

Capital Projects & Infrastructure

Solving Africa's infrastructure paradox

There is need and available funding, together with a large pipeline of potential projects—but not enough money is being spent.

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Most of Africa lags the rest of the world in coverage of key infrastructure classes, including energy, road and rail transportation, and water infrastructure. Taking electricity as an example, entire communities across large swathes of Africa lack any connection to the grid. For households and businesses alike, work-arounds are expensive—in 2015, our colleagues found that that by some measures, generator-based power in sub-Saharan Africa costs three to six times what grid consumers pay across the world. Even those who do have electricity generally use very little of it: in Mali, for example, the average person uses less electricity in a year overall than a Londoner uses just to power their tea kettle.

Closing this infrastructure gap matters greatly for the continent's economic development, for the quality of life of its people, and for the growth of its business sector. The good news is that infrastructure investment in Africa has been increasing steadily over the past 15 years, and that international investors have both the appetite and the funds to spend much more across the continent. The challenge, however, is that Africa's track record in moving projects to financial close is poor: 80 percent of infrastructure projects fail at the feasibility and business-plan stage. This is Africa's infrastructure paradox—there is need and availability of funding, together with a large pipeline of potential projects, but not enough money is being spent.

In this article, we examine the context for this paradox, and its root causes, based on extensive quantitative research and interviews with more than 30 experts and investors across the continent. We then put forward a set of solutions that could address the paradox and unlock the flow of investment that is so badly needed.

Closing Africa's infrastructure gaps

Africa faces serious infrastructure gaps. For example, nearly 600 million people in sub-Saharan Africa lack access to grid electricity—accounting for over two-thirds of the global population without power (Exhibit 1). While significant progress is being made to close this gap, Africa still lags behind; for example India connected 100 million

people to electricity in 2018, compared to just 20 million achieved in Africa. This has led to electricity consumption per person in Ethiopia, Kenya, and Nigeria being less than one-tenth that of the BRICs (Brazil, Russia, India, and China). Furthermore, the unmet demand looks likely to increase: McKinsey forecasts that Africa's demand for electricity will quadruple between 2010 and 2040. The continent also trails the BRIC countries in other key measures, including rail density and road density.

Yet there is also no shortage of effort to close Africa's infrastructure gaps. A 2018 report by the Infrastructure Consortium for Africa (ICA) found that between 2013 and 2017, the average annual funding for infrastructure development in Africa was \$77 billion—double the annual average in the first six years of this century. Nearly half of the recent activity was in West and East Africa, with 27 and 19 percent of the total respectively. The transport and energy sectors together accounted for nearly three-quarters of the total investment.

The rising spend has come principally from African governments, which accounted for 42 percent of total funding in 2017. Chinese investment in particular has grown steadily: According to the same ICA report, Chinese infrastructure commitments grew at an average annual rate of 10 percent from 2013 to 2017 and have supported many of Africa's most ambitious infrastructure developments in recent years. For example, China's EXIM Bank financed more than 90 percent of the \$3.6 billion Mombasa-Nairobi Standard Gauge Railway in Kenya. Opened in 2017, the railway cut travel time between the cities in half.

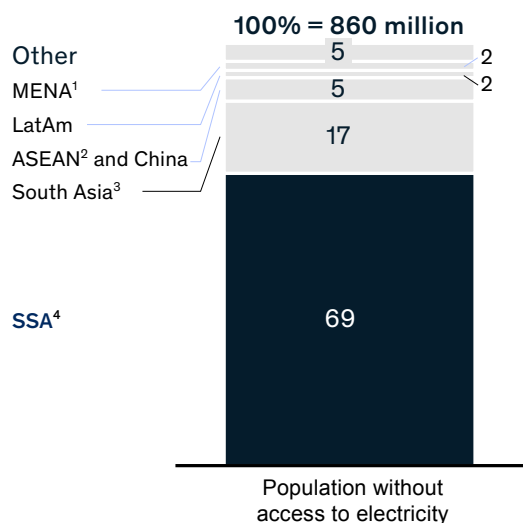
However, many more projects are needed. As a share of GDP, infrastructure investment in Africa has remained at around 3.5 percent per year since 2000—but the McKinsey Global Institute estimated in 2016 that this will need to rise to 4.5 percent if the continent is to close its infrastructure gaps. By way of comparison, China spends about 7.7 percent of GDP on infrastructure, and India 5.2 percent. In absolute terms, this would mean a doubling of annual investment in African infrastructure between 2015 and 2025, to \$150 billion by 2025.

Exhibit 1

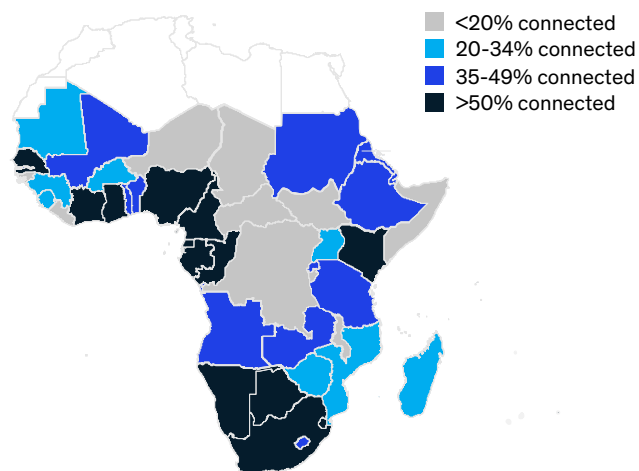
More than two-thirds of the global population without access to electricity is based in sub-Saharan Africa.

Distribution of population without access to electricity by region

2018 total without access, %



SSA electrification rates



¹ Middle East and North Africa

² Association of Southeast Asian Nations

³ Bangladesh, India, Nepal, Pakistan, Sri Lanka

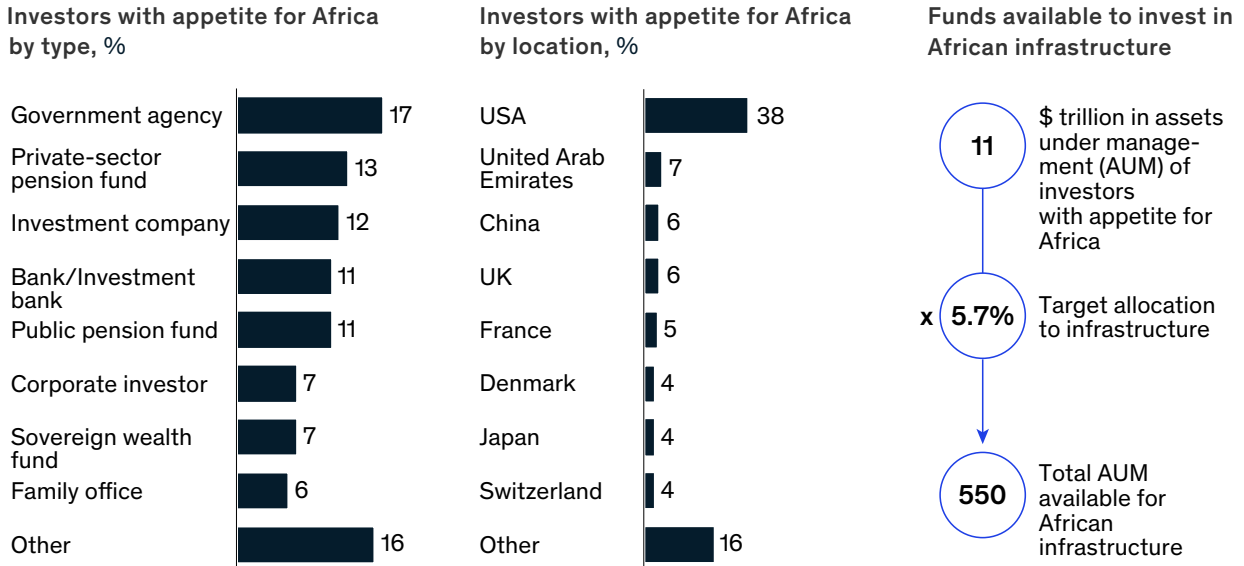
⁴ Sub-Saharan Africa

What are the prospects of unlocking such a step-change in infrastructure investment? On the one hand, many African governments face rising debt-to-GDP ratios, which will constrain their infrastructure spending in the years ahead. In sub-Saharan Africa, for example, the median debt-to-GDP ratio exceeds 50 percent—up from 31 percent in 2012. On the other hand, international investors have considerable appetite for African infrastructure projects. By our estimate, such investors could have as much as \$550 billion in assets under management. They include government agencies, private-sector pension funds, and investment companies. Investors from the United States account for 38 percent of this potential funding, with significant funding also available from the United Arab Emirates, China, the United Kingdom, and France (Exhibit 2).

The appetite for investment varies across asset classes; some investors are eager for the returns (and risk) associated with greenfield development, while others are more attracted to the steady performance of brownfield assets. However, the increase in number and value of deals in the recent past is a strong indicator of the region's potential momentum.

These investors are not sitting on their hands. Together with African governments, many of them are already exploring—or have committed to—major new infrastructure projects over the next decade. McKinsey analysis indicates that Africa's current pipeline of infrastructure projects includes \$2.5 trillion worth of projects estimated to be completed by 2025, across all asset classes. Not all of these projects will eventually

The right interventions could unlock up to \$550 billion to invest in Africa infrastructure.



succeed, as over 50 percent of them are still in feasibility stages; nonetheless, this represents an impressive source of future infrastructure activity. We should note that nearly half of the projects in the study phase (by value) are in six countries, led by Nigeria (17 percent).

Why so few African projects get funding

Will a critical mass of this project pipeline move from feasibility to completion? The answer will determine whether Africa makes the necessary progress in closing its infrastructure gap. Unfortunately, our research shows that most infrastructure projects in Africa fail to reach financial close: less than 10 percent of projects achieve this milestone, and 80 of projects fail at the feasibility and business-plan stage (Exhibit 3).

This low success rate represents a significant financial burden for infrastructure developers. For the six largest infrastructure markets in Africa, we estimate that the development costs of just the

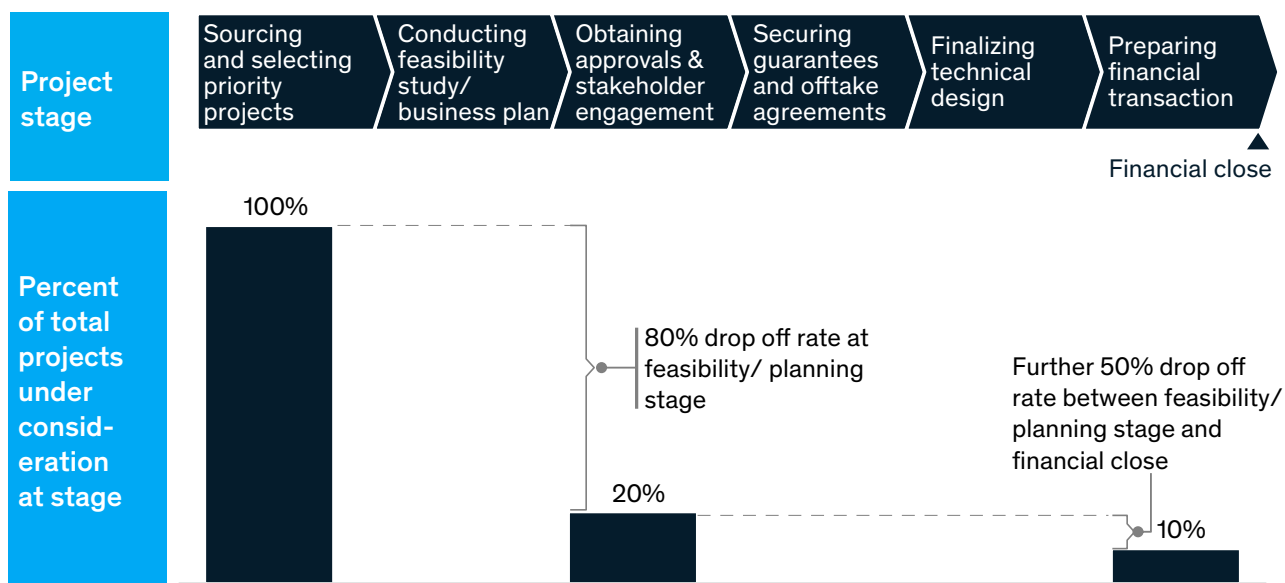
projects in the feasibility-study phase amounted to \$30 billion.

There are several reasons for the high failure rate. Many governments and developers lack the capabilities, as well as the budgets, to design and implement infrastructure projects with commercial potential. In addition, short political cycles may challenge commitments to long-term infrastructure projects. As a result, investors lack bankable project pipelines: only a few projects meet investors' risk-return expectations and reach financial close. Indeed, reaching financial close can be extremely challenging even for projects in asset classes that have delivered high returns in the past (such as power generation), and for projects that have secured revenues and guarantees.

The causes of Africa's infrastructure paradox

We term this situation "Africa's infrastructure paradox": there is funding, a large pipeline, and a need for spending, but not enough money is being

‘Africa’s infrastructure paradox’: Despite available funds, large pipeline, and clear need, few projects reach financial close.



- Low technical capabilities, as well as limited financial resources being dedicated to developing feasibility studies and business plans, result in many being rejected.
- In many African countries, weak country balance sheets and limited banking access for offtakers/ commodity buyers impede projects, especially mega-projects, from obtaining required guarantees.

spent. To better understand the root causes of this paradox—and how they might be tackled—we investigated a number of case studies spanning important projects across Africa that have been significantly delayed or cancelled.

In one example, a proposed power project rushed the feasibility study with the aim of accelerating the development lifecycle; but this move had the opposite effect, leading to significant delays in breaking ground. The project had to be relocated because logistical challenges made it impossible to transport equipment to the original site. In another example, start of construction of a large port facility was delayed because of ongoing negotiations between the national government and investors, despite an initial agreement having been signed years earlier.

Based on the emerging themes from these case studies, we believe that this infrastructure paradox

is not a structural problem, but the result of six discrete and critical market failures at the early stages of project development—that is, from concept phase to financial close. These failures, and their root causes, include:

- **Limited deal pipeline or selection of low-impact projects**, often due to the lack of a long-term master plan that can bridge political cycles. A shorter-term focus may result in the unwillingness to develop larger, more impactful projects, as well as inadequate infrastructure-policy frameworks leading to poor prioritization of infrastructure projects.
- **Weak feasibility study and business plan**. Developers and governments often lack the crucial capabilities and resources, including the capacity to assess key technical and financial risks associated with large-scale infrastructure projects. “Private sector players

generally do not invest sufficient time and effort in developing a strong feasibility study,” said one public-private partnership expert at an African finance ministry.

- **Delays in obtaining licenses, approvals, and permits.** These issues may include a lack of capacity and motivation by government agencies to get projects off the ground; a lack of coordination between responsible agencies; and community resistance to some projects.
- **Inability to agree on risk allocations.** This is a result of skill gaps in quantifying and correctly allocating risks to their natural owners—a challenge that persists in even the most sophisticated public agencies worldwide. Another common problem is an excessive focus on risk avoidance as opposed to risk management and mitigation.
- **Inability to secure offtake agreements and guarantees.** A primary cause is governments that are unable to provide sovereign guarantees, as a result of weak balance sheets.
- **Poor program delivery.** This is the result of insufficient capabilities in planning (including technical design), managing, and execution of large projects.

Steps for solving the infrastructure paradox

How can African governments, development institutions, and private investors and developers resolve Africa’s infrastructure paradox, and unlock a dramatic increase in the number of projects reaching financial close? We believe that a few practical steps taken by pioneering organizations in all three of those sectors point the way to replicable solutions.

Actions for governments and development institutions

A first step for governments, supported by national and multilateral development banks, is

to consider how they can **improve the flow of private-sector financing** into commercially viable infrastructure sectors, such as energy (Exhibit 4). As discussed earlier, there is no shortage of private-sector finance, but investors struggle to match these funds against viable projects in Africa. Governments and their institutional partners can take decisive action to improve the commercial viability of projects, including by helping to mitigate political, currency, and regulatory risks, and by increasing the deal flow of bankable projects.

One example is the solar energy programs currently being rolled out in Senegal and Zambia, supported by the International Finance Corporation (IFC). The governments and the IFC have agreed to manage key risks, including issues related to land, currency, and politics. As a result, the projects attracted significant international investor interest; Zambia’s tender to construct the country’s first solar power plant received seven major bids, and Senegal’s tender process attracted fourteen bids across two projects. The successful bids are among the lowest tariffs to have been achieved for solar power generation on the continent.

A second step to consider is **reallocating government financing**. To prevent the crowding out of private-sector financing, governments should consider reallocating financing from the most commercially viable asset classes to those that provide lower returns, which are more appropriate for government investment. This step would mirror international best practice: in developed markets, the trend is for the majority of public financing to be directed to projects in less commercially viable sectors such as water, sanitation, and transport.

An example comes from Kenya, where the government has prioritized investment in municipal infrastructure as part of a drive to provide 500,000 new affordable housing units in five years. Another example of such prioritization is government investment in setting up industrial development zones, as in Ethiopia, which is attracting global apparel manufacturers. In such cases, governments invest in infrastructure requirements

To attract more private-sector financing, 5 factors require improvement.

<p>Commercial viability/ bankability</p>	<ul style="list-style-type: none"> ▪ Private sector will only get involved in projects with adequate risk returns ▪ Preference goes to projects with predictable and stable revenues (eg tariffs, offtake agreements)—coupled with speed to profit ▪ Ability to ring-fence revenues to pay off debt enables project finance
<p>Political and currency risk</p>	<ul style="list-style-type: none"> ▪ Degree of perceived country political risk, driven by political stability and situation in a country ▪ Strong currency fluctuations can hamper project development if funds are sourced in dollars but offtake revenues are priced in local currency
<p>Counterparty, regulatory risk</p>	<ul style="list-style-type: none"> ▪ A credible offtaker is critical to guarantee revenues ▪ A clear PPP³ regulation, legal protections for investors, and easy permitting and land acquisition reduce legal and operational risks and enhance commercial viability of projects
<p>Deal flow</p>	<ul style="list-style-type: none"> ▪ Private-sector players need to invest time and funds to settle into a country and will do so only if deal flow is significant and clear ▪ Sufficient deal flow provides exit options and a track record for investors
<p>Availability, priority of IDA¹/DFI² finance</p>	<ul style="list-style-type: none"> ▪ The involvement of DFIs has a multiplier effect on private capital as they are a guarantee of serious due diligence and conservative approach ▪ Risk mitigation instruments help improve the credit rating of borrower

“I look at 8 things before investing: the sponsor, the project, how the project was awarded, the country, the documentation required, the currency risk, the environment and political risks, the presence of DFIs and exit opportunities.”

*—Fund manager,
Africa infrastructure
investment fund*

¹ International Development Agency

² Development finance institution

³ Public–private partnership

such as electricity and transport, and then hand over management of the zone to a development corporation or the private sector.

A third key step is to **strengthen collaboration with national or multilateral financial institutions**. Multilaterals can offer governments critical skills in areas such as transaction support, planning, and risk allocation—and they can embed those skills in government entities. The above example of IFC-backed solar power projects illustrates just how much potential there is for African governments to

make smarter use of the expertise and financing of multilaterals.

In similar fashion, the year 2019 saw the African Development Bank, through its Africa Investment Forum (AIF) platform, help secure 52 deals worth \$40 billion of investment towards infrastructure in Africa. Governments may consider engaging with development institutions to help identify the projects with the highest potential impact, and work with them to focus their investment accordingly. There are also opportunities for

greater collaboration between local development-finance institutions and financial institutions that are interested in Africa, such as the development agencies of other countries.

Actions for private-sector developers and investors

There are also steps that private players—including project developers, infrastructure funds, and engineering, procurement, and construction companies (EPCs)—can take to help solve Africa's infrastructure paradox.

We believe that one necessary action for many private developers is to invest even more capital upfront to ensure from the earliest project development phases that projects are feasible and correctly prepared. That additional investment can deliver robust feasibility studies and commercial plans, which will give governments and investors greater confidence in the technical and commercial viability of large-scale projects. By implication, this greater rigor in the early phases will require developers to be more thoughtful about shaping their project pipelines and selecting the viable, valuable projects they wish to focus on. An example is Turkey's major infrastructure developers, which

have ramped up their presence in Africa in recent years—in part by investing in thoughtful pre-planning on major projects in airport development and other infrastructure classes.

Private-sector players can also focus more on examining the risk profiles of their potential clients, and on identifying financial partners that can support them with risk mitigation. They can then develop in-depth plans to manage the full set of risks related to the project, from currency risk to political volatility.

More than anywhere else on Earth, Africa has huge unmet needs for infrastructure, reflecting a long history of underinvestment. Today the continent has the opportunity to build the infrastructure its people and businesses need—at speed and scale. The funding is available, together with a large pipeline of potential projects. To ensure that the money is spent where it is needed, and delivers high-quality infrastructure on time and on budget, governments and private sector players need to step up to prepare, plan, and manage projects with a new level of rigor and robustness.

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