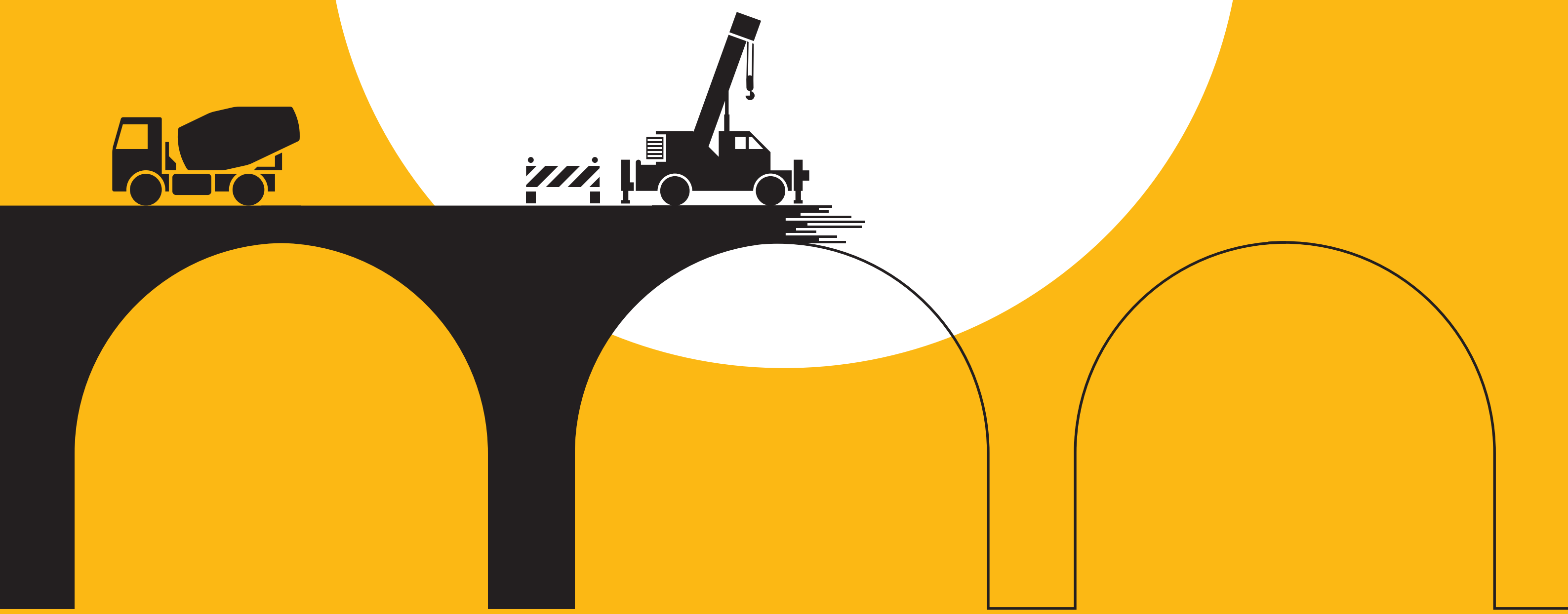
The Economist | Corporate Network

SPANNING AFRICA'S INFRASTRUCTURE GAP

How development capital is transforming Africa's project build-out



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Preface

Spanning Africa’s infrastructure gap: How development capital is transforming Africa’s project build-out is a report from The Economist Corporate Network (ECN). It is based on interviews with leaders in private-sector, multilateral and bilateral institutions that fund and support Africa-based infrastructure projects. Baker & McKenzie sponsored the report. ECN performed the research and wrote the report independently. The findings and views expressed in this report are those of the ECN alone and do not necessarily reflect the views of the sponsor.

Herman Warren was the author of the report. Pamela Qiu contributed to the research. Wai Lam was responsible for the cover design. The cover is by Thinkstock.

Special thanks are extended to all interviewees who shared their time, and provided data and perspective on this important topic.

November 2015

Interviewees, in alphabetical order:

Orli Arav, chief investment officer, **Impala Energy**

Guang Zhe Chen, country director for Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia and Zimbabwe Africa Region, **World Bank**

Zhao Changhui, chief country risk analyst, **Export-Import Bank of China**

David Ludlow, head of International Business Development, **UKEF**

Richard Malinga, senior transport engineer, **African Development Bank**

Michael Fischer, director, Regional Office Southern Africa, **DEG**

Romain Py, executive head: Transactions, **Africa Infrastructure Investment Managers**

Bhavtik Vallabhjee, director: Power, Utilities & Infrastructure, **Barclays Africa**

Ewout van der Molen, manager, Regional Representative Office Southern Africa, **FMO**

Mohan Vivekanandan, group executive: Strategy, **DBSA**

Jan Martin Witte, head of division, Infrastructure Southern Africa, **KfW Development Bank**

List of abbreviations

African Development Bank	ADB
African Export-Import Bank	Afreximbank
Africa Infrastructure Investment Managers	AIIM
Agence Francaise De Développement	AFD
China Development Bank	CDB
Deutsche Investitions- und Entwicklungsgesellschaft	DEG
Development finance institutions	DFIs
Development Bank of Southern Africa	DBSA
Export-Import Bank of China	China Exim
European Investment Bank	EIB
Infrastructure Consortium for Africa	ICA
International Finance Corporation	IFC
Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.	FMO
Islamic Development Bank	IDB
Japan Bank for International Cooperation	JBIC
KfW Development Bank	KfW
Overseas Private Investment Corporation	OPIC
Renewable energy independent power producer procurement	REIPPP
The Economist Corporate Network	ECN
UK Export Finance	UKEF
US Export-Import Bank	US Ex-Im

List of development financial institutions (DFIs) covered in detail

ADB
AFD
Afreximbank
DBSA
DEG
EIB
FMO
IDB
IFC
JBIC
KfW
US Ex-Im
UKEF
The World Bank

List of countries assessed

North Africa
Algeria
Egypt
Libya
Morocco
Tunisia

Sub-Saharan Africa
Angola
Botswana
Cameroon
Congo (Brazzaville)
Côte d'Ivoire
DRC
Ethiopia
Gabon
Ghana
Kenya
Mauritius
Mozambique
Nigeria
South Africa
Tanzania
Uganda
Zambia

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Executive Summary

Africa's economic growth rate in the last few years has been significantly higher than the global economic average. In 2015, for example, Africa's economic rate of growth is expected to be 3.1%, as compared to a global average of 2.6%. This notwithstanding, the region has a host of developmental challenges. Among them is a yawning infrastructure gap: power, road density, water storage and irrigation infrastructure, to name just a few aspects, are inadequate or non-existent. Mobile-phone penetration and growth of available bandwidth are bright spots. Nonetheless, according to the International Telecommunications Union (ITU), at around 27%, Internet usage is low relative to other developing regions.

DFIs can bring capital, technical expertise and a capacity to engage in ways in which private-sector players are unable

To address the infrastructure gap requires many billions of US dollars. A 2009 World Bank estimate indicated that over US$90bn annually was required in Sub-Saharan Africa alone, a figure likely to have increased in the six years that have passed since then. Private-sector financiers have ploughed billions of US dollars into Africa-based infrastructure projects. In 2013 the ICA estimates that private-sector players allocated US$8.7bn to Africa-based infrastructure projects across a host of sectors, including power, communications and transportation. However, to put that into perspective, Crossrail, a single-transport project in the UK, has a funding envelope of around US$23bn.

It is clear that private-sector actors' funding contribution in Africa is not nearly enough, and, importantly, sourcing the required funding is only part of the challenge. Addressing the infrastructure deficit in power, transport, water and sanitation, and other sectors, requires the technical capacity to manage the physical build and on-going maintenance, as well as establishing a conducive or "bankable" environment to support large and, at times, complex projects. These resources, unfortunately, are lacking in many African jurisdictions.

A crucial enabler to building, upgrading and maintaining Africa-based infrastructure is the collective support provided by the development-capital sector, made up of development finance institutions (DFIs) and export credit agencies[1]. DFIs can bring capital, technical expertise and a capacity to engage in ways in which private-sector players are unable, are ill equipped or are unwilling to do on their own, if at all. Moreover, the participation of DFIs creates a platform that private- and public-sector actors can build on to develop viable infrastructure initiatives. Without the involvement of DFIs, the already inadequate private-sector funding contributions to Africa-based infrastructure projects would be significantly less.

This ECN report focuses on the role played by these multilateral and bilateral institutions to fund and support Africa-based infrastructure projects. As part of the research, ECN analysed the infrastructure-related activities of 14 DFIs ("focus DFIs"), assessing their funding approvals across 22 African countries ("focus countries") over a six-year period: 2009 to 2014 ("the period").

[1] For the purposes of this report, 'development capital' or DFIs encompass both development and export credit finance.

The focus DFIs approved funding of around US$93bn for Africa-based infrastructure projects from 2009 to 2014

ECN also conducted 15 on- and off-the-record interviews with individuals active in funding and facilitating Africa-based infrastructure initiatives. The combination of the quantitative and qualitative research provides insights into the evolving development-capital landscape and the importance of these funding providers in supporting Africa's infrastructure build-out.

What has emerged from the research is that DFIs play a critical role in providing funding and other support to enable the build-out of infrastructure across Africa.

The focus DFIs are some of the largest and most active institutions supporting Africa-based infrastructure projects and initiatives. ECN estimates that the group represents around 28% of the total DFI-supported infrastructure investment in Africa over the period. The focus DFIs alone approved funding of around US$93bn for Africa-based infrastructure projects from 2009 to 2014. If the focus DFIs provided 28% of all DFI-funding approvals for Africa-based infrastructure initiatives over the period, the total funding allocation was around US$328bn.

Over 67% of focus-DFI-funding approvals were provided by four of the focus group: World Bank, DBSA, ADB and AFD.

Organisation	Funding commitments 2009-14 in US$ bn	% of total focus DFI commitments
World Bank	US$20.8	22%
DBSA	US$16.5	18%
ADB	US$16.2	18%
AFD	US$9.1	9%
Others (nine)	US$30	33%
Total*	US$92.7	100%

**Totals may not tally due to rounding*

Over 67% of focus-DFI-funding approvals were provided by the World Bank, DBSA, ADB and AFD

The sectorial allocation of funding indicates that Africa is far from a commodity play. Over two-thirds of this US$93bn was directed to the power and transportation sectors.

Sector	Funding commitments 2009-14 in US$ bn	% of total focus DFI commitments
Power	US$37.1	40%
Transport	US$24.6	27%
Commodities (incl extractives)	US$12.9	16%
Water & sanitation	US$14.5	14%
Other	US$3.6	4%
Total*	US$92.7	100%

**Totals may not tally due to rounding*

Around 80% of approved funding from focus DFIs is going to countries in Sub-Saharan Africa. However, just six of the focus countries received 67% (or US$62.5bn) of the approved funding over the period. By and large, the six are the countries with the largest economies in the region. Ethiopia is a notable exception, punching above its weight: the East African nation achieved around two-thirds of the funding allocation of Nigeria, notwithstanding the Ethiopian economy's being less than one-tenth of the size of the Nigerian economy.

Country	Funding commitments 2009-14 in US$ bn	% of total focus DFI commitments*
South Africa	US$25.6	28%
Egypt	US$9.1	10%
Nigeria	US$8	9%
Morocco	US$7.7	8%
Kenya	US$6.8	7%
Ethiopia	US$5.3	6%
Other	US$33.2	33%

**Total may not equal 100% due to rounding*

The wider development-capital sector plays an increasingly important role by providing capital and other forms of support for the build-out of Africa-based infrastructure.

The role of Asia-based DFIs looms large. Although they did not provide official numbers for this report, China-based DFIs, in particular, are estimated to be the largest single source of funding, contributing over US$13.4bn in Africa in 2013 alone, according to the ICA. Chinese support for Africa-based infrastructure has been weighted towards industries in the transportation sector: rail, roads, airports and seaports. However, China-based DFIs are also funding beneficiation and production platforms, such as commodity-processing and manufacturing facilities in African countries. The role and influence of China-based DFIs in Africa are likely to increase. China-based DFIs and policy banks, such as China Exim, have committed to as much as US$1trn over the next decade or so, in support of Africa-based investments of Chinese companies and the foreign-policy objectives of the Chinese government.

China-based DFIs are estimated to be the largest single source of funding, contributing over US$13.4bn in Africa in 2013

Development funding from DFIs and others is generally extended in hard currencies. Nearly half of all development funding from DFIs is extended on commercial terms, which means governments, and state-owned and other entities, must repay the capital sums borrowed with interest and manage the currency risk. In the near term, African governments' ability to service existing loans and embark on new projects will be constrained. Some headwinds are impacting on borrowers' fiscal space to fund infrastructure projects: the expectation of higher US borrowing rates and commodity prices that have come off of recent highs.

This notwithstanding, the consensus view among those ECN interviewed is that DFIs will continue to support the development of bankable Africa-based infrastructure projects and be a source of catalytic growth and development in the region.

1) Development capital: Raison d'être

"The World Bank is a development organisation. We fight poverty. However, eliminating poverty is not sufficient. There must be shared prosperity."

"The DBSA's focus is on funding infrastructure development a) to promote economic growth, b) to improve the lives of people and c) to promote regional integration."

"UKEF is here to serve the UK-based exporters."

The financial institutions researched by ECN can be categorised broadly into three groups:

1. ***Multi- and bilateral institutions with a focus on poverty alleviation*** that provide loans, grants, guarantees and insurance cover directly to governments and state-owned enterprises. These institutions may or may not have a national agenda. The World Bank, ADB, EIB, IDB, KfW and DBSA are examples.
2. ***Multi- and bilateral institutions with a focus on supporting private-sector players***, without regard to where the private-sector actors may be headquartered, through the issuing of loans, purchasing equity stakes, issuing guarantees, providing insurance cover and, in some instances, grants that may be convertible to equity. FMO, IFC and DEG fall broadly into this category.
3. ***Bilateral institutions with a primarily nationalist focus*** to promote their nations' strategic industrial interests and support businesses headquartered in their countries in exporting products and services around the world. Export-credit agencies, such as US Ex-Im, UKEF, JBIC and China Exim are examples of these types of institutions.

Why are DFIs sought out as partners?

Why would a country consider using funding from a DFI, as opposed to going to the capital markets or a commercial bank? The answer is not clear-cut; rather, there is a range of reasons.

Many DFIs have A-grade credit ratings, allowing them to source capital at lower rates than individual companies or many countries can. The benefits of a lower cost of capital are reflected in the terms extended by DFIs to funding recipients.

"The World Bank's IBRD funding is one of the cheapest sources available to borrowing nations," says Guang Zhe Chen, country director at The World Bank.

DFIs, unencumbered by regulations that impact on commercial players such as banks, are also able to offer longer-tenor-loan agreements. However, DFIs don't see themselves as competing with commercial banks. "We are complementing their offerings, or filling gaps where they don't or can't operate. For example, if the client requires longer-term funding in US dollars, we are often in a better position than commercial banks to provide all or part of the required funding," says Ewout van der Molen, manager, Regional Representative Office Southern Africa at FMO.

Tenor length is vital to infrastructure projects, which often take many years to complete.

Moreover, DFIs play a role when commercial players are constrained (for example, during the 2008 financial crisis) or find that the market conditions associated with a particular project or country are not conducive to lending. "The general view is, there is an important role that agencies like UKEF play in extending funding assistance through the cycle," says David Ludlow, head of International Business Development at UKEF.

Some borrowing nations would not be able to access funding at all if it were not for DFIs, particularly those that offer the concessional funding that DFIs may provide.

"The ADB also provides concessional funding, which is almost like grants, through the African Development Fund (ADF). Of the 54 countries in Africa, about 40 are ADF-eligible," says Richard Malinga, senior transport engineer at the ADB.

2) The development-capital difference

“Money is not the issue.”

African infrastructure projects often require governments to find and manage significant sources of capital. Finding the money to finance an infrastructure project is not necessarily the biggest impediment, however.

“Infrastructure projects may have large capital requirements. However, the money is out there. Money is not the issue,” says Romain Py, executive head: Transactions at AIIM.

Viable infrastructure projects are often referred to as being bankable. In order to increase the chances of an infrastructure project being a success, the legal and regulatory frameworks must be supportive, stakeholder requirements must be fully understood, impacts must be assessed, and the capacity of the managing agencies in government, for example, may need to be created or strengthened.

DFIs help to facilitate an environment pre-, during and post-infrastructure build, which is conducive to a project’s success. The pre-build phase is particularly important.

“There are a number of challenges we often confront: off-take, difficult regulatory frameworks for investors, and the creditworthiness of prospective debtors may also come into play,” says Michael Fischer, director, Regional Office Southern Africa at DEG.

DFIs, particularly the ones that loan directly to governments and state-owned enterprises, are increasingly focusing on these pre-build aspects.

“A private-sector player may be unwilling to participate in the early stages of investment, because returns may not be commensurate with the risk; that’s where we, as a development bank, are playing a role. We’re patient; we’re involved in preparing the deals to get them to a bankable phase,” says Mohan Vivekanandan, group executive: Strategy at DBSA.

KfW is actively involved in working with governments to improve the bankability of infrastructure projects. An example of this is the GET FiT programme in Uganda, which was intended to fast-track renewable-energy projects.

“Our GET FiT programme in Uganda is an example of a project that’s worked very well. We worked together with the Ugandan government, the many private power-project developers, DFIs and others, to lay the foundation for a bankable project,” says Jan Martin Witte, head of division, Infrastructure Southern Africa at KfW Development Bank.

DFIs' active involvement doesn't necessarily end when the financing is approved, or even when the build phase is in progress or complete. "Unlike commercial banks, when a project's financing closes, we provide implementation support. Our staff oversee projects and help to solve problems, if any arise. For every project, at least two times per year, we undertake implementation-support missions," says Mr Chen of The World Bank.

DFIs collaborate, mainly...

The required capital and scale of major infrastructure projects necessitate that various institutions collaborate from a funding perspective. DFIs generally work together, some more closely than others.

"For most projects, we are typically not the sole funder. We are, classically, a part of a consortium of financiers. Our preferred partner in South Africa is FMO, but we work with a range of DFIs, such as Proparco, IFC, etc., as well as with regional DFIs and commercial banks across the continent [of Africa]," says Mr Fischer.

"It's always better [for us] to go alone."

China-based DFIs, China Exim for example, are notable exceptions in terms of collaboration.

"We do hope that we will have more opportunities to work with other institutions—private and other development agencies. But, in the real sense, it's a very tough job. Each institution will have its own philosophy and conditions for financing; therefore, the negotiations will be very lengthy, documentation very tedious, and the time to really find someone to make a deal workable will be unreasonably long. It may sound good, but it's not good in the real world. It's always better [for us] to go alone. We have the financial resources for that. We are open to co-operation, but it happens very little," says Zhao Changhui, chief country risk analyst, China Exim.

3) Africa's infrastructure gap in context

Jeff Gable, managing principal of Africa Non-Equity Research at Barclays, was quoted in the *South China Morning Post*, saying, "Africa is infrastructure-light right now."

"Africa is infrastructure-light right now."

Across the continent, there is an obvious need for increased electrification, improvements to and proliferation of transport links, expanding access to water and sanitation, and so on.

Infrastructure deficit in Sub-Saharan Africa

Normalised units	Sub-Saharan Africa low-income countries	Other low-income countries
Roads		
Paved-road density	31	134
Total road density	137	211
Water & sanitation		
Improved water	60	72
Improved sanitation	34	51

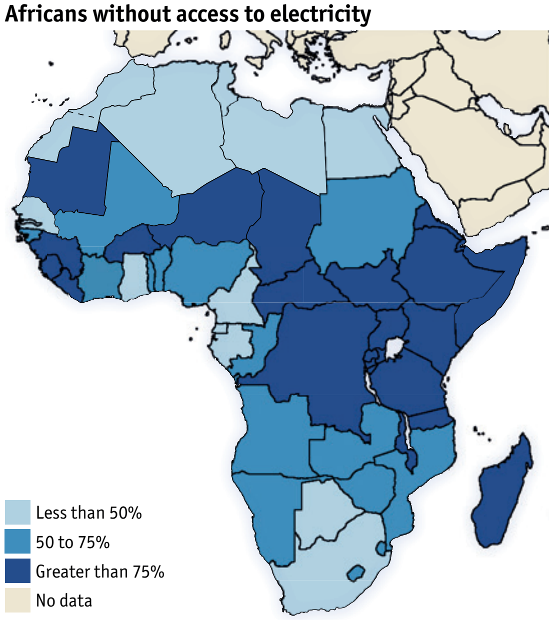
Source: *Financing African Infrastructure*.

Note: Road density is measured in km per 100 sq km of arable land; water and sanitation coverage in % of population with access to services.

Lights out

The infrastructure deficit is telling. For example, a sizeable percentage of Africa's population lacks a reliable, affordable or accessible electricity supply. According to the International Energy Agency (IAE), 50% or more of the populations of at least 24 countries in Sub-Saharan Africa lacks access to grid-based electricity.

Africans without access to electricity



Logistics: not moving well

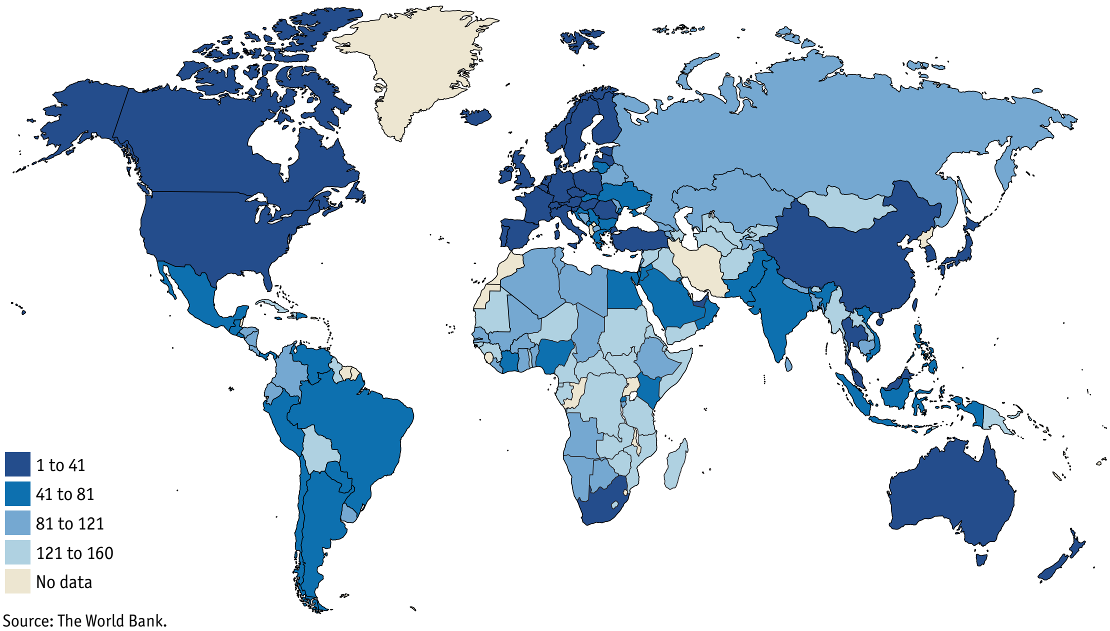
Africa, with the exception of a handful of countries such as South Africa and Egypt, has inadequate infrastructure to move goods and people efficiently within and across national borders.

"Given that inter-country trade is around 12% between African countries, Africa needs to focus on building an integrated transport infrastructure," says Kgomotso Modise, deputy director-general in the South African Department of Public Enterprises, speaking at the 2015 Infrastructure Africa Conference in Johannesburg. Ms Modise adds, "There are 4,000 airports in Africa, of which only 20% have paved runways. Therefore, Africa's share of global air transport remains modest."

African economic growth would increase by over 2% per annum with the appropriate level and quality of infrastructure in place

The World Bank's logistics performance index (LPI) reflects how well a country is perceived to perform across various hard and soft logistics categories. Indicative of the infrastructure-related challenges in the transport sector, the majority of African countries rank in the lower half of the 2014 LPI.

2014 LPI global ranking



Source: The World Bank.

Growing with significant drag

The World Bank estimates that the infrastructure deficit negatively impacts productivity by as much as 40% and that economic growth would increase by over 2% per annum with the appropriate level and quality of infrastructure in place.

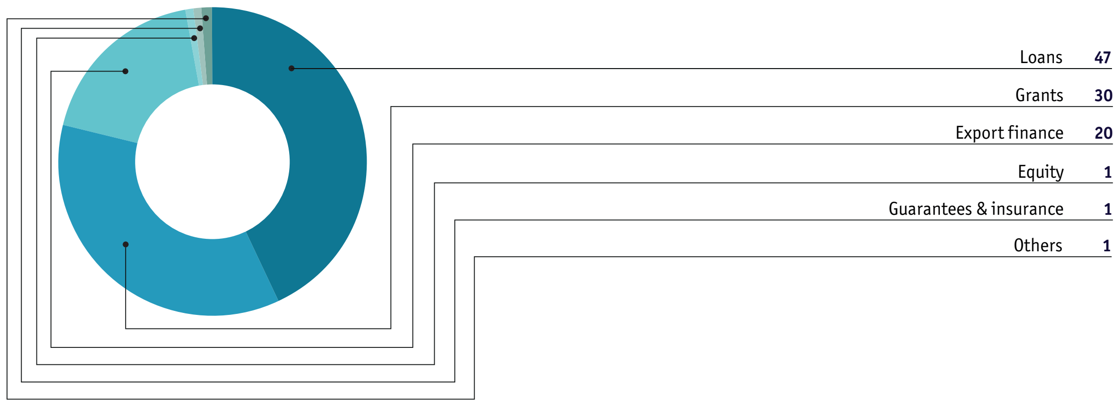
4) Resources for infrastructure build-out

DFIs plugging the funding gap

A significant proportion of the financial support currently allocated to Africa-based infrastructure for new builds, upgrades and maintenance, is sourced from DFIs broadly inclusive of bilateral and multilateral institutions, such as development banks, export credit agencies and import-export banks.

The ICA estimates that, in 2013 alone, around US$44bn in DFI-sourced funding was committed to various infrastructure projects across Africa. The private sector, by comparison, is only estimated to have invested around US$9bn in this year, just 17% of the total combined private and DFI funding that year.

Funding types: 2013 ICA member commitments
(% of total commitments)



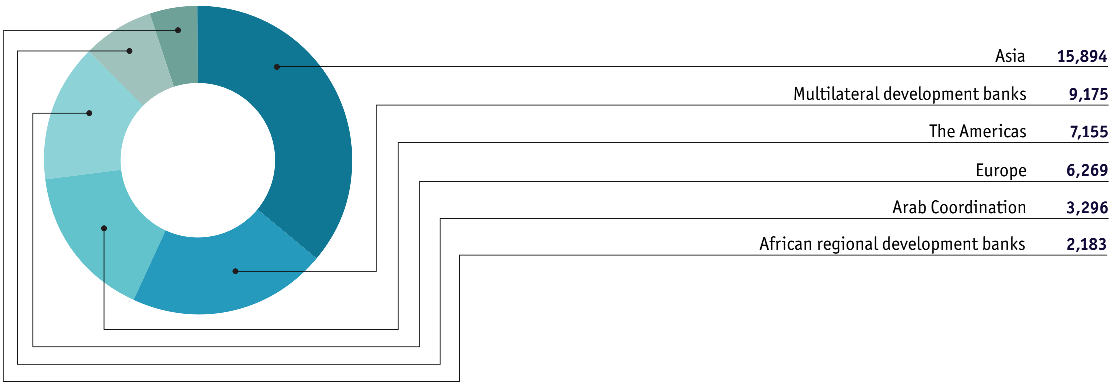
Source: *Infrastructure Consortium for Africa Report 2013*.

Types of DFI funding

According to the ICA's statistics, around 80% of their members' funding that goes towards supporting infrastructure falls into one of two categories: loans and grants. ICA-member loans are generally extended for longer tenures and at more favourable rates than can be sourced elsewhere by governments, state-owned entities and private-sector players. Grants compose around 30% of the funding extended, and are particularly relevant in the African context, where many nations are unable to take on or service debt. Mr Witte comments: "KfW works in 27 African countries. We can only provide loan funding to 15 of them, because we don't believe that the other 12 are in a position to service additional debt sustainably." Grant funding from KfW and other forms of concessional funding helps to fill the gap.

In 2013 the ICA estimated that Asian, American, European and multilateral DFIs contributed around 88% of the US$44bn of finance directed towards Africa-based infrastructure initiatives.

Who is financing Africa's infrastructure: 2013
(Funding in US$ m)



Source: *Infrastructure Consortium for Africa Report 2013*.

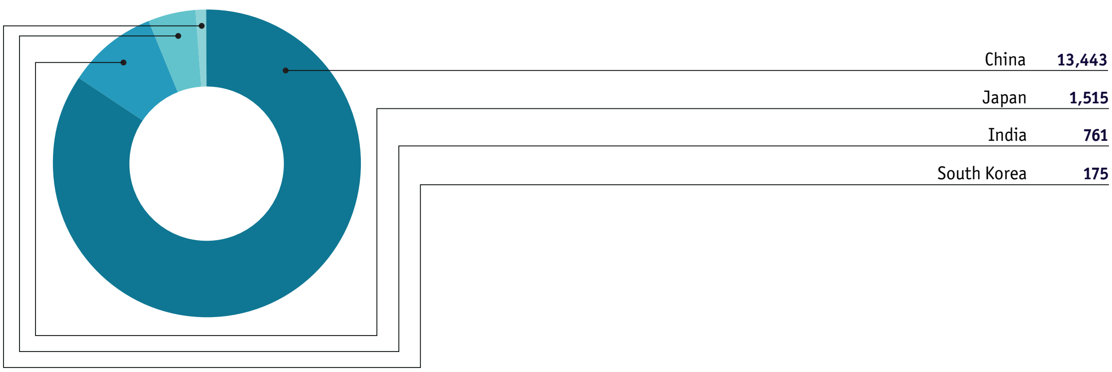
African regional banks represent the smallest share of funding; however, they form an important source of direct finance. Moreover, many, such as South Africa-based DBSA, are managing and pooling funds sourced from multilateral and bilateral DFIs for Africa-based infrastructure projects.

China is also the single largest source of finance to Africa compared with all other regions and countries

Asia-based sources: A story of Chinese domination

According to the ICA, Asia-based DFIs contributed around 36% of all DFI-related funding for infrastructure in Africa in 2013. Of Asia-based DFIs, China-based institutions represent the largest source of funds flowing into Africa-based infrastructure projects. In 2013 over 85% of all Asia-sourced funds came from China-based institutions, according to the ICA. In 2013 China-sourced funds were nearly nine times higher than those of the second-largest contributing nation (Japan) and nearly 79 times greater than the total contributed by South Korea. China is also the single largest source of finance to Africa compared with all other regions and countries, according to ICA figures.

Asian contribution to Africa infrastructure spend: 2013
(Funding in US$ m)



Source: *Infrastructure Consortium for Africa Report 2013*.

China-based investments overall and by sector

China-based DFIs do not provide much detail regarding the financial and other support they provide for infrastructure-related projects in Africa, overall, by project or country. According to research undertaken by The American Heritage Institute and The Heritage Foundation over the six-year period from 2009 to 2014, China-based companies concluded or tendered for deals worth at least US$100bn.

Around 70% of the total deal value went into the transport (30%) and energy (39%) sectors. It's likely that a significant percentage of the transactions concluded over the period were supported through financing, and guaranteed by China-based DFIs such as China Exim, CDB and Sinosure.

"In the next three to five years, there will be at least US$500bn of trade between African countries and China."

"There is no doubt that cumulative Chinese investment in Africa will amount to at least US$1trn over the next decade."

Africa-China trade on the rise

The level of trade between China and Africa has increased significantly over the last 10 years. *The Saturday Star* reported that, in 2014, according to China state councillor, Yang Jiechi, China-Africa trade totalled US$220bn. China's share of Africa's foreign trade increased from around 4% in 2000 to around 21% in 2014. Moreover, according to Mr Yang, by June 2014 over 3,800 km of railways and 4,334 km of roads had been built or were under construction in Africa with China-based financing.

"In the next three to five years, there will be at least US$500bn of trade between African countries and China, so the investment will naturally open up new frontiers for investments in all countries in Africa," says Mr Zhao.

The trade growth, coupled with the strategic imperatives for China to secure access to key commodities and expand market access for China-based companies, means China sees Africa as an important investment destination.

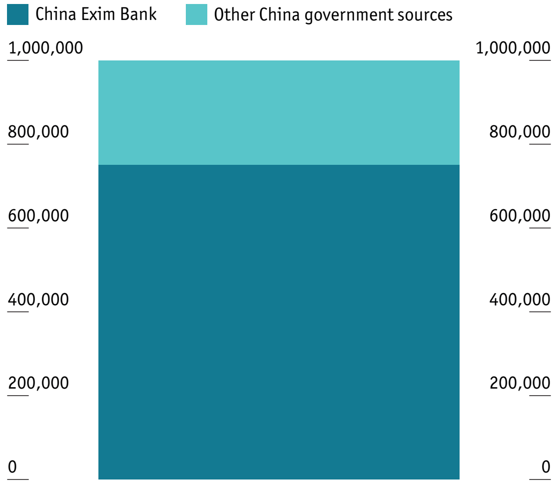
China-Africa funding mix

"There is no doubt that cumulative Chinese investment in Africa will amount to at least US$1trn over the next decade," says Mr Zhao.

China Exim is believed to be the main source (at least 75%) of the billions of US dollars that will be directed to infrastructure in Africa on an annual basis from China-based organisations.

According to reports in *The Saturday Star*, China's investment stock in Africa at the end of 2014 totalled US$30bn; this, according to Mr Yang, is a sixty-fold increase from around US$500m in 2000. If the rate of investment stock growth is half of the 34% compound annual rate between 2000 and 2014, China's investment stock will total around US$168bn by the end of 2025.

China-Africa financing mix 2013-25
(US$ m)

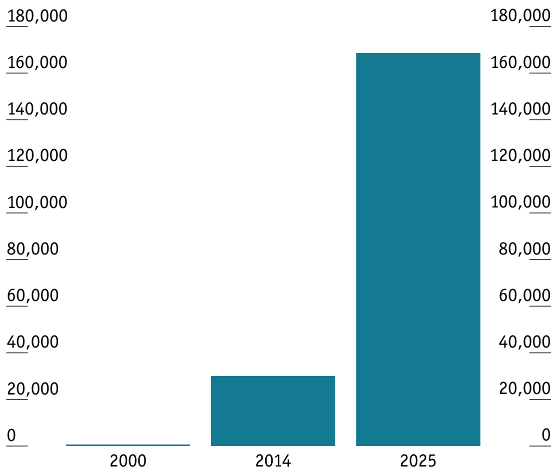


Source: Economist Corporate Network Interview, *South China Morning Post*, November 18th 2013.

Currently, according to Mr Yang, around US$12bn of China's investment stock has been allocated to South Africa. Perhaps due to the influence of the "one belt, one road" initiative, which seeks to advance China's international presence and cultivate ties with more countries, "Countries in East Africa—Ethiopia, Kenya, Tanzania—as well as Angola, are getting more attention," according to Mr Zhao.

So, how much has China Exim actually invested in Africa, in the last year alone? Mr Zhao isn't specific, but describes it as, "billions and billions of US dollars".

China investment stock in Africa 2000-25
(Investment stock in US$ m)



Source: ECN analysis; *The Saturday Star*, October 10th 2015.

The private sector's US$8.8bn investment in infrastructure-related projects in 2013 is only 20% of that contributed by DFIs

Private sector rallied by DFIs

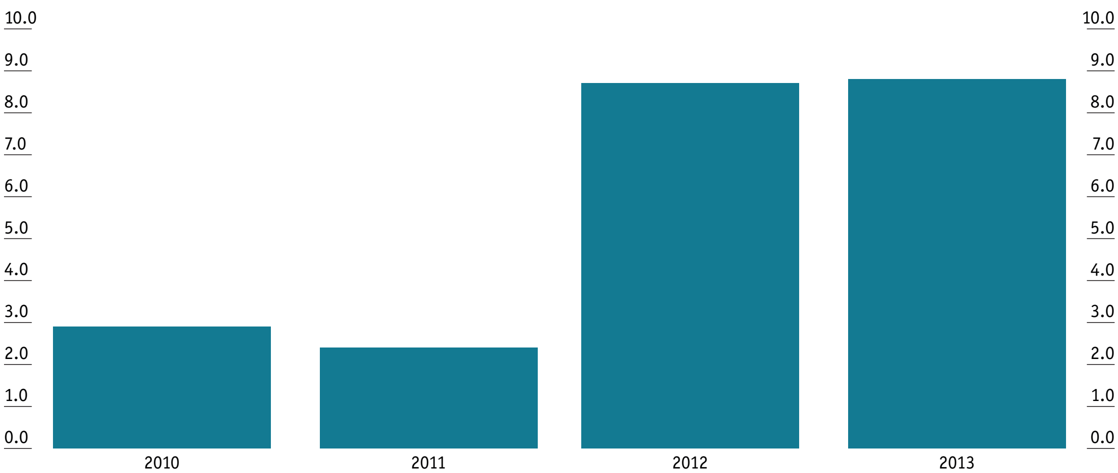
The private sector's US$8.8bn investment in infrastructure-related projects in 2013 is only 20% of that contributed by DFIs. However, private-sector-investment flows grew by over 300% over the period 2010-13. This growth from a low base would have been unlikely without the support of DFIs.

Private-sector investment is facilitated by DFI funding and the overall role DFIs play in establishing a base of bankable projects. Outside of, perhaps, South Africa, Nigeria and Egypt, no African country's financial sector has the capacity to finance infrastructure projects unilaterally.

Private-sector-investment flows grew by over 300% over the period 2010-13

Many private-sector investors prefer to work with DFIs, given the associated costs of preparing bids that may not be successful, as well as the risks that may accompany successful bids. "We like to do deals that involve the World Bank, OPIC and the IFC. Deals including these lenders and equity

Private-sector African infrastructure spend
(Total spend in US$ bn)



Source: *Infrastructure Consortium for Africa Report 2013*.

participants give us a sense that the adjudication process will be fair and transparent and, overall, their involvement creates an ‘umbrella effect,’ which gives confidence,” says Mr Py.

The umbrella effect is that DFIs have influence and leverage that makes it more likely that governments and state-owned entities will ensure that debt repayment and other terms and conditions associated with a project are met.

Underscoring this point, Mr Chen says, “If we lend a country money and we’re not paid back, the government is unlikely to be extended credit from anyone else.”

5) 14 DFIs in focus

ECN analysed the financial commitments directed towards the Africa-based infrastructure projects of 14 DFIs across 22 African countries over a six-year period: 2009 to 2014.

Over the period, the focus DFIs approved US$92.7bn in funding, averaging around US$15.4bn in approvals per year.

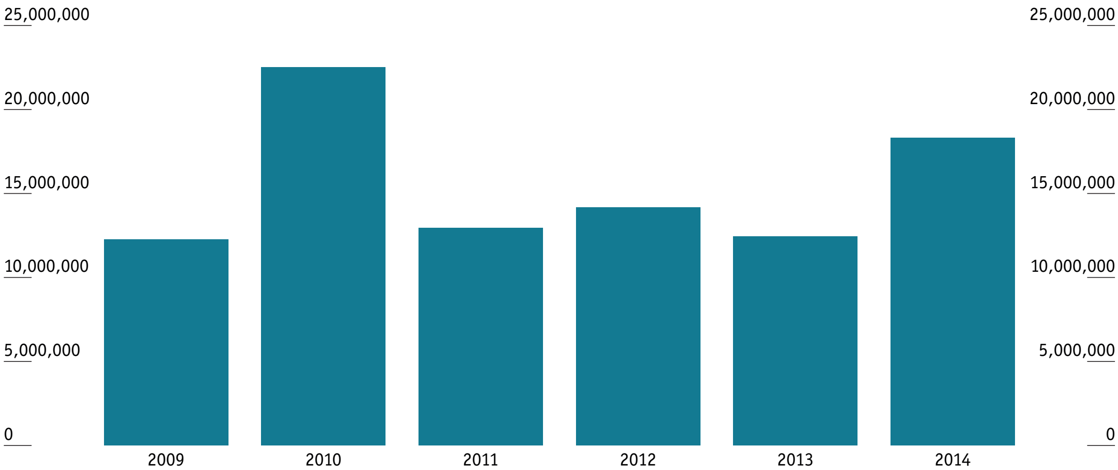
Focus DFIs' financial commitments ranged from a low of around US$12.3bn in 2009 to a high of around US$22.5bn in 2010

Funding insights

Over the period, the focus DFIs' financial commitments ranged from a low of around US$12.3bn in 2009 to a high of around US$22.5bn in 2010. However, the four consistently largest contributors among focus DFIs were The World Bank, ADB, AFD and DBSA.

These four approved US$62.7bn of funding commitments, or around 68% of the total among focus DFIs over the period.

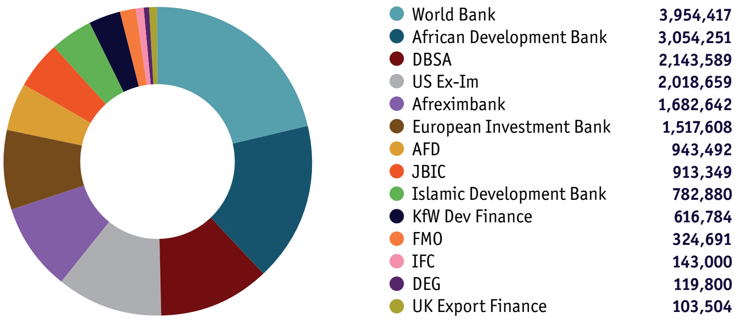
DFI commitments by year 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

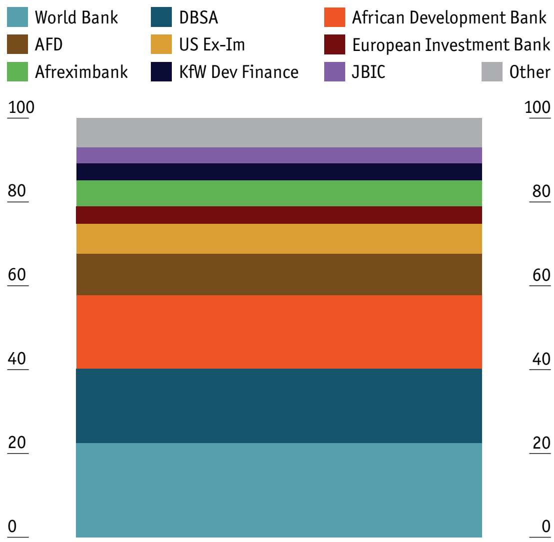
In 2014 US Ex-Im was the fourth-largest provider of development capital among focus DFIs, having approved over US$2bn. Over the period, US Ex-Im approved around US$6.7bn for Africa-based infrastructure initiatives.

DFI commitment share 2014
(Commitments in US$ '000s)



Source: ECN analysis.

Total share of DFI commitments 2009-14
(% of total commitments)



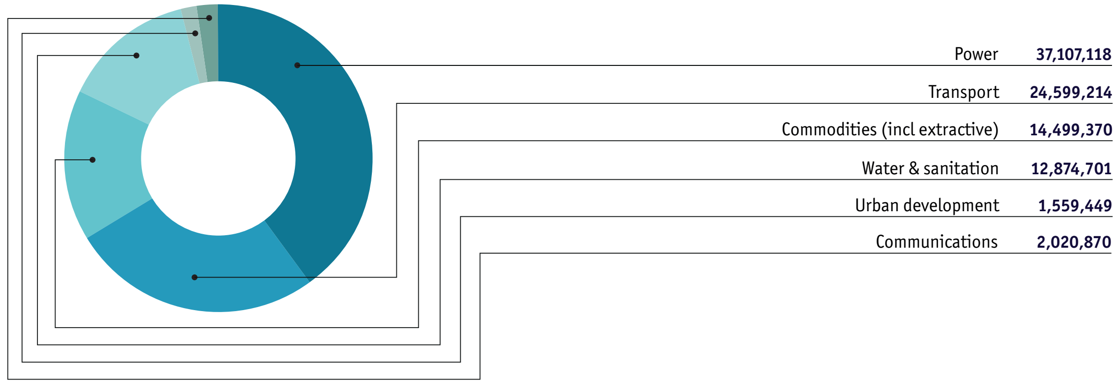
Source: ECN analysis.

US Ex-Im in limbo

US Ex-Im reports that, overall in 2014, it backed a total of US$27.5bn in US exports, supported 164,000 American jobs and generated a surplus of US$675m for US tax payers. Ironically, while nearly 60 countries around the world leverage export-import and credit agencies to support sales and export-backed jobs in their countries, the US Congress allowed US Ex-Im's authority to expire: as of July 1st 2015 US Ex-Im is unable to accept new applications from customers or engage in new business. In response, many US-based small and medium-sized enterprises (SMEs) and large corporations, such as General Electric and Boeing, have indicated that, without US Ex-Im's support, they may be forced to relocate some US operations to other countries or close some US-based facilities altogether. Top business lobbies support the reauthorisation of the bank, as does US president, Barack Obama. US Ex-Im's supporters in the US Senate (the upper house) are focusing on a must-pass piece of legislation to attach US Ex-Im's reauthorisation and send it to the House of Representatives (the lower house). Some public representatives, such as Jeb Hensarling, the lower-house financial services committee chairman, oppose reauthorising US Ex-Im because they believe it supports a "progressive welfare state and the cronyism connected to it", as well as being the antithesis of a competitive free-market economy. It remains to be seen if those opposed to reauthorising US Ex-Im will win the day, and, if they do, whether they are pioneering a trend that other countries will follow.

Commitments by sector

DFI commitments by sector 2009-14
(US$ m)



Source: ECN analysis.

Power- and transport-related projects received around 67% of the financing commitments

Over the period, power- and transport-related projects received around 67% of the financing commitments. Approvals of the amounts of US$37bn and US$24.6bn were granted for power-related and transportation-related projects, respectively.

Across Africa, there are numerous renewable and other energy-related projects underway, and the private sector is getting involved in a big way.

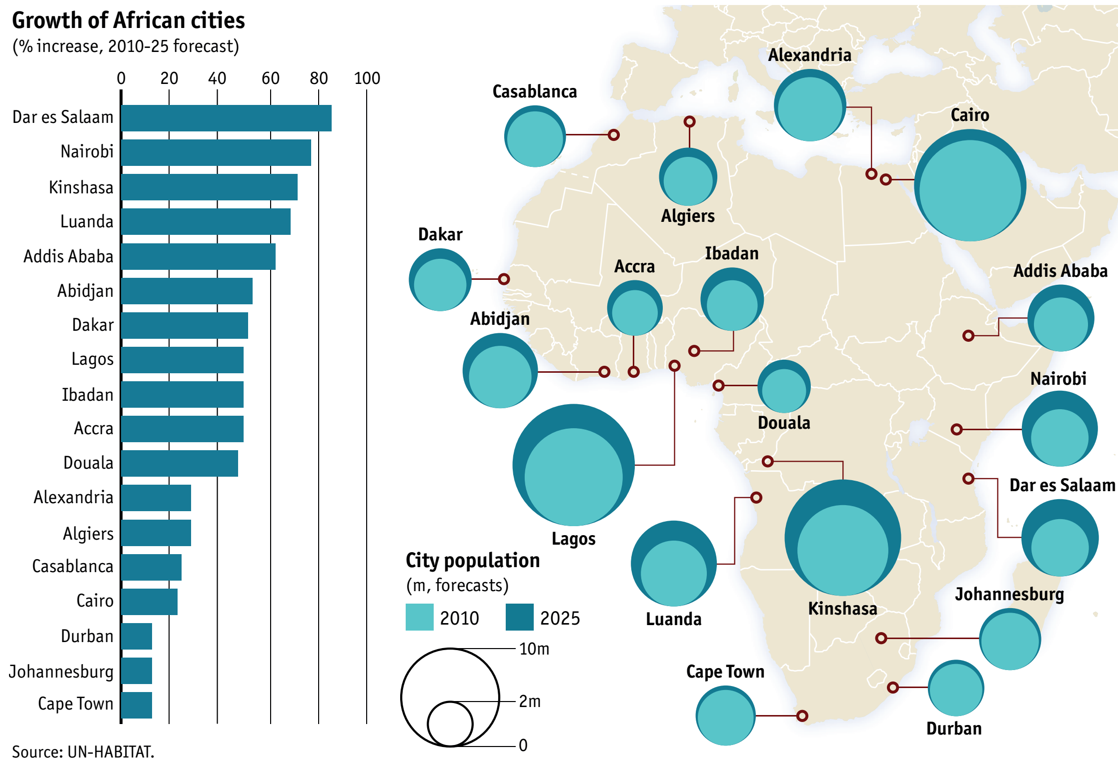
“Renewable energy and gas projects present viable and attractive opportunities across Sub-Saharan Africa. There isn’t a shortage of funding for good projects. We believe we can develop around ten projects in the next five years, across technologies and countries in Sub-Saharan Africa,” says Orli Arav, chief investment officer at Impala Energy.

Urbanisation and the need for better mobility

The population of Africa is expected to increase from current levels of around 1.2bn to well over 2bn people by 2050. Increasingly, the population is moving to urban centres.

With increasing levels of urbanisation across Africa, transportation within and between cities is becoming more important.

“Urban transport is taking more of our focus. ADB is particularly looking at ways to assist in the improvement of mobility in cities,” says Mr Malinga.



Source: UN-HABITAT.

Social infrastructure and the off-take challenge

One of the factors driving the allocation of funding is a viable “off-take” mechanism that allows for cost recovery and financial return to be generated by the owners and/or managers of the infrastructure. For example, South Africa’s REIPPP programme guarantees successful bidders a predetermined price for any power generated. This clear purchase price, as well as a supportive regulatory framework, has resulted in over 6,000 mw of power-purchase agreements being concluded over the last three-year period.

Off-take mechanisms are often not in place, or are less attractive than ones that can be secured in the energy or transportation sectors. Social infrastructure, which encompasses everything from public education to health and safety infrastructure, may be particularly prone to the off-take challenge.

“There is plenty of money out there, where there are projects with proper off take. But, in the case of social projects, such as schools or water-related projects, that’s often not the case,” says Mr Vivekanandan.

Notwithstanding off-take challenges, water and sanitation-related projects secured 14% or around US$12.9bn in focus DFIs’ funding commitments over the period.

South Africa’s REIPPP programme and its state-owned-enterprise coal-powered generation projects secured over US$16.3bn, or around 43% of all power-related funding commitments in the period.

“In a period of four years, there have been 92 REIPPP projects and over 6,000 mw allocated. This equates to R193bn of investment pulled into the South African economy through renewable energy. It’s been well received by the financing and developer communities alike,” says Bhavtik Vallabhjee, director: Power, Utilities and Infrastructure at Barclays Africa.

Governments become the off-take guarantor in many instances where revenue that is recoverable from the end-user of the infrastructure is not sufficient to generate the appropriate level of financial return for private-sector actors. "Infrastructure investments, by and large, will have to be recovered from government budgets," says Mr Chen.

Over three-quarters, or around US$67bn, were directed to projects in Sub-Saharan African countries

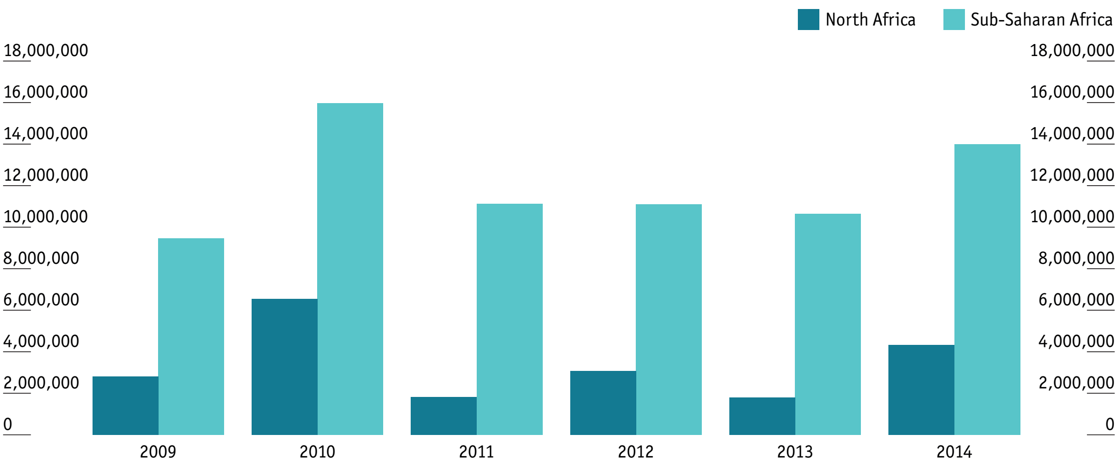
Regional mix of funding

Of focus DFIs' funding commitments, over three-quarters, or around US$67bn, were directed to projects in Sub-Saharan African countries.

Sub-Saharan Africa: Resilience and punching above one's weight

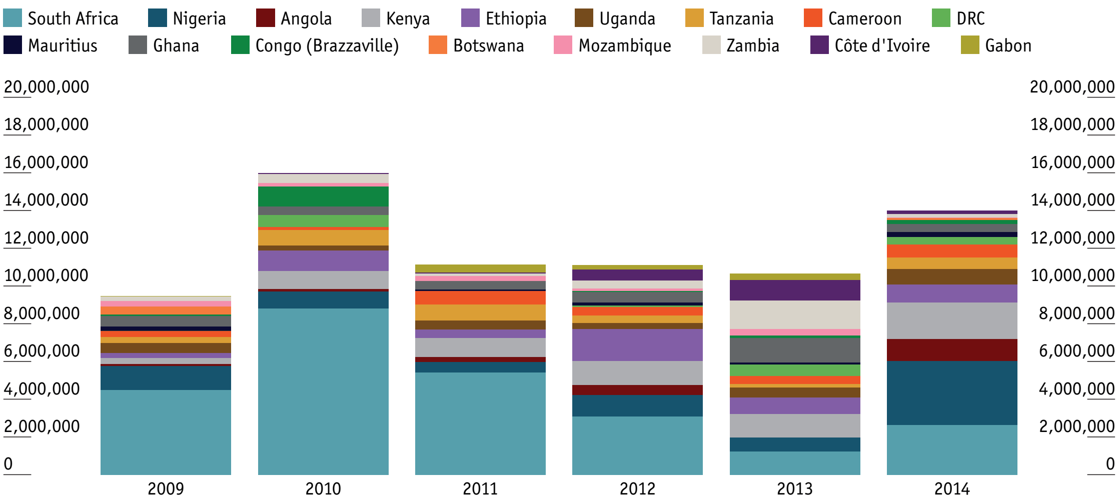
Over the period 2009-14, South Africa received around 35% of total focus DFIs' funding commitments.

DFI commitments by region 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

Sub-Saharan Africa: DFI commitments by country 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

Nigeria, Sub-Saharan Africa's largest economy, received around 11% of funding approvals. Noteworthy is Nigeria's 2014 share of Sub-Saharan African funding approvals from focus DFIs, which is the highest, at around 25%. Over the previous five years, Nigeria's share of financial approvals averaged just 8% of the total granted. The jump in Nigeria's 2014 share was attributable to a US$2bn increase in funding relative to what was approved by focus DFIs in 2013. Focus-DFI-funding increases in Nigeria were most apparent in three sectors: water and sanitation (US$1.2bn), power (US$612m) and commodities, including extractives (US$461m).

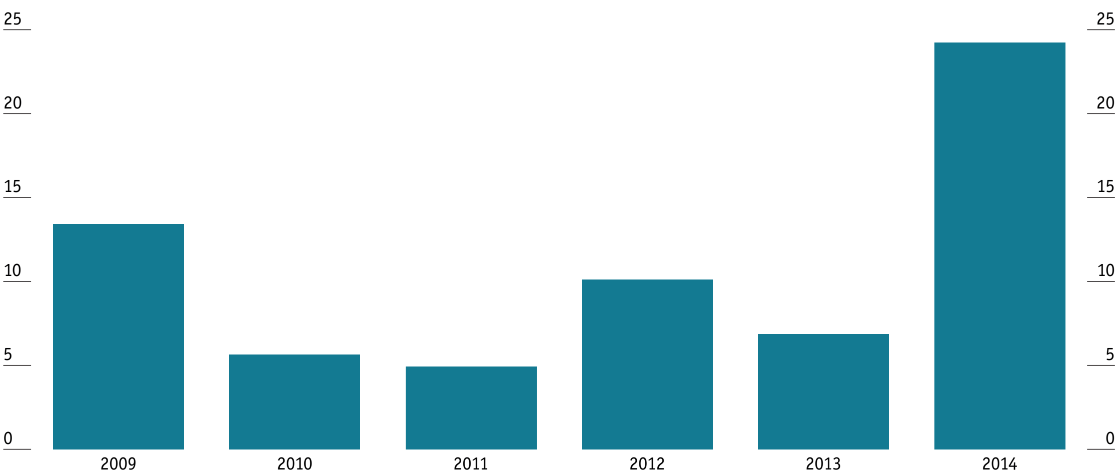
In 2014, despite regional and country-specific headwinds, Nigeria significantly increased its share of focus-DFI funding

Kenya, Sub-Saharan Africa's third-largest economy, received around 9.4% of funding approvals. Ethiopia, a fast-growing East African economy with the second-largest population in Africa, received 7% of funding approvals, the fourth-highest share among the 17 Sub-Saharan African countries analysed. To put this in perspective, Ethiopia's economy is less than 9% of the size of that of Nigeria (that is, 2014 GDP of US$50bn compared with Nigeria's US$569bn); however, Ethiopia received around two-thirds of the infrastructure-related funding approvals of Nigeria (that is US$5.31bn, compared with US$7.96bn) over the period. The Ethiopian government has prioritised the roll-out of infrastructure overall. However, the transportation sector received well over two-thirds of focus-DFI-funding approvals, which is indicative of the emphasis the Ethiopian government has placed on improving links to and from the landlocked country.

Sub-Saharan Africa: Finance approvals by sector

Power-related projects received over US$28bn, or around 39%, of total funding approvals over the

Nigeria: Share of Sub-Saharan Africa infrastructure financing 2009-14
(% of total)

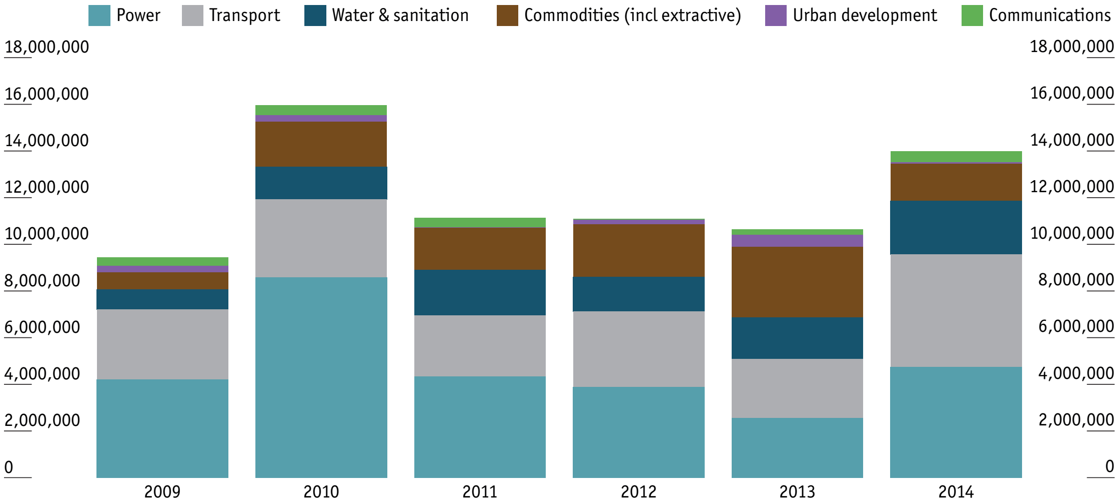


Source: ECN analysis.

period. DFIs, as well as private-sector players such as commercial banks, are backing projects in the power sector.

FMO, for example, has weighted its financing approvals towards this sector. "The bulk of our infrastructure investments have centred on the energy sector," Mr van der Molen confirms.

Sub-Saharan Africa Infrastructure financing 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

"The low-hanging fruit has been around power, given the large supply-demand gap in the region, and as this is 'contracted power' with bankable power-purchase agreements. In recent times, Barclays has been most active in this sector," says Mr Vallabhjee.

"The low-hanging fruit has been around power, given the large supply-demand gap in the region..."

ECN's analysis shows that, out of the US$28.3bn in finance approvals in the power sector, South Africa received US$16.3bn, or around 64% of the total, underscoring major generating-capacity expansion on the part of Eskom, the state-owned energy company, as well as the attractiveness of the South African government's REIPPP programme. In light of this, *The Global Status Report of 2014* placed South Africa fourth globally in terms of renewable-energy investments relative to GDP.

The transport sector received around 27%, or US$19.5bn, of the funding over the period. ADB provided around US$3.7bn of this funding. "Around half of the financing the Bank approves goes towards infrastructure, and nearly half of that would be on transport," says Mr Malinga.

US Ex-Im approved financial support of around US$4.6bn, relating to the transport sector over the period. US Ex-Im's support was skewed towards aviation infrastructure. DBSA and AFD were the other two significant contributors to transportation-related projects. Both DFIs extended support to the value of US$3.7bn over the period.

South Africa, Ethiopia and Kenya received around 55%, or US$10.7bn, of focus DFIs' transportation-sector funding approvals over the period.

Morocco, Egypt and Tunisia received 99.7% of the financial commitments allocated to North Africa from the focus DFIs

The power sector attracted around 64% of the financial support directed towards South Africa. At 16% of funding commitments, transport was the second-largest sector for South Africa.

Around 82% of infrastructure-related funding in Kenya was directed to two sectors: power and transportation. The power sector attracted US$2.5bn and the transportation sector around US$3.1bn over the period.

Over two-thirds, or US$3.6bn, of infrastructure-related funding in Ethiopia was directed to the transportation sector. Power was the next-largest sector, with total financial support over the focus period of around US$834m.

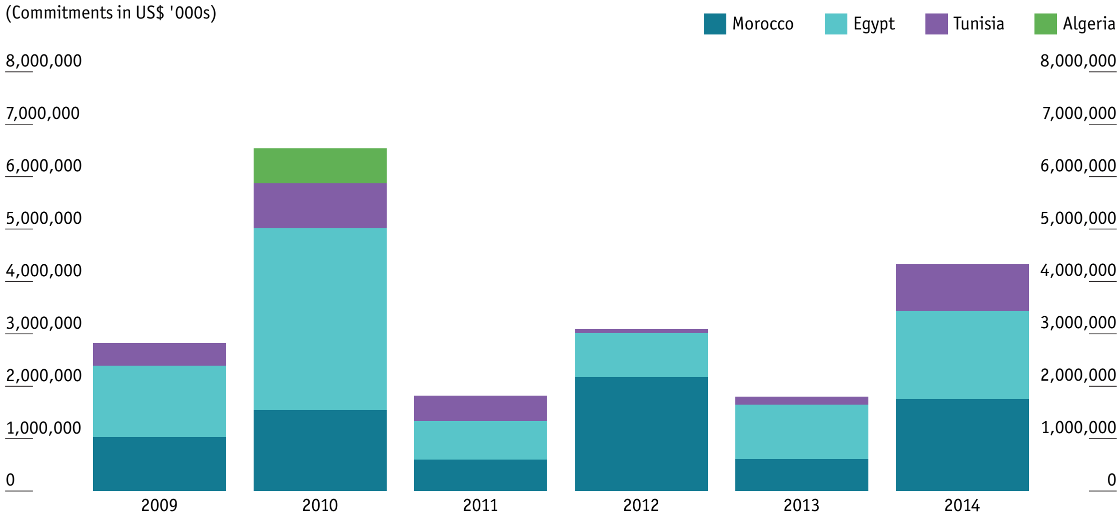
North Africa: Domination by three countries

Over the period, Morocco, Egypt and Tunisia received 99.7% of the financial commitments allocated to North Africa from the focus DFIs. Focus-DFI approvals of around US$19.3bn in support of power (US$8.1bn), transportation (US$5bn), water and sanitation (US$3.1bn) and commodity-related initiatives (US$3.1bn) in these three countries account for their significant share of the funding allocation.

North Africa: Finance approvals by sector

Around 43%, or US$8.8bn, of the funding approved for North Africa was directed to power projects.

North Africa: DFI commitments by country 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

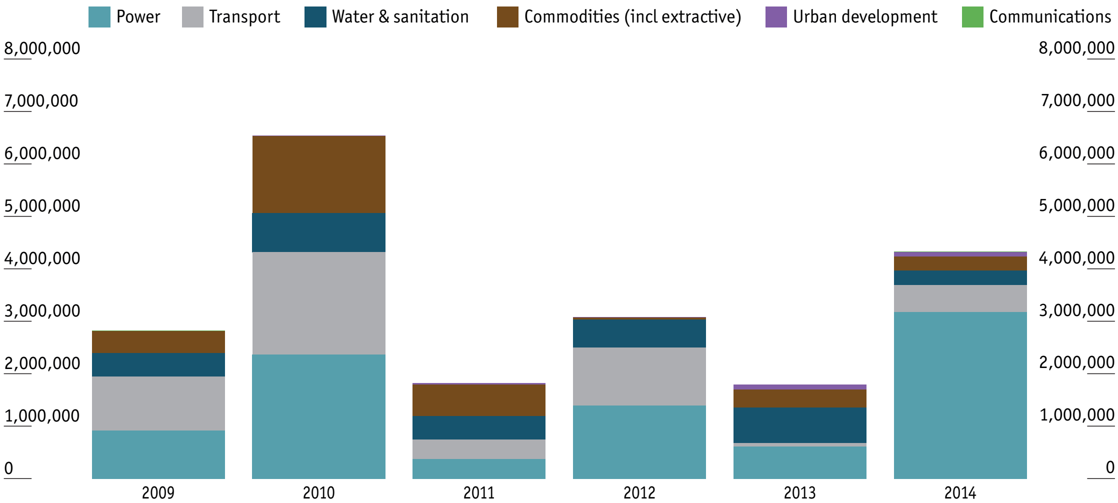
Of the power projects approved, Egypt and Morocco were allocated around 43% and 39% of financial commitments, respectively. The projects encompassed gas-fired plants such as the Helwan South power plant in Egypt, as well as large-scale renewable-energy initiatives in Morocco, aimed at weaning the country off of its heavy reliance on fossil fuels to generate energy.

Transportation-related infrastructure-finance approvals totalled around US$5.1bn over the focus

period in North Africa. Egypt and Morocco were allocated 50% and 35% of this approval amount, respectively. Both of these North African nations have prioritised improving mobility in urban areas. Egypt, for example, has focused on bus-rapid-transport corridors and light-rail transit.

Water-, sanitation- and commodity-related investments garnered around 30% of the financing approvals. Morocco received half of the water and sanitation-related financing approvals, or US$1.5bn. Egypt received over 62%, or US$1.95bn, of the funding approvals for the commodities (including extractives) sector.

North Africa infrastructure financing 2009-14
(Commitments in US$ '000s)

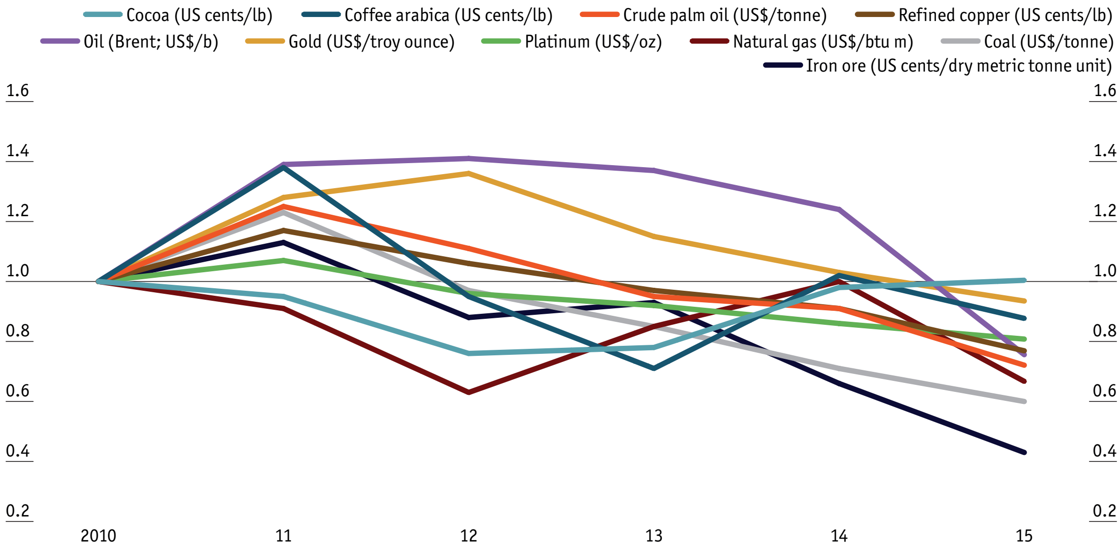


Source: ECN analysis.

6) Funding headwinds

Commodity-cycle impact

Commodity price index: 2010-15
(Price index 1 = 2010 price)



Source: The Economist Intelligence Unit.

Africa remains a net exporter of primary commodities

Oil, gold, natural gas and a range of other commodities prices have fallen from the highs of the pre-2014 period. The Economist Intelligence Unit estimates the average price of the ten commodities highlighted in the chart above to decline by around 24% between 2010 and 2015.

Africa remains a net exporter of primary commodities, and the earnings generated from the export of commodities play a significant role in financing government expenditure and, by extension, infrastructure investments. Nigeria, for example, depends on oil exports for 90% of its foreign-exchange earnings and around 70% of fiscal revenue.

The price of oil averaged around US$99 per barrel in 2014. The 2015 average price is forecast to decrease by 39%, to US$60/b.

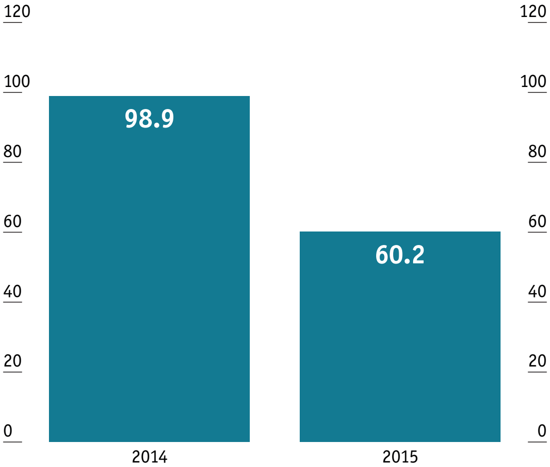
The decline in the price of oil has placed significant pressure on the value of the naira, which is estimated to have depreciated by around 26% over 2014-15. This makes servicing hard-currency debt obligations all the more difficult. The reduced earnings from the export of oil have also made it more challenging for the Nigerian government to fund its current and capital expenditure.

Somewhat paradoxically, "The soft commodity cycle could actually increase demand [for DFI] lines of credit," says Mr Chen, as the tougher operating environment may reduce the appetite of other financiers to extend capital.

"So far, there has been very little impact of the softer commodity cycle for two fundamental reasons:

1) The Chinese economy is still growing, so the demand for commodities is still there; this won't change for the foreseeable future. China is an important recipient of those commodities.

Average oil price: 2014 vs. 2015
(US$/b)



Source: The Economist Intelligence Unit.

"The soft commodity cycle could actually increase demand [for DFI] lines of credit."

2) Local African economies are becoming more resilient because of diversification, and the larger amount of investments from China is beating a new path for those economies. Sectors such as manufacturing are more diversified; there are more and better conditions for international trade; and there are new service industries. So all this new capacity will also assimilate the commodities produced locally," says Mr Zhao.

Mr van der Molen captures a general view among ECN interviewees: "Given the softer commodity cycle, it's reasonable to expect a slowdown in deal flow. However, as quickly as it slows, it may speed up. FMO is a long-term player. We see no reason to panic."

Indeed, energy-dependent economies such as in East Africa are seeing a benefit from lower oil prices.

US monetary policy

A number of African currencies have been hit hard, not only by softer commodity prices, but also, as capital flows away from their markets to the US, it drives up the demand for US dollars and drives down the demand for African currencies, as well as possibly leading to higher interest-rate demands on debt issuances.

As the US economy is showing strong and consistent signs of recovery, many observers expect the US Federal Reserve (the Fed, the central bank) to increase the US prime-lending rate, and, as a result, put increased depreciating pressure on emerging-market currencies.

"The Africa rising story is going to right-size a little..."

Outside of South Africa, most DFI-funded transactions are in hard currencies. Speaking at the 2015 Infrastructure Africa Conference, Mo Shaik, group executive: International Finance at DBSA, said "The Africa rising story is going to right-size a little because of these global issues that are taking place. The US recovery and the possibility of rising interest rates, particularly as they relate to the strengthening US dollar, are placing pressure on those with dollarised-loan obligations."

Conclusion

The challenge of addressing the infrastructure gap in Africa is too big for any one actor to address on its own. Billions of US dollars annually are required to pay for the physical infrastructure, but, beyond the build-related finance, funding and assistance are required to plan, manage and develop bankable projects. Many African countries face the conundrum of not being able to take on additional debt, while lacking the technical and other capacities to manage infrastructure-related projects successfully. In this context, the role DFIs have played of being there "through cycles", and helping to create an enabling environment that supports infrastructure development, has been indispensible.

Clearly, not all DFIs operate on an altruistic basis. Some DFIs, the bilateral ones in particular, are guided primarily by a nationalist agenda in support of their own export base, which may or may not distribute the benefits of their funding initiatives equitably. However, without the contributions of DFIs, bridging the infrastructure divide would be all the more difficult.

"In the short term, I don't see the African infrastructure gap being filled," says Mr Chen. Ultimately, he adds, "Governments have to plan and meet their infrastructure needs within the context of their own resources." With many African governments' fiscal health determined by commodity prices and the recent commodity super-cycle appearing to have reached its end, it may be some time before Africa sees the level of infrastructure necessary for the region to achieve its full potential. But, as anyone seeking sustainable commercial success in Africa knows, a long-term commitment is required, as well as an understanding of the local business environment.

Africa-based development-capital providers may see their ability to raise and extend funding at competitive rates negatively impacted by the credit ratings of their shareholding countries. This is particularly the case with the DBSA, whose rating is dictated by the credit rating of South Africa, which is a country acutely exposed to international capital flows, and which depends on commodity exports for over 50% of its foreign-exchange earnings.

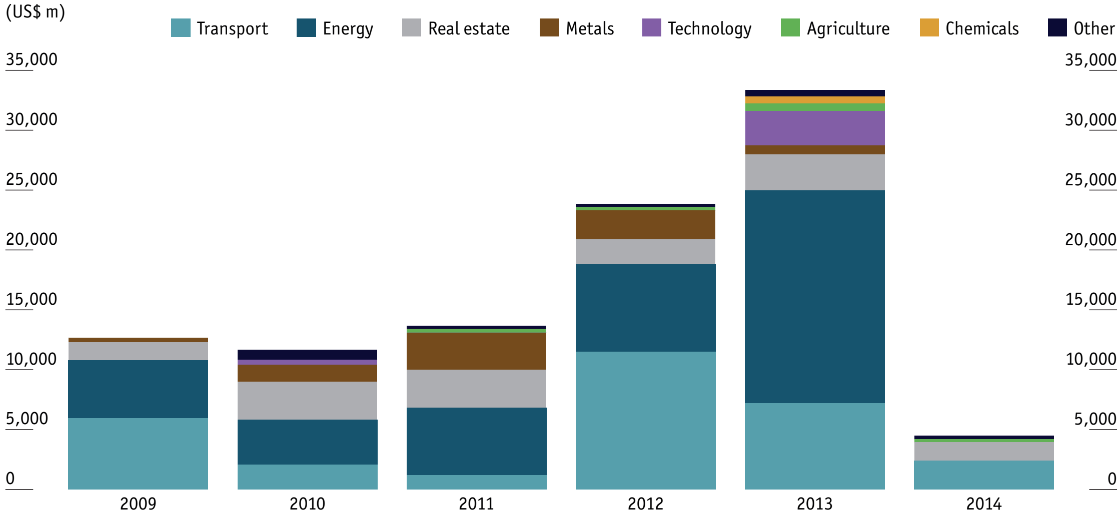
This notwithstanding, the involvement of development funders from other regions is expected to remain a constant. Of note, China-based sources of development funding and investment in Africa have increased dramatically over the last 14 years, and, if the narrative coming from Chinese officials is to be believed, China will remain by far the biggest source of finance to assist in addressing Africa's infrastructure deficit for the foreseeable future.

Clearly, the development-capital sector and its funding participants will continue to occupy an important space in creating and supporting bankable projects. DFIs, having already approved hundreds of billions of US dollars into Africa-based-infrastructure projects in the last few years alone, over the next decade are likely to allocate well over US$1trn in new funding, combining the contributions from China, focus DFIs and other institutions, such as the BRICS Development Bank, not covered in this report. In developed markets, DFI-funded projects act as multipliers, bringing in tens of US dollars for every one US dollar in funding allocated. Africa is not necessarily achieving that level of capital leverage, but the signs, for example with South Africa's REIPPP or Uganda's GET FiT programme, point encouragingly in this direction. Development capital is certainly catalysing private-sector investment in Africa-based infrastructure projects, but not yet on the scale needed. However, as investors become more comfortable, perhaps the multiplier effect will increase to a greater extent. If that happens, billions of US dollars will rapidly become trillions, and Africa will acquire the platform of infrastructure necessary fully to realise its potential.

Appendix

Chinese-Africa-investment focus

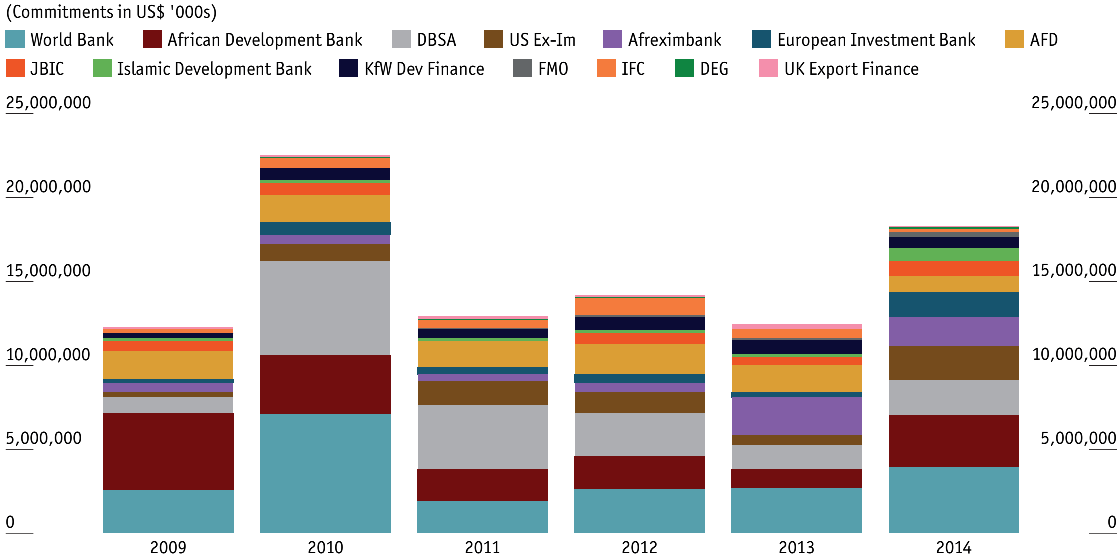
Chinese investments and contracts in Africa: 2009-14
(US$ m)



Sources: The American Enterprise Institute; The Heritage Foundation.

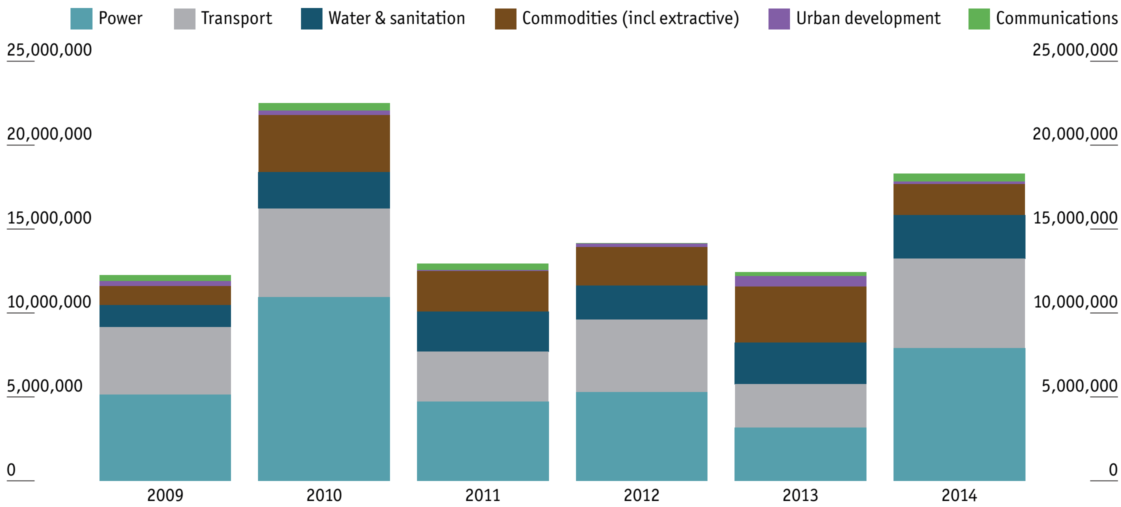
Focus DFIs: Additional insights

DFI commitments in Africa by year 2009-14
(Commitments in US$ '000s)



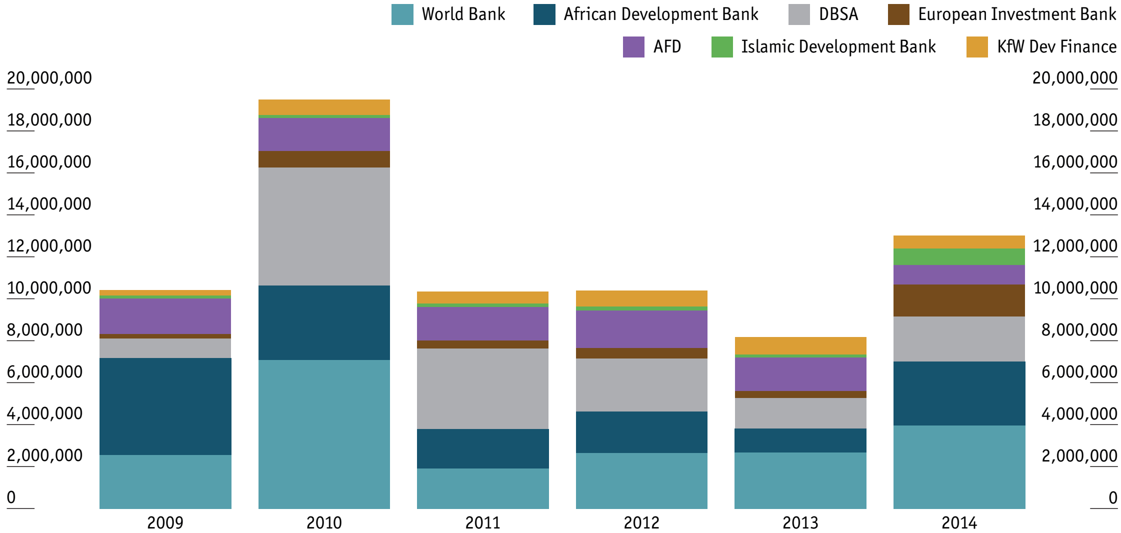
Source: ECN analysis.

DFI commitments in Africa by sector 2009-14
(Commitments in US$ '000s)



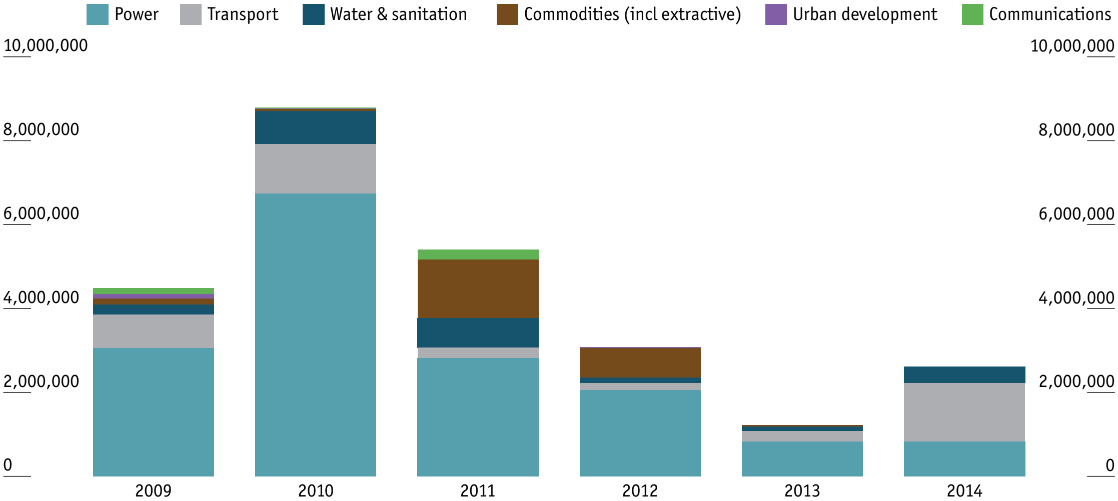
Source: ECN analysis.

DFI commitments in Africa by year (primarily to government)
(Commitments in US$ '000s)



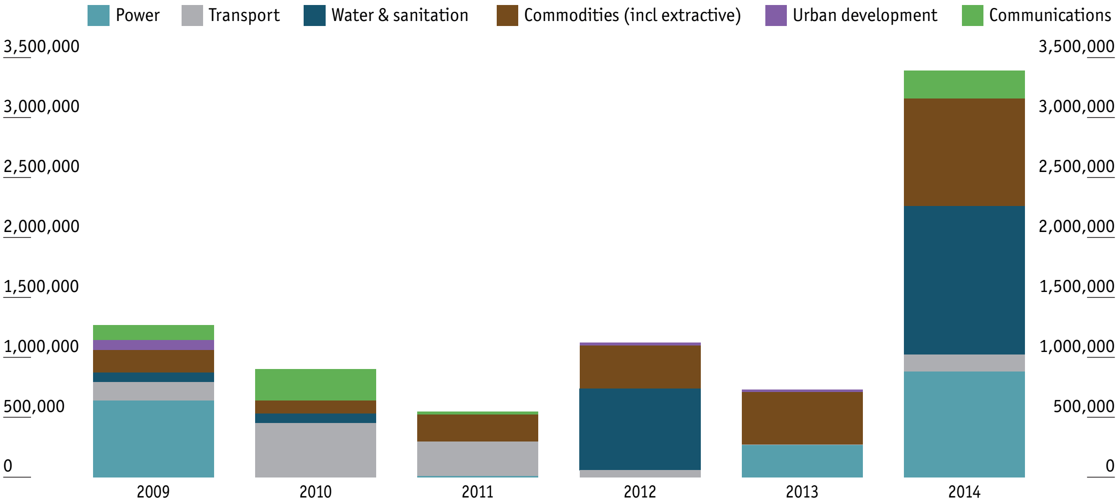
Source: ECN analysis.

South Africa infrastructure financing 2009-14
(Commitments in US$ '000s)



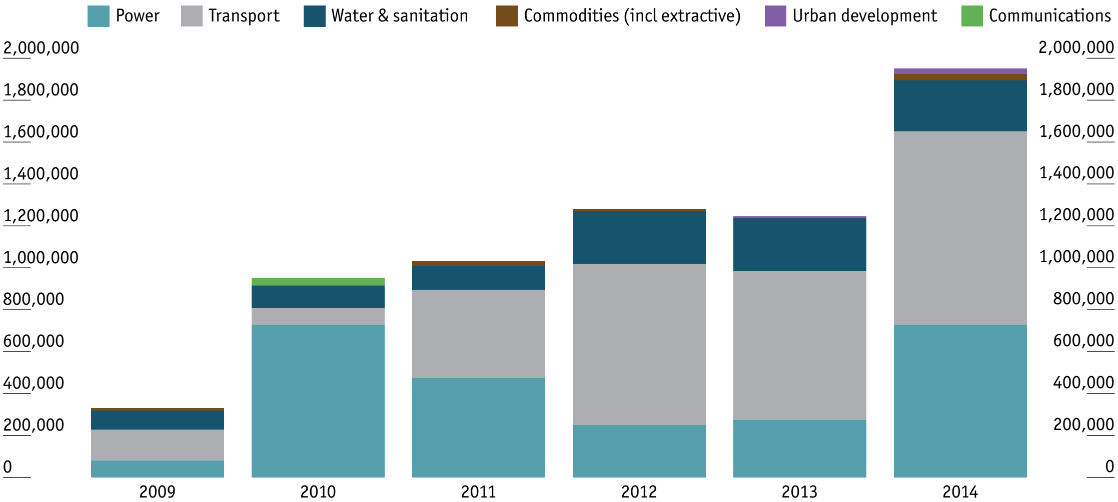
Source: ECN analysis.

Nigeria infrastructure financing 2009-14
(Commitments in US$ '000s)



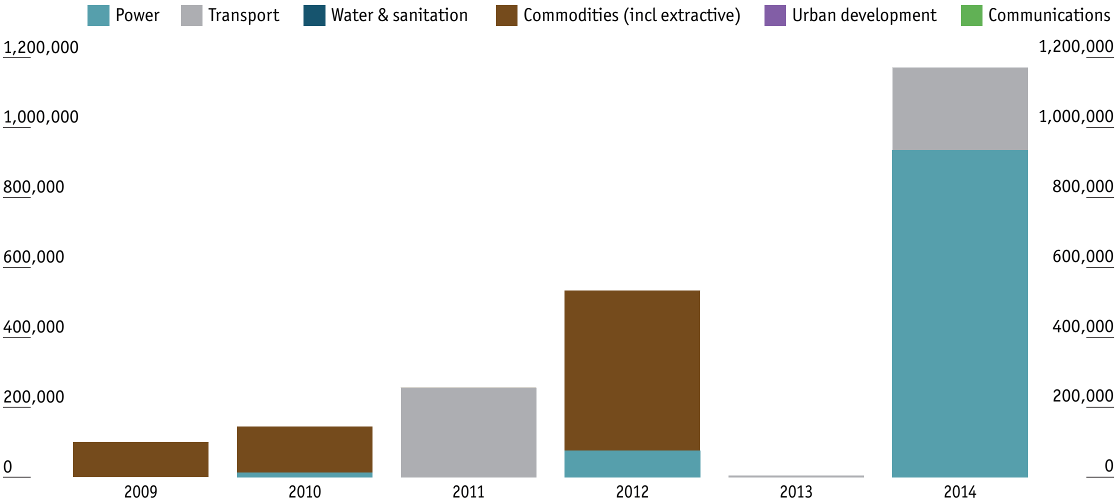
Source: ECN analysis.

Kenya infrastructure financing 2009-14
(Commitments in US$ '000s)



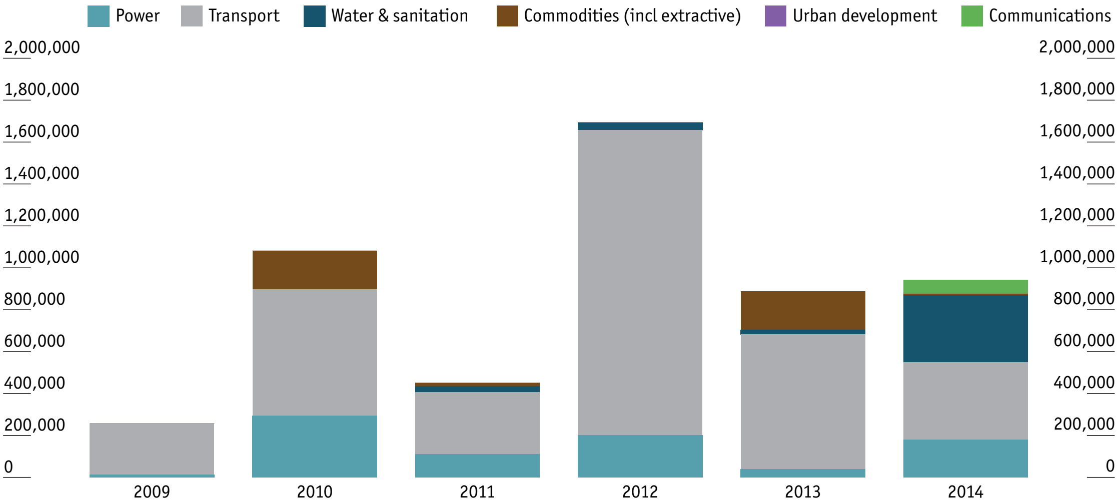
Source: ECN analysis.

Angola infrastructure financing 2009-14
(Commitments in US$ '000s)



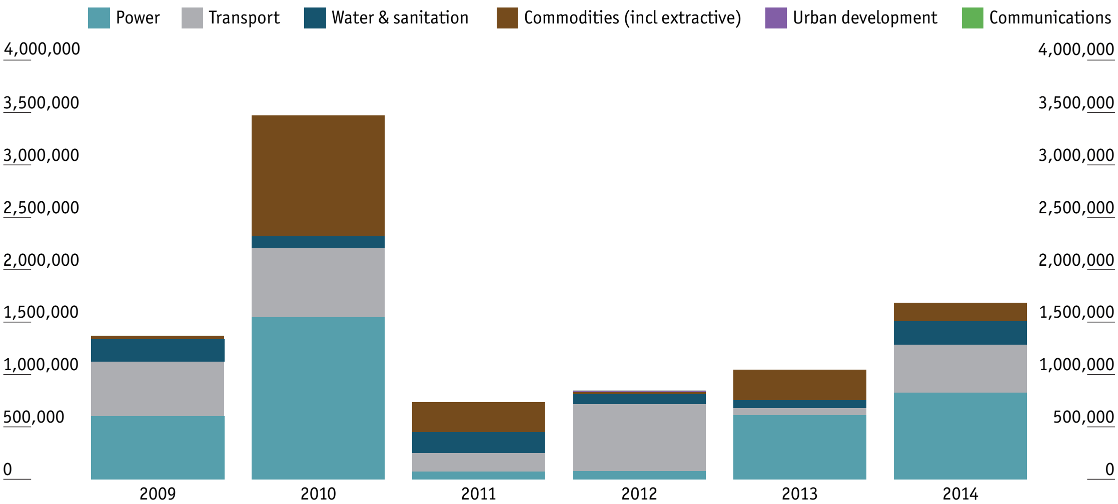
Source: ECN analysis.

Ethiopia infrastructure financing 2009-14
(Commitments in US$ '000s)



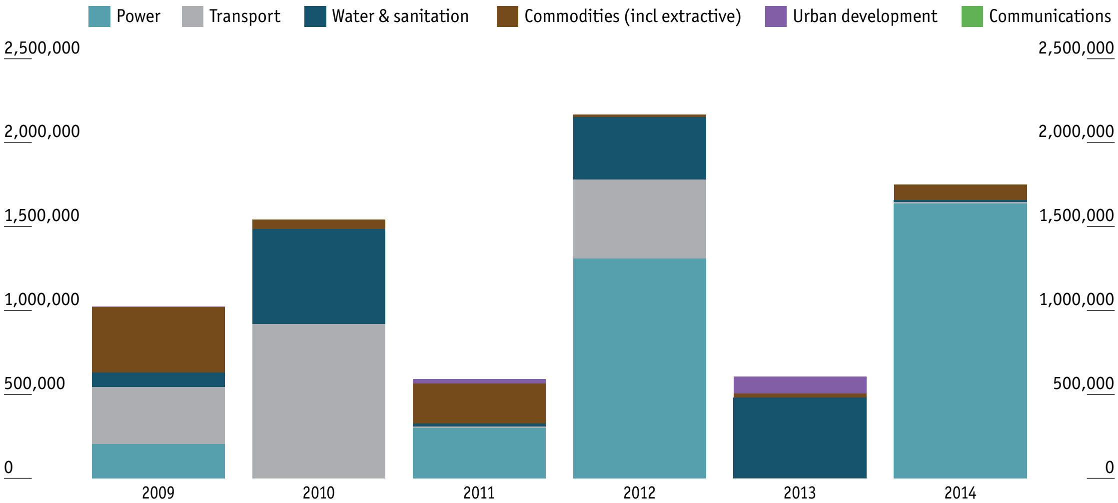
Source: ECN analysis.

Egypt infrastructure financing 2009-14
(Commitments in US$ '000s)



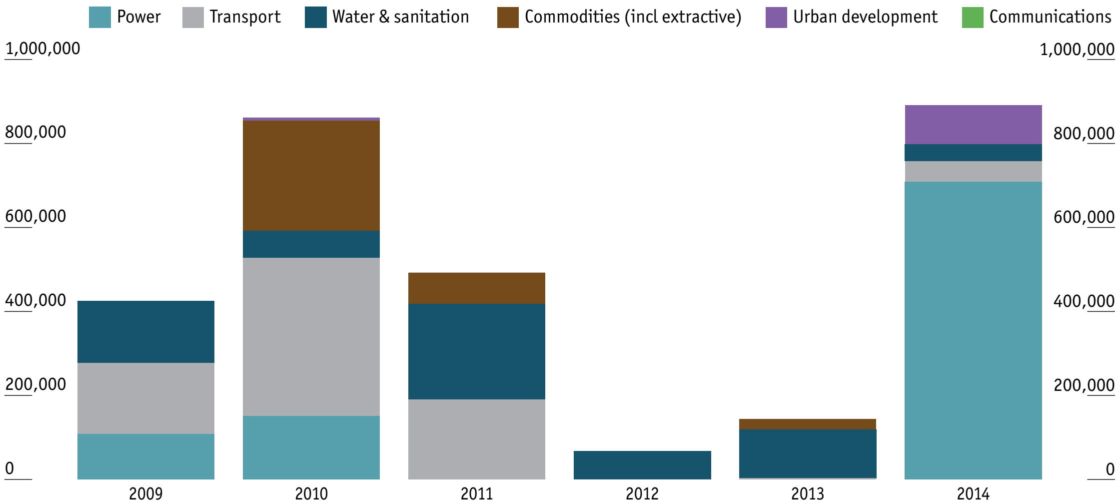
Source: ECN analysis.

Morocco infrastructure financing 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

Tunisia infrastructure financing 2009-14
(Commitments in US$ '000s)



Source: ECN analysis.

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