. The largest airport project was in Bulgaria. Other countries with airport projects are Albania, China, and Nigeria.

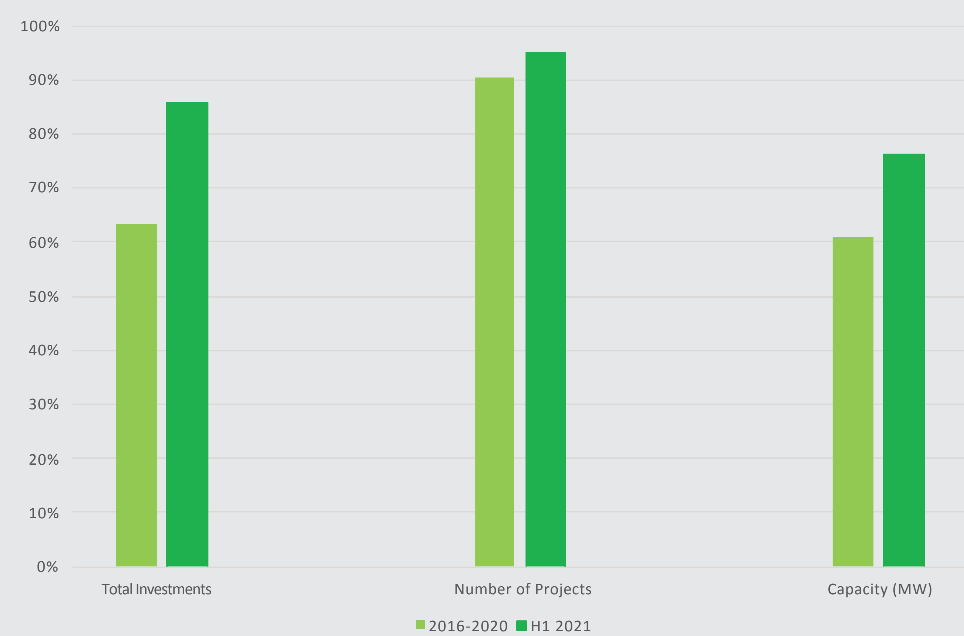
Energy

With US$13.4 billion across 62 projects, investment in the energy sector in the first half of 2021 dropped by 7 percent from the first half-year of 2020 levels (US$14.4 billion) and 38 percent from the five-year H1 average (US$21.6 billion), recording the lowest levels in the last 10 years.

The electricity subsector accounts for all the US$13.4 billion investments in energy, and there was only one coal project reported during the period. Of total investment commitments in the sector, US$12.9 billion was committed to 61 electricity-generation projects.

FIGURE 7

Electricity Generation Projects in EMDEs (Renewable and Conventional Resources) by Investment Volume, Number of Projects, and New Capacity, Five-Year Average(2016-2020) and H1 2021

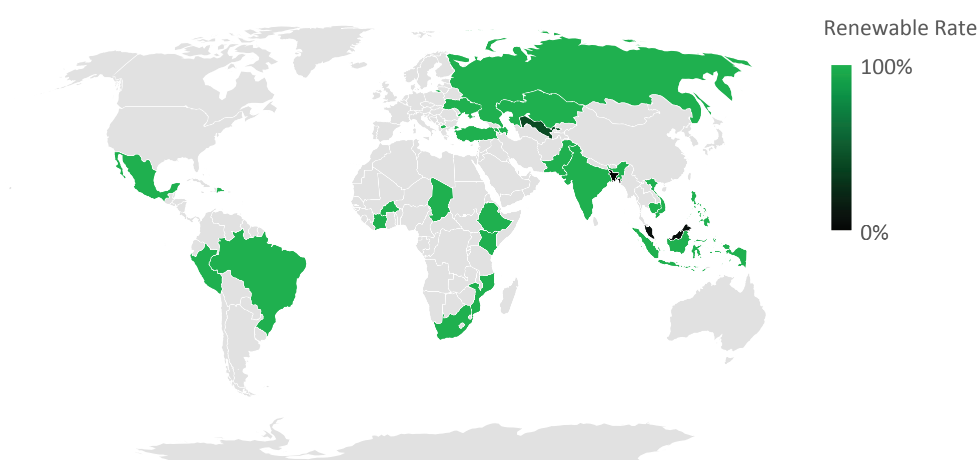


Fifty-eight (about 95 percent) of 61 new electricity-generation projects used renewable-energy sources. In terms of investment volume, almost 86 percent of new electricity-generation investments were in renewables. Seventy-six percent of the newly added 12 GW capacity were from renewable-energy sources in the first half of 2021.

The most popular renewable technology in the first half of 2021 was solar photovoltaic (PV). Solar PV added 5.9 GW in new power generation capacity in low- and middle-income countries. India and Brazil together had eight solar PV projects, worth US$2.6 billion.
The next most popular source of renewable energy was onshore wind technology. Vietnam and Brazil together had 13 new onshore wind power plants. Ukraine reported a large 792 MW onshore wind power project. To be developed in three stages, the Zophia wind project will be one of the biggest onshore wind farms in Europe.

At a country level, with the exceptions of Bangladesh, Malaysia, and Uzbekistan, most of the private investments in energy were in renewable energy projects (Figure 8). In Bangladesh, based on the data provided, all newly added power generation capacity (307MW) is from coal. However, Bangladesh has recently announced that it will be cancelling a number of new coal fired power projects and will be focusing on gas and renewable energy projects to meet its energy needs moving forward.

FIGURE 8
Rate of Renewable Energy Sources Used in Newly Added Electricity Generation



Note: Renewable rate refers to the share of new renewable energy capacity in the total new capacity.

Investment commitments in renewable technology continue to be especially high in Vietnam. The Government of Vietnam has set new feed-in tariff rates for utility-scale, rooftop, and floating PV projects after a long period of policy uncertainty and this has helped encourage investment into the sector. This highlights the importance of a clear policy framework to promote a country's renewable energy sector.

Water and Sanitation

The water and sanitation sector's 2021 half-year private investment commitments were unusually high. At US$7.8 billion across 23 projects, investment in the water and sanitation sector in the first half of 2021 was the highest in the last 10 years, and it represented a five-fold increase compared to the first half of 2020.

Seventy-two percent of investment commitments in the water and sanitation sector occurred in Brazil, where a concession was awarded for a multibillion-dollar PPP water treatment project as part of the Brazilian government's policy of privatizing Rio de Janeiro's water and sewage treatment plants. The winning bidders intend to collect and treat 90 percent of sewage by 2033; the 35-year concession was the largest ever water treatment rights sale in Brazil.

Other countries with private investment commitments in the water and sanitation sector include China, Sri Lanka, Egypt, the Philippines, India, and Ghana.

Municipal Solid Waste

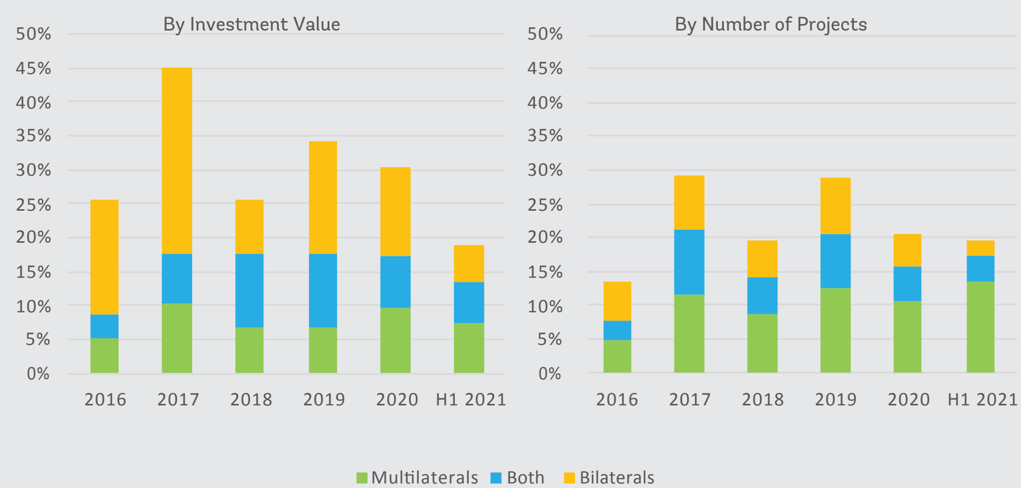
In the first half of 2021, a mere US$71 million was invested across eight MSW projects, compared to US$888 million across 16 projects in the first half-year 2020. These were the lowest MSW investment commitments in the last 10 years. The only countries with transactions in the sector were Bulgaria and China.

Financing Trends

Development and Export Finance Institution[7] Support

In the first half of 2021, 26 projects received some form of DEFI support, accounting for 19 percent of all PPI projects. By investment value, projects with DEFI support accounted for 20 percent of total investment commitments. There were two megaprojects that received DEFI support in the first half-year of 2021, both electricity generation projects, one in the Zophia wind plant in Ukraine and the other the Sirdaya combined cycle gas power plant in Uzbekistan. This was higher than last year's megaproject involvement, in which only one megaproject Thar Block-I Coal-Fired Power Plant in Pakistan saw DEFI support.

FIGURE 9
Share of Infrastructure Commitments with Private Participation in EMDEs that Received Support from Multilateral/Bilateral DEFIs, 2016–H1 2021



DEFI support tended to be focused in the energy sector, representing 85 percent of total support, specifically in the renewable energy sub sector with 21 out of 22 projects in the energy sector being renewable energy projects, reflecting the global push to reduce greenhouse gas emissions and combat climate change. Strong emphasis was seen in the solar sector, with 13 solar projects, with the remaining projects being wind energy (6 projects), biomass (1 project) and geothermal (1 project). DEFIs continued to direct most of their support to low-income and lower-middle-income countries (20 projects) as countries that have relatively low levels of financial sector development tend to rely heavily on DEFI debt and/or guarantees to encourage and support infrastructure investment.

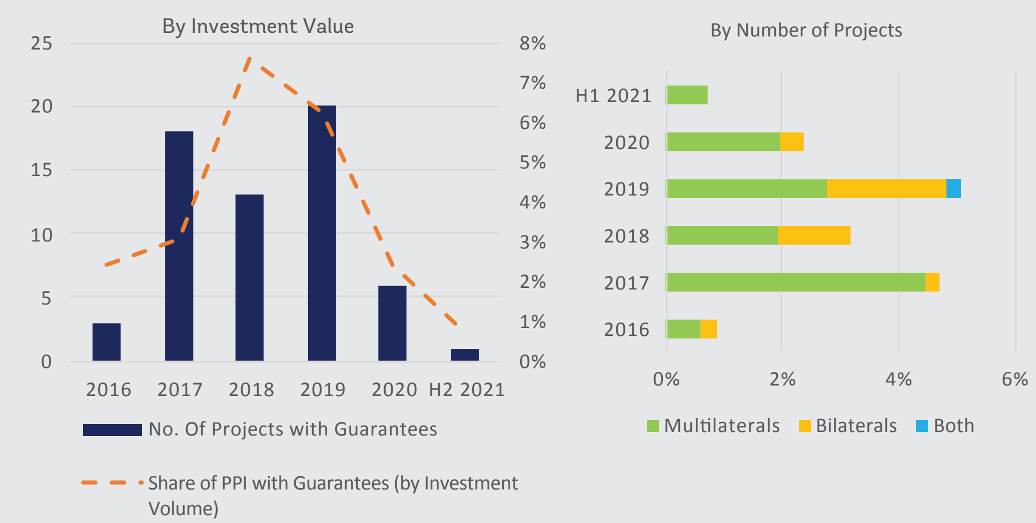
7 For the purposes of this report, DEFI refers to multilateral institutions and bilateral agencies with a development mandate, as well as export credit agencies with a mandate to support domestic businesses in pursuing investments abroad. Henceforth in this report, the term bilaterals will include bilateral institutions as well as export credit agencies.

DEFIs provided direct debt support of US$1.8 billion in the first half of 2021; of this, 26 percent, or US$460 million of direct loans, was provided by bilateral institutions to eight projects. Multilateral institutions provided US$1.3 billion in direct loans to 18 projects, as well as quasi-equity to two projects and a guarantee to one project.

DEFI Guarantees[8]

FIGURE 10

Projects with Private Investment Commitments Involving Guarantees in EMDEs, 2016–H1 2021



In the first half of 2021, a geothermal powerplant in Ethiopia was the only project with guarantee support compared to three projects in the first half of 2020 and 4 projects in the previous H1 five-year H1 average. This fall in the number of guarantees being issued could be due to the more cautious nature of recovery with financially better structured projects achieving closure and so decreasing the requirement of guarantees.

8 At this stage, the PPI Database only indicates which projects received guarantees from which entities and not any details on the guarantees covered or the guarantee amounts. Hence, for the projects receiving guarantee support, the debt to such projects is categorized according to the debt provider classification.

Appendix A: DEFI Agencies that Supported Projects in the first half of 2021		
Multilateral	**Bilateral**	
	Development Institution	**Export Credit Agencies**
ADB (Asian Development Bank)	Agence francaise de developpement (AFD)	Export Import Bank of China
AfDB (African Development Bank)	Canadian Climate Fund for the Private Sector in Asia II	Export Development Canada
AIIB (Asian Infrastructure Investment Bank)	CDC Group	Export Finance Australia
Climate Investment Funds	DEG (German Investment Corporation)	
Emerging Africa Infrastructure Fund (EAIF)	FMO (the Dutch Development Bank)	
EBRD (European Bank for Reconstruction and Development)	Japan International Cooperation Agency (JICA)	
European Investment Bank (EIB)	Kreditanstalt fuer Wiederaufbau (KfW)	
Green Climate Fund	Oesterreichische Entwicklungsbank AG	
Inter-American Development Bank (IDB)	OPIC	
IFC	Proparco	
OPEC Fund for International Development (OFID)	U.S. International Development Finance Corporation	
MIGA		
North American Development Bank (NADB)		
Private Infrastructure Development Group		
Sustainable Energy Fund for Africa		

About the Private Participation in Infrastructure Projects Database

The Private Participation in Infrastructure Database is a product of the World Bank Group's Infrastructure Finance, PPPs and Guarantees Global Practice. Its purpose is to identify and disseminate information on private participation in infrastructure projects in low- and middle-income countries. The database highlights the contractual arrangements used to attract private investment, the sources and destinations of investment flows, and information on the main investors. The site currently provides information on more than 10,000 infrastructure projects dating from 1984 to the first half of 2021. It contains over 50 fields per project.

For more information, please visit: ppi.worldbank.org

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The World Bank Group plays a key role in the global effort to end extreme poverty and boost shared prosperity. It consists of five institutions: The World Bank, including the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA); the International Finance Corporation (IFC); the Multilateral Investment Guarantee Agency (MIGA); and the International Centre for Settlement of Investment Disputes (ICSID). Working together in more than 100 countries, these institutions provide financing, advice, and other solutions that enable countries to address the most urgent challenges of development. For more information, please visit: www.worldbank.org

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