

Note 20 | September 2016

MITIGATING PRIVATE INFRASTRUCTURE PROJECT RISKS

Private sector financing is essential to bridging the infrastructure gap between emerging markets and developed countries. Given the risk profiles of many of these projects, however, private investors are reluctant to help finance important infrastructure investments. Now, new packages of financial and advisory products offered by development finance institutions are substantially improving these risk profiles, making them viable for private investment even in very challenging environments.

Emerging markets lag developed countries in terms of reliable access to electricity, sanitation facilities, water resources, and paved roads. Because the necessary infrastructure investments pose too large a burden for African governments and development institutions alone, the time is right for expanded private sector participation.

Private enterprise investments are dependent on risk considerations. As a result, many important infrastructure investments that are critical to Africa's development will not be made in the current environment unless there are substantial improvements to their risk profiles. Thus a central theme of the recent development agenda (the Addis Ababa Action Agenda of the third Financing for Development conference) was the role that public sector institutions can play to mitigate risks for private investors interested in emerging market infrastructure projects. If done successfully, such risk mitigation can go a long way to "crowd-in" the private finance needed to complement public spending on infrastructure.

Such risk mitigation is not reliant on a single approach, however. Instead, development finance institutions offer an array of financial and advisory products—including co-financing, guarantees, hedging instruments, credit enhancements, and regulatory reforms—that can make emerging market infrastructure projects viable for private investors. Combining the efforts of World Bank Group members—the World Bank, IFC, and the Multilateral Investment Guarantee Agency—and other development finance institutions, the Azura-Edo Power Project in Nigeria and the Azito Power Plant Expansion Project in Côte

d'Ivoire demonstrate how appropriately structured and implemented investment and de-risking techniques can meet private investors' needs even in challenging environments.

Azura Edo: A New Template for Power Projects

A weak electricity grid and insufficient power generation cause widespread and regular blackouts in Nigeria, forcing millions of people to rely on costly and polluting diesel generators to keep on lights, refrigerators, and computers. An estimated 42 percent of Nigeria's 180 million residents lack access to electricity.

Solving this perennial power shortage has been among the biggest development challenges for successive governments in Nigeria, Africa's most populous country. Available electricity capacity is less than 5,000 megawatts, yet demand is estimated to be several orders of magnitude higher.

In 2010 the government of Nigeria embarked on a comprehensive power sector reform to liberalize the electricity sector, increase private participation, and improve efficiency. In support of the reform process, the World Bank Group developed the Nigeria Energy Business Plan, bringing together the resources of IFC, along with the International Bank of Reconstruction and Development (IBRD) and the Multilateral Investment Guarantee Agency (MIGA), to attract private investment in the sector.

The World Bank Group worked with nearly fifteen financial institutions, including commercial banks and development finance institutions, to support Azura, a greenfield gas-fired power plant that will provide electricity to an estimated 14 million

people in the West African country. Azura is Nigeria's first privately-financed independent power project and draws from the country's reserves of natural gas, a clean-burning transition fuel, to address critical electricity needs and move toward a less carbon-intensive economy.

The new 459 megawatt plant near Benin City, about 300 kilometers east of Lagos, is the start of a two-phase project that will ultimately generate about 1,000 megawatts of additional power for the country. Commercial operation is expected to begin in mid-2018.

The approximately \$876 million financing package signed in December 2015 was a breakthrough for power generation in Nigeria, and received a stamp of approval from the World Bank Group as well as financing partners including Standard Chartered Bank, Siemens Bank, Rand Merchant Bank, KfW, Proparco, Swedfund, and the Overseas Private Investment Corporation, among others.

An array of World Bank Group instruments was used to structure the financing, including partial risk guarantees from IBRD as well as political risk insurance cover for equity, swaps, and commercial debt from MIGA. IFC provided \$50 million in debt and \$30 million in subordinated debt and mobilized \$267.5 million of senior debt alongside the Netherlands Development Finance Company, and an additional \$35 million of subordinated debt.

The transaction introduced almost 20 investors, between shareholders and lenders, with no previous experience in Nigeria, to the country's power sector, many of whom are expected to pursue other opportunities in the country. As a result, the Azura project's documentation and financial structure are expected to become a template for future privately-financed power deals in Nigeria, providing a model that could save time and cut costs—and attract additional investors.

In addition to delivering much needed electricity to millions of Nigerians, the Azura project demonstrates the ability of appropriately structured solutions to attract international financing even in the most challenging investment environments.

Azito Energy: Meeting Africa's Power Needs

Despite being blessed with a huge endowment of natural gas reserves, hydro capacity, and other natural resources, Sub-Saharan Africa is massively underpowered. Generation capacity is lower than that of any other world region and is marked by unreliable supplies, high prices, and low rates of access. Some 600 million Africans lack access to electricity, according to a 2015 report by McKinsey & Co.

AZURA-EDO: PROJECT IMPACT AND RISK MITIGANTS

Impact

- Increasing power supply by 459 megawatts by year 2018, an increase of 10 percent over current national available generation capacity
- Providing electricity to an estimated additional 14 million residents
- Creating new project document templates for privately financed power projects

Market/Off-Taker Risk Mitigants

- A 'Put-Call Option Agreement' between the company and the off-taker backstopping the off-taker payments
- Credit enhancements through a World Bank Partial Risk Guarantee and the MIGA political risk insurance
- World Bank Group participation through multiple instruments providing comfort to other investors

Construction/Operational Risk Mitigants

- Standard project finance structure
- Fixed-price turn-key contract with Nigerian and international entities with strong operational track-record

Gas Supply Risk Mitigants

- Strong contractual arrangements with the gas supplier (Seplat – coupled with strong operational track record) and with the off-taker under the power purchase agreement

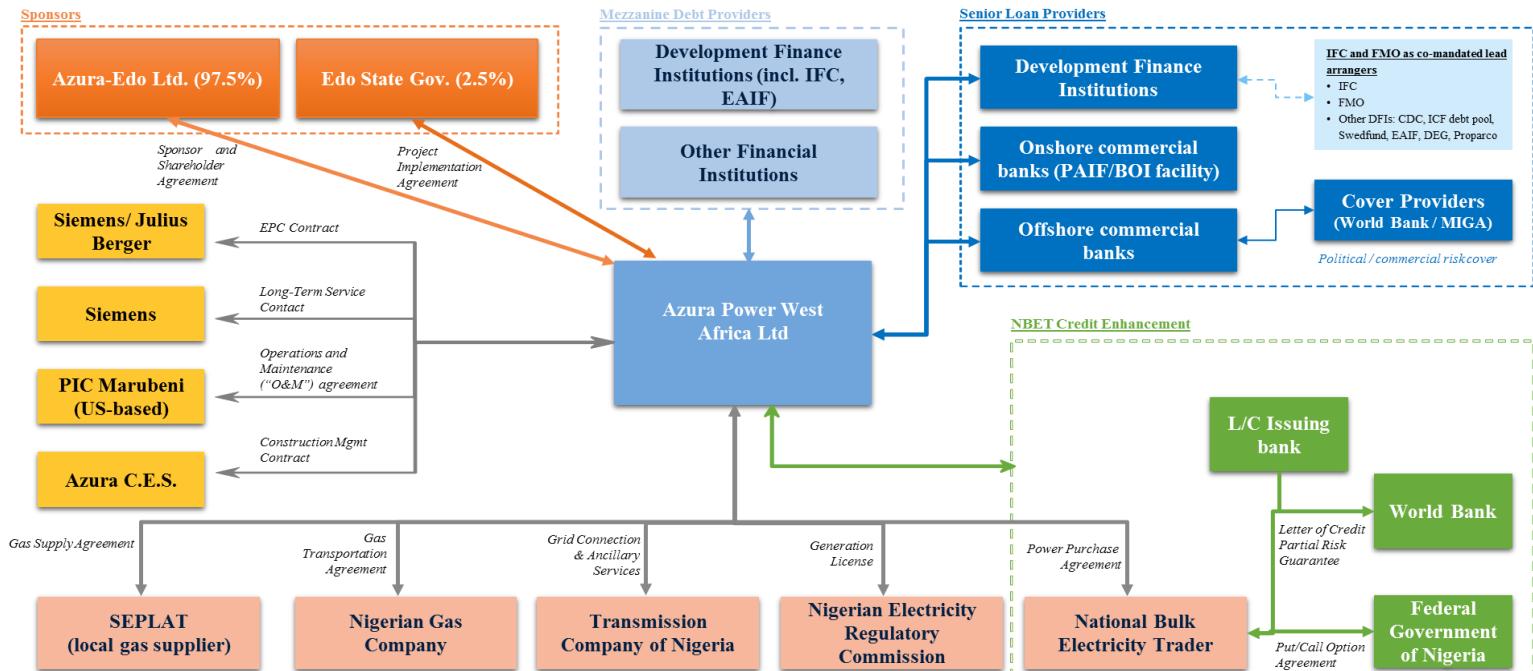
The gap between supply and demand is growing. Because new household connections in many countries are not keeping pace with population growth, the electrification rate, already low, is actually declining. At the same time, the high penetration of diesel generators across the continent—with prices three to six times what grid consumers generally pay—is a strong indication that African businesses and consumers are willing to pay for electricity. McKinsey predicts a period of rapid electrification for Africa in coming decades.

Yet in the immediate aftermath of a long civil war and a contested and violent election in Cote d'Ivoire, it seemed all but impossible for a private entity to embark alone on a major power infrastructure project in 2012. The risks, from political volatility to regulatory and currency risk to a lack of local expertise, among many others, were too daunting. That year, to enable such a project to go forward, nine development finance institutions teamed up to provide the long-term finance and design regulatory reforms necessary to break ground on a 139 megawatt power plant expansion in Cote d'Ivoire.

The power plant is located near Azito village in Cote d'Ivoire's Yopougon district, about six kilometers west of the port of Abidjan. It was initially built in 1998 when the International Development Association (IDA), the World Bank's fund for the

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Azura-Edo – Project Structure



Notes:

FMO – Dutch development bank

CDC – UK Development Finance Institution

ICF – the International Climate Fund of UK

From IFC staff

EAIF – Emerging Africa Infrastructure Fund

DEG – German Investment and Development Corporation

poorest, provided up to \$30 million in partial risk guarantees. The IDA guarantees helped mobilize long-term finance substantially beyond prevailing market terms for the country, allowing for the completion of the initial project. Now, the power plant is majority owned by Globeleq Generation Holdings, a power generation developer focused on emerging markets.

An expansion and modernization of the existing Azito plant was estimated to cost \$430 million and would require financing and technical expertise, currency hedges, interest rate swaps, insurance against political risk, a reliable fuel supply, and end-user purchase agreements. It was a large and complex package to pull together, beyond the scope of any private investor.

Enter IFC. The development bank provided a \$125 million anchor investment and arranged another \$220 million in long-term loans from eight other development banks. World class turbine technology was procured from General Electric, and experienced contractors including Hyundai Engineering and Construction were brought in to build, operate, and maintain the facility.

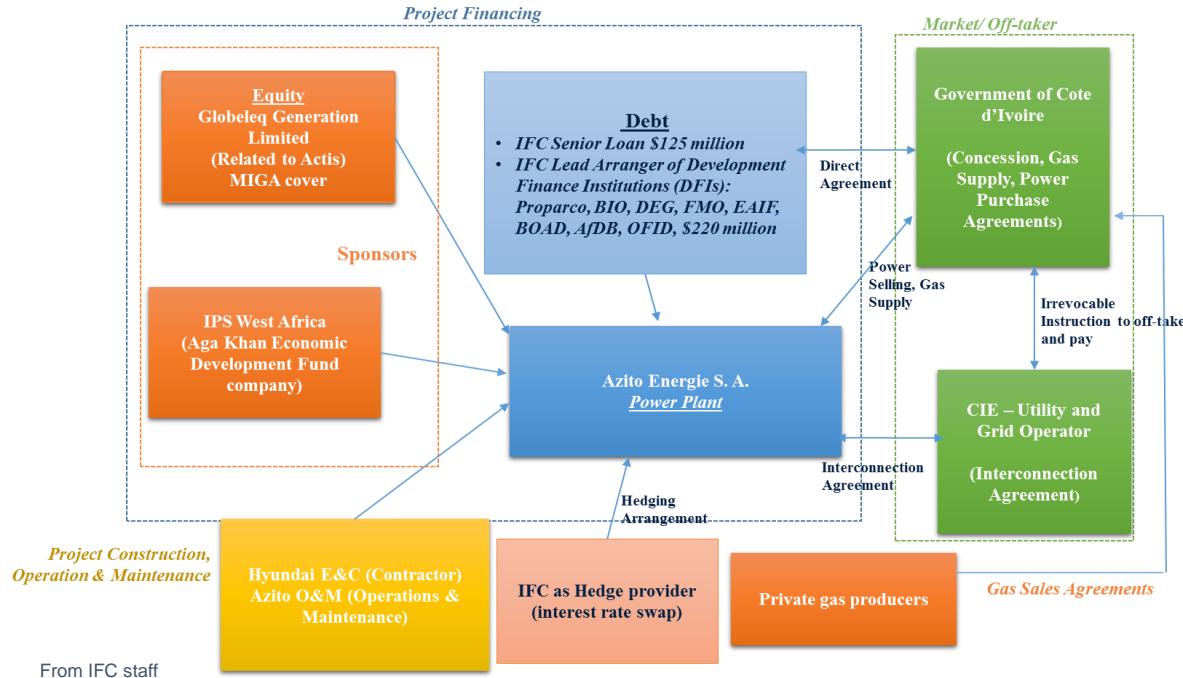
A reliable supply of natural gas was organized among several regional producers while the national government and the private utility Cobalt International Energy were contracted to purchase and distribute the power produced. In addition, the World Bank worked with the Cote d'Ivoire government on energy sector reform and financial management.

As part of the expansion, the existing plant was fitted with two heat recovery steam generators, a 140 megawatt steam turbine generator, one steam condenser, and an air-cooled cooling water system. Essentially, the technology makes use of waste heat generated by the existing gas turbines to produce steam to drive another generator, thereby reducing the need for additional fuels to increase the plant's capacity.

The expanded facility will generate 50 percent more power with no incremental gas consumption. It is expected to reach 2.3 million additional customers and is a successful example of a major investment in Cote d'Ivoire following the recent crisis.

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Azito Energy – Project Structure



While opportunities to replicate the Azito plant's successful expansion are proliferating across Africa, there is still a large gap to fill. New private sector power capacity created from 2012 to 2014 was just 6 percent of annual demand for new capacity across Africa. The continent could absorb \$490 billion in capital for new

power generating capacity over the next 25 years and an additional \$345 billion for transmission and distribution, McKinsey Reports.

Conclusion

The revenue and risk profiles of emerging market infrastructure projects present major challenges to attracting much needed private investment. Without private financing, however, many of these infrastructure projects, which are critical to meeting development goals, will not be built. Recognizing this gap, development institutions have created new financial products that lower the risk of emerging market infrastructure projects for private investors. As recent projects in Nigeria and Côte d'Ivoire demonstrate, this new approach can help attract private investment to even the most challenging environments. ■

AZITO ENERGY: PROJECT IMPACT AND RISK MITIGANTS

Impact

- Creating power generation capacity for 2.3 million additional customers with no incremental fuel consumption

Financing Risk Mitigants

- IFC long-term finance, providing comfort to other investors
- Strong financial standing of project sponsors
- IFC swap, fixing interest rate on the debt for 15 years

Operational Risk Mitigants

- Project sponsors very experienced in power sector
- Experienced international contractors

Market/Off-Taker Risk Mitigants

- MIGA equity guarantee on the concession contract and political and transfer risk
- World Bank engagement in sector structural reforms and financial management

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